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# HEALTH STATISTICS 

FROM THE U. S. NATIONAL HEALTH. SURVEY

# Chronic Respiratory Conditions reported in interviewṣ 

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

Statistics on prevalence of chronic respiratory conditions and associated disability by age,sex, medical attention, and type of condition. Based on data collected in household interviews during the period July 1957 -June 1958.
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Washington, D. C.

# 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 dashi)-------------------------
Magnitude greater than zero but less than


Magnitude of the sampling error:preclüdes showing separate estimates--------------------

## CHRONIC RESPIRATORY CONDITIONS

## THE PREVALENCE OF CHRONIC CONDITIONS

Estimates of the amount of chronic illness in the United States have been derived from a number of different sources. In general, this source material may be classified as (1) studies based on medical records and examinations, and (2) sur-veys conducted by household interview.

Aside from the general method of study, the basic difference between these two approaches in the measurement of illness prevalence is in the underlying concept of morbidity. In medical studies, an attempt is made to detect illness through the use of recognized diagnostic tests and methods, medical history, and the presence of clinical signs and symptoms. With the household-interview technique the objective is to identify conditions which represent a departure from a state of physical or mental well-being of which the affected individual is aware. Further qualification of data obtained in a household survey is possible by restricting conditions to those about which the person has taken some action, such as cutting down on usual activities (activity restriction),or seeking medical advice.

It is quite possible that a conditiondetectable by diagnostic techniques in a medical examining program will not be reported in a household interview because it has had insufficient physical, social, or economic impact on the affected individual. On the other hand, a condition reported by a person in an interview because it had interfered with his usual activities may prove to be at a subclinical level at the time of a medical examination.

This basic distinction in the concept of illness accounts for much of the difference in prevalence estimates derived from medical studies and those based on interview surveys. The definition of illness in each of these approaches is an inherent characteristic of the techrïque itself, and

This report was preparied by Geraldine A. Gleeson, of the U. S. National dealth Survey stalff.
for this reason the user of such data should not be surprised to find rather marked differences between estimates obtained in surveys of these different types.

The household-interview method differs from surveys based on medical records or examinations and tests not only in the concepts of illness inherent in the methods but also in the accuracy .of the description of the nature of the morbidity the diagnostic data. In the household interview this accuracy is dependent upon the information which the respondent has and passes on to the interviewer. It is information which has been transmitted to the family by the physician attending the case or, in the absence of medical attention, has been gained through previous experience or education of the family. It is obvious that there are numerous possibilities for error in this process. For this reason detailed classification of the conditions reported in household interviews is not warranted until more :evidence is available on the size of reporting error.

In this report, findings of previous surveys and estimates made by researchers in the health field are cited. Some of the data are from other household-interview-type surveys. Because these -earlier surveys were restricted to certain areas or to particular segments of the population and because the methods, definitions, interviewer training, and specificity and detail of the questioning varied quite widely from one survey to another, the prevalence estimates should not be : taken to represent real differences between time periods or between areas. They are cited to provide a background for the presentation of the first data on chronic* respiratory conditions from the health household interview of the U.S. National Health Survey.

To the extent they are available, results of " medical record and examination studies of these same diseases are also presented. These will show how the differing concepts of morbidity af:fect the magnitude of the prevalence estimates.

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## SOURCE AND CLASSIFICATION OF DATA ON CHRONIC CONDITIONS

Data on chronic conditions presented in this report are based primarily on replies to four "illness-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 "asthma," "any allergy," "chronic bronchitis," and "repeated attacks of sinus trouble.")
Positive responses concerning the diseases with which this report is concerned may come from any one of the four questions. The unduplicated positive replies represent total prevalence of the diseases within the family. Because the statistics are based upon a number of 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 reported 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 diagnosis and to establish the criteria of severity which are shown in this report.

The accuracy of reporting of conditions which were "never medically attended" is subject to 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 conditions such as heart disease and diabetes are reported as "never medically attended," one may have little or no confidence 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. More reliability can be placed in the classification of conditions of this nature.

The four diagnostic categories considered in this report are asthma-hay fever, chronic sinus-
itis, chronic bronchitis, and other chronic respiratory diseases (exclusive of tuberculosis). Each of these condition groups will be discussed separately in the text, although each of the detailed tables shown in the following section includes, for convenience of presentation, comparative data for the condition groups. In considering asthma-hay fever, chronic sinusitis, and chronic bronchitis as separate disease entities, the number of conditions reported is equivalent to the number of persons with the disease. However, the reader is cautioned that the disease categories cannot be added to obtain the number of persons affected since the disease groups are not mutually exclusive. The residual group, other chronic respiratory diseases, includes a number of respiratory diagnoses. The number of persons with these conditions cannot be estimated since a person may have several of the diseases included in this category.

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 in Appendix 1 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.

## ASTHMA AND HAY FEVER

Family reports of asthma and hay fever, which are usually classified in the general category of allergic disorders, have been included in this report. Because of the frequent coexistence of asthma and hay fever, it is customary in morbidity studies to assign cases with both diseases or with asthma alone to the asthma classification, and to include in the hay fever category only cases of hay fever without asthma. This procedure produces a complete count of asthma cases with or without hay fever, and an incomplete count of cases of hay fever because it includes only cases where asthma is not reported. However, by combining the two groups it is possible to obtain an estimate of the number of persons with either asthma, hay fever, or both. For this reason the disease groups are combined in the detailed tables and are discussed jointly in the text, hereafter referred to as asthma-hay fever. For those who may be interested in the separate categories (subject to the above qualifications), table A shows number of cases and rate per 1,000 persons for asthma (with or without hay fever) and for hay fever (without asthma).

The condition group, asthma-hay fever (ISC 240-241), includeshay fever due to any of the pollen allergens, allergic rhinitis, and allergic asthma specified as bronchial or spasmodic. This category excludes cardiac asthma (434.2) and pneumoconiotic asthma (523-524).

Table A. Number of cases of asthma and hay fever, and rate per 1,000 persons by medical attention: United States, July 1957-June 1958

| Medical attention | Asthma (with or without hay fever) |  | Hay fever (without asthma) |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Number (in thousands) | $\begin{aligned} & \text { Rate per } \\ & 1,000 \\ & \text { persons } \end{aligned}$ | Number (in thousands) | $\begin{aligned} & \text { Rate per } \\ & 1,000 \\ & \text { persons } \end{aligned}$ |
| Total conditions------------------ | 3,946 | 23.4 | 4,157 | 24.7 |
| Medically attended within past year | 2,128 | 12.6 | 1,669 | 9.9 |
| Medically attended more than a year ago- | 1,498 | 8.9 | 1,786 | 10.6 |
| Never medically attended---------------- | 320 | 1.9 | 701 | 4.2 |

Estimates of the occurrence of asthma-hay fever in the population of the United States based on comparatively recent household surveys conducted in various communities and States range from 16 persons per 1,000 in an 8 -week survey of the general population of New York City in 1952; to 69 persons per 1,000 in the California Health Survey in 1954-55. ${ }^{2}$ The Hagerstown, Md., studies ${ }^{3}$ have estimated that 33 per 1,000 persons in that area have asthma-hay fever (1955-57). A survey ${ }^{4}$ conducted in Michigan during 1950 on a sample of 3,800 persons estimated the rate in that area to be 36 persons per 1,000 population. From interview data collected during the period from July 1957 through June 1958 from 36,000 households comprising 115,000 persons, it is estimated by the National Health Survey that 48 persons per 1,000 of the civilian noninstitutional population have asthma-hay fever.

Independent estimates ${ }^{5-8}$ made on the basis of clinical experience prior to 1940 by several clinical investigators were in agreement that respiratory allergy diagnosed as asthma-hay fever was present in about 30 per 1,000 persons in the population of the United States.

The cases of asthma-hay fever reported in the National Health Survey were about evenly divided among males and females, producing rates of 49.0 cases per 1,000 males and 47.3 per 1,000 females. However, the age distribution of persons with asthma-hay fever (fig. 1 and table 2) is quite different for males and females, with a preponderance of cases among young males. The rate of asthma-hay fever cases among males under 15 years of age was 47.8 per 1,000 as compared with 30.1 per 1,000 among females in this age group. This finding is in line with Bray's ${ }^{9}$ conclusion from extensive pediatric material that
asthma is twice as common in boys as in girls, but, on the contrary, is somewhat more frequently seen in girls than in boys after puberty. In Urbach's ${ }^{10}$ experience, figures on asthma among persons under 20 years of age comprise more than twice as many boys as girls.


Figure 1. Number of cases of asthma-hay fever per 1,000 population by sex and age.

Table B. Disability associated with asthma-hay fever for persons under 15 years of age by sex: United States, July 1957-June 1958

| Type of disability | Number of days (in millions) | Days per person with asthmahay fever |
| :---: | :---: | :---: |
| Restricted activity |  |  |
| Male------------ | 14.5 | 11.3 |
| Female | 6.9 | 8.9 |
| Bed disability |  |  |
| Male- | 6.0 | 4.6 |
| Female | 2.6 | 3.3 |

In addition to the more frequent occurrence of respiratory allergy among male children, there would appear to be more disability associated with this condition among boys. (See Appendix II for definitions of restricted-activity and bed-disability days.) In National Health Survey data it was found that males under 15 years of age with asthma-hay fever had on the average 11.3 re-stricted-activity days per person per year, of


Figure 2. Number of days of disability per person with asthma-hay fever per year by age.
which 4.6 were days of bed disability, while females in the age group had 8.9 restricted-activity days per person per year with 3.3 days of bed disability (table B).

In the total population approximately $97 \mathrm{mil}-$ lion days of restricted activity were reported as due to asthma-hay fever. Thirty million of these were bed-disability days. These numbers represent 11.9 days of restricted activity, 3.7 of which were days of bed disability per person with asth-ma-hay fever per year. Rates of disability are shown by broad age groupings in figure 2.

## CHRONIC SINUSITIS

In National Health Survey data, the category "chronic sinusitis" (ISC 513) includes all cases of "sinusitis," "sinus," and "sinus trouble or condition" reported by the respondent at the time of the interview and first noticed more than 3 months before the interview; also, all cases described as "repeated attacks of sinus trouble," within the year prior to the interview. Because of the popular usage of the terms "sinus" and "sinus trouble," and the general tendency of persons to describe nasopharyngeal symptoms in these terms, it is quite possible that this category may include cases of conditions such as nasal congestion and nonspecific headache, as well as a number of other self-diagnosed conditions affecting the upper respiratory system. The fact that 25 percent of the conditions included in the category designated as chronic sinusitis had never been seen by a physician would indicate that the accuracy with which the complaints aredescribed may be of a lower order in this category than in asthma-hay fever, for instance, where only 13 percent of the reported cases were self-diagnosed, or in chronic bronchitis where only 7 percent had never been seen by a physician (table 4).

This high proportion of medically unattended cases may also be a result of the reporting of less severe sinus infections which would not entail seeking medical attention.

Recent health surveys employing the house-hold-interview technique have produced the following estimates of the prevalence of chronic sinusitis. In the Kansas City Metropolitan Area Health Survey ${ }^{11}$ during 1953-54 it was found that approximately 50 persons per 1,000 population in that area reported chronic sinusitis. The California Health Survey ${ }^{2}$ conducted during 1954-55 produced a rate approximating 47 per 1,000 persons for chronic sinusitis. The Hagerstown, Md., studies during $1955-57^{3}$ indicated that 30 persons per 1,000 in that area reported chronic sinusitis or pharyngitis. These estimates are somewhat lower than the rate of 59 per 1,000 persons reported to have chronic sinusitis from data collected by the current National Health Survey. However, estimates of the prevalence of sinusitis, a disease which is known to be influenced by climatic conditions, based on a nationwide sample of the population would be expected to differ substantially from estimates based on surveys conducted in smaller areas. Rates derived from data collected by all of these surveys, including the National Health Survey, showed approximately the same sex differential for sinusitis, the rate for females being consistently higher than that for males.


Figure 3. Number of cases of chronic sinusitis per 1,000 population by sex and age.

Earlier surveys in which data were collected by household interview, including the Eastern Health District (Baltimore) study (1938-1943), ${ }^{12}$ the survey conducted by the Commission on Costs of Medical Care (1928-31), ${ }^{13}$ and the health survey conducted by the Public Health Service in 1935$36^{14}$ produced rates ranging from 5 to 10 cases per 1,000 population. The substantially higher rates in the more recent surveys may be due to a number of factors, including the current popular usage of terms relating to sinusitis, an actual increase in the incidence of sinusitis, and recent advances in questionnaire and sampling techniques.

The rate of chronic sinusitis in the population computed on the basis of cases reported in the National Health Survey showed a fairly sharp increase through age 34 (fig. 3). At this point the rate became stable for both males and females, and maintained this stability through age 54. The rate for males in the 25-54 year age group was about 80 cases per 1,000 and for females about 100 cases per thousand. Unlike many chronic conditions the rate of sinusitis was somewhat lower among persons 55 years and older than among middle-aged persons. Lower rates among older persons have been explained clinically as due to the aging process during which the mucous membranes of the sinus passages become atrophied. Other factors may also contribute to this prevalence decline of sinusitis in older persons.


Figure 4. number of days of disability per person witn chronic sinusitis per year by age.

About 55 million days of restricted activity were attributed to chronic sinusitis. Of these days, 17 million were days of bed disability. This represents a disability rate of 5.5 days of restricted activity, of which 1.7 were bed-disability days per person with chronic sinusitis per year. Rates of disability attributed to chronic sinusitis are shown for broad age groups in figure 4.

## CHRONIC BRONCHITIS

The condition group, chronic bronchitis (ISC 502), in National Health Survey data includes cases of bronchitis, 'bronchial trouble," and bronchitis with emphysema reported as present at the time of the interview and first noticed more than 3 months before the week of interview. Also included are conditions described as "chronic bronchitis" in response to the reading of the "Check List of Chronic Conditions." Excluded from the category are bronchiectasis (ISC 526) and emphysema without mention of bronchitis (ISC 527.1).

Very few estimates of the prevalence of chronic bronchitis in the United States population are available. The reason why estimates based on clinical experience have not been made is probably that the number of cases seen by a single clinician or even groups of clinicians is too


Figure 5. Number of cases of caronic bronchitis per 1,000 population by sex and age.
small to serve as a basis for nationwide estimates. This is due to the general low prevalence of the disease, which also explains why chronic bronchitis is often combined with the acute form of the disease in estimates made from data collected in household surveys. In the Kansas City Metropolitan Area Health Survey, ${ }^{11}$ the Baltimore Survey ${ }^{15}$ conducted by the Commission on Chronic Illness, and the California Health Survey ${ }^{2}$ composite rates based on the acute and chronic forms of bronchitis were computed. A rate of 4 persons with chronic bronchitis per 1,000 population was produced by the 8 -week survey conducted among the general population of New York City during 1952, ${ }^{1}$ and also by the Eastern Health District (Baltimore) study during 1938-43. ${ }^{12}$

In the health survey conducted by the Public Health Service in 1935-36, ${ }^{14}$ the case rate of chronic bronchitis in the United States was estimated at 13 per 1,000 persons in the population. This rate is roughly equivalent to the estimate of 12.6 cases per 1,000 persons based on data collected in the National Health Survey. In these data the distribution of chronic bronchitis by age was not of the usual pattern for chronic illnesses (table 2, fig. 5). The rate of bronchitis among children under 10 years of age was roughly equivalent to the rate among persons 55 years of age and older. However, the rate among boys under 10 was substantially higher than that for girls, while no sex


Figure 6. Number of days of disability per person with chronic bronchitis per year by age.
differential was noted among persons 55 years and older.

The accuracy of classification of cases to the chronic bronchitis category was considered to be of a relatively high degree in that 93 percent of the cases had been seen by a physician at some time (table 4), and about 36 percent were reported to be under medical care at the time of the interview (table 6).

About 32 million days of restricted activity were attributed to chronic bronchitis. Of these, 12 million were bed-disability days. This represents a rate of 15.1 restricted-activity days with 5.8 bed-disability days per person with chronic bronchitis per year. Figure 6 shows the comparative rates of disability associated with chronic bronchitis by age group.

## OTHER CHRONIC RESPIRATORY DISEASES

The condition group, other chronic respiratory diseases, includes the following conditions, with identifying 1SC numbers: hypertrophy of tonsils and adenoids (510), peritonsillar abscess (511), chronic pharyngitis and nasopharyngitis (512), deflected nasal septum (514), nasal polyp (515), chronic laryngitis (516), pneumoconiosis (523-524), bronchiectasis (526), pulmonary collapse (527.0), emphysema without mention of bronchitis (527.1), absence of respiratory organ (Impairment Code X36), and other respiratory conditions of 3 months or more duration (517$522,525,527.2$, and 783).

Obviously, a residual group of this nature is not comparable to data collected in other surveys. lt has been included in this report so that a total picture of the chronic disease involvement of the respiratory system (exclusive of tuberculosis) could be presented.

As previously mentioned, conditions included in this residual group must be considered as totals of cases rather than as persons because it is quite possible for two or more of the included conditions to be reported for one individual. Likewise, the summation of disability days attributed to the conditions in this group does not yield an unduplicated count of days for the condition group. The computation of number of days of disability per person per year is not meaningful since an accurate estimation of total persons involved is not available. For these reasons, the condition group, other chronic respiratory diseases, has been omitted from tables 12-14 in which data relating to disability are presented.

## DISABILITY DUE TO CHRONIC RESPIRATORY CONDITIONS

One of the most meaningful measures of the social and economic impact of a disease is the extent to which it causes disability in the population where it exists. The National Health Survey measures two aspects of disability due to disease: one, long-term inability to carry on all or part of one's regular activities, spoken of as limitation of activity, and the other, the comparatively short periods of disability measured in days of restricted activity, bed disability, and loss of time from work. Only the latter type of disability will be considered in this report because the condition groups included are not of the type which usually cause limitation of activity.

In terms of the gross number of restrictedactivity days, 97 million days were attributed to asthma-hay fever, as compared with 55 million to chronic sinusitis, and 32 million to chronic bronchitis. About one third of the restricted-activity days were also bed-disability days among persons with asthma-hay fever and chronic sinusitis, while bed-disability days attributed to chronic bronchitis comprised about 40 percent of the restricted-activity days. In each of these three condition groups, bed-disability days represent a substantially higher proportion of the restricted-activity days among children under 15 years of age than in the other age groups.

The prevalence and disability days for asth-ma-hay fever, chronic sinusitis, and chronic bronchitis in relation to the number of cases and disability days reported for all chronic conditions are shown in table C. The percentage columns for any of the conditions included in this table show the proportion of cases the condition contributed to the total chronic condition category, and the amount of disability the condition contributed to the total disability reported for all chronic conditions. For example, 7.8 percent of all chronic conditions reported were classified as chronic sinusitis, but only 2.3 percent of all bed-disability days associated with chronic conditions were attributed to chronic sinusitis.

In table 13 and figure 7 , which show the number of days of disability per person per year for each of the respiratory condition groups, the comparative severity of chronic bronchitis becomes apparent. This ratio of days of disability per person describes essentially the impact of the disease upon the individual. A more general measure of the social and economic effect of a disease is the average number of persons with disability from the disease on any day during the

Table C. Prevalence and disability for chronic respiratory conditions in relation to prevalence and disability for all chronic conditions: United States, July 1957-June 1958

| Condition group | Conditions repor ted |  | Restrictedactivity days |  | $\begin{gathered} \text { Bed-disability } \\ \text { days } \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Number } \\ & \text { (in } \\ & \text { thousands) } \end{aligned}$ | Percent | $\begin{aligned} & \text { Number } \\ & \text { (in } \\ & \text { millions) } \end{aligned}$ | Percent | $\begin{aligned} & \text { Number } \\ & \text { (in } \\ & \text { millions) } \end{aligned}$ | Percent |
| A11 chronic conditions- | 127,897 | 100.0 | 2,327 | 100.0 | 764 | 100.0 |
| Asthma-hay fever------------- | 8,103 | 6.3 | 97 | 4.1 | 30 | 3.9 |
| Chronic sinusitis------------ | 9,936 | 7.8 | 55 | 2.4 | 17 | 2.3 |
| Chronic bronchitis----------- | 2,127 | 1.7 | 32 | 1.4 | 12 | 1.6 |



Figure 7. Number of days of disability due to asthma-hay fever, chronic sinusitis, and chronic bronchitis per person with the condition per year.
year. Asthma-hay fever accounted for restricted activity of 265,000 persons per day, as compared with 150,000 persons per day for chronic sinusitis, and 88,000 persons restricted in their activities because of chronic bronchitis. These figures are on an average basis, and are, of course, subject to the influence of the seasonality of these diseases. This general measure of restricted activity for broad groups with comparable data for bed disability is presented in table 14. The figures are not additive for the condition groups since identical disability days may have been attributed to more than one condition.

About 9 million work-loss days per year were reported as due to asthma-hay fever by those persons classed as "usually working." Chronic sinusitis accounted for 7 million workloss days and chronic bronchitis for 4 million work-loss days among "usually working" persons. By using 245 days as a typical work-year, it is possible to estimate that at least 37,000 persons among the "usually working" population were absent on a typical work day due to asthma-hay fever, 29,000 because of chronic sinusitis, and 16,000 because of chronic bronchitis. These persons with work-loss days are not additive for the three condition groups. As pointed out above, these figures are influenced by the seasonality of the conditions involved.

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## POPULATION

15. Population used in obtaining rates shown in this publication by sex and age: United States, July 1957-June 1958-

Table 1. Number of chronic respiratory conditions reported in interviews by condition group, sex, and age: United States, July 1957-June 1958
[Data are based on household interviews during July $1957-J u n e$ 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]


[^1]Table 2. Number of chronic respiratory conditions reported in interviews. per 1,000 persons per year by condition group, 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]

| Sex and age | Condition group |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Asthmahay fever | Chronic sinusitis: | Chronic bronchitis | Other chronic respiratory diseases ${ }^{1}$ |
| Both sexes: |  |  |  |  |
| All ages | 48.1 | 59:0 | 12.6 | 12.9 |
| Under 5-- | 25.7 | (*) | 18.5 | 13.0 |
| 5-9-- | 44.1 | 12.1 | 16.7 | 16.7 |
| 10-14 | 50.4 | 21.6 | 6.4 | 9.2 |
| 15-24 | 55.6 | 50.7 | 5.4 | 10.1 |
| 25-34- | 54.9 | 92.3 | 7.3 | 10.6 |
| 35-44- | 49.0 | 94.9 | 9.9 | 10.1 |
| 45-54- | 52.3 | 93.3 | 14.7 | 12.9 |
| 55-64- | 54.3 | 80.4 | 18.1 | 15.8 |
| $65+$ | 45.9 | 67.3 | 21.0 | 20.7 |
| Male |  |  |  |  |
| All ages- | 49.0 | 52.5 | 12.0 | 14.2 |
| Under 5- | 31.1 | (*) | 20.3 | 13.1 |
| 5-9-.. | 53.8 | 13.4 | 18.4 | 17.1 |
| 10-14- | 61.7 | 18.7 | 6.8 | 9.6 |
| 15-24- | 53.4 | 45.8 | 4.1 | 9.3 |
| 25-34- | 47.1 | 82.6 | 5.1 | 12.3 |
| 35-44--- | 42.9 | 84.8 | 7.0 | 10.0 |
| 45-54- | 48.6 | 85.2 | 12.4 | 15.5 |
| 55-64- | 55.3 | 72.6 | 19.4 | 20.4 |
| 65+-- | 54.7 | 57.2 | 20.2 | 26.2 |
| Female: |  |  |  |  |
| All ages | 47.3 | 65.2 | 13.2 | 11.6 |
| Under 5- | 20.0 | (*) | 16.6 | 12.7 |
| 5-9. | 33.9 | 10.7 | 14.9 | 16.3 |
| 10-14- | 38.6 | 24.8 | 5.9 | 8.9 |
| 15-24- | 57.4 | 55.0 | 6.6 | 10.7 |
| 25-34- | 62.0 | 101.2 | 9.4 | 9.0 |
| 35-44- | 54.6 | 104.3 | 12.8 | 10.2 |
| 45-54- | 56.0 | 101.1 | 16.8 | 10.5 |
| 55-64- | 53.5 | 87.6 | 16.8 | 11.6 |
| 65+- | 38.5 | 75.7 | 21.7 | 16.3 |

[^2]Table 3. Number of chronic. respiratory conditions reported in interviews. by medical attention status, condition group, 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 1 . Definitions of terms are given in Appendix 11]

| Condition group and age | Total | Medically attended |  | Never medically attended |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Within past year | More than a year ago |  |
|  | Number of conditions in thousands |  |  |  |
|  | 8,103 | 3,797 | 3,284 | 1,021 |
| Under 15- | 2,060 | 1,240 | 669 | 151 |
| 15-24- | 1,172 | . 468 | 528 | 176 |
| 25-44- | 2,370 | 983 | 1,1,058 | 330 |
| 45-54- | 1,028 | 422 | 468 | 139 |
| 55-64- | 806 | 377 | 308 | 121 |
| 65+- | 666 | 308 | 253 | 106 |
| Chronic sinusitis |  |  |  |  |
|  | 9,936 | 3,159 | 4,272 | 2,505 |
| Under 15- | 590 | 311 | 154 | 125 |
| 15-24- | 1,070 | 365 | 383 | 322 |
| 25-44- | 4,273 | 1,209 | 1,954 | 1,110 |
| 45-54- | 1,833 | 561 | 857 | 415 |
| 55-64 | 1,192 | 381 | 540 | 271 |
| 65+- | 977 | 333 | 383 | 261 |
| Chronic bronchitis |  |  |  |  |
|  | 2,127 | 1,264 | 724 | 139 |
| Under 15- | 757 | 528 | 209 | (*) |
| 15-24-- | 114 | 69 | (*) | (*) |
| 25-44- | 395 | 182 | 187 | (*) |
| 45-54 | 288 | 169 | 103 | (*) |
| 55-64 | 268 | 144 | 93 | (*) |
| 65+- | 305 | 172 | 94 | (*) |
| Other chronic respiratory diseases ${ }^{1}$ |  |  |  |  |
|  | 2,166 | 1,252 | 656 | 258 |
| Under 15- | 693 | 466 | 172 | (*) |
| 15-24- | 212 | 123 | 66 | (*) |
| 25-44- | 471 | 251 | 154 | (*) |
| 45-54 | 254 | 128 | 89 | (*) |
| 55-64 | 235 | 130 | 76 | (*) |
| 65+- | 301 | 1.55 | 99 | (*) |

[^3]Table 4. Percent distribution of chronic respiratory conditions reported in interviews according to medical attention status by condition group 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. I. Definitions of terms are given in Appendix 11.]

| Condition group and age | Total | Medically attended |  | Never medically attended |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Within past year | $\begin{gathered} \text { More } \\ \text { than a } \\ \text { year ago } \end{gathered}$ |  |
| Asthma-hay fever |  |  |  |  |
| All ages | 100.0 | 46.9 | 40.5 | 12.6 |
| Under 15- | 100.0 | 60.2 | 32.5 | 7.3 |
| 15-24- | 100.0 | 39.9 | 45.1 | 15.0 |
|  | 100.0 | 41.5 | 44.6 | 13.9 |
|  | 100.0 | 41.1 | 45.5 | 13.5 |
|  | 100.0 | 46.8 | 38.2 | 15.0 |
| 65+- | 100.0 | 46.2 | 38.0 | 15.9 |
| . Chronic sinusitis |  |  |  |  |
| All ages---------------------------------------------- | 100.0 | 31.8 | 43.0 | 25.2 |
|  | 100.0 | 52.7 | 26.1 | 21.2 |
|  | 100.0 | 34.1 | 35.8 | 30.1 |
|  | 100.0 | 28.3 | 45.7 | 26.0 |
|  | 100.0 | 30.6 | 46.8 | 22.6 |
|  | 100.0 | 32.0 | 45.3 | 22.7 |
| 65+- | 100.0 | 34.1 | 39.2 | 26.7 |
| Chronic bronchitis |  |  |  |  |
|  | 100.0 | 59.4 | 34.0 | 6.5 |
| Under 15- | 100.0 | 69.7 | 27.6 | (*) |
|  | 100.0 | 60.5 | (*) | (*) |
|  | 100.0 | 46.1 | 47.3 | (*) |
|  | 100.0 | 58.7 | 35.8 | (*) |
| 55-64 | 100.0 | 53.7 | 34.7 | (*) |
|  | 100.0 | 56.4 | 30.8 | (*) |
| Other chronic respiratory diseases ${ }^{1}$ |  |  |  |  |
| A11 ages | 100.0 | 57.8 | 30.3 | 11.9 |
|  | 100.0 | 67.2 | 24.8 | (*) |
| 15-24- | 100.0 | 58.0 | 31.1 | (*) |
|  | 100.0 | 53.3 | 32.7 | (*) |
|  | 100.0 | 50.4 | 35.0 | (*) |
|  | 100.0 | 55.3 | 32.3 | (*) |
|  | 100.0 | 51.5 | 32.9 | (*) |

[^4]Table 5. Number of chronic respiratory conditions reported in interyiews: and number per 1,000 persons per year by medical attention status, condition group, and sex: United States, July 1957-June 1958
[Data are based on household interviews during July ! 957-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 |I]


[^5]Table 6. Number and percent distribution of chronic respiratory conditions reported in interviews by medical care status according to condition group 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 1 . Definitions of terms are given in Appendix II]

| Condition group and age | Number of conditions in thousands |  |  | Percent of total |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | Under care | Not under care | Total | Under care | Not under care |
| Asthma-hay fever |  |  |  |  |  |  |
| All ages- | 8,103 | 4,516 | 3,586 | 100.0 | 55.7 | 44.3 |
| Under 15- | 2,060 | 1;255 | 805 | 100.0 | 60.9 | 39.1 |
| 15-24 | 1,172 | 592 | 580 | 100.0 | 50.5 | 49.5 |
| 25-44 | 2,370 | 1.,354 | 1,017 | 100.0 | 57.1 | 42.9 |
| 45-54--------------------------------------------1- | 1,028 | :549 | 479 | 100.0 | 53.4 | 46.6 |
| 55-64- | 806 | 432 | 374 | 100.0 | 53.6 | 46.4 |
| 65+-- | 666 | 335 | 331 | 100.0 | 50.3 | 49.7 |
| Chronic sinusitis |  |  |  |  |  |  |
| All ages | 9,936 | 3,298 | 6,638 | 100.0 | 33.2 | 66.8 |
| Under 15----------------------------------------1- | 590 | 249 | 341 | 100.0 | 42.2 | 57.8 |
|  | 1,070 | 322 | 748 | 100.0 | 30.1 | 69.9 |
|  | 4,273 | 1,381 | 2,892 | 100.0 | 32.3 | 67.7 |
| 45-54- | 1,833 | 645 | 1,188 | 100.0 | 35.2 | 64.8 |
| 55-64 | 1,192 | 401 | 791 | 100.0 | 33.6 | 66.4 |
|  | 977 | 299 | 678 | 100.0 | 30.6 | 69.4 |
| Chronic bronchitis |  |  |  |  |  |  |
| All ages------------------------------------ | 2,127 | 760 | 1,367 | 100.0 | 35.7 | 64.3 |
| Under 15- | 757. | 290 | 467 | 100.0 | 38.3 | 61.7 |
| 15-24-- | 114 | (*) | 86 | 100.0 | (*) | 75.4 |
| 25-44--------------------------------------------- | 395 | 126 | 269 | 100.0 | 31.9 | 68.1 |
|  | 288 | 110 | 178 | 100.0 | 38.2 | 61.8 |
| 55-64----------------------------------------------- | 268 | 100 | 169 | 100.0 | 37.3 | 63.1 |
| 65+- | 305 | 107 | 198 | 100.0 | 35.1 | 64.9 |
| Other chronic respiratory diseases ${ }^{1}$ |  |  |  |  |  |  |
| All ages | .2,166 | 850 | 1,316 | 100.0 | 39.2 | 60.8 |
| Under 15 | -693 | -248 | 445. | 100.0 | . 35.8 | - 64.2 |
| 15-24-------------------------------------------- | 212 | - 89 | 123 : | 100.:0 | 42.0 | 58.0 |
| 25-44--------------------------------------------1- | 471 | 145 | . 326 | 100.0 | . 30.8 , | -.69..2 |
| 45-54---------------------------------------------- | 254 | 108 | ${ }^{\circ} 147$. | 100.0 | - 42.5 | -57.9 |
|  | 235 | 114 | 121 | 100.0 | 48.5 | 51.5 |
|  | -301. | 147 , | 155 | 100.0 | 48.8 | 51.5 |

[^6]Table 7. Number of chronic respiratory conditions reported in interyiews and number per 1,000 persons per year by medical care status, condition group, and sex: 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]

| Condition group and sex | Number of conditions in thousands |  |  | Rate per 1,000 persons |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | Under care | Not under care | Total | Under care | Not under care |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Male- | 4,015 | 2,197 | 1,818 | 49.0 | 26.8 | 22.2 |
| Female----------------------------------------------- | 4,088 | 2,319 | 1,769 | 47.3 | 26.8 | 20.5 |
| Both sexes | 9,936 | 3,298 | 6,638 | 59.0 | 19.6 | 39.4 |
| Male- | 4,297 | 1,385 | 2,912 | 52.5 | 16.9 | 35.6 |
| Female----------------------------------------------- | 5,639 | 1,913 | 3,726 | 65.2 | 22.1 | 43.1 |
| Both sexes | 2,127 | 760 | 1,367 | 12.6 | 4.5 | 8.1 |
|  | 986 | 340 | 647 | 12.0 | 4.2 | 7.9 |
|  | 1,141 | 420 | 721 | 13.2 | 4.9 | 8.3 |
| Other chronic respiratory diseases ${ }^{1}$ <br> Both sexes |  |  |  |  |  |  |
|  | 2,166 | 850 | 1,316 | 12.9 | 5.0 | 7.8 |
| Male-------------------------------------------------- | 1,165 | 458 | 707 | 14.2 | 5.6 | 8.6 |
| Female----------------------------------------------- | 1,001 | 393 | 608 | 11.6 | 4.5 | 7.0 |

[^7]Table 8. Number of chronic respiratory conditions reported in interviews by condition group, medical attention status, and bed disability: 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 il

*The magnitude of the sampling error precludes showing separate estimates.
${ }^{1}$ Excludes tuberculosis. For inclusions see page 7.
Table 9. Percent distribution of chronic respiratory conditions reported in interviews by bed disability according to medical attention status and condition group: United States, July 1957-June 1958
(See headnote on table 8)

| Medical attention and bed-days | Condition group |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Asthmahay fever | Chronic sinusitis | Chronic bronchitis | Other chronic respiratory diseases ${ }^{1}$ |
| Total conditions---------------------------------- | 100.0 | 100.0 | 100.0 | 100.0 |
| With $1+$ bed-days in year--------------------- | 15.9 | 10.3 | 37.9 | 35.3 |
| With no bed-days in year--------------------- | 84.1 | 89.7 | 62.2 | 64.7 |
| Medically attended within past year------------ | 100.0 | 100.0 | 100.0 | 100.0 |
| With $1+$ bed-days in year--------------------- | 25.6 | 20.1 | 47.1 | 48.6 |
| With no bed-days in year--------------------- | 74.4 | 79.9 | 52.9 | 51.4 |
| Medically attended more than a year ago-------- | 100.0 | 100.0 | 100.0 | 100.0 |
|  | 8.8 | 7.3 | 27.1 | 20.1 |
| With no bed-days in year---------------------1- | 91.3 | 92.7 | 72.8 | 79.9 |
|  | 100.0 | 100.0 | 100.0 | 100.0 |
|  | ${ }^{(*)}$ | 3.0 | (*) | (*) |
| With no bed-days in year---------------------- | 97.3 | 97.0 | 89.9 | 90.3 |

[^8]Table 10. Number of chronic respiratory conditions reported in interyiews by medical care and medical attention status 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 1 . Definitions of terms are given in Appendix 11]

| Medical care status | Condition group |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Asthmahay fever | Chronic sinusitis | Chronic bronchitis | Other chronic respixatory diseases ${ }^{1}$ |
|  | Number of conditions in thousands |  |  |  |
|  | 8,103 | 9,936 | 2,127 | 2,166 |
| Under care-------------------------------------1- | 4,516 | 3,298 | 760 | 850 |
|  | 3,586 | 6,638 | 1,367 | 1,316 |
| Medically attended within past year----------- | 3,797 | 3,159 | 1,264 | 1,252 |
|  | 2,771 | 1,843 | 586 | 661 |
|  | 1,027 | 1,316 | 679 | 591 |
| Medically attended more than a year ago------- | 3,284 | 4,272 | 724 | 656 |
|  | 1,745 | 1,455 | 175 | 189 |
|  | 1,539 | 2,817 | 549 | 467 |
|  | 1,021 | 2,505 | 139 | 258 |
|  | 1,021 | 2,505 | 139 | 258 |

${ }^{1}$ Excludes tuberculosis. For inctusions see page 7.

Table 11. Percent distribution of chronic respiratory conditions reported in interviews by medical care according to medical attention status and condition group: United States, July 1957-June 1958
(See headnote on table 10 )

| Medical care status | Condition group |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Asthmahay fever | Chronic sinusitis | Chronic bronchitis | Other chronic respiratory diseases ${ }^{1}$ |
| Total conditions--------------------------------1-1 | 100.0 | 100.0 | 100.0 | 100.0 |
| Under care | 55.7 | 33.2 | 35.7 | 39.2 |
| Not under care---------------------------------1- | 44.3 | 66.8 | 64.3 | 60.8 |
|  | 100.0 | 100.0 | 100.0 | 100.0 |
|  | 73.0 | 58.3 | 46.4 | 52.8 |
| Not under care----------------------------------- | 27.0 | 41.7 | 53.7 | 47.2 |
| Medically attended more than a year ago-------- | 100.0 | 100.0 | 100.0 | 100.0 |
| Under care- | 53.1 | 34.1 | 24.2 | 28.8 |
|  | 46.9 | 65.9 | 75.8 | 71.2 |
| Never medically attended- | 100.0 | 100.0 | 100.0 | 100.0 |
|  | 100.0 | 100.0 | 100.0 | 100.0 |

[^9]Table 12. Number of disability days associated with chronic respiratory conditions reported in interviews by condition group 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 11]

| Age | Asthma- <br> hay fever | Chronic <br> sinusitis | Chronic <br> bronchitis |
| :---: | :---: | :---: | :---: |

Number of restricted-activity days in thousands

| A11 ages----------------------------- | 96,553 | 54,890 | 32,104 |
| :---: | :---: | :---: | :---: |
| Under 15- | 21,379 | 4,547 | 9,168 |
| 15-44- | 22,880 | 19,936 | 5,887 |
| 45+- | 52,295 | 30,407 | 17,049 |
|  | Number of bed-disability days in thousands |  |  |
| A11 ages---------------------------- | 30,022 | 17,300 | 12,331 |
| Under 15- | 8,543 | 1,699 | 5,121 |
| 15-44- | 6,163 | 6,664 | 2,326 |
|  | 15,316 | 8,937 | 4,884 |

Table 13. Number of disability days per person with the condition per year due to chronic respiratory conditions reported in interviews by condition group and age: United States, July 1957-June 1958
(See headnote on table 12 )


Table 14. Average number of persons each day with disability due to chronic respiratory conditions reported in interviews by condition group 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 1 . Definitions of terms are given in Appendix 11]

Age $\quad$\begin{tabular}{c|c|c|c}
Asthma- <br>
hay fever

$\quad$

Chronic <br>
sinusitis

$\quad$

Chronic <br>
bronchitis
\end{tabular}

Persons each day with restricted activity in thousands ${ }^{1}$

|  | 265 | 150 | 88 |
| :---: | :---: | :---: | :---: |
| Under | 59 | 12 | 25 |
| 15-44 | 63 | 55 | 16 |
| 45+ | 143 | 83 | 47 |

Persons each day with bed disability in thousands ${ }^{1}$


[^10]Table 15. Population used in obtaining rates shown in this publication by sex and age: United States, July 1957June 1958
(See headnote on table 14)

| Age | Both sexes | Male | Female |
| :---: | :---: | :---: | :---: |
|  | Population in thousands |  |  |
| All ages- | 168,369 | 81,906 | 86,463 |
| Under 5- | 19,352 | -9,858 | 9,494 |
| 5-9- | 18,086 | 9,235 | 8,851 |
| 10-14 | 15,199 | 7,747 | 7,452 |
| 15-24- | 21,093 | 9,801 | 11,292 |
| 25-34-- | 22,738 | 10,859 | 11,880 |
| 35-44- | 22,918 | 11,026 | 11,892 |
| 45-54- | 19,639 | 9,592 | 10,047 |
| 55-64- | 14,831 | 7,147 | 7,685 |
| 65+- | 14,512 | 6,641 | 7,871 |

NOTE: For official population estimates for more general use, see Bureau of the Census report on the civilian population of the United States, in Current Popuration 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 Chronic Respiratory Conditions 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 chronic respiratory conditions 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

## Household-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 relescoped 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 cases of chronic bronchitis reported-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 population statistics, such as the number of persons having asthma-hay fever, 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 chronic sinusitis,
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 interview -is 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 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 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 P-20, $\mathrm{P}-25, \mathrm{P}-50, \mathrm{P}-57$, and $\mathrm{P}-60$ 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 $21 / 2$ 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 chronic bronchitis; 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 chronic bronchitis experienced during the year.

Sampling errors for Narrow- and Wide-range statistics were read from curves which have been firted 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:

| Variable | Use sampling error table indicated below |
| :---: | :---: |
| Number of conditions in any age-sex category, or according to medical attention, medical care status, or bed-disability category- | Table I, Narrow range |
| Prevalence rates of conditions based on total population in age and/or sex categories | Table II |
| Percentage distribution of conditions in any agesex category according to medical attention, medical care status, or bed-disability cat-egory- | Table II |
| Estimates of the number of disability days------ | Table I, Wide range |
| Rates of disability days of the following types: <br> (1) number of disability days per person per year, (2) average number of persons each day with disability | Use rule 3(b) below |
| ```Percentage distribution of disability days associated with conditions, according to age``` | Table III |

Type I consists of statistics on prevalence, for example, the number of persons having medically attended asthma-hay fever.
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 chronic sinusitis.
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 III.
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 IIl 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.
[^11]Table I. Standard errors of estimates of aggregates

| (A11 numbers shown in thousands) |  |  |
| :---: | :---: | :---: |
| Size of estimate | Standard error |  |
|  | Narrow-range Type I | Wide-range Type II |
| 100 | 22 | ... |
| 500 | 50 | - |
| 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 | . . . | 21,000 |
| 1,250,000 | -.. | 32,000 |

Illustration of use of table I. - The number of re-stricted-activity days associated with asthma-hay fever was $96,553,000$. Since this is an estimate of an aggregate and since restricted-activity days is a Wide-range Type Il variable, the "Wide-range". column of table lis 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 96,553,000 days is 5,362,000.

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 |

[^12]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 |

lllustration of use of table III. -Of the $54,890,000$ restricted-activity days associated with chronic sinusitis, 36.3 percent of them were for persons $15-44$ 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 $50,000,000$ a statistic of 25 percent has a standard error of 2.9 percentage points and a statistic of 50 percent has a standard error of 3.4 percentage points. Interpolating, with a base of $50,000,000$ a statistic of 36.3 percent would have a standard error of 3.13 percentage points. Corresponding calculations with a base of $75,000,000$ produce a standard error of 2.54 percentage points. A final interpolation between these two results yields an estimate of 3.01 percentage points which rounds to 3.0 as the approximate standard error for a statistic of 36,3 percent with a base of 54, 890, 000 . IInterpolationhas been carried out in two dimensions in this example. Usually a simple scanning of table lll will provide an approximate answer which is sufficient for most purposes.)

## 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 Revision of the International Classification was used. Impairments 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

1. Asthma

Any allergy
Tuberculosis
4. Chronic bronchitis
5. Repeated-attacks of sinus trouble
6. Rheumatic fever
7. Hardening of the arteries

High blood pressure
Heart troubje
10. Stroke
11. Trouble with varicose veins
12. Hemorrhoids of piles
13. Galloladder or liver trouble
14. Stomach ulcer
15. Any other chronic stomach trouble
16. Kidney stones or other
kidney trouble
17. Arthritis or rheumatism
18. Prostate trouble
19. Diabetes
20. Thyroid trouble or. goiter
21. Epilepsy or convulsions of any kind
22. Mental or nervous trouble
23. Repeated trouble with
back or spine
24. Tumor or cancer
25. Chronic skin trouble
26. Hernia or rupture

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.
8. Paralysis of any kind.
9. 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.

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 through 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 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.

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.

A condition is counted as medically attended if a physician was consulted about it at its onset or at any time thereafter. However, the first medical attention for a condition that was presentin the 2 calendar weeks before the interview may not occur until after the end of the 2 -week period, and, in fact, may not occur until after the interview. Such cases are necessarily treated as though there had been no medical attention.

Interval since last medical consultation for a condition. - The interval since the last medical consultation 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.
-For the purposes of this definition "physician" is defined as in "Medically attended condition."

Still under care. -This information is obtained only for chronic conditions. A chronic condition which is "still 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.

For the purposes of this definition "physician" is defined as in "Medically attended condition."

## 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 activ-
ities' 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 beddisability days even if the patient was not actually in bed at the hospital.

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.

## 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.






FOOTNOTES AND COMUENTS


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.
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No. 11. Limitation of Activity and Mobility Due to Chronic Conditions, United States, July 1957-June 1958. PHS Pub. No. 584-B11. Price 30 cents.
No. 12. Chronic Respiratory Conditions Reported in Interviews, United States, July 1957-June 1958. PHS Pub. No. 584-B12.

Series C (Health Interview Survey results for population groups)
No. 1. Children and Youth, Selected Health Characteristics; United States, July 1957-June 1958. PHS Pub. No. 58̣4-C1. Price 35 cents.

## Catalog Card

U. S. Mational Eealth Survey.

Chronic respiratory conditions reported in interviews, united States, July 1957-June 1958; statistics on prevalence of chronic respiratory conditions and associated disability by age, sex, medical attention, and type of condition. Based on data collected in household interviews during the period July 1957-June 1958. Washington, U.S. Dept. of Health, Education, and Welfare, Public Health Service, Division of Public Health Methods, 1959.

32 p . diagrs., tables. 27 cm . (Its Health statistics, ser. $\mathrm{Bl} \mathrm{l}^{2}$
U.S. Public Health Service. Publication no. 584-812

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Cataloged by U.S. Dept. of Health, Education and Welfare. Library.

[^0]:    *For definition of chronic condition, see 'Appendix ${ }^{\prime}$ II .

[^1]:    *The magnitude of the sampling error precludes showing separate estimates.
    ${ }^{1}$ Excludes tuberculosis. For inclusions see page 7.

[^2]:    * The magnitude of the sampling error precluides showing separate estimates.
    ${ }^{1}$ Excludes tuberculosis. For inclusions see page 7 .

[^3]:    *The magnitude of the sampling error precludes showing separate estimates.
    ${ }^{1}$ Excludes tuberculosis. For inclusions see page 7.

[^4]:    *The magnitude of the sampling error precludes showing separate estimates.
    ${ }^{1}$ Excludes tuberculosis. For inclusions see page 7.

[^5]:    ${ }^{1}$ Excludes tuberculosis. For inclusions see page 7.

[^6]:    *The magnitude of the sampling error precludes'showing separate estimates.
    ${ }^{1}$ Excludes tuberculosis. For inclusions see page 7.

[^7]:    ${ }^{1}$ Excludes tuberculosis. For inclusions see page 7.

[^8]:    *The magnitude of the sampling. error precludes showing separate estimates.
    ${ }^{1}$ Excludes tuberculosis. For inclusions see page 7.

[^9]:    ${ }^{1}$ Excludes tuberculosis. For inclusions see page 7.

[^10]:    ${ }^{1}$ These figures are obtained by dividing the number of disability days in each age-condition category by 365.

[^11]:    The relative standarderror for any statistic is the standarderror divided by the statistie itself.

[^12]:    lllustration of use of table II. -Of the $2,127,000$ persons reported as having chronic bronchitis, 6.5. percent were never medically attended. Since this is a percęntage, and a Narrow-range variable, table ll is appropriate. For a base of $2,000,000$ a statistic of 5 . percent has a standard error of 1.3 percentage points, and a statistic of 10 percent has a standard error of 1.5 percentage points. Interpolating, with a base of $2,000,000$ a statistic of 6.5 percent would have a standard error of 1.36. Corresponding calculations with a base of $3,000,000$ produce a standard error of 1.06 . A final interpolation between these two results yields an estimate of 1.32 percentage points which rounds to 1.3 as the approximate standard error fora statistic of 6.5 percent with a base of 2, 127,000. (Interpolation has been carried put in two dimensions in this example. Usually a simple scanning of table ll will provide an approximate answer which is sufficient for most purposes.)

