

Medical Care, Health Status, and Family Income

Statistics on personal health expenditures, health insurance coverage, the use of medical and dental services, chronic illness and disability acute illness, and disability days, by family income, size of family, age, and sex. Based on data collected in household interviews.

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CONTENTS

| | Page |
|--------------------------------------------------------|------|
| I. Introduction----- | 1 |
| Source and Description of the Data----- | 1 |
| The Population by Economic Status----- | 2 |
| II. Health Insurance Coverage----- | 5 |
| Introduction----- | 5 |
| Age----- | 5 |
| Family Size----- | 8 |
| Race and Income----- | 8 |
| Education----- | 9 |
| Summary----- | 9 |
| III. Hospitalization----- | 11 |
| Rate of Hospitalization----- | 11 |
| Length of Hospital Stay----- | 14 |
| Surgical Convalescence----- | 18 |
| Proportion of the Hospital Bill Paid by Insurance----- | 19 |
| Summary----- | 22 |
| IV. Medical and Dental Care----- | 24 |
| Physician Visits----- | 24 |
| Physician Visits by Type of Service----- | 27 |
| Medical Specialists Services----- | 27 |
| Medical X-ray Visits----- | 31 |
| Dental Visits----- | 34 |
| Dental X-ray Visits----- | 38 |
| Summary----- | 39 |
| V. Personal Health Expenses----- | 41 |
| Description of the Data----- | 41 |
| Distribution of Persons by Interval of Expense----- | 42 |
| Amount of Health Expenses----- | 43 |
| Health Expenses by Age and Sex----- | 45 |
| Health Expenses by Family Size----- | 46 |
| Health Expenses by Type of Expense----- | 47 |
| Hospital Expenses----- | 47 |
| Doctor Expenses----- | 49 |
| Medicine Expenses----- | 50 |
| Dental Expenses----- | 50 |
| Other Expenses----- | 51 |
| Summary----- | 51 |

TABLE OF CONTENTS—Continued

| | Page |
|--------------------------------------------------------------------|------|
| VI. Chronic Illness and Disability----- | 52 |
| Persons With One or More Chronic Conditions----- | 52 |
| Activity Limitation Due to Chronic Conditions----- | 53 |
| Mobility Limitation Due to Chronic Conditions----- | 57 |
| Chronic Conditions That Cause Activity Limitation----- | 58 |
| Persons Receiving Care at Home----- | 58 |
| Use of Hearing Aids, Braces, and Artificial Limbs----- | 63 |
| Summary----- | 64 |
| VII. Acute Conditions----- | 65 |
| Summary----- | 69 |
| VIII. Disability Days----- | 70 |
| Summary----- | 74 |
| IX. Population----- | 75 |
| Appendix I. Technical Notes on Methods----- | 81 |
| Background of This Report----- | 81 |
| Statistical Design of the Health Interview Survey----- | 81 |
| General Qualifications----- | 82 |
| Reliability of Estimates----- | 82 |
| Appendix II. Definitions of Certain Terms Used in This Report----- | 84 |
| Terms Relating to Costs of Medical and Dental Care----- | 84 |
| Health Insurance Terms----- | 84 |
| Kind of Coverage----- | 85 |
| Terms Relating to Hospitalization----- | 85 |
| Terms Relating to Proportion of Bill Covered by Insurance----- | 85 |
| Terms Relating to Recuperation Following Surgery----- | 85 |
| Terms Relating to X-rays----- | 86 |
| Medical Care Terms----- | 86 |
| Dental Care Terms----- | 88 |
| Terms Relating to Chronic Conditions----- | 88 |
| Terms Relating to Disability----- | 88 |
| Personal Care Terms----- | 89 |
| Terms Relating to Special Aids----- | 90 |
| Terms Relating to Acute Conditions----- | 90 |
| Terms Relating to Disability Days----- | 91 |
| Demographic, Social, and Economic Terms----- | 92 |
| Family and Related Terms----- | 92 |

SYMBOLS

| | |
|--------------------------------------------------------------------|-----|
| Data not available----- | --- |
| Category not applicable----- | ... |
| Quantity zero----- | - |
| Quantity more than 0 but less than 0,05---- | 0.0 |
| Figure does not meet standards of reliability or precision----- | * |

MEDICAL CARE, HEALTH STATUS, AND FAMILY INCOME

I. INTRODUCTION

In planning programs for the eradication of poverty in the Nation it is desirable to use all relevant data describing American society. This should include statistics on the relationship of health and the use of health services to economic status. In line with this comprehensive approach, a wide range of health-related topics were examined for the purposes of determining the impact of financial status on levels of health and of identifying the particular segments of the population in which this impact is most acute.

To accomplish this dual purpose, various topics which measure the extent of illness and disability, the use of medical facilities, and the expenditures for medical care were selected for study. When these health-related items are compared among people of varying incomes, certain patterns in the relationship between low income and health become evident. The underlying causes of this relationship are more difficult to assess. The Health Interview Survey is a general purpose health statistical program and, as such, has not extensively analyzed the intricate causes—the "social epidemiology"—which collectively determine the interrelationships indicated in succeeding pages. This report may serve only to reveal the limitations in our knowledge of the health and social characteristics of the population, and to stimulate research which will further the understanding of the nature of these problems.

No attempt was made to determine adequacy of income or to establish the amount of income necessary to provide minimum health require-

ments. It was thought that levels of adequacy would in most instances depend on the purpose for which the data are used.

In the preparation of this report, special emphasis was placed on the gross differentials in the extent of illness and in the use of health facilities among persons of varying income levels. Information on other factors that contribute to the health status of the population can be found in current reports issued by the National Center for Health Statistics.

SOURCE AND DESCRIPTION OF THE DATA

The costs of medical care, ability to meet these costs, and the use of health services and facilities are considered in this report in terms of personal health expenditures, health insurance coverage, the proportion of the hospital bill paid by insurance, hospital utilization, physician and dental visits, specialists' services, and visits for X-ray services. Illness and its associated disability are shown by economic status in terms of chronic conditions and impairments, chronic disability, persons receiving care at home, acute illness and injury, and disability days associated with illness.

The amount of family income is used to categorize persons according to economic status. By this procedure, differences in health status and variations in the extent of medical care according to income groups can be used to show the relation-

This report was prepared by Philip S. Lawrence, Sc.D., Geraldine A. Gleeson, Elijah L. White, Robert R. Fuchsberg, and Charles S. Wilder of the *Division of Health Interview Statistics*.

ship of economic status to the health of the Nation.

The information contained in this report is based on data collected in a continuous nationwide survey conducted by household interview. Each week a randomly selected sample of households is interviewed to obtain information relating to the health characteristics of each member living in the household.

The Survey is limited to the civilian, non-institutional population of the United States. For some kinds of information, such as the incidence of acute conditions, the effect of this restriction on the data is negligible; for other types of information, such as the prevalence of specific chronic conditions for which the rate of institutionalization is relatively high, a considerable underestimation may result. Another general qualification of the Survey is that collected information refers only to persons who were alive at the time of interview. This exclusion of information for persons who died prior to interview tends to reduce all estimates somewhat. Hospital data, for example, provide information on the hospital experience of the population, but do not assess the total amount of care provided by hospital facilities during a given year.

In the Health Interview Survey, interviews are conducted in approximately 42,000 households comprising 134,000 persons during each year. Since the estimates derived from the interview data are based on a sample, they will differ somewhat from figures that would have been obtained if a complete census had been taken using the same procedures. However, the aggregates and rates shown in this report are sufficiently reliable for general use.

Most of the estimates shown are based on data collected during the period July 1962-June 1963. However, for certain items not included on the questionnaire during that period and for which information is not routinely collected, it was necessary to present estimates based on other time intervals.

In addition to family income, other person characteristics which were considered in this report are age, sex, and family size. Family size, a new concept introduced into Survey data in this report, is defined as a person characteristic denoting the size of the family of which the person is a member. If it seemed appropriate because of

their interrelationship with family income, other demographic characteristics of the population were considered in the discussion and explanation of variations in the health-related topics covered in the report. In other instances, particularly where space did not permit a complete presentation of related material, reference was made to selected reports of the Health Interview Survey that provide supplemental information. Each of these reports (listed on the inside of the back cover) also contains a facsimile of the questionnaire used in the collection of data during the period covered by the particular report. Those interested in the content and format of the questionnaires are referred to this source for information.

Included in Appendix I is a brief description of the Survey design and methods used in estimation. As previously stated, most of the estimates shown are subject to sampling errors but are sufficiently reliable for general use. For those who wish to obtain approximate values of sampling errors, included in Appendix I is a guide to other Health Interview Survey reports that contain appropriate sampling error charts (or tables) with instructions for their use.

Definitions of terms used in this report may be found in Appendix II. Since many of the terms have specialized meanings, it is suggested that the reader familiarize himself with these definitions.

THE POPULATION BY ECONOMIC STATUS

To give meaningful interpretation to differences in the health and medical care levels in the several income groups used in this report, it is necessary to have some knowledge of the population composition within the income intervals. In addition to providing aggregates which were used as base estimates for rates or percentages shown in the report, the tables on pages 75-80 can be used to compare distributions by income according to age, sex, and size of family. Percentage distributions based on these estimates, as well as information on other demographic characteristics of the population, follow.

Of the estimated 183 million persons in the civilian, noninstitutional population during the

period July 1962-June 1963, approximately 23 million, or 12 percent, were living in families with income less than \$2,000. About 18 percent of the population had family incomes of \$2,000-3,999, 34 percent were in the \$4,000-6,999 bracket, and 31 percent had incomes of \$7,000 or more. The remaining 5 percent includes persons with unknown amount of income. These estimates include individuals in the income bracket as well as persons living in families of two or more members. Since most of the discussion concerns the distribution of the population within income intervals, persons for whom amount of family income could not be obtained were excluded.

The 23 million persons living in families with less than \$2,000 annual income were rather evenly distributed among the age groups shown, with roughly one-fourth in each of the age groups—under 15, 15-44, 45-64, and 65 years and over (table 1). However, the composition of the families in which they live is quite different. About one-half of the children under age 15 years in this income interval were living in family groups of 6 or more members. Among persons 15-44 years the

distribution by family size was less concentrated, with only one-fifth living in families of 6 or more members. However, for persons 45 years and over the percentage at this income level living in large families was negligible. In fact, about 70 percent of those aged 45-64 years, and more than 90 percent of those 65 years and older, were either individuals living alone (or with unrelated persons) or members of two-person families.

At the highest family-income level shown in table 1, \$7,000 and over, children under 15 comprised about one-third of the population, and only 4 percent of the persons in this income level were 65 years or older. Of the approximately 18 million children under 15 in this income group, about 7 million, or slightly less than 40 percent, were living in families of six or more members, and about the same percentage of persons 65 years and over were living alone or in two-member families.

Probably the most marked differences in population distribution by family income are those of race (table 1). In the lowest family income interval, under \$2,000, 72 percent of the population was white and 28 percent nonwhite. As income

Table 1. Percent distribution of the population by age, race, and sex according to family income: United States, July 1962-June 1963

| Characteristic | Family income | | | | |
|---------------------|---------------|---------------|---------------|---------------|----------|
| | All incomes | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| All persons----- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| <u>Age</u> | | | | | |
| Under 15 years----- | 31.8 | 23.3 | 31.5 | 36.1 | 31.5 |
| 15-44 years----- | 38.8 | 29.4 | 35.5 | 41.4 | 42.3 |
| 45-64 years----- | 20.2 | 20.6 | 19.5 | 17.7 | 22.1 |
| 65+ years----- | 9.2 | 26.7 | 13.5 | 4.8 | 4.1 |
| <u>Race</u> | | | | | |
| White----- | 88.3 | 72.3 | 80.4 | 91.4 | 95.9 |
| Nonwhite----- | 11.7 | 27.7 | 19.6 | 8.6 | 4.1 |
| <u>Sex</u> | | | | | |
| Male----- | 48.5 | 43.1 | 47.7 | 49.3 | 50.4 |
| Female----- | 51.5 | 56.9 | 52.3 | 50.7 | 49.6 |

level increased the proportion of nonwhite persons decreased; 96 percent of the people living in families with income of \$7,000 or more were white and 4 percent were nonwhite.

In the income group under \$2,000, females made up about 57 percent of the population and males about 43 percent. In each succeeding income interval the percentage of males increased until the sexes were about equally divided in the family-income group of \$7,000 or more (table 1).

When the population in the three income groups—under \$4,000, \$4,000-6,999, and \$7,000 or more—was considered by marital status, married persons represented the largest segment in each income group, ranging from 40 percent among those with family income under \$4,000 to 51 percent among those with income of \$7,000 or more (table 2). The widowed, divorced, and separated constituted about 16 percent of the persons with income of less than \$4,000. This proportion decreased to approximately 5 percent in the income groups over \$4,000.

The data shown in table 2 emphasize the high correlation between family income and educational level of the family head. In the lowest income

group, under \$4,000, only 43 percent of the persons were members of families where the head of the family had completed more than 8 years of schooling. In the next highest level of family income, \$4,000-6,999, this percentage increased to 70 percent, and among those with \$7,000 and over income, this percentage increased to about 83 percent.

This material has been presented to give a very general idea of the characteristics of the persons who make up the various income groups. Since most of the estimates for health items shown in this report are based on data collected during the period July 1962-June 1963, population estimates also were derived from sample data collected in the Health Interview Survey during that period. Even though these estimates will vary to some extent from the official population estimates produced by the Bureau of the Census, they provide a more accurate base for the health topics because all are derived from the same source. Due to the changing levels of income, the distributions shown are not descriptive of the population for years prior to fiscal year 1963.

Table 2. Percent distribution of the population by marital status and by education of family head: United States, July 1962-June 1963

| Characteristic | Family income | | | |
|---------------------------------|---------------|---------------|---------------|----------|
| | All incomes | Under \$4,000 | \$4,000-6,999 | \$7,000+ |
| All persons----- | 100.0 | 100.0 | 100.0 | 100.0 |
| <u>Marital status</u> | | | | |
| Under 17 years----- | 35.5 | 31.2 | 39.8 | 35.9 |
| Never married----- | 9.8 | 12.2 | 7.3 | 9.5 |
| Married----- | 46.2 | 40.3 | 47.6 | 50.6 |
| Widowed----- | 5.5 | 10.9 | 3.1 | 2.6 |
| Divorced----- | 1.7 | 2.9 | 1.5 | 0.9 |
| Separated----- | 1.2 | 2.5 | 0.8 | 0.5 |
| <u>Education of family head</u> | | | | |
| Under 5 years----- | 6.3 | 14.3 | 3.5 | 1.4 |
| 5-8 years----- | 26.3 | 40.0 | 25.2 | 14.3 |
| 9-12 years----- | 46.2 | 36.1 | 55.3 | 46.8 |
| 13+ years----- | 19.1 | 7.2 | 14.5 | 36.4 |
| Unknown----- | 2.0 | 2.5 | 1.6 | 1.1 |

II. HEALTH INSURANCE COVERAGE

INTRODUCTION

Within the past two decades there has been a rapid growth in prepayment plans for meeting costs of medical care. The scope of coverage of such plans has dramatically increased to include not only hospitalization but also surgical, medical, and, in many cases, laboratory and drug costs. In recent years, serious efforts have been made to expand the extent of coverage to population groups that are not reached through the usual channels of purchase—most frequently, the place of employment. These efforts have run into some deep-seated problems which have their roots in the financial and educational characteristics of the population groups for which such protection is needed. The employed population is not only more capable of purchasing insurance protection but is a more select population with respect to health. In times when medical care costs are increasing along with other basic costs of living, unemployed persons and those on low and fixed incomes are unable to afford insurance protection.

The unemployed and those beyond employment age in many cases have not had the educational advantages of persons in the currently employed population. Since insurance is not offered to them through a place of business or an employees' organization, they must be able to recognize the need for insurance and seek it for themselves. If low educational level is a barrier to the recognition of a need for insurance protection, it is superimposed upon low income as a deterrent to the purchase of insurance. Moreover, the variety and complexity of plans offered on today's market may serve as a restraint to poorly educated persons or result in the purchase of health insurance which is inadequate for their needs. These and many other factors in relation to health insurance require the establishment of bench marks, by periodic review, to measure

progress in the protection of all groups against the costs of medical care.

Approximately three-fourths of the U.S. population has some form of health insurance coverage. In general, insurance policies provide protection against the basic costs of hospitalization and may, in addition, offer protection against other costs—most frequently, surgical expenses. The proportion of persons with these two types of coverage are shown by age and family income in table 1. The figures do not include persons whose only insurance was for accidental injury or whose coverage was limited to a single disease or group of diseases, nor do they include persons with insurance only for loss of income. Medical care for dependents of military personnel and care provided by other governmental health or welfare programs were not considered as insurance coverage. The figures shown were derived from household interviews as explained in Section I of this report. Interview data, for a variety of reasons, produce estimates of coverage which are about 5 percentage points lower than estimates based upon reports from insuring organizations. These differences, while of interest from the standpoint of variations in methods of collection of data, do not substantially influence the interpretation of the rates with respect to identification of population groups in need of protection against the costs of ill health.

AGE

Table 1 shows that for both hospital and surgical insurance, the highest proportion of coverage is for the age groups 25-44 and 45-64 years. These are the ages of maximum employment, when single persons usually carry individual policies and married persons carry policies on themselves and their families. Family coverage accounts for the high rate (68.7 percent hospital

coverage) among children under 15 years of age. Upon reaching age 19 or so, most young people cease to be included in family policies, and there may be a period of time before they obtain insurance in their own name. This results in a drop in coverage rates for the age group 15-24, a drop which is more pronounced (about 63 percent coverage) if the data are confined to ages 19-24 years.

Among the age groups shown, persons 65 years and over had the lowest coverages—54.0 percent for hospitalization and 45.7 percent for surgical expenses. These rates reflect the low proportion of the older population in the labor force. Of those in the labor force 67.4 percent had hospital insurance as compared with 50.7 percent of older persons not in the labor force (Series 10, No. 11). In the past few years, there has been improvement in the rates for coverage among the elderly. For example, some 3½ years

ago, the Health Interview Survey produced estimates of 46.1 percent of the persons 65 years and over with hospital insurance and 37.1 percent with surgical insurance. These increases in recent years may be partially due to provisions in plans whereby persons can carry all or part of their health insurance coverage into retirement.

The same age pattern of insurance coverage that exists for all family income groups combined does not exist within each family income category. Actually, the most poorly covered groups in our population are adults of working age and their families with incomes of less than \$2,000. Many of these persons are not actually working, and those who are working are often in occupational groups such as household workers or laborers which do not offer or provide health insurance as a benefit. Their children, of course, are not covered under a family policy. The low rate of coverage (about 22 percent) for children under 15 years of age in the

Table 1. Percent of persons with hospital and surgical insurance coverage, by age and family income: United States, July 1962-June 1963

| Age | Population in thousands | Number with insurance in thousands | Family income | | | | |
|--------------------------------------------|-------------------------|------------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | | | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| Percent of persons with hospital insurance | | | | | | | |
| All ages-- | 183,146 | 128,703 | 70.3 | 34.1 | 51.9 | 79.0 | 87.5 |
| Under 15 years-- | 58,241 | 40,030 | 68.7 | 21.9 | 42.8 | 78.2 | 87.6 |
| 15-24 years----- | 25,700 | 16,979 | 66.1 | 41.6 | 49.4 | 73.7 | 82.6 |
| 25-44 years----- | 45,353 | 34,602 | 76.3 | 30.9 | 52.7 | 81.8 | 90.0 |
| 45-64 years----- | 36,986 | 27,985 | 75.7 | 37.9 | 63.1 | 83.5 | 90.5 |
| 65+ years----- | 16,866 | 9,107 | 54.0 | 39.0 | 58.4 | 66.4 | 70.3 |
| Percent of persons with surgical insurance | | | | | | | |
| All ages-- | 183,146 | 119,413 | 65.2 | 28.8 | 46.8 | 73.9 | 83.0 |
| Under 15 years-- | 58,241 | 37,744 | 64.8 | 18.5 | 39.2 | 74.1 | 83.5 |
| 15-24 years----- | 25,700 | 15,564 | 60.6 | 35.6 | 43.7 | 68.2 | 77.7 |
| 25-44 years----- | 45,353 | 32,584 | 71.8 | 26.4 | 48.4 | 77.2 | 86.0 |
| 45-64 years----- | 36,986 | 25,814 | 69.8 | 32.5 | 57.6 | 77.2 | 85.6 |
| 65+ years----- | 16,866 | 7,707 | 45.7 | 32.0 | 50.3 | 56.4 | 61.0 |

¹Includes persons with unknown incomes.

lowest income group is further explained by the relationship between insurance status and family size shown later in this section. The higher rate of 41.6 percent hospital coverage among persons 15-24 years of age probably results from the new entrants into employment which offers coverage even though the starting wage level is low or the employment is part time. Other young people with low incomes may have insurance which is, for a few years, being paid for by parents who are in higher income groups. Furthermore, many of the young persons who have their own incomes are still single or are married with no children, and even though their incomes are low, they can better afford insurance protection than middle-aged adults with the same total income but larger families.

Although hospital insurance coverage is low (39 percent) among elderly persons with family incomes of less than \$2,000, this rate is still higher than the average for the income group and higher than that for the two preceding age groups. Undoubtedly, many of the persons in this age-income class were formerly in higher income groups and are now receiving relatively low retirement benefits. However, low income among these persons often is more adequate than for younger persons who are still supporting families and have other living expenses which older people no longer have. It is likely that some of those who acquired coverage while they were employed have been able to retain their insurance. Provisions for continued coverage beyond retirement age have increased in very recent years. It is interest-

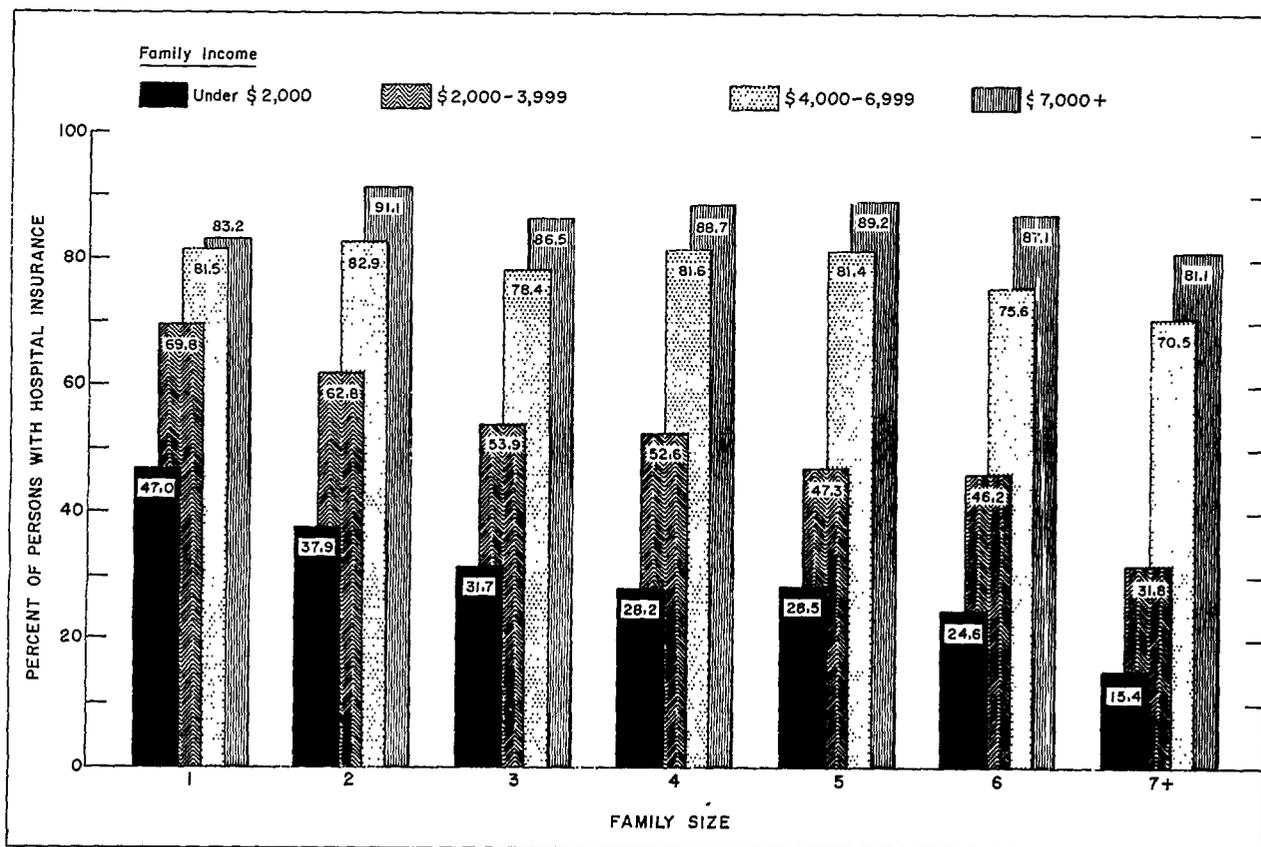


Figure 1. Percent of persons with hospital insurance coverage, by family income and size.

ing to note that in 1959 an estimated 33.3 percent of persons aged 65 or over with less than \$2,000 income had hospital insurance as compared with the more recent corresponding figure of 39.0 percent. Yet, for other ages in this low income group, there has been no measurable increase in the 3½-year interval. Certainly not all of the increase in coverage of elderly persons with low incomes is accounted for by the factor described above. Sometimes, for their own financial protection, young adults purchase health insurance on elderly parents whose income does not permit the payment of premiums. With the rising costs of medical care, this practice has increased in recent years.

In the family income group \$2,000-3,999, the proportion of persons with hospital or surgical insurance coverage is somewhat higher than for the lowest income category, but still only about half of the persons are covered. It is not until family incomes reach \$4,000 or higher that more adequate insurance protection—upwards of 75 percent—is achieved. There are undoubtedly occupational differences which distinguish each of the income categories and reflect in the coverage rates.

FAMILY SIZE

Reference has been made to family size as a factor in the low rates of health insurance coverage for persons with family incomes of less than \$2,000. Figure 1 indicates that as additional persons must share a limited income, the family resources are spent on food and shelter rather than on hospital insurance, even though the risk that someone will require hospitalization becomes greater as the number of persons in the family increases. Coverage is almost negligible (only 15 percent) where there are seven or more members in a family with income of \$2,000 or less and only about 32 percent in families of \$2,000-3,999 income.

In the higher family income groups, hospital insurance protection does not decrease materially with increasing family size. The economic pressures of the large family of moderate or higher income are not sufficient to prevent the purchase of insurance to protect against the financial hazards of ill health.

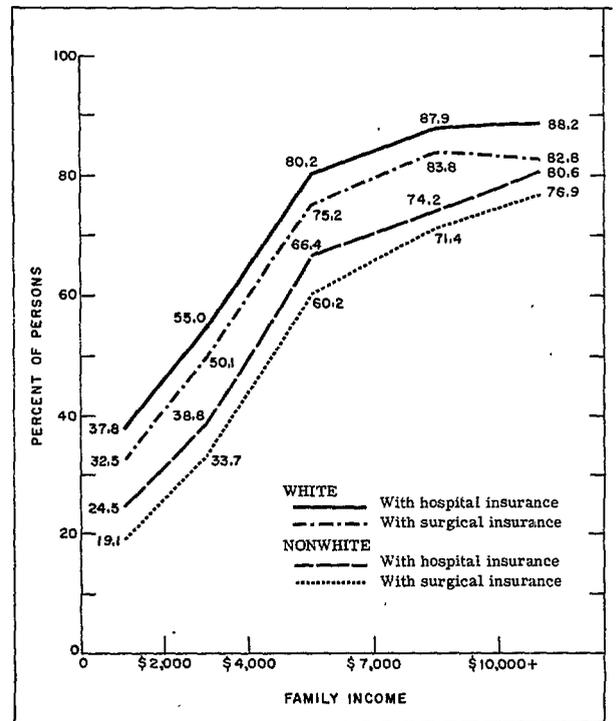


Figure 2. Percent of persons with hospital and surgical insurance coverage, by family income and race.

RACE AND INCOME

Income differences are almost always found to be associated with racial differences in the general population. Figure 2 shows the level of health insurance coverage within each family income group for white and nonwhite persons. Although neither racial group has very high rates of coverage in the lowest income class, the relative difference between white and nonwhite populations is great. However, at the highest family income level, \$10,000 or more, there is a relatively smaller difference in coverage between the races. There are, of course, many other factors besides income which may influence racial differences in coverage. For example, within the income groups there are undoubtedly differences between white and nonwhite persons in types of employment, educational levels, and family size.

Table 2. Percent of persons with hospital and surgical insurance coverage, by family income and educational level of head of household: United States, July 1962-June 1963

| Educational level of head of household | Population in thousands | Number with insurance in thousands | Family income | | | |
|----------------------------------------|-------------------------|------------------------------------|--------------------------------------------|---------------|---------------|----------|
| | | | All incomes ¹ | Under \$4,000 | \$4,000-6,999 | \$7,000+ |
| | | | Percent of persons with hospital insurance | | | |
| All levels----- | 183,146 | 128,703 | 70.3 | 44.6 | 79.0 | 87.6 |
| Under 5 years----- | 11,622 | 4,276 | 36.8 | 26.9 | 61.8 | 66.3 |
| 5-8 years----- | 48,209 | 29,150 | 60.5 | 42.6 | 74.9 | 82.0 |
| 9-12 years----- | 84,603 | 63,660 | 75.2 | 50.9 | 81.0 | 87.8 |
| 13+ years----- | 35,017 | 29,666 | 84.7 | 62.2 | 83.7 | 90.5 |
| Unknown years----- | 3,695 | 1,951 | 52.8 | 35.3 | 68.7 | 78.9 |
| | | | Percent of persons with surgical insurance | | | |
| All levels----- | 183,146 | 119,413 | 65.2 | 39.4 | 73.9 | 83.0 |
| Under 5 years----- | 11,622 | 3,704 | 31.9 | 22.5 | 55.1 | 60.6 |
| 5-8 years----- | 48,209 | 26,760 | 55.5 | 38.2 | 69.6 | 77.5 |
| 9-12 years----- | 84,603 | 59,531 | 70.4 | 45.1 | 76.2 | 83.7 |
| 13+ years----- | 35,017 | 27,797 | 79.4 | 56.0 | 78.6 | 85.5 |
| Unknown years----- | 3,695 | 1,622 | 43.9 | 27.3 | 59.9 | 67.8 |

¹Includes persons with unknown incomes.

EDUCATION

Income is highly correlated with education. However, the purchase of health insurance depends not only upon financial ability but also upon an understanding of the need for insurance and a judgment of how one should allocate his income dollars. It is not surprising, therefore, that within each family income group, there is a progression in the rate of health insurance coverage with increasing educational level of the head of the household. Table 2 shows that among persons living in families of less than \$4,000 income, where the head of this household had less than 5 years of formal education, only 26.9 percent had hospital insurance and 22.5 percent had surgical insurance. This is in contrast with coverage rates in excess of 85 percent in the highest education and income classes. Study of age-specific rates within each class indicates that age is not a

primary factor in determining the levels of coverage seen in table 2. The rates are high or low, as the case may be, irrespective of the age distribution.

SUMMARY

1. The percent of persons who have hospital or surgical insurance coverage is closely related to family income—ranging from 34 percent among those in families of less than \$2,000 income to almost 90 percent for persons in families of \$7,000 or more annual income. Persons of all ages in the lowest income group and older persons in the higher income groups have the least health insurance coverage.
2. Only 22 percent of the children in low income families have hospital insurance coverage—a figure which results for the

most part from the poor coverage in large families.

3. Health insurance protection is related to educational level of the head of the household as well as to family income, especially in the lower income groups.
4. Possibly as a result of differences in occupation, family size, or education, nonwhite persons of low income have a substantially lower proportion of coverage than white persons.

5. Although various demographic characteristics influence the rate of health insurance protection, the greatest single factor is the ability of the family to pay for it. Where the family income is over \$7,000, even elderly persons, nonwhite persons, persons in large families, and persons of grade-school education have in excess of 70 percent hospital insurance coverage.



III. HOSPITALIZATION

RATE OF HOSPITALIZATION

Increasing utilization of hospitals in the care and treatment of patients, coupled with the rising costs of hospital and other medical care services, has brought about a surge of interest in the ability of all segments of the population to meet the costs of inpatient hospitalization. While some aspects of treatment, such as the use of antibiotics, have reduced the need for hospitalization or shortened the length of stay, others, such as the increased use of specialist services and the need to centralize costly diagnostic and treatment equipment, have resulted in greater hospital utilization. Changes in the patterns of hospital care have occurred at a rapid rate.

Equally rapid have been changes in the social and economic patterns of the population. These changes include increasing numbers of older people, rapid urbanization and technical development, new educational and income distributions, and growth of a wide variety of plans for meeting medical care costs.

The combined effect of these changes is a very complex set of associations, of which the relationship between hospitalization and family income is only one facet. Reasons for the more marked relationships are usually evident. However, certain other apparent associations are more difficult to interpret and may occasionally be due to sampling variability or to methods employed in the Survey.

According to data from the time period which corresponded most closely to calendar year 1962, there were about 22,778,000 discharges from short-stay hospitals. These discharges excluded hospitalization of the military population and also any short-stay hospitalization of persons who were residents of institutions at the time of interviewing. The sample included only persons living at time of interview and their hospitalization during the preceding year. The data do not, therefore, represent the complete extent of care provided

by hospitals of the Nation, nor do they indicate completely those hospitalizations for which surviving relatives must pay.

In the noninstitutional living population there were during the year approximately 125 hospital discharges per 1,000 persons (table 1). Rates of discharge for persons of the several income classes do not differ greatly from this total rate when persons of all ages are considered. However, there are considerable variations in rates by income within the several age and sex groups. Notable among these is the low rate of hospitalization for children in families with less than \$2,000 income per year, 47.5 discharges per 1,000 children. Not only was the total income in these families low, but in many cases there was a large number of persons per family; 38 percent of the children in low income families lived in family groups of seven or more persons. In the higher income groups, 25 percent of the children lived in families of seven or more persons. In all of the income groups the hospitalization rate for boys was higher than for girls. This is partially due to differences in rates of hospitalized injuries in children of the two sexes, 14.5 per 1,000 for boys and 8.1 per 1,000 for girls (Series B, No. 37, table 12).

Differences in hospital discharge rates for males and females are pronounced in the age group 15-44 years, primarily because of the high rate of hospitalization of women for deliveries in all income classes. Deliveries accounted for nearly half of all hospitalizations in this age-sex group. The most marked variation by income is the low hospitalization rate for women, aged 15-44 years, in families with \$7,000 or more annual income. Data from an earlier year (Series B, No. 32) show that the low rate among young women of ages 15-24 is responsible for the reduced rate in the broader age group. The obvious reason is early marriage concomitant with low income at one end of the scale, and delayed marriage and later childbearing among young women in the highest

income families. The high rate of hospitalization among young women in the lowest income groups is accompanied by low rates of hospital insurance coverage, as shown in Section II. As a consequence, only about 30 percent of the women aged 15-44 years in families of less than \$2,000 income had any part of the bill paid by insurance (Series B, No. 30) as compared with 80 percent of the women of these ages in families with income of \$7,000 or more.

In each of the income groups under \$7,000, the rate of hospital discharges among men 45-64 years was higher than for women of this age. In the income group \$7,000 and over, the rate for males declined. This may be due in part to occupational differentials among the income groups. The higher income groups are represented by larger proportions of men in professional and managerial occupations who are not so likely to be

Table 1. Average annual number of patients discharged from short-stay hospitals per 1,000 population, by age, sex, and family income: United States, July 1962-June 1963

| Age and sex | Number of persons in thousands | Number of discharges in thousands | Family income | | | | |
|-----------------------|--------------------------------|-----------------------------------|-------------------------------------------|---------------|---------------|---------------|----------|
| | | | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| <u>All ages</u> | | | Number of discharges per 1,000 population | | | | |
| Both sexes-- | 183,146 | 22,778 | 124.4 | 125.1 | 131.8 | 130.4 | 114.7 |
| Male----- | 88,833 | 8,936 | 100.6 | 114.9 | 105.5 | 99.8 | 96.4 |
| Female----- | 94,313 | 13,842 | 146.8 | 132.8 | 155.8 | 160.1 | 133.3 |
| <u>Under 15 years</u> | | | | | | | |
| Both sexes-- | 58,241 | 3,803 | 65.3 | 47.5 | 68.9 | 67.6 | 66.1 |
| Male----- | 29,608 | 2,230 | 75.3 | 61.8 | 80.4 | 75.5 | 78.2 |
| Female----- | 28,634 | 1,573 | 54.9 | 33.5 | 56.8 | 59.6 | 53.3 |
| <u>15-44 years</u> | | | | | | | |
| Both sexes-- | 71,053 | 10,978 | 154.5 | 162.0 | 174.6 | 167.9 | 130.0 |
| Male----- | 33,829 | 2,759 | 81.6 | 81.5 | 85.6 | 86.5 | 77.5 |
| Female----- | 37,224 | 8,218 | 220.8 | 226.5 | 252.8 | 241.9 | 180.1 |
| <u>45-64 years</u> | | | | | | | |
| Both sexes-- | 36,986 | 5,133 | 138.8 | 125.0 | 132.5 | 155.5 | 137.2 |
| Male----- | 17,886 | 2,505 | 140.1 | 151.3 | 152.8 | 152.5 | 128.5 |
| Female----- | 19,100 | 2,628 | 137.6 | 109.0 | 117.1 | 158.5 | 147.2 |
| <u>65+ years</u> | | | | | | | |
| Both sexes-- | 16,866 | 2,864 | 169.8 | 152.2 | 164.8 | 186.3 | 209.1 |
| Male----- | 7,510 | 1,441 | 191.9 | 185.8 | 155.8 | 205.5 | 261.5 |
| Female----- | 9,356 | 1,423 | 152.1 | 129.4 | 173.6 | 169.3 | 164.9 |

¹Includes persons with unknown incomes.

exposed to the health and accident hazards that exist in some of the occupations associated with lower income. Also, there is comparatively little unemployment in the income group \$7,000 and over. A previous report (Series 10, No. 7) and other sections of this report show the high rates of disability among the unemployed, particularly in certain occupational groups, and the low rates of disabling injury among working males with high family income (Series B, No. 41).

The hospitalization data for older persons must be interpreted with care since, in the Health Interview Survey, questions were not asked about persons who had died prior to interview, or who were institutionalized at the time of interview. Since institutionalization and death are more prevalent in the oldest age groups, the hospital rates which are representative of the living population of these ages do not fully represent the total amount of care provided by hospital facilities. Still, the rates among persons over 65 years of age are higher than those for any other group because of extensive chronic illness in this population. The rates for each sex fluctuate with income. This may be partly due to sampling variability, since for this age group the sample frequencies, upon which the rates are based, are smaller than for other ages. However, for both sexes combined the rates of hospital discharges increase progressively from 152 per 1,000 among elderly persons with less than \$2,000 family income to 209 per 1,000 for those living in families with income of \$7,000 and over.

Within each age group (both sexes combined), the rate of hospital discharges among persons in families with income less than \$2,000 is generally lower than for persons of \$2,000-3,999 or more, with the previously noted exceptions caused by maternity hospitalization. These somewhat lower rates in the lowest income group are obscured in the data for all ages presented in table 1. This is because the low income group includes a disproportionately large number of elderly persons, the group in which rates of hospitalization are highest. When the totals are adjusted to remove the influence of age differences between high and low income groups, the rate of hospital discharges for persons in families of less than \$2,000 income is 116.7 per 1,000 as compared with 128.5 per 1,000 for persons in higher income families.

The above data are based upon the number of hospital discharges rather than the number of individual persons hospitalized during the year. Hence, an even lower proportion of individuals were hospitalized in the lowest income group, relative to those in higher income families, because of the higher ratio of multiple hospitalizations in the former group. Estimates based on an average of 2 years of data, July 1960-June 1962, show that in the income group under \$2,000, about 17.7 percent of those discharged had been previously hospitalized during a year. In succeeding income groups, the corresponding ratios were 15.0 percent multiple hospitalization of persons in families of \$2,000-3,999 income, 13.5 percent of those with \$4,000-6,999 income, and 11.6 percent in higher incomes. It is evident from these data that in families of low income, the probability that a person will be hospitalized is less than in higher income families but the chances of multiple hospitalization within a given year are greater.

There are several factors which may lead to generally lower utilization of hospitals in the lower income groups. It was noted in Section II that the rate of hospital and surgical insurance coverage for these groups is less than for persons in better economic circumstances. Some evidence that insurance coverage is a factor is presented in another report (Series 10, No. 11) which shows that 10.5 percent of persons with hospital insurance and 8.6 percent of persons without hospital insurance were hospitalized during the year (1963), a difference which was most marked among persons in the older age groups. An alternative to hospitalization, for less serious conditions and minor surgical procedures, is the use of outpatient facilities. It has been observed (Section IV, figure 1) that among persons in families of less than \$2,000 income, about 16 percent of the visits to physicians were at hospital clinics as compared with 9 percent among persons in all income groups. It is likely that persons in the higher income groups are more frequently hospitalized for minor care and diagnostic procedures irrespective of whether there is insurance which covers the type of service needed. On the other hand, it is possible that among higher economic groups some hospitalization, or repeated or prolonged hospitalization, may be avoided by early diagnosis and preventive care.

Other demographic characteristics of the population, associated with income level, also affect hospital rates. Among persons in families in which the head of the household had more than 8 years of schooling, the rate was about 10 percent higher than in families of lesser education, perhaps reflecting, for the latter group, a lack of knowledge of when to seek medical care. The rural-farm population had hospital rates about 18 percent below the national average, which may be partly due to the lack of available hospital facilities. Hospital rates of the nonwhite population were 20 percent less than for the entire population, while nonwhite persons used hospital clinics at twice the rate of white persons. All of these and many other factors are woven inextricably into the complex pattern of differential hospital utilization in relation to income.

LENGTH OF HOSPITAL STAY

Even though, in terms of rates of discharges, short-stay hospital utilization by persons of low income families was, age for age, somewhat less than for persons in higher income families, in terms of days of hospitalization the rates for low income persons were proportionately higher. Whereas persons with family income of less than \$2,000 had 13 percent of the total discharges, they utilized 17 percent of the days of care. The effect of this difference is shown in figure 1 which presents the average length of stay per hospital discharge.

In all income groups, males have longer average durations of stay than females, but the difference is most marked at the lower income levels. In general, the sex difference exists throughout all age and income groups in the population. It is particularly marked at ages 15-44 years, the ages at which hospitalization for deliveries reduces the average stay for women. However, even when deliveries, which average 4.3 days, are excluded, thereby lengthening the average stay for women, males still exceed females in duration of stay in this age group (Series B, No. 32).

In the group with \$2,000-3,999 family income, as well as in the lowest income group, the average length of stay also exceeded that of higher economic classes. This relationship can be examined in terms of the distribution of hospitalized persons by length-of-stay intervals. Such a distribution is shown in figure 2 for persons of all ages in the several income categories; 5.6 percent of persons in families of less than \$2,000 income and 10.1 percent of those in the \$7,000 and over group had 1 day of stay. In the lowest income groups, about 41 percent stayed 8 or more days as compared with 27 percent of those of highest incomes. The figures presented include discharges from short-stay hospitals only—that is, those classified as general; maternity; eye, ear, nose, and throat; or osteopathic. Excluded are psychiatric, tuberculosis, and other long-term hospitals and institutions. To the extent that there may be a differential utilization of long-term hospitals, in lieu of short-stay hospitals, by the several income

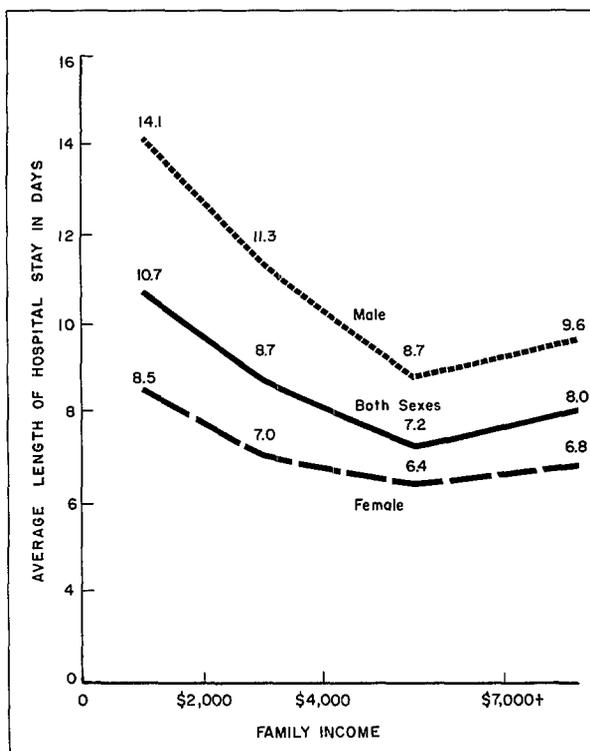


Figure 1. Average length of stay in short-stay hospitals, by sex and family income.

classes, the number of persons with stays of 31 or more days in short-stay hospitals could be affected. This factor is not likely to have much effect at the shorter intervals of stay, since a very large proportion of discharges are from short-stay hospitals. It may be noted that about 6 percent of persons of under \$2,000 family income were in short-stay hospitals for more than 30 days as contrasted with 2 percent of those in higher incomes.

Table 2 presents data similar to that shown in figure 2, but by age groups, for persons in families of less than \$4,000 income and of \$4,000 and over income. The higher proportion with long length of stay, 15 or more days, among persons of low income is evident in each age bracket. For the shorter lengths of stay, 3 days or less, the difference between income groups is most marked among children. In this age group, under 15 years, approximately 1 million of the 3.8 million hospital discharges were for tonsilleotomies or adenoidectomies which average about 1.8 days of stay and rarely exceed 3 days. According to an earlier

report the length of stay for tonsilleotomies does not differ appreciably between the two income groups (Series 10, No. 3). However, among children in the higher income class (table 4), the rate of inpatient hospitalization for this operation was about twice the rate of lower income children. Of the percentages of 1-3 day stays for children of the lower and higher family incomes, 46.8 and 57.3 respectively, approximately half of the difference is accounted for by the relatively greater volume of tonsilleotomies in the latter group.

In the age group 15-44 years, the percentage of hospital stays of 1-3 days for persons with family income under \$4,000 was 42.2, compared with 36.6 percent for higher income persons. This relationship is reversed for stays of 4-7 days. Examination of the distribution of days of stay by sex reveals that this deviation from the usual pattern is among females only, as shown in table 3.

It has been pointed out that deliveries constitute a very high proportion of the hospital utilization in this age group, about 48 percent of the

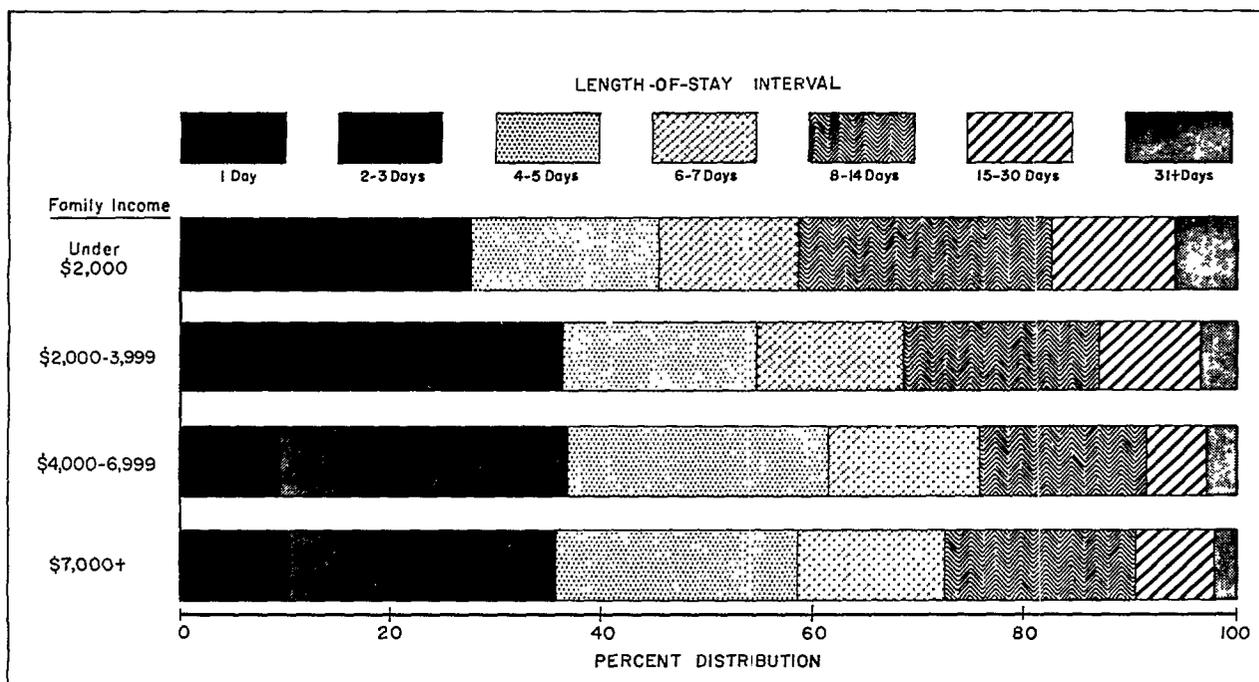


Figure 2. Percent distribution of hospitalized persons, by length-of-stay intervals according to family income.

discharges and 38 percent of the days of stay. Another report (Series 10, No. 3) showed that women in families with income less than \$4,000 have an average length of hospital stay of 3.9 days per delivery as compared with 4.4 days for those in higher income families. The shorter periods of hospital stay following delivery among lower income women contribute to the high proportion of 1-3 day stays shown in table 3 for females, 15-44 years, living in families with less than \$4,000 income.

In addition to the two specific major conditions already described, tonsillectomies and deliveries, there are a number of other factors which may result in differences between income groups in the rates of hospital discharges and durations of stay. One of these is the greater utilization of outpatient facilities by low income persons, which not only reduces inpatient rates but also tends to decrease the proportion of persons with short hospital stays. On the other hand, persons with higher incomes may more often be hospitalized

Table 2. Percent distribution of hospitalized persons, by intervals of stay in short-stay hospitals according to age and family income: United States, July 1962-June 1963

| Age and family income | Number of discharges in thousands | Interval of hospital stay in days | | | | |
|--------------------------------|-----------------------------------|-----------------------------------|----------|----------|-----------|----------|
| | | All days | 1-3 days | 4-7 days | 8-14 days | 15+ days |
| <u>All ages</u> | | Percent distribution | | | | |
| All incomes ¹ ----- | 22,778 | 100.0 | 34.7 | 26.2 | 18.1 | 11.0 |
| Under \$4,000----- | 7,108 | 100.0 | 32.9 | 31.7 | 20.8 | 14.6 |
| \$4,000+----- | 14,586 | 100.0 | 36.2 | 38.1 | 16.7 | 8.9 |
| <u>Under 15 years</u> | | | | | | |
| All incomes----- | 3,803 | 100.0 | 54.2 | 28.7 | 10.4 | 6.6 |
| Under \$4,000----- | 953 | 100.0 | 46.8 | 30.4 | 12.6 | 10.3 |
| \$4,000+----- | 2,695 | 100.0 | 57.3 | 28.3 | 9.3 | 5.0 |
| <u>15-44 years</u> | | | | | | |
| All incomes----- | 10,978 | 100.0 | 37.8 | 42.7 | 14.4 | 5.1 |
| Under \$4,000----- | 3,091 | 100.0 | 42.2 | 36.6 | 15.6 | 5.5 |
| \$4,000+----- | 7,427 | 100.0 | 36.6 | 44.6 | 13.9 | 4.9 |
| <u>45-64 years</u> | | | | | | |
| All incomes----- | 5,133 | 100.0 | 25.0 | 31.9 | 25.3 | 17.9 |
| Under \$4,000----- | 1,422 | 100.0 | 23.0 | 26.8 | 29.0 | 21.3 |
| \$4,000+----- | 3,433 | 100.0 | 26.1 | 33.7 | 24.1 | 16.1 |
| <u>65+ years</u> | | | | | | |
| All incomes----- | 2,864 | 100.0 | 14.6 | 29.0 | 29.4 | 27.0 |
| Under \$4,000----- | 1,642 | 100.0 | 15.6 | 27.7 | 28.4 | 28.2 |
| \$4,000+----- | 1,032 | 100.0 | 12.0 | 32.2 | 31.4 | 24.3 |

¹Includes persons with unknown incomes.

for certain diagnostic procedures and "elective" surgery, or once hospitalized may remain in the hospital for a longer period of time than would low income persons with similar conditions. These factors are dependent to some degree upon health insurance coverage which is more extensive among those with high incomes.

Length of stay is also related to the type of hospital. For example, the average stay in Veteran, other Federal, and other governmental hospitals is about 11 days in contrast with 7.8 days in proprietary and nonprofit, nongovernmental hospitals. Of the hospitalized persons in families of less than \$2,000 income, 33.7 percent were in governmentally owned hospitals, in contrast with 18.3 percent of hospitalized persons in families of over \$2,000 income. These figures relate to data from an early period, 1957-58 (Series B, No. 7), but it is assumed that the basic relationship has remained unchanged. Therefore, the greater utilization of governmentally owned hospitals by low income persons may partly account for the higher than average length of stay and the high percentage of discharges of 15 or more days of stay. This is to be expected, since some governmental hospitals impose income restrictions on admittance. Fur-

thermore, many of the patients are the chronically ill or those who either have no health insurance or have exhausted insurance benefits.

Length of stay is related to the severity of illness or disease. Other sections of this report indicate that the proportion of persons who report one or more chronic conditions which are not disabling is less in the low income groups than in higher income groups. On the other hand, a greater proportion of low income persons have chronic conditions which are disabling, that is, conditions which interfere with the ability to engage in productive activity. Similarly, a recent report (Series 10, No. 7) showed that among persons in the labor force, a higher proportion of the unemployed (16.7 percent) than of the employed (10.5 percent) have chronic conditions which limit their ability to work full time, or which cause other limitation in normal activities. These findings suggest that the higher proportion of persons with more serious illnesses in low income groups may contribute to longer stay when such persons are hospitalized.

A number of factors concerning social and home environment undoubtedly relate to hospitalization and duration of stay. These factors include the suitability of the environment to which

Table 3. Percent distribution of days of hospital stay, ages 15-44 years, by length of stay according to sex and family income: United States, July 1962-June 1963

| Sex and family income | Days of hospital stay | | | | |
|--------------------------------|-----------------------|----------|----------|-----------|----------|
| | All days | 1-3 days | 4-7 days | 8-14 days | 15+ days |
| <u>Male</u> | | | | | |
| All incomes ¹ ----- | 100.0 | 34.4 | 36.3 | 18.7 | 10.6 |
| Under \$4,000----- | 100.0 | 32.3 | 32.3 | 24.4 | 11.1 |
| \$4,000+----- | 100.0 | 35.6 | 37.8 | 16.5 | 10.1 |
| <u>Female</u> | | | | | |
| All incomes ¹ ----- | 100.0 | 39.0 | 44.8 | 13.0 | 3.2 |
| Under \$4,000----- | 100.0 | 45.2 | 37.8 | 13.0 | 3.9 |
| \$4,000+----- | 100.0 | 37.0 | 47.1 | 12.9 | 2.9 |

¹Includes persons with unknown incomes.

the patient must return for posthospital convalescence; the presence of a spouse or other relative to provide care; or the nature of work or housework to which the patient must return. While the Survey thus far has provided no direct evidence that such social factors are related to income differentials with respect to all reasons for hospitalization, data on hospital stay and convalescence following certain surgical procedures suggest that such factors are important.

SURGICAL CONVALESCENCE

About 55 to 60 percent of all hospitalizations in the United States involve surgical procedures. In the lowest income group, under \$2,000, the proportion is approximately 43 percent; from \$2,000-3,999 it is 50 percent; from \$4,000-6,999 it is 60 percent; and in the highest income group, 58 percent. These are preliminary data recently

collected by the Health Interview Survey. Slightly over half of the surgical cases and about 28 percent of the total discharges from short-stay hospitals are for six types of operations: tonsillectomy, appendectomy, hernia repair, hemorrhoidectomy, hysterectomy, and normal delivery. For these operations, data are presented by income in table 4. These were selected not solely on the basis of frequency, but also because they are identified with fairly standard operative procedures. This latter characteristic provides comparability between population groups with respect to length of hospital stay and postoperative convalescence.

Data on surgical convalescence were collected in the Health Interview Survey only during the year July 1960 through June 1961. The criterion for length of convalescence was the number of days before the person could return full time to school, to work, to housekeeping, or to other

Table 4. Rate of hospital discharges, average hospital days, and average posthospital convalescent days per discharge, for persons who had returned to usual activity, for selected operations, by family income¹: United States, July 1960-June 1961

| Selected operation and population group | Family income | | | | | |
|----------------------------------------------|------------------------------------------|----------|-------------------------------------|----------|----------------------------------------|----------|
| | Under \$4,000 | \$4,000+ | Under \$4,000 | \$4,000+ | Under \$4,000 | \$4,000+ |
| | Hospital discharges per 1,000 population | | Average hospital days per discharge | | Average posthospital convalescent days | |
| Tonsillectomy Children-6-16 years----- | 8.1 | 15.7 | 1.7 | 1.7 | 8.4 | 8.1 |
| Appendectomy All persons-6+ years---- | 1.5 | 2.1 | 7.9 | 6.3 | 27.6 | 19.5 |
| Hemorrhoidectomy All persons-25+ years--- | 1.6 | 2.9 | 8.7 | 7.2 | 26.2 | 21.7 |
| Hernia repair Male workers-17+ years-- | 3.9 | 3.5 | 9.3 | 7.1 | 49.0 | 36.1 |
| Hysterectomy Females-25+ years----- | 3.2 | 5.3 | 9.5 | 10.5 | 39.3 | 42.4 |
| Normal delivery Females-17-44 years----- | 107.7 | 92.0 | 3.9 | 4.4 | 11.8 | 11.1 |

¹Persons with unknown incomes have been excluded from this table.

activities he had usually engaged in prior to the operation. The questions were not asked for children under 6 years of age. The data in table 4 are limited to those persons who had only a single operation performed during the hospital episode and who had returned to their usual activity following the discharge. The latter was necessary because a person who had been discharged from the hospital shortly before the interview could not be expected to have completed convalescence. Because of these exclusions, data in table 4 are based upon about 80 percent of the specified types of operations performed during the year. (For more detailed definitions see Series 10, No. 3.)

For all but two types of operations (hernia and normal delivery) the rate of hospital discharges was considerably higher among persons in the higher family income group than among persons in the lower family income group. This finding would result if persons in higher income families were more subject to the conditions for which the operations were performed, or if the severity or other characteristics of the conditions more frequently indicated surgical treatment. It is more likely that when forms of treatment alternative to surgery can be used, consideration is given to the patient's economic situation.

Working males of less than \$4,000 family income were hospitalized for hernia operations in higher proportion than working males of higher income. This probably reflects differences in physical requirements of the types of occupations engaged in by the two income classes. With respect to deliveries, hospitalization for this purpose is common practice among all income classes in the United States, and the higher rate in the lower income group is primarily related to the difference in birth rates.

Hysterectomy and normal delivery were the only types of operations, of those included in this report, for which the duration of hospital stay was longer among women with family income of \$4,000 or more than for those with income less than \$4,000. Deliveries among women in the higher income group followed the normal pattern of longer hospital stay with increasing age, 4.2 days for women under 25 years of age and 4.5 days for women over 25 years. However, among lower income women this pattern was reversed, with 4.0 days of stay for the younger women and 3.8 days for the older ones (Series 10, No. 3,

table 16). This shorter stay of low income women, particularly those 25 years and over, may be related to differences in the parity order of delivery. The number of other children at home to care for and other family responsibilities, as well as cultural differences, may influence the duration of stay for deliveries and for hysterectomies as well. It is interesting to note that for these two procedures, the total duration of convalescence (hospital days plus posthospital convalescence) exhibits little difference between the two income groups.

Among persons hospitalized for appendectomy, hemorrhoidectomy, and hernia repair, those in the lower income families had appreciably longer hospital stay and posthospital convalescence. The reason is subject to speculation but may include such factors as the physical requirements of work, which govern to some extent the degree to which recovery must have progressed before discharge or return to full-time activity; the severity or extent to which the condition had advanced prior to the operation; the quality of hospital or postsurgical care received; or the extent to which the patient and his family can apply the knowledge and provide the environment necessary for adequate recovery. The degree to which each of these factors plays a part, if at all, has not been determined. In all probability, these and other conditions are interdependent elements in the differential duration of hospitalization and convalescence of persons of high and low incomes.

PROPORTION OF THE HOSPITAL BILL PAID BY INSURANCE

Section II of this report described the extent of hospital insurance coverage in the population. This section is concerned with the part of the bill paid by insurance among persons who, as inpatients, have utilized hospital services. A high degree of correlation between these two measures is to be expected. However, the latter is a more direct measure of the extent to which insurance is available when hospitalization occurs and of the scope of coverage when it is available.

The reader is cautioned against relating directly the insurance coverage data in Section II to the insurance utilization data presented below. The data in Section II refer to the period July

1962-June 1963, whereas the data shown here refer to an earlier period, July 1958-June 1960. Undoubtedly, the use of insurance, as well as coverage of the population, had changed during the intervening time. Although the levels at which various proportions of the bill are paid by insurance may have changed in recent years, the general

relationships between the levels by age and family income, shown in table 5, have probably remained essentially the same.

Among persons in the lowest family income group, none of the hospital bill was paid by insurance for about 60 percent of the discharges. The percentage decreased successively with in-

Table 5. Percent distribution of total hospital discharges for which no part, less than 3/4, or 3/4 or more of the hospital bill was paid by insurance, by age according to family income: United States, July 1958-June 1960

| Age and proportion of bill paid by insurance | Family income | | | | |
|----------------------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| <u>All ages</u> | | | | | |
| Total----- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| No part----- | 32.0 | 60.4 | 40.8 | 21.0 | 19.0 |
| Less than 3/4----- | 16.7 | 12.9 | 15.5 | 17.4 | 19.7 |
| 3/4 or more----- | 51.3 | 26.7 | 43.7 | 61.7 | 61.2 |
| <u>Under 15 years</u> | | | | | |
| Total----- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| No part----- | 27.9 | 67.1 | 40.6 | 18.9 | 19.6 |
| Less than 3/4----- | 13.8 | 7.7 | 12.4 | 16.3 | 12.6 |
| 3/4 or more----- | 58.3 | 25.2 | 46.9 | 64.8 | 67.8 |
| <u>15-44 years</u> | | | | | |
| Total----- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| No part----- | 33.1 | 67.0 | 45.3 | 22.0 | 18.7 |
| Less than 3/4----- | 16.3 | 9.0 | 13.3 | 17.1 | 22.2 |
| 3/4 or more----- | 50.6 | 24.0 | 41.4 | 60.9 | 59.1 |
| <u>45-64 years</u> | | | | | |
| Total----- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| No part----- | 24.0 | 49.9 | 28.3 | 16.2 | 11.0 |
| Less than 3/4----- | 18.0 | 14.6 | 18.6 | 17.8 | 20.2 |
| 3/4 or more----- | 58.0 | 35.5 | 53.1 | 66.0 | 68.8 |
| <u>65+ years</u> | | | | | |
| Total----- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| No part----- | 48.8 | 57.3 | 40.2 | 36.4 | 48.9 |
| Less than 3/4----- | 20.9 | 18.4 | 25.1 | 23.2 | 19.8 |
| 3/4 or more----- | 30.3 | 24.3 | 34.7 | 40.2 | 31.3 |

¹Includes persons with unknown incomes.

creasing income until in the highest income group, \$7,000 or more, only 19 percent of the bills had no part paid by insurance or, conversely, for 81 percent, insurance covered some part of the bill. Insurance paid for three-fourths or more of the bill in about 27 percent of the discharges of persons in the lowest income group, in contrast with 61 percent of discharges of those of the highest group. This same general pattern of payment by insurance is consistent in each of the separate age groups shown in the table.

At age 65 years and over, persons in the higher income groups had a larger percentage of discharges (48.9 percent) for which insurance paid no part and a smaller percentage (31.3 percent) for which it paid three-fourths or more of the bill than was true of younger persons of equivalent income. This is partly accounted for by the differences noted for 1-day hospital stays. In the older age group, no part of the bill was paid by insurance in 66 percent of the cases in contrast with about 30 percent unpaid stays of 1 day among younger persons (Series B, No. 30). Younger and older patients, and those in lower or higher income groups, undoubtedly have different patterns in their use of inpatient and outpatient facilities and of diagnostic and elective procedures. It is probable that older persons of higher family incomes more often enter the hospital irrespective of whether they have insurance coverage, or, if they have insurance, regardless of whether the

insurance pays for the specific purpose of hospitalization.

Data on the proportion of the bill paid by insurance in relation to the total hospital discharges are presented in table 5. Another way of considering the proportion of the bill paid is in relation to those discharges for which any part of the bill was paid by insurance. This provides some measure of the adequacy of the insurance payment (table 6). Of the discharges for whom insurance paid any part of the hospital bill, 67.4 percent among those with income less than \$2,000 had three-fourths or more of the bill paid as compared with 75.6 percent among those with family income \$7,000 or more. And, conversely, 13.1 percent in this low income group had less than one-half of the bill paid by insurance in comparison with 6.7 percent in the income group \$7,000 or more. From these data and from the percentages shown in table 5, it appears that not only do low income persons less often have insurance which pays for any part of the bill, but also their insurance often provides less adequate payment. This is to be expected in view of the probability that lower income persons are more likely than those of higher incomes to purchase low-option group plans and policies which provide more limited insurance coverage. However, the fact that insurance pays for a relatively low proportion of hospital expenses of low income persons does not mean that in all cases their "out-of-pocket" expenses are more extensive. Many

Table 6. Percent distribution of hospital discharges with any part of the bill paid by insurance, by proportion of the bill paid according to family income: United States, July 1958-June 1960

| Proportion of bill paid by insurance | Family income | | | | |
|-----------------------------------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| | Percent distribution | | | | |
| Discharges with any part of the bill paid by insurance--- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Less than 1/2----- | 7.9 | 13.1 | 9.5 | 6.6 | 6.7 |
| 1/2-3/4----- | 16.6 | 19.4 | 16.7 | 15.4 | 17.7 |
| 3/4 or more----- | 75.4 | 67.4 | 73.8 | 78.1 | 75.6 |

¹Includes persons with unknown incomes.

low income patients receive special considerations or assistance from individual sources or from private and governmental agencies.

During the current year, the Health Interview Survey contains questions regarding the proportion of bills for surgery or delivery paid by insurance among persons discharged from short-stay hospitals. The data shown in figure 3 were obtained from the first quarter of information collected during the period July-September 1963. The questions referred to insurance payment of bills for surgery or delivery during the year prior to the date of interview.

Income differentials in the proportion of surgical or delivery cases paid by insurance followed the same general pattern as that for hospital bills, as had been reported in previous years. Of the surgical cases among persons with less than \$2,000 family income, an estimated 72 percent had none of the bill paid by insurance and only 10 percent had three-fourths or more of the bill paid. In contrast, the corresponding percentages among persons of \$7,000 or higher income were about 21 percent of the surgically treated without any payment by insurance, and 47 percent with three-fourths or more.

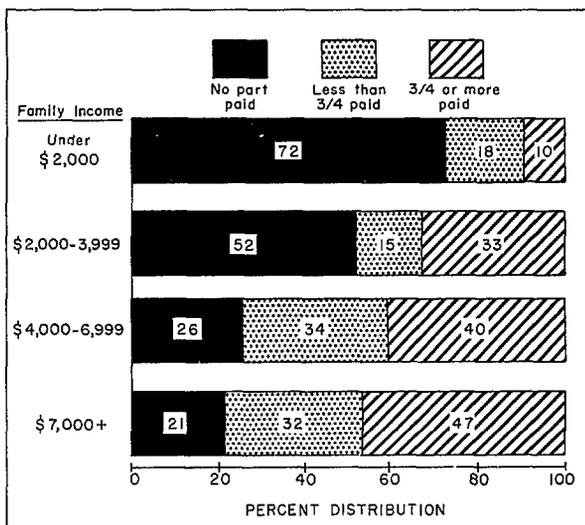


Figure 3. Percent distribution of surgical or delivery cases for which no part, less than three-fourths, or three-fourths or more of the surgeon's bill was paid by insurance according to family income.

The data presented in figure 3 are preliminary estimates inasmuch as they are based upon approximately 34,000 sampled persons instead of a full annual sample. Because of sampling variability and trend changes in insurance coverage, the above percentages may differ by a few points from those which would be obtained from the full year of collection. However, it may be assumed that during the balance of the year there will be no substantial changes in the proportion of surgical cases paid by insurance in relation to income levels of the population.

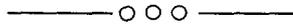
SUMMARY

1. In the living civilian, noninstitutional population of the United States, the rate of discharges from short-stay hospitals was somewhat lower among persons with annual family income of less than \$2,000 than among those with higher incomes. These rates, adjusted for age, were about 117 and 129 per 1,000 population for the respective income groups. During a year, a larger proportion of persons who live in low income families had multiple hospital episodes than those in higher income groups.
2. The average length of hospital stay decreased from 10.7 days per person in the lowest income families to 8.7 days among persons of \$2,000-3,999 family income, 7.2 days in the income group \$4,000-6,999, and then increased to 8.0 days per person in the highest income group. Among persons of less than \$4,000 family income, about 33 percent of the hospital stays were for 1 to 3 days, whereas among those of higher incomes, 36 percent were for 1 to 3 days. At the other end of the scale, about 15 percent of those with income less than \$4,000, and about 9 percent of those with higher income, had hospital stays in excess of 2 weeks.
3. The proportion of hospital discharges that have involved surgical procedures is less among persons of low income than among persons of high income. For certain selected operations—tonsillectomies, appendectomies, hemorrhoidectomies, and

hysterectomies—the rate of hospital discharges is about 50 percent higher among persons of \$4,000 or more income than among those of lower income. However, for hernia operations and normal deliveries, hospital discharge rates were higher in the low income group. For all of these conditions, except hysterectomies, the average length of posthospital convalescence—that is, the time required before return to normal daily activities—was longer for persons of family incomes of less than \$4,000 than for persons of higher family incomes.

4. Among persons who were hospitalized, insurance paid for some part of the bill for about 40 percent of patients with less

than \$2,000 family income, 60 percent of patients with \$2,000-3,999 family income, and 80 percent of patients with higher incomes. Insurance paid three-fourths or more of the bill for approximately 27 percent, 44 percent, and 61 percent of these respective income groups. Preliminary data from the current survey year show, for the proportion of bills for surgery or delivery paid by insurance, an even more marked association with income. Insurance paid some part of the bill for surgery or delivery for only 40 percent of the surgically treated among those with income less than \$4,000, while for persons of more than \$4,000 family income, the rate paid was 75 percent.



IV. MEDICAL AND DENTAL CARE

During the past several decades many factors have helped to bring about changes in the attitude toward medical care in this country. Because of advances in medicine and improved hospital services and equipment, people have been motivated to seek treatment for their illnesses. Health care, which at one time was often postponed or neglected entirely because of the lack of treatment facilities, is now being practiced by many because of the increased accessibility of private physicians, of public clinics, outpatient departments, industrial health units, and other care services.

Estimates of 890 million physician visits and 248 million dental visits, producing rates of 5.0 doctor visits and 1.4 dental visits per person in the population per year, indicate the overall magnitude of health services being provided the residents of the United States. However, because of the unequal distribution of services throughout the population, 15 percent of the people in the United States have not seen a doctor in the past 2 years and 18 percent have never seen a dentist. This

lack of medical and dental care is most acute among persons of low economic status.

PHYSICIAN VISITS

Persons living in families with annual incomes of less than \$4,000 consult physicians less frequently than persons in higher income families. Based on information gathered from July 1957-June 1959, persons in low income families (under \$4,000 per year) averaged 4.6 physician visits per year as compared with 5.1 visits for those with incomes from \$4,000 to \$6,999 and 5.7 visits for persons with family incomes of \$7,000 and over.

Since persons in the lower income groups have higher rates of disability due to illness and injury (see table 1, Section VIII) than those with larger family incomes, it appears that the lower rate of utilization of physician services results from lack of funds or for reasons other than need for such services among persons in low income families.

Table 1. Number of physician visits per person per year, by sex and family income: United States, July 1957-June 1959

| Sex | Family income | | | | |
|------------------------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| Number of physician visits per person per year | | | | | |
| Both sexes----- | 5.0 | 4.6 | 4.6 | 5.1 | 5.7 |
| Male----- | 4.4 | 4.0 | 4.0 | 4.4 | 5.0 |
| Female----- | 5.6 | 5.1 | 5.2 | 5.8 | 6.4 |

¹Includes persons with unknown incomes.

Females averaged 5.6 physician visits per year as compared with 4.4 for males. In families with annual incomes of less than \$2,000, females averaged 5.1 visits and males 4.0 visits as compared with 6.4 visits for females and 5.0 visits for males in families with annual incomes of \$7,000 and over (table 1). This sex differential among persons of all income groups as well as among those in low and high income families is largely due to visits for prenatal and postnatal care among females.

The pattern of low rates of physician visits for persons in low income families and higher rates for persons in higher income families is consistent for each of the age groups shown in table 2. This disparity is particularly evident among children under 15 years of age, where the number of physician visits ranged from 3 visits for those living in families with incomes of less than \$2,000 to almost twice the number (5.7 per child) among those in families with incomes of \$7,000 and over.

Most of the physician visits take place in the physician's office. During July 1957-June 1959, office visits accounted for 66 percent of all physician visits. Physician visits in the patient's home, in hospital clinics, and by telephone each accounted for about 10 percent of the visits (fig. 1). Visits to hospital clinics represented about 1 out of 6 visits for persons with family incomes of less

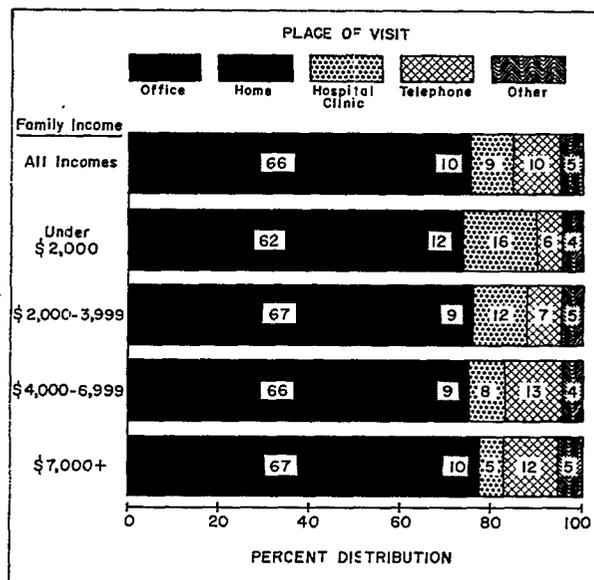


Figure 1. Percent distribution of physician visits, by type of visit according to family income.

than \$2,000 and only 1 out of 20 visits for those with incomes of \$7,000 and over. For physician consultations by telephone, the reverse was true with only 1 out of 20 for persons in the lowest family income group and 1 out of 8 for persons in the highest income group. The proportion of

Table 2. Number of physician visits per person per year, by age and family income: United States, July 1957-June 1959

| Age | Family income | | | | |
|---------------------|------------------------------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| | Number of physician visits per person per year | | | | |
| All ages----- | 5.0 | 4.6 | 4.6 | 5.1 | 5.7 |
| Under 15 years----- | 4.6 | 3.0 | 3.7 | 5.0 | 5.7 |
| 15-44 years----- | 4.8 | 4.0 | 4.5 | 4.9 | 5.5 |
| 45-64 years----- | 5.4 | 5.1 | 5.4 | 5.4 | 5.6 |
| 65+ years----- | 6.8 | 6.5 | 6.6 | 6.9 | 8.7 |

¹Includes persons with unknown incomes.

Table 3. Number of physician visits per person per year, by place of visit, age, and family income: United States, July 1957-June 1959

| Place of visit and age | Family income | | | | |
|------------------------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| <u>Office</u> | | | | | |
| Number of physician visits per person per year | | | | | |
| All ages----- | 3.3 | 2.8 | 3.1 | 3.4 | 3.8 |
| Under 15 years----- | 2.6 | 1.6 | 2.2 | 2.8 | 5.7 |
| 15-44 years----- | 3.4 | 2.6 | 3.1 | 3.6 | 4.0 |
| 45-64 years----- | 3.8 | 3.4 | 3.9 | 3.9 | 4.1 |
| 65+ years----- | 4.1 | 4.0 | 4.3 | 3.9 | 4.8 |
| <u>Home</u> | | | | | |
| All ages----- | 0.5 | 0.5 | 0.4 | 0.4 | 0.6 |
| Under 15 years----- | 0.5 | 0.2 | 0.3 | 0.5 | 0.7 |
| 15-44 years----- | 0.3 | 0.2 | 0.2 | 0.3 | 0.4 |
| 45-64 years----- | 0.5 | 0.5 | 0.5 | 0.4 | 0.4 |
| 65+ years----- | 1.5 | 1.4 | 1.5 | 1.6 | 2.5 |
| <u>Hospital clinic</u> | | | | | |
| All ages----- | 0.5 | 0.7 | 0.6 | 0.4 | 0.3 |
| Under 15 years----- | 0.4 | 0.8 | 0.5 | 0.4 | 0.3 |
| 15-44 years----- | 0.5 | 0.8 | 0.6 | 0.4 | 0.3 |
| 45-64 years----- | 0.5 | 0.8 | 0.6 | 0.5 | 0.2 |
| 65+ years----- | 0.5 | 0.5 | 0.3 | 0.6 | 0.5 |
| <u>Telephone</u> | | | | | |
| All ages----- | 0.5 | 0.3 | 0.3 | 0.6 | 0.7 |
| Under 15 years----- | 0.9 | 0.2 | 0.5 | 1.1 | 1.3 |
| 15-44 years----- | 0.3 | 0.1 | 0.3 | 0.4 | 0.5 |
| 45-64 years----- | 0.3 | 0.2 | 0.3 | 0.3 | 0.4 |
| 65+ years----- | 0.5 | 0.5 | 0.3 | 0.5 | 0.6 |
| <u>Other</u> | | | | | |
| All ages----- | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 |
| Under 15 years----- | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| 15-44 years----- | 0.3 | 0.3 | 0.3 | 0.2 | 0.3 |
| 45-64 years----- | 0.3 | 0.2 | 0.1 | 0.3 | 0.4 |
| 65+ years----- | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 |

¹Includes persons with unknown incomes.

physician visits in the office or in the home was about the same in each of the income groups.

The place-of-visit category "other" includes examination or treatment received at a company or industry health unit, school, insurance office, health department clinic, or similar place but excludes visits made by physicians to hospital inpatients. Physician visits at places designated as "other" accounted for between 4 and 5 percent of the physician visits in each of the income groups (fig. 1).

In general, rates of office visits follow the usual pattern of increase with income and increase with age for each income group (table 3). An exception to this overall description appears in families with incomes of \$7,000 and over. In such families children under age 15 had the highest rate of office visits—5.7 visits per child per year. In each of the other income groups, this age group had the lowest rate of office visits. The significantly higher rate of office visits for the children in the highest income group probably reflects the greater use of physician services for routine physical examinations and preventive care. Services such as allergy injections and immunizations and other regular visits for examination, treatment, and followup would account for this high rate of office visits.

Home visits are of comparatively low volume for persons under 65 years of age (about 0.4 visits per person per year). However, in the 65 and over age group, with the exception of persons living in families with \$7,000 or more income, home visits averaged 1.5 per person per year. Persons 65 years of age or older in families with incomes of \$7,000 or more had a considerably higher rate of physician visits (2.5 per person per year) in the home, indicating that family finances often dictate not only the frequency but the place of visit.

The average number of physician visits per person by telephone follows the general pattern of increasing number of visits with higher family income. This may reflect both the availability of a telephone in the home and the availability of a physician for telephone consultation. Persons in the lower socioeconomic groups are less likely to have a telephone available and, because they often use public clinical facilities, are also less likely to have a doctor available for telephone consultation.

The highest rate of telephone consultations was for children under 15 years of age, undoubtedly reflecting the greater use of the telephone for consultation with the family doctor or pediatrician on the care of infants. Although the total rate of telephone visits for children under 15 years of age was 0.9 per person per year, those with family incomes of less than \$2,000 had only 0.2 visits per child. This is in sharp contrast with the rate of 1.1 visits per year for children in the \$4,000-6,999 income group and 1.3 for children in the \$7,000 and over income group.

Physician Visits by Type of Service

During the 1-year period July 1957-June 1958, information was obtained about the reason for the physician visits. Of the five general categories—diagnosis and treatment, prenatal and postnatal care, general checkup, immunization, and other—about 75 percent of the physician visits were for diagnosis and treatment. This category was rather broadly defined to include examinations and tests for the diagnosis of illness and treatment or advice given by a physician or under the physician's supervision. Table 4 indicates that the overall rates by type of service show no marked variation by income group. Slightly lower rates of physician visits for prenatal and postnatal care were reported by females 15-44 years of age in the lowest and highest income groups than were reported for this age group in the \$2,000-3,999 and \$4,000-6,999 income groups. The rates for physician visits involving immunization were lowest for the less than \$2,000 income group (0.2 per person per year). Each succeeding income group reported a higher rate of physician visits for immunization services, with 0.5 visits per person per year in the \$7,000 and over income group.

Medical Specialists Services

In July 1963, the Health Interview Survey initiated the collection of information on the use of medical specialist services. Preliminary estimates were prepared from data gathered during the 3-month period July-September 1963. Because these initial estimates are founded on relatively small numbers with correspondingly high sam-

Table 4. Number of physician visits per person per year, by type of service and family income: United States, July 1957-June 1958

| Type of service | Family income | | | | |
|------------------------------------------------|------------------------------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| | Number of physician visits per person per year | | | | |
| All visits----- | 5.3 | 4.7 | 5.0 | 5.4 | 6.0 |
| Diagnosis and treatment----- | 4.0 | 3.9 | 3.8 | 4.0 | 4.3 |
| Prenatal and postnatal care ² ----- | 1.0 | 0.8 | 1.2 | 1.2 | 0.9 |
| General checkup----- | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 |
| Immunization----- | 0.4 | 0.2 | 0.3 | 0.4 | 0.5 |
| All other----- | 0.4 | 0.3 | 0.3 | 0.3 | 0.5 |

¹Includes persons with unknown incomes.

²Computed for females aged 15-44 years.

pling errors, the data in this report have been limited to broad categories of the population.

Information regarding medical specialists covers seven specialty areas—pediatrics, obstetrics and gynecology, ophthalmology, otolaryn-

gology, psychiatry, dermatology, and orthopedics. These particular specialties were selected for inclusion on the questionnaire because it was felt that household respondents would usually know whether members of the family had consulted one

Table 5. Number of persons utilizing the services of medical specialists,¹ by family income: United States, July-September 1963

| Item | Family income | | | | |
|-----------------------------------------------------------------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ² | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| Population July-September 1963 in thousands----- | 184,754 | 19,926 | 31,565 | 60,715 | 62,226 |
| Persons using the services of one or more of the selected specialists in thousands----- | 38,041 | 2,555 | 4,378 | 12,496 | 17,107 |
| Percent of the total population---- | 20.6 | 12.9 | 13.9 | 20.6 | 27.5 |

¹Includes only specialists in pediatrics, obstetrics and gynecology, ophthalmology, otolaryngology, psychiatry, dermatology, and orthopedics.

²Includes persons with unknown incomes.

of these types of specialists. The designation "specialist" includes physicians who, according to the knowledge of the respondent, have limited their practice to one of these specialties as well as physicians certified by appropriate medical specialty boards.

Of the 185 million persons in the United States, 38 million (20.6 percent) of the population utilized the services of one or more of these medical specialists during an average 12-month period. There were marked differences in the percentage of persons in each of the family income groups who utilized the services of one or more of these specialists. Services of specialists were used more by persons with high family incomes than by those with low family incomes, with the percentage availing themselves of these services increasing consistently from 13 percent for those with incomes of less than \$2,000 to 28 percent for those with incomes of \$7,000 and over (table 5).

More people reported the use of the services of a pediatrician than of any of the other six medical specialties. An estimated 12½ million children had visited a pediatrician one or more times during the year. About 20 percent of the children under 15 years of age were examined or treated by a pediatrician—9.6 percent of those in the lowest income group and 29.4 percent of those in families with incomes of \$7,000 or more (fig. 2).

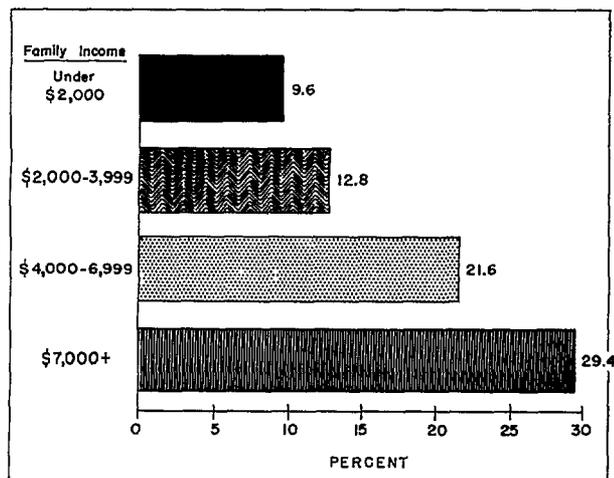


Figure 2. Percent of the population under 15 years of age utilizing the services of a pediatrician during a 12-month period, by family income.

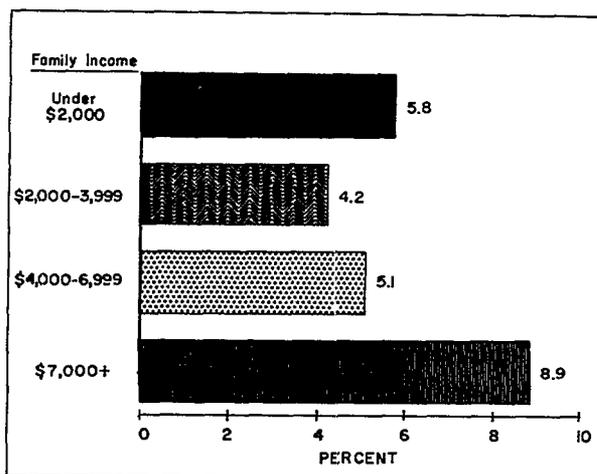


Figure 3. Percent of the population utilizing the services of an ophthalmologist during a 12-month period, by family income.

The total number of visits to pediatricians during the year was 39 million, 3.1 visits per child utilizing the services of a pediatrician, with about the same average annual number of visits in each of the income groups.

An estimated total of about 11½ million, or 6.3 percent, of the population consulted an ophthalmologist during the 12-month period. Since some people are not aware of the distinction between an ophthalmologist, an optometrist, and an optician, there undoubtedly is some confusion on the part of the respondent who considers all these as eye doctors. While we have no way of measuring the extent of reporting error this introduces, it probably tends to inflate the estimates for persons of low economic and educational status more so than estimates for persons in higher socioeconomic groups. This may explain to some extent why 5.8 percent of the persons with less than \$2,000 family income reported visiting an ophthalmologist during the 12-month period and only 4.2 percent in the \$2,000-3,999 group and 5.1 percent in the \$4,000-6,999 group visited an ophthalmologist during the year (fig. 3). Another factor which may contribute to this high percentage in the low income group is the disproportionate number of persons 65 years of age and over (table 1, Section I), a population group susceptible to the kinds of eye conditions, such as cataracts and glaucoma, which require the services of an ophthalmologist.

The average number of visits per person among those visiting an ophthalmologist was 1.8. This rate, while showing only a slight variation by income, is highest in the under \$2,000 income group (2.1 visits per person).

About 8 million women, 12.1 percent of the female population over 14 years of age, consulted obstetricians or gynecologists. As may be seen in figure 4, the proportion of women consulting obstetricians or gynecologists varied strikingly with income—from 3.5 percent in the lowest income group to 17.1 percent in the \$7,000 and over group. This pattern indicates the greater use of specialist services by high income persons although some of the difference may be associated with the age distribution within the income groups. The average number of visits per person consulting an obstetrician or gynecologist was 3.9 visits per year.

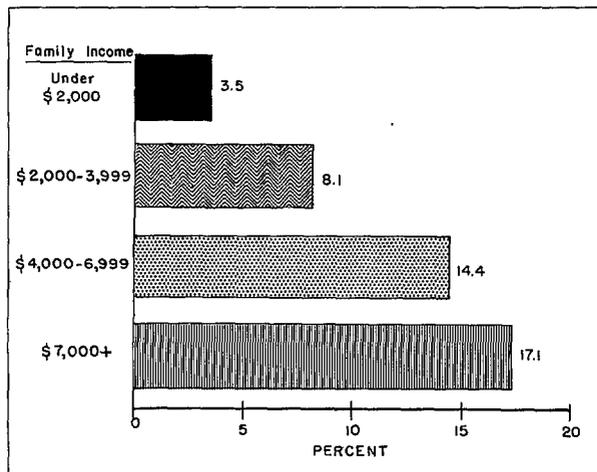


Figure 4. Percent of the female population over 14 years of age utilizing the services of an obstetrician or gynecologist during a 12-month period, by family income.

Otolaryngologists—physicians specializing in conditions affecting the ear, nose, and throat—treated an estimated 4,653,000 persons during the 12-month period. This means that about 2.5 percent of the population consulted one or more otolaryngologists during the year, with each person receiving this type of service averaging about 2.5 visits per year. About 2.2 percent of the per-

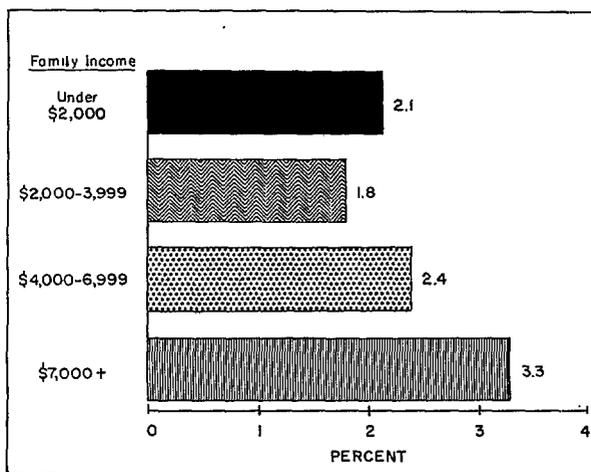


Figure 5. Percent of the population utilizing the services of an otolaryngologist during a 12-month period, by family income.

sons with incomes less than \$7,000 consulted an otolaryngologist, and 3.3 percent of the persons with higher family incomes obtained advice or treatment from this type of specialist (fig. 5).

Over 3 million persons (1.7 percent of the U.S. population) consulted an orthopedist an average of 3.2 times during the year. About 1.2 percent of the persons with incomes less than \$4,000, 1.6

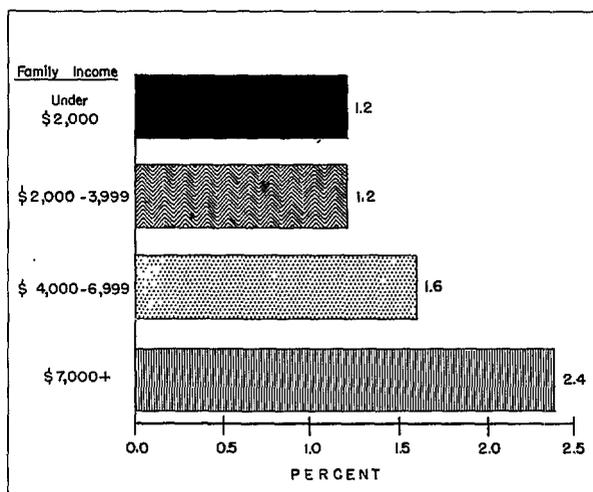


Figure 6. Percent of the population utilizing the services of an orthopedist during a 12-month period, by family income.

with incomes between \$4,000 and \$6,999, and 2.4 with incomes of \$7,000 or more visited an orthopedist during the 12-month period (fig. 6). Again, the pattern of greater use of a specialist's services among those in the higher income families is apparent.

Only 1.6 percent of the population (about 3 million persons) consulted a dermatologist during the year. These 3 million persons averaged about 3.2 visits per person during the year. The figures by income group are quite striking—2.4 percent of the people in the \$7,000 and over income group consulted a dermatologist compared with only 1.1 percent in the lower income group (fig. 7).

According to the information reported in the household interviews, 990,000 persons (about 0.5 percent of the population) reported visits to a psychiatrist during the 12-month period. Because of the exclusion of psychiatrists' visits to patients in hospitals and those in institutions, and because of the reluctance of respondents to give information which may indicate the presence of mental illness, the estimates shown here must be regarded as minimum. The proportion of persons was about the same in each income group (fig. 8). The comparatively high proportion of persons in the low income groups under the care of a psychiatrist may be related to the kinds of conditions for

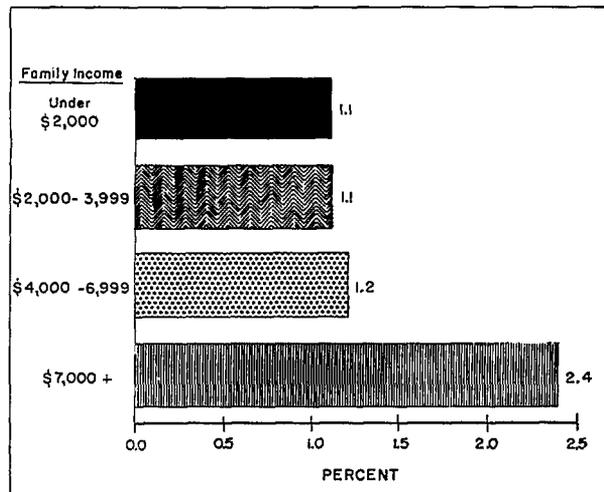


Figure 7. Percent of the population utilizing the services of a dermatologist during a 12-month period, by family income.

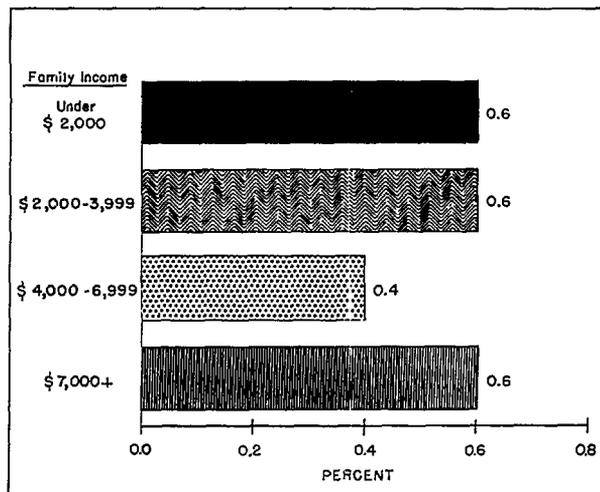


Figure 8. Percent of the population utilizing the services of a psychiatrist during a 12-month period, by family income.

which these people are being treated. Because of the extended treatment time characteristic of psychiatric care, during which a person might be limited in his opportunities for employment, the amount of family income for these persons would also tend to be limited. For persons seeing a psychiatrist, the average number of visits during the year was 4.5—ranging from 3.0 visits per year in the \$2,000-3,999 group to 5.1 visits in the \$7,000 and over income group.

Medical X-ray Visits

In the collection of data on physician visits by type of service during July 1957-June 1958, visits for medical X-rays were considered visits for diagnosis or treatment and are included in the data for this category in table 4. However, in the Health Interview Survey for July 1960-June 1961, questions designed to collect information on the volume of medical and dental X-ray visits were added to the routine questionnaire. Estimates based on responses to these questions provide some measure of the frequency with which persons in the population receive this kind of service, but they cannot be used to determine the comparative frequency of visits for X-ray and for other types of medical services.

During July 1960-June 1961, members of the noninstitutional, civilian population made an estimated 85 million visits to medical facilities for X-rays. Since in some cases more than one area of the body was x-rayed, a total of 93 million areas of the body were x-rayed during the 85 million visits. No attempt was made to collect information about the number of film exposures or fluoroscopic views during these visits or to obtain data about treatment with radioactive materials, such as radium and radioisotopes.

The annual rate of medical X-ray visits for diagnosis or treatment was approximately 48 visits per 100 persons, with a rate of 50 visits per 100 males and 46 visits per 100 females

(table 6). With the exception of the age group under 15 years, there was no definite pattern of relationship between the frequency of medical X-ray visits and the amount of family income. The greater rate of visits with increasing family income among children under 15, particularly among boys, reflects the increased medical attention children receive in higher income groups for the care of injuries. This statement is supported by the fact that of all the medical X-ray visits among children more than one-third were X-rays of the extremities; a comparable proportion for persons of all ages was one-sixth (table 7, Series B, No. 38). The high rate of injuries received among

Table 6. Number of medical X-ray visits per 100 persons per year, by family income, sex, and age: United States, July 1960-June 1961

| Sex and age | Family income | | | | |
|---------------------------------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| Number of medical X-ray visits per 100 persons per year | | | | | |
| <u>Both sexes</u> | | | | | |
| All ages----- | 47.9 | 54.4 | 46.6 | 44.2 | 52.4 |
| Under 15 years----- | 16.4 | 14.4 | 14.8 | 16.1 | 19.6 |
| 15-44 years----- | 60.1 | 75.0 | 61.5 | 56.1 | 60.9 |
| 45-64 years----- | 71.2 | 70.3 | 66.6 | 68.9 | 81.9 |
| 65+ years----- | 55.4 | 55.8 | 52.8 | 65.3 | 55.5 |
| <u>Male</u> | | | | | |
| All ages----- | 49.7 | 55.4 | 48.3 | 44.4 | 56.7 |
| Under 15 years----- | 18.2 | 17.5 | 16.3 | 16.7 | 22.7 |
| 15-44 years----- | 61.7 | 67.0 | 60.9 | 58.0 | 66.4 |
| 45-64 years----- | 76.3 | 86.7 | 76.6 | 66.6 | 86.6 |
| 65+ years----- | 58.4 | 60.9 | 57.5 | 66.5 | 53.7 |
| <u>Female</u> | | | | | |
| All ages----- | 46.2 | 53.5 | 45.1 | 43.9 | 48.1 |
| Under 15 years----- | 14.6 | 11.1 | 13.2 | 15.5 | 16.5 |
| 15-44 years----- | 58.6 | 82.0 | 62.1 | 54.5 | 55.6 |
| 45-64 years----- | 66.5 | 59.4 | 58.8 | 71.3 | 76.9 |
| 65+ years----- | 53.0 | 52.2 | 48.2 | 64.0 | 56.9 |

¹Includes persons with unknown incomes.

children in high income families is shown in table 13, Series 10, No. 2.

Even though the relationship between medical X-ray visits and amount of family income was not well defined among persons 15 years and over, rates for certain age-sex groups showed unusual variations by income. The rate for medical X-ray visits among males 45-64 years was approximately the same for those in the lowest and the highest income groups (87 visits per 100 persons per year). For the middle income groups, the rates were lower for this age-sex group but were still higher than for males in any of the other age groups. A possible explanation of these high rates for X-ray visits is the increased frequency with which men in this age group receive X-rays in connection with employment, with routine physical examination, and for the detection of cardiac abnormalities, lung cancer, and other chronic conditions for which the attack rate is high among men of this age. The rate for chest X-ray visits among men 45-64 years of age was 47.5 per 100 population as compared with 29.9 per 100 for males of all ages.

Among females, the highest rate of medical X-ray visits (82.0 per 100 persons) was among those 15-44 years in families with less than \$2,000 income. As income increased, the rate for visits in this age-sex group decreased sharply to 55.6 visits for those with \$7,000 or more family income. Among females 45-64 years, this pattern was reversed, with rates ranging from 59.4 visits for women in families with incomes of less than \$2,000 to 76.9 visits for those in families with \$7,000 or more income. Since persons in low income families have a high percentage of their X-rays in hospitals (table 7) and females 15-44 years have a high rate of hospitalization for delivery, it is possible that the high rate of X-rays for women in the childbearing age living in families with less than \$2,000 income is due in part to the number of routine X-rays done in prenatal clinics or in fluorographic units in certain hospitals during hospitalization for delivery.

In addition to the high percentage of medical X-ray visits in hospitals among persons with incomes of less than \$2,000, table 7 also shows a consistent pattern of a lower proportion of

Table 7. Percent distribution of chest and other medical X-rays, by place of visit according to family income: United States, July 1960-June 1961

| Type of X-ray and place of visit | Family income | | | | |
|----------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| <u>Chest X-ray</u> | | | | | |
| Percent distribution | | | | | |
| All places----- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Hospital----- | 41.0 | 52.2 | 43.6 | 38.7 | 35.5 |
| Doctor's office----- | 20.6 | 13.5 | 16.5 | 19.9 | 27.7 |
| Other and unknown----- | 38.4 | 34.3 | 39.8 | 41.5 | 36.8 |
| <u>Other medical X-ray</u> | | | | | |
| All places----- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Hospital----- | 61.0 | 71.0 | 68.8 | 59.9 | 52.1 |
| Doctor's office----- | 34.5 | 24.8 | 27.6 | 35.9 | 42.2 |
| Other and unknown----- | 4.5 | 4.2 | 3.6 | 4.2 | 5.7 |

¹Includes persons with unknown incomes.

X-rays done in hospitals with increasing family income for both chest and other medical X-rays. The high percentage of chest X-ray visits for persons in all income groups to places other than doctors' offices and hospitals indicates the frequency with which this type of X-ray is done in mobile units, schools, and industrial health facilities.

DENTAL VISITS

During the 12-month period ending June 1959, there were an estimated 248 million dental visits made in the United States, an average of 1.4 dental visits per person during the year.

Because many people regard conditions needing dental care as inconveniences which do not have the life-threatening potential of other chronic conditions, they often postpone visits to the dentist for examination and treatment. This may be particularly true of low income families who, in an attempt to avoid dental expense, often delay going to a dentist until they are in pain or other acute discomfort.

Figure 9 indicates the extent to which the amount of dental care varies according to family income. The rate of visits for persons with \$7,000

or more family income is more than 3 times the rate for persons with less than \$2,000 income. Although this contrast is due to some extent to the age composition of persons in the two income groups, the dental visit rate for persons in high income families is substantially higher than the rate among persons of lower income within each age category. For children under age 15, the rate of dental visits in the \$7,000 or more income group was about 5 times as high as for the corresponding age in the lowest family income group; for persons between 15 and 64 years, about 3 times as high; and for older persons, almost twice as high.

Since persons with family incomes of \$7,000 or more are the population segment which is receiving the highest level of dental care, rates for persons in this income group probably indicate the level of dental care which individuals should have if income and associated factors were not deterrents to frequency of dental visits. In the \$7,000 and over income group, persons under 45 years of age averaged 2.5 dental visits a year, those 45-64 years averaged 2 visits, and those 65 or older, 1 visit.

Females averaged 1.7 visits per year, a rate slightly higher than that for males, who reported that they saw their dentist at a rate of 1.2 times during the year. In each of the income groups, this higher rate for females was evident. The largest rate differential by sex appeared in the 15-44 year age group, in which males averaged 1.5 dental visits per year and females 2.1 visits per year. The rates for females ranged from 1 visit per year in the less than \$2,000 income group to about 3 visits per year in the \$7,000 and over income group. These high rates of dental visits among women are associated to some extent with the increased incidence of dental caries during and following pregnancy. Also, women may go to dentists more frequently for cosmetic reasons.

A point often overlooked in the study of the frequency of dental visits is that a sizable number of persons in each of the age and income categories (60 percent of the entire population) do not visit the dentist at all during the year (table 8). About 78 percent of the persons living in families with incomes of less than \$2,000 had no dental visits in a year. This proportion was progressively lower in each higher income group. In families

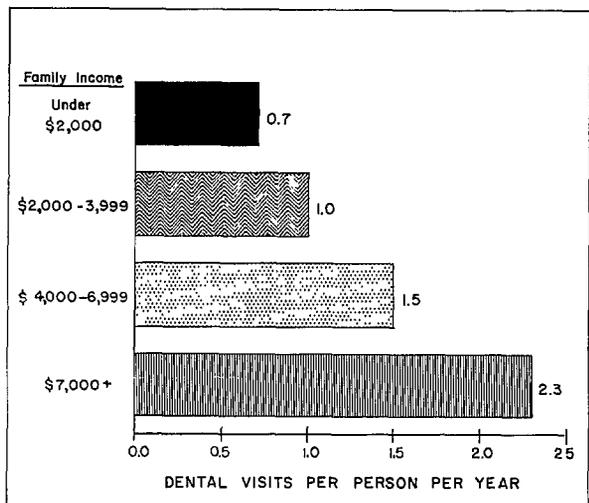


Figure 9. Number of dental visits per person per year, by family income

Table 8. Percent distribution of persons, by number of dental visits during the year according to family income: United States, July 1958-June 1959

| Number of dental visits during the year | Family income | | | | |
|-----------------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| | Percent distribution | | | | |
| Total----- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| No dental visit----- | 59.7 | 78.3 | 68.9 | 56.5 | 42.2 |
| 1 dental visit----- | 15.8 | 10.5 | 13.9 | 16.9 | 19.7 |
| 2 dental visits----- | 10.6 | 4.6 | 7.2 | 11.3 | 17.1 |
| 3 dental visits----- | 4.0 | 2.1 | 3.0 | 4.5 | 5.8 |
| 4+ dental visits----- | 9.4 | 3.8 | 6.5 | 10.4 | 14.6 |
| Unknown----- | 0.7 | 0.7 | 0.5 | 0.4 | 0.5 |

¹Includes persons with unknown incomes.

with \$7,000 or more income, 42 percent reported that they had not visited a dentist during the year. About 30 percent of the population visited a dentist from 1 to 3 times. By income group, this proportion ranged from 17 percent in the less than \$2,000 group to about 43 percent in the \$7,000 and over group. Persons with 4 or more dental visits

per year accounted for only about 4 percent of the persons in families with less than \$2,000 income and about 15 percent of those with family incomes of \$7,000 or more. Much of the high frequency of visits in the higher income group may be accounted for by multiple visits among children for orthodontic work. It was among children that the great-

Table 9. Percent distribution of persons, by time interval since last dental visit according to family income: United States, July 1957-June 1958

| Time interval since last dental visit | Family income | | | | |
|---------------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| | Percent distribution | | | | |
| Total----- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Under 6 months----- | 22.8 | 11.7 | 16.8 | 24.5 | 34.7 |
| 6-11 months----- | 13.8 | 7.3 | 11.3 | 15.5 | 18.9 |
| 1 year----- | 14.0 | 10.7 | 14.3 | 15.1 | 14.6 |
| 2-4 years----- | 14.3 | 15.6 | 16.2 | 14.3 | 11.5 |
| 5+ years----- | 14.6 | 27.6 | 16.5 | 11.0 | 8.8 |
| Never----- | 18.1 | 24.0 | 22.5 | 18.0 | 10.0 |
| Unknown----- | 2.4 | 3.2 | 2.3 | 1.6 | 1.6 |

¹Includes persons with unknown incomes.

est income differences in frequency of visits occurred.

Another measure of dental care is the distribution of persons by interval since last dental visit (table 9). Estimates based on this kind of information collected in the Survey during July 1957-June 1958 indicate that 50 percent of all children under 15 years of age had never visited a dentist. This percentage ranged from 74 percent among children in the lowest income group to 32 percent in the \$7,000 and over group (fig. 10). These high percentages which at first glance indicate an appalling lack of dental care among children are exaggerated to some extent because

more than one-third of the children under 15 are under 5 years of age, an age interval during which dental needs are few. Furthermore, the fact that this proportion of young children varies from 30 percent in the \$7,000 or more income group to 37 percent for those with income less than \$2,000 explains a part of the differential for these income groups in the percentage of children under 15 who have never had dental care. The lack of utilization of dental services in low income families is further indicated in that 29 percent of the persons in the 15-44 age group had not seen a dentist in 5 years or more as compared with only 7 percent in the \$7,000 and over income group.

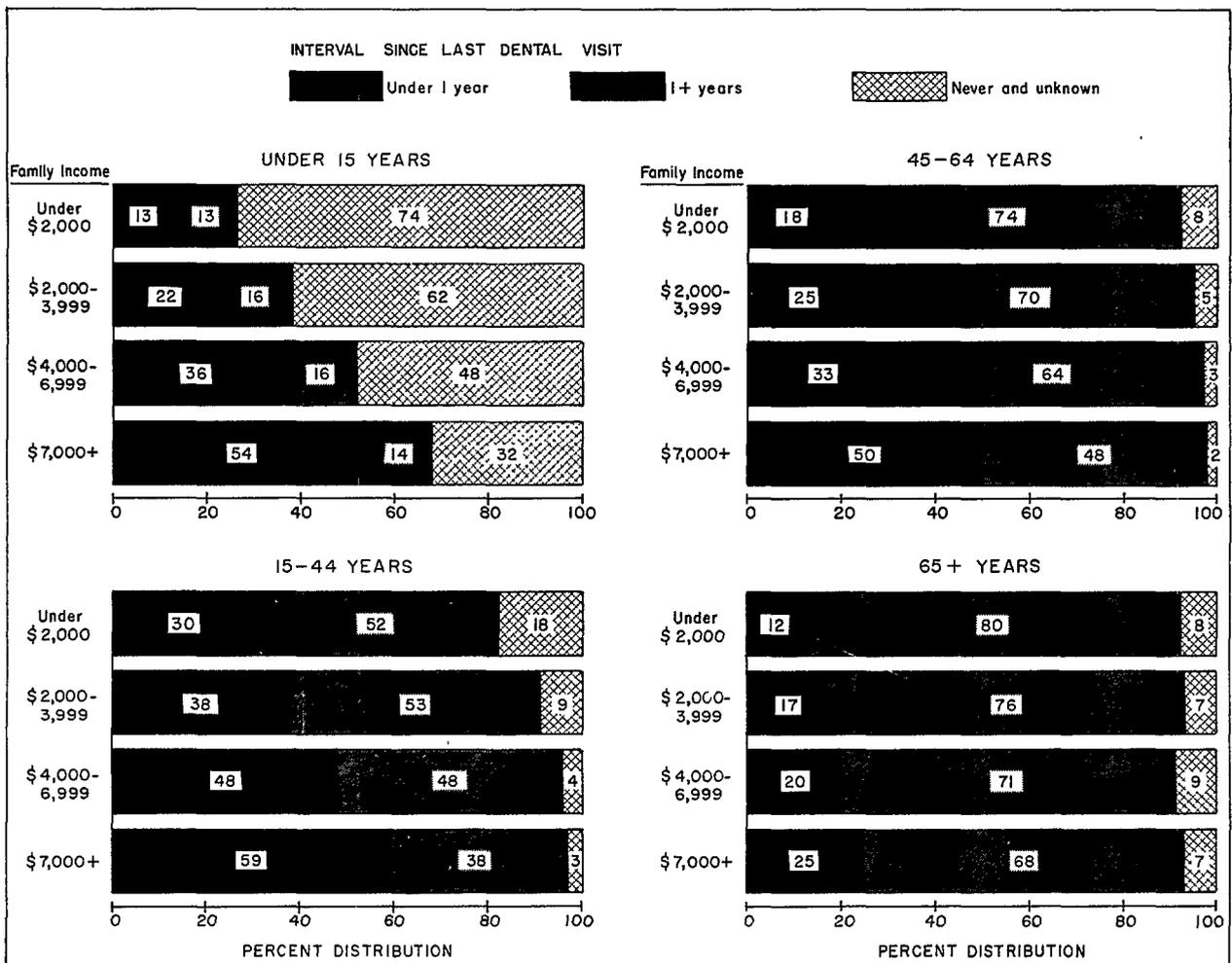


Figure 10. Percent distribution of persons, by time interval since last dental visit, according to age and family income.

Table 10. Percent distribution of dental visits, by type of service according to family income and age: United States, July 1957-June 1958

| Age and type of service | Family income | | | | |
|-------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| <u>All ages</u> | | | | | |
| All visits ² ----- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Fillings----- | 43.0 | 27.4 | 35.6 | 46.5 | 45.7 |
| Extractions----- | 17.0 | 37.1 | 23.0 | 16.4 | 9.9 |
| Cleaning or examination----- | 17.7 | 12.2 | 13.5 | 17.0 | 21.8 |
| Straightening----- | 3.4 | 1.2 | 2.1 | 2.5 | 5.3 |
| Gum treatment----- | 1.5 | 1.6 | 2.0 | 1.8 | 1.1 |
| Denture work----- | 8.6 | 14.2 | 13.0 | 6.7 | 7.9 |
| Other----- | 12.3 | 8.3 | 14.0 | 12.2 | 13.0 |
| <u>Under 15 years</u> | | | | | |
| All visits----- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Fillings----- | 49.4 | 39.2 | 53.6 | 49.0 | 49.7 |
| Extractions----- | 11.8 | 32.0 | 15.3 | 14.4 | 5.1 |
| Cleaning or examination----- | 19.2 | 5.3 | 15.3 | 20.1 | 20.8 |
| Straightening----- | 8.4 | 3.4 | 2.8 | 5.0 | 15.2 |
| Gum treatment----- | 0.5 | 5.7 | 0.3 | 0.5 | 0.1 |
| Denture work----- | 1.4 | 0.5 | 2.9 | 1.0 | 1.4 |
| Other----- | 13.4 | 14.3 | 11.8 | 14.2 | 12.8 |
| <u>15-44 years</u> | | | | | |
| All visits----- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Fillings----- | 46.7 | 35.6 | 37.9 | 49.1 | 50.1 |
| Extractions----- | 19.1 | 40.8 | 25.2 | 17.4 | 13.1 |
| Cleaning or examination----- | 16.7 | 14.2 | 12.6 | 15.2 | 21.8 |
| Straightening----- | 2.4 | 1.7 | 3.0 | 1.8 | 2.6 |
| Gum treatment----- | 1.9 | 1.0 | 2.5 | 2.5 | 1.3 |
| Denture work----- | 5.6 | 4.3 | 7.0 | 5.5 | 5.9 |
| Other----- | 11.4 | 6.4 | 15.7 | 11.6 | 10.6 |
| <u>45-64 years</u> | | | | | |
| All visits----- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Fillings----- | 32.3 | 15.6 | 22.4 | 36.6 | 36.1 |
| Extractions----- | 17.3 | 40.0 | 25.2 | 17.4 | 7.9 |
| Cleaning or examination----- | 18.4 | 14.4 | 14.7 | 17.4 | 21.6 |
| Straightening----- | 0.3 | * | * | -0.7 | 0.1 |
| Gum treatment----- | 1.9 | 0.2 | 3.1 | 2.4 | 1.6 |
| Denture work----- | 19.0 | 23.7 | 27.0 | 15.8 | 17.8 |
| Other----- | 13.1 | 6.4 | 9.0 | 11.8 | 18.0 |
| <u>65+ years</u> | | | | | |
| All visits----- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Fillings----- | 16.7 | 15.7 | 9.9 | 31.7 | 12.7 |
| Extractions----- | 21.9 | 25.5 | 19.1 | 13.1 | 25.1 |
| Cleaning or examination----- | 15.7 | 8.3 | 11.0 | 12.5 | 37.7 |
| Straightening----- | * | * | * | * | * |
| Gum treatment----- | 1.1 | 2.2 | * | * | 3.4 |
| Denture work----- | 34.5 | 37.2 | 43.3 | 39.5 | 15.6 |
| Other----- | 12.1 | 12.0 | 21.3 | 3.7 | 8.4 |

¹Includes persons with unknown incomes.

²Distribution may add to more than 100 percent because more than one type of service may have been received at a single visit.

Several factors influence the type of dental service persons receive. The most obvious of these factors is age. Among persons under 45 years of age more than 60 percent of the dental visits were for fillings or extractions; for persons 45 and over a progressively smaller proportion of the visits fell in these categories (table 10). The proportion of visits for straightening teeth (8.4 percent for children under 15) decreased with advancing age. On the other hand, visits for denture work increased from 1.4 percent for those under 15 to 34.5 percent among those 65 years and older. The category "cleaning and/or examination" remained fairly constant throughout the age groups.

Among persons in the lowest income group, 37.1 percent of the visits involved tooth extractions. For those with family incomes of \$7,000 or more, only 9.9 percent of the visits were for extractions. Preventive care services such as cleaning or examination accounted for only 12.2 percent of the visits in the less than \$2,000 group and 21.8 percent of the visits in the \$7,000 and over group. For children under 15 years of age 15.2 percent of the dental visits in the \$7,000 and over income group were for orthodontic services (teeth straightening). In each of the other income groups, only 2.8 to 5.0 percent of the visits for children under 15 involved orthodontic work.

Dental X-ray Visits

Dental visits for X-ray were not classified as a separate category in the data collected during July 1957-June 1958. Dental visits at which X-rays were taken, when they were reported, were included in the "other" category shown in table 10. However, in the supplemental part of the questionnaire dealing with X-ray visits during the period July 1960-June 1961, the X-ray visits specifically related to dental services were identified as such. In the Survey a dental X-ray visit was defined as an X-ray usually taken in a dentist's office for the primary purpose of studying the condition or formation of the teeth. X-rays of the teeth or jaw taken in hospitals or clinics primarily for dental purposes were also considered as dental X-ray visits.

Survey data indicate that approximately 49 million dental X-ray visits occur annually. This

represents a rate of 27.4 visits per 100 persons, with 23.9 visits per 100 males and 30.7 per 100 females. The rate of visits for X-ray was highest in the 15-44 age group, 38.0 visits per 100 persons per year, and lowest among persons 65 years and older, 10.4 visits per 100 persons annually. For each of the age groups shown in table 11 as well as for males and females, the number of dental X-ray visits increased consistently with family income. This pattern of increase is similar to that for all dental visits shown in figure 9 and for costs of dental services shown in the following section of this report. Despite the different data collection periods, figure 11 shows that the curves for dental visits (Series B, No. 15), X-ray visits, and dental expenses (table 1, Section V), are quite similar when plotted according to amount of family income.

Estimates in figure 11 indicate that regardless of income level about 20 percent of dental visits involved X-ray procedures. This percentage is much higher than would be inferred from table 10 even if all of the visits in the "other" category were X-ray visits. In many instances, visits for extractions, fillings, denture work, straightening,

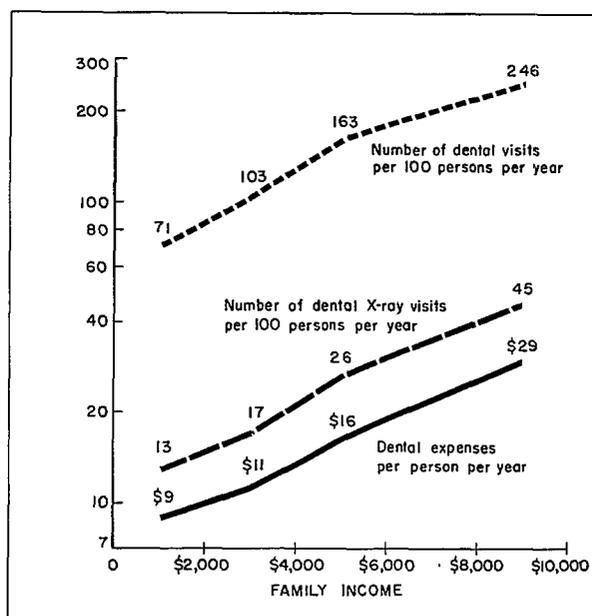


Figure 11. Comparative estimates of dental visits (July 1957-June 1959), dental X-ray visits (July 1960-June 1961), and dental expenses (July 1962-June 1963), by family income.

Table 11. Number of dental X-ray visits per 100 persons per year, by family income, age, and sex: United States, July 1960-June 1961

| Age and sex | Family income | | | | |
|---------------------|--------------------------------------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| | Number of dental X-ray visits per 100 persons per year | | | | |
| All persons----- | 27.4 | 12.9 | 17.4 | 25.7 | 45.3 |
| <u>Age</u> | | | | | |
| Under 15 years----- | 21.4 | 7.4 | 12.2 | 19.1 | 37.6 |
| 15-44 years----- | 38.0 | 23.4 | 27.2 | 35.3 | 55.4 |
| 45-64 years----- | 23.9 | 10.9 | 13.3 | 20.2 | 41.7 |
| 65+ years----- | 10.4 | 7.2 | 7.5 | 12.7 | 22.8 |
| <u>Sex</u> | | | | | |
| Male----- | 23.9 | 11.5 | 13.8 | 22.1 | 40.1 |
| Female----- | 30.7 | 14.1 | 20.7 | 29.3 | 50.5 |

¹Includes persons with unknown incomes.

or examination involve X-rays, but to a household respondent the X-ray becomes incidental to or even identified with the major purpose of the visit. In such an instance, the respondent would probably have reported the dental visit, but since she was not specifically asked about X-rays, she may have limited the type of service to the extraction or denture work that motivated the visit.

Experience in household surveys has demonstrated the necessity for specific questioning about items if complete information is to be obtained. Because such specific X-ray questions were asked during July 1960-June 1961, it is believed that the estimate of 27.4 dental X-ray visits per 100 persons shown in table 11 is more accurate than one that might be estimated from the data collected during July 1957-June 1958.

SUMMARY

1. Persons in families with incomes under \$4,000 averaged 4.6 visits to a physician each year, and those in families with incomes of \$7,000 or more averaged 5.7 visits per year.
2. The relative increase in rates of physician visits from low to high family income was about the same for males and females, even though the level of the rates was higher for females because of visits for prenatal and postnatal care.
3. The pattern of utilization of physician visits is quite clear cut, showing an increase of visits with advancing age and with increase in family income.

4. The rate of physician visits (5.7 visits) for children under 15 living in families with \$7,000 or more income was approximately twice that for children in families with incomes of less than \$2,000 (3.0 visits).
5. During an average 12-month period, 1 person out of 5 received the services of one or more of the following specialists: pediatrician, obstetrician or gynecologist, ophthalmologist, otolaryngologist, psychiatrist, dermatologist, or orthopedist. With the exception of psychiatrists' services, the percentage of persons with family incomes of \$4,000 or more receiving the services of specialists was higher than the percentage among those with incomes less than \$4,000.
6. The amount of dental care that people received varied directly with amount of family income. Only 19 percent of the persons living in families with less than \$2,000 income visited the dentist during the year as compared with 54 percent of those with family incomes of \$7,000 or more.
7. Among children under 15, only 1 out of 4 of those in families with incomes of less than \$2,000 had ever had any dental care, while 3 out of 4 children in the \$7,000 or more income group had visited a dentist at least one time.

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V. PERSONAL HEALTH EXPENSES

The preceding sections of this report have dealt with the utilization of health facilities and have emphasized the many factors that determine the extent to which people avail themselves of these facilities. It has been pointed out that health education, insurance coverage, and availability of services are only a few of the motivational factors which have increased the use of preventive and diagnostic services and encouraged people to seek treatment for illness. However, in view of the increasing costs of medical care during the past decade, there is little doubt that a primary consideration in the use of health services is the ability to pay for them. For this reason, variations in the amount of money that people spend to maintain or regain their health can be studied most effectively when related to the amount of family income.

Data collected during the period July-December 1962 by the Health Interview Survey indicate that the average person spent \$129 during the year for personal health services, i.e., hospital care, medical and dental services, medicines, and other health-related services and products. Other surveys¹ conducted during the past 10 years revealed that expenditures of this kind amounted to \$66 per person in 1953 and \$94 per person in 1958. These estimates indicate that the cost of health services has doubled over a 10-year period and has increased about 38 percent during the past 4 years.

DESCRIPTION OF THE DATA

One of the major reasons that collection of data on personal health expenses was undertaken by the Health Interview Survey, despite the availability of such data from other sources, was the

unique opportunity of relating health expenses to economic, social, and health information collected concurrently in the household interviews.

The material on health expenditures was collected by self-enumeration. At the completion of the routine health questionnaire, the interviewer left forms designed to obtain information for each member of the household about the types and amount of health expenses during the year prior to interview. These forms were completed and then submitted by mail to become a part of the records for individuals in the household. This procedure allowed respondents to refer to medical bills and other records and in this manner increased the accuracy and completeness of the collected data. Households for which forms were not returned or for which some items of data were missing were contacted by telephone to complete the information. However, even with this followup, nonresponse was about 6 percent. Because of the unstated expenditures, the data on medical costs are presented in this report as percentage distributions of the population by interval of expense and as amounts of expense per person per year, with all estimates based on known data. This procedure, in effect, assumes that medical expenses incurred by the total population are distributed in the same proportion as those for persons who responded in the sample population. In addition, this form of presentation permits the showing of data in average dollar amounts and in intervals which are more comprehensible than the billions of dollars represented in the estimated total volume of health expenses.

Personal health expense data derived from the Health Interview Survey represent the value of services received or health products purchased and include expenses paid for by health insurance. Excluded are the cost of health insurance premiums and services or products paid for by Federal, State, or local governmental agencies and welfare or other free-care programs. Also excluded are expenses of persons residing in institutions at the

¹Anderson, O. W., Collette, P., and Feldman, J. J.: Family expenditure patterns for personal health services, 1953 and 1958: Nationwide surveys. *Research Series No. 14*. Health Information Foundation. New York, 1960.

time of interview, expenses of families of military personnel who were covered by Medicare, and expenses of persons who were formerly members of interviewed households but who had died prior to the date of interview. Definitions and inclusions for each category of expense are presented in Appendix II.

Data presented in this report do not show separate estimates for direct payments by consumers and the part paid for by health insurance. Findings of other studies conducted by the Health Information Foundation, the Social Security Administration, and the Department of Commerce indicate that about a third of the medical care costs of the population is paid by some form of insurance benefit.

DISTRIBUTION OF PERSONS BY INTERVAL OF EXPENSE

About 18 percent of the population reported no expenses for health care or services for a 12-month period (fig. 1). This proportion varies

from approximately 30 percent for persons living in families where total income was less than \$2,000 to about 11 percent for those with family income of \$7,000 and over.

About 30 percent of the total population spent over \$100 per year for health care and services, with the proportion varying from 25 percent to 37 percent for those with family incomes of less than \$2,000 and \$7,000 and over, respectively. While this significant association exists between family income and personal health expenses, it is necessary to qualify these data with the fact that they exclude payments by governmental and welfare agencies. Thus, the expenses for the lower income groups are understated to an unknown extent. However, data on utilization of physician services and dental services do indicate that a larger number of visits are made by those with higher incomes (table 1 and fig. 9, Section IV). Other data indicate that those with low incomes are hospitalized less often, but when they are hospitalized, they have, on the average, longer hospital stays (table 2, Section III). The lower rate of hospitalization among persons with low income supports the higher proportion of persons at this income level with no health expenses. However, expenses associated with the longer hospital stay reported for these persons would tend to reduce any differences in the amount of hospital expense by family income. Another factor that would tend to reduce differences by income level is that persons with low income are often hospitalized in government-owned facilities where the additional costs associated with their longer hospital stays would be offset by the comparatively low daily costs in relation to those in private and proprietary hospitals.

Differences in the distribution of expenses for males and females in the various income levels are shown in table 1. The pattern of higher levels of expense for persons with higher income and greater expenses for females is clearly indicated in figure 2, which shows the comparative percentage of males and females with expenses of \$100 or more. As will be seen in subsequent discussions of the several component parts of the total personal health expenses, this pattern is generally consistent. One very obvious reason for the overall pattern for females is the extra medical expense and services related to childbearing.

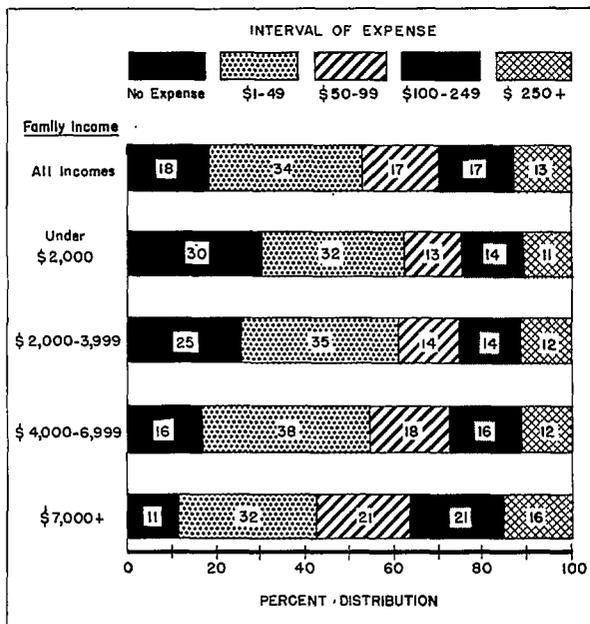


Figure 1. Percent distribution of persons, by interval of expense according to family income.

Table 1. Percent distribution of persons, by interval of expense according to family income and sex: United States, July-December 1962

| Sex and interval of expense | Family income | | | | |
|-----------------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| <u>Both sexes</u> | | | | | |
| All persons----- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| No expense----- | 18.2 | 30.2 | 24.5 | 16.4 | 10.7 |
| \$1-49----- | 34.1 | 31.6 | 34.6 | 37.5 | 31.7 |
| \$50-99----- | 17.3 | 13.0 | 14.2 | 17.7 | 20.7 |
| \$100-249----- | 16.9 | 13.9 | 14.3 | 15.9 | 21.0 |
| \$250-499----- | 8.1 | 6.8 | 7.6 | 7.8 | 9.4 |
| \$500+----- | 5.3 | 4.5 | 4.7 | 4.8 | 6.4 |
| <u>Male</u> | | | | | |
| All persons----- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| No expense----- | 20.3 | 34.2 | 27.9 | 18.5 | 12.3 |
| \$1-49----- | 36.3 | 33.2 | 37.0 | 39.8 | 33.8 |
| \$50-99----- | 17.2 | 11.3 | 13.5 | 17.7 | 20.8 |
| \$100-249----- | 15.5 | 12.2 | 12.4 | 14.6 | 19.6 |
| \$250-499----- | 6.4 | 5.2 | 5.6 | 5.8 | 8.1 |
| \$500+----- | 4.2 | 3.9 | 3.7 | 3.7 | 5.4 |
| <u>Female</u> | | | | | |
| All persons----- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| No expense----- | 16.2 | 27.2 | 21.5 | 14.3 | 9.0 |
| \$1-49----- | 32.1 | 30.4 | 32.3 | 35.3 | 29.6 |
| \$50-99----- | 17.4 | 14.3 | 14.9 | 17.7 | 20.6 |
| \$100-249----- | 18.3 | 15.1 | 16.1 | 17.3 | 22.4 |
| \$250-499----- | 9.7 | 8.0 | 9.5 | 9.7 | 10.8 |
| \$500+----- | 6.2 | 4.9 | 5.6 | 5.8 | 7.5 |

¹Includes persons with unknown incomes.

AMOUNT OF HEALTH EXPENSES

In this report, emphasis is focused on the levels of health expenditures by type of expense and the extent to which these levels vary in relation to the amount of family income. Examination of expenses per person shown in table 2 indicates a direct relationship between expenses and income level, with total expenses increasing from \$112 per person among those with family incomes of less than \$2,000 to \$153 per person for those with incomes of \$7,000 and over. However, the increase

in the three lowest groups was very gradual, with the major differential occurring between the \$4,000-6,999 and the \$7,000 and over groups. Essentially this same pattern of increase with family income is present for expenses paid to doctors and dentists, with these two items contributing more than one-half of the amount of personal expense in the \$7,000 and over income group. For medicines, hospitals, and other health expenses (including such items as nursing care, special appliances, eyeglasses, physical therapy, and outpatient or emergency hospital care), the

Table 2. Health expenses per person per year, by family income and type of expense:
United States, July-December 1962

| Type of expense | Family income | | | | |
|-------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| All expenses----- | 129 | 112 | 116 | 119 | 153 |
| Hospital----- | 30 | 28 | 30 | 30 | 31 |
| Doctor----- | 43 | 36 | 38 | 41 | 52 |
| Dental----- | 19 | 9 | 11 | 16 | 29 |
| Medicine----- | 26 | 28 | 26 | 23 | 28 |
| Other----- | 11 | 11 | 11 | 9 | 13 |

¹Includes persons with unknown incomes.

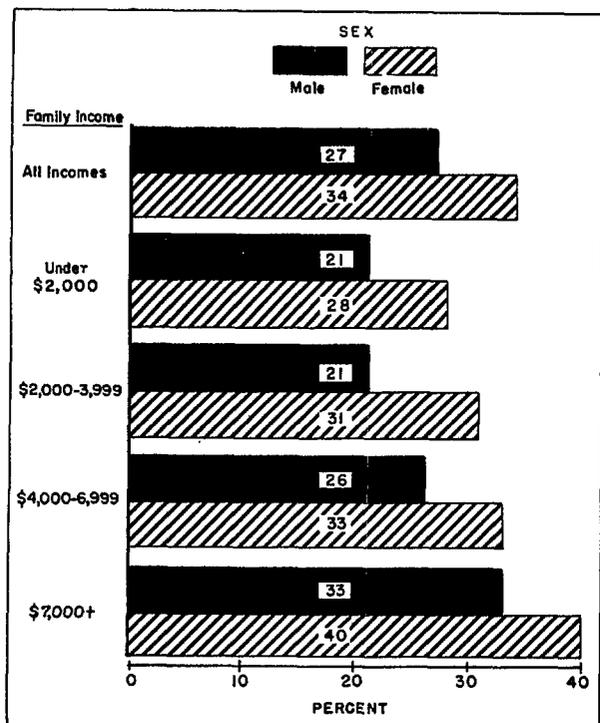


Figure 2. Percent of persons with health expenses of \$100 or more, by sex according to family income.

pattern of expense was less well defined with the lowest and highest income groups expending about the same amount.

However, when the various types of expense are considered as proportions of total health expenses, it is apparent from figure 3 that expenses paid to doctors represent about a third of the total expenditures in each of the income groups. On the other hand, the proportionate amount of hospital and medicine expenses decreased as the amount of family income became greater. Some part of this higher proportion of medicine and hospital expense in the lower income groups is due to the high percentage of persons 65 years and older (see table 1, Section I), a segment of the population known to have high rates of chronic illness and hospitalization (see tables 1 and 2, Section III, and table 1, Section VI). Proportionate expenses for dental care increased from a low of 8 percent for those with family incomes of less than \$2,000 to 19 percent for those with incomes of \$7,000 and over. Because of the low rate of dental visits for persons over 65 (Series B Number 15), the aforementioned population distribution, which results in a younger median age as income increases, accentuates this well-

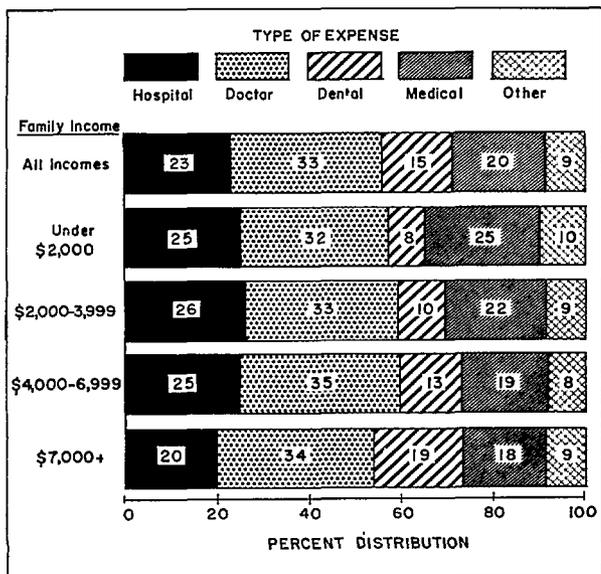


Figure 3. Percent distribution of personal health expenses, by type of expense according to family income.

defined relationship between amount of dental care and family income.

At least two items, dental expenses and hospital expenses, suggest that in this pattern a larger proportion of health expenses is spent for preventive health care as the level of income increases. Thus the expenses for those with incomes under \$2,000 include a larger than average expenditure for hospital care and a much smaller proportion (8 percent) for dental care. These proportions are reversed for those with family incomes of \$7,000 and over. Data on utilization of physicians, dentists, and hospitals are consistent with this pattern as shown in other sections of this report.

HEALTH EXPENSES BY AGE AND SEX

Per capita expenses for all categories of health expenditures by age, sex, and family income indicate some significant variations (table 3). As expected, the amount of outlay for health expenses

Table 3. Health expenses per person per year, unadjusted and adjusted for age, by sex and family income: United States, July-December 1962

| Age and sex | Family income | | | | |
|---------------------|------------------------------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| | Health expenses per person per year in dollars | | | | |
| Unadjusted----- | 129 | 112 | 116 | 119 | 153 |
| Age adjusted----- | | 93 | 110 | 128 | 160 |
| Under 15 years----- | 59 | 29 | 43 | 60 | 80 |
| 15-44 years----- | 131 | 97 | 108 | 132 | 156 |
| 45-64 years----- | 191 | 154 | 169 | 189 | 221 |
| 65+ years----- | 208 | 162 | 213 | 210 | 308 |
| Male----- | 111 | 101 | 99 | 101 | 137 |
| Female----- | 144 | 119 | 130 | 137 | 169 |

¹Includes persons with unknown incomes.

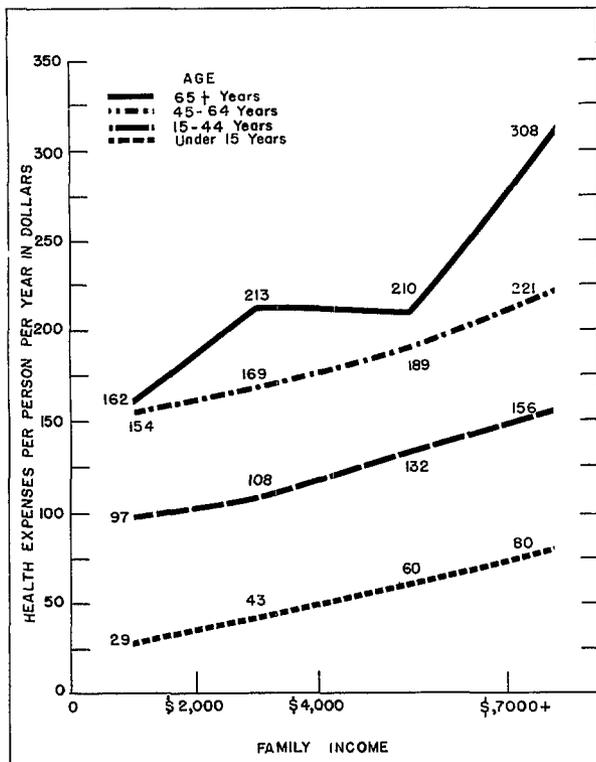


Figure 4. Health expenses per person per year, by age and family income.

increased with age for all income levels. Similarly, for the various age groups the expenses increased from the lowest to the highest income group. The pattern is quite similar for all except the 65 years and over group, where approximately the same level of \$210 per capita expense is reported for those persons in the two intermediate income categories (fig. 4). When the rates by age are adjusted for the differences in the age distribution of persons in the several income groups, the association of increased expenditures with higher family income is accentuated (table 3). The pattern established by these rates, where the effect of age distribution has been removed, is more descriptive of the true relationship of family income and health expenses.

The distribution of expenses by sex shows that females, regardless of income level, reported higher expenses. As expected, most of the difference between expenses for males and females was

accounted for by the greater expenses reported for women in the childbearing ages, 15-44 years (table 4).

HEALTH EXPENSES BY FAMILY SIZE

Table 5 shows the distribution of total per capita personal health expenses for various age groups by family size. For families of three persons or more, there was a clear-cut pattern of progressive increases in costs of health services from the youngest to the oldest age group. It is also apparent that for each age group except 65 years and over the expense decreased with family size. This is especially true for children under 15 years of age whose expense decreased from \$84 for a child living in a three-member family to only \$40 for a child in a family of seven or more. The pattern for persons 65 years of age and over is less well defined, but this tendency to vary may be due to the small number of older persons living in large families.

Because of the different types of household composition in families and the varying expense patterns by age, the relationship between family size and health expense can perhaps be most readily seen by considering the health expense pattern for children under 15 years of age by family income and size. Data are presented only for children living in families of three or more members because very rarely do children of this

Table 4. Comparative health expenses per person per year for all persons 15-44 years of age, by type of expense and sex: United States, July-December 1962

| Type of expense | Male | Female |
|-------------------|-------|--------|
| All expenses----- | \$100 | \$162 |
| Hospital----- | 20 | 43 |
| Doctor----- | 33 | 59 |
| Medicine----- | 17 | 25 |
| Dental----- | 21 | 25 |
| Other----- | 9 | 10 |

Table 5. Health expenses per person per year, by family size and age: United States, July-December 1962

| Family size | Under 15 years | 15-44 years | 45-64 years | 65+ years |
|------------------------------------------------|----------------|-------------|-------------|-----------|
| Health expenses per person per year in dollars | | | | |
| Total----- | 60 | 132 | 192 | 206 |
| 1 member----- | - | 140 | 203 | 189 |
| 2 members----- | 58 | 132 | 213 | 216 |
| 3 members----- | 84 | 142 | 188 | 214 |
| 4 members----- | 78 | 140 | 179 | 209 |
| 5 members----- | 61 | 130 | 151 | 160 |
| 6 members----- | 53 | 121 | 142 | 231 |
| 7+ members----- | 40 | 112 | 125 | 165 |

age live in smaller households. The data in figure 5 show that for children in large families, less money is expended per child for health care, regardless of income level. It also shows that as the family income increases, more money is spent

for health care. Some measure of the combined impact of family income and family size on the maintenance of child health can be gained from the fact that the amount of health expense (\$104) for a child living in a three-member family with \$7,000 and over income was five times greater than the amount spent for health care of a child in a family with seven or more members and family income of less than \$2,000.

HEALTH EXPENSES BY TYPE OF EXPENSE

Hospital Expenses

Expenses for hospital care constituted about 23 percent of all health expenses. Expenses averaged approximately \$30 per person in the population.² These costs varied from \$25 for males to \$35 for females. Again, much of this difference is attributable to hospitalization for delivery among females of childbearing age.

Within each income category, hospital expense per person increased directly with age, and expenses for each age group except those for persons 65 years and over increased in a consistent pattern as the income level rose (table 6).

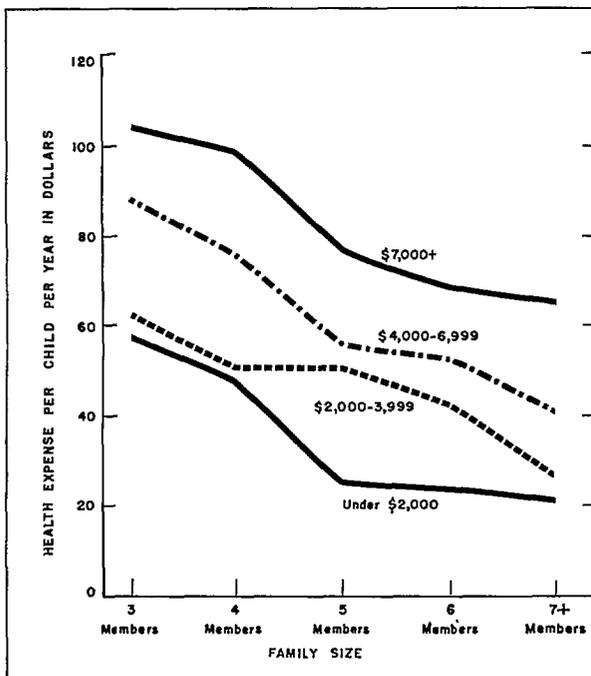


Figure 5. Health expenses per child (under 15 years of age) per year, by family income and size.

² Average annual cost of hospitalization for persons with hospital expenses was about \$255 per person. This estimate does not refer to costs per hospital episode but rather to costs during the year irrespective of the number of episodes.

Table 6. Health expenses per person per year, by type of expense, age, and family income: United States, July-December 1962

| Type of expense and age | Family income | | | | |
|------------------------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| Health expenses per person per year in dollars | | | | | |
| <u>Hospital</u> | | | | | |
| All ages----- | 30 | 28 | 30 | 30 | 31 |
| Under 15 years----- | 10 | 7 | 9 | 12 | 10 |
| 15-44 years----- | 32 | 24 | 30 | 30 | 33 |
| 45-64 years----- | 46 | 38 | 43 | 49 | 48 |
| 65+ years----- | 53 | 40 | 57 | 49 | 83 |
| <u>Doctor</u> | | | | | |
| All ages----- | 43 | 36 | 38 | 41 | 52 |
| Under 15 years----- | 22 | 11 | 16 | 23 | 29 |
| 15-44 years----- | 46 | 34 | 39 | 47 | 54 |
| 45-64 years----- | 61 | 50 | 50 | 62 | 71 |
| 65+ years----- | 62 | 47 | 63 | 61 | 100 |
| <u>Medicine</u> | | | | | |
| All ages----- | 26 | 28 | 26 | 23 | 28 |
| Under 15 years----- | 13 | 7 | 11 | 13 | 17 |
| 15-44 years----- | 21 | 17 | 18 | 21 | 25 |
| 45-64 years----- | 39 | 38 | 41 | 38 | 41 |
| 65+ years----- | 54 | 48 | 55 | 55 | 65 |
| <u>Dental</u> | | | | | |
| All ages----- | 19 | 9 | 11 | 16 | 29 |
| Under 15 years----- | 10 | 2 | 4 | 8 | 18 |
| 15-44 years----- | 23 | 14 | 14 | 21 | 33 |
| 45-64 years----- | 25 | 12 | 17 | 22 | 38 |
| 65+ years----- | 15 | 8 | 13 | 18 | 31 |
| <u>Other</u> | | | | | |
| All ages----- | 11 | 11 | 11 | 9 | 13 |
| Under 15 years----- | 4 | 2 | 3 | 4 | 6 |
| 15-44 years----- | 9 | 8 | 7 | 8 | 11 |
| 45-64 years----- | 20 | 16 | 18 | 18 | 23 |
| 65+ years----- | 24 | 19 | 25 | 27 | 29 |

¹Includes persons with unknown incomes.

While the increase of health expense in accordance with income was somewhat irregular for the oldest age group, it was still present, with amounts per person for those with family income level over \$7,000 per year about twice that for older persons with family income less than \$2,000.

There was a comparatively small increase in hospital expenses with increased level of income for persons of all ages, despite a very definite relationship in this respect within most of the age groups (table 6). This is explained by the differences in age distribution in the several income intervals. The relatively large proportion of older persons in the low income group inflate the health expenditures of persons of all ages combined with low family incomes. Table 7 shows the comparison of expenditures between income groups when the effect of age discrepancies is removed.

Doctor Expenses

Doctor expenses constituted approximately one-third of all health expenses in each of the income groups. However, the costs per person per year varied for each income level and in each age group (table 6). As would be expected, doctor expenses increased with age because of the increasing number of chronic conditions and general health problems associated with aging. However, it was also apparent that with more income available, the utilization of doctors' services also increased.

Similar to the expense pattern noted for total expenses and for hospital expenses, females reported higher expenditures than males, with doctor expenses for females of childbearing age

Table 7. Health expenses per person per year, unadjusted and adjusted for age, by type of expense and family income: United States, July-December 1962

| Type of expense | Family income | | | |
|-------------------|---------------|---------------|---------------|----------|
| | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| <u>Hospital</u> | | | | |
| Unadjusted----- | 28 | 30 | 30 | 31 |
| Age adjusted----- | 23 | 29 | 32 | 34 |
| <u>Doctor</u> | | | | |
| Unadjusted----- | 36 | 38 | 41 | 52 |
| Age adjusted----- | 31 | 36 | 44 | 54 |
| <u>Medicine</u> | | | | |
| Unadjusted----- | 28 | 26 | 23 | 28 |
| Age adjusted----- | 21 | 24 | 25 | 30 |
| <u>Dental</u> | | | | |
| Unadjusted----- | 9 | 11 | 16 | 29 |
| Age adjusted----- | 9 | 11 | 17 | 29 |
| <u>Other</u> | | | | |
| Unadjusted----- | 11 | 11 | 9 | 13 |
| Age adjusted----- | 9 | 10 | 11 | 14 |

(\$59) accounting for the major differences when compared with expenses for males (\$33).

The sharp increase in the average amount paid to doctors by persons of all ages as the level of family income increased was further accentuated when the estimates were adjusted for differences in the age distribution in the income groups (table 7).

Medicine Expenses

Medicine expenditures were broadly defined to include all forms of medication prescribed by doctors as well as nonprescribed items such as tonics, ointments, vitamins, sedatives, and analgesics. Despite the broad definitions and the obvious problems of collecting data of this nature in a household interview, the amounts spent for medicines seemed to fall into a logical pattern when related to the age, sex, and income level of the population. Since respondents were asked to report expenses incurred during the year prior to interview, it is probable that many minor purchases were forgotten. This would lead to underestimates of the total costs of medications for the population as a whole. However, any overall underreporting probably did not seriously affect the relative differences between age, sex, and income groups.

Per capita medicine expenses increased with income level for the various age groups and also increased with advancing age. However, when persons of all ages are considered, the total per capita for the lowest income group is higher than the overall average, more than the middle income groups, and as high as that for those with family incomes of \$7,000 and over. This pattern may be explained by the differential age distribution in the various income levels. Thus, the existence of more older persons and their higher outlay for medicines at the lower income levels tended to establish higher average expenses. When the data were adjusted for age (table 7), the pattern of higher expenses for the higher income levels became quite definite.

Examination of the proportions of health expenses by type of expense in figure 3 indicates that about 20 percent of all expenses were for medicines. However, this proportion decreased from 25 percent for the lowest income group to about 18 percent for those with the highest income.

Dental Expenses

Dental services accounted for 15 percent of the total per capita personal health expenses over an average 12-month period. This proportion varied significantly with income level, from 8 percent for those within the lowest family income level to 19 percent for those with incomes over \$7,000 (fig. 3).

Data on per capita dental expenses are presented in table 6. Overall, persons with incomes of \$7,000 and over spent three times as much on dental care as the lowest income group (\$29 as compared with \$9).

Dental expenditures within each age group increased progressively with rise in family income. As expected, per capita expenditures when considered by age reached a peak at some point within the 45-64 year age group and then declined.

The most significant differences were those for children under age 15 with 83 percent of those of the lowest income group reporting no dental expenses compared with only 46 percent of those with family income over \$7,000 per year. Actual expenditures varied from a per capita of \$2 to \$18, respectively, for the lowest and highest income levels (table 6).

The rate of utilization of dental services, unlike medical services, is relatively low among persons 65 years and over in comparison with younger people. This results partly from the high percentage of persons over age 65 who have lost all their teeth—62.4 percent of those in the lowest income group and 55.4 percent of those with family incomes of \$7,000 or more (see table 5, page 9, Series B, No. 22). The proportions of edentulous persons in the next younger age group, 45-64, were 34.3 percent and 20.8 percent, respectively, in the lowest and highest income groups. The effect on dental expenditures of having no teeth may be realized by the fact that among persons over age 45 only 10 percent of those without teeth had seen a dentist in a year in contrast with 40 percent of those with teeth.

The rates for dental expenditure among older persons do not appreciably affect the rates for persons of all ages in the several income groups. For this reason, the age-adjusted rates shown in table 7 are essentially the same as the unadjusted

rates at all income levels. Examination of information on the volume of visits and the type of services sought (table 10, Section IV) indicates a usage pattern highly related to income level. Thus, those in higher income groups not only visited dentists more often but also utilized services for cleaning, examining, and straightening teeth to a greater extent. The theory that expenses for dental care are treated as optional health services by those with low income and education seems to be supported by these data. For those with family incomes of less than \$4,000, the small amount spent for dental care would provide for little more than emergencies or acute dental problems.

Other Expenses

This category of health expense is a combination of data based on several specific questions about "other" medical expenses. Experience in other surveys has demonstrated the necessity for specific questioning about certain categories of health expense which are often overlooked by the respondent but which represent a substantial amount of expense. For this reason, the questionnaire specifically inquired about expenses for eyeglasses, hearing aids, special nursing, physical therapy, speech therapy, corrective shoes, chiropractors' fees, special braces, trusses, wheel chairs, and artificial limbs. As a result, about 90 percent of the expenses reported in this category were associated with these specific items. Other expenses in this category were for ambulance service, emergency outpatient care, laboratory fees, and similar services. Expenses for eyeglasses accounted for approximately half of the amount reported in this category.

Per capita expenses for the special and other medical care were \$11 for all persons (table 2), representing about 9 percent of all personal health expenditures (fig. 3). As expected, these expenses increased with age regardless of income level and, in general, they also increased for each age group as income rose. When the age distribution within income intervals was taken

into account, the direct relationship of increased expense with high family income was emphasized in a pattern similar to that for other types of medical expense (tables 6 and 7).

SUMMARY

1. Based on data collected by the Health Interview Survey during the period July-December 1962, the average person in the United States spent \$129 per year for hospital care, medical and dental services, medicines, and other health-related services or products. Expenditures per person ranged from \$112 for people living in families with less than \$2,000 family income to \$153 per person for those in families with incomes of \$7,000 and over.
2. In each of the family income intervals—under \$2,000, \$2,000-3,999, \$4,000-6,999, and \$7,000 and over—amounts spent for doctors' services comprised about a third of the total health expenditures.
3. The amount of health expense (\$104) for a child living in a three-member family with an income of \$7,000 and over was five times greater than the amount spent for health care of a child in a family with seven or more members and an income of less than \$2,000.
4. About 18 percent of the population had no expense for health care or services during the 12-month period. This proportion varied from 11 percent among persons with family incomes of \$7,000 and over to 30 percent for persons with family incomes of less than \$2,000.
5. At all income levels, the amount of health expenses increased with advancing age and was greater for females than for males. In families with incomes of less than \$2,000 the amount of expense ranged from \$29 per person under 15 years of age to \$162 per person 65 years and older; with family incomes of \$7,000 or more, comparable amounts were \$80 per person under 15 years of age and \$308 per person 65 years of age and older.



VI. CHRONIC ILLNESS AND DISABILITY

PERSONS WITH ONE OR MORE CHRONIC CONDITIONS

One of the most comprehensive measures of the extent of chronic illness in the population is the proportion of persons with one or more chronic conditions. Based on data collected in the Health Interview Survey during the period July 1962-June 1963 and exclusive of persons in institutions, approximately 81 million persons in the United States, representing about 45 percent of the total population, were estimated to have at least one chronic condition. Included are those persons with comparatively minor conditions such as sinusitis or hay fever as well as those with heart conditions, diabetes, and other serious ailments.

Because of the cumulative nature of chronic illness in an aging population and the increase in

the probability of acquiring chronic illness with age, the percentage of persons with such conditions increases significantly with age from 19.5 percent among persons under 15 years to 81.2 percent among those 65 years and older. Therefore, to study the extent of chronic illness in relation to the amount of family income, it is necessary to consider specific age groups because the disproportionate number of older persons living in low income families unduly influences the estimates for persons of all ages.

From table 1 and figure 1 it is apparent that approximately one-fifth of the population under 15 years of age and less than one-half of those 15-44 years have one or more chronic conditions, but the amount of chronic illness does not vary by family income to any appreciable degree. However, in the age groups 45-64 years and 65 years and older the increase in the percentage of persons

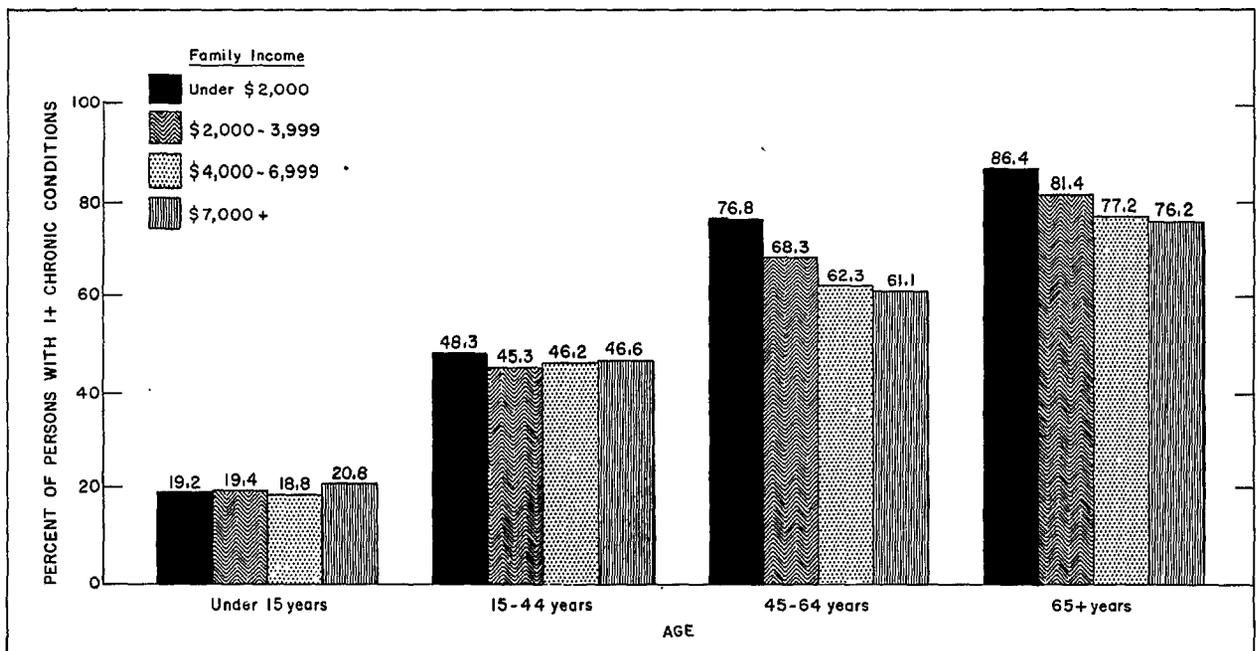


Figure 1. Percent of persons with one or more chronic conditions, by age and family income.

Table 1. Percent of the population with one or more chronic conditions, by family income, sex, and age: United States, July 1962-June 1963

| Sex and age | Family income | | | | |
|-----------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| <u>Both sexes</u> | | | | | |
| Percent of population | | | | | |
| All ages----- | 44.5 | 57.6 | 46.5 | 40.6 | 42.9 |
| Under 15 years----- | 19.5 | 19.2 | 19.4 | 18.8 | 20.8 |
| 15-44 years----- | 46.0 | 48.3 | 45.3 | 46.2 | 46.6 |
| 45-64 years----- | 64.3 | 76.8 | 68.3 | 62.3 | 61.1 |
| 65+ years----- | 81.2 | 86.4 | 81.4 | 77.2 | 76.2 |
| <u>Male</u> | | | | | |
| All ages----- | 43.2 | 54.9 | 45.3 | 39.9 | 42.3 |
| Under 15 years----- | 21.2 | 21.0 | 21.4 | 20.1 | 22.9 |
| 15-44 years----- | 43.9 | 45.2 | 42.5 | 44.7 | 44.9 |
| 45-64 years----- | 62.6 | 78.3 | 67.6 | 60.8 | 59.5 |
| 65+ years----- | 79.9 | 86.0 | 81.2 | 76.0 | 72.7 |
| <u>Female</u> | | | | | |
| All ages----- | 45.7 | 59.7 | 47.7 | 41.3 | 43.5 |
| Under 15 years----- | 17.7 | 17.5 | 17.3 | 17.4 | 18.6 |
| 15-44 years----- | 47.8 | 50.9 | 47.9 | 47.6 | 48.2 |
| 45-64 years----- | 65.9 | 75.9 | 68.8 | 63.8 | 62.9 |
| 65+ years----- | 82.2 | 86.7 | 81.7 | 78.2 | 79.2 |

¹Includes persons with unknown incomes.

ACTIVITY LIMITATION DUE TO CHRONIC CONDITIONS

with chronic illness as family income decreases is quite pronounced. Considering the progressive nature of many types of chronic illness, it is quite possible that in these age groups the illness reaches a stage where it interferes with usual activities and thus becomes a limiting factor in the amount of family income. It is also possible, however, that poorer diet, poorer environment, or poorer health habits associated with lower income were responsible for a higher prevalence of chronic morbidity. The pattern is consistent for males and females 45 years and over; however, for males the differential between the income groups of less than \$2,000 and \$7,000 or more is considerably greater than that for females.

Further evidence that chronic illness may be the causative agent in the relationship of low family income and increased prevalence of chronic conditions can be seen from data shown in table 2. The population in each of the groups by age and family income has been distributed into the following groups: persons with no chronic conditions, persons with one or more chronic conditions but with no limitation of usual activity due to the conditions, and persons with one or more chronic

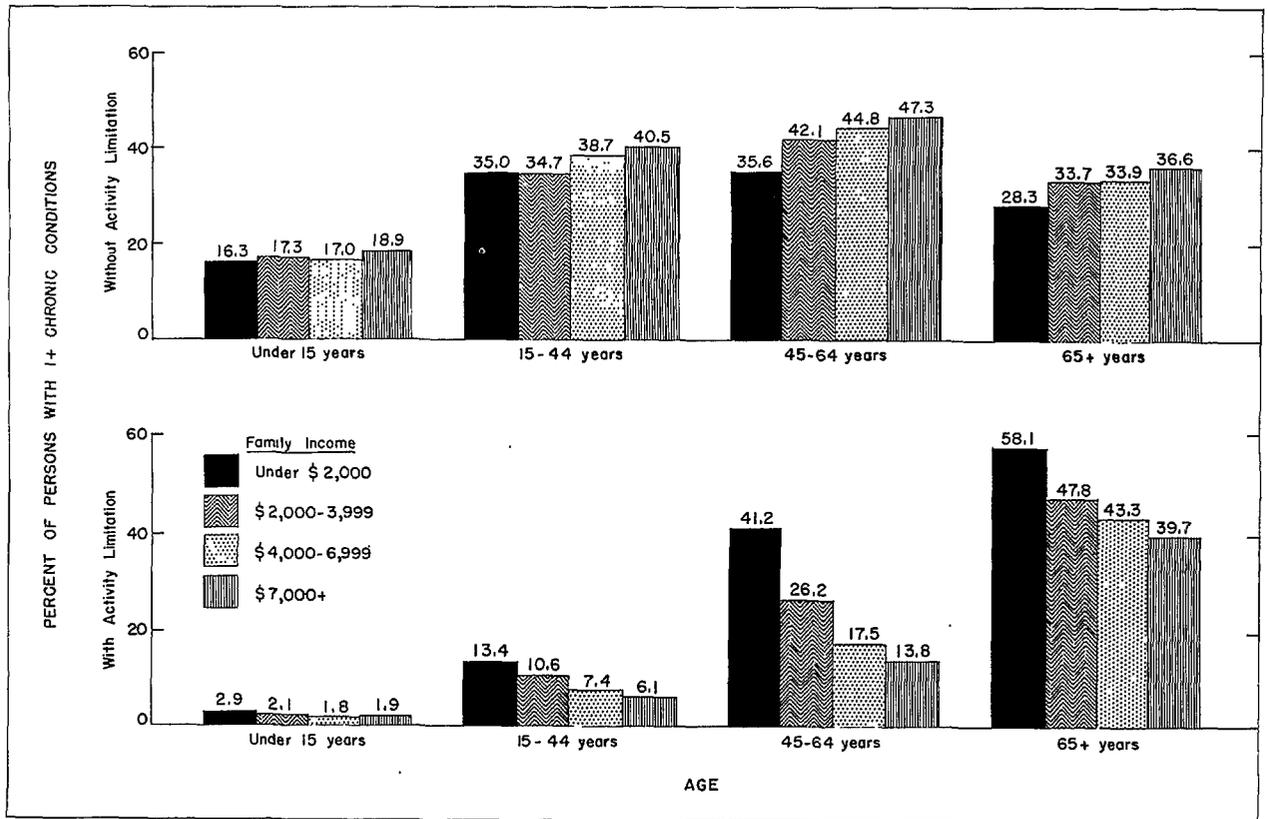


Figure 2. Percent of persons with one or more chronic conditions, with and without activity limitation, by age and family income.

conditions that cause limitation of activity. Limitation of activity is defined as inability to carry on the usual activity for one's age-sex group, such as working, keeping house, or going to school, restriction in the amount or kind of usual activity, or restriction in relation to other activities (i.e., recreational or civic interests). In short, limitation of activity is a measure of chronic disability resulting from illness.

When persons with chronic illness are classified according to the presence or absence of activity limitation due to their illness, an inverse relationship between amount of family income and the presence of chronic illness exists only among those whose chronic illness involves activity limitation (table 2). As a matter of fact, there is a tendency toward more of the nondisabling long-term illness in the higher income groups. This dual pattern is present among persons under age

45, but it becomes more definite in the older age groups where the prevalence of activity limitation is greatest. In fact, the high proportion of persons with activity limitation in the age groups over 45 is responsible for the patterns of income of persons with chronic illness shown in figure 1.

The smaller number of persons in the lower income groups whose chronic illness caused no limitation may be related to the method of data collection. Persons in low income groups make less use of medical care and diagnostic procedures and are therefore often not aware of the presence of a chronic ailment until it has some impact on their activities. On the other hand, a person of higher economic status is perhaps more likely to be aware of the presence of a chronic condition through medical checkup or treatment of minor symptoms before the condition results in activity limitation. Since a household respondent can be

Table 2. Total number and percent distribution of the population, by degree of chronic illness, according to age and family income: United States, July 1962-June 1963

| Age and degree of illness | Total number in population in thousands | Family income | | | | |
|-----------------------------------------|-----------------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| <u>All ages</u> | | Percent distribution | | | | |
| All persons----- | 183,146 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Persons with no chronic conditions----- | 101,662 | 55.5 | 42.4 | 53.5 | 59.4 | 57.1 |
| Persons with 1+ chronic conditions: | | | | | | |
| Without limitation of activity----- | 58,751 | 32.1 | 29.0 | 30.5 | 31.7 | 35.0 |
| With limitation of activity----- | 22,733 | 12.4 | 28.6 | 16.0 | 8.9 | 7.9 |
| <u>Under 15 years</u> | | | | | | |
| All persons----- | 58,241 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Persons with no chronic conditions----- | 46,893 | 80.5 | 80.8 | 80.6 | 81.2 | 79.2 |
| Persons with 1+ chronic conditions: | | | | | | |
| Without limitation of activity----- | 10,208 | 17.5 | 16.3 | 17.3 | 17.0 | 18.9 |
| With limitation of activity----- | 1,141 | 2.0 | 2.9 | 2.1 | 1.8 | 1.9 |
| <u>15-44 years</u> | | | | | | |
| All persons----- | 71,053 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Persons with no chronic conditions----- | 38,398 | 54.0 | 51.7 | 54.7 | 53.8 | 53.4 |
| Persons with 1+ chronic conditions: | | | | | | |
| Without limitation of activity----- | 26,958 | 37.9 | 35.0 | 34.7 | 38.7 | 40.5 |
| With limitation of activity----- | 5,697 | 8.0 | 13.4 | 10.6 | 7.4 | 6.1 |
| <u>45-64 years</u> | | | | | | |
| All persons----- | 36,986 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Persons with no chronic conditions----- | 13,194 | 35.7 | 23.2 | 31.7 | 37.7 | 38.9 |
| Persons with 1+ chronic conditions: | | | | | | |
| Without limitation of activity----- | 16,143 | 43.6 | 35.6 | 42.1 | 44.8 | 47.3 |
| With limitation of activity----- | 7,649 | 20.7 | 41.2 | 26.2 | 17.5 | 13.8 |
| <u>65+ years</u> | | | | | | |
| All persons----- | 16,866 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Persons with no chronic conditions----- | 3,178 | 18.8 | 13.6 | 18.6 | 22.8 | 23.8 |
| Persons with 1+ chronic conditions: | | | | | | |
| Without limitation of activity----- | 5,442 | 32.3 | 28.3 | 33.7 | 33.9 | 36.6 |
| With limitation of activity----- | 8,246 | 48.9 | 58.1 | 47.8 | 43.3 | 39.7 |

¹Includes persons with unknown incomes.

expected to report only those conditions of which he is aware and considers sufficiently important to report, it is not surprising that conditions which have had no impact on the individual were reported less frequently by persons of low economic status.

Persons with chronic illness are divided into two groups—those with and those without activity limitation—and are shown by family income and age in figure 2. It is quite evident that low family income is associated with a greater amount of chronic limitation of activity. There is little doubt that reduction of income because of restrictions in the amount or kind of work that can be performed and inability to work, leading in some instances to involuntary retirement, are major factors in this relationship.

In table 3, the percentage of persons with chronic illness causing activity limitation is shown for those 15 years and older by age, family size, and family income. For all of the age groups, the relationship of low family income and increased activity limitation is present regardless of family size. Among persons in the age groups 15-44 and 45-64 years, a somewhat smaller proportion of those living alone are limited in their activities than is the case for those in family groups, but there is no marked pattern of increase of chronic limitation with increase in family size. Such a pattern would, of course, indicate an increase of activity limitation with a decrease in per capita income. However, among persons 65 years and over, the pattern becomes well defined; this increase in the

Table 3. Percent of the population 15 years and older with one or more chronic conditions causing activity limitation, by family size and income: United States, July 1962-June 1963

| Age and family size | Family income | | | | |
|---------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| <u>15-44 years</u> | | | | | |
| All sizes----- | 8.0 | 13.4 | 10.6 | 7.4 | 6.1 |
| 1 member----- | 7.3 | 8.6 | 8.4 | 4.9 | 5.4 |
| 2 members----- | 9.4 | 17.9 | 11.3 | 8.8 | 5.6 |
| 3 members----- | 8.4 | 15.7 | 10.3 | 7.4 | 7.2 |
| 4+ members----- | 7.7 | 14.0 | 10.9 | 7.4 | 6.0 |
| <u>45-64 years</u> | | | | | |
| All sizes----- | 20.7 | 41.2 | 26.2 | 17.5 | 13.8 |
| 1 member----- | 24.6 | 40.4 | 16.9 | 11.9 | 13.1 |
| 2 members----- | 21.3 | 41.1 | 27.2 | 17.8 | 14.3 |
| 3 members----- | 19.7 | 43.5 | 29.6 | 18.5 | 12.9 |
| 4+ members----- | 19.1 | 41.2 | 27.6 | 17.8 | 14.1 |
| <u>65+ years</u> | | | | | |
| All sizes----- | 48.9 | 58.1 | 47.8 | 43.3 | 39.7 |
| 1 member----- | 45.8 | 52.9 | 32.5 | 20.3 | 19.6 |
| 2 members----- | 48.7 | 61.6 | 49.2 | 38.8 | 33.1 |
| 3 members----- | 51.7 | 65.8 | 53.4 | 52.8 | 45.9 |
| 4+ members----- | 52.9 | 73.7 | 58.9 | 53.1 | 46.2 |

¹Includes persons with unknown incomes.

percentage of limited persons 65 years and older with the increase in family size may be related to the amount of per capita income or it may be simply a reflection of the tendency of older persons, regardless of their income, to move into family groups as they become increasingly disabled.

MOBILITY LIMITATION DUE TO CHRONIC CONDITIONS

Mobility limitation is defined in the Health Interview Survey as the state of being confined to the house except in emergencies or of having difficulty or needing the help of others in getting around outside the house as a result of chronic

illness. Data on this measure of disability is not collected every year in the Health Interview Survey, but the most comprehensive estimates available show a definite correlation of increased mobility limitation with low family income (table 4). However, this correlation does not seem to be as strong among people over 65 years of age as it is in the main working ages. Even though the number of persons with mobility limitation makes up a comparatively small percentage of the population, approximately 5 million persons are limited to some extent, of which 1 million are confined to the house except in emergencies. It should be remembered that these figures are for persons who live in households; hence, they exclude the institutional population.

Table 4. Percent of the population with chronic mobility limitation, by family income and age: United States, July 1957-June 1961

| Age and degree of mobility limitation | Family income | | | | |
|---------------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| <u>All ages</u> | | | | | |
| With mobility limitation----- | 2.7 | 7.3 | 2.9 | 1.5 | 1.4 |
| Confined to the house----- | 0.6 | 1.4 | 0.6 | 0.3 | 0.3 |
| <u>Under 15 years</u> | | | | | |
| With mobility limitation----- | 0.3 | 0.4 | 0.3 | 0.3 | 0.3 |
| Confined to the house----- | 0.1 | * | * | * | * |
| <u>15-44 years</u> | | | | | |
| With mobility limitation----- | 0.8 | 1.7 | 1.0 | 0.6 | 0.5 |
| Confined to the house----- | 0.1 | * | 0.2 | 0.1 | * |
| <u>45-64 years</u> | | | | | |
| With mobility limitation----- | 3.7 | 8.9 | 4.4 | 2.6 | 1.7 |
| Confined to the house----- | 0.7 | 1.6 | 0.8 | 0.5 | 0.3 |
| <u>65+ years</u> | | | | | |
| With mobility limitation----- | 18.0 | 20.4 | 15.5 | 17.3 | 17.3 |
| Confined to the house----- | 4.1 | 4.1 | 3.7 | 4.2 | 4.4 |

¹Includes persons with unknown incomes.

CHRONIC CONDITIONS THAT CAUSE ACTIVITY LIMITATION

| Impairments | Impairment Codes ¹ |
|------------------------|-------------------------------|
| Visual impairments | X00-X05 |
| Orthopedic impairments | X70-X89 |

In the Health Interview Survey, data on chronic and acute conditions are based on replies to a series of "illness-recall" questions. Some of these questions, designed to assist the respondent in reporting illnesses as accurately and completely as possible, refer to illnesses occurring during the 2-week period prior to the week of interview. Other questions were designed to obtain information on conditions and impairments prevalent at the time of interview. Chronic conditions, which may be reported in response to either type of "recall" question, are defined as those described by the respondent in terms of one of the conditions on the Check List of Chronic Conditions or in terms of one of the impairments on the Check List of Impairments (Cards A and B, Appendix III), or as having been present for more than 3 months at the time of interview.

Prevalence estimates based on conditions reported in health interviews measure the presence of illness in terms of cases which the respondent is aware of, remembers, and considers sufficiently important to report. Conditions which have had some impact on the individual, such as those interfering with usual activities, are undoubtedly the ones of which the respondent is most aware and which are likely to be most consistently reported. The bias in the reporting of conditions causing no activity limitation according to family income was pointed out in the discussion of table 2. Therefore, the estimates for the selected condition categories shown in figure 3 and table 5 include only conditions which caused chronic limitation of activity. The equivalent International List Numbers or Classification of Impairment Code Numbers for the selected conditions are:

| <u>Chronic Conditions</u> | <u>ICD Code Numbers 1955 Revision</u> |
|-------------------------------|-------------------------------------------|
| Heart conditions | 410-443 |
| Arthritis and rheumatism | 720-727 |
| Mental and nervous conditions | 083, 300-324 |
| High blood pressure | 444-447 |

The conditions shown in table 5 represent the leading causes of activity limitation in the population. For each of these categories, the prevalence of conditions causing limitation decreases as the amount of family income increases. Heart conditions, arthritis and rheumatism, and orthopedic impairments not only have the highest prevalence of activity limiting cases but also tend to have the highest differential of prevalence among persons with family incomes of less than \$2,000 and those with incomes of \$7,000 or more.

Among the 81 million persons with one or more chronic illnesses, an estimated 22,733,000 had limited activity associated with 31,508,000 chronic conditions. This means that 38.6 percent of the limited persons had more than one condition causing the limitation. The percentage of persons with multiple conditions causing limitation decreased by the amount of family income from 59.8 percent among those with incomes of less than \$2,000 to 24.1 percent among those with incomes of \$7,000 or more (table 6).

This marked increase in the number of conditions causing limitation is not due to the disproportionate age distribution of the population by income since it is also noted from table 6 when only limited persons 65 years and older are considered.

Data on chronic illness and activity or mobility limitation associated with it by other demographic characteristics of the population and based on other data collection periods can be found in *Health Statistics* from the U.S. National Health Survey, Series B, Nos. 11, 31, 35, and 36.

PERSONS RECEIVING CARE AT HOME

During the fiscal year 1959, information was collected by the Health Interview Survey on persons receiving care at home. It was found that

¹Outline of Impairment Codes listed in Series B, No. 35, page 41.

Table 5. Selected chronic condition categories causing limitation of activity, and rates per 1,000 population, by age and family income: United States, July 1962-June 1963

| Condition category and age | Family income | | | | |
|-------------------------------------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| <u>Heart conditions</u> | | | | | |
| Rate per 1,000 population | | | | | |
| All ages----- | 20.3 | 53.8 | 26.6 | 12.6 | 11.9 |
| Under 15 years----- | 1.2 | * | * | * | * |
| 15-44 years----- | 5.4 | 10.3 | 5.1 | 5.8 | 4.1 |
| 45-64 years----- | 38.6 | 77.9 | 44.2 | 30.9 | 28.7 |
| 65+ years----- | 108.3 | 127.5 | 116.0 | 93.1 | 84.8 |
| <u>Arthritis and rheumatism</u> | | | | | |
| All ages----- | 18.2 | 59.3 | 22.9 | 9.9 | 8.7 |
| Under 15 years----- | 0.2 | * | * | * | * |
| 15-44 years----- | 4.2 | 6.2 | 5.1 | 3.6 | 4.0 |
| 45-64 years----- | 36.5 | 98.3 | 47.4 | 26.5 | 19.6 |
| 65+ years----- | 99.3 | 138.6 | 86.4 | 76.4 | 63.3 |
| <u>Mental and nervous conditions</u> | | | | | |
| All ages----- | 9.6 | 26.4 | 13.3 | 6.6 | 4.2 |
| Under 15 years----- | 0.8 | * | * | * | * |
| 15-44 years----- | 7.9 | 16.1 | 12.4 | 7.3 | 4.2 |
| 45-64 years----- | 18.6 | 51.3 | 24.8 | 13.7 | 8.2 |
| 65+ years----- | 27.6 | 40.2 | 28.0 | 18.1 | 10.3 |
| <u>High blood pressure</u> | | | | | |
| All ages----- | 7.6 | 23.8 | 9.2 | 4.1 | 3.9 |
| Under 15 years----- | * | * | * | * | * |
| 15-44 years----- | 2.3 | 6.3 | 3.5 | 1.7 | 1.4 |
| 45-64 years----- | 13.8 | 32.0 | 17.8 | 9.5 | 8.3 |
| 65+ years----- | 42.3 | 57.0 | 33.5 | 35.8 | 35.3 |
| <u>Visual impairments</u> | | | | | |
| All ages----- | 6.8 | 23.4 | 9.0 | 3.4 | 2.7 |
| Under 15 years----- | 0.9 | * | * | * | * |
| 15-44 years----- | 1.9 | 6.0 | 3.1 | 1.4 | 0.8 |
| 45-64 years----- | 7.5 | 22.1 | 10.6 | 4.7 | 3.6 |
| 65+ years----- | 46.5 | 62.4 | 40.6 | 35.5 | 32.3 |
| <u>Orthopedic impairments, except paralysis and absence</u> | | | | | |
| All ages----- | 23.5 | 54.4 | 28.1 | 18.1 | 14.9 |
| Under 15 years----- | 1.8 | * | * | 1.7 | * |
| 15-44 years----- | 21.5 | 35.3 | 28.2 | 20.1 | 17.0 |
| 45-64 years----- | 43.0 | 94.1 | 51.5 | 38.6 | 25.6 |
| 65+ years----- | 63.9 | 89.1 | 54.5 | 48.8 | 40.0 |

¹Includes persons with unknown incomes.

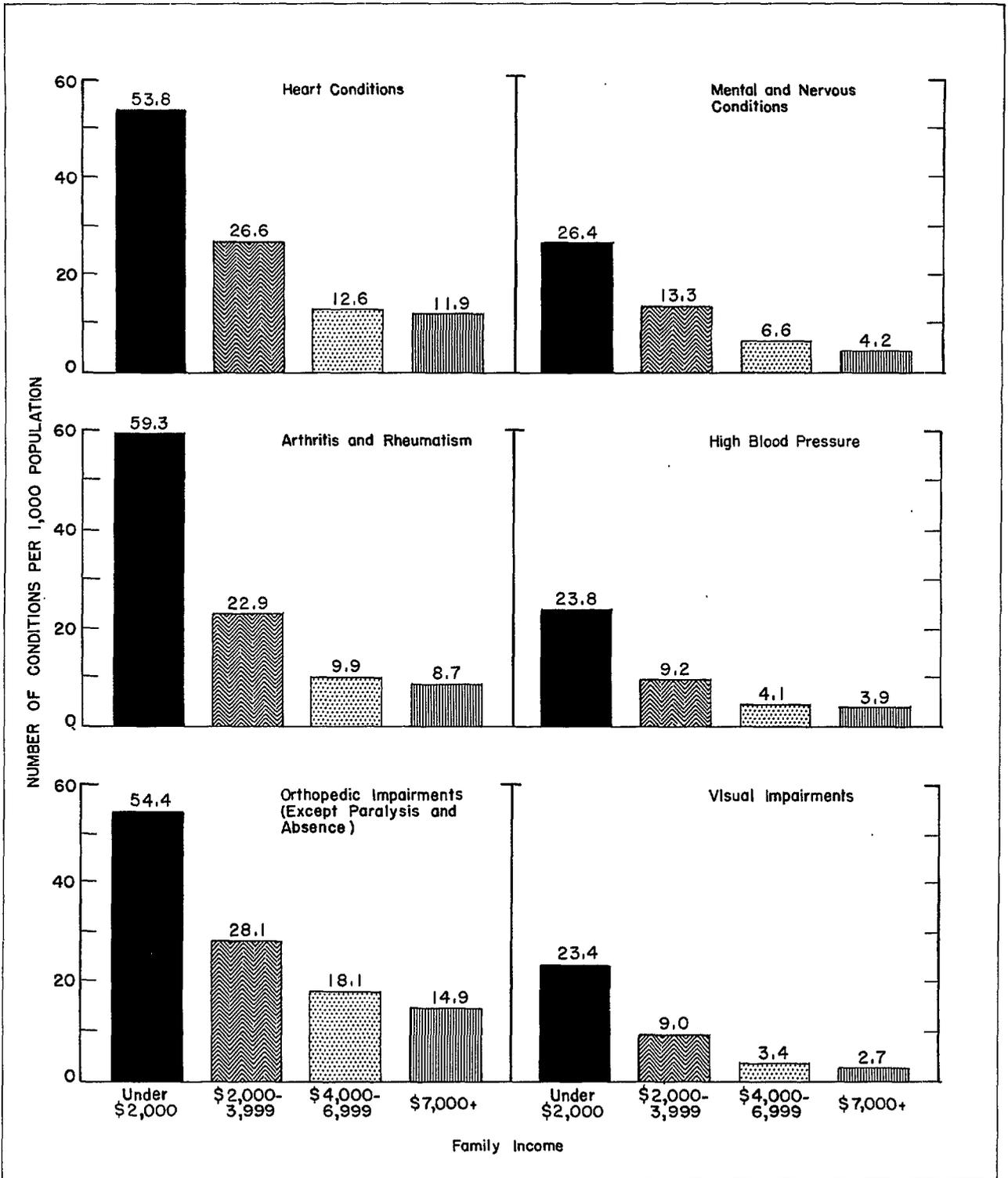


Figure 3. Number of conditions causing activity limitation per 1,000 population, by selected condition categories and family income.

Table 6. Number of chronic conditions causing activity limitation, number of limited persons, and percent of limited persons reporting more than one condition causing limitation, by family income and age: United States, July 1962-June 1963

| Item | Family income | | | | |
|---------------------------------------------------------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| <u>All ages</u> | | | | | |
| Number of conditions causing activity limitation in thousands ----- | 31,508 | 10,335 | 7,040 | 7,053 | 5,567 |
| Number of limited persons in thousands ----- | 22,733 | 6,466 | 5,192 | 5,485 | 4,486 |
| Percent of limited persons with more than one condition causing limitation----- | 38.6 | 59.8 | 35.6 | 28.6 | 24.1 |
| <u>65+ years</u> | | | | | |
| Number of conditions causing activity limitation in thousands ----- | 12,010 | 5,618 | 2,924 | 1,656 | 1,162 |
| Number of limited persons in thousands ----- | 8,246 | 3,508 | 2,096 | 1,268 | 922 |
| Percent of limited persons with more than one condition causing limitation----- | 45.6 | 60.1 | 39.5 | 30.6 | 26.0 |

¹Includes persons with unknown incomes.

approximately 1 million persons (about seven persons per 1,000 population) were incapacitated to a degree that required the services—either full-time or part-time—of a household member, a nurse, or other attendant. In the population with family incomes of less than \$4,000, about 641,000 persons were receiving care at home—a rate of 10.4 per 1,000 population. This is about three times the rate among persons with incomes of \$4,000 or more. In this group the 362,000 persons receiving care comprised a rate of 3.7 per 1,000 population.

Since these estimates of personal care in the home cover only the civilian noninstitutional population of the United States, all of the nursing services provided in hospitals, nursing homes, and institutions for the chronically ill are excluded. Infants were not included unless they required more than normal infant care because of illness or handicap.

From table 7 it is apparent that the age distribution of persons receiving care at home differs markedly by family income. Among those with incomes of less than \$4,000, about 1 person out of 6 receiving care at home was under 45 years of age, while this ratio was about 1 person out of 3 for those with incomes of \$4,000 or more.

About 62 percent of the care recipients in the lower income bracket were persons 65 years and older as compared with 50 percent of those in families with incomes of \$4,000 or more (fig. 4). For those requiring constant care, as well as those needing part-time care, a significantly higher percentage of those living in low-income families were 65 years or older. One explanation might be that there is a tendency in higher income families to provide institutional care for older persons and to keep younger persons needing care in the home, while the reverse situation may be typical of low-income families.

Table 7. Percent distribution of persons receiving care at home, by type of care and age according to family income: United States, July 1958-June 1959

| Type of care and age | Family income | | |
|-----------------------------------------|--------------------------|---------------|----------|
| | All incomes ¹ | Under \$4,000 | \$4,000+ |
| <u>All persons</u> | | | |
| All ages----- | 100.0 | 100.0 | 100.0 |
| Under 45 years----- | 21.7 | 15.6 | 33.4 |
| 45-64 years----- | 19.9 | 22.3 | 16.9 |
| 65+ years----- | 58.3 | 62.2 | 49.7 |
| <u>Persons receiving constant care</u> | | | |
| All ages----- | 100.0 | 100.0 | 100.0 |
| Under 45 years----- | 23.1 | 15.8 | 36.8 |
| 45-64 years----- | 20.3 | 22.9 | 15.5 |
| 65+ years----- | 56.6 | 61.3 | 47.3 |
| <u>Persons receiving part-time care</u> | | | |
| All ages----- | 100.0 | 100.0 | 100.0 |
| Under 45 years----- | 20.1 | 15.4 | 28.2 |
| 45-64 years----- | 19.5 | 21.6 | 18.3 |
| 65+ years----- | 60.7 | 63.4 | 53.5 |

¹Includes persons with unknown incomes.

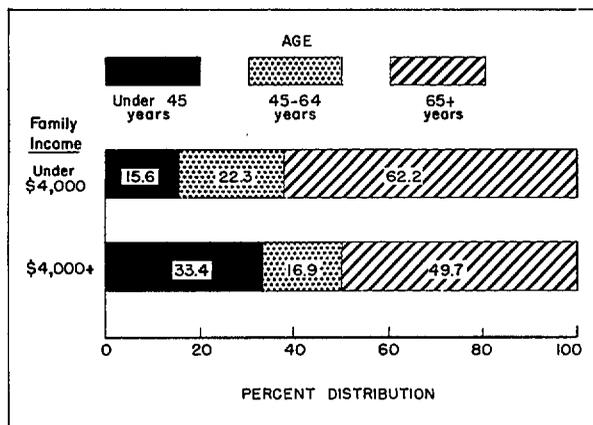


Figure 4. Percent distribution of persons receiving care at home, by age and family income.

For persons receiving constant care, 87 percent of those in families with incomes of less than \$4,000 were cared for by a household member as compared with 75 percent in families with incomes of \$4,000 or more (table 8). The situation where the services of a household member are needed to provide personal care would be expected to reduce the income-producing capacity of the family; on the other hand, securing the services of a person outside the household may not affect the family income but nevertheless imposes a financial burden. Where part-time care was needed, a high percentage was provided by household members regardless of the amount of family income. Further information on persons receiving care in the home can be found in *Health Statistics* from the U.S. National Health Survey, Series B, No. 28.

Table 8. Percent distribution of persons receiving care at home, by type of care and person providing care, according to family income: United States, July 1958-June 1959

| Type of care and person providing care | Family income | | |
|----------------------------------------|--------------------------|---------------|----------|
| | All incomes ¹ | Under \$4,000 | \$4,000+ |
| | Percent distribution | | |
| All persons----- | 100.0 | 100.0 | 100.0 |
| Household members----- | 82.6 | 88.0 | 82.3 |
| Nurse----- | 8.4 | 4.8 | 9.7 |
| Other----- | 9.0 | 7.2 | 8.0 |
| Persons receiving constant care----- | 100.0 | 100.0 | 100.0 |
| Household members----- | 77.2 | 87.1 | 74.5 |
| Nurse----- | 12.0 | 6.3 | 14.5 |
| Other----- | 10.8 | 6.6 | 10.9 |
| Persons receiving part-time care----- | 100.0 | 100.0 | 100.0 |
| Household members----- | 90.0 | 89.0 | 94.4 |
| Nurse----- | 3.6 | 3.1 | 2.1 |
| Other----- | 6.5 | 7.9 | 3.5 |

¹Includes persons with unknown incomes.

USE OF HEARING AIDS, BRACES, AND ARTIFICIAL LIMBS

A supplementary topic covered on the questionnaire used by the Health Interview Survey during fiscal year 1959 was the use of special appliances and aids. Data on these kinds of appliances which are generally used in the correction or partial correction of chronic impairment have been included in this report.

In the computation of comparative rates by family income, percentages have been based on the number of persons with the specific kind of impairment for which the appliance is appropriate (table 9). Since the data on impairments were obtained independently of the appliance information, there was no assurance that all of the persons with hearing impairment could benefit from the use of a hearing aid or that all orthopedic impairments could be corrected by the use of a brace. These

base populations have been used merely because they seemed more appropriate than the total population.

The rate for persons using hearing aids among families with incomes of less than \$4,000 is higher than that for persons in families with incomes of \$4,000 or more because of the disproportionate number of older persons, a group with high prevalence of hearing impairments, in the lower income group. When the percentages shown are age adjusted, they are 21.3 percent with aids in the lower income group and 23.8 percent among persons with family incomes of \$4,000 or more. Age adjustment makes no appreciable change in the rates shown in table 9 for the use of braces and artificial limbs, because absence of major extremities and orthopedic impairments are more evenly distributed by age in the population.

For more information on the use of corrective appliances, the reader is referred to *Health Statistics* from the U.S., National Health Survey, Series B, No. 27.

Table 9. Comparison of persons with hearing aids, artificial limbs, and braces, by family income: United States, July 1958-June 1959

| Characteristic | Family income | | |
|---------------------------------------------------------|--------------------------|---------------|----------|
| | All incomes ¹ | Under \$4,000 | \$4,000+ |
| Persons with hearing aids in thousands ----- | 1,161 | 648 | 510 |
| Persons with hearing impairments in thousands ----- | 5,774 | 2,829 | 2,478 |
| Percent with hearing aids----- | 20.1 | 22.9 | 20.6 |
| Persons with artificial limbs in thousands ----- | 139 | 82 | 58 |
| Persons with absence of major extremities in thousands | 274 | 161 | 90 |
| Percent with artificial limbs----- | 50.7 | 50.9 | 64.4 |
| Persons with arm, leg, and other braces in thousands -- | 695 | 306 | 389 |
| Persons with orthopedic impairments in thousands ----- | 7,645 | 3,637 | 3,513 |
| Percent with arm, leg, or other braces----- | 9.1 | 8.4 | 11.1 |

¹Includes persons with unknown incomes.

SUMMARY

The following statements describe the variations in the amount and kinds of chronic illness and disability in the civilian, noninstitutional population of the United States in relation to amount of family income:

1. When persons with chronic illness are considered according to the presence or absence of activity limitation due to their illness, the inverse relation between amount of family income and the presence of chronic illness exists only among those whose illness involves limitation of usual activities. Among persons with family incomes of less than \$2,000, about 29 percent have chronic limitation of activity; and as income increases, the percent with chronic limitation of activity decreases to the degree that only 8 percent with family incomes of \$7,000 or more are so limited.
2. There is a definite association of increased mobility limitation (i.e., inability to move about freely) with low family income. About 7 percent of the persons with family incomes of less than \$2,000 have

some degree of mobility limitation, while slightly more than 1 percent of those with incomes of \$7,000 or more are limited in their ability to move around.

3. Heart conditions, arthritis and rheumatism, and orthopedic impairments—the leading causes of activity limitation in the population—not only lead to a high prevalence of activity limitation among persons with family incomes under \$2,000, but also tend to have a high differential of activity-restricting conditions among persons with family incomes of less than \$2,000 and those with incomes of \$7,000 or more.
4. The percent of persons with more than one chronic condition causing limitation decreased from 59.8 percent among those with incomes of less than \$2,000 to 24.1 percent among those with incomes of \$7,000 or more.
5. The rate of 10.4 persons receiving care at home per 1,000 population with less than \$4,000 family income was about three times the rate of 3.7 per 1,000 population with family incomes of \$4,000 or more.



VII. ACUTE CONDITIONS

During the 12 months ending with June 1963, an estimated 401 million acute illnesses or injuries occurred among the civilian population not residing in institutions. The incidence of acute conditions was equivalent to a rate of 218.8 conditions per 100 persons per year. Each of these conditions required the individual to reduce his usual activities for at least 1 day or seek medical attendance or take both of these actions.

It can be seen by examining the unadjusted incidence rates for all acute conditions, shown in table 1, that the upper income groups have somewhat higher rates than do the lower income categories. However, when these rates are adjusted to the age distribution of the total civilian, non-institutional population during this period, the rate differences are reduced. In fact, the rate for the \$7,000 and over group is the only rate that is significantly greater than any of the other rates.

The greater incidence of infective and parasitic diseases, respiratory conditions, and injuries was responsible for the high rate of acute conditions among persons with a family income of \$7,000 or more (table 1). On the other hand, the lowest income group had the highest rate of digestive system conditions and of illnesses reported as influenza.

The income differentials in the rates for the infective and parasitic disease group may be partially attributed to the use of the term the "virus." This term has been used in various parts of the United States without additional qualifying adjectives (see Series B, No. 34). When the term has been qualified as "viral cold," "viral flu," etc., the appropriate respiratory diagnostic code numbers have been assigned. However, whenever the "virus" has been reported as such, it has been assigned to a category in the infective and parasitic disease group. The rates for the "virus" and the effect on the rates for infective and parasitic diseases in the various income groups when the "virus" is excluded from the disease category are shown below.

This information indicates that the exclusion of the rates for the "virus" from the infective and parasitic disease group substantially reduces the rate differences among the income categories. It is possible that the lower income groups substitute some other diagnostic terminology for this class of conditions. They may be reported as respiratory illness (e.g., a cold, flu, or gripe),

| Disease category | Family income | | | |
|----------------------------------------------------------------------|-----------------------------------------|---------------|---------------|----------|
| | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| | Incidence rate per 100 persons per year | | | |
| Infective and parasitic diseases----- | 14.3 | 16.3 | 27.8 | 30.6 |
| The "virus," n.o.s.----- | 5.1 | 7.1 | 13.3 | 19.1 |
| Infective and parasitic diseases, excluding the "virus," n.o.s.----- | 9.3 | 9.2 | 14.5 | 11.5 |

NOTE: n.o.s.--not otherwise specified.

digestive system disorders (e.g., diarrhea), or some other term. If reported as digestive disorders, this category may account for some of the higher rates in this diagnostic group among persons of low income (table 1).

There is relatively little difference in the incidence rates of injuries among income groups, although the rate for the \$7,000 and over group is significantly greater than the rate for those with a family income of less than \$4,000.

Table 1. Comparison of unadjusted with age-adjusted¹ incidence of acute conditions per 100 persons per year, by family income and condition group: United States, July 1962-June 1963

| Condition group | Family income | | | | |
|--------------------------------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ² | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| Incidence of acute conditions per 100 persons per year | | | | | |
| <u>All acute conditions</u> | | | | | |
| Unadjusted----- | 218.8 | 203.5 | 201.4 | 224.7 | 236.6 |
| Age-adjusted----- | | 215.9 | 204.5 | 216.2 | 232.5 |
| <u>Infective and parasitic diseases</u> | | | | | |
| Unadjusted----- | 24.4 | 14.3 | 16.3 | 27.8 | 30.6 |
| Age-adjusted----- | | 17.2 | 16.7 | 25.9 | 30.4 |
| <u>Respiratory conditions</u> | | | | | |
| Unadjusted----- | 127.2 | 119.3 | 118.3 | 130.6 | 136.8 |
| Age-adjusted----- | | 126.6 | 119.9 | 124.8 | 134.3 |
| Upper respiratory conditions | | | | | |
| Unadjusted----- | 77.1 | 64.7 | 71.6 | 79.0 | 86.5 |
| Age-adjusted----- | | 69.0 | 72.3 | 74.7 | 85.3 |
| Influenza | | | | | |
| Unadjusted----- | 45.6 | 49.4 | 42.2 | 47.2 | 45.7 |
| Age-adjusted----- | | 53.2 | 43.0 | 46.0 | 44.3 |
| Other respiratory conditions | | | | | |
| Unadjusted----- | 4.5 | 5.2 | 4.5 | 4.3 | 4.6 |
| Age-adjusted----- | | 4.5 | 4.6 | 4.0 | 4.6 |
| <u>Digestive system conditions</u> | | | | | |
| Unadjusted----- | 11.2 | 16.3 | 12.9 | 10.6 | 8.7 |
| Age-adjusted----- | | 17.3 | 13.1 | 10.5 | 8.5 |
| <u>Injuries</u> | | | | | |
| Unadjusted----- | 27.7 | 25.6 | 25.0 | 27.1 | 30.9 |
| Age-adjusted----- | | 25.8 | 25.2 | 26.8 | 30.3 |
| <u>All other acute conditions</u> | | | | | |
| Unadjusted----- | 28.4 | 28.0 | 28.8 | 28.6 | 29.5 |
| Age-adjusted----- | | 29.0 | 29.5 | 28.3 | 29.0 |

¹ Adjusted to the age distribution of the total civilian, noninstitutional population of the United States.

² Includes persons with unknown incomes.

NOTE: Excluded from these statistics are all conditions involving neither restricted activity nor medical attention.

Figure 1 shows the age-specific incidence rates for the four income groups. The increase in incidence rates shown in table 1 for the unadjusted rates is confined to the under 15 age group. The gradual decrease in the incidence of acute conditions with advancing age, regardless of amount of family income, may reflect an increased immunity to acute infections acquired with age, as well as a tendency to attribute acute episodes to existing chronic conditions.

The rise in the incidence rate by income for persons under age 15 reflects both the increased

use of medical facilities and the reduction of usual activities among the higher income groups (table 2). For both medically attended and activity-restricting acute conditions, the rate for the upper income levels was the highest. The data on the rates of physician visits (table 2, Section IV) also show an increase in the number of physician visits per person under age 15 as income rises. Persons in higher income levels are probably less reluctant to take their children to a doctor for acute illnesses and injuries, as evidenced by the sharp increase in visits to physicians' offices for chil-

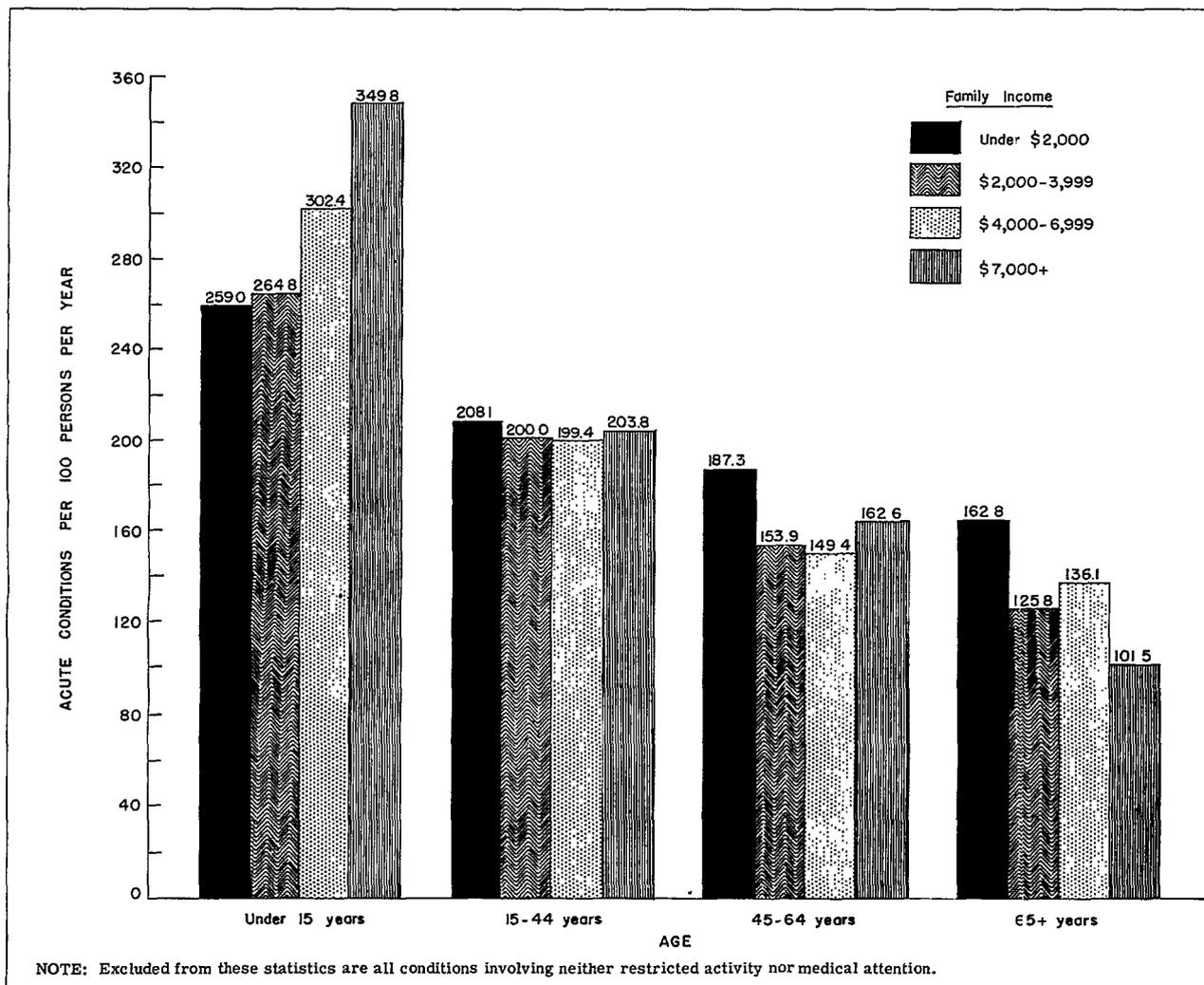


Figure 1. Incidence of acute conditions per 100 persons per year, by family income and age.

dren under 15 living in high income families (table 3, Section IV).

Among persons in age groups 15 years and over there is no distinct pattern in rates of medically attended conditions by income. The rate for the lowest income group closely approximates those of the other income intervals. Perhaps the nature of the illnesses or injuries are such that medical attention is unavoidable, or the care is furnished by some agency—e.g., workmen's compensation, clinic services, or industry health unit.

In each of the age groups of 15 years and over, the rate of activity-restricting conditions was highest in the low income group. The difference

in rate by income was notable in the upper age groups. Perhaps the nature of usual activities in the lowest income group is so strenuous that acute illnesses and injuries cause these people to abstain from these activities while ill. This may also account for the relative increase in medically attended conditions.

A further refinement of the incidence data shown in table 2 is that of limiting the rates to the cases which involved one or more days in bed, that is, the bed-disabling acute conditions. An acute illness or injury which has required one or more days in bed will be remembered and is more likely to be reported during the interview than one

Table 2. Incidence of acute conditions per 100 persons per year, by measures of impact of illness and age: United States, July 1962-June 1963

| Measures of impact of illness and age | Family income | | | |
|----------------------------------------|---------------|---------------|---------------|----------|
| | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| <u>Medically attended conditions</u> | | | | |
| All ages----- | 125.4 | 133.0 | 153.2 | 160.2 |
| Under 15 years----- | 145.5 | 175.8 | 204.6 | 234.0 |
| 15-44 years----- | 135.0 | 128.9 | 134.6 | 135.8 |
| 45-64 years----- | 109.1 | 99.5 | 104.4 | 115.8 |
| 65+ years----- | 110.2 | 92.3 | 108.0 | 82.1 |
| <u>Activity-restricting conditions</u> | | | | |
| All ages----- | 152.0 | 143.4 | 159.6 | 174.1 |
| Under 15 years----- | 203.3 | 190.1 | 223.8 | 269.7 |
| 15-44 years----- | 150.7 | 144.8 | 139.7 | 147.7 |
| 45-64 years----- | 144.2 | 109.4 | 98.3 | 107.8 |
| 65+ years----- | 114.9 | 80.2 | 73.8 | 68.9 |
| <u>Bed-disabling conditions</u> | | | | |
| All ages----- | 98.5 | 85.2 | 100.8 | 108.5 |
| Under 15 years----- | 137.4 | 108.1 | 137.9 | 162.2 |
| 15-44 years----- | 111.1 | 93.6 | 90.0 | 97.0 |
| 45-64 years----- | 80.1 | 63.2 | 66.3 | 65.7 |
| 65+ years----- | 64.9 | 41.5 | 41.5 | 45.4 |

having less impact. Thus, the pattern of incidence rates by income level should be less influenced by response bias.

Therefore, it is of interest that the rates of bed-disabling conditions follow essentially the same pattern of distribution as shown in figure 1, with these two exceptions. (1) For children under 15 years of age, the rate of bed-disabling conditions for the lowest income level is approximately equal to that for the \$4,000-6,999 level with a substantial decline in rate in the intervening category. Perhaps medical care obtained from outside the family's resources is made available to these persons but is not available to persons with a family income of more than \$2,000. (2) Among persons 65 years of age and over, the incidence rate does not decline sharply for the \$7,000 and over class.

SUMMARY

1. The relationship of income and the incidence of acute conditions, causing restricted activity or medical attention, differs by age.
2. Among children under age 15, the incidence rate of acute conditions increases with amount of family income.
3. From age 15 through 44, the incidence rates of acute conditions are influenced least by family income.
4. Among persons 45 years and older, the incidence rates of all acute conditions, as well as the rates for medically attended, activity-restricting, or bed-disabling conditions, are higher for those with family income of less than \$2,000 than for any of the other income groups.

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VIII. DISABILITY DAYS

During the year July 1962-June 1963, the civilian population, exclusive of those living in institutions, experienced an estimated 3 billion days of restricted activity, or an average of 16 days per person per year (table 1). A day of restricted activity is one on which a person is forced to reduce his usual activities for the whole of that day because of illness or injury. A restricted-activity day may also be a bed-disability day if the person spent all or most of that day in bed as a result of illness or injury. It may also be counted as time lost from work if a currently employed person (see Appendix II for definition) is absent from work for a day due to illness or injury. Also, a day of restricted activity may be

a school-loss day if a child aged 6 through 16 is absent from school because of illness or injury. A person may cut down on his usual activities and not spend the day in bed or lose time from work or school; such a disability causes a restricted-activity day but does not meet the requirements of any other form of short-term disability.

The rates for restricted-activity days, bed-disability days, and work-loss days per person per year were lower as the amount of family income increased (fig. 1). However, the decline in rates was not constant among income groups. Between the two lowest groups, the difference in rates for restricted-activity days was about 11 days. Between the two upper income groups shown,

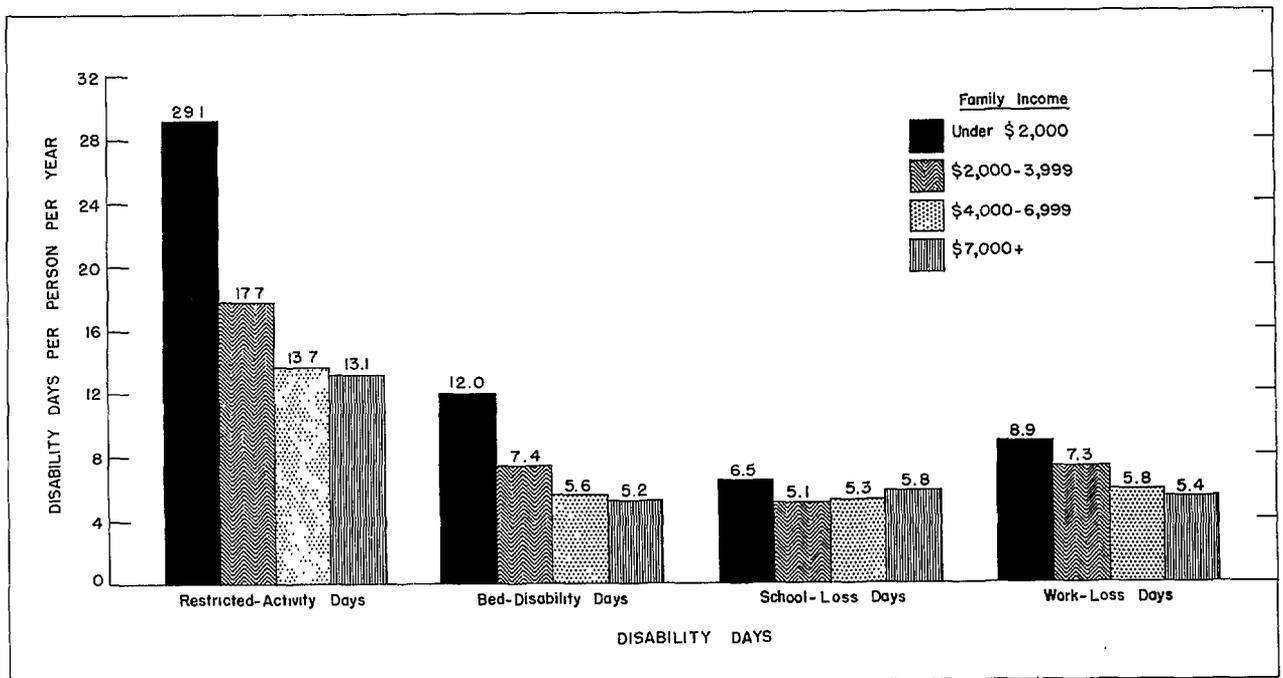


Figure 1. Disability days per person per year, by type and family income.

the difference was approximately 1 day. A similar pattern is noted for the bed-disability and work-loss day rates. The rates by sex for these three types of disability days were distributed similarly by income although, in most instances, the rates for females exceeded those for males. The inverse relationship and disproportionate distribution in rates by income have been shown in the following National Health Survey reports: Series B, Nos. 10

and 29; Series C, No. 7; and Series 10, Nos. 2 and 4.

The rates for school-loss days for the period July 1962-June 1963 present a different distribution—a comparatively high rate for the lowest income group, a decline for the two middle groups, and an increase in rate for the highest income group (table 1). However, this distribution differs somewhat from that shown in previous reports.

Table 1. Disability days per person per year, by family income, type of disability day, and sex: United States, July 1962-June 1963

| Type of disability day and sex | Family income | | | | |
|-------------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| <u>Restricted activity</u> | | | | | |
| Disability days per person per year | | | | | |
| Both sexes----- | 16.2 | 29.1 | 17.7 | 13.7 | 13.1 |
| Male----- | 14.5 | 28.4 | 16.5 | 11.9 | 11.7 |
| Female----- | 17.8 | 29.7 | 18.9 | 15.5 | 14.5 |
| <u>Bed disability</u> | | | | | |
| Both sexes----- | 6.6 | 12.0 | 7.4 | 5.6 | 5.2 |
| Male----- | 5.7 | 11.6 | 6.8 | 4.5 | 4.5 |
| Female----- | 7.5 | 12.3 | 7.9 | 6.7 | 6.0 |
| <u>School loss</u> | | | | | |
| Both sexes----- | 5.6 | 6.5 | 5.1 | 5.3 | 5.8 |
| Male----- | 5.3 | 7.0 | 4.8 | 4.7 | 5.6 |
| Female----- | 5.9 | 5.9 | 5.4 | 5.9 | 6.0 |
| <u>Work loss</u> | | | | | |
| Both sexes----- | 6.1 | 8.9 | 7.3 | 5.8 | 5.4 |
| Male----- | 5.9 | 10.2 | 7.6 | 5.4 | 4.9 |
| Female----- | 6.6 | 7.5 | 6.8 | 6.6 | 6.5 |

¹Includes persons with unknown incomes.

The following table shows the rates of school-loss days per person per year by income group for July 1962-June 1963 and for 3 earlier years:

| Year | Family income | | | |
|------------------------|---------------|---------------|---------------|----------|
| | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| July 1962-June 1963--- | 6.5 | 5.1 | 5.3 | 5.8 |
| July 1961-June 1962--- | 5.4 | 6.4 | 5.7 | 5.7 |
| July 1960-June 1961--- | 5.2 | 4.9 | 4.8 | 4.8 |
| July 1957-June 1958--- | 8.5 | 9.1 | 8.4 | 7.8 |

The Asian influenza epidemic in the October-December quarter of 1957 was undoubtedly responsible for the high rates of time lost from school during July 1957-June 1958. Fluctuation in rates from year to year primarily results from acute illnesses and injuries which cause many of the disability days experienced by school-age children. These data suggest that the rate distribution for the period July 1962-June 1963 may

have been influenced by sampling variability to account for the increased rates for the lowest and highest income groups.

The age distribution of the population in each family income group is responsible for some part of the inverse relationship between the disability day rates and family income. Examination of table 1, Section I, shows that about 47 percent of the persons with family income under \$2,000 were 45 years of age or older. Comparable percentages of persons in this age interval for the other income groups were 33 percent in the \$2,000-3,999 group, 23 percent in the \$4,000-6,999 group, and 26 percent in the \$7,000 and over group. The disability day reports (for example, Series 10, No. 4) show that as age increases the rate of disability also rises. Therefore, if the age distribution of persons in the income groups differs, one may also expect a differential in the rates for all ages combined. By comparing the unadjusted and adjusted rates shown in table 2, it can be seen that the differences in rates by income are not entirely removed by age adjustment but that they are substantially reduced. Much of this reduction is due to the

Table 2. Comparison of unadjusted with age-adjusted¹ rates per person per year, for restricted-activity days, bed-disability days, and work-loss days, by family income: United States, July 1962-June 1963

| Disability day | Family income | | | |
|----------------------------|---------------|---------------|---------------|----------|
| | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| <u>Restricted activity</u> | | | | |
| Unadjusted----- | 29.1 | 17.7 | 13.7 | 13.1 |
| Age-adjusted----- | 22.8 | 17.1 | 14.8 | 13.7 |
| <u>Bed disability</u> | | | | |
| Unadjusted----- | 12.0 | 7.4 | 5.6 | 5.2 |
| Age-adjusted----- | 9.7 | 7.0 | 5.9 | 5.6 |
| <u>Work loss</u> | | | | |
| Unadjusted----- | 8.9 | 7.3 | 5.8 | 5.4 |
| Age-adjusted----- | 8.6 | 7.3 | 5.9 | 5.5 |

¹ The restricted-activity and bed-disability day rates have been adjusted to the age distribution of the total civilian, noninstitutional population of the United States. The work-loss rate has been adjusted to the age distribution of the total currently employed population.

decreased rate of disability in the lowest income group. Nevertheless, even when age differences between income groups are accounted for, the lowest income group has substantially greater rates of disability days.

Disability days are associated with acute illnesses and injuries as well as with chronic conditions. The average acute condition during July 1962-June 1963 caused 4 days of restricted activity and about 2 days of bed disability. Since there was an annual average of 2.2 acute illnesses and injuries per person during the same period, this kind of illness made a substantial contribution (about 9 days of activity restriction and 4 bed-days) to the person-disability rates of 16 days of reduced activity and 7 days of bed stay. The information on the incidence rates of acute conditions for all ages in Section VII indicates that in families where the income was greater the rate of acute conditions was also somewhat higher. Among persons with family incomes of less than \$2,000, the average acute condition caused 6 days of restricted activity and 3 bed-days. In each of the other income groups, the average acute condition caused about 4 days of reduced activity and 2 days in bed. It may be assumed that a negligible

number of persons experienced more than one acute condition on the same day, and therefore an estimate can be made of the respective contribution of acute and chronic conditions to the total days of disability which people experience. Table 3 indicates that the inverse relationship between disability days and income noted in table 2 is due, in large part, to the income pattern established by disability from chronic conditions. With the exception of the lowest income group, acute conditions caused the same amount of disability in each income interval. The higher rates of disability from acute conditions among persons with family incomes of less than \$2,000 may result from financial inability or reluctance to obtain medical attention for these conditions or from the lack of knowledge of when to seek medical care. This situation may also account for the added days of restricted activity without a corresponding increase in the number of days of bed stay per case.

Chronic illness and impairment caused the average individual in the civilian population not residing in institutions to reduce his activity by about 7 days per year and to spend about 3 days in bed (table 3). Since the amount of disability is

Table 3. Disability days per person per year attributed to acute and chronic conditions, by family income: United States, July 1962-June 1963

| Item | Family income | | | | |
|-------------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| Disability days per person per year | | | | | |
| Restricted-activity days----- | 16 | 29 | 18 | 14 | 13 |
| Acute conditions----- | 9 | 12 | 8 | 8 | 8 |
| Chronic conditions----- | 7 | 17 | 10 | 6 | 5 |
| Bed-disability days----- | 7 | 12 | 7 | 6 | 5 |
| Acute conditions----- | 4 | 5 | 4 | 4 | 4 |
| Chronic conditions----- | 3 | 7 | 3 | 2 | 1 |

¹Includes persons with unknown incomes.

disproportionately greater in the lowest income group, it is apparent that ill health and resulting disability imposes a great burden on these people. Removal of this burden through reduction of illness and prevention of disability would be of great value to these people and to the Nation in terms of increased productive capacity.

SUMMARY

1. Rates of disability days are inversely related to the amount of family income, even with adjustment for differences in the age distribution within income intervals.
2. Based on unadjusted data, a person with family income of less than \$2,000 has, on the average, 16 days more of restricted activity than a

- person with an income of \$7,000 or more. Comparable differentials were 7 additional days of bed disability and 4 days more lost from work. The rate of days lost from school was fairly constant for all income levels.
3. The number of disability days attributable to chronic illness and impairment was highest among persons with family income of less than \$2,000 and decreased consistently with higher amounts of income. Disability days associated with acute illness or injury remained fairly constant regardless of amount of family income. The relatively higher rate of disability days due to chronic illness in the lowest income group is influenced to some extent by the comparatively high proportion of older persons in this group.



IX. POPULATION

Table 1. Population of all ages used in computing rates shown in this publication, by family income, sex, and family size: United States, July 1962-June 1963

| Sex and family size | Family income | | | | | |
|---------------------------|---------------|---------------|---------------|---------------|----------|---------|
| | All incomes | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ | Unknown |
| <u>Both sexes</u> | | | | | | |
| Population in thousands | | | | | | |
| Persons in all families-- | 183,146 | 22,590 | 32,485 | 61,675 | 57,082 | 9,314 |
| 1 member----- | 12,012 | 6,045 | 2,605 | 1,968 | 827 | 566 |
| 2 members----- | 31,608 | 5,667 | 7,308 | 8,915 | 7,801 | 1,916 |
| 3 members----- | 28,919 | 2,597 | 5,256 | 9,903 | 9,580 | 1,582 |
| 4 members----- | 36,509 | 2,001 | 5,200 | 13,849 | 13,958 | 1,500 |
| 5 members----- | 29,568 | 1,798 | 3,980 | 11,190 | 11,316 | 1,284 |
| 6 members----- | 18,659 | 1,383 | 2,751 | 7,151 | 6,474 | 900 |
| 7+ members----- | 25,872 | 3,098 | 5,385 | 8,699 | 7,125 | 1,566 |
| <u>Male</u> | | | | | | |
| Persons in all families-- | 88,833 | 9,747 | 15,487 | 30,392 | 28,785 | 4,421 |
| 1 member----- | 4,626 | 2,034 | 1,031 | 937 | 469 | 155 |
| 2 members----- | 14,887 | 2,563 | 3,346 | 4,252 | 3,826 | 901 |
| 3 members----- | 14,133 | 1,201 | 2,518 | 4,851 | 4,816 | 748 |
| 4 members----- | 18,084 | 920 | 2,569 | 6,874 | 7,009 | 712 |
| 5 members----- | 14,913 | 865 | 1,983 | 5,572 | 5,830 | 663 |
| 6 members----- | 9,284 | 684 | 1,349 | 3,536 | 3,256 | 459 |
| 7+ members----- | 12,906 | 1,479 | 2,692 | 4,371 | 3,581 | 783 |
| <u>Female</u> | | | | | | |
| Persons in all families-- | 94,313 | 12,843 | 16,998 | 31,283 | 28,296 | 4,893 |
| 1 member----- | 7,386 | 4,011 | 1,575 | 1,031 | 358 | 411 |
| 2 members----- | 16,720 | 3,104 | 3,963 | 4,664 | 3,975 | 1,015 |
| 3 members----- | 14,785 | 1,396 | 2,738 | 5,052 | 4,764 | 834 |
| 4 members----- | 18,425 | 1,081 | 2,631 | 6,976 | 6,950 | 788 |
| 5 members----- | 14,656 | 933 | 1,997 | 5,618 | 5,487 | 621 |
| 6 members----- | 9,375 | 699 | 1,402 | 3,615 | 3,218 | 441 |
| 7+ members----- | 12,966 | 1,619 | 2,692 | 4,328 | 3,544 | 783 |

NOTE: For official population estimates for more general use, see Bureau of the Census reports on the civilian population of the United States, in *Current Population Reports: Series P-20, P-25, and P-60.*

Table 2. Population of persons under 15 years of age used in computing rates shown in this publication, by family income, sex, and family size: United States, July 1962-June 1963

| Sex and family size | Family income | | | | | |
|---------------------------|---------------|---------------|---------------|---------------|----------|---------|
| | All incomes | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ | Unknown |
| <u>Both sexes</u> | | | | | | |
| Population in thousands | | | | | | |
| Persons in all families-- | 58,241 | 5,260 | 10,220 | 22,265 | 17,993 | 2,503 |
| 1 member----- | * | * | * | * | * | * |
| 2 members----- | 651 | 212 | 200 | 164 | 51 | * |
| 3 members----- | 5,506 | 598 | 1,168 | 2,087 | 1,455 | 197 |
| 4 members----- | 13,152 | 798 | 2,028 | 5,410 | 4,459 | 457 |
| 5 members----- | 13,729 | 912 | 1,968 | 5,466 | 4,857 | 527 |
| 6 members----- | 9,730 | 754 | 1,511 | 3,888 | 3,148 | 430 |
| 7+ members----- | 15,464 | 1,983 | 3,345 | 5,247 | 4,023 | 866 |
| <u>Male</u> | | | | | | |
| Persons in all families-- | 29,608 | 2,605 | 5,188 | 11,313 | 9,224 | 1,277 |
| 1 member----- | * | * | * | * | * | * |
| 2 members----- | 332 | 103 | 100 | 88 | * | * |
| 3 members----- | 2,802 | 305 | 601 | 1,068 | 740 | 88 |
| 4 members----- | 6,657 | 403 | 1,026 | 2,761 | 2,247 | 219 |
| 5 members----- | 7,103 | 449 | 1,029 | 2,776 | 2,562 | 288 |
| 6 members----- | 4,919 | 389 | 742 | 1,947 | 1,625 | 216 |
| 7+ members----- | 7,786 | 953 | 1,692 | 2,669 | 2,022 | 450 |
| <u>Female</u> | | | | | | |
| Persons in all families-- | 28,634 | 2,655 | 5,032 | 10,952 | 8,769 | 1,226 |
| 1 member----- | * | * | * | * | * | * |
| 2 members----- | 319 | 109 | 100 | 76 | * | * |
| 3 members----- | 2,704 | 294 | 567 | 1,019 | 715 | 108 |
| 4 members----- | 6,495 | 395 | 1,003 | 2,648 | 2,211 | 237 |
| 5 members----- | 6,626 | 463 | 939 | 2,690 | 2,295 | 239 |
| 6 members----- | 4,812 | 365 | 770 | 1,941 | 1,522 | 214 |
| 7+ members----- | 7,678 | 1,029 | 1,653 | 2,578 | 2,001 | 416 |

NOTE: For official population estimates for more general use, see Bureau of the Census reports on the civilian population of the United States, in *Current Population Reports: Series P-20, P-25, and P-60.*

Table 3. Population of persons 15-44 years of age used in computing rates shown in this publication, by family income, sex, and family size: United States, July 1962-June 1963

| Sex and family size | Family income | | | | | |
|---------------------------|---------------|---------------|---------------|---------------|----------|---------|
| | All incomes | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ | Unknown |
| <u>Both sexes</u> | | | | | | |
| Population in thousands | | | | | | |
| Persons in all families-- | 71,053 | 6,634 | 11,545 | 25,550 | 24,134 | 3,191 |
| 1 member----- | 4,113 | 1,764 | 959 | 916 | 332 | 143 |
| 2 members----- | 7,775 | 935 | 1,547 | 2,613 | 2,374 | 307 |
| 3 members----- | 13,165 | 1,009 | 2,380 | 4,790 | 4,354 | 632 |
| 4 members----- | 17,474 | 836 | 2,367 | 6,729 | 6,874 | 668 |
| 5 members----- | 12,685 | 662 | 1,606 | 4,797 | 5,068 | 551 |
| 6 members----- | 7,289 | 503 | 1,023 | 2,784 | 2,627 | 354 |
| 7+ members----- | 8,552 | 924 | 1,664 | 2,922 | 2,506 | 536 |
| <u>Male</u> | | | | | | |
| Persons in all families-- | 33,829 | 2,946 | 5,399 | 12,172 | 11,766 | 1,546 |
| 1 member----- | 2,107 | 796 | 493 | 522 | 235 | 62 |
| 2 members----- | 3,501 | 405 | 672 | 1,196 | 1,085 | 144 |
| 3 members----- | 6,301 | 448 | 1,105 | 2,257 | 2,177 | 314 |
| 4 members----- | 8,265 | 355 | 1,134 | 3,161 | 3,294 | 322 |
| 5 members----- | 6,115 | 305 | 739 | 2,300 | 2,500 | 272 |
| 6 members----- | 3,452 | 227 | 477 | 1,330 | 1,239 | 179 |
| 7+ members----- | 4,088 | 411 | 781 | 1,406 | 1,236 | 254 |
| <u>Female</u> | | | | | | |
| Persons in all families-- | 37,224 | 3,687 | 6,146 | 13,378 | 12,368 | 1,645 |
| 1 member----- | 2,006 | 968 | 466 | 394 | 97 | 81 |
| 2 members----- | 4,273 | 530 | 875 | 1,417 | 1,289 | 163 |
| 3 members----- | 6,864 | 561 | 1,275 | 2,533 | 2,177 | 318 |
| 4 members----- | 9,209 | 481 | 1,233 | 3,568 | 3,580 | 346 |
| 5 members----- | 6,570 | 357 | 868 | 2,497 | 2,568 | 279 |
| 6 members----- | 3,837 | 276 | 546 | 1,453 | 1,388 | 175 |
| 7+ members----- | 4,465 | 514 | 883 | 1,516 | 1,269 | 283 |

NOTE: For official population estimates for more general use, see Bureau of the Census reports on the civilian population of the United States, in *Current Population Reports: Series P-20, P-25, and P-60.*

Table 4. Population of persons 45-64 years of age used in computing rates shown in this publication, by family income, sex, and family size: United States, July 1962-June 1963

| Sex and family size | Family income | | | | | |
|---------------------------|---------------|---------------|---------------|---------------|----------|---------|
| | All incomes | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ | Unknown |
| <u>Both sexes</u> | | | | | | |
| Population in thousands | | | | | | |
| Persons in all families-- | 36,986 | 4,657 | 6,332 | 10,929 | 12,630 | 2,438 |
| 1 member----- | 3,711 | 1,402 | 963 | 808 | 352 | 186 |
| 2 members----- | 14,845 | 1,885 | 2,700 | 4,694 | 4,516 | 1,050 |
| 3 members----- | 7,941 | 639 | 1,186 | 2,415 | 3,190 | 510 |
| 4 members----- | 4,988 | 281 | 631 | 1,458 | 2,330 | 288 |
| 5 members----- | 2,615 | 179 | 339 | 753 | 1,178 | 167 |
| 6 members----- | 1,340 | 105 | 189 | 378 | 575 | 93 |
| 7+ members----- | 1,545 | 164 | 324 | 424 | 489 | 144 |
| <u>Male</u> | | | | | | |
| Persons in all families-- | 17,886 | 1,758 | 2,729 | 5,536 | 6,732 | 1,131 |
| 1 member----- | 1,305 | 430 | 321 | 326 | 177 | 52 |
| 2 members----- | 6,662 | 684 | 1,055 | 2,210 | 2,233 | 480 |
| 3 members----- | 3,970 | 277 | 540 | 1,247 | 1,665 | 241 |
| 4 members----- | 2,778 | 124 | 325 | 847 | 1,340 | 142 |
| 5 members----- | 1,490 | 88 | 176 | 437 | 700 | 89 |
| 6 members----- | 790 | 55 | 118 | 219 | 346 | 53 |
| 7+ members----- | 890 | 100 | 195 | 250 | 271 | 74 |
| <u>Female</u> | | | | | | |
| Persons in all families-- | 19,100 | 2,899 | 3,603 | 5,394 | 5,898 | 1,307 |
| 1 member----- | 2,406 | 972 | 642 | 482 | 175 | 134 |
| 2 members----- | 8,182 | 1,201 | 1,645 | 2,483 | 2,283 | 570 |
| 3 members----- | 3,971 | 363 | 646 | 1,168 | 1,525 | 268 |
| 4 members----- | 2,210 | 157 | 306 | 611 | 990 | 146 |
| 5 members----- | 1,125 | 91 | 164 | 316 | 477 | 77 |
| 6 members----- | 550 | 50 | 71 | 160 | 229 | * |
| 7+ members----- | 655 | 64 | 129 | 174 | 218 | 70 |

NOTE: For official population estimates for more general use, see Bureau of the Census reports on the civilian population of the United States, in *Current Population Reports: Series P-20, P-25, and P-60*.

Table 5. Population of persons 65 years of age and over used in computing rates shown in this publication, by family income, sex, and family size: United States, July 1962-June 1963

| Sex and family size | Family income | | | | | |
|---------------------------|---------------|---------------|---------------|---------------|----------|---------|
| | All incomes | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ | Unknown |
| <u>Both sexes</u> | | | | | | |
| Population in thousands | | | | | | |
| Persons in all families-- | 16,866 | 6,040 | 4,388 | 2,931 | 2,324 | 1,183 |
| 1 member----- | 4,177 | 2,875 | 684 | 241 | 143 | 234 |
| 2 members----- | 8,337 | 2,636 | 2,862 | 1,444 | 860 | 535 |
| 3 members----- | 2,308 | 351 | 522 | 610 | 580 | 244 |
| 4 members----- | 895 | 85 | 173 | 254 | 295 | 87 |
| 5 members----- | 539 | * | 67 | 174 | 214 | * |
| 6 members----- | 299 | * | * | 101 | 125 | * |
| 7+ members----- | 311 | * | 52 | 106 | 107 | * |
| <u>Male</u> | | | | | | |
| Persons in all families-- | 7,510 | 2,438 | 2,170 | 1,372 | 1,063 | 467 |
| 1 member----- | 1,205 | 805 | 217 | 86 | 57 | * |
| 2 members----- | 4,392 | 1,372 | 1,519 | 757 | 480 | 263 |
| 3 members----- | 1,061 | 172 | 272 | 279 | 234 | 104 |
| 4 members----- | 383 | * | 85 | 105 | 127 | * |
| 5 members----- | 204 | * | * | 59 | 68 | * |
| 6 members----- | 123 | * | * | * | * | * |
| 7+ members----- | 143 | * | * | * | 51 | * |
| <u>Female</u> | | | | | | |
| Persons in all families-- | 9,356 | 3,602 | 2,218 | 1,559 | 1,261 | 716 |
| 1 member----- | 2,972 | 2,070 | 467 | 155 | 86 | 194 |
| 2 members----- | 3,946 | 1,263 | 1,343 | 687 | 380 | 272 |
| 3 members----- | 1,246 | 178 | 250 | 332 | 347 | 139 |
| 4 members----- | 511 | * | * | 149 | 168 | 58 |
| 5 members----- | 335 | * | * | 115 | 146 | * |
| 6 members----- | 176 | * | * | 61 | 79 | * |
| 7+ members----- | 168 | * | * | 59 | 56 | * |

NOTE: For official population estimates for more general use, see Bureau of the Census reports on the civilian population of the United States, in *Current Population Reports: Series P-20, P-25, and P-60.*

Table 6. Population used in computing rates shown in this publication, by family income and age: United States, July 1962-June 1963

| Age | Family income | | | | |
|--------------------------------------|--------------------------|---------------|---------------|---------------|----------|
| | All incomes ¹ | Under \$2,000 | \$2,000-3,999 | \$4,000-6,999 | \$7,000+ |
| Total | Population in thousands | | | | |
| All ages----- | 183,146 | 22,590 | 32,485 | 61,675 | 57,082 |
| Under 15 years----- | 58,241 | 5,260 | 10,220 | 22,265 | 17,993 |
| 15-44 years----- | 71,053 | 6,634 | 11,545 | 25,550 | 24,134 |
| 45-64 years----- | 36,986 | 4,657 | 6,332 | 10,929 | 12,630 |
| 65+ years----- | 16,866 | 6,040 | 4,388 | 2,931 | 2,324 |
| <u>Currently employed population</u> | | | | | |
| All ages-17+ years----- | 67,954 | 6,174 | 10,792 | 22,806 | 24,636 |
| 17-44 years----- | 40,358 | 3,156 | 6,232 | 14,584 | 14,610 |
| 45-64 years----- | 24,373 | 2,183 | 3,802 | 7,531 | 9,351 |
| 65+ years----- | 3,223 | 835 | 759 | 691 | 675 |
| <u>School age</u> | | | | | |
| 6-16 years----- | 40,235 | 3,447 | 6,589 | 14,450 | 13,875 |

¹Includes persons with unknown incomes.

NOTE: For official population estimates for more general use, see Bureau of the Census reports on the civilian population of the United States, in *Current Population Reports: Series P-20, P-25, and P-60.*



APPENDIX I

TECHNICAL NOTES ON METHODS

Background of This Report

This report is one of a series of statistical reports prepared by the National Health Survey. It is based on information collected in a continuing nationwide sample of households in the Health Interview Survey, a major part of the program.

The Health Interview Survey utilizes a questionnaire which, in addition to personal and demographic characteristics, obtains information on illnesses, injuries, chronic conditions and impairments, and other health topics. As data relating to each of these various broad topics are tabulated and analyzed, separate reports are issued which cover one or more of the specific topics. The present report is based primarily on the consolidated sample for 52 weeks of interviewing ending June 1963.

The population covered by the sample for the Health Interview Survey is the civilian, noninstitutional population of the United States living at the time of the interview. The sample does not include members of the Armed Forces, U.S. nationals living in foreign countries, or crews of vessels.

Statistical Design of the Health Interview Survey

General plan.—The sampling plan of the survey follows a multistage probability design which permits a continuous sampling of the civilian population of the United States. The first stage of this design consists of drawing a sample of 357 from the 1,900 geographically defined primary sampling units (PSU's) into which the United States has been divided. A PSU is a county, a group of contiguous counties, or a standard metropolitan statistical area.

With no loss in general understanding, the remaining stages can be combined and treated in this discussion as an ultimate stage. Within PSU's then, ultimate stage units called segments are defined in such a manner that each segment contains an expected nine households. A segment consists of a cluster of neighboring households or addresses. Two general types of segments are used: (1) area segments which are defined

geographically, and (2) B segments which are defined from a list of addresses from the Decennial Census and Survey of Construction. Each week a random sample of about 90 segments is drawn. In the approximate 800 households in those segments, household members are interviewed concerning factors related to health.

Since the household members interviewed each week are a representative sample of the population, samples for successive weeks can be combined into larger samples. Thus the design permits both continuous measurement of characteristics of high incidence or prevalence in the population and through the larger consolidated samples, more detailed analysis of less common characteristics and smaller categories. The continuous collection has administrative and operational advantages as well as technical assets, since it permits field work to be handled with an experienced, stable staff.

Sample size and geographic detail.—The national sample plan for the 12-month period ending June 1963 included about 134,000 persons from 42,000 households in about 4,700 segments. During the 3 years from July 1959 through June 1962 the yearly sample included about 125,000 persons from 38,000 households in about 6,400 segments. The sample plan for the year ending June 1959 included about 120,000 persons from 37,000 households in about 6,200 segments. During July 1957-June 1958 the sample included about 115,000 persons from 36,000 households in about 6,000 segments.

Collection of data.—Field operations for the household survey are performed by the Bureau of the Census under specifications established by the National Center for Health Statistics. In accordance with these specifications the Bureau of the Census selects the sample; conducts the field interviewing as an agent of the Center; and performs a manual edit and coding of the questionnaires. The Health Survey, using Center electronic computers, carries out further editing and tabulates the edited data.

Estimating methods.—Each statistic produced by the survey—for example, the number of hospital discharges in a specified period—is the result of two stages of ratio estimation. In the first of these, the

control factor is the ratio of the 1960 decennial population count to the 1960 estimated population in the National Health Survey's first-stage sample of PSU's. These factors are applied for some 25 color-residence classes.

Later, ratios of sample-produced estimates of the population to official Bureau of the Census figures for current population in about 60 age-sex-color classes are computed, and serve as second-stage factors for ratio estimating.

The effect of the ratio-estimating process is to make the sample more closely representative of the population by age, sex, color, and residence, thus reducing sampling variance.

As noted, each week's sample represents the population living during that week and characteristics of that population. Consolidation of samples over a time period, say a calendar quarter, produces estimates of average characteristics of the U.S. population for that calendar quarter. Similarly, population or prevalence data for a year are averages of the four quarterly figures.

For statistics measuring the number of occurrences during a specified time period, such as the incidence of acute illnesses or injuries, a similar computational procedure is used, but the statistics are interpreted differently. For these items, the questionnaire asks for the respondent's experience during the 2-calendar weeks prior to the week of interview. In such instances the estimated quarterly total for the statistic is simply 6.5 times the average 2-week estimate produced by the 13 successive samples taken during the period. The annual total is the sum of the four quarters. Thus, the experience of persons interviewed during a year—experience which actually occurred for each person in a 2-calendar-week interval prior to week of interview—is treated as though it measured the total of such experience during the year. Such interpretation leads to no significant bias.

General Qualifications

Nonresponse.—Data were adjusted for nonresponse by a procedure which imputes to persons in a household which was not interviewed the characteristics of persons in households in the same segment which were interviewed. The total noninterview rate was 5 percent; 1 percent was refusal; and the remainder was primarily due to the failure to find any eligible household respondent after repeated trials.

The interview process.—The statistics presented in this report are based on replies secured in interviews of persons in the sampled households. Each person 19 years of age and over, available at the time of interview, was interviewed individually. Proxy respondents within the household were employed for children and for adults not available at the time of the interview, pro-

vided the respondent was closely related to the person about whom information was being obtained.

There are limitations to the accuracy of diagnostic and other information collected in household interviews. For diagnostic information, the household respondent can, at best, pass on to the interviewer only the information the physician has given the family. For conditions not medically attended, diagnostic information is often no more than a description of symptoms. However, other facts, such as the number of disability days caused by the condition, can be obtained more accurately from household members than from any other source since only the persons concerned are in a position to report this information.

Rounding of numbers.—The original tabulations on which the data in this report are based show all estimates to the nearest whole unit. All consolidations were made from the original tabulations using the estimates to the nearest unit. In the final published tables the figures are rounded to the nearest thousand, although these are not necessarily accurate to that detail. Devised statistics, such as rates and percent distributions, are computed after the estimates on which these are based have been rounded to the nearest thousand.

Population figures.—Some of the published tables include population figures for specified categories. Except for certain overall totals by age and sex, which are adjusted to independent estimates, these figures are based on the sample of households in the National Health Survey. These are given primarily to provide denominators for rate computation, and for this purpose are more appropriate for use with the accompanying measures of health characteristics than other population data that may be available. In some instances these will permit users to recombine published data into classes more suitable to their specific needs. With the exception of the overall totals by age and sex, mentioned above, the population figures differ from corresponding figures (which are derived from different sources) published in reports of the Bureau of the Census. For population data for general use, see the official estimates presented in Bureau of the Census reports in the P-20, P-25, and P-60 series.

Reliability of Estimates

Since the estimates are based on a sample, they will differ somewhat from the figures that would have been obtained if a complete census had been taken using the same schedules, instructions, and interviewing personnel and procedures. As in any survey, the results are also subject to measurement error.

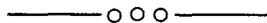
The standard error is primarily a measure of sampling variability, that is, the variations that might occur by chance because only a sample of the population is surveyed. As calculated for this report, the standard error also reflects part of the variation which arises in

the measurement process. It does not include estimates of any biases which might lie in the data. The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 95 out of 100 that the difference would be less than twice the standard error and about 99 out of 100 that it would be less than 2½ times as large.

In most instances, the estimates shown in this report are sufficiently reliable for general purposes. However, for users of the data who may wish to obtain approximate relative sampling errors for the statistics shown, the following guide refers to previous publications of the Health Interview Survey that contain appropriate sampling error charts (or tables) with instructions for their use. Also, from these publications it is possible to gain some idea of the magnitude of aggregates which, in some instances, have not been shown in this report.

| <u>Statistics relating to:</u> | <u>Publication</u> |
|--------------------------------------------------------------------------------------------------------------|--------------------------|
| Persons in any group other than the U.S. total population or any age-sex category thereof ¹ ----- | Series 10, No. 2 |
| Hospital discharges and days----- | Series 10, No. 2 |
| X-ray visits ----- | Series B, No. 38 |
| Physician and dental visits - | Series B, Nos. 15 and 19 |
| Chronic conditions or impairments----- | Series B, Nos. 35 and 36 |
| Acute conditions ----- | Series 10, No. 1 |
| Disability days----- | Series 10, No. 4 |

¹The number of persons in the total U.S. population, or any age-sex category thereof, is not subject to sampling error.



APPENDIX II

DEFINITIONS OF CERTAIN TERMS USED IN THIS REPORT

Terms Relating to Costs of Medical and Dental Care

Costs of medical and dental care.—These are the total personal health expenses for medical and dental care during a specified 12-month period. The National Health Survey collects data for each related member of a household in the Survey sample during the specified 12-month period. The total expenditures are defined as all bills paid (or to be paid) for medical and dental care by the person himself, his family, or friends and also any part paid by insurance whether paid directly to the hospital or doctor, to the person himself, or to his family. If a respondent does not know the exact amount paid by insurance, he is requested to estimate it and include it in the total bill.

For the National Health Survey, costs of medical and dental care exclude amounts paid (or to be paid) by workmen's compensation, charitable or welfare organizations, Federal, State, or local governmental programs, or other free care. Also excluded are expenses of persons residing in institutions at the time of interview.

If a baby is born in the household during the specified 12-month period, the hospital and doctor bills relating to the baby's birth are counted in medical expenditures for the mother. However, all other medical expenditures relating to the baby's health are counted in the medical expenditures for the baby.

There are six categories of expenditures for medical and dental care as follows:

1. Doctors' bills.—Doctors' bills are defined as the total bills paid (or to be paid) for medical care to doctors, including surgeons, for a person during the specified 12-month period. Such bills include costs of operations, treatments, check-ups, deliveries, pregnancy care, X-rays, laboratory fees, eye examinations, immunizations or shots, and any other doctors' services provided for the patient.
2. Hospital bills.—Hospital bills are the total expenditures paid (or to be paid) for hospitalizations of a person during the specified 12-month period. Only hospitalizations for overnight or longer in a hospital (nursing home, rest home, sanitarium, etc.) are counted. Hospital bills

include costs of room and board, operating and delivery room, anesthesia, special treatments, X-rays, tests, and any other hospital services provided for the hospitalized patient.

3. Medicine costs.—Medicine costs are total expenditures paid (or to be paid) for medicine for a person during the specified 12-month period. The total expenditures for medicine include the costs of all kinds of medicine whether or not prescribed by a doctor, such as tonics, pills, prescriptions, salves, ointments, vitamins, and any other medicine.
4. Dentists' bills.—Dentists' bills are defined as the total bills paid (or to be paid) for dental care for a person during the specified 12-month period. Dentists' bills include costs of fillings, extractions, cleanings, X-rays, bridgework, dental plates, straightening of teeth, and any other dental services provided for the dental patient.
5. Special medical expenses.—Special medical expenses paid (or to be paid) for a person during the specified 12-month period include costs of the following: eye glasses, hearing aids, special nursing, physical therapy, speech therapy, corrective shoes, chiropractors' fees, and special braces or trusses, wheel chairs, or artificial limbs.
6. Other medical expenses.—All medical expenses for a person during the specified 12-month period not included above are classified as "other." For example, emergency or outpatient treatment in a hospital or clinic would be classified as "other."

Health Insurance Terms

Health insurance is any plan specifically designed to pay all or part of the medical or hospital expenses of the insured individual. The insurance can be either a group or an individual policy with the premiums paid by the individual, his employer, a third party, or a combination of these. Benefits received under the plan can be in the form of payment to the individual or to the hospital or doctor. However, the plan must be a formal one with defined membership and benefits rather than an

informal one. For example, an employer simply paying the hospital bill for an employee would not constitute a health insurance plan.

For the National Health Survey, health insurance excludes the following kinds of plans: (1) plans limited to the "dread diseases," such as cancer and polio; (2) free care such as public assistance or public welfare, care given free of charge to veterans, care given to dependents of military personnel (Medicare), care given under the Crippled Children or similar programs, and care of persons admitted for research purposes; (3) insurance which pays bills only for accidents, such as liability insurance held by a car or property owner, insurance that covers children for accidents at school or camp, and insurance for a worker that covers him only for accidents on the job; and (4) insurance which pays only for loss of income.

Kind of Coverage

Hospital.—Insurance which pays all or part of the hospital bill for the hospitalized person. By hospital bill is meant only the bill submitted by the hospital itself, not the doctor's or surgeon's bill or the bill for special nurses. Such a bill always includes the cost of room and meals and may also include the costs of other services such as operating room, laboratory tests, X-rays, etc.

Surgical.—Insurance which pays in whole or part the bill of the doctor or surgeon for an operation whether performed in a hospital or in the doctor's office. Insurance which pays the costs of visits to a doctor's office for postoperative care is included as surgical insurance.

Terms Relating to Hospitalization

Hospital discharge.—A hospital discharge is the completion of any continuous period of stay of 1 or more nights in a hospital, as an inpatient, except the period of stay of a well, newborn infant. A hospital discharge is recorded whenever a present member of the household is reported to have been discharged from a hospital in the 12-month period prior to the interview week. (For this report estimates were based on discharges which occurred during the 6-month period prior to the interview. See Appendix I.)

Hospital.—For this Survey a hospital is defined as any institution meeting one of the following criteria: (1) named in the listing of hospitals in the current Guide Issues of Hospitals, the Journal of the American Hospital Association; (2) named in the listing of hospitals in the Directories of the American Osteopathic Hospital Association; or (3) named in the annual inventory of hospitals and related facilities submitted by the States to the Division of Hospital and Medical Facilities of the Public Health Service in conjunction with the Hill-Burton program.

Short-stay hospital.—A short-stay hospital is one for which the type of service is general; maternity; eye,

ear, nose, and throat; children's; osteopathic hospital; or hospital department of institution.

Hospital day.—A hospital day is a day in which a person is confined to a hospital. The day is counted as a hospital day only if the patient stays overnight. Thus, a patient who enters the hospital on Monday afternoon and leaves Wednesday noon is considered to have had 2 hospital days.

Estimates of the total number of hospital days are derived by summing the days for all hospital discharges. (See definition of "Hospital discharge.")

Length of hospital stay.—The length of hospital stay is the duration in days, exclusive of the day of discharge, of a hospital discharge. (See definition of "Hospital discharge.")

Average length of stay.—The average length of stay per discharged patient is computed by dividing the total number of hospital days for a specified group by the total number of discharges for the same group.

Terms Relating to Proportion of Bill Covered by Insurance

Hospital bill.—A hospital bill is defined as the bill submitted by the hospital to the patient for the care and services received during the period of hospitalization. Bills submitted to the patient by doctors, surgeons, anesthetists, or other individuals for services rendered during the period of hospitalization are not considered as part of the hospital bill.

The hospital bill will normally include the cost of the room, meals, regular nursing service, laboratory tests, X-rays, medicines, injections, use of the operating room, and other services that may be provided for the patient. When the charges for special nurses, anesthetists, ambulance service, etc., are included by the hospital on the bill submitted to the patient, these are also considered as part of the hospital bill for purposes of the Survey.

Proportion of bill paid by insurance.—The proportion of the bill paid (also referred to as fraction of bill paid) by insurance was determined by the respondent's own estimate of the part of the total hospital bill that was paid for or was expected to be paid for by insurance. The response categories used are (a) no part of the bill paid by insurance; (b) less than 1/2; (c) 1/2 up to, but not including, 3/4; (d) 3/4 or more.

Terms Relating to Recuperation Following Surgery

Length of postoperative hospital stay.—The length of postoperative hospital stay is the duration in days from the date of the operation, including the day of the operation, to the date of discharge from the hospital, exclusive of the day of discharge, of a hospital discharge. (See definition of "Hospital discharge.")

Average length of postoperative hospital stay.—The average length of postoperative hospital stay per discharged patient is computed by dividing the total number of postoperative hospital days for a specified group by the total number of hospital discharges for the same group.

Average length of preoperative hospital stay.—The average length of preoperative hospital stay is computed by subtracting the average length of postoperative hospital stay from the average length of hospital stay.

Posthospital convalescence.—Posthospital convalescence is the duration of convalescent days of a hospital discharge from the date the patient was discharged from the hospital, including the day of discharge from the hospital, to the date of return to usual full-time activity. The number of convalescent days is recorded for each completed hospitalization for all household members if an operation was performed, if a fracture or dislocation was set, or if the hospital stay included a delivery. (In this report the statistics are limited to six selected operations for patients, 6 years old and over, who had only one operation during the hospital stay and who had returned to usual full-time activity.)

Estimates of the total number of posthospital convalescent days are derived by summing the days for all hospital discharges. (See definition of "Hospital discharge.")

Average duration of posthospital convalescence.—The average duration of posthospital convalescence per discharged patient is computed by dividing the total number of posthospital convalescent days for a specified group by the total number of hospital discharges for the same group.

Convalescence after surgery.—Convalescence after surgery is the duration of convalescent days of a hospital discharge from the date of the patient's operation, including the day of the operation, to the date the patient returned to his usual full-time activity. Total convalescent days for a hospital discharge can also be derived by summing his postoperative hospital days and his posthospital convalescent days. The total number of convalescent days is recorded for each complete hospitalization for all household members if an operation was performed, if a fracture or dislocation was set, or if the hospital stay included a delivery. (In this report the statistics are limited to six selected operations for hospital discharges, 6 years old and older, who had only one operation during the hospital stay and who had returned to their usual full-time activity.)

Estimates of the total number of convalescent days are derived by summing the total convalescent days for all hospital discharges. (See definition of "Hospital discharge.")

Average duration of convalescence after surgery.—The average duration of convalescence per discharged patient is computed by dividing the total number of convalescent days from date of operation (including the day of the operation) to date of return to usual full-time ac-

tivity for a specified group by the total number of hospital discharges for the same group. Average duration of convalescence per discharged patient for a group can also be derived by summing the average length of postoperative hospital stay and the average duration of posthospital convalescence of the group.

Terms Relating to X-rays

X-ray visit.—An X-ray visit is defined as a visit by a person to a physician's office, dentist's office, hospital, mobile X-ray unit, Public Health Department, etc., during the course of which X-ray equipment is used for diagnosis or treatment. X-ray includes X-ray film photography and X-ray emission for treatment and fluoroscopy, but excludes the use of radioisotopes. Only one visit is counted each time the person is x-rayed, regardless of the number of X-ray films exposed or the number of ports used. However, statistics are collected for each of the separate areas of the body toward which X-rays have been emitted.

An X-ray visit is counted each time the person is x-rayed during the reference period. Hence, one person may be included in the statistics more than once. However, if several areas of the body are x-rayed during a single visit, only one X-ray visit is recorded. The term "X-ray visit" is used synonymously with "person-" event in other National Health Survey statistics, e.g., person-day.

Statistics are prepared separately for dental X-ray visits and medical X-ray visits, i.e., other than dental. A dental X-ray visit is defined as an X-ray usually taken in a dentist's office for the primary purpose of studying the condition or formation of the teeth. If an X-ray of the teeth or jaw is taken in a hospital or clinic primarily for dental purposes, it is counted as a dental X-ray.

Medical Care Terms

Physician visit.—A physician visit is defined as consultation with a physician, in person or by telephone, for examination, diagnosis, treatment, or advice. The visit is considered to be a physician visit if the service is provided directly by the physician or by a nurse or other person acting under a physician's supervision. For the purpose of this definition "physician" includes doctors of medicine and osteopathic physicians. The term "doctor" is used in the interview, rather than "physician," because of the need to keep to popular usage. However, the concept toward which all instructions are directed is that which is described here.

Physician visits for services provided on a mass basis are not included in the tabulations. A service received on a mass basis is defined as any service involving only a single test (e.g., test for diabetes) or a single procedure (e.g., smallpox vaccination) when this single service was administered identically to all per-

sons who were at the place for this purpose. Hence, persons passing through a tuberculosis chest X-ray trailer, by this definition, are not included as physician visits. However, a special chest X-ray given in a physician's office or an outpatient clinic is considered a physician visit.

Physician visits to hospital inpatients are not included.

If a physician is called to the house to see more than one person, the call is considered a separate physician visit for each person about whom the physician was consulted.

A physician visit is associated with the person about whom the advice was sought, even if that person did not actually see or consult the physician. For example, if a mother consults a physician about one of her children, the physician visit is ascribed to the child.

Place of visit.—The place of visit is a classification of the types of places at which a physician visit took place. The definitions of the various categories are as follows:

1. Home is defined as any place in which the person was staying at the time of the physician's visit. It may be his own home, the home of a friend, a hotel, or any other place the person may be staying (except as an overnight patient in a hospital).
2. Office is defined as the office of a physician in private practice only. This may be an office in the physician's home, an individual office in an office building, or a suite of offices occupied by several physicians. For purposes of this Survey, physicians connected with prepayment group practice plans are considered to be in private practice.
3. Hospital clinic is defined as an outpatient clinic in any hospital.
4. Company or industry health unit refers to treatment received from a physician or under a physician's supervision at a place of business (e.g., factory, store, office building). This includes emergency or first-aid rooms located in such places if treatment was received there from a physician or trained nurse.
5. Telephone contact refers to advice given in a telephone call directly by the physician or transmitted through the nurse.
6. Other refers to advice or treatment received from a physician or under a physician's general supervision at a school, at an insurance office, at a health department clinic, or any other place at which a physician consultation might take place.

Type of medical service.—A medical service is a service received when a physician is consulted. For the purposes of this Survey, medical services have been categorized into several broad types. A single physician visit may result in the recording of more than one type of medical service (though a particular type is not re-

corded more than once for any one physician visit). Tables showing physician visits classified by type of medical service therefore add to more than the total number of visits. The definitions of the types of medical service are as follows:

1. Diagnosis and treatment include (a) examinations and tests in order to diagnose an illness regardless of whether the examinations and tests resulted in a diagnosis, and (b) treatment or advice given by the physician or under the physician's supervision. The category includes diagnosis alone, treatment alone, and both combined. X-rays either for diagnostic purposes or for treatment are included in this class.
2. Prenatal and postnatal care include consultations concerning the care of the mother during pregnancy and in the postpartum period. It excludes consultations for illnesses not related to pregnancy or delivery.
3. General checkup includes checkups for general purposes and also those for specific purposes, such as employment or insurance. If a diagnosis or diagnoses are made in the course of a general checkup, the physician visit is classified to "Diagnosis and treatment" as well as to "General checkup." If the consultation is for checking up on a specific condition, as, for example, when a person goes at regular intervals for a check on a tuberculous or heart condition, this is classified as "Diagnosis and treatment" and not as "General checkup."
4. Immunization includes this preventive service when provided by a physician or under a physician's supervision. A physician service which is for the sole purpose of receiving immunization against a particular disease given at the same time and place that many other persons are receiving the identical immunization is excluded because of the rule for exclusion of such services in the definition of a physician visit.
5. Other includes eye refractions and specific preventive-care services (such as vitamin injections) not embraced by the above type-of-service categories. Also included are all visits where an unknown type of service was reported.

Services of certain medical specialists or practitioners.—A service from a medical specialist or practitioner is the service received when the medical specialist or practitioner is consulted. The service is recorded each time a member of the household is reported to have consulted a medical specialist or practitioner during the 12-month period prior to the interview week. If two or more different specialists of the same type are seen, a record is made of the combined total of the number of times each is seen.

For the purpose of the Survey, the doctor who is a medical specialist must limit his practice to the speciality involved. Doctors who do not qualify to use the specialist name but limit their practice to the

speciality involved, if so indicated by the respondent, are counted as specialists.

Dental Care Terms

Dental visits.—Each visit to a dentist's office for treatment or advice is considered a dental visit. The visit may involve services provided directly by the dentist or by a dental hygienist acting under a dentist's supervision. Services provided while a person was a patient in a hospital for overnight or longer are not considered dental visits.

Type of dental service.—A dental service is a service received when a dentist or dental hygienist is visited. For purposes of this Survey, dental services have been categorized into a number of broad types. If a single dental visit involves more than one type of dental service, each type of service is recorded. If a particular type of service is rendered more than once during a single visit, the type of service is nevertheless recorded only once. For example, if during a single dental visit, 1 tooth is extracted and 3 teeth are filled, the types of services rendered during that visit are recorded as "Extractions" and "Fillings," each category being recorded only once. The categories of types of dental services are defined as follows:

1. Fillings include temporary fillings, permanent fillings, inlays, crowns, and similar procedures.
2. Extractions include any dental surgery and related activity such as removal of stitches.
3. Cleaning or examination includes all forms of dental prophylaxis, "checkup," consultation, and X-rays.
4. Straightening includes orthodontic treatment and brace work and also fitting or repair of braces.
5. Gum treatment includes all peridontal work, except prophylaxis.
6. Denture work includes taking impressions for false teeth, plate fitting or repair, and bridge-work.
7. Other includes all types of dental service not listed above.

Time interval since last dental visit.—The interval since the last dental visit is the length of time prior to the week of interview since a dentist or dental hygienist was last visited for treatment or advice of any type.

The interval is recorded as under 6 months, 6-12 months, and to the last complete year for periods of 1 year or more.

Terms Relating to Chronic Conditions

Condition.—A morbidity condition, or simply a condition, is any entry on the questionnaire which describes a departure from a state of physical or mental well-being. It results from a positive response to one

of a series of "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; whether they were acute or chronic; or according to the type of disease, injury, impairment, or symptom reported. For the purposes of each published report or set of tables, only those conditions recorded on the questionnaire which satisfy certain stated criteria are included.

Conditions, except impairments, are coded by type according to the International Classification of Diseases with certain modifications adopted to make the code more suitable for a household-interview-type survey.

Chronic condition.—A condition is considered to be chronic if (1) it is described by the respondent in terms of one of the chronic diseases on the "Check List of Chronic Conditions" or in terms of one of the types of impairments on the "Check List of Impairments," or (2) the condition is described by the respondent as having been first noticed more than 3 months before the week of the interview.

Impairments.—Impairments are chronic or permanent defects, usually static in nature, resulting from disease, injury, or congenital malformation. They represent decrease or loss of ability to perform various functions, particularly those of the musculoskeletal system and the sense organs. All impairments are classified by means of a special supplementary code for impairments. Hence, code numbers for impairments in the International Classification of Diseases are not used. In the Supplementary Code, impairments are grouped according to type of functional impairment and etiology.

Persons with chronic conditions.—The estimated number of persons with chronic conditions is based on the number of persons who at the time of the interview were reported to have one or more chronic conditions.

Prevalence of conditions.—In general, prevalence of conditions is the estimated number of conditions of a specified type existing at a specified time or the average number existing during a specified interval of time. The prevalence of chronic conditions is defined as the number of chronic cases reported to be present or assumed to be present at the time of the interview; those assumed to be present at the time of the interview are cases described by the respondent in terms of one of the chronic diseases on the "Check List of Chronic Conditions" and reported to have been present at some time during the 12-month period prior to the interview.

Terms Relating to Disability

Chronic activity limitation.—Persons with chronic conditions are classified into four categories according to the extent to which their activities are limited at

present as a result of these conditions. Since the usual activities of preschool children, school-age children, housewives, and workers and other persons differ, a different set of criteria is used for each group. There is a general similarity between them, however, as will be seen in the descriptions of the four categories below:

1. Persons unable to carry on major activity for their group (major activity refers to ability to work, keep house, or go to school)

Preschool children: inability to take part in ordinary play with other children.

School-age children: inability to go to school.

Housewives: inability to do any housework.

Workers and all other persons: inability to work at a job or business.

2. Persons limited in the amount or kind of major activity performed (major activity refers to ability to work, keep house, or go to school)

Preschool children: limited in the amount or kind of play with other children, e.g., need special rest periods, cannot play strenuous games, cannot play for long periods at a time.

School-age children: limited to certain types of schools or in school attendance, e.g., need special schools or special teaching, cannot go to school full time or for long periods at a time.

Housewives: limited in amount or kind of housework, i.e., cannot lift children, wash or iron, or do housework for long periods at a time.

Workers and all other persons: limited in amount or kind of work, e.g., need special working aids or special rest periods at work, cannot work full time or for long periods at a time, cannot do strenuous work.

3. Persons not limited in major activity but otherwise limited (major activity refers to ability to work, keep house, or go to school)

Preschool children: not classified in this category.

School-age children: not limited in going to school but limited in participation in athletics or other extracurricular activities.

Housewives: not limited in housework but limited in other activities, such as church, clubs, hobbies, civic projects, or shopping.

Workers and all other persons: not limited in regular work activities but limited in other activities, such as church, clubs, hobbies, civic projects, sports, or games.

4. Persons not limited in activities

Includes persons with chronic conditions whose activities are not limited in any of the ways described above.

Chronic mobility limitation.—Persons with chronic activity limitation of some degree as a result of one or more chronic conditions are classified according to the extent to which their mobility is limited at present. There are four categories as follows:

1. Confined to the house—confined to the house all the time except in emergencies.
2. Cannot get around alone—able to go outside but needs the help of another person in getting around outside.
3. Has trouble getting around alone—able to go outside alone but has trouble in getting around freely.
4. Not limited in mobility—not limited in any of the ways described above.

Personal Care Terms

Personal care at home in this Survey is family help or nursing care provided part time or full time in the person's own home either by members of the household, other relatives, friends, persons hired for the service, or by charitable or public agencies. Usual care required by infants is not included as nursing care.

Constant care means the person could not be left alone, in that someone must always be in attendance or within call.

Part-time care means that the person could not get along without help during certain times or with certain activities, such as dressing, eating, or getting into a chair.

Duration of care is the number of months or years that the person has required continuing nursing care irrespective of whether on a constant or part-time basis.

Person providing care.—A "household member" providing help or nursing care is a person who is a member of the interviewed household. "Other relative" is a related person living outside of the household. "Trained nurse" is a private registered nurse, public health nurse, or visiting nurse. If a trained nurse who is a member of the household provides the care it is recorded as "trained nurse" rather than household mem-

ber. "Practical nurse" includes persons called a nurse by the respondent but not stated to be a "trained nurse."

"Other" includes friends and also persons employed only to sit with the person requiring care.

Length of time under care.—For a person currently under care the length of time was recorded as the total time that he had required full- or part-time care on a continuous basis. If there were periods during which no care was required, only the last uninterrupted period was to be counted.

Terms Relating to Special Aids

Special aid.—A special aid is a device used to compensate for defects resulting from disease, injury, impairment, or congenital malformation. Aids included in this Survey are hearing aids, wheel chairs, braces, and artificial limbs. Information was recorded about special aids even though persons possessing them did not use them.

1. Hearing aid is defined as any kind of mechanical or electrical device used to improve hearing.
2. Wheel chair is any device stated by the respondent to be a wheel chair, but excluding wheeled "walkers" and nonwheeled devices for support.
3. Brace is defined as any kind of supportive device for the arms, hands, legs, feet, back, neck, or head, exclusive of temporary casts, slings, bandages, trusses, belts, or crutches. Dental braces are also excluded.
4. Artificial limb is a device used to replace a missing leg, arm, hand, or foot. It does not have to have moving parts, but a device employed only for lengthening a leg where the whole leg and foot is present is not included.

Use of special aid.—The frequency of use of a special aid was recorded as reported by the respondent in terms of "all of the time," "most of the time," "occasionally," or "never used now." When necessary, it was explained that these terms referred to the times when a person possessing such a device would ordinarily be expected to use it, such as during the waking hours and under the circumstances that would normally require it.

Terms Relating to Acute Conditions

Acute condition.—An acute condition is defined as a condition which has lasted less than 3 months and which 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 which had their onset during the 2 weeks prior to the interview week and which involved either medical attention or restricted activity during the 2-week period. However, it excludes certain conditions which are always classified as chronic (listed below) even though the onset occurred within 3 months prior to week of interview.

Conditions always classified as chronic:

| | |
|--------------------------------------------------------|--------------------------------------------------------------------------|
| Asthma | Stomach ulcer |
| Hay fever | Any other chronic stomach trouble |
| Tuberculosis | Kidney stones or chronic kidney trouble |
| Chronic bronchitis | Arthritis or rheumatism |
| Repeated attacks of sinus trouble | Mental illness |
| Rheumatic fever | Diabetes |
| Hardening of the arteries | Thyroid trouble or goiter |
| High blood pressure | Any allergy |
| Heart trouble | Epilepsy |
| Stroke | Chronic nervous trouble |
| Trouble with varicose veins | Cancer |
| Hemorrhoids or piles | Chronic skin trouble |
| Tumor, cyst, or growth | Hernia or rupture |
| Chronic gallbladder or liver trouble | Prostate trouble |
| Deafness or serious trouble with hearing | Paralysis of any kind |
| Serious trouble with seeing, even when wearing glasses | Repeated trouble with back or spine |
| Cleft palate | Club foot |
| Any speech defect | Permanent stiffness or deformity of the foot, leg, fingers, arm, or back |
| Missing fingers, hand, or arm—toes, foot, or leg | Condition present since birth |
| Palsy | |

Condition groups.—Conditions are classified according to the International Classification of Diseases, 1955 Revision, with certain modifications adopted to make the code more suitable for a household-interview survey. In this report, all tables which have data classified by type of condition employ a 5-category re-grouping plus several selected subgroups. The International Classification code numbers included in each category are shown below:

| <u>Condition Groups</u> | <u>International Classification Code Numbers</u> |
|------------------------------------|--------------------------------------------------|
| I Infective and parasitic diseases | 020-138 |
| II Respiratory conditions | 470-501, 511, 517-525, 527, 783 |
| Upper respiratory | 470-475, 511, 517 |
| Influenza | 480-483 |
| Other respiratory | 490-501, 518-525, 527, 783 |
| III Digestive system conditions | 530-539, 543-553, 570, 571, 573-587, 784, 785 |

IV Injuries

N800-N885, N890-N895,
N900-N994, N996-N999

Terms Relating to Disability Days

Disability.—Disability is the general term used to describe any temporary or long-term reduction of a person's activity as a result of an acute or chronic condition.

Disability days are classified according to whether they are days of restricted activity, bed-days, work-loss days, or school-loss days. All days of bed disability are, by definition, days of restricted activity. The converse form of this statement is, of course, not true. Days lost from work and days lost from school are also days of restricted activity for the working and school-age populations. Hence, restricted activity is the most inclusive term used in describing disability days.

Condition-days of restricted activity, bed disability, etc.—Condition days of restricted activity, bed disability, and so forth are days of the various forms of disability associated with any one condition. Since any particular day of disability may be associated with more than one condition, the sum of days for all conditions adds to more than the total number of person-days of disability.

Restricted-activity day.—A day of restricted activity is one on which a person substantially reduces the amount of activity normal for that day because of a specific illness or injury. The type of reduction varies with the age and occupation of the individual as well as with the day of the week or season of the year. Restricted activity covers the range from substantial reduction to complete inactivity for the entire day.

Bed-disability day.—A day of bed disability is one on which a person stays in bed for all or most of the day because of a specific illness or injury. It is considered to be a day only if the period of bed disability includes more than half of the daylight hours. All hospital days for inpatients are considered to be days of bed disability even if the patient was not actually in bed at the hospital.

Work-loss day.—A day lost from work is a normal working day on which a person did not work at his job or business because of a specific illness or injury. If the person's regular work day is less than a whole day and the entire work day was lost, it would be counted as a whole work day lost. The number of days lost from work is determined only for persons 17 years of age or over who reported that at any time during the 2-week period covered by the interview they either worked at or had a job or business. (See "Currently employed persons.")

School-loss day.—A day lost from school is a normal school day on which a child did not attend school because of a specific illness or injury. The number of days lost from school is determined only for children 6-16 years of age.

Person-days of restricted activity, bed disability, etc.—Person-days of restricted activity, bed disability,

V Other conditions

All other acute code numbers

Onset of condition.—A condition is considered to have had its onset when it was first noticed. This could be the time the person first felt sick or became injured, or it could be the time when the person or his family was first told by a physician that he had a condition of which he was previously unaware.

Incidence of conditions.—The incidence of conditions is the estimated number of conditions having their onset in a specified time period. As previously mentioned, minor acute conditions involving neither restricted activity nor medical attention are excluded from the statistics. The incidence data shown in some reports are further limited to various subclasses of conditions, such as "incidence of conditions involving bed disability."

Activity-restricting condition.—An activity-restricting condition is a condition which has caused at least 1 day of restricted activity during the 2 calendar weeks before the interview week. (See definition of "Restricted-activity day.") The incidence of acute activity-restricting conditions is estimated from the number of such conditions reported as having started in the 2-week period, but a condition which did not result in restricted activity until after the end of the 2-week period in which it had its onset is not included.

Bed-disabling condition.—A condition involving at least one day of bed disability is called a bed-disabling condition. (See definition of "Bed-disability day.") The incidence of acute bed-disabling conditions is defined in a manner analogous to the incidence of acute activity-restricting conditions.

Medically attended condition.—A condition is considered medically attended if a physician has been consulted about it either at its onset or at any time thereafter. Medical attention includes consultation either in person or by telephone for treatment or advice. Advice from the physician transmitted to the patient through the nurse is counted as well as visits to physicians in clinics or hospitals. If during the course of a single visit the physician is consulted about more than one condition for each of several patients, each condition of each patient is counted as medically attended.

Discussions of a child's condition by the physician and a responsible member of the household are considered as medical attention even if the child was not seen at that time.

For the purpose of this definition, the term "physician" includes doctors of medicine and osteopathic physicians.

and so forth are days of the various forms of disability experienced by any one person. The sum of days for all persons in a group represents an unduplicated count of all days of disability for the group.

Demographic, Social, and Economic Terms

Age.—The age recorded for each person is his age at last birthday. Age is recorded in single years and combined into groups suitable for the purpose of the table.

Income of family or of unrelated individuals.—Each member of a family is classified according to the total income of the family of which he is a member. Within the household all persons related to each other by blood, marriage, or adoption constitute a family. Unrelated individuals are classified according to their own income.

The income recorded is the total of all income received by members of the family (or by an unrelated individual) in the 12-month period ending with the week of interview. Income from all sources is included, e.g., wages, salaries, rents from property, pensions, help from relatives, and so forth.

Family and Related Terms

The definitions of families and unrelated individuals are the same as those used in the 1960 Census.

Family refers to a group of two or more persons related by blood, marriage, or adoption who are living together in the same household. Although the usual household contains only the primary family, a household can contain secondary families as well as individuals unrelated to the family. A lodger and his family who are not related to the head of the household, or a resident employee and his wife living in are considered as a secondary family and not as part of the primary family. However, if the son of the head of household and the son's

wife and children are members of the household, this subfamily is treated as part of the primary family.

Individuals are persons (other than inmates of institutions) who are not living with any relatives. An unrelated individual can be (a) a household head living alone or with nonrelatives, (b) a lodger or resident employee with no relatives in the household, (c) a staff member of an institution who has no relatives living with him, or (d) a resident of a dormitory, lodging house, or other shared-residence facility who has no relative living with him.

Currently employed persons.—Currently employed persons are all persons 17 years of age or over who reported that at any time during the 2-week period covered by the interview they either worked at or had a job or business. Current employment includes paid work as an employee of someone else, self-employment in business, farming, or professional practice, and unpaid work in a family business or farm. Persons who were temporarily absent from their job or business because of a temporary illness, vacation, strike, or bad weather are considered currently employed if they expected to work as soon as the particular event causing their absence no longer existed.

Free-lance workers are considered as having a job if they had a definite arrangement with one or more employers to work for pay according to a weekly or monthly schedule, either full time or part time. Excluded from the currently employed are such persons who have no definite arrangements but work only when their services are needed.

Also excluded from the currently employed population are (1) persons who were not working, even though having a job or business, if they were on layoff or looking for work, (2) persons receiving revenue from an enterprise in whose operation they did not participate, (3) persons doing housework or charity work for which they received no pay, and (4) seasonal workers during the unemployment season.



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