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HEALTH STATISTICS

# Heart Conditions and <br> High Blood Pressure reported in interviews 

## United States <br> July 1957 - June 1958

Statistics on the prevalence of heart conditions and high blood pressure and days of disability due to these conditions by age, sex, and medical care status. Based on data collected.in household interviews during the period July I957-June 1958.
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# U. S. NATIONAL HEALTH SURVEY 

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The U. S. National Health Survey is a continuing program under which the Public Health Service makes studies todetermine the extent of illness and disability in the population of the United States and to gather related information. It is authorized by Public Law 652, 84th Congress.

## CO-OPERATION OF THE BUREAU OF THE CENSUS

Under the legislation establishing the National Health Survey, the Public Health Service is authorized to use, insofar as possible, the services or facilities of other Federal, State, or private agencies. For the Health Interview Survey the Bureau of the Census designed and selected the sample, conducted the household interviews, and processed the data in accordance with specifications established by the Public Health Service.

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## EXPLANATION OF SYMBOLS

Data not available (three dashes)----------------
Category not applicable (three dots)------------ ...
Quantity is zero (1 dash)-----------------------
Magnitude greater than zero but less than one-half of the unit used0 or 0.0

Magnitude of the sampling error precludes showing separate estimates-------------------

# HEART CONDITIONS AND HIGH BLOOD PRESSURE 

## THE PREVALENCE OF 'CHRONIC CONDITIONS

Estimates of the number of cases of chronic illness of various types in the United States, or in particular cities, counties, States, or other population groups, have been derived from different sources. These sources may be divided into two categories: surveys based on medical records and examinations, and surveys conducted by household interview.

When surveys of these two types are used to measure the prevalence of chronic illness, that is, the number of cases in the population at any one time, there is a basic difference in the underlying concept of morbidity that is associated with the survey methods. In surveys based upon medical records or examinations, the concept of morbidity is that which the physician usually employs. Through the use of diagnostic tests, examination procedures, and medical history questions the physician determines whether certain clinical signs and symptoms are present. On this basis, he makes a decision that one or another disease is or is not present.

In the household-interview survey, however, the objective is to identify conditions which represent a departure from a state of physical or mental well-being as seen by the affected individual himself or members of his family. A person

[^0]is not considered to be ill unless he thinks of himself as ill, and the evidence that he thinks of himself as ill is, first, the reporting of illness in an interview, and, second, if desired, the taking of certain actions which indicate awareness of illness, such as seeing a physician, cutting down on activities, and so forth.

Statistics on the prevalence of chronic disease based upon each of these concepts of morbidity are collected, and each type has particular usefulness for different purposes. The statistics based upon the medical criteria are appropriate for the study of the etiology and epidemiology of diseases, the stages of disease, the forms of treatment, the rehabilitation potential, and similar problems with which the medical sciences are concerned.

The illness reported in interviews, on the other hand, is particularly relevant to study of the social aspects of morbidity-the use or nonuse of medical care, the disability, and, in general, the behavior of people in the face of ill health.

In the former type of chronic disease statistics, the diagnostic classification can be made more precise, and, in view of the uses to which such statistics are put, this precision is necessary. In the latter type, one has to be content with much less precision in the diagnostic classification because the description of the nature of the condition must be passed from the attending physician to the family and thence to the interviewer, with all of the possible errors that this process
entails. However, for most of the uses to which these statistics are appropriate, broader disease categories are satisfactory.

Surveys based on medical records and examinations, and surveys based on household interviews yield results which differ widely for some diseasegroups. In particular, a medical examination survey may pick up numerous chronic conditions that were not reported in prior interviews with the examined persons. In these interviews the individuals do not, of course, report conditions they do not know they have. (These unreported conditions may include some which have never been diagnosed and some which have been diagnosed but which have not been communicated to the family by the physician.) The interviewed persons also tend not to report those conditions which have had no social or economic impact upon their lives. Thus, those ailments which are reported to an interviewer have passed through a screening which selects those of which the individual is most aware and to which he attributes the greatest importance.

It should also be pointed out that some conditions reported in interviews which have been troublesome to the respondent and which have interfered with his usual activities may be undetectable by diagnostic tests and physical examination. Thus, while these two concepts of morbidity overlap, neither one is wholly contained within the other. Neither one represents a "true" concept of prevalence. Each concept is appropriate for measuring illness along a different axis, and each form of measurement is subject to its own peculiar sources of error. Nevertheless, each is useful, though for different purposes.

The data to be presented in the main body of this report are statistics of heart disease and high blood pressure collected by means of household interviews. They measure the levels of these diseases in terms of cases which the people interviewed have been made aware of, have remem-
bered, and considered sufficiently important to report.

The estimates of numbers of cases and rates from the National Health Survey household interviews were obtained using methods and definitions which are described in the following section and in Appendices I and II.

## SOURCE AND CLASSIFICATION OF DATA ON CHRONIC CONDITIONS

Data on chronic conditions presented in this report are based primarily on replies to four "ill-ness-recall" questions in the Health Household Interview.

1. Were you sick at any time last week or the week before?
2. Last week or the week before did you take any medicine or treatment for any condition?
3. At the present time do you have any ailments or conditions that have continued for a long time? (lf 'No') Even though they don't bother you all the time?
4. Has anyone in the family . . . had any of these conditions during the past 12 months? (Interviewer reads list of major chronic _conditions which includes. 'Heart trouble" and "High blood pressure.")
Positive responses concerning the diseases with which this report is concerned may come from any one or more of the four questions. The unduplicated positive replies represent total prevalence of the diseases. Because the statistics are based upon many household interviews throughout a 12 -month period, the prevalence is actually an average prevalence during the year, that is, the average number of conditions of a particular type existing in the population in that period.

Further questions are asked regarding each condition to obtain a more explicit description of
its nature, and to obtain facts about medical attendance and disability. These facts are used to classify the conditions by type of condition and to establish the medical care and disability characteristics of the cases shown in this report.

The accuracy of the description of the nature of conditions which were 'never medically attended" is obviously subject to much doubt. The extent to which such cases are reported and the degree of reliance to be placed in the classification of such conditions vary from one condition to another. For example, when diseases such as heart conditions and high blood pressure are reported as "never medically attended," one may have little or noconfidence in the accuracy of the diagnoses, but the number of such cases represents only a small fraction of the total cases reported. On the other hand, for conditions such as asthma, hay fever, or sinusitis, where the proportion of cases "never medically attended" is higher, the respondent may report such cases on the basis of recognizable symptoms or previous family experience. A somewhat higher degree of confidence can be placed in the classification of conditions of this nature.

The two diagnostic categories considered in this report are shown in table A [heart conditions (I) and high blood pressure without a heart condition (II)]. Since the disease categories are mutually exclusive, the number of persons who have heart conditions may be added to the number of persons with high blood pressure to obtain the total number of persons with either a heart condition, high blood pressure, or both conditions. If a person reported both a heart condition and high blood pressure (Ib) he is counted only in the heart condition group (1). Therefore, the high blood pressuregroup (II) includes only people reporting high blood pressure who have not also reported a heart condition.

A description of the statistical design of the household survey, and general qualifications of the data presented in the report are given in Appendix I. Particular attention is called to the section on Reliability of Estimates, which includes tables of sampling errors and instructions for their use. Explanations and definitions of special terms and concepts used in this report are presented in Appendix II.

Table A. Persons with a heart condition or high blood pressure reported in interviews

| , | Number <br> in thousands | $\begin{gathered} \text { Rate per } \\ 1,000 \\ \text { popula- } \\ \text { tion } \end{gathered}$ |
| :---: | :---: | :---: |
| Total number with a heart condition or high blood pressure------ | 10,117 | 60.1 |
| I Total number with a heart condition | 4,849 | 28.8 |
| a. Number with a heart condition with no high blood pressure (ISC codes 410-434*) | 3,951 | 23.5 |
| b. Number with both a heart condition and high blood pressure (ISC codes 440-443) | 898 | 5.3 |
| II Number with high blood pressure without a heart condition (ISC codes 444-447) | 5,268 | 31.3 |

[^1]
## DIAGNOSTIC GROUPS

The heart condition group includes International Statistical Classificatiun code numbers 410443 which cover the following major diagnostic groups; chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease, hypertensive heart disease, and other diseases of the heart. I.S.C. code numbers 444-447, the category titled hypertensive disease without mention of heart, comprise the high blood pressure without heart involvement group.

Technically these are the diagnostic entities which make up the two chronic disease groups covered by this report. Actually, in a household-interview survey many of these conditions are described by the respondent in general terms such as heart trouble, weak heart, high blood pressure, etc. Therefore, a major portion of reported conditions such as these would properly beclassified in either "Heart disease NOS (not otherwise specified)" or as "Hypertension NOS."

## HEALTH SURVEY ESTIMATES

An estimated total of 10 million persons in the United States were reported to have either a heart condition or high blood pressure. That is, one person in 17 had cither one or both of these conditions in the nationwide health household-interview survey conducted during the period July 1957-June 1958. Roughly, half of these people indicated that they had high blood pressure with no heart condition and the remainder had a heart condition or both high blood pressure and a heart condition.

The over-all prevalence rate for these diseases was 60.1 per 1,000 population. This figure is approximately a third as high as the prevalence rates for this same group of conditions when the illness is measured by means of a careful examination administered to a sample of the general
population. Reports of the studies sponsored by the Commission on Chronic Illness in Baltimore, Maryland, ${ }^{1}$ and Hunterdon County, New Jersey, ${ }^{2}$ showed prevalence rates of 163 and 236 per 1,000 population, respectively. This wide divergency between interview results and examination results had its principal origin in the different concepts of morbidity underlying the measurement procedures, as described in the first section of this report.
ln the urban study the rate for heart disease among persons of all ages was 96 per 1,000 population, while that for hypertension without heart involvement was 66 per 1,000 . In the rural study the prevalence of the total group of conditions, 236 per 1,000 , was evenly divided between heart disease and hypertension without heart disease. These figures may be contrasted with the national statistics based on household interviews which yielded estimated rates of 28.8 for heart disease and 31.3 for high blood pressure.

The heart condition and high blood pressure prevalence rates in the national data follow a pattern typical of many chronic diseases. That is, they increase with age following a fairly regular pattern. Heart conditions range from a low rate of 5 per 1,000 persons in the group under 25 years of age to a high of 186 per 1,000 for those over 75 years of age. Similarly, the high blood pressure rates range from 2.5 per 1,000 for persons in the age group under 25 to 131 per 1,000 for those over 75.

Figure 1 and table 1 present the prevalence rates of each condition group according to sex and

[^2]

Figure 1. Number of persons per 1,000 population with a aeart condition or high blood pressure without a heart condition by sex and age.
age. Note that the over-all prevalence rate of heart conditions among males and females was about the same: 29 per 1,000 persons for males and 28 per 1,000 for females. Certain age groups, however, showed significant rate differences for males and females. It is noteworthy that the agesex pattern for morbidity from heart conditions, shown in table 1, bears some resemblance to that found in mortality for the same group of diseases, namely a ratio of male to female prevalence greater than 1 which starts in the early working ages and reaches a peak in the age groups 45-54 and 5564 years of age. In the older ages there is a progressively lower ratio of male to female rates.

The difference in prevalence rates according to sex are more marked for high blood pressure. While the total prevalence rate for persons reporting high blood pressure without heart involvement
was 31 per 1,000 , the rate for males was only 18 per 1,000 compared with 44 per 1,000 for females. In each age group shown in figure 1 , females reported a significantly higher prevalence rate of high blood pressure than did males. This difference was greatest in the age group 55-64 where the rate of high blood pressure among females was about three times the rate for males (table 1).

## MEDICALLY ATTENDED CONDITIONS.

Figures 2 and 3 and table 2 show the distribution of persons with heart conditions or high blood pressure according to whether medically attended within the past year, medically attended more than one year ago, or never medically attended.

'Figure 2. Percent distribution of persons with a' heart condition by medical attention status.

About 98 percent of the people reporting heart conditions or high blood pressure stated that these conditions had been medically attended. The proportion medically attended was the same for each condition. Seventy-five percent of all people reporting heart conditions or high blood pressure received medical attention within the past year for their condition. Another 23 percent had seen a physician about the condition but not for one year or more.

It should be pointed out that if people in the interview sample had undiagnosed but symptomatic heart disease which was beginning to give them trouble, they would not be able to report the nature of their condition in anything but symptomatic terms. Such symptoms would not have been classified as heart disease. Consequently, the small percentages included in the category 'heart conditions - never medically attended" include only those people who, despite their failure to consult a physician, believed that their trouble was a heart


Figure 3. Percent dıstribution of persons with nigh blood pressure without a heart condition by medical attention status.
condition. The same holds true, of course, for high blood pressure.

Since only 1.4 percent of all the heart conditions and only 2.0 percent of the high blood pressure without heart involvement reported were never medically attended, a detailed table, showing prevalence estimates and rates for all medically attended conditions by age, is not included. These estimates and rates would almost duplicate those in table 1 for all groups shown on the table. Table 5 contains estimates and rates for a subgroup of the medically attended-persons with conditions medically attended in the past year.

## MEDICAL ATTENTION AND "UNDER CARE" STATUS

Several types of tabulations are presented in order to give some objective indications of the significance of the conditions to the individuals


Figure 4. vumber of persons per 1,000 population "under care" of a physician for a neart condition or hign blood pressure without a heart condition by sex and age.
who reported them. The first classification involves the recency of medical care. One of the first reactions to the pain, disability, or fear resulting from illness is the seeking of medical attention. If the illness is not transitory, the individual will usually remain "under care" of a physician. In such cases he will be reported in the survey as still taking medicine or treatment or following advice prescribed by the physician. Tables 3 and 4 contain data in the form of frequencies, rates, and percentages which relate to the recency of medical attention and the proportion "under care" by sex and condition group. Seventy-five percent of all persons reporting heart conditions and 68 percent of all persons reporting high blood pressure stated that they still were taking medicine or treatment or following the advice of a physician ('under care'). Figure 4 shows
prevalence rates for heart conditions and high blood pressure which at the time of the survey were still under care of a physician by sex and age groups. By comparing the rates for those under care with the total rates shown in figure 1 , it can be seen that the age-sex patterns are almost identical.

## 'BED-DISABLING CONDITIONS

Disability is a criterion often used inhealth surveys as a measure of the severity of a condition. Of the 10 million persons reporting heart conditions or high blood pressure, 2 million, or only 1 out of every 5 persons, reported that they were confined to their bed for 1 or more days during the 12 months preceding the interview week be-
cause of these conditions. The number of persons who reported bed disability due to heart conditions with or without high blood pressure $(1,323,000)$ was about twice as great as the number reporting bed disability due to high blood pressure without heart involvement $(677,000)$. Figure 5 and tables 7, 8, and 9 show the estimates, rates, and the proportion of conditions involving bed disability. A beddisability day is a day on which a person was kept in bed either all or most of the day because of the condition. "All or most of the day" is defined as more than half of the daylight hours. All hospital days are included as bed-disability days even if the patient was not actually in bed at the hospital.

The classification of persons with conditions into two groups (conditions causing one or more


Figure 5'. Number of persons per 1,000 population with a heart condition or high blood pressure, causing one or more days of bed disability in the year by sex and age.
days of bed disability in the year and conditions causing no bed disability) reveals that the rate for bed-disabling cases of heart conditions is 7.9 per 1,000 persons as against a rate of 4.0 per 1,000 persons for high blood pressure. When the beddisabling cases are further subdivided and the rates for cases involving major bed disability ( 31 or more days in the year) are examined, it appears that in this group there are about five times as many people with heart conditions as there are people with high blood pressure without heart involvement.

The percent distribution of persons with heart conditions or high blood pressure, according to the amount of bed disability caused by their condition, is shown in figures 6 and 7.


Figure 6. Percent distribution of persons with a neart condition according to the extent of bed disability caused by the condition.


Figure 7. Percent distribution of persons with high blood pressure without a heart condition according to the extent of bed disability caused by the condition.

## DISABILITY DAYS

As a further indication of the impact of these conditions on the Nation, data are presented on the number of days of disability they caused. Three different measures of disability are used in this report-restricted-activity days, bed-disability days, and work-loss days. By definition, 're-stricted-activity day" is the most inclusive measure of disability. A restricted-activity day is a day when a person has had to cut down on his usual activities for the whole of a day because of his condition. A restricted-activity day is also a beddisability day if the condition kept the person in bed all or most of the day. For persons 17 years of age or over a restricted-activity day mayalso
be a work-loss day if the person would have been working on this day had he not been ill.

## RESTRICTED-ACTIVITY DAYS

Heart conditions and high blood pressure caused an estimated total of 337 million days of restricted activity in the 12 -month period from July 1957-June 1958. These 337 million days represent approximately 10 percent of the total per-son-days of restricted activity reported for all conditions (acute and chronic). Persons with heart conditions and those with both a heart condition and high blood pressure accounted for about 238 million restricted-activity days or 70 percent of the total for heart conditions or high blood pressure. About 99 million restricted-activity days were experienced by persons who reported high blood pressure without any heart involvement.

Figure 8 indicates the average number of re-stricted-activity days per year per person with the condition. In each of the age-sex groups shown, persons with heart conditions experienced a considerably higher average number of days of restricted activity due to their condition than those who reported high blood pressure without heart involvement. Heart conditions accounted for an average of 49 days of restricted activity per year per person with the condition and high blood pressure, 19 days. The average number of restrictedactivity days increased with age in each of the condition groups, but in both groups there was a tendency tolevel off after middle age. In the case of high blood pressure, it is worth noting that, although female prevalence was considerably higher than male prevalence, the average number of restricted-activity days per case was higher at all ages among males.


Figure 8. Average number of restricted-activity days per person with the condition per year due to heart conditions or hign blood pressure by sex and age.

## BED-DISABILITY DAYS

In the civilian noninstitutional population of the United States heart conditions and high blood pressure resulted in about 119 million bed-days during the year ending June 1958. About three times as many bed-days were associated with heart conditions ( 88 million) as with high blood pressure ( 32 million).

For the two conditions combined, approximately 35 percent of the restricted-activity days
were bed-disability days. In the heart condition group, bed-days accounted for 37 percent and in the high blood pressure group, 32 percent.

The average number of bed-days per condition (fig. 9) generally follows the same age-sex pattern as average days of restricted activity (fig. 8). Persons with heart conditions reported an average of 18 days of bed disability per year and persons with high blood pressure an average of 6 days per year.


Figure 9. Average number of bed-disability days per person with the condition per year due to heart conditions or high blood pressure by sex and age.

## WORK-LOSS DAYS AMONG THE "USUALLY WORKING" POPULATION

Usually working people lost approximately 26 million days from work due to heart disease and hypertension- 16.5 million due to heart conditions and 9.5 million, high blood pressure. Males reported 21 million work-loss days, about 4 times as many days as females ( 5 million).

Of the 16.5 million work-loss days associated with heart conditions 14 million were experienced by males and 2.5 million by females. The 9.5 million work-loss days associated with high blood
pressure were similarly divided- 7.0 million for males and 2.5 million for females.

Undoubtedly these low estimates of days lost from work are due to the fact that it is only people with a job or business, or those actively engaged in a profession, who can report days lost from work. Some of the people with heart disease and hypertension have left the "usually working" population as a result of their poor health; others had retired from work before the onset of disability. Consequently, work-loss data do not measure the full impact of these conditions upon the economy.

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Table 1. Persons with heart conditions or high blood pressure reported in interviews. by sex, age, and condition group: United States, July 1957-June 1958
[Data are based on household interviews during July 1957-June 1958. Data refer to the civilian noninstitutional population of the United States. Detailed figures may not add to totals due to rounding. The survey design, general qualifications, and information on the reliability of the estimates are given in Appendix l. Definitions of terms are given in Appendix II]


Table 2. Number and percent distribution of persons with heart conditions or high blood pressure reported in interviews. by sex according to when physician was last consulted about the condition: United States, July 1957-Junë 1958
[Data are based on househoid interviews during july 1957-June 1958. Data refer to the civilian noninstitutional pupulation of the United States. Detailed figures may not add to totals due to rounding. The survey design, general qualifications, and information on the reliability of the estimates are given in Appendix l. Definitions of terms are given in Appendix. 11]

| Sex and medical attention | Number of persons with condition in thousands |  |  | Percent of total |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | Heart conditions | High blood pressure without heart involvement | Total | Heart conditions | High blood pressure without heart Involvement |
| Both sexes <br> Total persons | 10,117 | 4,849 | 5,268 | 100.0 | 100.0 | 100.0 |
| Med. att. within past yr.---- | 7,601 | 3,598 | 4,003 | 75.1 | 74.2 | 76.0 |
| Med. att. more than a yr. ago | 2,343 | 1,183 | 1,160 | 23.2 | 24.4 | 22.0 |
| Never medically attended----- | 173 | 69 | 105 | 1.7 | 1.4 | 2.0 |
| Total persons | 3,899 | 2,403 | 1,496 | 100.0 | 100.0 | 100.0 |
| Med. att. within past yr.--- | 2,799 | 1,713 | 1,086 | 71.8 | 71.3 | 72.6 |
| Med. att. more than a yr. ago | 1,016 | 657 | 358 | 26.1 | 27.3 | 23.9 |
| Never medically attended----- | 85 | 32 | 52 | 2.2 | 1.3 | 3.5 |
| Total persons---------- | 6,218 | 2,446 | 3,772 | 100.0 | 100.0 | 100.0 |
| Med. att. within past yx.-.-- | 4,802 | 1,885 | 2,918 | 77.2 | 77.1 | 77.4 |
| Med. att. more than a yr. ago | 1,328 | 525 | 802 | 21.4 | 21.5 | 21.3 |
| Never medically attended----- | 88 | 36 | 52 | 1.4 | 1.5 | 1.4 |

Table 3. Persons with heart conditions or high blood pressure reported in interviews by sex, when physician was last consulted about the condition, and medical care status: United States, July 1957-June 1958
[Data are based on hoùsehold interviews during July 1957-June 1958. Data refer to the civilian noninstitutional population of the United States. Detailed figures may not add to totals due to rounding. The survey design, general qualifications, and information on the reliability of the estimates are given in Appendix 1 . Definitions of terms are given in Appendix 11]


Table 4. Number and percent distribution of persons with heart conditions or high blood pressure reported in interviews by sex according to when physician was last consulted about the condition and medical care status: United States, July 1957-June 1958
[Data are based on household interviews during July 1957-June 1958. Data refer to the civilian noninstitutional population of the United States. Detailed figures may not add to totals due to rounding. The survey design, general qualifications, and information on the reliability of the estimates are given in Appendix 1 . Definitions of terms are given in Appendix 1I]

| Sex and medical care status | Number of persons with condition in thousands |  |  | Percent of total |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | Heart conditions | High blood pressure without heart involvement | Total | Heart conditions | High blood pressure without heart involvement |
| Both sexes |  |  |  |  |  |  |
| Total persons---------- | 10,117 | 4,849 | 5,268 | 100.0 | 100.0 | 100.0 |
| Under care----------- | 7,203 | 3,615 | 3,587 | 71.2 | 74.6 | 68.1 |
| Not under care------- | 2,915 | 1,233 | 1,681 | 28.8 | 25.4 | 31.9 |
| Med. att. within past yr.---- | 7,601 | 3,598 | 4,003 | 100.0 | 100.0 | 100.0 |
|  | 6,033 | 3,009 | 3,023 | 79.4 | 83.6 | 75.5 |
| Not under care-------------- | 1,568 | 588 | 980 | 20.6 | 16.3 | 24.5 |
| Med. att. more than a yr. ago. Under care Not under $\qquad$ | 2,343 | 1,183 | 1,160 | 100.0 | 100.0 | 100.0 |
|  | 1,170 | 606 | 564 | 49.9 | 51.2 | 48.6 |
|  | 1,173 | 576 | 597 | 50.1 | 48.7 | 51.5 |
| Never medically attended----- <br> Not under care | 173 | 69 | 105 | 100.0 | 100.0 | 100.0 |
|  | 173 | 69 | 105 | 100.0 | 100.0 | 100.0 |
| Total persons---------- | 3,899 | 2,403 | 1,496 | 100.0 | 100.0 | 100.0 |
| Under care <br> Not under care------- | 2,678 $\mathbf{1}, 221$ | $\begin{array}{r}1,734 \\ \hline 669\end{array}$ | 944 552 | 68.7 31.3 | 72.2 27.8 | 63.1 36.9 |
| Med. att. within past yr.---- | 2,799 | 1,713 | 1,086 | 100.0 | 100.0 | 100.0 |
| Under care------------------ | 2,207 | 1,410 | 797 | 78.8 | 82.3 | 73.4 |
| Not under care-------------- | 591 | 303 | 288 | 21.1 | 17.7 | 26.5 |
| Med. att. more than a yr. ago | 1,016 | 657 | 358 | 100.0 | 100.0 | 100.0 |
| Under care------------------ | 471 | 324 | 147 | 46.4 | 49.3 | 41.1 |
| Not under care------------- | 545 | - 333 | 211 | 53.6 | 50.7 | 58.9 |
| Never medically attended----- <br> Not under care-------------- | 85 | 32 | 52 | 100.0 | 100.0 | 100.0 |
|  | 85 | 32 | 52 | 100.0 | 100.0 | 100.0 |
| Female |  |  |  |  |  |  |
| Total persons---------- | 6,218 | 2,446 | 3,772 | 100.0 | 100.0 | 100.0 |
| Under care----------- | 4,524 | 1,882 | 2,643 | 72.8 | 76.9 | 70.1 |
| Not under care------- | 1,693 | 565 | 1,129 | 27.2 | 23.1 | 29.9 |
| Med. att. within past yr.---- | 4,802 | 1,885 | 2,918 | 100.0 | 100.0 | 100.0 |
| Under care------------------ | 3,825 | 1,599 | 2,226 | 79.7 | 84.8 | 76.3 |
| Not under care------------- | 977 | 285 | 691 | 20.3 | 15.1 | 23.7 |
| Med. att. more than a ýr. ago Under care | 1,328 | 525 | 802 | 100.0 | 100.0 | 100.0 |
|  | 699 | 282 | 417 | 52.6 | 53.7 | 52.0 |
| Not under care------------- | 628 | 243 | 385 | 47.3 | 46.3 | 48.0 |
| Never medically attended <br> Not under care | 88 | 36 | 52 | 100.0 | 100.0 | 100.0 |
|  | 88 | 36 | 52 | 100.0 | 100.0 | 100.0 |

Table 5. Persons medically attended within the year for heart conditions or high blood pressure reported in interviews: by sex and age: United States, July 1957-June 1958
[Data are based on household interviews during July l957-June 1958. Data refer to the civilian noninstitutional population of the United States. Detailed figures may not add to totals due to rounding. The survey design, general qualifications, and information on the reliability of the estimates are given; in Appendix 1 . Definitions of terms are given in Appendix 11 ].

| Sex and age | Number of persons medically attended within the year in thousands |  |  | Rate per 1,000 population |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | Heart conditions | High blood pressure without heart involvement | Total | Heart conditions | High blood pressure without heart Involvement |
| Both sexes |  |  |  |  |  |  |
| A11 ages----------------- | 7,601 | 3,598 | 4,003 | 45.1 | 21.4 | 23.8 |
| Under 25------------------------ | 374 | 246 | 128 | 5.1 | 3.3 | 1.7 |
|  | 960 | 333 | 627 | 21.0 | 7.3 | 13.7 |
|  | 1,250 | 484 | 766 | 63.6 | 24.6 | 39.0 |
| 55-64-------------------------- | 1,871 | 857 | 1,014 | 126.2 | 57.8 | 68.4 |
| 65-74---------------------------- | 1,929 | 961 | 967 | 200.4 | 99.8 | 100.4 |
| 75+-----------------------------1-2- | 1,217 | 716 | 501 | 249.1 | 146.5 | 102.5 |
| Male |  |  |  |  |  |  |
| A11 ages----------------- | 2,799 | 1,713 | 1,086 | 34.2 | 20.9 | 13.3 |
| Under 25----------------------- | 149 | 117 | 33 | 4.1 | 3.2 | 0.9 |
|  | 399 | 167 | 233 | 18.2 | 7.6 | 10.6 |
|  | 489 | 265 | 225 | 51.0 | 27.6 | 23.5 |
| 55-64----------------------------1-2- | 668 | 445 | 222 | 93.5 | 62.3 | 31.1 |
| 65-74---------------------------- | 715 | 466 | - 248 | 158.5 | 103.3 | 55.0 |
| 75+------------------------------ | 379 | 254 | 125 | 177.9 | 119.2 | 58.7 |
| Female |  |  |  |  |  |  |
| A11 ages | 4,802 | 1,885 | 2,918 | 55.5 | 21.8 | 33.7 |
| Under 25----------------------- | 225 | 130 | 96 | 6.1 | 3.5 | 2.6 |
| 25-44--------------------------- | 560 | 166 | 394 | 23.6 | 7.0 | 16.6 |
|  | 761 | 220 | 541 | 75.7 | 21.9 | 53.8 |
| 55-64-------------------------- | 1,203 | 411 | 792 | 156.5 | 53.5 | 103.1 |
|  | 1,214 | 495 | 719 | 237.3 | 96.8 | 140.5 |
| 75+----------------------------- | 838 | 462 | 376 | 304.2 | 167.7 | 136.5 |

Table 6. Persons with heart conditions or high blood pressure under care of a physician reported in interyiews. by sex and age: United States, July 1957-June 1958
[Data are based on household interviews during July l957-June l958. Data refer to the civilian noninstitutional population of the United States. Detailed figures may not add to totals due to rounding. The survey design, general qualifications, and information on the reliability of the estimates are given in Appendix 1 . Definitions of terms are given in Appendix II]


Table 7. Persons with heart conditions or high blood pressure reported in interviews. by sex, when physician was last consulted about the condition, and bed-disability days attributed to the condition: United States, July 1957-June 1958
[Data are based on household interviews during July 1957-June 1958. Data refer to the civilian noninstitutional population of the United States. Detailed figures may not add to totals due to rounding. The survey design, general qualifications, and information on the reliability of the estimates are given in Appendix 1 . Definitions of terms are given in Appendix 11]


Table 8. Number and percent distribution of persons with heart conditions or high blood pressure reported in interviews by sex according to when physician was last consulted about the condition and bed-disability days attributed to the condition: United States, July 1957-June 1958
[Data are based on household interviews during July 1957-June 1958. Data refer to the civilian noninstitutional population of the United States. Detailed figures may not add to totals due to rounding. The survey design, general qualifications, and information on the reliablity of the estimates are given in Appendix l. Definitions of terms are given in Appendix 11$]$

| Sex, medical attention, and bed-days | Number of persons with condition in thousands |  |  | Percent of total |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | Hear t conditions | High blood pressure without heart involvement | Total | Heart conditions | High blood pressure without heart involvement |
| Both sexes |  |  |  |  |  |  |
| Total persons | 10,117 | 4,849 | 5,268 | 100.0 | 100.0 | 100.0 |
| With $1+$ bed-days in year With no bed-days in year | 2,000 8,117 | 1,323 3,526 | 5677 4,591 | 19.8 80.2 | 27.3 72.7 | 12.9 87.1 |
| With no bed-days in year----- |  |  | 4,591 |  |  |  |
| Med. attended within past year------- | 7,601 | 3,598 | 4,003 | 100.0 | 100.0 | 100.0 |
| With l+ bed-days in year----------- | 1,757 | 1,178 | 579 | 23.1 | 32.7 | 14.5 |
| With no bed-days in year---------- | 5,844 | 2,420 | 3,424 | 76.9 | 67.3 | 85.5 |
| Med. attended more than a year ago-- | 2,343 | 1,183 | 1,160 | 100.0 | 100.0 | 100.0 |
| With 1+ bed-days in year----------- | 237 | 140 | 97 | 10.1 | 11.8 | 8.4 |
| With no bed-days in year----------- | 2,106 | 1,042 | 1,064 | 89.9 | 88.1 | 91.7 |
| Never medically attended------------- | 173 | 69 | 105 | 100.0 | 100.0 | 100.0 |
| With 1+ bed-days in year | (*) | (*) | (*) | (*) | < (*) | (*) |
| With no bed-days in year | 167 | 63 | 104 | 96.5 | 91.3 | 99.0 |
| Male |  |  |  |  |  |  |
| Total persons | 3,899 | 2,403 | 1,496 | 100.0 | 100.0 | 100.0 |
| With 1+ bed-days in year----With no bed-days in year----- | $\begin{array}{r} 840 \\ 3,060 \end{array}$ | $\begin{array}{r} 654 \\ 1,749 \end{array}$ | 186 1,311 | 21.5 | 27.2 72.8 | 12.4 87.6 |
| Med. attended within past year------- | 2,799 | 1,713 | 1,086 | 100.0 | 100.0 | 100.0 |
| With l+ bed-days in year | 754 | 589 | 165 | 26.9 | 34.4 | 15.2 |
| With no bed-days in year----------- | 2,044 | 1,124 | 921 | 73.0 | 65.6 | 84.8 |
| Med. attended more than a year ago--With 1+ bed-days in year With no bed-days in year----------- | 1,016 | 657 | 358 | 100.0 | 100.0 | 100.0 |
|  | 85 930 | 64 593 | (E) 337 | 8.4 91.5 | 9.7 90.3 | ¢ 94.1 |
| Never medically attended------------ | 85 | (*) | 52 | 100.0 | (*) | (*) |
| With $1+$ bed-days in year----------With no bed-days in year | 85 | (*) | 52 | 100.0 | (*) | (*) |
| Female |  |  |  |  |  |  |
| Total persons | 6,218 | 2,446 | 3,772 | 100.0 | 100.0 | 100.0 |
| With 1+ bed-days in year----- | 1,161 | 669 | 491 | 18.7 | 27.4 | 13.0 |
| With no bed-days in year----- | 5,057 | 1,777 | 3,281 | 81.3 | 72.6 | 87.0 |
| Med. attended within past year------- | 4,802 | 1,885 | 2,918 | 100.0 | 100.0 | 100.0 |
| With 1+ bed-days in year----------- | 1,003 | 588 | 414 | 20.9 | 31.2 | 14.2 |
| With no bed-days in year----------- | 3,799 | 1,296 | 2,503 | 79.1 | 68.8 | 85.8 |
| Med. attended more than a year ago--With $1+$ bed-days in year <br> With no bed-days in year----n-......... | 1,328 | 525 | 802 | 100.0 | 100.0 | 100.0 |
|  | 152 | 76 | 76 | 11.4 | 14.5 | 9.5 |
| With no bed-days in year----------- | 1,176 | 449 | 726 | 88.6 | 85.5 | 90.5 |
| Never medically attended------------- | 88 | (*) | 52 | 100.0 | (*) | 100.0 |
| With 1+ bed-days in year---------- | (*) | (*) | (*) | (*) | (*) | (*) |
| With no bed-days in year----------- | 82 | (*) | 51 | 93.2 | (*) | 98.1 |

Table 9. Persons with heart conditions or high blood pressure reported in interviews by sex, age, and the extent of bed disability associated with these conditions: United States, July 1957-June 1958
[Data are based on household interviews during July 1957-June 1958. Data refer to the civilian noninstitutional population of the United States. Detailed figures may not add to totals due to rounding. The survey design, general qualifications, and information on the reliability of the estimates are given in Appendix l. Definitions of terms are given in Appendix 11]


NOTE: Bed disability (a) Minor $=1-30$ days ( 6 ) $\mathrm{Major}=31$ or more days ( $c$ ) Unknown $=$ Unknown number of days

Table 10. Number of restricted-activity days in the year associated with heart conditions or high blood pressure reported in interyiews. by sex and age: United States, July 1957-June 1958
[Data are based on household interviews during July l957-June 1958 . Data refer to the civilian noninstitutional population of the United States. Detailed figures may not add to totals due to rounding. The survey design, general qualifications, and information on the reliability of the estimates are given in Appendix l. Definitions of terms are given in Appendix II]


[^3]Table 11. Number of bed-disability days in the year associated with heart conditions or high blood pressure reported in interviews. by sex and age: United States, July 1957-June 1958
[Data are based on household interviews during July 1957-June 1958. Data refer to the civilian noninstitutional population of the United States. Detailed figures may not add to totals due to rounding. The survey design, general qualifications, and information on the reliability of the estimates are given in Appendix l. Definitions of terms are given in Appendix II]


[^4]Table 12. Population used in obtaining rates shown in this publication by sex and age: United States, July 1957June 1958
[Data are based on household interviews during July 1957 -June 1958 . Data refer to the civilian noninstitutional population of the United States. Detailed figures may not add to totals due to rounding. The survey design, general qualifications, and information on the reliability of the estimates are given in Appendix l. Definitions of terms are given in Appendix Il]


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, P-50, P-57, and P-60.

## APPENDIX I

## TECHNICAL NOTES ON METHODS

## Background of This Report

This report on Heart Conditions and High Blood Pressure is one of a series of statistical reports which cover separate health-related topics prepared by the U. S. National Health Survey. The report is based on information collected in the nationwide continuing sample household-interview survey which is a main aspect of the program.

The household-interview survey uses a questionnaire which, in addition to personal and demographic characteristics, requests information on illnesses, injuries, chronic conditions, medical care, dental care, and hospitalization. As interview data relating to each of these various broad subject areas are tabulated and analyzed, separate reports are issued covering one or more specific topics. The present report on heart conditions and high blood pressure is based on the consolidated sample for 52 weeks of interviewing ending June 29, 1958.

The population covered by the sample for the house-hold-interview survey is the civilian population of the United States living at the time of the household interview. Although the sample collection covers persons living as inmates of resident-type institutions, data for these persons are not included in the figures given in these reports pending special study of the applicability of an interview-type questionnaire to these persons. The sample does not include members of the Armed Forces, United States nationals living in foreign countries, and 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 an area sample of 372 from among approximately 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 Area.

With no loss in general understanding, the remaining stages can be telescoped and treated in this discussion as an ultimate stage. Within PSU's, then, ultimate stage units called segments are defined, also geographically, in such a manner that each segment contains an expected six households in the sample. Each week a random sample of about 120 segments is drawn. In the approximately 700 households in those segments persons are interviewed concerning illnesses, injuries, chronic conditions, disability, and other factors related to health.

The household members interviewed each week are a representative sample of the population so that samples for successive weeks can be combined into larger
samples for, say a calendar quarter, or a year. 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 over a 12 -month period includes approximately 115,000 persons from 36,000 households in 6,000 segments, with representation from every State. The over-all sample was designed in such a fashion, that from the annual sample, tabulations can be provided for various geographic sections of the United States and for urban and rural sectors of the Nation.

Collection of data. -The field operations for the household survey are performed by the Bureau of the Census under specifications established by the Public Health Service. In accordance with these specifications the Bureau of the Census designs and selects the sample, conducts the field interviewing acting as collecting agent for the Public Health Service, and edits and codes the questionnaires. Tabulations are prepared by the Public Health Service using the Bureau of the Census electronic computers.

Estimating methods.-Each statistic produced by the survey-for example, the number of persons with high blood pressure-is the result of two stages of ratio estimation. In the first of these, the ratio factor is 1950 decennial population count to estimated population for 1950 for the U. S. National Health Survey first-stage sample of PSU's. These factors are applied for 132 color-residence classes.

Later, ratios of sample-produced estimates of the population to official Bureau of the Census figures for current population in 76 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 United States population for that calendar quarter.

For prevalence statistics, such as the number of persons with heart conditions, weekly estimates were averaged to produce estimates for a quarter. The quarterly estimates were then averaged to obtain the estimates for the year.

For statistics measuring the number of occurrences during a specified time period, such as number of bed-disability days associated with high blood pres-
sure, a similar computational procedure is used, but the statistics have a different interpretation. For the disa-bility-day items, the questionnaire asks for the respondent's experience over the two calendar weeks prior to week of interview. In such instances, the estimated quarterly total for the statistic is simply 6.5 times the average two-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 two-calendar-week interval prior to week of interviewis treated in analysis as though it measured the total of such experience occurring in the year. For most statistics, such interpretation leads to no significant bias.

The interviewing and estimation procedures, as noted earlier, are designed to reproduce the experience in the reference period of the questionnaire for the population living at the time of interview.

## General Qualifications

Nonresponse. -Data were adjusted for nonresponse by a procedure which imputed to persons in a household not interviewed the characteristics of interviewed persons in the same segment. The total noninterview rate was 6 percent; 1 percent was refusal, and the remainder was accounted for by all other reasons, such as failure to find any household respondent after repeated trials.

The interview process. -The statistics presented in this report are based on replies secured in interview of persons in the sampled households. Each person, 18 years 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 provided 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 collec ed in household interviews. For diagnostic information the household respondent, can, at best, pass on to the interviewer only the information the physician has given to the family. For conditions not medically attended, diagnostic information is often no more than a description of symptoms. However, other types of 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 all of this type of information.

Rounding of numbers. - The original tabulations on which 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 shown in thousands or millions, although they are not necessarily accurate to that detail. Derived statistics such as rates and percent distributions are computed after the estimates on which they 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 over-all totals by age and sex (which are independently estimated), these figures are based on the sample of households in the U. S. National Health Survey. They are given primarily for the purpose of providing 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 they will permit users to recombine published data into classes more suitable to their specific needs. With the exception of the over-all totals by age and sex, mentioned above, the population figures may in some cases differ from corresponding figures (which are derived from different sample surveys) 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 $\mathrm{P}-20$, $P-25, P-50, P-57$, 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 difference would be less than twice the standard error and about 99 out of 100 that it would be less than $2 \%$ times as large.

The estimates of standard errors shown in the following tables are approximations for the 372-area sample. In order to derive standard errors which would be applicable to a wide variety of health statistics and which could be prepared at a moderate cost, a number of approximations were required. As a result, tables I through III, included at the end of this Appendix, should be interpreted as providing an estimate of approximate standard error rather than as the precise standard error for any specific aggregate or percentage.

Three classes of statistics for the health survey are identified for purposes of estimating variances.

Narrow range. - This class consists of (1) statistics which estimate a population attribute-i.e., number of persons with a specified characteristic; for example: the number of persons with heart conditions; and (2) statistics for which the measure for a single individual for the period of reference in the questionnaire is usually either the value 0 or 1 , but on occasion may take on the value 2 , or very rarely 3 .

Medium range. - This class consists of other statistics for which the measure for a single individual for the period of reference in the questionnaire will rarely lie outside the range 0 to 5 . (There were no Medium-range statistics presented in this report.)

Wide range. -This class consists of statistics for which the measure for a single individual for the period of reference in the questionnaire will range from 0 to a number frequently in excess of 5 ; for example: the number of restricted-activity days associated with heart conditions experienced during the year.

Sampling errors for Narrow- and Wide-range statistics were read from curves which have been fitted to computed standard errors for a number of appropriate items for four quarters of sampling.

In addition to classifying variables according to whether they are Narrow, Medium, or Wide range, two other classes of statistics are defined in the survey:
\(\left.\begin{array}{l|l}\hline Variable \& Use sampling error table <br>

indicated below\end{array}\right]\)| Number of persons with heart conditions or high blood |
| :--- |
| pressure in any age-sex category, or according to |
| medical attention, under care status, or bed-disa- |
| bility category--- |

Type I consists of statistics on prevalence, for example, the number of persons with high blood pressure under care of a physician.
Type II consists of statistics for which the period of reference in the questionnaire is two weeks, for example, the number of re-stricted-activity days associated with heart conditions.
Only those sampling error tables applicable to data contained in this report are presented here. Those shown are the sampling error tables for Narrow-range Type I statistics and for Wide-range Type II statistics.

General rules for determining sampling errors. The "guide" shown above, together with the following rules will enable the reader to determine sampling errors from tables I through III for the statistics presented in this report.

1. Estimates of aggregates: Standard errors for estimates of aggregates are given in table $I$, with the following exception. Where the aggregate consists of the number of persons in an age or sex category of the population for which the number of such persons is a large part of the total population in the age or sex category, table I overstates the sampling error by a significant amount. Such a statistic has the same relative standard error ${ }^{1}$ as does the estimated number
expressed as a percent of the total population in the category. Table II may be utilized for computing standard errors for this group of estimates.
2. Estimates of percentages: Standard errors for estimates of percentages are given in tables II and 111 .
3. Estimates of ratios or rates: (a) Where the numerator of the rate is a subclass of the base or denominator, use table II or III to obtain the sampling error. (b) Where the numerator is not a subclass of the denominator, a rough approximation of the sampling error may be obtained as follows. The relative standard error ${ }^{1}$ of the ratio is equal to the square root of the sum of the squares of the relative standard errors ${ }^{1}$ of the numerator and the denominator. This will normally give an overestimate of the true sampling error.
4. Differences between two sample estimates: The standard error of a difference is approximately the square root of the sum of the squares of each standard error considered separately. This formula will represent the actual standard error quite accurately for the difference between separate and uncorrelated characteristics although it is only a rough approximation in most other cases.
[^5]Table I. Standard errors of estimates of aggregates.

| Size of estimate | Standard error |  |
| :---: | :---: | :---: |
|  | Narrow-range Type I | Wide-range Type II |
| 100 | 22 | $\cdots$ |
| 500 | 50 | . ${ }^{\text {. }}$ |
| 1,000 | 70 | 500 |
| 2,000 | 100 | 700 |
| 3,000 | 120 | 900 |
| 5,000 | 160 | 1,200 |
| 10,000 | 220 | 1,500 |
| 20,000 | 300 | 2,200 |
| 30,000 | 330 | 2,700 |
| 50,000 | 350 | 3,500 |
| 100,000 | 400 | 5,500 |
| 200,000 | ... | 8,000 |
| 500,000 | ... | 15,000 |
| 750,000 | $\ldots$ | 21,000 |
| 1,250,000 | . . . | 32,000 |

Illustration of use of table 1.-The number of re-stricted-activity days associated with high blood pressure was $98,892,000$. Since this is an estimate of an aggregate and since restricted-activity days is a Widerange Type ll'variable, the "Wide-range". column of table I is appropriate. Reading in this column, it is found that a statistic of $50,000,000$ has a standard error of $3,500,000$ and a statistic of $100,000,000$ has a standard error of 5,500,000. Interpolating between these values, the appropriate standard error of the estimated $98,892,000$ days is $5,456,000$.

Table II. Standard error of estimated percentage for Narrow-range statistics (body of table expressed in percentage points)

| Estimated percentage | Base of percentage (base is shown in thousands) |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Type I items | 100 | 500 | 1,000 | 2,000 | 3,000 | 5,000 | 10,000 | 20,000 | 30,000 | 50,000 | 100,000 |
| 2 or 98----.-- | 3.6 | 1.6 | 1.1 | 0.8 | 0.7 | 0.5 | 0.4 | 0.3 | 0.2 | 0.2 | 0.1 |
| 5 or 95- | 5.6 | 2.5 | 1.8 | 1.3 | 1.0 | 0.8 | 0.6 | 0.4 | 0.3 | 0.3 | 0.2 |
| 10 or 90 | 6.8 | 3.0 | 2.1 | 1.5 | 1.2 | 1.0 | 0.7 | 0.5 | 0.4 | 0.3 | 0.2 |
| 25 or 75------- | 9.8 | 4.4 | 3.1 | 2.2 | 1.8 | 1.4 | 1.0 | 0.7 | 0.6 | 0.4 | 0.3 |
| 50------------- | 12.9 | 5.8 | 4.1 | 2.9 | 2.4 | 1.8 | 1.3 | 0.9 | 0.7 | 0.6 | 0.4 |

llustration of use of table ll..-Of the $5,268,000$ persons reported as having high blood pressure, 12.9 percent had one or more days of bed disability in the year. Since this is a percentage, and a Narrow-range variable, table il: is appropriate. For a base of $5,000,000$ a statistic of 10 percent has a standard error of 1.0 percentage polnts, and a statistic of 25 percent has a standard error of l. 4 percentage points. Interpolating, with a base of $5,000,000$ a statistic of 12.9 percent would have a standard error of 1.08 . Corresponding calculations with a base of $10,000,000$ produce a standard error of 0.76 . A final interpolation between these two results yields an estimate of l. 06 percentage points which rounds to 1.1 as the approximate standard error for a statistic of 12.9 percent with a base of 5,268,000. Interpolation has been carried out in two dimensions in this example. Usually a simple scanning of table Il will provide an approximate answer which is sufficient for most purposes.'

Table III. Standard error of estimated percentage for Wide-range statistics (body of table expressed in percentage points)

| Estimated percentage | Base of percentage (base is shown in thousands) |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Type II items | 2,500 | 12,500 | 25,000 | 50,000 | 75,000 | 125,000 | 250,000 | 500,000 | 750,000 | 1,250,000 |
| 2 or 98------- | 4.2 | 1.9 | 1.3 | 0.9 | 0.8 | 0.6 | 0.4 | 0.3 | 0.2 | 0.2 |
| 5 or 95-------- | 6.5 | 2.9 | 2.1 | 1.5 | 1.2 | 0.9 | 0.7 | 0.5 | 0.4 | 0.3 |
| 10 or 90------- | 9.0 | 4.0 | 2.8 | 2.0 | 1.6 | 1.3 | 0.9 | 0.6 | 0.5 | 0.4 |
| 25 or 75------- | 13.0 | 5.8 | 4.1 | 2.9 | 2.4 | 1.8 | 1.3 | 0.9 | 0.8 | 0.6 |
| 50------------- | 15.0 | 6.7 | 4.7 | 3.4 | 2.7 | 2.1 | 1.5 | 1.1 | 0.8 | 0.7 |

Illustration of use of table lll. —Of the $98,892,000$ restricted-activity days associated with high blood pressure, 20.6 percent of them were for persons over 75 years of age. Since this is a percentage and since restricted-activity days is a Wide-range variable, table lll is. appropriate. For a base of 75,000,000 a statistic of 10 percent has a standard error of 1.6 percentage points and a statistic of 25 . percent has a standard error. of 2.4 percentage points. Interpolating, with a base of $75,000,000$ a statistic of 20.6 percent would have a standard error of 2.17 percentage points. Corresponding calculations with a base of $125,000,000$ produce a standard error of 1.65 percentage points. A final interpolation between these two results yields an estimate of 1.92 percentage points which rounds to l. 9 as the approximate standard error for a statistic of 20.6 percent with a base of $98,892,000$. IInterpolation has been carried out in two dimensions in this example. Usually a simple scanning of table ill will provlde an approximate answer which is sufficient for most purposes.l

## APPENDIX II

## DEFINITIONS OF CERTAIN TERMS USED IN THIS REPORT

## 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 (11-17, Appendix III). 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 Statistical Classification of Diseases, Injuries, and Causes of Death with certain modifications adopted to make the code more suitable for a household-interview-type survey. For survey results for the year ending June 29, 1958, the 1948 Re vision of the International Classification was used. lmpairments are coded according to a special supplementary classification.

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.

Onset of condition.-A morbidity condition, whether acute or chronic, 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 the person or his family was first told by a physician that he had a disease of which he was previously unaware. For a chronic condition, episodic in nature, the onset is always considered to be the original onset rather than the start of the most recent episode.

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 denotes the number of chronic cases reported to be present or assumed to be;present at the time of 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 conditions 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.

Estimates of the prevalence of chronic conditions may be restricted to cases that satisfy certain addi-

## Check List of Chronic Conditions.

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Asthma 16. Kidney stones or other
Asthma 16. Kidney stones or other
Midney trouble
Any allergy
Tuberculosis
Chronic bronchitis 18. Prostate trouble
Repeated attacks of sinus
irouble
Rheumatic fever
    Hardening of the arteries
    High blood pressure
Heart trouble
    Stroke
11. Trouble with varicose veins
Hemorrhoids or piles
13. Gallbladder or liver trouble
Stomach ulcer
15. Any other chronic stomach
trouble
Midney trouble
19. Diabetes
20. Thyroid
    goiter
    pilepsy or convulsions
    of any kind
tental or nervous
trouble
23. Repeated trouble with
    back or spine
    rumor or cance
    Tumor or cancer
25. Chronic skintrouble
18. Prostate trouble
20. Thyroid trouble or
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Check List of Impairments

1. Deafness or serious trouble with hearing.
2. Serious trouble with seeing, even with glasses.
3. Condition present since birth, such as cleft palate or
club foot.
4. Stammering or other trouble with speech.
5. Missing fingers, hand, or arm.
6. Missing toes, foot, or leg.
7. Cerebral palsy.
B. Paralysis of any kind.
8. Any permanent stiffness or deformity of the foot or leg,
fingers, arm, or back.
tional stated criteria, such as, for example, cases involving a day or more in bed in the past year, or cases still under medical care.

Persons with heart conditions or high blood pressure. -The prevalence counts of heart conditions or high blood pressure shown in this report are obtained from counts of conditions rather than persons. If an individual reports both a heart condition and high blood pressure, these are merged in the medical coding procedure and appear in tabulations as a heart condition. Since there can be no duplication of persons in the two condition groups shown the counts are essentially counts of persons with the condition. In this report "the number of persons with a condition" and "the prevalence of a condition" are used synonymously.

Physician. -For the purposes of this report, 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.

Medically attended condition. - A condition for which a physician was consulted is called a medically attended condition. Consulting a physician includes consultation in person or by telephone for treatment or advice. Advice from the physician transmitted to the patient by the nurse is counted as medical consultation as well as visits to physicians in clinics or hospitals. If at one visit the physician is consulted about more than one condition for each of several patients, each condition is counted as medically attended. A condition is counted as medically attended if a physician was consulted about it at its onset or at any time thereafter.

A parent consulting a physician about a child's condition is counted as medical consultation about that condition even if the child was not seen by the physician at that time.

Interval since last medical attention for a condition. -The interval since the last medical attention for a condition is obtained only for chronic conditions. It refers to the number of months or years prior to the week of interview since a physician was last consulted about the chronic condition. If during the course of an examination for the purpose of obtaining insurance, employment, etc., a condition was merely noted by a physician who was not giving a diagnosis, advice, or treatment, this is not counted in determining the last time a physician was consulted.

Under care. -This information is obtained only for chronic conditions. A chronic condition which is "under care" is one for which the person is still "under instruction" from a physician. By "under instruction' is meant one or more of the following: (1) taking certain medicine or treatment prescribed by a physician, (2) observing a certain systematic course of diet or activity, (3) visiting the physician regularly for checking on the condition, and (4) under instruction from the physician to return if some particular thing happens.

## Terms Relating to Disability

Disability.-Disability is a 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, hospital days, work-loss days, or school-loss days. All hospital days are, by definition, days of bed disability; all days of bed disability are, by definition, days of restricted activity. The converse form of these statements is, of course, not true. Days lost from work and days lost from school are special terms which apply to the working and school-age populations only, but these, too, are days of restricted activity. Hence, "days of restricted activity" is the most inclusive term used to describe disability days.

Restricted-activity day.-A day of restricted activity is a day when a person cuts down on his usual activities for the whole of that day on account of an illness or an injury. The term 'usual activities' for any day means the things that the person would ordinarily do on that day. For children under school age, "usual activities" depend upon whatever the usual pattern is for the child's day which will, in turn, be affected by the age of the child, weather conditions, and so forth. For retired or elderly persons, "usual activities" might consist of almost no activity, but cutting down on even a small amount for as much as a day would constitute restricted activity. On Sundays or holidays "usual activities" are
taken to be the things the person usually does on such days-going to church, playing golf, visiting friends or relatives, or staying at home and listening to the radio, reading, looking at television, and so forth.

Restricted activity does not imply complete inactivity but it does imply only the minimum of "usual activities." A special nap for an hour after lunch does not constitute cutting down on usual activities, nor does the elimination of a heavy chore, such as cleaning ashes out of the furnace or hanging out the wash. If a farmer or housewife carries on only the minimum of the day's chores, however, this is a day of restricted activity.

A day spent in bed or a day home from work or school because of illness or injury is, of course, a re-stricted-activity day.

Bed-disability day. - A bed-disability day, sometimes for brevity referred to as a "bed-day," is a day on which a person was kept in bed either all or most of the day because of an illness or an injury. "All or most of the day" is defined as: more than half of the daylight hours. All hospital days are included as bed-disability days even if the patient was not actually in bed at the hospital.

Bed-disability categories. - In an attempt to develop a crude measure of the severity of the condition, persons were categorized according to the amount of bed disability caused by the condition. The categories refer to the number of days of bed disability experienced during the 12 months prior to the interview week.

| Categories | Days in the 12 months |
| :--- | :--- |
| No bed disability | No days |
| Minor bed disability | $1-30$ days |
| Major bed disability | 31 or more days |
| Unknown bed disability | Unknown number of days |

Work-loss day.-A day is counted as lost from work if the person would have been going to work at a job or business that day but instead lost the entire work day because of an illness or an 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. Work-loss days are determined only for persons 17 years of age and over.

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.

## Demographic Terms

Age. -The age recorded for each person is the age at last birthday. Age is recorded in single years and grouped in a variety of distributions depending upon the purpose of the table.

Usually working.-The major activity category "usually working" includes persons 17 years and older who reported that they spent most of their time during the 12 months prior to interview as: a paid employee of someone else; self-employed in own business or profession, or in farming; or an unpaid worker in a family business or farm. Work around the house, or volunteer or unpaid work, such as for church, Red Cross, etc., is not counted as working.

## APPENDIX III

## QUESTIONNAIRE

The items below show the exact content and wording of the questionnaire used in the household survey. The actual questionnaire is designed for a household as a unit and includes additional spaces for reports on more than one person.


| If male and 14 years old-or over, ask: <br> 9. (e) Did you over merve in the Ansed Porces of the Uaited Statea? if "rea, " sak: <br> (b) Are you nois in the Arged Porces, not cocoting the reserves? (If "Tes." dalete this parion fron quastionnsire) |  |
| :---: | :---: |
| (c) Than ay of your gervice darlige eat or mats it penco-time ouly? If Mar, " alat <br> (d) During bict and did yon berve? <br> if "peaceetinet only, ush: <br> (') Eas ay of sour service between mine 27, 1850 and January 31, 1585 ? |  |
| If 6 geara old or over, ank: <br>  <br> (Por, malea over 16): mittag, looking for mort, or dalag something else? <br> (Por temalem ovar 16): worting, lootiag for moti, teeping bouse, or folag monething el se? <br> (Por children 6-16): elog to achool or dalag apecthige else? <br> If "bonathing olser' chected, and person is 50 years oid or over, ach: <br> (b) Are you reti redt | Uader 6 geare Fart 10 a Looking for mork Leepios house colng to school somerhing zite $\square$ Yen $\square$ No. |
| I $\begin{aligned} & \text { Intervien each edult person for blaself for questians } 11-28 \text { and Tables I, } \\ & \text { II, and A, if he Ls at hoes. Enter column number of respondent in each columi. }\end{aligned}$ | nesponded for aslf Co1. Mo. $\qquad$ vas respondent |
| We are interested in all hinds of iliness, thether serious or cot .- <br> 11. Were roo ald at ay time Last mbex os Tik mexs expoos? <br> (a) What wes the matter? <br> (b) faything elae? | $\square$ res $\square$ No |
| 12. Leat meet or the weet before did you have my accidents or injuries, either at home or atay from hone? <br> (a) what were they? <br> (b) Anything el se? | $\square$ уeв $\square$ мо |
| 13. Latat meet or the reet beforo did yoo feal my 111 effects from mearliter meeldent or injarg? <br> (a) What werv these effects? <br> (b) Anythinz elwe? | $\square$ Yes $\square$ no |
| 14. Last meot or the meet before did you tote my mediciné or treatient for any comedition (besides ... midich goo told me about)? <br> (a) For mat conditions, <br> (b) Anything else? |  |
| 15. AT THE Proscort TIate do you have may alleents or conditiona that have con- <br> tiared for a loon time? (If Mio") Even though they don' $t$ bother yoo all the time? <br> (a) That are they? <br> (b) Anything olve? | $\square$ уes $\square$ ко |
| 16. mas magane in the fatily - you, your--, etc. - had any of these conditicas DUsDNG TEE PAST 12 mantis? <br> (Bead card $A$, condition by condition: record any conditions <br> entioned in the column for the person) | $\square \mathrm{Yes} \square$ no |
|  | $\square$ yes $\square$ no |







FOOTNOTES AND COMIENTS


## SELECTED REPORTS FROM THE U.S.NATIONAL HEALTH SURVEY

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Series A (Program descriptions, survey designs, concepts, and definitions)
    No. 1. Origin and Program of the U. S. National Health Survey. PHS Pub. No.
        584-A1. Price 25 cents.
    No. 2. The Statistical Design of the Health Household-Interview Survey. PHS
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        1957-June 1958. PHS Pub. No. 584-B6. Price 35 cents.
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        States, July 1957-June 1958. PHS Pub. No. 584-87. Price 30 cents.
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    No. 10. Disability Days, United States, July 1957-June 1958. PHS Pub. No. 584-
        B10. Price 40 cents.
    No. 11. Limitation of Activity and Mobidity Due to .Chronic Conditions, United
        States, July 1957-June 1958. PHS Pub. No. 584-B11. Price 30 cents.
    N.o. 12. Chronic Respiratory Conditions Reported in Interviews, United States,
        July 1957-June 1958. PHS Pub.- No. 584-B12. Price 30 cents.
    No. 13. Heart Conditions and High Blood Pressure Reported in Interviews, United
        States, July 1957-June 1958. PHS Pub. No. 584-B13.
Series C (Health Interview Survey results for population groups)
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        1957-June 1958. PHS Pub. NO. 584-C1. Price 35 cents.
    No. 2. Veterans, Health and Medical Care, United States, July 1957-June 1958.
        PHS Pub. No. 584-C2.
Series D (Develommental and Evaluation Reports)
No. 1. A Study of Special Purpose Medical-History Techniques. PHS Pub. No. 584-D1.
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## Catalog Card

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U. S. National Health Survey.
    Heart conditions and high blood pressure, United States, July
    1957-June 1958. Statistics on the prevalence of heart conditions and
    high blood pressure and days of disability due to these conditions
    by age, sex, and medical care status. Based on data collected in
    household interviews during the period July 1957-June 1958. Wash-
    ington, U.S. Dept. of Health, Education, and Welfare, Public Health
    Service, Division of Public Health Methods, 1960.
    36 p. diagrs., tables. 26cm. IIts Health statistics,
    ser.Bl3)
    U.S. Public Health Service. Publication no.584-Bl3.
    1. Heart - Diseases. 2. Hypertension.
    1. Title. (Series. Series: U.S. Public Health Service. Publication
    no. 584-8131
    Cataloged oy U.S. Dept- of Health, Education, and Welfare. Libraryol
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[^0]:    This report was prepared by Robert R. Fuchsberg, of the U.S. National Health Survey staff.

[^1]:    *Code 420 Arteriosclerotic Heart Disease includes some people with this condition who also have high blood pressure. These conditions are merged in the initial medical coding procedure and cannot be counted separately.

[^2]:    ${ }^{1}$ Commission on Chronic lllness in 1953-54: Chronic Illness in a Large City: The Baltimore Study IChronic IIIness in the United States, Vol. |V). Harvard University Press, Cambridge, Mass. 195?.
    ${ }^{2}$ Commission on Chronic lliness: Chronic $111-$ ness in a Rural Area: The Hunterdon Study lChronic IIlness in the United States, Vol. IIIl. Harvard University,Pres5, Cambridge, Mass., 1959.

[^3]:    ${ }^{1}$ Estimates of all persons with heart conditions or high blood pressure, used in computing these rates, appear in table 1 .

[^4]:    ${ }^{1}$ Estimates of all persons with heart conditions or high blood pressure, used in computing these rates, appear in table 1 .

[^5]:    $l_{\text {The }}$ relative standarderror for any statistic is the standarderror divided by the statistic itself.

