

VITAL and HEALTH STATISTICS
DATA FROM THE NATIONAL VITAL STATISTICS SYSTEM

Mortality From Diseases Associated With Smoking: United States, 1950-64

An analysis of mortality trends by age, color, and sex of diseases stated by the Surgeon General's Advisory Committee in its report *Smoking and Health* to be associated with tobacco smoking.

Washington, D.C.

October 1966

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
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THIS REPORT is divided into two major sections: (1) trends of mortality from those diseases that the Surgeon General's Advisory Committee considered to be causally related to smoking (particularly cigarette smoking)—cancer of the lung, cancer of the larynx, cancer of the lip, and chronic bronchitis; and (2) trends of mortality from those diseases that the Advisory Committee considered to be associated with but not clearly causally related to smoking—arteriosclerotic heart disease, including coronary disease; cirrhosis of liver; emphysema; ulcer of stomach; cancer of the esophagus; cancer of parts of oral cavity other than lip; cancer of bladder and other urinary organs; and specified noncoronary cardiovascular diseases.

The mortality trend for lung cancer continued upward. Cohort analysis shows that more recently born cohorts are at higher risk of dying from lung cancer at younger ages than were their predecessors. There were no signs of reversals in the trend for cancer of the larynx and chronic bronchitis, the two other diseases stated by the Committee to be causally related to cigarette smoking. Both of these diseases are much lower in frequency than lung cancer. Mortality from cancer of the larynx was almost stationary during 1950-64. Mortality from chronic bronchitis nearly doubled during 1950-64; it is one of those diseases that by itself may not be fatal but in combination with another serious disease increases the risk of death. For cancer of the lip, cited as causally related to pipe smoking, there was a decline in the death rate of about 67 percent.

There were substantial increases during 1950-64 in mortality from three of the eight groups of diseases associated with but not clearly causally related to smoking—arteriosclerotic heart disease, including coronary disease, especially in the male population; cirrhosis of the liver, with the most marked increase for the nonwhite population; and emphysema, especially for the white male population. For the remaining five groups, mortality rates were either downward or relatively stable during 1950-64. The death rate for other circulatory diseases (a subgroup included under specified noncoronary cardiovascular diseases), however, was clearly upward. This subgroup includes peripheral vascular disease and arterial embolism and thrombosis.

SYMBOLS

Data not available-----	---
Category not applicable-----	...
Quantity zero-----	-
Quantity more than 0 but less than 0.05-----	0.0
Figure does not meet standards of reliability or precision-----	*

MORTALITY FROM DISEASES ASSOCIATED WITH SMOKING

A. Joan Klebba, *Division of Vital Statistics*

INTRODUCTION

Purpose of This Report

Beginning about 1950 extensive studies using epidemiological, experimental, and clinical methods have been made on the effects of tobacco on health. The Advisory Committee on Smoking and Health appointed by the Surgeon General of the Public Health Service in 1962 reviewed and evaluated the studies available at that time and presented the results in the report *Smoking and Health*, issued in 1964. In addition to considering the evidence on lung cancer, the Advisory Committee also weighed the evidence on the relationship of smoking, particularly of cigarettes, to a number of other diseases.

As a result of various activities that were set underway following the publication of *Smoking and Health* and the interest in measuring the long-range effects of programs to stop the rise in mortality during productive years of life from cancer of the lung and other diseases linked with cigarette smoking, it was considered desirable to pay special attention to current and future mortality trends from these diseases.

Scope of Present Report

This report is designed to lay the foundation for the long-range observation of these trends. It is divided into two major sections: (1) trends of mortality from those diseases that the Surgeon General's Advisory Committee considered to be *causally* related to smoking, and (2) trends of mortality from those diseases that the Advisory Committee considered to be associated with but not clearly causally related to smoking. In this first report the time period covers the years 1950-64; and data for each cause are analyzed by

age, sex, and color. These trend data have been obtained from the certificates of death filed in the State offices of vital statistics.

Separate trend figures are presented for 10-year age groups for persons 25 years and over. Also included for these diseases linked to tobacco usage are age-adjusted rates. Inasmuch as most of the studies reviewed by the Committee referred to men, all of the statistics in the present report are shown separately for men. Because the Committee concluded that the limited data on women pointed in the same direction as for men, considerable data for the female population are also shown.

The data evaluated by the Committee established that the sex differential for smoking has grown smaller over the last several decades. Male cohorts born after 1900 successively began to smoke earlier in life. Large-scale adoption of cigarette smoking by women did not occur until the 1920's and 1930's. By 1955, 32 percent of the female population were smoking as compared with 65 percent of the male population. Disparities between male and female mortality rates for some causes related to smoking were found to be correlated with the differences in smoking patterns for men and women. Another reason for presenting selected mortality trends for women is that the relative rise in mortality from a number of causes, including lung cancer, has been greater since about 1960 for the female than for the male population.

Data for selected causes are also shown separately for the white and nonwhite populations. In studies reviewed by the Committee it was established that as late as the mid-1950's the proportion of smokers was roughly the same among white and nonwhite persons, but many more heavy smokers (more than one pack a day) were found in the white population. At the same time

it was found that "amount smoked" was positively related to income and that the smallest percentage of smokers was within the rural-farm population. As a result of the large migration of nonwhite rural-farm families to urban areas during 1955-64 and the rise in the socioeconomic level of the nonwhite population, the color differential for the percentage of heavy smokers may have lessened over this 10-year period. Furthermore, the relative rise in mortality from a number of diseases linked to tobacco usage has been greater over 1950-64 for the nonwhite than for the white population. Among these are lung cancer and arteriosclerotic heart disease, including coronary disease.

Also shown in this report are general mortality trends for the period 1950-64 by age, color, and sex (table 1). Age-adjusted death rates for the four color-sex groups are also included. These general trends serve as baselines for identifying shifts in the relative importance over the years from causes of death linked with the use of tobacco, particularly cigarettes.

MORTALITY FROM DISEASES CAUSALLY RELATED TO SMOKING

From the combined results of the studies reviewed by its members, the Advisory Committee concluded that tobacco usage is *causally* related to the following four diseases: cancer of the lung, cancer of the larynx, cancer of the lip, and chronic bronchitis. The epidemiologic method coupled with clinical and laboratory observations provided the basis for these four conclusions.

Cancer of the Lung

*Cigarette smoking is causally related to lung cancer in men; the magnitude of the effect of cigarette smoking far outweighs all other factors. The data for women, though less extensive, point in the same direction.*¹

¹Public Health Service: *Smoking and Health*, Report of the Advisory Committee to the Surgeon General of the Public Health Service. PHS Pub. No. 1103. Washington. U.S. Government Printing Office, 1964. p. 31.

Total mortality trend.—The death rate for cancer of the lung (International List Numbers 162 and 163) almost doubled between 1950 (12.2 deaths per 100,000 population) and 1964 (24.0 deaths per 100,000). Not much of this rise could be attributed to the changing age composition of the population. The corresponding age-adjusted rate likewise almost doubled (11.1 deaths per 100,000 for 1950 and 20.7 deaths for 1964, table 2). The annual number of deaths from lung cancer rose from 18,313 deaths in 1950 to 45,838 in 1964. In this 15-year period deaths from lung cancer totaled approximately a half million (467,442 deaths).

Mortality differentials by sex and color.—Lung cancer mortality in the male population increased from 19.9 deaths per 100,000 population in 1950 to 41.4 deaths in 1964. The corresponding increase in the female population was from 4.5 to 7.1 deaths per 100,000. Until 1960 the ratio of the death rate in the male population for this cause to the corresponding death rate in the female population continued upward. But after 1960 this ratio leveled off, reflecting the greater relative rise in mortality from lung cancer in the female population.

Year	Ratio of male to female death rates for:	
	Total death rate	Age-adjusted death rate
1964-----	5.8	6.4
1963-----	5.8	6.4
1962-----	6.0	6.6
1961-----	6.0	6.5
1960-----	6.2	6.8
1959-----	6.1	6.6
1958-----	6.0	6.5
1957-----	6.0	6.6
1956-----	5.9	6.3
1955-----	5.6	6.0
1954-----	5.6	6.0
1953-----	5.4	5.7
1952-----	4.8	5.1
1951-----	4.8	5.0
1950-----	4.4	4.7

In 1964 the death rate for lung cancer, unadjusted for changing age composition, was about 40 percent higher for the white population (24.8 deaths per 100,000) than for the nonwhite population (17.9 deaths per 100,000). This differential by color was lower for 1964, however, than for 1950, owing to the greater relative increase in lung cancer mortality in the nonwhite population during 1950-64.

Year	Ratio of white to nonwhite death rates for:	
	Total death rate	Age-adjusted death rate
1964-----	1.4	1.0
1963-----	1.3	0.9
1962-----	1.4	1.0
1961-----	1.4	1.0
1960-----	1.3	1.0
1959-----	1.4	1.0
1958-----	1.5	1.1
1957-----	1.5	1.1
1956-----	1.5	1.1
1955-----	1.6	1.1
1954-----	1.6	1.2
1953-----	1.6	1.1
1952-----	1.6	1.2
1951-----	1.6	1.2
1950-----	1.7	1.3

Mortality from lung cancer rose faster during 1950-64 in the nonwhite male population than in the other color-sex groups.

Color and sex	Ratio of 1964 to 1950 death rates for:	
	Total death rate	Age-adjusted death rate
Total-----	2.0	1.9
Male-----	2.1	2.0
Female-----	1.6	1.5
White-----	2.0	1.8
Male---	2.1	2.0
Female-	1.6	1.5
Nonwhite-----	2.4	2.4
Male---	2.6	2.7
Female-	1.9	1.8

Mortality trends in the male population by color and age.—For 1964, as for each year of the period 1950-64, the death rate for cancer of the lung for the white male population was higher for each succeeding age group from 25-34 years through 65-74 years but was lower for the age groups 75 years and over (fig. 1). Similarly the death rate for the nonwhite male population for this cause increased with advance in age from 25-34 years through 65-74 years for most of the years during 1950-64 and declined at ages over 74 years. As pointed out by the Advisory Committee, however, there actually was no decline in the risk of dying from cancer of the lung with advance in age.² As shown in figure 2, within each cohort (a group of persons born during the same 5-year period) the death rates for cancer of the lung increased steadily to the end of the life span. Thus the mortality curve for Cohort J (males born in 1880-84) shows the death rates for cancer of the lung within the cohort first for 1949, when its members were 65-69 years of age; then in 1954, when they were 70-74 years of age; in 1959, when they were 75-79 years of age; and in 1964, when they were 80-84 years of age. The death rates for cancer of the lung within Cohort J continued to increase with each of these 5-year advances in age, rising from 87.9 deaths per 100,000 at ages 65-69 years to 174.6 deaths per 100,000 at ages 80-84 years. Similarly for each of the other 11 cohorts in figure 2, mortality from lung cancer increased almost steadily throughout that part of the life span lived by the cohort during 1949-64.

The mortality experience of the individual male cohorts during 1949-64 shows that for every 5-year age group beginning with 25-29 years the risk of dying from lung cancer was almost always higher for successively younger cohorts than for their predecessors. The increasing steepness of the mortality curves indicates that mortality from lung cancer rose more rapidly within recently born male cohorts.

Mortality trends in the female population by color and age.—Between 1950 and 1964 mortality from lung cancer among white women more than doubled for the age groups 35-44 years and 45-54 years (table 2). The greatest percentage increase over this 15-year period (116 percent) was for

²Ibid., pp. 138 and 139.

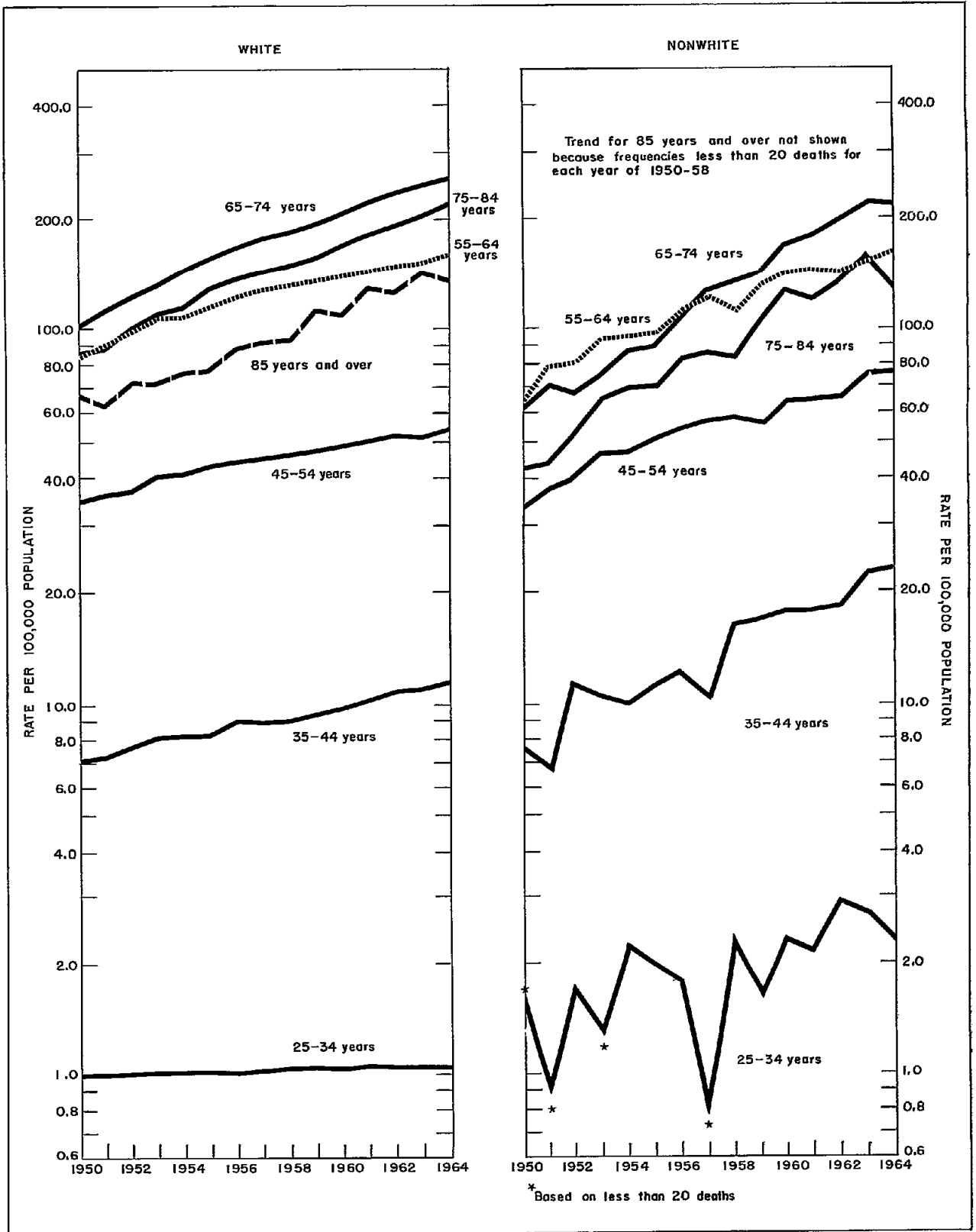


Figure 1. Death rates among men for cancer of the lung, by color and specified age groups: 1950-64.

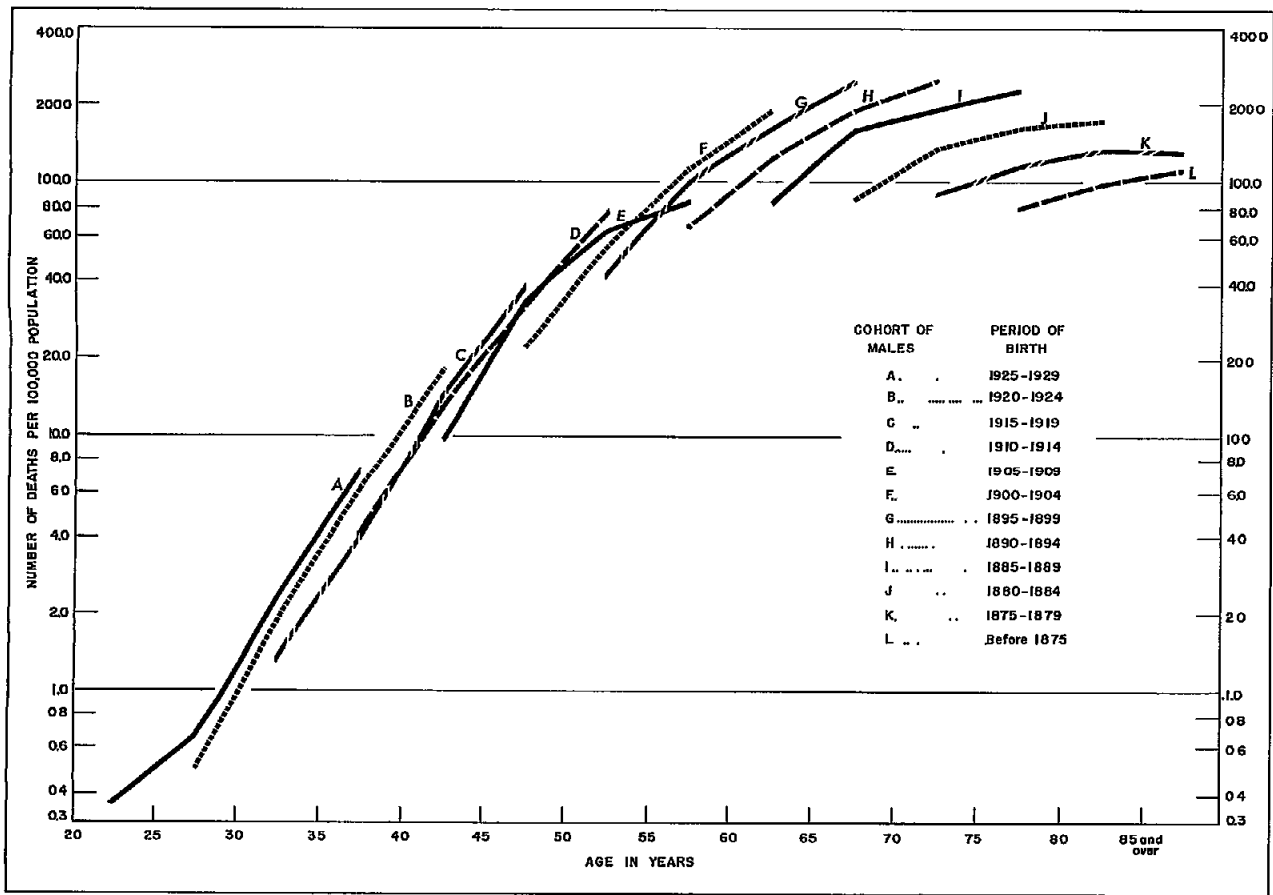


Figure 2. Cancer of the lung among men, by birth cohort and age at death: 1949, 1954, 1959, and 1964.

the age group 35-44 years. For succeeding age groups the relative increase lessened—amounting to only 13 percent at ages 75-84 years. The Committee suggested that these age-sex differentials may be attributable to differences in length of exposure to one or more factors related to lung cancer.

Unlike the pattern for men, the death rate for cancer of the lung among women 25 years and over rose steadily with advance in age for each year of the period 1950-64 (table 2). The female cohort experience shows that the death rates for cancer of the lung increased for the cohort to the end of the life span (fig. 3). The steepness of the mortality curves shows that mortality from lung cancer also rose more rapidly in more recently born female cohorts. The cohort approach

shows larger rises in mortality from lung cancer between successive female cohorts born after World War I (Cohorts B, C, and A) than the corresponding rises between cohorts born earlier.

Cancer of the Larynx

*Cigarette smoking is a significant factor in the causation of cancer of the larynx.*³

Cancer of the larynx as a cause of death is of relatively low frequency compared with cancer of lung. Deaths attributed to this cause totaled 2,494 in 1964 as compared with 1,852 in 1950. Almost all of these deaths occurred in the white male

³Ibid., p. 32.

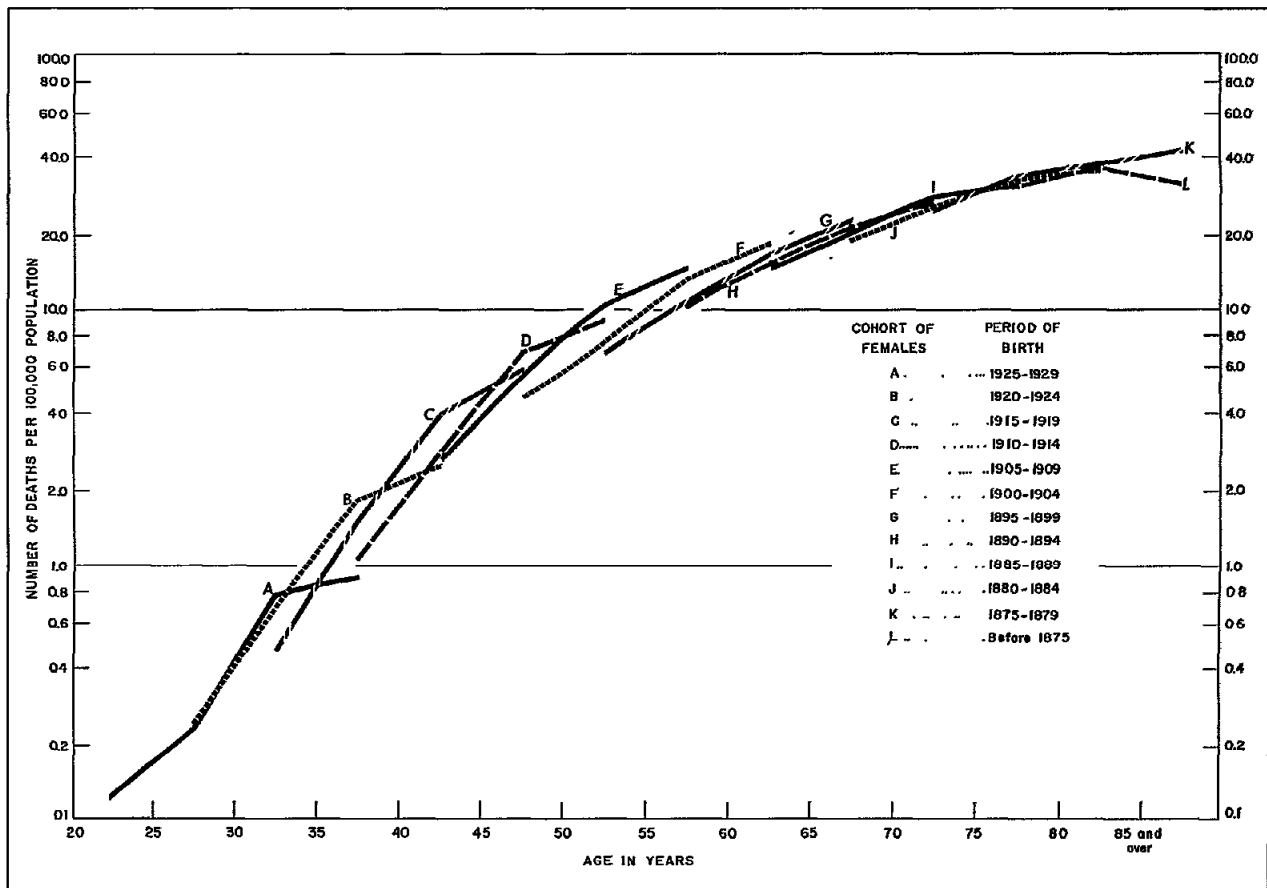


Figure 3. Cancer of the lung among women, by birth cohort and age at death: 1949, 1954, 1959, and 1964.

population—2,000 deaths in 1964 and 1,555 deaths in 1950.

The total death rate for cancer of the larynx increased only slightly over the 15-year period—from 1.2 deaths per 100,000 population in 1950 to 1.3 deaths in 1964 (table A).

In the white male population the 1964 mortality rate for cancer of the larynx was about eight times the corresponding rate for the white female population; and in the nonwhite male population the mortality rate for this cause was about seven times that for the nonwhite female population.

After the middle years of life mortality from cancer of the larynx increased substantially in the male population. In 1964 there were 3.0 deaths per 100,000 population at ages 45-54 years and

15.3 deaths per 100,000 at ages 75-84 years (table 3).

The age-adjusted death rate for this cause in the male population also remained relatively stable during the period 1950-64—2.0 deaths per 100,000 for 1950 and 2.1 deaths for 1964.

Cancer of the Lip

*Pipe smoking appears to be causally related to lip cancer.*⁴

Cancer of the lip was not an important cause of mortality among the female population during

⁴Ibid.

Table A. Death rates for malignant neoplasm of larynx, by color and sex: United States, 1950-64

[Deaths are those attributed to category number 161 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64. Asterisk indicates rate based on less than 20 deaths]

Year	Total			White		Nonwhite	
	Both sexes	Male	Female	Male	Female	Male	Female
	Rate per 100,000 population						
1964-----	1.3	2.4	0.3	2.4	0.3	2.1	0.3
1963 ¹ -----	1.4	2.5	0.3	2.5	0.3	2.0	0.4
1962 ¹ -----	1.3	2.4	0.3	2.4	0.3	2.0	0.2
1961-----	1.3	2.4	0.3	2.5	0.3	2.1	0.2
1960-----	1.4	2.5	0.3	2.5	0.2	2.2	0.3
1959-----	1.3	2.3	0.3	2.4	0.3	1.8	0.3
1958-----	1.3	2.4	0.3	2.4	0.3	2.0	0.3
1957-----	1.3	2.3	0.2	2.4	0.2	1.8	0.2
1956-----	1.3	2.3	0.2	2.4	0.2	1.5	0.2
1955-----	1.3	2.4	0.2	2.5	0.2	1.7	0.3
1954-----	1.2	2.2	0.2	2.3	0.2	1.8	*
1953-----	1.3	2.3	0.2	2.4	0.2	1.6	*
1952-----	1.2	2.2	0.2	2.3	0.2	1.5	*
1951-----	1.2	2.2	0.2	2.3	0.2	1.3	*
1950-----	1.2	2.2	0.3	2.3	0.2	1.4	0.3

¹Figures by color exclude data for New Jersey; see page 6-9, Section 6, Volume II, Vital Statistics of the United States, 1963.

1950-64 (table B). There were only 28 deaths among women attributed to this cause during 1964 as compared with 157 among men.

During 1950-64 there was a decline of about 67 percent in mortality from cancer of the lip among males. About 15 percent of this decline may be attributed to the break in comparability of mortality statistics for this cause between 1957 and 1958 (see Qualifications of Data). The remaining decline of about 52 percent may reflect progress in early detection and improved treatment.

During the period 1958-64 in which the Seventh Revision of the International Classification of Diseases was in use, total mortality from cancer of the lip among men remained about the same. By age, however, there were substantial decreases in this death rate for each 10-year age group from 55-84 years (table 4).

Chronic Bronchitis

Cigarette smoking is the most important of the causes of chronic bronchitis in the United States, and increases the risk of dying from chronic bronchitis and emphysema....⁵

Mortality figures should not be used to estimate the incidence of bronchitis in the deceased population nor in the general population. It is one of those chronic diseases appearing frequently in multiple-cause tabulations that by itself may not be fatal but in combination with another serious disease increases the risk of death. In the multiple-cause study of deaths occurring in 1955, the total number of times

⁵Ibid., p. 31.

Table B. Death rates for malignant neoplasm of lip, by color and sex: United States, 1950-64

[Deaths are those attributed to category number 140 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64. Asterisk indicates rate based on less than 20 deaths]

Year	Total			White		Nonwhite	
	Both sexes	Male	Female	Male	Female	Male	Female
	Rate per 100,000 population						
1964-----	0.1	0.2	0.0	0.2	0.0	*	*
1963 ¹ -----	0.1	0.2	0.0	0.2	*	*	*
1962 ¹ -----	0.1	0.2	0.0	0.2	*	*	*
1961-----	0.1	0.2	0.0	0.2	*	*	*
1960-----	0.1	0.2	0.0	0.2	*	*	*
1959-----	0.1	0.2	0.0	0.3	*	*	*
1958-----	0.1	0.2	0.0	0.3	0.0	*	-
1957-----	0.2	0.4	0.0	0.4	0.0	*	*
1956-----	0.2	0.4	0.0	0.4	0.0	*	*
1955-----	0.2	0.4	0.0	0.5	0.0	*	*
1954-----	0.2	0.4	0.0	0.4	0.0	*	*
1953-----	0.3	0.5	0.1	0.5	0.1	*	*
1952-----	0.3	0.5	0.1	0.5	0.1	*	*
1951-----	0.3	0.5	0.1	0.5	0.1	*	*
1950-----	0.3	0.6	0.1	0.6	0.1	*	*

¹Figures by color exclude data for New Jersey; see page 6-9, Section 6, Volume II, Vital Statistics of the United States, 1963.

bronchitis appeared on the certificates of death was 2.6 times the number of times that it was coded as an underlying cause.⁶ The certifying physician may report this cause in Part II of the medical certification under "Other significant conditions contributing to death but not related to the terminal disease condition given in Part Ia." The information supplied will depend on the physician's evaluation of the part bronchitis played in the death.

It was suggested in a number of studies reviewed by the Advisory Committee that chronic bronchitis by virtue of the attenuating effect it has on the epithelial defenses of the host might

make the bronchial epithelium a target organ for the action of a carcinogen, such as that in cigarette smoke.⁷ Nevertheless, bronchitis was coded as an associated or contributory cause for only 124 of 27,133 deaths attributed to lung cancer in 1955. In contrast *diseases of heart (410-443)* were coded as associated or contributory conditions for 2,057 of the 27,133 deaths attributed to lung cancer. As indicated previously the information supplied on the death certificate will depend on the physician's evaluation of the part a disease or condition played in the death.

Total mortality trend.—The death rate for chronic and unqualified bronchitis rose from 1.3 deaths per 100,000 population in 1950 to 2.3 deaths in 1964. For each of the 10-year age

⁶National Center for Health Statistics: *Vital Statistics of the United States, 1955, Supplement*. Public Health Service. Washington. U.S. Government Printing Office, 1965. p. XXIX.

⁷Public Health Service, op. cit., pp. 141-148.

groups from 35 through 74 years, mortality from these causes at least doubled between 1950 and 1964 (table 5). A small part of this rise in the death rate for chronic and unqualified bronchitis is attributable to the break in comparability between 1957 and 1958 (see Qualifications of Data). During the 7 years 1958-64, following the adoption of the Seventh Revision, mortality from these causes increased about 53 percent.

Mortality differentials by sex.—While mortality from chronic and unqualified bronchitis for the female population remained at about the same level during this 15-year period (around 1 death per 100,000 population), it increased about 125 percent for the male population (from 1.6 deaths per 100,000 in 1950 to 3.6 deaths in 1964).

Mortality trends by sex and age.—Within the male population mortality from chronic and unqualified bronchitis more than doubled between 1950 and 1964 for each 10-year age group from 35 through 84 years. The largest of these increases was for the age group 65-74 years—the death rate in 1964 (23.2 deaths per 100,000) was 3.3 times greater than the corresponding death rate in 1950. The death rate for chronic and unqualified bronchitis nearly doubled during the period 1950-64 for women aged 45-54 and 55-64 years. These substantial increases at the end of the biologically reproductive period, however, are not apparent in the trend of the death rate for all ages. These increases were almost entirely offset by decreases in the death rates for these causes at ages 75 years and older.

MORTALITY FROM DISEASES ASSOCIATED WITH BUT NOT CLEARLY RELATED TO SMOKING

There are eight causes or groups of causes of death for which the Advisory Committee found evidence of an association with tobacco use. The Committee did not think the data adequate, however, to decide whether or not these relationships are causal. These causes include the leading cause of death *arteriosclerotic heart disease, including coronary disease*, and three other causes with relatively high frequencies—*cirrhosis of liver, emphysema, and ulcer of stomach*. The remaining causes are cancer of the esophagus, cancer of parts of oral cavity other than lip,

cancer of bladder and other urinary organs, and specified noncoronary cardiovascular diseases.

Arteriosclerotic Heart Disease, Including Coronary Artery Disease

*...It is established that male cigarette smokers have a higher death rate from coronary artery disease than non-smoking males. Although the causative role of cigarette smoking in deaths from coronary disease is not proven, the Committee considers it more prudent from the public health viewpoint to assume that the established association has causative meaning than to suspend judgment until no uncertainty remains.*⁸

Total mortality trend.—About 73 percent of the deaths assigned in 1964 to *arteriosclerotic heart disease, including coronary disease (420)* were attributed to the subcategory *heart disease specified as involving coronary arteries (420.1)*. The increase in the total death rate for *arteriosclerotic heart disease, including coronary disease*, during 1950-64 amounted to 34 percent, with a rate of 285.1 deaths per 100,000 population for 1964 (table 6). About half of this increase, however, is attributable to the aging of the population, particularly of the female population.

The changes in mortality from this cause by color and sex were as follows:

Color and sex	Ratio of 1964 to 1950 death rates for:	
	Total death rate	Age-adjusted death rate
Total-----	1.34	1.17
Male-----	1.28	1.20
Female-----	1.47	1.17
White-----	1.34	1.16
Male----	1.27	1.19
Female--	1.47	1.15
Nonwhite-----	1.53	1.42
Male----	1.50	1.48
Female--	1.58	1.38

⁸Ibid., p. 82.

The absolute increase in the age-adjusted death rate for arteriosclerotic heart disease, including coronary disease, was 31.3 deaths per 100,000 persons as compared with an absolute increase of 9.6 deaths per 100,000 persons in the age-adjusted death rate for lung cancer (tables 2 and 6).

Mortality differentials by sex and color.—

The death rate for the white population for *arteriosclerotic heart disease, including coronary disease*, was about 73 percent higher in 1964 than the corresponding rate for the nonwhite population; and for the male population it was about 62 percent higher than that for the female population. As shown by the following figures the mortality differential by color decreased during 1950-64 when measured both by the total and the age-adjusted death rates:

Year	Ratio of male to female for:		Ratio of white to nonwhite for:	
	Total death rate	Age-adjusted death rate	Total death rate	Age-adjusted death rate
1964--	1.62	2.16	1.73	1.11
1963--	1.64	2.15	1.73	1.12
1962--	1.65	2.14	1.75	1.14
1961--	1.68	2.15	1.79	1.18
1960--	1.69	2.14	1.81	1.20
1959--	1.70	2.13	1.84	1.22
1958--	1.72	2.12	1.83	1.22
1957--	1.71	2.08	1.81	1.21
1956--	1.74	2.09	1.86	1.26
1955--	1.76	2.10	1.91	1.29
1954--	1.80	2.11	1.94	1.32
1953--	1.82	2.10	1.87	1.29
1952--	1.83	2.08	1.93	1.33
1951--	1.86	2.11	1.96	1.36
1950--	1.86	2.09	1.98	1.36

This lessening of the gap between the death rates for arteriosclerotic heart disease, including coronary disease, for the white and nonwhite populations resulted from the relatively more rapid rise in mortality from these causes in the nonwhite population. On the other hand the lessening of the mortality differential by sex for these diseases is attributable to the changing age composition of

the population, particularly to the increasing number of older women. As shown by age-sex-specific rates (table 6) the relative rise in mortality from arteriosclerotic heart disease during 1950-64 was greater for the male than for the female population for every age group under 85 years.

*Mortality differentials by sex, color, and age.—*For every 10-year age group from 25 to 85 years, the relative increase between 1950 and 1964 in the death rate for *arteriosclerotic heart disease, including coronary disease*, was more than twice as high for the nonwhite male population as for the white male population.

In the white female population there were substantial increases in this death rate during 1950-64 for the older age groups—with increases of 9 percent at ages 65-74 years, 20 percent at ages 75-84 years, and 59 percent at ages 85 years and over (table 6). But the increases in the rate for this cause in the nonwhite female population occurred at earlier ages and were even greater—with rises amounting to 35 percent at ages 55-64 years, 58 percent at ages 65-74 years, 54 percent at ages 75-84 years, and 93 percent at ages 85 years and over.

Cirrhosis of Liver

Increased mortality of smokers from cirrhosis of the liver has been shown in the prospective studies. The data are not sufficient to support a direct or causal association.

...The increased death rate from cirrhosis among smokers may reflect the consumption of alcohol and associated nutritional deficiencies rather than the effect of cigarette smoking.⁹

*Total mortality trend.—*Cirrhosis of liver moved up from the rank of 13th leading cause of death in 1950 to the 11th in 1964. Over these years the death rate for this chronic disease increased about 32 percent, and the age-adjusted rate increased about 35 percent. This upturn resulted partly from higher mortality in the non-

⁹Ibid., pp. 39 and 342.

white population. Death rates and rank order by color and sex are shown below for 1950 and 1964.

Color and sex	1964		1950	
	Rate	Rank order	Rate	Rank order
Total-----	12.1	11	9.2	13
White male-----	16.0	11	12.6	13
White female---	8.2	11	6.5	13
Nonwhite male--	15.7	8	7.8	18
Nonwhite female	9.5	13	5.2	19

The rise in mortality from this cause in the nonwhite population (92 percent) is not attributable to changes in age composition (table C). The percentage increase in the corresponding age-adjusted rate was about 105 percent. The 83 percent increase for the nonwhite female population (from 5.2 deaths per 100,000 population in 1950 to 9.5 per 100,000 in 1964) also cannot be attributed to changes in age composition because the corresponding increase in the age-adjusted rate was even higher (92 percent).

Trends by sex and age.—Marked increases for cirrhosis of liver during 1950-64 occurred for young adult and middle-aged persons (table 7). For each 10-year age group from 25 through 54 years the relative increase in the death rate amounted to 49 percent or more. For the age group 55-64 years the increase amounted to 40 percent. Conversely, at the older ages the death rate for cirrhosis of the liver decreased. At ages 75-84 years the decrease amounted to about 20 percent, and at ages 85 years and over to about 35 percent. Similar patterns with increases at younger ages and decreases at older ages between 1950 and 1964 occurred within both the male and female populations.

The downturn of mortality from cirrhosis of liver at older ages does reflect lower risk of death from this cause with advancing age. As shown below by the mortality rates for the male cohort born during the 5-year period 1885-89, this downturn with advancing age is not an artifact

due to the mixture of cohorts with differing mortality experience:

Year of death	Age at death	Death rate per 100,000
1964-----	75-79 years	45.4
1959-----	70-74 years	49.5
1954-----	65-69 years	52.7
1949-----	60-64 years	42.7

Both for men and women there is a downturn in mortality from cirrhosis of liver after about age 70 years.

Cohort analysis also shows that for both men and women successively younger cohorts are at higher risks of dying from cirrhosis of liver during the most productive ages of life. Following, for example, are the death rates for this cause at ages 40-44 years for four male cohorts:

Period of birth of cohort	Age at death	Year of death	Death rate per 100,000
1920-24---	40-44	1964-----	20.7
1915-19---	40-44	1959-----	19.3
1910-14---	40-44	1954-----	16.6
1905-09---	40-44	1949-----	14.1

For women born during the period 1915-19 the death rate for cirrhosis of liver at ages 45-49 years was about 72 percent greater than the corresponding death rate for women born about the beginning of the century (1900-1904):

Period of birth	Age at death	Year of death	Death rate per 100,000
1915-1919-	45-49	1964-----	18.8
1900-1904-	45-49	1949-----	10.9

Table C. Death rates for cirrhosis of liver, by color and sex; and corresponding age-adjusted rates: United States, 1950-64

[Deaths are those attributed to category number 581 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Year	White			Nonwhite		
	Both sexes	Male	Female	Both sexes	Male	Female
Rate per 100,000 population						
1964-----	12.1	16.0	8.2	12.5	15.7	9.5
1963 ¹ -----	11.8	15.7	8.0	11.5	13.9	9.3
1962 ¹ -----	11.6	15.7	7.6	11.5	13.8	9.3
1961-----	11.4	15.4	7.5	10.8	13.3	8.4
1960-----	11.5	15.6	7.4	10.2	12.6	7.9
1959-----	11.1	14.9	7.3	9.7	11.7	7.9
1958-----	11.0	14.9	7.2	8.5	10.7	6.5
1957-----	11.6	15.8	7.5	9.4	11.6	7.4
1956-----	11.0	14.7	7.4	8.5	10.2	6.9
1955-----	10.5	14.2	7.0	7.5	9.0	6.0
1954-----	10.4	14.1	6.8	7.1	8.6	5.7
1953-----	10.7	14.3	7.2	7.2	8.9	5.7
1952-----	10.6	14.3	7.0	7.2	9.4	5.1
1951-----	10.2	13.5	6.9	7.1	8.7	5.6
1950-----	9.5	12.6	6.5	6.5	7.8	5.2
Age-adjusted rate per 100,000 population						
1964-----	10.9	15.0	7.3	15.2	19.5	11.3
1963 ¹ -----	10.7	14.7	7.2	13.9	17.1	11.0
1962 ¹ -----	10.5	14.6	6.8	13.8	16.8	11.0
1961-----	10.3	14.2	6.7	12.8	15.9	9.9
1960-----	10.3	14.4	6.6	11.9	14.8	9.1
1959-----	10.0	13.7	6.4	11.3	13.7	9.1
1958-----	9.9	13.7	6.3	9.9	12.5	7.4
1957-----	10.4	14.4	6.6	10.8	13.4	8.4
1956-----	9.8	13.4	6.5	9.7	11.8	7.8
1955-----	9.4	12.9	6.1	8.5	10.3	6.8
1954-----	9.3	12.8	6.0	8.1	9.8	6.5
1953-----	9.6	13.0	6.4	8.1	10.0	6.3
1952-----	9.5	13.0	6.2	8.1	10.6	5.7
1951-----	9.2	12.3	6.2	8.1	9.9	6.3
1950-----	8.6	11.6	5.8	7.4	9.0	5.9

¹Figures by color exclude data for New Jersey; see page 6-9, Section 6, Volume II, Vital Statistics of the United States, 1963.

In 1964 the death rate for the male population for cirrhosis of liver was almost twice the corresponding rate for the female population. Inasmuch as about the same relative increase occurred for both sexes, the mortality differential by sex remained about the same from 1950 to 1964.

Emphysema

*A relationship exists between cigarette smoking and emphysema but it has not been established that the relationship is causal.*¹⁰

¹⁰Ibid., p. 31.

Table D. Death rates for emphysema without mention of bronchitis, by color and sex: United States, 1950-64

[Deaths are those attributed to category number 527.1 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Year	White			Nonwhite		
	Both sexes	Male	Female	Both sexes	Male	Female
	Rate per 100,000 population					
1964-----	8.9	15.7	2.3	3.4	6.2	0.8
1963 ¹ -----	8.7	15.5	2.2	3.6	6.3	1.1
1962 ¹ -----	7.2	12.8	1.8	2.9	4.9	0.9
1961-----	6.0	10.6	1.5	2.6	4.6	0.7
1960-----	5.5	9.8	1.3	2.4	4.2	0.7
1959-----	4.7	8.4	1.0	2.1	3.7	0.7
1958-----	4.1	7.4	0.9	1.8	3.2	0.5
1957-----	3.6	6.4	0.8	1.7	3.1	0.4
1956-----	2.9	5.1	0.6	1.1	1.8	0.3
1955-----	2.4	4.2	0.6	1.1	1.9	0.3
1954-----	2.0	3.5	0.5	0.8	1.5	0.2
1953-----	-	-	-	-	-	-
1952-----	-	-	-	-	-	-
1951-----	-	-	-	-	-	-
1950-----	0.8	1.5	0.2	0.5	0.9	0.1

¹Figures by color exclude data for New Jersey; see page 6-9, Section 6, Volume II, Vital Statistics of the United States, 1963.

Total mortality trend.—The death rate for emphysema was 10 times higher for 1964 than for 1950. No appreciable part of this increase resulted from the changing age composition of the population. The age-adjusted rate for 1964 was about nine times higher than the corresponding rate for 1950 (table 8).

Mortality trends by color and sex.—A striking feature of emphysema is the predominance of the disease in men. For 1964 the ratio of mortality from this disease in the male and female population was approximately 7 to 1 (table 8). The sex ratio for the white population was also 7 to 1, and that for the nonwhite population was approximately 8 to 1 (table D). A decided increase has been observed, however, in the death rate for emphysema in the white female population—from

0.2 deaths per 100,000 for 1950 to 2.3 deaths per 100,000 for 1964.

The rates for the male population increased steadily with advance in age, rising from 1.5 deaths per 100,000 population at ages 35-44 years to 136.4 deaths at ages 75-84 years (table 8). At ages 35-44, 45-54, and 55-64 years mortality from emphysema is now greater than that from ulcer of stomach; and at ages 65-74 years it is now greater than that from both ulcer of stomach and cirrhosis of liver (fig. 4).

Within the female population the greatest relative increase in mortality from emphysema was for the age group 65-74 years. For this age group the death rate was about 12 times higher for 1964 than for 1950.

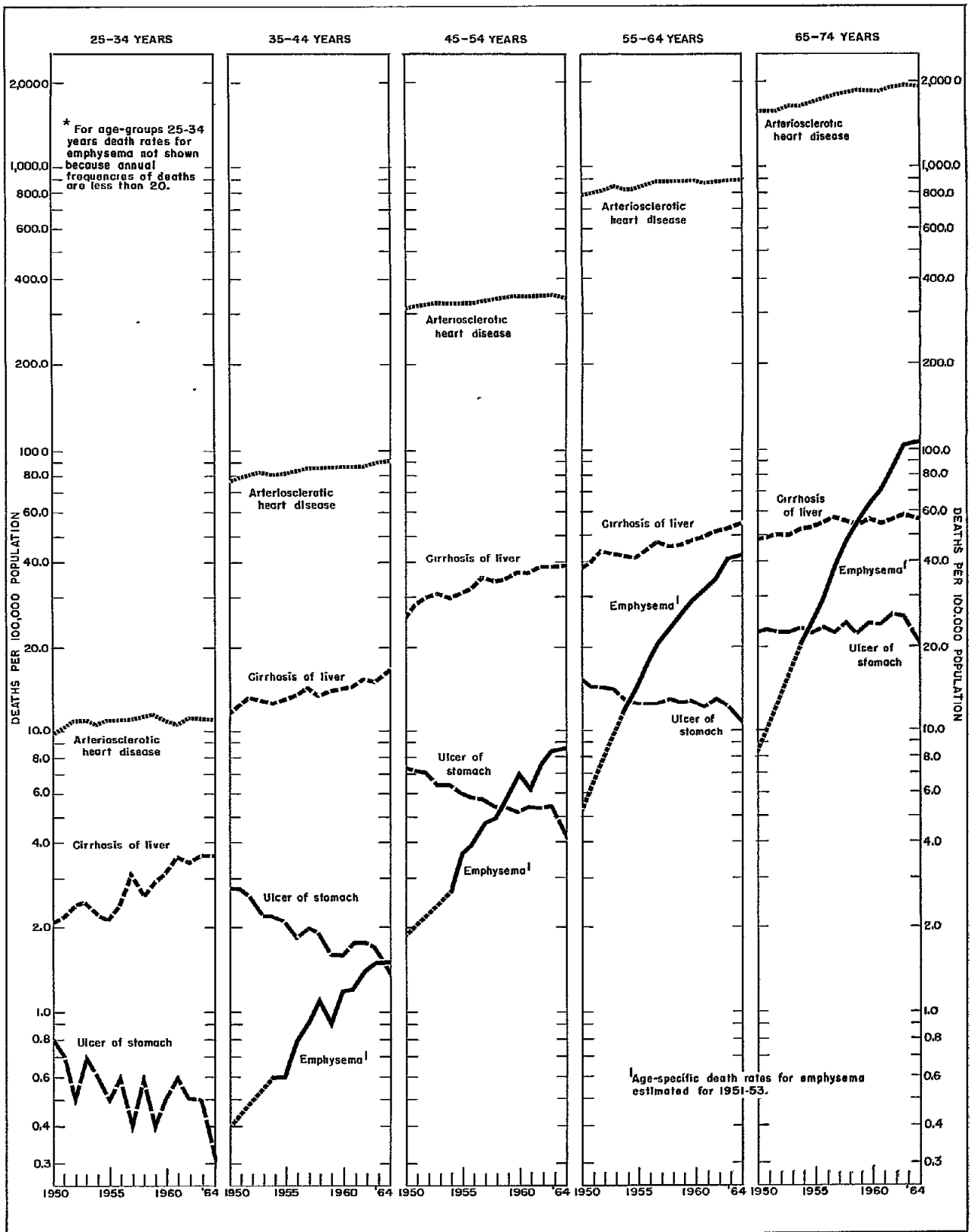


Figure 4. Death rates among men for four leading causes associated with smoking, by specified age groups: United States, 1950-64.

Table E. Death rates for ulcer of stomach, by color and sex: United States, 1950-64

[Deaths are those attributed to category number 540 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Year	White			Nonwhite		
	Both sexes	Male	Female	Both sexes	Male	Female
	Rate per 100,000 population					
1964-----	2.9	4.0	1.8	2.4	3.4	1.5
1963 ¹ -----	3.4	4.8	2.1	2.6	3.9	1.5
1962 ¹ -----	3.5	4.9	2.2	2.7	4.2	1.3
1961-----	3.3	4.7	1.9	2.7	3.9	1.5
1960-----	3.3	4.7	1.9	2.5	3.9	1.2
1959-----	3.1	4.5	1.8	2.4	3.7	1.1
1958-----	3.2	4.7	1.7	2.7	3.8	1.6
1957-----	3.1	4.5	1.6	2.5	3.9	1.2
1956-----	3.1	4.6	1.6	2.5	3.7	1.4
1955-----	3.0	4.5	1.4	2.6	3.9	1.3
1954-----	2.9	4.6	1.3	2.7	4.1	1.4
1953-----	3.0	4.8	1.3	2.7	4.2	1.3
1952-----	3.0	4.7	1.2	2.5	3.9	1.2
1951-----	3.0	4.8	1.2	2.7	4.1	1.5
1950-----	3.0	4.8	1.2	3.0	4.8	1.3

¹Figures by color exclude data for New Jersey; see page 6-9, Section 6, Volume II, Vital Statistics of the United States, 1963.

Ulcer of Stomach

*Epidemiological studies indicate an association between cigarette smoking and peptic ulcer which is greater for gastric than for duodenal ulcer.*¹¹

Total mortality trend.—Mortality from *ulcer of the stomach* rose slightly during 1950-63, after which there was a sharp drop (table 9). This drop occurred between 1963 and 1964 and resulted from new coding procedures introduced for data year 1964 (see Qualifications of Data).

The upward trend from 1950 to 1963, the year of the break in comparability, resulted primarily from a rise in mortality from this cause in the white female population (table E). For 1963 the death rate for this cause for the male population

was about twice the corresponding rate for the female population as compared with four times the corresponding rate for the female population for 1950.

Trend by sex and age.—In the male population the risk of death from ulcer of stomach declined almost steadily from 1950 to 1963 for persons under 65 years of age. It remained at about the same level over this period for men aged 65-74 years and rose substantially for men of older ages (fig. 4 and table 9). Conversely, in the female population the risk of death from ulcer of stomach increased somewhat for persons in the age groups 55-64, 65-74, and 75-84 years.

Cancer of the Esophagus

The evidence supports the belief that an association exists between tobacco use and cancer of the esophagus... but the data

¹¹*ibid.*, p. 39.

Table F. Death rates for malignant neoplasm of esophagus, by color and sex: United States, 1950-64

[Deaths are those attributed to category number 150 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Year	White			Nonwhite		
	Both sexes	Male	Female	Both sexes	Male	Female
	Rate per 100,000 population					
1964-----	2.5	3.9	1.2	4.7	7.8	1.8
1963 ¹ -----	2.4	3.7	1.1	4.8	7.8	1.9
1962 ¹ -----	2.5	3.9	1.1	4.5	7.4	1.8
1961-----	2.5	3.9	1.1	4.2	6.9	1.6
1960-----	2.5	4.0	1.1	4.4	7.1	1.9
1959-----	2.5	3.9	1.2	4.4	7.1	1.7
1958-----	2.5	4.0	1.1	3.9	6.6	1.5
1957-----	2.5	4.0	1.2	3.9	6.6	1.3
1956-----	2.5	3.9	1.1	3.7	6.2	1.4
1955-----	2.5	4.1	1.1	3.5	5.7	1.5
1954-----	2.4	3.9	1.0	3.8	6.1	1.6
1953-----	2.5	4.0	1.0	3.3	5.4	1.3
1952-----	2.5	4.0	1.1	3.2	5.3	1.2
1951-----	2.4	3.8	1.1	3.1	5.3	1.1
1950-----	2.5	3.9	1.1	3.4	5.4	1.4

¹Figures by color exclude data for New Jersey; see page 6-9, Section 6, Volume II, Vital Statistics of the United States, 1963.

are not adequate to decide whether these relationships are causal.¹²

Total mortality trend.—Mortality from cancer of the esophagus rose about 8 percent, from 2.6 deaths per 100,000 in 1950 to 2.8 deaths in 1964 (table 10). This rise reflects increases in mortality at ages under 65 years, with the greatest relative increase (60 percent) for the age group 35-44 years. At ages 65 years and over the death rate for cancer of the esophagus declined.

Trends by color and sex.—Cancer of the esophagus is the only cause of death among those examined in this report for which the level of mortality was higher in the nonwhite than in the white population for each year of the period 1950-64. Moreover, this color differential became larger during this 15-year period (table F).

¹²Ibid., p. 32.

The 1964 death rate for cancer of the esophagus for nonwhite males was four times the corresponding rate for nonwhite females.

Trends by sex and age.—In 1964 cancer of this site had a death rate that was 3.7 times higher for the male than for the female population. The relative increase from 1950 to 1964 in mortality from this cause was about the same for both sexes—about 8 percent for the male population and about 9 percent for the female population (table 10).

For men there were substantial increases in this rate at ages 35-64 years, with an increase of about 71 percent at ages 35-44 years. For older men aged 65-84 years this rate declined between 1950 and 1964. For women there were also substantial increases in mortality from this cause during the early middle years of life, both at ages 35-44 years (with an increase of 67 percent) and at ages 45-54 years (with an increase of

Table G. Death rates for malignant neoplasm of buccal cavity and pharynx, excluding malignant neoplasm of lip, by color and sex: United States, 1950-64

[Deaths are those attributed to category numbers 141-148 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Year	White			Nonwhite		
	Both sexes	Male	Female	Both sexes	Male	Female
	Rate per 100,000 population					
1964-----	3.4	5.1	1.6	3.2	5.0	1.4
1963-----	3.4	5.2	1.7	2.9	4.5	1.3
1962 ¹ -----	3.4	5.2	1.7	2.8	4.4	1.3
1961-----	3.4	5.3	1.6	2.7	4.2	1.2
1960-----	3.4	5.2	1.7	2.6	3.9	1.4
1959-----	3.4	5.3	1.5	2.6	4.2	1.1
1958-----	3.3	5.1	1.5	2.5	3.8	1.3
1957-----	3.3	5.2	1.4	2.7	4.4	1.1
1956-----	3.2	5.1	1.4	2.6	3.9	1.3
1955-----	3.2	5.1	1.4	2.3	3.5	1.2
1954-----	3.2	5.1	1.4	2.3	3.6	1.1
1953-----	3.1	4.8	1.3	2.1	3.2	1.0
1952-----	3.0	4.8	1.4	2.3	3.5	1.2
1951-----	3.0	4.7	1.3	2.3	3.5	1.2
1950-----	3.2	5.0	1.3	2.4	3.5	1.3

¹Figures by color exclude data for New Jersey; see page 6-9, Section 6, Volume II, Vital Statistics of the United States, 1963

50 percent). The death rate for women at ages 55-64 years remained almost constant over 1950-64, while that for women at older ages declined.

Cancer of Parts of Oral Cavity Other Than Lip

*Although there are suggestions of relationships between cancer of other specific sites of the oral cavity and several forms of tobacco use, their causal implication cannot at present be stated.*¹³

Sites of the oral cavity other than the lip for which association between cancer and the use of tobacco is less well established are the

tongue, salivary gland, floor of mouth, mesopharynx, nasopharynx, and hypopharynx.

Total mortality trend.—The total death rate for cancer of these sites showed no marked change between 1950 (3.1 deaths per 100,000 population) and 1964 (3.3 deaths per 100,000). The age-adjusted rate for this group of causes was the same for both 1950 and 1964 (2.8 deaths per 100,000). Nevertheless, between 1950 and 1964 there were substantial increases in the rates for the age groups 45-54 and 55-64 years. These increases are not reflected in the total death rate for these cancers, because they were offset by decreases for the age groups 65-74 and 75-84 years.

Trends by color and sex.—Mortality from these other cancers of the oral cavity remained relatively stable during 1950-64 for each of the four color-sex groups except the nonwhite male population (table G). For this group the death

¹³Ibid., p. 37.

Table H. Death rates for malignant neoplasm of bladder and other urinary organs, by color and sex: United States, 1950-64

[Deaths are those attributed to category number 181 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Year	Total			White		Nonwhite	
	Both sexes	Male	Female	Male	Female	Male	Female
	Rate per 100,000 population						
1964-----	4.2	5.8	2.6	6.2	2.6	3.4	2.3
1963 ¹ -----	4.3	6.1	2.6	6.3	2.6	3.8	2.2
1962 ¹ -----	4.3	6.1	2.7	6.3	2.6	3.5	2.5
1961-----	4.3	6.0	2.6	6.3	2.7	3.7	2.1
1960-----	4.4	6.2	2.7	6.5	2.7	3.6	2.6
1959-----	4.3	6.1	2.6	6.4	2.7	3.6	2.2
1958-----	4.3	5.9	2.6	6.2	2.7	3.5	2.3
1957-----	4.4	6.1	2.7	6.4	2.8	3.6	2.5
1956-----	4.3	6.0	2.7	6.4	2.7	3.4	2.2
1955-----	4.4	6.0	2.8	6.3	2.9	3.0	1.9
1954-----	4.4	6.1	2.7	6.4	2.7	3.5	2.3
1953-----	4.4	6.0	2.8	6.3	2.8	3.5	2.4
1952-----	4.3	6.0	2.7	6.3	2.8	3.3	2.0
1951-----	4.2	5.8	2.6	6.1	2.7	3.5	2.0
1950-----	4.2	5.8	2.7	6.1	2.8	3.2	2.2

¹Figures by color exclude data for New Jersey; see page 6-9, Section 6, Volume II, Vital Statistics of the United States, 1963.

rate from these cancers rose about 40 percent, causing the mortality differential by color to all but disappear.

In 1964 the death rate for cancer of these sites in the male population (5.1 deaths per 100,000 population) was about three times the corresponding rate in the female population (1.6 deaths per 100,000).

Trends by sex and age.—By age the death rate for these oral cancers increased for men at ages 25-64 years and declined for men of older ages. For women the increase in mortality occurred at ages 35-64 years (table 11).

Cancer of Bladder and Other Urinary Organs

Available data suggest an association between cigarette smoking and urinary bladder cancer in the male but are not sufficient to

*support a judgment on the causal significance of this association.*¹⁴

Total mortality trend.—There was no change in the death rate from *cancer of the bladder and other urinary organs* during 1950-64 (table H). This constant death rate does not necessarily indicate, however, that there has been no change in the incidence of this disease.

Trends by color and sex.—For 1964 the death rate for this cause for the male population (5.8 deaths per 100,000 population) was more than double that for the female population (2.6 deaths per 100,000 population). The death rate for these urinary bladder cancers in the white female population was close to that in the nonwhite female population (table H). But mortality from this cause in the white male population was almost double that in the nonwhite male population.

¹⁴ibid.

Table J. Death rates among men for specified noncoronary cardiovascular diseases, and corresponding age-adjusted death rates: United States, 1950-64

[Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Year	Chronic endocarditis not specified as rheumatic and other myocardial degeneration (421,422)		Other diseases of heart (430-434)		Hypertensive heart disease (440-443)		Diseases of arteries, excluding general arteriosclerosis, and diseases of veins and other diseases of circulatory system (451-456, 460-468)		General arteriosclerosis (450)	
	Total	Age-adjusted	Total	Age-adjusted	Total	Age-adjusted	Total	Age-adjusted	Total	Age-adjusted
	Rate per 100,000 population									
1964-----	27.8	22.1	16.4	14.1	26.1	22.0	16.3	14.4	17.8	12.1
1963-----	29.8	23.7	16.6	14.3	28.4	23.8	15.9	13.7	18.5	13.9
1962-----	29.5	23.4	16.2	13.9	29.2	24.4	15.0	13.0	18.5	13.8
1961-----	30.1	24.0	16.2	14.0	30.3	25.3	14.1	12.2	18.3	13.8
1960-----	32.0	25.7	16.9	14.5	32.7	27.4	13.7	11.9	19.3	14.8
1959-----	31.9	25.5	16.4	14.1	38.6	28.7	12.8	11.1	18.9	14.5
1958-----	33.8	27.3	16.8	14.5	42.7	31.6	12.5	10.9	19.4	15.0
1957-----	37.4	30.4	15.4	13.4	42.5	32.4	11.4	10.0	19.1	14.8
1956-----	38.6	31.6	15.2	13.2	43.3	33.4	10.7	9.3	18.9	14.8
1955-----	40.9	33.7	15.5	13.5	45.0	35.1	9.2	8.1	19.9	15.7
1954-----	42.6	35.5	15.9	14.0	46.6	36.7	8.0	7.1	18.6	14.9
1953-----	48.3	40.7	17.7	15.6	51.3	41.6	7.5	6.7	20.6	16.8
1952-----	51.6	44.1	18.0	16.1	53.9	44.5	7.0	6.4	20.4	16.9
1951-----	55.5	48.2	18.5	16.6	55.6	46.2	6.5	5.9	21.1	17.9
1950-----	59.4	52.9	19.3	17.7	53.1	48.0	5.8	5.4	20.9	18.4

Trend by age.—Cancer of the urinary bladder may occur at any age, but it has been estimated that approximately 90 percent occur after the age of 50. Also almost all deaths attributable to this cause occur at ages 50 years and over.

There was a slight increase in the death rate for these cancers during the period 1950-64 among men 65 years and over (table 12).

Specified Noncoronary Cardiovascular Diseases

Although a causal relationship has not been established, higher mortality of cigarette smokers is associated with many other cardiovascular diseases, including miscellaneous circulatory diseases, other heart

diseases, hypertensive heart disease, and general arteriosclerosis.

...It is apparent that much more work will have to be done to determine what relationship may exist between non-coronary occlusive vascular disease, aneurysmal disease, and smoking.¹⁵

Five diseases of the cardiovascular system for which the association with smoking is uncertain are *specified degenerative heart disease (421 and 422), other heart disease (430-434), hypertensive heart disease (440-443), general*

¹⁵Ibid., pp. 32 and 326.

Table K. Death rates for hypertensive heart disease, by color and sex: United States, 1950-64

[Deaths are those attributed to category numbers 440-443 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Year	White			Nonwhite		
	Both sexes	Male	Female	Both sexes	Male	Female
	Rate per 100,000 population					
1964-----	26.2	22.2	30.0	58.6	55.8	61.2
1963 ¹ -----	28.1	24.1	32.0	64.1	61.1	67.0
1962 ¹ -----	29.3	24.9	33.5	65.1	62.3	67.7
1961-----	30.5	26.2	34.6	66.0	62.3	69.5
1960-----	32.7	28.3	37.1	69.9	67.1	72.4
1959-----	34.4	30.0	38.7	72.2	68.0	76.1
1958-----	38.1	33.2	43.0	79.0	73.2	84.5
1957-----	37.6	33.5	41.7	81.9	77.7	85.8
1956-----	38.6	34.5	42.6	81.4	78.2	84.4
1955-----	40.4	36.4	44.4	82.5	80.9	83.9
1954-----	42.0	38.2	45.8	84.4	81.6	87.1
1953-----	46.3	42.8	49.8	92.8	91.7	93.8
1952-----	48.6	45.3	51.9	98.4	98.1	98.7
1951-----	50.5	47.1	53.8	99.0	96.5	101.4
1950-----	51.4	47.9	54.8	100.5	98.7	102.2

¹Figures by color exclude data for New Jersey; see page 6-9, Section 6, Volume II, Vital Statistics of the United States, 1963.

arteriosclerosis (450), and other circulatory diseases (451-468).

Other circulatory diseases as a group is unique among these noncoronary cardiovascular diseases in that it is the only one for which the trend in the male population during the 15-year period 1950-64 was upward. This mixed category of circulatory diseases includes aortic aneurysm, phlebitis of the lower extremities, and pulmonary embolism (table J).

For 1964 the death rate for *other circulatory diseases* was 2.8 times the corresponding rate for 1950. This near tripling of the rate is not attributable to the changing age composition; the age-adjusted rate for 1964 was 2.7 times the corresponding rate for 1950. Neither does any appreciable amount of this increase result from coding changes introduced with the Seventh Revision, beginning with data year 1958. Assignment of deaths according to the Sixth and Seventh Re-

visions of the International Lists showed that only about 4 percent more deaths were assigned to this cause as a result of the procedures adopted with the Seventh Revision as compared with the number assigned under the Sixth Revision. Between 1958 and 1964 the relative increase in the death rate for *other circulatory diseases* amounted to about 30 percent.

For the other groups of causes in table J, the mortality trend in the male population is clearly downward during 1950-64. The steepest drop (53 percent) was for the degenerative heart diseases (421 and 422)—*chronic endocarditis not specified as rheumatic* and *other myocardial degeneration*. It is possible that during 1950-64 physicians changed their diagnoses from these degenerative heart diseases to diseases of the coronary arteries.

Also for hypertensive heart disease there was a marked drop in the male death rate (51 percent).

For hypertensive heart disease the greatest relative decrease was for the white male population (table K). The death rate for this cause for the nonwhite population is still more than twice that for the white population, and the rates for both white and nonwhite women are still considerably higher than the corresponding rates for white and nonwhite men. Part of the substantial decline in hypertensive heart disease within the white population may be associated with the availability of drugs for lowering blood pressure during this 15-year period.

SUMMARY

During the period 1950-64 there was a deceleration in the downward trend of mortality for most age groups (table 1). In fact for white males in age groups between 45 and 74 years and for nonwhite males 35-44 years and 65 years and over, there were signs of reversals of the former downward trend. Trends of mortality from the diseases linked with tobacco use, some of which contributed substantially to this unfavorable mortality change, are summarized below under the following four systems: respiratory, cardiovascular, digestive, and genitourinary.

Diseases of the Respiratory System

In the judgment of the Advisory Committee *lung cancer, cancer of the larynx, and chronic and unqualified bronchitis* are causally linked with cigarette smoking; and *emphysema, without mention of bronchitis*, is strongly associated with this form of tobacco use. Not only was the trend of the death rate for each of these diseases upward during the period 1950-64 but for lung cancer and emphysema the rises were of unprecedented proportions for noncommunicable diseases. Cohort analysis shows that for both men and women successively younger cohorts are at higher risk of dying from these four diseases during the most productive ages of life.

The gains made during 1950-64 in reducing mortality through increased control of tuberculosis were more than offset by rises in the death rates for the above-mentioned lung diseases linked with cigarette smoking. There may be some variation in the manner in which physicians categorize on the death certificate deaths from one

or the other of these respiratory diseases or combinations of them. It is useful, therefore, to examine the trend of mortality from all of these diseases together as well as the trends of each of them. When the death rates for all of these diseases are combined (table L), it is found that they account for about 9 percent of the total death rate in 1964 as compared with 8 percent in 1950. This increase occurred even though the death rate for tuberculosis dropped from 20.6 deaths per 100,000 population in 1950 to 4.0 deaths per 100,000 in 1964.

The death rate for cancer of the lung almost doubled between 1950 and 1964. Mortality from this cause in 1964 was about six times higher in the male than in the female population. But beginning about 1960 there was a greater relative increase in mortality from lung cancer in the female than in the male population. The differential by color also decreased over this period, owing to the greater relative increase in mortality for this cause in the nonwhite population. The death rate for lung cancer for nonwhite men aged 35-44 years more than tripled between 1950 and 1964, reaching 22.8 deaths per 100,000 nonwhite men for 1964. For nonwhite women aged 35-44 years the 1964 death rate for lung cancer was 2.7 times greater than the corresponding rate for 1950.

Mortality from cancer of the larynx increased only slightly during 1950-64. This relative stability may be due to improvement in early detection and successful treatment of these cancers.

The recorded mortality from chronic and unqualified bronchitis almost doubled during 1950-64. This is one of those groups of diseases that by itself may not be fatal but in combination with other diseases may cause death. While the death rate for these causes among the female population remained about the same, mortality in the male population almost doubled.

For *emphysema*, a disease associated with atmospheric pollution as well as with cigarette smoking, the death rate for the male population for 1964 was about 10 times the corresponding rate for 1950. This precipitous rise in mortality from *emphysema* resulted in the mortality from this cause becoming higher among men at ages 35-64 years than mortality from *ulcer of stomach*, and higher at ages 65-74 years than

Table L. Death rates for all causes and for diseases of the respiratory system, including tuberculosis, malignant neoplasm of respiratory system, and asthma: United States, 1950-64

[Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Year	All causes of death	Diseases of the respiratory system, including tuberculosis, malignant neoplasm of respiratory system, and asthma				
		Total	Tuberculosis of respiratory system (001-008)	Malignant neoplasm of respiratory system not specified as secondary (160-164)	Asthma (241)	
Rate per 100,000 population						
1964-----	939.7	81.1	4.0	25.7	2.3	
1963-----	961.9	88.0	4.6	24.9	2.7	
1962-----	945.4	79.9	4.7	24.0	2.6	
1961-----	929.6	75.9	5.0	23.1	2.7	
1960-----	954.7	83.3	5.6	22.2	3.0	
1959-----	938.6	75.2	6.0	21.2	2.8	
1958-----	950.8	77.1	6.6	20.4	2.9	
1957-----	958.6	80.4	7.3	19.9	3.9	
1956-----	935.1	70.8	7.8	19.2	3.6	
1955-----	930.4	68.4	8.3	18.2	3.6	
1954-----	919.0	66.1	9.3	17.1	3.8	
1953-----	959.0	75.8	11.3	16.7	4.3	
1952-----	961.4	74.1	14.4	15.6	4.5	
1951-----	966.7	78.4	18.5	14.7	4.5	
1950-----	963.8	77.8	20.6	14.1	2.9	
Other specified diseases of the respiratory system (470-475, 480-493, 500-527)						
Year	Total	Bronchitis unqualified and chronic bronchitis (501,502)	Emphysema without mention of bronchitis (527.1)	Influenza (480-483)	Pneumonia (490-493)	Residual diseases of respiratory system
Rate per 100,000 population						
1964-----	49.1	2.3	8.3	0.9	30.2	7.4
1963-----	55.8	2.3	8.0	3.8	33.8	8.0
1962-----	48.5	1.9	6.7	1.8	30.4	7.7
1961-----	45.1	1.7	5.6	1.2	29.0	7.7
1960-----	52.5	1.8	5.2	4.4	32.9	8.3
1959-----	45.1	1.5	4.4	1.6	29.6	8.0
1958-----	47.1	1.5	3.9	2.6	30.6	8.6
1957-----	49.4	1.4	3.4	4.4	31.4	8.8
1956-----	40.2	1.2	2.7	1.4	26.8	8.2
1955-----	38.2	1.2	2.2	1.7	25.4	7.7
1954-----	35.8	1.2	1.9	1.7	23.8	7.4
1953-----	43.6	1.3	1.6	6.0	27.0	7.6
1952-----	39.6	1.2	1.2	3.6	26.1	7.4
1951-----	40.8	1.3	1.1	4.5	26.9	6.9
1950-----	40.2	1.3	0.8	4.4	26.9	6.8

mortality from either *ulcer of stomach* or *cirrhosis of liver*. There was also a substantial increase in deaths attributed to emphysema in the white female population—from 0.2 deaths per 100,000 in 1950 to 2.3 deaths per 100,000 in 1964. Some of this increase in mortality from emphysema may result from a growing awareness of this disease and an interest in it on the part of physicians. If this is true it would be logical to presume that many of these deaths were formerly assigned to one of the other respiratory diseases.

Diseases of the Cardiovascular System

Among the causes of death associated with use of tobacco, particularly cigarette smoking, is one with very high frequency in the male population—*arteriosclerotic heart disease, including coronary disease (420)*. Mortality from this cause increased 28 percent in the male population between 1950 and 1964, with a rate of 354.2 deaths per 100,000 for 1964. No great part of this upturn may be attributed to changes in age composition. The corresponding increase in the age-adjusted rate was 20 percent. The increase in mortality from this cause among the female population during this period was even higher (47 percent). But a substantial part of this rise resulted from the aging of the female population; the percentage increase in the age-adjusted rate during 1950-64 was 17 percent. Based on age-adjusted rates, the greatest relative increase during 1950-64 in mortality from arteriosclerotic heart disease among the four color-sex groups occurred in the nonwhite male population (48 percent).

In the opinion of the Advisory Committee more work is needed to determine the relationship of smoking with the following diseases of the cardiovascular system: *specified degenerative heart disease (421 and 422)*, *other heart disease (430-434)*, *hypertensive heart disease (440-443)*, *general arteriosclerosis (450)*, and *other circulatory diseases (451-468)*.

Diseases of the Digestive System

The relative increase in the death rate for *cirrhosis of the liver* (another cause associated with cigarette smoking but more directly as-

sociated with alcoholism, nutritional deficiencies, and outbreaks of infectious hepatitis) amounted to about 32 percent between 1950 and 1964. The mortality differential by color disappeared during 1950-64 as a result of the near doubling of mortality from this cause in the nonwhite population.

By sex, however, the relative increases were about equal. Consequently, the death rate in 1964 for cirrhosis of the liver for the male population (16.0 deaths per 100,000) was still about twice the corresponding rate for the female population (8.4 deaths per 100,000) (table 7). Cohort analysis through data year 1964 shows that for each of the four color-sex groups successively younger cohorts are at higher risks of dying from cirrhosis of liver at earlier ages, especially in the middle years of life.

Ulcer of stomach is another disease of the digestive system that has been related to tobacco usage. Epidemiological studies indicated that the association of this cause with cigarette smoking was greater for gastric than for duodenal ulcer. The rise in mortality from gastric ulcers (540) reflects primarily increased mortality from this cause for the white female population. For 1964, however, the death rate for gastric ulcers for the white male population was still more than twice the corresponding rate for the white female population.

Cancer of the esophagus, also associated with tobacco usage, increased about 8 percent during 1950-64. Much of this rise resulted from increased mortality from this cause in the nonwhite male population. For 1964 mortality from esophageal cancers in the nonwhite population was about double that in the white population (table F).

The sex differential for 1964 was even greater—the death rate for this cause in the male population was 3.7 times the corresponding rate in the female population (table 10).

Cancer of parts of oral cavity other than lip is indicated by the Advisory Committee to be another group of diseases for which there are suggestions of a relationship with several forms of tobacco use. Mortality from these cancers remained fairly constant during 1950-64 for all persons except the nonwhite male group. The rise from 3.5 deaths per 100,000 nonwhite population for 1950 to 5.0 deaths caused the mortality differential by color to all but disappear.

Diseases of the Genitourinary System

Mortality from urinary bladder cancer, the only disease of this system strongly associated with tobacco use, remained fairly constant during 1950-64 for each of the four color-sex groups except nonwhite males. The upturn for this group resulted in the near disappearance of the mortality differential by color.

QUALIFICATION OF DATA

Deaths

The rates shown in this report are based on all deaths occurring in the continental United States for 1950-58, with Alaska added beginning in 1959 and Hawaii in 1960. Deaths among Armed Forces overseas and among U.S. nationals abroad are excluded for all years.

Race

The category "white" includes in addition to persons reported as white those reported as Mexican or Puerto Rican. The category "nonwhite" consists of persons reported as Negro, American Indian, Chinese, and Japanese; other numerically small nonwhite groups; and persons reported as being of mixed white-nonwhite races.

Age-Specific Rates

All rates are shown per 100,000 population in the group for which computed. In many cases the rates are shown beyond the last significant figure, not because they can be interpreted with that degree of accuracy but merely for convenience in computation and publication.

Small Frequencies

Rates based on fewer than 20 deaths are shown with an asterisk to indicate that such figures are subject to large sampling fluctuations. The number "20" is arbitrary and is not set forth as a critical point distinguishing statistically reliable rates. The standard errors of many of the rates based on frequencies greater than 20 should also be calculated before conclusive interpretation of

differences between rates is made. Events of a rare nature may be assumed to follow a Poisson probability distribution. For this distribution a simple approximation may be used to estimate the error. For approximation formulas often used to compute the standard error of the number of deaths, rates, and differences between rates, see *Vital Statistics of the United States, 1950*, Volume I, pp. 28 and 29.

Age-Adjusted Rates

The age-adjusted rates presented in this report were computed by the direct method, that is, by applying the age-specific death rates for a particular cause to the standard population distributed by age. The total population as enumerated in 1940 was selected as the standard.

Age-adjusted rates are shown with an asterisk where more than half of the age-specific death rates were based on fewer than 20 deaths. In those instances for which numbers of deaths are very small (i.e., cancer of the lip in the female population) age-adjusted rates are, of course, not shown.

Population Bases

Rates were computed on population bases made available by the Bureau of the Census. Rates for the decennial years 1950 and 1960 are based on populations enumerated as of April 1 in censuses of those years. Rates for all other years are based on midyear (July 1) estimates. The sources of the populations used are published in the following issues of *Current Population Reports*, Series P-25:

- No. 98. "Estimates of the Population of the United States and of the Components of Change, by Age, Color, and Sex: 1940 to 1950," 1954.
- No. 265. "Estimates of the Population of the United States, by Age, Color, and Sex: July 1, 1950 to 1962," 1963. (Used only for data years 1961 and 1962.)
- No. 276. "Estimates of the Population of the United States, by Age, Color, and Sex: July 1, 1963," 1963.

No. 293. "Estimates of the Population of the United States, by Age, Color, and Sex: July 1, 1964," 1964.

No. 310. "Estimates of the Population of the United States and Components of Change, by Age, Color, and Sex, 1950 to 1960," 1965.

Population estimates by color for 1962 and 1963 exclude data for New Jersey. Birth, death, and fetal death records for the State of New Jersey did not contain the race item at the beginning of 1962. The certificate revision without this item was used for most of 1962 as well as for 1963. Therefore the National Center for Health Statistics estimated a population base by color for these years which excluded New Jersey. The estimates for 1963 are shown in table 6-5 of *Vital Statistics of the United States, 1963*, Volume II, Part A. Those for 1962 are shown in the comparable report for that year.

Causes of Death

During the period 1950-64 causes of death were classified according to two revisions of the International Lists of Causes of Death. The Sixth Revision, issued in 1948, was in use for 1950-57; and the Seventh Revision, issued in 1955 was in use for 1958-64. The changes incorporated in the Seventh Revision were limited for the most part to amendments of errors and inconsistencies in the Sixth Revision. Consequently, for most of the diseases considered in this report the degree of discontinuity in the trends between 1957 and 1958 resulting from the adoption of the Seventh Revision is not appreciable. Any major breaks that did occur are shown in a study in which a 10-percent sample of deaths occurring in the United States in 1958 were coded by both the Sixth and Seventh Revisions applying the coding procedures in effect, respectively, with each Revision (reference 3).

The differences resulting from the use of the two Revisions are expressed by factors termed "comparability ratios" which are computed by dividing the number of deaths assigned to particular causes using the Seventh Revision by the numbers of the deaths assigned to the same causes using the Sixth Revision. These ratios

give an indication of the net changes between the two revisions. A comparability ratio of 1.00 indicates that the same number of deaths were assigned to a particular cause whether the new or old classification was used. A ratio of less than 1.00 indicates a decrease in assignment of deaths to a cause in the Seventh Revision as compared with the Sixth. Conversely, a ratio of more than 1.00 means that there was an increase in assignments under the Seventh Revision.

Most of the selected diseases linked with tobacco usage included in this report are among those for which the comparability ratios were close to 1.00. Exceptions relevant to this study as well as the effects of some changes in assignment of deaths by cause introduced in the United States subsequent to the adoption of the Seventh Revision for data year 1958 are summarized below.

Cancer of the lip.—*Malignant neoplasm of lip (140)* had a comparability ratio of only 0.85. Thus part of the decrease for lip cancer is attributable to the break in comparability of statistics for this cause between 1957 and 1958, occasioned by the transfer of deaths to *other malignant neoplasm of skin (191)* when the histological type indicated origin in the skin.

Arteriosclerotic heart disease.—No part of the increase in mortality from *arteriosclerotic heart disease, including coronary disease (420)* during 1950-64 may be attributable to a break in comparability of cause-of-death statistics between 1957 and 1958 since fewer deaths were coded to this cause under the Seventh Revision than had been coded under the Sixth Revision. The comparability ratio was 0.98. As indicated in the following paragraph, however, a small part of this increase may be attributable to changes in interpretation in adapting coding procedures to reporting practices during 1950-64.

Specified degenerative heart disease.—The comparability ratio for *nonrheumatic chronic endocarditis and other myocardial degeneration (421 and 422)* was 0.99. Consequently, the degree of discontinuity in the trend of mortality for these two causes between 1957 and 1958 resulting from the adoption of the Seventh Revision is not appreciable. The changes in interpretation, however, in adapting coding procedures to reporting practices during 1950-64 account for a significant part

of the drop of about 53 percent in the death rate for these diseases. Such changes are summarized each year in *Vital Statistics of the United States*.

Hypertensive heart disease.—The comparability ratio for *hypertensive heart disease (440-443)* was 1.11. Thus despite the fact that 11 percent more deaths were assigned to hypertensive heart disease as a result of the procedure adopted with the Seventh Revision, the death rate for this cause declined steeply over 1958-64. As mentioned earlier, this drop may be due in part to more effective drug therapy.

Other circulatory diseases.—No appreciable amount of the near tripling of the death rate for these diseases (451-456, 460-468) resulted from coding changes introduced with the Seventh Revision. Only about 4 percent more deaths were assigned to these causes as a result of the procedures adopted with the Seventh Revision.

Chronic bronchitis.—The effect of the adoption of the Seventh Revision resulted in more deaths being coded to *chronic bronchitis (501 and 502)* than had been coded under the Sixth Revision. The comparability ratio was 1.07. The major change introduced in 1958 for this cause was that preference was given to bronchitis over nonallergic asthma in classifying deaths in which both conditions were reported on the certificate of death.

Ulcer of stomach.—The sharp drop between 1963 and 1964 in the death rate for *ulcer of stomach (540)* resulted from new coding procedures introduced for data year 1964. These changes resulted in the assignment of deaths to the presumptive underlying cause as reported, e.g., pulmonary tuberculosis. Previously, sequences involving gastric ulcers due to most other conditions were considered "highly improbable" and consequently deaths for which such sequences were entered on the certificate were assigned to the ulcer.

Death-Registration States

The geographic area from which these mortality statistics were collected comprised the 48 States and the District of Columbia for the years 1950-58; Alaska was added in 1959 and Hawaii in 1960. Inasmuch as these two States have relatively small populations when compared with the continental United States, it is unlikely that the extension of the area to include them resulted in a serious comparability problem. The mortality trends for the 48 States are available in most of the tables in this report for a 9-year period (1950-58); and mortality trends for the entire 50 States are available for a 5-year period (1960-64).

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Table 1. Death rates for all causes, by age, sex, and color; and corresponding age-adjusted rates; United States, 1950-64

[Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Sex, year, and color	All ages ¹	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Age-adjusted rate
<u>Both sexes</u>									
Rate per 100,000 population									
1964-----	939.7	151.7	305.6	738.1	1,695.7	3,776.8	8,184.9	19,981.9	741.3
1963-----	961.9	148.4	303.1	747.4	1,726.2	3,885.0	8,521.4	21,012.1	758.7
1962-----	945.4	145.2	298.2	741.0	1,692.9	3,798.4	8,431.5	20,510.0	746.4
1961-----	929.6	143.5	292.5	731.5	1,673.6	3,722.4	8,364.7	19,634.3	735.4
1960-----	954.7	146.4	299.4	756.0	1,735.1	3,822.1	8,745.2	19,857.5	760.9
1959-----	938.6	147.8	293.9	743.3	1,711.7	3,757.3	8,584.9	19,417.5	750.9
1958-----	950.8	147.4	298.9	753.5	1,739.8	3,836.0	8,794.4	19,795.3	764.6
1957-----	958.6	152.8	307.1	764.9	1,780.6	3,902.7	8,807.5	19,789.8	776.3
1956-----	935.1	149.1	300.9	746.8	1,744.0	3,809.3	8,785.6	19,229.7	763.3
1955-----	930.4	149.6	306.8	756.3	1,729.7	3,811.1	8,794.6	18,983.3	764.6
1954-----	919.0	153.2	309.8	776.2	1,737.4	3,785.1	8,603.5	18,157.5	763.2
1953-----	959.0	162.7	332.0	817.2	1,838.5	3,939.0	9,063.5	19,187.3	804.7
1952-----	961.4	172.7	343.9	833.9	1,859.9	3,940.7	9,054.6	19,056.6	815.8
1951-----	966.7	176.6	353.6	847.2	1,881.2	4,005.5	9,235.9	19,758.8	829.1
1950-----	963.8	178.7	358.7	853.9	1,901.0	4,104.3	9,331.1	20,196.9	841.5
<u>Male</u>									
1964-----	1,083.5	198.0	383.6	964.2	2,292.4	4,986.9	9,740.8	21,202.3	938.5
1963-----	1,109.5	191.7	377.3	980.5	2,319.7	5,111.3	10,091.7	22,460.3	956.8
1962-----	1,089.0	186.0	371.4	971.2	2,265.3	4,941.3	9,886.6	21,902.1	935.5
1961-----	1,073.3	183.8	366.3	956.0	2,238.6	4,810.2	9,793.2	20,914.4	920.0
1960-----	1,104.5	187.9	372.8	992.2	2,309.5	4,914.4	10,178.4	21,186.3	949.3
1959-----	1,084.4	189.4	367.8	972.5	2,275.1	4,787.6	9,912.1	20,543.4	932.4
1958-----	1,096.7	188.0	373.1	977.1	2,298.1	4,852.4	10,135.3	20,833.4	944.0
1957-----	1,108.1	193.5	381.1	987.6	2,345.7	4,916.9	10,098.4	20,726.1	955.6
1956-----	1,082.5	191.6	370.7	964.1	2,288.7	4,762.2	10,078.0	20,045.3	937.4
1955-----	1,076.4	191.8	377.0	973.9	2,256.9	4,734.6	10,044.1	19,588.4	934.3
1954-----	1,065.3	196.2	377.2	987.1	2,254.2	4,673.8	9,800.6	18,741.1	928.5
1953-----	1,112.0	206.4	406.3	1,038.1	2,377.8	4,814.2	10,275.9	19,915.9	975.2
1952-----	1,111.9	215.6	417.0	1,054.5	2,386.4	4,786.6	10,228.7	19,673.6	982.1
1951-----	1,114.8	218.2	427.8	1,061.8	2,386.2	4,862.0	10,350.5	20,818.0	993.2
1950-----	1,106.1	216.5	428.8	1,067.1	2,395.3	4,931.4	10,426.0	21,636.0	1,001.6
<u>Female</u>									
1964-----	801.1	107.1	231.5	522.7	1,143.9	2,781.9	7,029.9	19,231.0	568.4
1963-----	819.4	106.7	232.7	524.4	1,175.3	2,863.9	7,343.1	20,108.4	584.0
1962-----	806.5	106.0	228.7	519.7	1,159.4	2,833.3	7,325.8	19,629.8	578.1
1961-----	790.3	104.8	222.4	514.7	1,145.6	2,791.7	7,270.3	18,783.9	569.9
1960-----	809.2	106.6	229.4	526.7	1,196.4	2,871.8	7,633.1	19,008.4	590.6
1959-----	797.1	107.8	223.3	520.7	1,182.3	2,856.5	7,551.0	18,681.4	586.0
1958-----	809.0	108.4	227.9	535.9	1,212.7	2,940.2	7,738.9	19,103.3	600.9
1957-----	813.2	113.8	236.2	547.6	1,243.2	3,000.7	7,781.6	19,151.0	611.5
1956-----	791.6	108.4	233.9	534.1	1,223.7	2,956.1	7,750.5	18,662.3	602.6
1955-----	788.2	109.4	239.2	543.0	1,222.6	2,978.0	7,785.5	18,554.8	606.9
1954-----	776.8	112.3	244.8	569.0	1,236.7	2,979.1	7,625.9	17,740.0	609.0
1953-----	810.4	121.4	260.3	599.7	1,312.3	3,139.9	8,064.8	18,663.4	644.7
1952-----	815.0	132.1	273.2	615.8	1,341.0	3,164.0	8,081.8	18,614.4	658.9
1951-----	821.9	137.3	281.6	634.3	1,379.0	3,213.4	8,296.7	19,005.6	673.2
1950-----	823.5	142.7	290.3	641.5	1,404.8	3,333.2	8,399.6	19,194.7	688.4

See footnotes at end of table.

Table 1. Death rates for all causes, by age, sex, and color; and corresponding age-adjusted rates: United States, 1950-64--Con.

[Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Sex, year, and color	All ages ¹	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Age-adjusted rate
<u>White, both sexes</u>									
Rate per 100,000 population									
1964-----	935.5	127.4	263.0	675.0	1,593.9	3,668.9	8,279.1	20,652.9	706.8
1963 ² -----	954.3	125.2	262.3	683.1	1,616.0	3,750.2	8,580.4	21,578.6	721.6
1962 ² -----	938.9	123.7	259.5	679.9	1,586.6	3,681.7	8,508.9	20,970.5	711.7
1961-----	925.3	121.2	254.2	672.9	1,575.7	3,638.1	8,468.5	20,070.4	703.8
1960-----	947.8	123.6	260.4	692.3	1,632.8	3,739.8	8,827.2	20,354.5	727.0
1959-----	931.6	125.0	255.6	681.2	1,616.2	3,686.4	8,681.7	19,928.9	718.5
1958-----	941.3	123.7	261.5	685.9	1,638.3	3,757.8	8,888.8	20,327.3	730.5
1957-----	947.8	128.3	267.2	693.4	1,673.2	3,831.0	8,910.1	20,308.7	741.3
1956-----	926.3	125.9	261.4	678.5	1,642.2	3,752.5	8,894.0	19,778.8	730.7
1955-----	921.8	126.9	267.7	685.1	1,636.2	3,758.3	8,905.4	19,532.4	732.7
1954-----	908.4	129.1	269.2	699.8	1,645.5	3,739.8	8,708.5	18,617.3	730.1
1953-----	944.8	136.6	286.7	733.0	1,737.0	3,884.3	9,160.9	19,627.4	767.7
1952-----	944.8	144.3	296.0	747.9	1,756.1	3,889.2	9,150.1	19,478.2	777.0
1951-----	950.0	148.4	304.8	759.3	1,774.8	3,955.1	9,331.9	20,219.3	790.2
1950-----	945.7	148.3	307.6	765.0	1,799.6	4,023.1	9,416.5	20,678.6	800.4
<u>White, male</u>									
1964-----	1,079.1	168.9	335.3	899.8	2,206.3	4,887.0	9,894.1	22,005.6	904.6
1963 ² -----	1,102.7	165.8	334.1	917.7	2,228.8	4,979.9	10,204.2	23,066.3	921.2
1962 ² -----	1,084.3	161.6	331.4	911.3	2,179.7	4,836.2	10,016.4	22,454.1	903.2
1961-----	1,070.5	158.6	325.8	900.6	2,162.2	4,739.3	9,957.9	21,392.5	891.1
1960-----	1,098.5	163.2	332.6	932.2	2,225.2	4,848.4	10,299.6	21,750.0	917.7
1959-----	1,078.4	163.4	328.7	914.7	2,195.2	4,731.1	10,047.6	21,085.9	902.1
1958-----	1,088.7	162.2	336.6	916.1	2,212.8	4,788.2	10,267.8	21,345.6	912.4
1957-----	1,098.7	166.0	341.9	922.6	2,251.1	4,863.7	10,241.8	21,162.7	922.9
1956-----	1,075.6	166.0	333.0	903.7	2,201.0	4,726.7	10,229.6	20,508.6	907.5
1955-----	1,069.6	167.3	338.5	910.1	2,175.2	4,698.7	10,199.2	20,063.6	905.0
1954-----	1,055.9	169.9	338.3	917.6	2,170.7	4,645.8	9,936.3	19,081.2	897.2
1953-----	1,098.3	177.6	361.4	958.8	2,282.4	4,771.5	10,407.6	20,234.0	939.3
1952-----	1,095.6	185.4	369.6	975.0	2,289.4	4,751.2	10,335.2	19,990.9	944.4
1951-----	1,099.3	188.7	381.5	980.5	2,289.4	4,827.2	10,476.2	21,192.8	956.5
1950-----	1,089.5	185.3	380.9	984.5	2,304.4	4,864.9	10,526.3	22,116.3	963.1
<u>White, female</u>									
1964-----	796.5	86.7	193.4	459.8	1,029.2	2,670.9	7,093.9	19,835.0	533.8
1963 ² -----	810.3	85.5	193.3	457.9	1,048.9	2,728.5	7,379.6	20,659.6	546.0
1962 ² -----	797.8	86.6	190.6	456.8	1,035.8	2,707.9	7,373.4	20,041.9	541.5
1961-----	784.1	84.6	185.5	452.5	1,029.2	2,699.4	7,337.3	19,201.5	536.2
1960-----	800.9	85.0	191.1	458.8	1,078.9	2,779.3	7,696.6	19,477.7	555.0
1959-----	788.5	87.5	185.4	453.8	1,073.0	2,775.1	7,628.1	19,180.6	551.9
1958-----	797.6	86.2	189.2	461.5	1,097.3	2,851.6	7,814.5	19,654.2	564.7
1957-----	800.6	91.7	195.1	469.1	1,125.5	2,915.6	7,859.6	19,727.6	574.5
1956-----	780.4	87.1	192.2	457.8	1,109.6	2,882.3	7,836.4	19,271.0	567.6
1955-----	777.4	87.9	199.1	464.3	1,119.4	2,911.4	7,876.1	19,156.1	572.8
1954-----	764.6	90.0	202.3	485.5	1,137.8	2,918.8	7,716.0	18,284.5	574.2
1953-----	795.1	97.4	214.2	510.4	1,205.9	3,075.5	8,148.3	19,189.2	606.8
1952-----	797.5	105.2	224.3	523.4	1,232.0	3,100.3	8,177.2	19,109.7	619.1
1951-----	803.3	110.1	229.9	539.9	1,265.1	3,151.8	8,382.0	19,524.4	632.6
1950-----	803.3	112.8	235.8	546.4	1,293.8	3,242.8	8,481.5	19,679.5	645.0

See footnotes at end of table.

Table 1. Death rates for all causes, by age, sex, and color; and corresponding age-adjusted rates: United States, 1950-64--Con.

[Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Sex, year, and color	All ages ¹	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Age-adjusted rate
Rate per 100,000 population									
Nonwhite, both sexes									
1964-----	971.6	331.0	658.3	1,316.5	2,714.7	5,058.2	6,993.5	12,654.0	1,031.1
1963 ² -----	1,007.3	323.0	646.5	1,323.1	2,792.5	5,288.9	7,456.6	14,569.2	1,062.3
1962 ² -----	982.0	311.5	631.5	1,294.0	2,704.2	4,965.9	7,220.4	14,397.3	1,027.0
1961-----	962.5	310.3	618.2	1,271.2	2,663.1	4,707.6	7,030.1	14,231.9	1,000.5
1960-----	1,008.5	318.6	633.4	1,342.9	2,774.6	4,784.9	7,631.1	13,907.6	1,046.1
1959-----	994.9	325.6	627.1	1,330.8	2,712.4	4,610.2	7,247.5	13,175.0	1,026.0
1958-----	1,027.1	335.6	624.5	1,397.1	2,824.3	4,780.3	7,480.8	13,395.5	1,060.1
1957-----	1,046.1	351.3	654.8	1,448.5	2,963.6	4,760.8	7,394.6	13,253.1	1,082.8
1956-----	1,007.4	339.1	643.2	1,400.4	2,896.2	4,488.0	7,247.8	12,604.9	1,048.3
1955-----	1,001.0	338.0	644.7	1,439.5	2,812.7	4,443.0	7,236.3	12,270.7	1,044.7
1954-----	1,006.9	354.5	660.4	1,509.5	2,826.8	4,327.4	7,111.1	12,183.6	1,055.5
1953-----	1,077.9	382.2	724.6	1,623.2	3,077.0	4,593.4	7,637.2	13,778.8	1,139.7
1952-----	1,101.8	412.4	761.1	1,654.3	3,159.7	4,556.6	7,653.5	13,851.0	1,169.6
1951-----	1,109.0	416.5	779.4	1,685.3	3,235.9	4,597.8	7,814.7	14,183.0	1,185.7
1950-----	1,119.4	440.2	805.3	1,706.1	3,126.6	5,205.0	8,039.7	14,473.6	1,225.7
Nonwhite, male									
1964-----	1,116.6	425.9	803.8	1,572.1	3,142.6	6,144.0	7,964.5	13,429.7	1,222.8
1963 ² -----	1,153.8	402.3	759.9	1,567.5	3,182.0	6,421.6	8,503.4	16,157.6	1,248.6
1962 ² -----	1,118.8	389.1	736.9	1,529.5	3,052.6	5,939.9	8,096.4	16,103.2	1,196.2
1961-----	1,094.7	384.4	723.3	1,474.6	2,995.9	5,615.6	7,818.4	15,593.5	1,158.0
1960-----	1,152.0	386.4	729.2	1,551.0	3,151.5	5,664.0	8,662.6	15,238.7	1,211.0
1959-----	1,133.2	405.1	719.5	1,529.1	3,098.5	5,450.5	8,180.6	14,444.8	1,186.9
1958-----	1,162.4	405.6	699.2	1,568.8	3,200.2	5,608.5	8,438.8	15,611.1	1,216.2
1957-----	1,186.0	429.9	730.4	1,615.3	3,382.3	5,556.7	8,255.6	15,503.8	1,239.8
1956-----	1,140.4	413.8	704.3	1,547.1	3,265.8	5,180.1	8,116.9	14,448.0	1,193.1
1955-----	1,133.3	405.9	716.1	1,589.0	3,191.2	5,159.4	8,018.4	13,766.7	1,187.5
1954-----	1,144.7	428.3	720.2	1,656.2	3,227.1	5,006.0	7,995.0	14,381.8	1,202.2
1953-----	1,228.1	460.3	803.6	1,798.4	3,511.5	5,304.1	8,501.8	15,857.1	1,297.1
1952-----	1,251.6	482.5	839.1	1,814.4	3,575.0	5,220.0	8,781.8	15,660.0	1,325.1
1951-----	1,248.2	480.5	842.6	1,834.8	3,593.9	5,272.8	8,721.7	16,142.1	1,327.9
1950-----	1,251.1	496.2	860.7	1,857.3	3,480.8	5,794.9	9,029.6	16,022.1	1,358.5
Nonwhite, female									
1964-----	835.0	249.0	531.5	1,084.4	2,310.2	4,127.3	6,134.4	12,080.0	859.0
1963 ² -----	869.4	254.8	546.8	1,098.5	2,418.4	4,300.9	6,541.2	13,404.4	894.2
1962 ² -----	852.9	244.5	538.0	1,072.6	2,368.4	4,115.3	6,407.9	13,481.0	873.4
1961-----	837.7	246.2	525.0	1,080.0	2,341.7	3,891.6	6,293.5	13,202.4	855.4
1960-----	872.6	260.0	547.3	1,144.9	2,409.7	3,981.4	6,708.4	12,871.2	893.3
1959-----	864.2	257.2	543.5	1,144.0	2,341.1	3,848.7	6,413.0	12,230.8	877.5
1958-----	899.1	275.3	555.8	1,235.9	2,469.1	4,014.8	6,610.5	12,173.7	917.5
1957-----	913.9	283.3	585.2	1,289.2	2,555.5	4,034.0	6,593.1	12,029.7	938.1
1956-----	881.6	274.4	587.3	1,257.7	2,533.3	3,831.9	6,429.0	11,325.0	912.1
1955-----	875.9	279.0	577.9	1,294.5	2,437.5	4,783.2	6,440.9	11,214.7	909.9
1954-----	877.1	290.5	604.8	1,366.5	2,426.5	3,700.5	6,219.8	11,053.1	918.2
1953-----	936.4	314.2	651.1	1,451.3	2,631.0	3,918.4	6,759.5	12,371.0	989.1
1952-----	960.3	350.9	688.7	1,496.2	2,733.0	3,934.2	6,583.6	12,603.4	1,021.7
1951-----	976.9	360.2	721.1	1,534.8	2,863.2	3,959.8	6,948.6	12,853.6	1,049.5
1950-----	993.5	390.4	754.0	1,554.9	2,763.0	4,610.7	7,064.7	13,366.8	1,095.7

¹Figures for age not stated included in "All ages" but not distributed among age groups.

²Figures by color exclude data for New Jersey; see page 6-9, Section 6, Volume II, Vital Statistics of the United States, 1963.

Table 2. Death rates for malignant neoplasm of bronchus and trachea, and of lung specified as primary, and malignant neoplasm of lung, unspecified as to whether primary or secondary, by age, sex, and color; and corresponding age-adjusted rates: United States, 1950-64

[Deaths are those attributed to category numbers 162 and 163 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Sex, year, and color	All ages ¹	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Age-adjusted rates
Both sexes									
Rate per 100,000 population									
1964-----	24.0	1.0	8.4	33.6	86.6	130.3	112.7	75.0	20.7
1963-----	23.1	1.1	8.0	32.6	82.7	126.9	106.5	80.7	20.0
1962-----	22.3	1.0	7.5	31.9	81.4	120.2	101.8	73.0	19.3
1961-----	21.3	1.1	7.2	30.1	77.9	114.9	96.3	74.0	18.4
1960-----	20.3	1.0	6.8	29.6	75.3	108.1	91.5	65.6	17.7
1959-----	19.4	1.0	6.4	28.0	73.8	102.5	86.1	62.8	16.9
1958-----	18.6	1.0	6.3	27.5	70.3	97.9	83.2	58.4	16.3
1957-----	18.1	0.9	5.8	26.5	69.5	94.4	80.6	56.9	15.8
1956-----	17.4	0.9	5.8	26.1	67.2	90.1	78.1	53.2	15.3
1955-----	16.3	0.9	5.4	25.1	62.4	83.2	75.5	48.4	14.4
1954-----	15.4	0.9	5.2	23.9	59.3	78.4	68.6	49.8	13.6
1953-----	14.9	0.8	5.3	23.6	58.9	72.9	65.9	46.0	13.2
1952-----	13.9	0.7	5.1	21.7	55.0	69.1	61.8	46.5	12.4
1951-----	12.9	0.7	4.6	21.5	50.7	63.6	57.1	43.0	11.6
1950-----	12.2	0.8	4.5	20.4	48.7	59.7	55.8	42.3	11.1
Male									
1964-----	41.4	1.4	12.8	56.4	158.1	254.0	213.7	132.9	37.7
1963-----	39.9	1.6	12.0	54.5	150.7	245.7	202.2	139.7	36.3
1962-----	38.7	1.5	11.6	54.2	148.8	231.6	189.1	124.2	35.0
1961-----	36.9	1.6	11.1	51.4	142.8	218.9	175.1	127.7	33.3
1960-----	35.4	1.4	10.5	50.6	139.3	204.3	167.1	107.7	31.9
1959-----	33.7	1.4	10.1	48.0	135.8	192.1	152.2	111.5	30.5
1958-----	32.2	1.5	9.8	47.5	129.7	181.1	143.2	91.3	29.2
1957-----	31.3	1.3	9.1	46.0	127.9	173.4	138.8	89.6	28.3
1956-----	30.1	1.3	9.3	45.5	122.0	163.7	133.3	85.0	27.2
1955-----	28.0	1.3	8.5	44.0	113.0	148.9	126.9	73.9	25.3
1954-----	26.3	1.3	8.4	41.5	107.2	139.6	110.5	75.0	23.8
1953-----	25.3	1.2	8.4	41.0	105.9	127.1	106.2	69.2	22.9
1952-----	23.2	1.1	8.1	37.3	96.7	117.6	95.6	71.1	21.1
1951-----	21.4	1.0	7.1	36.9	88.6	108.4	85.2	60.5	19.6
1950-----	19.9	1.1	7.1	35.0	83.8	98.7	82.6	62.5	18.5
Female									
1964-----	7.1	0.6	4.2	11.9	20.5	28.6	37.8	39.4	5.9
1963-----	6.9	0.6	4.1	11.7	19.6	28.0	34.7	43.9	5.7
1962-----	6.4	0.5	3.6	10.5	18.6	26.1	35.5	40.6	5.3
1961-----	6.2	0.5	3.4	9.6	17.3	25.9	35.8	39.6	5.1
1960-----	5.7	0.5	3.2	9.2	15.4	24.4	32.8	38.8	4.7
1959-----	5.5	0.6	2.9	8.6	15.4	24.2	34.4	30.9	4.6
1958-----	5.4	0.5	2.9	8.0	14.2	24.6	36.0	36.4	4.5
1957-----	5.2	0.5	2.6	7.3	14.0	24.2	34.3	34.6	4.3
1956-----	5.1	0.5	2.5	7.1	14.8	24.1	33.9	31.1	4.3
1955-----	5.0	0.5	2.4	6.6	13.8	23.9	34.0	30.3	4.2
1954-----	4.7	0.5	2.2	6.6	12.9	22.9	34.5	31.8	4.0
1953-----	4.7	0.5	2.3	6.3	13.1	23.4	32.8	29.4	4.0
1952-----	4.8	0.4	2.1	6.3	13.9	24.5	33.8	28.9	4.1
1951-----	4.5	0.4	2.1	6.4	13.0	22.1	33.6	30.6	3.9
1950-----	4.5	0.5	1.9	5.8	13.6	23.3	32.9	28.2	3.9

See footnotes at end of table.

Table 2. Death rates for malignant neoplasm of bronchus and trachea, and of lung specified as primary, and malignant neoplasm of lung, unspecified as to whether primary or secondary, by age, sex, and color; and corresponding age-adjusted rates: United States, 1950-64—Con.

[Deaths are those attributed to category numbers 162 and 163 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Sex, year, and color	All ages ¹	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Age-adjusted rates
<u>White, both sexes</u>	Rate per 100,000 population								
1964-----	24.8	0.9	7.8	32.6	86.1	131.9	115.6	76.2	20.6
1963 ² -----	23.6	1.0	7.3	31.3	81.9	126.6	107.2	82.0	19.7
1962 ² -----	22.8	0.9	7.1	31.0	80.8	120.4	102.8	74.6	19.1
1961-----	22.0	1.0	6.8	29.4	77.7	116.5	98.7	75.6	18.4
1960-----	20.9	0.9	6.4	28.8	75.1	109.6	92.5	66.2	17.6
1959-----	20.1	1.0	6.0	27.4	73.8	104.4	87.6	63.7	16.9
1958-----	19.3	0.9	5.9	26.9	70.9	99.8	85.4	59.9	16.3
1957-----	18.7	0.9	5.7	25.8	69.7	96.3	82.6	59.2	15.9
1956-----	18.1	0.8	5.6	25.6	67.4	92.4	79.9	55.2	15.4
1955-----	17.0	0.9	5.2	24.6	62.9	85.6	77.7	50.4	14.5
1954-----	16.0	0.8	5.1	23.4	59.9	80.7	70.5	51.4	13.7
1953-----	15.4	0.8	5.1	23.2	59.3	75.2	67.7	47.3	13.3
1952-----	14.4	0.7	4.9	21.5	55.6	71.2	63.7	47.6	12.5
1951-----	13.4	0.7	4.5	21.4	51.0	65.4	59.0	44.8	11.7
1950-----	12.7	0.7	4.5	20.3	49.6	61.1	57.5	44.9	11.2
<u>White, male</u>									
1964-----	42.7	1.3	11.6	54.3	157.8	257.7	220.9	136.0	37.6
1963 ² -----	40.6	1.4	10.9	51.8	149.8	245.8	203.8	141.6	35.7
1962 ² -----	39.5	1.3	10.8	52.5	148.3	231.7	191.2	126.0	34.7
1961-----	38.0	1.6	10.3	50.0	142.9	222.6	179.7	130.4	33.3
1960-----	36.4	1.3	9.7	49.2	139.2	207.5	170.4	109.4	31.9
1959-----	34.9	1.4	9.4	47.1	136.3	196.4	155.7	112.6	30.6
1958-----	33.4	1.4	9.0	46.5	131.4	185.2	147.9	93.4	29.3
1957-----	32.4	1.3	8.9	44.9	128.5	177.5	142.9	92.0	28.4
1956-----	31.2	1.2	9.0	44.6	122.8	168.4	137.1	88.1	27.4
1955-----	29.2	1.2	8.2	43.3	114.4	154.0	131.3	76.9	25.6
1954-----	27.4	1.2	8.2	41.0	108.2	144.2	113.6	77.0	24.1
1953-----	26.3	1.2	8.2	40.5	106.8	131.4	109.2	70.9	23.2
1952-----	24.2	1.0	7.8	37.1	98.0	121.9	98.8	71.5	21.3
1951-----	22.3	1.0	7.2	36.8	89.4	111.7	88.3	63.3	19.8
1950-----	20.8	1.0	7.1	35.1	85.4	101.5	85.5	67.4	18.8
<u>White, female</u>									
1964-----	7.4	0.6	4.1	11.8	20.1	28.7	38.5	40.0	5.8
1963 ² -----	7.0	0.6	3.9	11.6	19.1	27.6	35.5	45.1	5.6
1962 ² -----	6.6	0.5	3.4	10.3	18.1	26.6	36.2	42.4	5.3
1961-----	6.4	0.5	3.4	9.5	17.0	26.0	37.2	40.9	5.1
1960-----	5.9	0.5	3.2	9.0	15.1	24.8	32.7	39.1	4.7
1959-----	5.7	0.6	2.8	8.2	15.1	24.2	35.0	32.1	4.6
1958-----	5.6	0.5	2.8	7.9	13.9	24.8	36.8	37.9	4.5
1957-----	5.4	0.5	2.5	7.2	13.9	24.3	35.3	37.0	4.3
1956-----	5.3	0.5	2.4	7.0	14.6	24.6	34.7	32.3	4.3
1955-----	5.1	0.5	2.3	6.3	13.6	24.0	34.9	31.6	4.1
1954-----	4.9	0.4	2.1	6.2	13.2	23.2	35.8	33.1	4.0
1953-----	4.9	0.4	2.2	6.1	13.0	24.0	34.0	30.2	4.0
1952-----	5.0	0.4	2.0	6.1	14.0	24.9	34.9	30.4	4.1
1951-----	4.7	0.4	2.0	6.1	12.9	22.8	34.7	31.6	3.9
1950-----	4.7	0.4	1.9	5.7	13.7	23.7	34.0	29.3	4.0

See footnotes at end of table.

Table 2. Death rates for malignant neoplasm of bronchus and trachea, and of lung specified as primary, and malignant neoplasm of lung, unspecified as to whether primary or secondary, by age, sex, and color; and corresponding age-adjusted rates: United States, 1950-64—Con.

[Deaths are those attributed to category numbers 162 and 163 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Sex, year, and color	All ages ¹	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Age-adjusted rates
Rate per 100,000 population									
Nonwhite, both sexes									
1964-----	17.9	1.3	13.4	43.3	91.0	112.1	75.1	62.1	21.4
1963 ² -----	18.2	1.8	13.6	42.9	85.0	119.1	86.3	65.4	21.5
1962 ² -----	16.4	1.7	11.0	38.3	80.1	102.4	76.2	51.4	19.2
1961-----	15.7	1.4	10.3	37.0	80.1	96.5	64.5	54.2	18.4
1960-----	15.6	1.3	10.0	37.0	77.9	90.4	77.2	58.6	18.1
1959-----	14.2	1.2	9.9	33.5	73.2	79.6	64.6	51.5	16.5
1958-----	13.1	1.3	9.9	33.0	63.7	74.8	52.1	39.4	15.2
1957-----	12.7	0.9	6.5	32.5	67.3	72.4	51.8	28.1	14.8
1956-----	12.0	1.2	7.7	30.2	64.8	62.1	52.2	29.5	14.0
1955-----	10.8	1.2	6.9	29.8	56.8	54.3	44.5	24.1	12.7
1954-----	10.2	1.4	6.4	28.2	52.4	50.5	41.4	29.1	11.9
1953-----	9.9	1.1	6.7	27.4	54.7	45.1	39.3	30.8	11.7
1952-----	8.9	1.0	6.8	23.6	47.7	43.2	33.6	32.7	10.5
1951-----	8.3	0.7	4.7	23.2	47.8	41.2	29.5	21.3	10.0
1950-----	7.4	1.3	4.5	20.8	38.7	40.3	29.0	11.2	8.9
Nonwhite, male									
1964-----	31.4	2.3	22.8	76.9	161.1	211.5	130.1	102.7	38.4
1963 ² -----	31.9	2.7	22.2	76.9	151.0	220.3	155.2	112.1	38.4
1962 ² -----	28.7	2.9	18.2	66.7	140.1	195.3	135.1	96.8	34.2
1961-----	29.7	2.2	17.6	64.9	141.9	177.0	119.0	96.8	32.8
1960-----	27.5	2.3	17.7	64.2	140.2	167.2	125.4	89.3	32.2
1959-----	24.5	1.7	16.8	56.5	130.5	140.9	107.6	100.0	28.7
1958-----	22.7	2.3	16.4	58.0	112.3	132.6	83.5	70.4	26.6
1957-----	22.1	0.8	10.5	57.1	121.3	126.6	85.9	61.5	25.9
1956-----	20.8	1.8	12.2	53.9	113.4	109.4	83.8	48.0	24.4
1955-----	18.3	2.0	11.3	50.7	97.2	88.7	69.6	37.5	21.3
1954-----	17.5	2.2	10.0	46.5	95.0	85.2	68.9	50.0	20.4
1953-----	17.0	1.3	10.5	46.5	94.4	75.9	65.8	47.6	19.7
1952-----	15.0	1.7	11.3	39.8	80.9	68.1	51.8	65.0	17.4
1951-----	13.8	0.9	6.7	37.7	79.5	70.0	43.4	26.3	16.2
1950-----	12.2	1.6	7.4	34.1	64.8	62.6	42.6	5.4	14.4
Nonwhite, female									
1964-----	5.3	0.5	5.2	12.8	24.4	26.8	27.9	32.0	6.2
1963 ² -----	5.3	1.1	6.1	11.6	21.7	30.7	26.1	31.1	6.2
1962 ² -----	4.7	0.7	4.7	11.8	22.2	20.5	23.7	19.0	5.4
1961-----	4.4	0.8	3.8	10.8	20.4	24.1	15.8	22.0	5.1
1960-----	4.3	0.5	3.0	11.1	17.6	20.1	34.0	34.8	4.9
1959-----	4.5	0.6	3.6	11.8	18.2	24.0	26.1	15.4	5.1
1958-----	4.0	0.4	3.9	9.3	16.9	22.1	23.5	18.4	4.6
1957-----	3.8	1.1	2.9	9.0	14.7	22.9	20.0	5.4	4.3
1956-----	3.6	0.7	3.5	7.4	17.1	18.5	22.5	16.7	4.2
1955-----	3.8	0.5	2.7	9.5	16.7	22.6	20.5	14.7	4.4
1954-----	3.2	0.7	3.1	10.3	9.9	18.4	15.1	15.6	3.8
1953-----	3.3	0.9	3.3	8.7	14.3	16.3	14.0	19.4	3.9
1952-----	3.2	0.4	2.5	7.6	13.6	19.9	16.4	10.3	3.7
1951-----	3.1	0.5	2.9	8.7	14.8	13.9	16.2	17.9	3.7
1950-----	2.8	1.0	1.9	7.4	11.9	17.9	15.6	15.3	3.5

¹Figures for age not stated included in "All ages," but not distributed among age groups.

²Figures by color exclude data for New Jersey; see page 6-9, Section 6, Volume II, Vital Statistics of the United States, 1963.

Table 3. Death rates among men for malignant neoplasm of larynx, by age; and corresponding age-adjusted rates: United States, 1950-64

[Deaths are those attributed to category number 161 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Year	All ages ¹	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Age-adjusted rate
	Rate per 100,000 population								
1964-----	2.4	0.0	0.4	3.0	9.1	13.8	15.3	17.0	2.1
1963-----	2.5	0.0	0.5	3.4	9.1	14.2	15.5	15.6	2.2
1962-----	2.4	0.0	0.5	3.2	8.9	13.1	16.1	14.2	2.1
1961-----	2.4	0.1	0.5	3.1	9.2	13.9	15.3	16.0	2.2
1960-----	2.5	0.0	0.5	3.2	8.9	14.2	16.9	17.1	2.2
1959-----	2.3	0.0	0.4	3.2	8.3	13.4	14.9	18.0	2.1
1958-----	2.4	0.1	0.4	3.3	8.2	13.5	16.3	14.2	2.1
1957-----	2.3	0.1	0.4	3.0	8.2	12.9	17.4	18.7	2.1
1956-----	2.3	0.0	0.4	2.8	8.4	13.7	16.3	16.2	2.1
1955-----	2.4	0.1	0.5	3.1	8.4	14.0	18.1	16.4	2.2
1954-----	2.2	-	0.5	2.7	7.9	13.0	16.6	14.5	2.0
1953-----	2.3	0.0	0.5	2.9	8.3	13.1	16.2	18.7	2.0
1952-----	2.2	0.1	0.4	2.8	8.1	12.6	16.3	15.4	2.0
1951-----	2.2	0.0	0.5	2.9	7.7	13.2	15.3	15.2	2.0
1950-----	2.2	-	0.5	3.1	7.7	13.3	16.0	16.5	2.0

¹Figures for age not stated included in "All ages" but not distributed among age groups.

Table 4. Death rates among men for malignant neoplasm of lip, by age; and corresponding age-adjusted rates: United States, 1950-64

[Deaths are those attributed to category number 140 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Year	All ages ¹	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Age-adjusted rate
Rate per 100,000 population									
1964-----	0.2	0.0	0.0	0.1	0.3	0.6	2.0	7.8	0.1
1963-----	0.2	0.0	0.0	0.1	0.3	1.0	2.1	4.2	0.1
1962-----	0.2	-	0.1	0.1	0.3	1.0	3.2	8.2	0.2
1961-----	0.2	0.0	0.0	0.1	0.3	1.2	2.8	8.5	0.2
1960-----	0.2	0.0	0.0	0.1	0.5	1.0	3.2	7.7	0.2
1959-----	0.2	0.0	0.0	0.1	0.5	1.3	3.2	8.5	0.2
1958-----	0.2	-	0.0	0.1	0.4	1.2	3.8	7.6	0.2
1957-----	0.4	0.0	0.1	0.3	0.5	1.9	5.2	11.9	0.3
1956-----	0.4	0.1	0.1	0.3	0.9	1.7	5.3	8.3	0.3
1955-----	0.4	0.0	0.1	0.3	0.9	2.0	5.2	13.5	0.3
1954-----	0.4	0.0	0.1	0.3	0.6	2.4	4.9	15.5	0.3
1953-----	0.5	0.0	0.1	0.2	0.9	2.7	5.6	16.3	0.4
1952-----	0.5	0.0	0.1	0.3	0.9	2.1	7.0	17.9	0.4
1951-----	0.5	0.0	0.1	0.3	1.0	2.6	6.0	16.4	0.4
1950-----	0.6	0.0	0.2	0.4	1.0	2.9	8.3	19.0	0.5

¹Figures for age not stated included in "All ages" but not distributed among age groups.

Table 5. Death rates for bronchitis, unqualified, and chronic bronchitis, by age and sex; and corresponding age-adjusted rates: United States, 1950-64

[Deaths are those attributed to category numbers 501 and 502 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Sex and year	All ages ¹	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Age-adjusted rate
<u>Both sexes</u>									
Rate per 100,000 population									
1964-----	2.3	0.1	0.4	1.5	5.0	12.4	18.9	32.9	1.8
1963-----	2.3	0.1	0.4	1.4	4.8	12.4	19.0	35.0	1.8
1962-----	1.9	0.1	0.3	1.2	4.1	9.8	15.5	27.9	1.5
1961-----	1.7	0.1	0.3	1.0	3.6	8.3	13.1	21.9	1.3
1960-----	1.8	0.1	0.3	1.1	3.6	8.8	13.5	25.4	1.4
1959-----	1.5	0.1	0.2	0.9	3.1	7.2	11.3	24.1	1.2
1958-----	1.5	0.1	0.2	0.8	3.2	6.6	11.9	22.7	1.2
1957-----	1.4	0.1	0.2	0.7	2.8	6.0	10.7	23.1	1.1
1956-----	1.2	0.1	0.2	0.5	2.6	4.6	10.4	25.3	1.0
1955-----	1.2	0.1	0.2	0.5	2.3	4.9	9.7	24.9	0.9
1954-----	1.2	0.1	0.1	0.6	2.1	4.5	10.8	23.2	0.9
1953-----	1.3	0.1	0.2	0.7	2.3	5.1	11.4	27.1	1.1
1952-----	1.2	0.1	0.2	0.6	2.0	5.0	10.9	24.6	1.0
1951-----	1.3	0.1	0.2	0.6	2.2	5.0	11.7	31.0	1.0
1950-----	1.3	0.1	0.2	0.6	2.2	5.2	12.2	39.9	1.1
<u>Male</u>									
1964-----	3.6	0.1	0.5	2.2	8.6	23.2	33.2	53.2	3.0
1963-----	3.5	0.1	0.4	2.1	8.6	23.2	32.6	50.4	3.0
1962-----	2.9	0.1	0.3	1.8	7.0	18.0	26.0	41.6	2.4
1961-----	2.5	0.1	0.4	1.6	6.0	14.9	22.0	31.1	2.1
1960-----	2.6	0.1	0.3	1.8	6.0	15.7	22.5	34.8	2.2
1959-----	2.3	0.1	0.3	1.4	5.5	13.0	17.8	34.6	1.9
1958-----	2.2	0.1	0.3	1.2	5.7	11.8	17.7	30.8	1.9
1957-----	2.0	0.0	0.3	1.1	4.7	10.4	15.5	30.9	1.6
1956-----	1.8	0.1	0.2	0.8	4.4	7.8	15.6	29.7	1.4
1955-----	1.6	0.1	0.2	0.7	3.9	7.9	12.5	28.9	1.3
1954-----	1.6	0.1	0.1	0.7	3.7	7.2	15.3	21.4	1.3
1953-----	1.8	0.1	0.2	1.0	4.0	8.1	15.0	32.5	1.5
1952-----	1.6	0.1	0.3	1.1	3.3	7.4	14.4	28.9	1.4
1951-----	1.6	0.1	0.3	0.9	3.5	7.5	14.4	38.7	1.4
1950-----	1.6	0.1	0.2	0.9	3.5	7.0	13.9	51.5	1.4
<u>Female</u>									
1964-----	1.1	0.1	0.4	0.9	1.7	3.6	8.3	20.4	0.8
1963-----	1.1	0.2	0.4	0.7	1.2	3.4	8.7	25.4	0.8
1962-----	0.9	0.1	0.3	0.6	1.4	2.8	7.5	19.3	0.7
1961-----	0.8	0.1	0.2	0.5	1.4	2.5	6.2	16.0	0.6
1960-----	0.9	0.0	0.2	0.5	1.3	2.8	6.6	19.4	0.7
1959-----	0.8	0.1	0.2	0.5	0.8	2.1	6.3	17.1	0.6
1958-----	0.8	0.1	0.2	0.4	0.9	2.1	7.3	17.2	0.6
1957-----	0.8	0.1	0.2	0.3	1.0	2.2	6.8	17.8	0.6
1956-----	0.7	0.0	0.1	0.2	0.8	1.7	6.2	22.3	0.5
1955-----	0.8	0.0	0.2	0.3	0.7	2.2	7.5	22.0	0.6
1954-----	0.8	0.0	0.1	0.4	0.6	2.1	7.2	24.5	0.6
1953-----	0.8	0.0	0.1	0.4	0.7	2.3	8.4	23.1	0.6
1952-----	0.8	0.1	0.1	0.2	0.8	2.8	8.0	21.5	0.6
1951-----	0.9	0.1	0.2	0.3	0.9	2.6	9.4	25.6	0.7
1950-----	1.0	0.1	0.1	0.4	0.9	3.5	10.7	31.8	0.8

¹Figures for age not stated included in "All ages" but not distributed among age groups.

Table 6. Death rates for arteriosclerotic heart disease, including coronary disease, by age, sex, and color; and corresponding age-adjusted rates: United States, 1950-64

[Deaths are those attributed to category number 420 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Sex, year, and color	All ages ¹	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Age-adjusted rate
Both sexes									
Rate per 100,000 population									
1964-----	285.1	6.9	53.2	205.8	576.3	1,384.9	2,957.7	6,882.9	216.5
1963-----	290.0	7.2	53.2	209.7	583.4	1,413.2	3,051.1	7,127.2	221.2
1962-----	283.9	7.1	51.2	208.1	576.4	1,384.9	3,010.6	6,914.7	217.5
1961-----	274.4	6.6	50.5	205.2	566.4	1,344.7	2,934.4	6,457.8	211.7
1960-----	275.6	6.8	50.4	207.7	580.9	1,356.1	2,998.0	6,368.6	214.6
1959-----	268.6	7.2	49.9	206.9	571.9	1,332.3	2,912.5	6,119.6	210.4
1958-----	266.2	7.4	50.3	205.7	574.7	1,329.6	2,920.7	6,048.4	210.4
1957-----	265.6	7.0	50.5	202.7	580.1	1,340.1	2,932.4	6,054.4	211.2
1956-----	255.5	6.9	49.3	197.4	563.7	1,297.9	2,868.6	5,732.9	205.1
1955-----	247.0	7.0	48.7	196.9	549.7	1,265.8	2,780.4	5,467.7	200.0
1954-----	235.7	6.7	47.8	198.3	540.9	1,225.2	2,624.3	5,003.4	193.4
1953-----	236.1	7.1	49.4	200.4	556.2	1,239.6	2,645.2	4,940.5	196.1
1952-----	226.2	7.1	48.5	200.1	550.6	1,189.5	2,532.0	4,649.1	190.2
1951-----	219.6	6.7	48.0	196.6	540.3	1,175.0	2,479.9	4,562.8	187.0
1950-----	213.0	6.4	46.7	196.0	534.4	1,180.9	2,423.9	4,424.0	185.2
Male									
1964-----	354.2	11.0	90.9	341.3	889.8	1,942.4	3,623.0	7,409.4	303.6
1963-----	361.6	11.1	89.7	348.9	895.2	1,977.5	3,740.2	7,754.0	309.4
1962-----	354.9	11.4	87.3	346.0	883.1	1,919.8	3,661.2	7,571.8	303.1
1961-----	345.5	10.7	87.0	341.3	868.8	1,860.2	3,565.0	7,057.4	295.3
1960-----	348.0	10.9	86.2	347.1	885.2	1,863.2	3,636.6	6,930.6	298.3
1959-----	339.7	11.7	85.6	343.7	875.5	1,820.5	3,499.2	6,606.5	291.8
1958-----	337.9	11.6	85.9	339.5	876.0	1,810.1	3,513.7	6,570.6	291.0
1957-----	336.4	11.0	86.0	335.0	881.6	1,804.5	3,490.2	6,473.6	290.0
1956-----	325.4	11.0	84.2	327.1	856.0	1,745.2	3,414.2	6,118.3	281.6
1955-----	316.2	11.1	82.5	324.6	834.3	1,700.6	3,311.6	5,777.0	274.5
1954-----	304.5	10.7	80.6	325.6	818.2	1,642.8	3,130.6	5,292.8	265.7
1953-----	305.9	11.0	83.3	327.2	835.5	1,650.0	3,155.3	5,296.2	268.5
1952-----	293.6	11.0	81.2	324.6	825.1	1,574.0	3,001.4	4,946.9	259.7
1951-----	286.7	10.3	80.0	318.6	804.7	1,564.0	2,957.7	4,981.6	256.0
1950-----	277.8	9.7	77.2	316.6	792.9	1,560.7	2,873.5	4,907.8	252.5
Female									
1964-----	218.5	3.0	17.4	76.8	286.4	926.5	2,464.0	6,559.0	140.7
1963-----	220.9	3.4	18.4	76.4	294.0	943.4	2,534.1	6,736.1	144.0
1962-----	215.3	3.0	16.9	75.5	290.7	933.3	2,516.1	6,499.2	141.9
1961-----	205.6	2.6	15.7	73.7	283.8	903.6	2,451.1	6,064.0	137.1
1960-----	205.4	2.8	16.4	72.4	295.6	914.8	2,502.5	6,009.4	139.3
1959-----	199.5	2.9	15.9	74.2	286.5	905.4	2,455.1	5,801.3	136.9
1958-----	196.5	3.4	16.3	75.5	290.2	906.1	2,453.9	5,700.2	137.3
1957-----	196.8	3.2	16.4	73.7	293.9	927.1	2,489.1	5,768.4	139.2
1956-----	187.5	3.0	15.8	70.6	284.6	897.4	2,431.5	5,464.7	134.7
1955-----	179.6	3.1	16.0	71.7	275.9	873.6	2,351.4	5,248.6	131.0
1954-----	168.8	3.0	16.2	73.2	272.2	846.3	2,211.4	4,796.5	125.9
1953-----	168.3	3.4	16.7	75.6	283.5	864.9	2,225.6	4,684.8	128.1
1952-----	160.5	3.4	16.8	77.1	280.0	836.5	2,143.0	4,435.7	124.6
1951-----	153.9	3.3	17.0	75.7	277.3	815.5	2,078.2	4,265.0	121.6
1950-----	149.1	3.4	16.9	76.0	275.0	826.8	2,041.4	4,087.1	120.8

See footnotes at end of table.

Table 6. Death rates for arteriosclerotic heart disease, including coronary disease, by age, sex, and color; and corresponding age-adjusted rates: United States, 1950-64—Con.

[Deaths are those attributed to category number 420 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Sex, year, and color	All ages ¹	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Age-adjusted rate
Rate per 100,000 population									
<u>White, both sexes</u>									
1964-----	300.1	6.0	50.7	202.2	570.4	1,392.2	3,045.4	7,188.7	217.8
1963 ² -----	303.3	6.1	50.8	205.4	575.8	1,412.1	3,115.8	7,366.1	221.3
1962 ² -----	297.0	6.3	49.0	204.6	568.9	1,388.6	3,078.3	7,114.9	217.9
1961-----	289.2	5.8	48.9	203.4	563.8	1,362.1	3,021.8	6,675.0	213.8
1960-----	290.5	6.1	48.6	205.2	579.0	1,377.2	3,084.4	6,625.4	216.9
1959-----	283.0	6.5	48.2	204.1	571.3	1,355.9	2,999.2	6,370.5	213.0
1958-----	280.2	6.5	48.9	202.2	574.2	1,353.5	3,009.3	6,304.4	213.0
1957-----	279.3	6.1	48.3	198.8	577.8	1,366.8	3,022.6	6,301.4	213.6
1956-----	269.1	6.2	47.5	194.8	563.0	1,325.3	2,959.4	5,986.1	207.9
1955-----	260.4	6.2	47.3	193.7	551.1	1,297.2	2,868.3	5,715.1	203.1
1954-----	248.6	6.1	46.1	195.9	543.1	1,259.0	2,710.7	5,220.4	196.6
1953-----	248.4	6.2	47.7	196.5	558.0	1,272.2	2,730.8	5,152.4	198.9
1952-----	238.4	6.2	46.8	197.7	553.0	1,224.9	2,616.9	4,848.6	193.4
1951-----	231.5	6.0	46.0	194.5	543.2	1,211.2	2,564.7	4,773.8	190.4
1950-----	224.6	5.7	45.1	194.6	540.4	1,208.9	2,502.7	4,634.5	188.4
<u>White, male</u>									
1964-----	373.9	9.9	89.2	343.7	900.9	1,971.5	3,755.5	7,779.6	309.0
1963 ² -----	379.7	9.9	88.4	350.7	905.9	1,995.8	3,846.6	8,039.9	313.6
1962 ² -----	372.8	10.4	86.4	348.4	893.6	1,944.8	3,763.7	7,828.7	307.6
1961-----	365.3	9.8	87.0	347.1	885.1	1,899.3	3,694.2	7,326.1	302.0
1960-----	368.0	10.3	86.0	352.5	901.3	1,909.2	3,758.4	7,248.7	305.3
1959-----	358.8	10.9	85.2	348.3	890.8	1,865.7	3,617.2	6,883.1	298.4
1958-----	356.8	10.8	86.5	343.6	892.3	1,855.3	3,633.3	6,862.0	297.8
1957-----	354.7	10.2	85.6	339.0	894.9	1,853.5	3,610.6	6,712.2	296.4
1956-----	344.0	10.5	84.3	332.2	871.1	1,795.5	3,538.4	6,364.9	288.6
1955-----	334.5	10.7	83.0	328.9	850.4	1,753.5	3,433.8	6,024.8	281.6
1954-----	322.0	10.2	81.1	331.0	833.7	1,696.7	3,244.3	5,495.0	272.7
1953-----	322.9	10.2	83.3	330.9	850.7	1,704.1	3,268.6	5,486.6	275.1
1952-----	310.4	10.3	81.6	330.2	840.9	1,628.0	3,113.8	5,136.4	266.7
1951-----	303.3	9.8	79.8	324.2	821.2	1,619.9	3,074.0	5,189.0	263.1
1950-----	294.0	9.0	77.5	323.1	812.9	1,608.2	2,978.7	5,139.8	259.5
<u>White, female</u>									
1964-----	228.7	2.1	13.6	66.7	265.7	917.5	2,524.4	6,831.4	138.6
1963 ² -----	229.2	2.4	14.7	65.8	270.5	927.2	2,574.8	6,949.8	140.7
1962 ² -----	223.4	2.2	13.1	65.9	267.3	919.5	2,562.1	6,668.1	138.8
1961-----	215.2	1.8	12.4	64.2	264.5	904.2	2,511.1	6,252.9	135.5
1960-----	215.1	1.9	12.7	61.9	277.6	916.3	2,566.9	6,233.7	137.8
1959-----	209.2	2.2	12.6	63.7	271.6	911.2	2,522.2	6,038.9	136.0
1958-----	205.6	2.2	12.7	64.2	274.4	912.3	2,523.2	5,935.8	136.1
1957-----	205.6	2.1	12.4	61.8	277.3	935.4	2,559.1	6,021.9	138.0
1956-----	196.0	2.0	11.8	60.2	269.3	905.2	2,500.8	5,722.6	133.8
1955-----	188.1	1.9	12.7	61.1	264.0	886.3	2,417.9	5,495.7	130.6
1954-----	177.0	2.1	12.2	62.9	262.2	862.3	2,279.8	5,023.4	125.8
1953-----	175.8	2.3	13.1	64.0	273.0	878.5	2,293.9	4,911.1	127.7
1952-----	168.0	2.4	12.9	66.7	270.2	856.0	2,208.9	4,641.8	124.4
1951-----	161.0	2.4	13.0	65.8	267.7	834.9	2,142.0	4,407.3	126.8
1950-----	156.0	2.6	13.2	66.6	267.5	838.9	2,101.6	4,283.4	120.6

See footnotes at end of table.

Table 6. Death rates for arteriosclerotic heart disease, including coronary disease, by age, sex, and color; and corresponding age-adjusted rates: United States, 1950-64--Con.

[Deaths are those attributed to category number 420 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Sex, year, and color	All ages ¹	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Age-adjusted rate
Nonwhite, both sexes									
Rate per 100,000 population									
1964-----	173.4	14.2	74.3	239.1	635.3	1,298.4	1,849.6	3,543.7	196.8
1963 ² -----	175.3	14.3	70.0	237.8	631.0	1,300.7	1,923.6	3,871.8	198.0
1962 ² -----	169.8	12.7	68.5	234.5	616.2	1,218.1	1,880.7	3,816.2	191.1
1961-----	161.2	12.4	63.6	221.6	592.9	1,141.3	1,798.8	3,766.7	181.6
1960-----	160.4	12.3	66.1	230.9	601.0	1,108.6	1,823.4	3,294.4	181.3
1959-----	154.0	13.0	65.4	233.4	577.8	1,050.9	1,713.4	3,057.4	174.5
1958-----	153.3	15.0	62.8	239.0	579.9	1,043.9	1,687.7	2,968.2	174.2
1957-----	154.6	13.9	69.6	239.9	606.5	1,020.5	1,673.6	2,995.3	176.1
1956-----	144.4	12.7	65.5	222.5	572.4	970.2	1,580.2	2,677.0	165.5
1955-----	136.2	13.7	60.5	227.6	533.0	890.3	1,528.1	2,443.1	157.1
1954-----	128.0	12.3	62.9	221.4	515.2	819.6	1,379.1	2,249.1	148.5
1953-----	132.5	14.9	64.2	238.2	534.6	848.9	1,392.3	2,336.5	154.7
1952-----	123.3	14.5	63.7	222.9	521.2	765.3	1,286.3	2,185.7	145.2
1951-----	118.2	12.7	65.3	217.1	504.0	737.9	1,225.3	2,008.5	140.3
1950-----	113.4	12.5	60.7	209.9	461.6	800.5	1,232.9	1,922.5	138.2
Nonwhite, male									
1964-----	204.9	19.3	105.8	318.7	781.6	1,604.2	2,086.9	3,827.0	242.9
1963 ² -----	208.6	19.1	95.4	316.6	758.5	1,622.6	2,235.6	4,366.7	244.3
1962 ² -----	202.2	17.6	94.3	312.4	736.7	1,503.7	2,180.4	4,300.0	234.7
1961-----	190.9	17.2	87.4	286.6	707.5	1,415.8	2,014.7	4,067.7	220.6
1960-----	190.7	15.7	87.8	297.0	723.7	1,340.2	2,114.1	3,574.5	219.5
1959-----	185.9	17.9	89.1	298.9	715.9	1,290.7	1,991.7	3,496.6	215.0
1958-----	183.1	18.2	80.7	300.0	703.5	1,277.8	1,982.7	3,403.7	212.0
1957-----	184.6	17.3	89.8	296.6	736.7	1,232.7	1,942.2	3,619.2	213.2
1956-----	171.3	15.3	82.9	277.6	687.1	1,152.6	1,808.5	3,140.0	198.2
1955-----	162.9	14.9	77.7	283.1	651.8	1,076.0	1,715.2	2,741.7	188.8
1954-----	155.7	15.0	76.6	272.9	638.5	1,002.8	1,616.8	2,700.0	181.0
1953-----	160.6	18.2	82.5	291.4	652.4	1,006.1	1,628.1	2,866.7	186.6
1952-----	149.6	17.5	78.0	270.5	635.0	940.6	1,473.6	2,550.0	175.2
1951-----	143.1	15.2	81.7	264.7	602.4	904.0	1,387.7	2,394.7	168.3
1950-----	136.6	15.2	74.3	254.2	554.1	943.1	1,407.3	2,196.3	164.0
Nonwhite, female									
1964-----	143.7	9.8	47.0	166.8	496.5	1,036.3	1,639.1	3,334.0	155.7
1963 ² -----	143.9	10.1	47.8	165.4	508.5	1,019.9	1,650.8	3,508.9	156.5
1962 ² -----	139.2	8.6	45.7	161.7	500.1	968.2	1,605.8	3,550.0	151.7
1961-----	133.3	8.2	42.5	160.4	482.1	894.6	1,597.8	3,539.0	145.8
1960-----	131.7	9.3	46.7	168.0	482.3	897.0	1,563.4	3,076.3	145.8
1959-----	123.8	8.8	43.6	171.6	445.0	833.6	1,464.6	2,730.8	137.1
1958-----	125.2	12.2	46.4	181.5	462.0	828.5	1,419.6	2,736.8	139.5
1957-----	126.2	11.0	51.0	185.8	479.6	826.7	1,423.4	2,637.8	141.7
1956-----	118.8	10.5	49.5	169.2	459.8	798.3	1,365.2	2,355.6	134.6
1955-----	110.9	12.6	44.5	173.8	415.1	719.3	1,399.4	2,232.4	126.8
1954-----	101.9	9.9	50.1	171.2	391.9	650.4	1,143.7	2,009.4	117.6
1953-----	106.1	12.1	47.2	185.9	414.3	700.0	1,158.7	1,977.4	123.9
1952-----	98.5	11.8	50.4	175.8	404.3	600.8	1,108.6	1,934.5	116.2
1951-----	94.6	10.4	50.2	169.5	401.6	580.9	1,070.3	1,746.4	113.0
1950-----	91.2	10.2	48.1	165.7	366.7	656.8	1,061.1	1,726.8	112.6

¹Figures for age not stated included in "All ages" but not distributed among age groups.

²Figures by color exclude data for New Jersey; see page 6-9, Section 6, Volume II, Vital Statistics of the United States, 1963.

Table 7. Death rates for cirrhosis of liver, by age and sex; and corresponding age-adjusted rates: United States, 1950-64

[Deaths are those attributed to category number 581 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Sex and year	All ages ¹	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Age-adjusted rate
<u>Both sexes</u>									
Rate per 100,000 population									
1964-----	12.1	3.3	13.9	29.5	38.1	36.7	29.5	25.4	11.5
1963-----	11.9	3.3	12.7	29.9	36.4	37.5	29.6	26.1	11.2
1962-----	11.7	3.2	13.0	28.9	35.4	37.1	29.5	26.3	11.0
1961-----	11.3	3.1	12.3	27.5	34.2	35.6	30.1	25.9	10.6
1960-----	11.3	2.9	11.8	27.6	32.7	37.4	32.1	28.8	10.5
1959-----	10.9	2.8	11.5	26.1	31.8	34.9	33.0	28.6	10.1
1958-----	10.8	2.5	11.1	24.9	31.3	36.6	34.0	31.2	9.9
1957-----	11.3	2.9	12.1	25.6	33.0	38.2	35.3	32.3	10.5
1956-----	10.7	2.4	11.2	23.8	30.9	36.8	37.3	32.7	9.9
1955-----	10.2	2.1	10.5	22.8	28.8	36.1	35.9	37.0	9.4
1954-----	10.1	2.2	10.4	21.5	29.1	35.5	35.7	37.4	9.2
1953-----	10.4	2.3	10.7	23.0	29.9	34.7	38.8	37.8	9.5
1952-----	10.2	2.4	10.6	22.4	29.9	34.4	37.6	37.9	9.5
1951-----	9.8	2.3	10.1	21.1	28.7	34.0	38.7	40.6	9.1
1950-----	9.2	2.1	9.3	19.1	27.2	33.8	36.9	39.0	8.5
<u>Male</u>									
1964-----	16.0	3.6	16.7	38.8	54.5	56.6	43.6	33.2	15.5
1963-----	15.7	3.6	15.3	38.2	52.4	57.8	42.7	34.5	15.1
1962-----	15.7	3.4	15.7	38.2	51.7	56.7	43.1	37.9	15.1
1961-----	15.1	3.6	14.8	36.1	49.4	55.1	44.8	32.4	14.5
1960-----	15.3	3.1	14.4	36.8	48.5	57.4	45.1	40.0	14.5
1959-----	14.6	2.9	14.1	34.7	46.1	53.3	46.2	37.5	13.8
1958-----	14.5	2.6	13.4	33.9	45.1	56.2	46.1	41.0	13.6
1957-----	15.3	3.1	14.7	35.3	48.2	57.4	48.9	42.1	14.4
1956-----	14.2	2.4	13.6	31.9	44.2	54.6	48.6	42.8	13.3
1955-----	13.6	2.1	12.9	30.9	41.4	52.5	50.1	43.7	12.7
1954-----	13.5	2.2	12.7	29.6	42.1	51.5	47.5	47.4	12.6
1953-----	13.8	2.5	12.9	30.9	43.1	49.9	50.9	45.0	12.8
1952-----	13.8	2.4	13.4	30.1	43.6	50.4	50.2	49.5	12.8
1951-----	13.0	2.2	12.6	28.2	39.6	48.6	52.8	42.2	12.1
1950-----	12.1	2.1	11.7	25.6	38.1	48.0	45.9	43.9	11.4
<u>Female</u>									
1964-----	8.4	3.0	11.2	20.7	23.0	20.4	19.0	20.6	7.8
1963-----	8.3	3.0	10.2	21.9	21.6	20.6	19.7	20.9	7.7
1962-----	7.9	3.0	10.5	20.0	20.1	20.6	19.1	19.0	7.4
1961-----	7.6	2.7	9.9	19.2	19.9	19.0	18.8	21.7	7.1
1960-----	7.5	2.7	9.3	18.6	17.9	20.1	22.0	21.7	6.9
1959-----	7.3	2.7	9.1	17.7	18.5	18.8	22.6	22.8	6.7
1958-----	7.1	2.3	8.9	16.0	18.2	19.4	24.5	24.6	6.5
1957-----	7.5	2.8	9.7	16.2	18.6	21.2	24.4	25.5	6.8
1956-----	7.3	2.4	8.8	15.9	18.2	20.8	28.2	25.7	6.6
1955-----	6.9	2.1	8.2	14.8	16.6	21.4	24.3	32.3	6.2
1954-----	6.7	2.1	8.2	13.6	16.5	21.0	26.1	30.4	6.1
1953-----	7.1	2.1	8.7	15.3	17.1	20.8	28.9	32.6	6.4
1952-----	6.8	2.3	8.0	14.7	16.4	19.7	27.2	29.7	6.2
1951-----	6.8	2.3	7.7	14.1	17.8	20.4	26.9	39.4	6.2
1950-----	6.3	2.0	6.9	12.6	16.1	20.6	29.2	35.6	5.8

¹Figures for age not stated included in "All ages" but not distributed among age groups.

Table 8. Death rates for emphysema without mention of bronchitis, by age and sex; and corresponding age-adjusted rates: United States, 1950-64

[Deaths are those attributed to category number 527.1 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Sex and year	All ages ¹	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Age-adjusted rate
Both sexes									
Rate per 100,000 population									
1964-----	8.3	0.1	1.0	5.7	22.6	52.8	67.8	68.5	6.6
1963-----	8.0	0.2	0.9	5.7	22.2	52.1	63.2	70.9	6.4
1962-----	6.7	0.1	1.0	4.5	18.7	42.9	52.6	55.5	5.3
1961-----	5.6	0.1	0.8	3.7	16.5	35.7	43.6	46.8	4.5
1960-----	5.2	0.1	0.8	4.0	15.5	32.6	38.6	38.4	4.2
1959-----	4.4	0.1	0.6	3.3	13.7	27.2	32.1	35.2	3.6
1958-----	3.9	0.1	0.7	2.8	12.2	24.3	28.2	27.6	3.2
1957-----	3.4	0.1	0.6	2.7	11.0	20.7	24.7	22.5	2.8
1956-----	2.7	0.1	0.5	2.2	9.1	15.3	19.8	19.4	2.2
1955-----	2.2	0.1	0.4	2.0	7.3	13.2	15.8	15.9	1.9
1954-----	1.9	0.1	0.4	1.6	6.3	10.9	12.9	15.0	1.6
1953 ² -----	1.6	---	---	---	---	---	---	---	---
1952 ² -----	1.2	---	---	---	---	---	---	---	---
1951 ² -----	1.1	---	---	---	---	---	---	---	---
1950-----	0.8	0.0	0.2	1.0	2.8	4.3	4.7	7.1	0.7
Male									
1964-----	14.6	0.2	1.5	9.6	41.7	105.5	136.4	134.2	12.6
1963-----	14.2	0.2	1.5	9.5	41.2	103.8	125.3	139.7	12.3
1962-----	11.8	0.2	1.4	7.6	34.9	85.3	101.9	104.2	10.1
1961-----	10.0	0.2	1.2	6.3	31.2	69.9	84.5	85.4	8.6
1960-----	9.2	0.1	1.2	7.0	29.1	64.0	74.5	72.6	8.0
1959-----	7.9	0.2	0.9	5.8	26.1	53.0	61.5	67.6	6.8
1958-----	6.9	0.1	1.1	4.9	23.3	47.1	55.1	46.2	6.0
1957-----	6.1	0.1	0.9	4.7	20.9	39.6	47.1	43.3	5.3
1956-----	4.8	0.1	0.8	3.9	17.5	29.6	36.3	33.6	4.2
1955-----	4.0	0.1	0.6	3.6	14.0	25.4	28.7	25.8	3.5
1954-----	3.3	0.1	0.6	2.7	11.9	20.3	24.1	23.4	2.9
1953 ² -----	2.9	---	---	---	---	---	---	---	---
1952 ² -----	2.2	---	---	---	---	---	---	---	---
1951 ² -----	2.0	---	---	---	---	---	---	---	---
1950-----	1.4	0.1	0.4	1.9	5.2	8.1	7.6	11.8	1.3
Female									
1964-----	2.1	0.1	0.6	2.0	5.0	9.4	17.0	28.0	1.6
1963-----	2.0	0.1	0.4	2.1	4.6	9.0	16.6	27.9	1.5
1962-----	1.7	0.1	0.5	1.6	3.6	7.1	15.0	24.6	1.3
1961-----	1.4	0.1	0.3	1.2	2.8	6.5	12.2	22.1	1.0
1960-----	1.2	0.1	0.5	1.1	2.8	5.3	10.7	16.6	0.9
1959-----	1.0	0.1	0.3	0.9	1.9	4.5	9.0	14.0	0.8
1958-----	0.9	0.0	0.3	0.8	1.7	4.2	7.1	15.1	0.7
1957-----	0.8	0.1	0.3	0.7	1.5	3.8	6.9	8.3	0.6
1956-----	0.6	0.1	0.2	0.5	1.2	2.4	6.5	9.6	0.5
1955-----	0.5	0.1	0.3	0.4	0.9	2.3	5.3	8.9	0.4
1954-----	0.5	0.0	0.1	0.4	0.9	2.4	3.8	8.9	0.4
1953 ² -----	0.4	---	---	---	---	---	---	---	---
1952 ² -----	0.3	---	---	---	---	---	---	---	---
1951 ² -----	0.3	---	---	---	---	---	---	---	---
1950-----	0.2	0.0	0.1	0.2	0.5	0.8	2.2	3.8	0.2

¹Figures for age not stated included in "All ages" but not distributed among age groups.

²Death rates by age not available for 1951-53.

Table 9. Death rates for ulcer of stomach, by age and sex; and corresponding age-adjusted rates: United States, 1950-64

[Deaths are those attributed to category number 540 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Sex and year	All ages ¹	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Age-adjusted rate
Both sexes									
Rate per 100,000 population									
1964-----	2.9	0.3	1.1	2.9	6.6	12.9	26.0	44.1	2.3
1963-----	3.4	0.4	1.3	3.6	7.7	15.9	29.4	48.8	2.7
1962-----	3.5	0.3	1.3	3.5	8.1	16.3	30.5	51.5	2.8
1961-----	3.2	0.4	1.2	3.6	7.5	15.1	27.9	43.4	2.6
1960-----	3.2	0.4	1.1	3.4	7.9	15.2	27.8	43.5	2.6
1959-----	3.0	0.2	1.1	3.4	7.7	14.0	27.1	37.5	2.5
1958-----	3.2	0.4	1.3	3.6	7.8	15.0	27.2	39.1	2.6
1957-----	3.0	0.3	1.3	3.6	7.6	14.2	24.5	38.0	2.5
1956-----	3.0	0.4	1.2	3.6	7.6	14.5	25.7	38.1	2.6
1955-----	2.9	0.4	1.3	3.6	7.5	14.2	23.8	31.0	2.5
1954-----	2.9	0.4	1.4	3.9	7.7	14.3	21.2	32.0	2.5
1953-----	3.0	0.4	1.4	3.9	8.3	14.0	23.9	27.8	2.6
1952-----	2.9	0.4	1.5	4.2	8.5	13.8	20.3	24.8	2.6
1951-----	3.0	0.4	1.6	4.3	8.6	14.6	19.9	25.8	2.6
1950-----	3.0	0.5	1.8	4.4	9.1	14.0	20.2	22.9	2.7
Male									
1964-----	4.0	0.3	1.4	4.3	10.6	20.4	37.5	59.7	3.4
1963-----	4.7	0.5	1.7	5.5	12.4	25.2	43.7	64.7	4.2
1962-----	4.9	0.5	1.8	5.3	13.0	26.0	45.2	67.6	4.3
1961-----	4.6	0.6	1.8	5.4	12.1	23.9	42.1	62.2	4.0
1960-----	4.6	0.5	1.6	5.2	12.7	24.3	40.3	62.7	4.0
1959-----	4.4	0.4	1.6	5.4	12.6	22.1	40.1	49.9	3.9
1958-----	4.6	0.6	1.9	5.4	12.9	24.2	40.7	55.5	4.1
1957-----	4.4	0.4	2.0	5.7	12.5	22.4	37.0	50.7	3.9
1956-----	4.5	0.6	1.8	5.8	12.5	23.5	37.6	53.2	4.0
1955-----	4.5	0.5	2.1	6.0	12.5	22.4	36.8	43.7	4.0
1954-----	4.5	0.6	2.2	6.4	12.9	23.3	32.6	43.8	4.0
1953-----	4.7	0.7	2.2	6.4	14.1	22.8	37.8	43.6	4.2
1952-----	4.6	0.5	2.6	7.1	14.2	22.8	30.6	35.2	4.2
1951-----	4.7	0.7	2.8	7.2	14.2	23.5	31.3	38.3	4.3
1950-----	4.8	0.8	2.8	7.4	15.4	22.6	32.5	35.5	4.4
Female									
1964-----	1.8	0.3	0.7	1.6	2.8	6.8	17.5	34.4	1.3
1963-----	2.0	0.2	0.9	1.7	3.4	8.1	18.8	38.9	1.5
1962-----	2.1	0.2	0.8	1.8	3.6	8.2	19.3	41.3	1.5
1961-----	1.8	0.2	0.7	1.8	3.2	7.6	17.0	31.2	1.4
1960-----	1.8	0.2	0.6	1.5	3.4	7.3	18.1	31.2	1.3
1959-----	1.7	0.1	0.6	1.6	3.1	7.0	17.0	29.5	1.3
1958-----	1.7	0.3	0.8	1.8	3.1	6.8	16.6	28.1	1.4
1957-----	1.6	0.2	0.6	1.6	3.0	6.9	14.7	29.4	1.3
1956-----	1.5	0.2	0.6	1.4	2.9	6.3	16.1	27.7	1.2
1955-----	1.4	0.3	0.5	1.3	2.7	6.9	13.2	22.0	1.1
1954-----	1.3	0.2	0.7	1.3	2.6	6.2	11.9	23.5	1.1
1953-----	1.3	0.2	0.6	1.4	2.7	5.9	12.6	16.4	1.1
1952-----	1.2	0.2	0.5	1.3	2.8	5.5	11.7	17.3	1.0
1951-----	1.2	0.2	0.6	1.3	2.9	6.3	10.3	16.9	1.1
1950-----	1.2	0.2	0.8	1.5	2.8	5.9	9.8	14.1	1.1

¹Figures for age not stated included in "All ages" but not distributed among age groups.

Table 10. Death rates for malignant neoplasm of esophagus, by age and sex; and corresponding age-adjusted rates: United States, 1950-64

[Deaths are those attributed to category number 150 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Sex and year	All ages ¹	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Age-adjusted rate
<u>Both sexes</u>		Rate per 100,000 population							
1964-----	2.8	0.0	0.8	3.6	9.0	14.1	18.4	21.4	2.3
1963-----	2.7	0.1	0.7	3.6	8.5	14.6	17.1	23.3	2.3
1962-----	2.7	0.1	0.6	3.7	8.8	13.9	18.0	24.1	2.3
1961-----	2.7	0.0	0.6	3.4	8.5	13.5	18.7	25.7	2.2
1960-----	2.7	0.0	0.6	3.7	8.4	14.4	19.8	22.4	2.3
1959-----	2.7	0.1	0.6	3.4	8.9	14.1	19.4	21.9	2.3
1958-----	2.7	0.0	0.5	3.5	8.5	13.7	19.4	23.6	2.2
1957-----	2.7	0.0	0.6	3.2	8.2	14.4	20.0	28.2	2.2
1956-----	2.6	0.0	0.7	3.1	8.1	13.9	21.1	21.6	2.2
1955-----	2.7	0.0	0.4	3.2	8.6	14.3	20.4	24.6	2.2
1954-----	2.6	0.0	0.5	3.0	7.8	15.0	20.4	22.9	2.2
1953-----	2.6	0.1	0.5	3.0	8.0	14.4	21.8	24.5	2.2
1952-----	2.6	0.1	0.5	3.1	7.9	14.7	22.4	26.8	2.3
1951-----	2.5	0.0	0.5	2.8	8.2	14.5	20.8	22.7	2.2
1950-----	2.6	0.1	0.5	2.9	8.3	15.6	21.2	22.7	2.3
<u>Male</u>									
1964-----	4.4	0.0	1.2	5.5	15.5	25.4	29.9	34.7	3.9
1963-----	4.3	0.1	1.0	5.6	14.4	25.9	27.7	39.0	3.8
1962-----	4.3	0.1	0.9	5.7	15.0	24.6	31.0	38.9	3.9
1961-----	4.2	0.0	0.9	5.6	14.3	23.9	31.3	42.0	3.7
1960-----	4.3	0.1	0.8	6.0	14.1	25.0	32.3	34.2	3.8
1959-----	4.3	0.1	0.9	5.5	15.1	24.0	30.8	32.4	3.8
1958-----	4.3	0.0	0.7	5.7	14.7	23.8	32.8	37.5	3.8
1957-----	4.2	0.1	0.9	5.2	13.8	24.5	32.5	44.8	3.7
1956-----	4.2	0.0	0.9	5.2	13.8	23.5	33.3	35.8	3.7
1955-----	4.2	0.1	0.7	5.2	14.7	24.2	32.6	34.9	3.7
1954-----	4.1	0.0	0.7	4.9	13.4	24.8	32.8	35.5	3.6
1953-----	4.2	0.1	0.7	4.9	13.8	24.2	35.9	36.7	3.7
1952-----	4.1	0.1	0.6	4.9	13.3	24.4	37.8	36.6	3.7
1951-----	4.0	0.0	0.7	4.7	13.6	23.7	32.6	33.6	3.5
1950-----	4.1	0.1	0.7	4.6	13.8	25.7	34.2	32.5	3.7
<u>Female</u>									
1964-----	1.2	0.0	0.5	1.8	3.0	4.9	9.8	13.2	1.0
1963-----	1.2	0.0	0.5	1.7	3.1	5.2	9.2	13.5	1.0
1962-----	1.2	0.1	0.3	1.8	3.1	4.8	8.2	14.6	0.9
1961-----	1.1	0.0	0.4	1.3	3.1	4.7	9.1	15.3	0.9
1960-----	1.2	0.0	0.3	1.4	3.0	5.2	10.1	14.8	0.9
1959-----	1.2	0.0	0.4	1.4	3.0	5.5	10.4	15.1	0.9
1958-----	1.1	0.0	0.4	1.5	2.6	4.9	8.9	14.3	0.9
1957-----	1.2	0.0	0.4	1.2	2.9	5.4	10.0	16.8	0.9
1956-----	1.1	0.0	0.5	1.1	2.6	5.3	11.4	11.7	0.9
1955-----	1.1	0.0	0.2	1.2	2.7	5.4	10.6	17.4	0.9
1954-----	1.1	0.1	0.3	1.1	2.4	6.0	10.2	13.9	0.9
1953-----	1.1	0.0	0.4	1.2	2.4	5.5	10.2	15.7	0.9
1952-----	1.1	0.1	0.3	1.3	2.7	5.7	9.8	19.7	0.9
1951-----	1.1	0.0	0.3	0.9	2.9	6.0	10.8	15.0	0.9
1950-----	1.1	0.1	0.3	1.2	2.9	6.1	10.2	15.9	0.9

¹Figures for age not stated included in "All ages" but not distributed among age groups.

Table 11. Death rates for malignant neoplasm of buccal cavity and pharynx, excluding malignant neoplasm of lip, by age and sex; and corresponding age-adjusted rates: United States, 1950-64

[Deaths are those attributed to category numbers 141-148 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Sex and year	All ages ¹	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Age-adjusted rate
<u>Both sexes</u>									
Rate per 100,000 population									
1964-----	3.3	0.2	1.1	5.1	11.0	14.6	19.7	34.0	2.8
1963-----	3.4	0.2	1.1	5.3	10.9	14.7	19.6	33.4	2.8
1962-----	3.4	0.2	1.1	5.0	10.3	15.2	21.2	36.6	2.8
1961-----	3.3	0.2	1.0	5.1	10.2	15.2	21.9	33.9	2.8
1960-----	3.3	0.2	1.1	5.3	9.6	15.1	22.9	31.2	2.8
1959-----	3.3	0.2	1.0	5.0	9.7	14.9	23.4	31.2	2.8
1958-----	3.2	0.2	1.0	4.5	9.9	14.3	23.2	34.7	2.7
1957-----	3.2	0.2	1.0	4.5	9.2	15.5	24.7	35.3	2.8
1956-----	3.1	0.2	0.9	4.2	9.4	14.6	24.5	34.1	2.7
1955-----	3.1	0.2	1.1	4.1	9.0	15.5	24.3	33.2	2.7
1954-----	3.1	0.2	1.0	4.0	9.1	15.6	24.1	34.2	2.7
1953-----	3.0	0.2	0.9	3.7	8.8	14.3	25.0	33.9	2.5
1952-----	3.0	0.2	0.9	3.8	8.8	15.2	24.0	32.4	2.6
1951-----	2.9	0.1	1.0	3.7	8.8	14.9	25.1	31.3	2.6
1950-----	3.1	0.2	1.0	3.8	9.2	16.4	28.2	33.8	2.8
<u>Male</u>									
1964-----	5.1	0.3	1.5	7.8	17.8	25.9	34.2	52.2	4.6
1963-----	5.2	0.2	1.5	8.3	18.2	25.1	32.8	53.5	4.6
1962-----	5.2	0.2	1.5	8.1	17.0	26.0	34.7	59.2	4.6
1961-----	5.1	0.4	1.4	7.7	17.1	25.7	36.2	53.5	4.6
1960-----	5.1	0.3	1.4	7.8	15.9	25.5	37.3	53.0	4.5
1959-----	5.2	0.3	1.4	8.0	16.3	25.7	37.8	53.2	4.6
1958-----	4.9	0.3	1.4	6.8	16.5	24.3	37.4	56.7	4.4
1957-----	5.1	0.3	1.4	7.1	15.5	27.0	40.2	57.3	4.5
1956-----	4.9	0.2	1.3	6.6	15.6	24.8	41.0	59.0	4.4
1955-----	4.9	0.3	1.5	6.3	15.2	26.1	40.8	55.0	4.4
1954-----	4.9	0.2	1.4	6.3	15.2	26.1	40.1	54.9	4.3
1953-----	4.7	0.2	1.3	5.8	14.8	24.3	40.9	54.7	4.3
1952-----	4.6	0.3	1.2	5.9	15.0	24.4	38.9	49.1	4.1
1951-----	4.6	0.2	1.4	5.6	14.6	24.6	41.8	48.0	4.2
1950-----	4.9	0.2	1.4	5.9	15.1	27.2	46.5	56.2	4.4
<u>Female</u>									
1964-----	1.6	0.2	0.6	2.5	4.7	5.4	9.0	22.9	1.3
1963-----	1.6	0.1	0.8	2.5	4.0	6.1	9.7	20.9	1.3
1962-----	1.6	0.2	0.8	2.1	4.2	6.1	10.9	22.3	1.3
1961-----	1.6	0.1	0.7	2.5	3.6	6.1	11.0	21.4	1.3
1960-----	1.6	0.2	0.7	2.8	3.8	6.1	11.6	17.3	1.3
1959-----	1.5	0.1	0.7	2.1	3.5	5.5	12.1	16.8	1.2
1958-----	1.5	0.2	0.7	2.1	3.6	5.5	12.1	20.0	1.2
1957-----	1.4	0.2	0.5	2.0	3.3	5.3	12.3	20.2	1.1
1956-----	1.4	0.2	0.6	1.8	3.4	5.5	11.3	16.8	1.1
1955-----	1.4	0.2	0.7	1.9	3.1	5.9	10.9	17.8	1.2
1954-----	1.4	0.1	0.7	1.9	3.1	6.1	11.1	19.3	1.2
1953-----	1.3	0.1	0.5	1.7	3.1	5.2	11.9	18.9	1.1
1952-----	1.3	0.2	0.6	1.6	2.7	6.7	11.6	20.5	1.1
1951-----	1.3	0.1	0.6	1.8	2.9	6.0	11.1	19.4	1.1
1950-----	1.3	0.2	0.5	1.8	3.2	6.2	12.7	18.2	1.2

¹Figures for age not stated included in "All ages" but not distributed among age groups.

Table 12. Death rates among men for malignant neoplasm of bladder and other urinary organs, by age; and corresponding age-adjusted rates: United States, 1950-64

[Deaths are those attributed to category number 181 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1950-57 and to the Seventh Revision for 1958-64]

Year	All ages ¹	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Age-adjusted rate
Rate per 100,000 population									
1964-----	5.8	0.1	0.4	3.1	12.8	38.1	72.3	110.1	4.9
1963-----	6.1	0.1	0.5	3.5	14.0	40.3	72.7	114.5	5.2
1962-----	6.1	0.1	0.5	3.5	13.6	40.7	70.7	114.2	5.1
1961-----	6.0	0.1	0.5	3.8	13.9	38.2	70.7	106.1	5.0
1960-----	6.2	0.0	0.6	3.6	14.3	38.7	76.7	104.1	5.2
1959-----	6.1	0.1	0.6	3.6	14.5	37.5	75.1	108.2	5.1
1958-----	5.9	0.1	0.6	3.4	13.7	37.5	74.4	105.5	5.0
1957-----	6.1	0.1	0.5	3.9	15.1	37.5	73.7	107.1	5.1
1956-----	6.0	0.1	0.6	3.7	15.6	36.5	74.7	106.7	5.2
1955-----	6.0	0.0	0.6	3.8	14.4	38.4	74.3	95.3	5.1
1954-----	6.1	0.1	0.6	4.1	15.5	37.3	73.8	103.6	5.2
1953-----	6.0	0.0	0.7	4.2	16.1	37.1	70.9	100.3	5.2
1952-----	6.0	0.1	0.7	4.2	15.9	37.5	72.0	96.7	5.2
1951-----	5.8	0.1	0.6	4.7	15.8	34.5	70.3	107.8	5.1
1950-----	5.8	0.1	0.7	4.2	16.6	37.3	68.5	101.8	5.2

¹Figures for age not stated included in "All ages" but not distributed among age groups.

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