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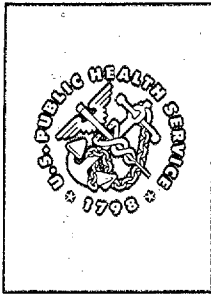
Mortality From Selected

Causes by Marital Status

United States - Part A

An analysis of mortality differentials by marital status
in two parts: Part A--For white women and men
                 Part B--For women and men of other races.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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DIVISION OF VITAL STATISTICS

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THIS REPORT presents mortality differentials for specified causes by marital status for 1959-61 and compares these differentials with corresponding ones for 1949-51 and, in some cases, for 1940. It is divided into four major sections, one for each of the four color-sex groups of the population. For each of these four groups the 1959-61 death rates were lower for the married group than for the single, widowed, or divorced, at every age in the span 20 years and over. Both divorced white men and women have higher death rates at almost every age than widowed white men and women. The exceptional age groups are 15-19 years and 20-24 years. At these ages both widowed white men and women have the highest death rates.

In contrast at almost every age the death rates for members of other races for both widowed men and women were higher than the corresponding rates for divorced men and women. Also, at almost every age the death rate for single women of other races was higher than the corresponding rate for divorced women.

For a number of causes of death the mortality level for single persons differed markedly from that for those who were ever-married (that is, married, widowed, or divorced). Some of the causes for which single persons have higher age-standardized mortality are tuberculosis and accidents, excluding motor vehicle accidents, both of which have higher mortality for single persons in each of the four color-sex groups and malignant neoplasm of breast, for which the death rate is higher for single white women after age 35 years. Single persons had lower mortality rates than ever-married persons for: malignant neoplasm of male genital organs, with lower mortality for both single white men and all other single men; diabetes mellitus, cirrhosis of liver, and motor vehicle accidents, all three of which have lower mortality for single white women; and homicide, with lower mortality for single white women, single white men, and single women of races other than white.

For races other than white the unfavorable mortality for widows compared with mortality for single, married, or divorced women results from higher mortality for a number of causes, including malignant neoplasm of digestive organs and peritoneum, vascular lesions affecting the central nervous system, arteriosclerotic heart disease, including coronary disease, accidents, excluding motor vehicle accidents, and suicide.

MORTALITY FROM SELECTED CAUSES BY MARITAL STATUS

A. Joan Klebba, M.A., *Division of Vital Statistics*

INTRODUCTION

Many investigators have recognized the importance of comparing the morbidity and mortality experience of the different marital classes in a population to obtain information on the role of environment, fertility, and other factors in specific diseases, accidental deaths, homicides, and suicides. Other uses made of mortality statistics by marital status are to study this cause of family dissolution, and to estimate the survival rates for marital groups for government and nongovernment insurance uses. This report presents an analysis of a set of data on mortality for selected causes by marital status, age, sex, and color for the period 1959-61.

The National Center for Health Statistics and its predecessor offices have published information on mortality by marital status periodically since 1890. Prior to the establishment in 1902 of the permanent office of the U.S. Bureau of the Census, the Census Office for the 1890 census and the 1900 census tabulated and published deaths in the death-registration area by sex, age, and marital condition, as enumerated in the decennial census or reported in the few States and cities then in the death-registration area. Not until data year 1900 was the annual collection of mortality statistics, for that part of the United States known as the registration area, begun. The area was expanded from 10 States and the District of Columbia in that year to include the continental United States by 1933. Alaska was admitted as a registration State in 1959 and Hawaii in 1960. Although the marital status item has been on the certificate of death in the registration States since before 1900, tabulations of deaths by marital status are not shown in the annual reports on vital statistics for the Nation except for the 6 years 1949, 1950, 1951, 1959, 1960, and 1961. Instead, marital status was the subject of or was included in a number of special reports. These reports are summarized in the Appendix under the section entitled Earlier Data on Mortality by Marital Status.

METHODOLOGY IN THE PRESENT REPORT

Because of the wide disparity in the mortality patterns, rates broader than sex-color-specific rates were found inadequate in the detailed analysis of mortality by marital status. No analysis is presented, for example, of the mortality experience by marital status of the white and other populations considered as a unit. This was avoided because the interaction of the dissimilar mortality patterns of the two color groups tends to obscure the mortality differentials by marital status.

The body of this report is divided into four main sections—one for each of the four color-sex groups of the population. The category "white," includes persons reported to be Mexican or Puerto Rican. The categories "races other than white" and "all other" or "other" consist of persons reported as Negro, American Indian, Chinese, Japanese; other numerically small ethnic or racial groups; and persons of mixed white and other ethnic or racial groups. Under each of the four sections, mortality differentials by marital status for all causes combined are presented first; these are followed by mortality differentials for selected causes. Because of space limitations, analysis by all causes of death has not been presented in this report. Instead, analysis is limited for the most part to some major components of the following four leading causes of death in 1960:

Rank order	Cause of death	Rate per 100,000	Percent of total deaths
1	Diseases of heart. 400-402, 410-443	369.0	38.7
2	Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues . 140-205	149.2	15.6
3	Vascular lesions affecting central nervous system 330-334	108.0	11.3
4	Accidents E800-E962	52.3	5.5

The numbers after causes of death are category numbers of the Seventh Revision of the International Classification of Diseases, issued in 1955. The major components included are: *Arteriosclerotic heart disease, including coronary disease* (420); *Malignant neoplasm of digestive organ and peritoneum, not specified as secondary* (150-156A, 157-159); *Malignant neoplasm of respiratory system, not specified as secondary* (160-164); *Malignant neoplasm of breast* (170); *Malignant neoplasm of genital organs* (171-179); *Leukemia and aleukemia* (204); *Motor vehicle accidents*

(E810-E835); and *All other accidents* (E800-E802, E840-E962).

Because of their growing public health importance the following causes of death are also included in the analysis: *Cirrhosis of liver* (581); *Diabetes mellitus* (260); *Suicide* (E970-E979); and *Homicide* (E964, E980-E985). Finally *Tuberculosis, all forms* (001-019), was included for a historical review of its rapid decline as a cause of mortality over the last 30 years.

For the four color-sex groups, age and cause-specific mortality rates were computed for each of the four marital classes—single, married, widowed, and divorced. In addition, age-specific death rates were computed for "ever-married" persons in each of the four color-sex groups, i.e., for married, widowed, and divorced persons in a given color-sex group added together. This was done as suggested by Zalokar[3] to eliminate the effects of subsequent selective factors favorable to married persons. This simpler division, as will be illustrated later, helps to avoid some of the complications of the usual division of the ever-married population into married, widowed, and divorced groups that tend to obscure some of the relations between marital status and mortality.

For each of the four color-sex groups, death rates for all ages 15 years and over are also shown in this report for each of the marital classes. It should be stressed, however, that these rates for all ages combined are severely limited in interpretation. They fail to take into account the widely differing age distributions of the single, married, widowed, and divorced groups. Instead of these total death rates the following measures are used in the analysis of mortality differentials by marital status: age-adjusted death rates, standardized mortality ratios (SMR's), and excess risk of death by age. Each of these measures as used throughout this entire report are described below.

Age-adjusted death rates.—Age-adjusted death rates are used only to measure differences between mortality levels for 1959-61 compared with those for 1949-51 or, occasionally, with those for 1940. These age-adjusted rates are computed by the direct method. For each color-sex-marital status group the standard population used is the total population 15 years and over in that group according to the 1960 decennial census, classified in the same age groups as those for which the age-specific rates are shown in table 3. These age-adjusted death rates may be interpreted as the death rates that would have been obtained for the earlier period (i.e. for 1949-51 or for

1940) if the age distribution of the color-sex-marital group under consideration had been the same for the earlier period as it was for 1959-61. Thus the death rate for 1959-61 for any specific color-sex-marital status group constitutes for the present analysis both the total death rate and the age-adjusted death rate for 1959-61.

Standardized-mortality ratios.—To summarize relative mortality by marital class, for a single time period, i.e., for 1959-61 or for 1949-51, the indirect method of applying a standard schedule of age-specific rates, classified in the same age groups as those shown in table 3, to the population in each marital group was used to calculate an "expected" number of deaths. The observed deaths were then divided by the corresponding expected numbers and the results expressed in the form of a standardized mortality ratio (SMR). Usually the standard schedule of rates used were those for the married class in the color-sex group being considered, but when examining the mortality experience by cause for single persons, the standard schedule of rates preferred were those for ever-married persons.

Excesses and deficits in risk of death by age.—To avoid equating relative mortality with risk, especially when examining mortality trends with advance in age for a given time period, the measure of increased risk associated with a deleterious effect as proposed by Sheps was used.[4] According to Sheps this increased risk may be estimated as follows:

> . . . if the rates for married persons depict the best results under given circumstances, then deleterious effects could be felt only by those

who would survive in the absence of harmful factors. The size of this population at risk may be estimated from the survivors in the married group. For example, out of 100,000 married white males ages 70-75, there were 100,000 - 5,457 = 94,543 survivors per annum. Since there were only 100,000 - 7,805 = 92,195 per 100,000 widowed survivors of the same race and age, the widowers suffered an excess risk of

$$\frac{94,543 - 92,195}{94,543} = 2,484 \text{ per } 100,000$$

potential survivors.

In the present report, deficits as well as excesses in risk of death occurred relative to the same standard population. Thus if in the above example there had been 100,000 - 5,302 = 94,698 widowed survivors of the same color and age of the married group, the widowers could be said to have a deficit in risk of

$$\frac{94,543 - 94,698}{94,543} = -164 \text{ per } 100,000$$

All such deficits are identified in the tables of the report by a minus sign.

PART I. DIFFERENTIAL MORTALITY BY MARITAL STATUS
FOR WHITE WOMEN

MORTALITY FOR ALL CAUSES

To recall the wide variation in the age distributions by marital status, figures for the single and married white female populations at ages 15 years and over, as reported in the 1960 census,[5] are shown below:

Single

Age in years	Number	Percent
15 and over	9,638,197	100.00
15-19	4,837,656	50.19
20-24	1,318,832	13.68
25-29	471,784	4.89
30-34	351,817	3.65
35-39	335,386	3.47
40-44	319,108	3.31
45-49	329,290	3.41
50-54	346,066	3.59
55-59	333,418	3.45
60-64	270,590	2.80
65-69	248,401	2.57
70-74	204,035	2.11
75-79	140,791	1.46
80-84	81,716	0.84
85 and over	49,307	0.51

Married

Age in years	Number	Percent
15 and over	38,646,531	100.00
15-19	901,840	2.33
20-24	3,388,663	8.76
25-29	4,208,670	10.89
30-34	4,807,535	12.43
35-39	5,065,156	13.10
40-44	4,584,561	11.86
45-49	4,148,375	10.73
50-54	3,471,512	8.98
55-59	2,824,470	7.30
60-64	2,128,509	5.50
65-69	1,586,682	4.10
70-74	926,378	2.39
75-79	429,060	1.11
80-84	135,176	0.34
85 and over	39,944	0.10

Changes from 1940 in mortality for each marital class.—The total death rate for single white women 15 years of age and over was higher for 1949-51 than for 1940 and higher for 1959-61 than for 1949-51; but age-adjusted rates show a decline in mortality between 1940 and 1949-51 and between 1949-51 and 1959-61:

Period	Total death rate	Age-adjusted death rate
	Rate per 100,000 population	
1959-61	591.4	591.4
1949-51	550.0	651.1
1940	487.7	827.8

This favorable change for single white women resulted from lower death rates for every age group for 1949-51 compared with those for 1940 and from lower death rates for every age group for 1959-61 compared with those for 1949-51:

Age in years	1959-61	1949-51	1940
	Rate per 100,000 population		
15 and over	591.4	550.0	487.7
15-19	48.0	57.9	100.7
20-24	77.4	91.0	151.1
25-34	153.9	175.3	239.4
35-44	312.1	320.0	399.7
45-54	571.8	623.4	793.4
55-59	839.0	1,087.5	1,398.7
60-64	1,379.3	1,588.2	2,091.4
65-69	2,072.5	2,434.6	3,201.3
70-74	3,429.9	4,187.3	5,208.4
75 and over	10,247.8	10,499.5	12,559.5

For almost every age group the rate of decrease in the death rate was markedly less between 1949-51 and 1959-61 than the corresponding rate of decrease between 1940 and 1949-51.

The total death rate for married white women was lower for 1949-51 than for 1940 and lower for 1959-61 than for 1949-51. With the effect of the changing age composition held constant, the level of mortality for married white women was about 26 percent lower for

1949-51 than for 1940 but only about 17 percent lower for 1959-61 than for 1949-51:

Period	Total death rate	Age-adjusted death rate
	Rate per 100,000 population	
1959-61	533.9	533.9
1949-51	560.6	646.5
1940	722.8	877.2

For every age group in the span 15 years and over the death rate for married white women was lower for 1959-61 than for 1949-51 and lower for the latter period than for 1940:

Age in years	1959-61	1949-51	1940
	Rate per 100,000 population		
15 and over	533.9	560.6	722.8
15-19	53.5	83.5	222.3
20-24	50.3	70.7	167.5
25-34	74.3	99.9	204.1
35-44	167.0	215.3	347.5
45-54	412.1	511.0	701.7
55-59	744.0	961.1	1,264.7
60-64	1,228.7	1,506.0	1,922.3
65-69	1,967.0	2,328.6	3,038.8
70-74	3,252.9	3,878.9	4,911.8
75 and over	6,891.2	7,643.5	9,263.1

The total death rate for white widows indicates an increase in mortality for this marital class for 1959-61 compared with corresponding mortality for 1949-51:

Period	Total death rate	Age-adjusted death rate
	Rate per 100,000 population	
1959-61	4,487.6	4,487.6
1949-51	4,165.0	4,659.8
1940	4,488.9	5,760.3

Age-adjusted death rates, however, were lower for 1949-51 than for 1940 and lower for 1959-61 than for 1949-51. The greater total death rate for white widows for 1959-61 compared with that for 1949-51 is attributable to the increase in the proportion of white widows at older ages, when the risk of death is greater. The percent of white widows at ages 60 years and over, for example, increased for the conterminous United States from 68.5 for 1950 to 74.1 for 1960.[5] For every age group in the span 15-74 years the death rate for these white women whose husbands had died was lower for 1959-61 than for 1949-51 and lower for the latter period than for 1940:

Age in years	1959-61	1949-51	1940
	Rate per 100,000 population		
15 and over	4,487.6	4,165.0	4,488.9
15-19	283.2	418.4	465.0
20-24	213.4	262.9	414.8
25-34	188.6	265.9	415.0
35-44	318.7	395.3	493.1
45-54	625.4	728.4	926.4
55-59	959.6	1,186.7	1,562.9
60-64	1,538.8	1,809.5	2,337.3
65-69	2,405.7	2,696.7	3,534.0
70-74	3,857.5	4,406.4	5,680.9
75 and over	10,920.0	10,781.4	12,980.6

For divorced white women, as for widowed white women, the total death rate shows an increase in mortality for 1959-61 compared with the corresponding mortality for 1949-51:

Period	Total death rate	Age-adjusted death rate
	Rate per 100,000 population	
1959-61	971.9	971.9
1949-51	851.9	1,230.4
1940	1,068.9	1,804.0

But age-adjusted rates show lower mortality for 1959-61 than for 1949-51 and lower mortality for the latter

period than for 1940. As observed for white widows, the higher total death rate for divorced white women for 1959-61, as compared with that for 1949-51, is attributable in part to the increase in the proportion of divorced white women at older ages. For the conterminous United States, the percent of divorced white women at ages 60 years and over increased from 10.6 for 1950 to 17.5 for 1960.[5] For every age group the death rate for divorced white women was lower for 1959-61 than for 1949-51 and lower for the latter period than for 1940:

Age in years	1959-61	1949-51	1940
	Rate per 100,000 population		
15 and over	971.9	851.9	1,068.9
15-19	117.0	140.8	281.9
20-24	137.2	143.2	332.9
25-34	196.0	222.6	350.6
35-44	355.5	390.7	554.0
45-54	652.0	718.3	1,047.9
55-59	1,053.8	1,284.7	1,767.2
60-64	1,627.6	1,997.7	2,850.3
65-69	2,450.8	3,284.1	4,666.4
70-74	3,970.2	5,773.3	8,693.0
75 and over	9,574.4	13,157.2	19,781.6

Standardized mortality ratios.—If the 1959-61 death rates for married white women at ages 15 years and over had occurred in the white female populations of each of the other three marital classes (single, widowed, and divorced), then the quotient of the observed number of deaths divided by the expected number, expressed·as a percentage, would give the following standardized mortality ratios:

Marital status	Observed deaths	Expected deaths	SMR's
Single	171,259	131,488	130
Married	620,283	620,283	100
Widowed	933,157	642,100	145
Divorced	46,840	32,491	144

For white women the lowest mortality is found for the married population, the next most favorable for the single group, and the highest for widowed and divorced persons.

A comparison of these 1959-61 SMR's with the corresponding SMR's for 1949-51 and for 1940 indicates that the rank of widowed and divorced women by mortality levels for these earlier years was the reverse of that for 1959-61:

Marital status	1959-61 SMR's	1949-51 SMR's	1940 SMR's
Single	130	120	101
Married	100	100	100
Widowed	145	131	130
Divorced	144	152	161

This may reflect in part the higher median age of the widowed female population in 1959-61 compared with that for the earlier periods.

The following SMR's were obtained by dividing white women into only two groups, i.e., single and ever-married. This was done to avoid the complications of the customary division of the ever-married group into married, widowed, and divorced that tends to obscure some relationships to disease.[3]

Marital status	1959-61 SMR's	1949-51 SMR's	1940 SMR's
Single	105	104	92
Ever-married ...	100	100	100

Inasmuch as a person who marries runs the risk of dissolution of marriage by death or divorce, a comparison of the death rate for single white women with that for ever-married white women is informative about the role played by single status in mortality. The resulting SMR's show the single status as being more favorable than did the above SMR's obtained by a comparison of the death rate for single white women with that for white women who had married one or more times and were still married at the time of death.

Excess risk of death by age, for the single, widowed, and divorced classes.—Excess deaths per 100,000 in unmarried groups of white women, computed as described above in Methodology in the Present Report

are shown below (using married white women as the favorable status group):

Period and age in years	Single	Widowed	Divorced
1959-61			
20-24	27.1	163.2	86.9
25-34	79.7	114.4	121.8
35-44	145.3	152.0	188.8
45-54	160.4	214.2	240.9
55-59	95.7	217.2	312.1
60-64	152.5	314.0	403.9
65-69	107.6	447.5	493.5
70-74	183.0	624.9	741.4
1949-51			
20-24	20.3	192.3	72.6
25-34	75.5	166.2	122.8
35-44	104.9	180.4	175.8
45-54	113.0	218.5	208.4
55-59	127.6	227.8	326.7
60-64	83.5	308.1	499.2
65-69	108.5	376.9	978.3
70-74	320.8	548.8	1,970.8
1940			
20-24	-16.4	247.7	165.7
25-34	35.4	211.3	146.8
35-44	52.4	146.1	207.2
45-54	92.3	226.3	348.6
55-59	135.7	302.0	508.9
60-64	172.0	422.7	945.8
65-69	167.6	510.7	1,678.6
70-74	311.9	808.8	3,976.5

For single white women there was a fairly consistent increase in the excess risks with advance in age for each of the three periods, 1959-61, 1949-51, and 1940 (except for the anomalous drop at ages 55-59 years for 1959-61, which may be attributable in part to overreporting of single white women at these ages in the 1960 census). A striking feature at ages under 55 years in the comparison of these risks for 1949-51 with those for 1959-61 is that for every age group except for 55-59 years the excess risks for 1959-61 are higher than for the earlier period. When the indexes of excess risk for the single group are calculated, using as the population at risk the survivors in the white female ever-married group (i.e., married, widowed, and divorced), the results show increases in the risks with advance in age only up to about age 45 years:

Age in years	1959-61	1949-51	1940
20-24	24.3	17.6	-21.2
25-34	75.2	70.0	28.1
35-44	133.9	92.1	38.2
45-54	131.3	81.4	54.3
55-59	42.6	70.2	55.3
60-64	47.7	-24.5	16.3
65-69	-86.1	-72.5	-88.5
70-74	-174.1	-19.6	-208.3

After age 65 years the single white women in this comparison have the more favorable status. As might be expected, even at the younger ages, when measured using as the population at risk the survivors in the ever-married group, the excess risks are lower than when the population at risk is limited to the survivors in the married group. As noted earlier, inasmuch as persons who marry face the risk of dissolution of their marriage by death or divorce, the ever-married group may constitute the better base on which to measure excess risk of death for single persons.

For white widows ages 25 years and over the excess risk of death increased with advancing age for 1959-61 and for 1949-51. For both of these periods very high excess risks of death were found for young white widows at ages 20-24 years:

Age in years	1959-61	1949-51	1940
20-24	163.2	192.3	247.7
25-34	114.4	166.2	211.3
35-44	152.0	180.4	146.1
45-54	214.2	218.5	226.3
55-59	217.2	227.8	302.0
60-64	314.0	308.1	422.7
65-69	447.5	376.9	510.7
70-74	624.9	548.8	808.8

This excess risk for white widows at ages 20-24 years for 1959-61 reflects unusually high rates for violent deaths (motor vehicle accidents, other accidents, suicide, and homicide), which accounted for about 60 percent of the death rate at these ages.

For divorced white women the excess risk of death increased steadily with advancing age for both 1959-61

and 1949-51. After age 55 years this excess risk was lower for 1959-61 than for 1949-51. The excess risk of death for divorced white women in 1940 was markedly higher for every age group than the corresponding excess risks for 1949-51 or 1959-61:

Age in years	1959-61	1949-51	1940
20-24	86.9	72.6	165.7
25-34	121.8	122.8	146.8
35-44	188.8	175.8	207.2
45-54	240.9	208.4	348.6
55-59	312.1	326.7	508.9
60-64	403.9	499.2	945.8
65-69	493.5	978.3	1,678.6
70-74	741.4	1,970.8	3,976.5

MORTALITY FOR SPECIFIED CAUSES

Tuberculosis, all forms.—Age-adjusted death rates for Tuberculosis, all forms, were lower for 1959-61 than for 1949-51 for each of the marital groups (table 1). Age-specific death rates for this cause suggest that for each of the marital groups mortality from this disease increases with advancing age (table 3). However, when the mortality experience from tuberculosis for any separate cohort of white women born during the same 5-year period is examined, the seeming upturn in the rate with advance in age is found to be an artifact resulting from the mixture of cohorts with differing mortality experience (table 4). Thus the cohort of white women born in 1890-94 experienced the following death rates from Tuberculosis, all forms, during the 50-year period 1914-64:

Year of death	Age at death	Death rate per 100,000
1914	20-24	121.4
1919	25-29	138.5
1924	30-34	83.1
1929	35-39	64.0
1934	40-44	43.3
1939	45-49	33.0
1944	50-54	24.4
1949	55-59	15.5
1954	60-64	7.2
1959	65-69	6.7
1964	70-74	7.3

Throughout the century for every cohort of white women the death rate for tuberculosis reached a high point well before the middle years of life and then turned downward. Successively younger cohorts of white women are at lower risk of dying from tuberculosis at almost every age than their predecessors. Because of advances in public health, with emphasis on control of the disease, and improved therapeutic procedures, tuberculosis dropped from being one of the three leading causes of death in 1900 to seventh place by 1947. This disease has not been among the 10 leading causes of death since 1952.

Age-specific death rates for tuberculosis are shown below for single white women for 1959-61 and 1949-51 and for all single women for 1940. Separate death rates for tuberculosis for single white women are not available for 1940, but since white women constituted about 90 percent of all single women in that year, these rates serve as estimates of those for single white women in 1940.

Age in years	1959-61	1949-51	1940
	Rate per 100,000 population		
15 and over	3.2	7.2	---
15-19	0.2	2.9	---
20-24	0.8	13.1	63.6
25-34	3.6	29.5	83.8
35-44	6.9	28.1	66.3
45-54	8.2	22.1	51.0
55-59	6.7	21.2	54.0
60-64	8.5	27.2	56.4
65-69	10.5	32.9	74.3
70-74	12.6	40.3	90.7
75 and over	24.3	52.5	89.1

One group of single white women known to have shared in this great decline in tuberculosis mortality are nuns in Catholic Sisterhoods engaged in educational and nursing work in the United States (numbering about 180,000 in 1960).[6] Fecher[7,8] reported excessively high mortality from tuberculosis among young nuns in a study of 25,000 living and deceased members of 34 communities for the period 1900-1924. Then in a second mortality study, for which the group of nuns was increased to 90,000 and the period was 1900-1954, he

found that beginning about 1940 tuberculosis had been brought under control and that by 1950 a nun of age 20 had a life expectancy that was 3 years longer than that for the total white female population.

As recently as 1949-51 in the white population the death of the wife from tuberculosis was the cause of the dissolution of 11,152 marriages; about 55 percent of these wives were under 45 years of age at the time of death. The corresponding figure for 1959-61 was 2,637 deaths of wives; only about 32 percent were under 45 years of age. The greatest relative reduction in mortality from tuberculosis among married white women between 1949-51 and 1959-61 was for the age group 25-34 years—from 9.6 deaths per 100,000 for 1949-51 to 0.8 deaths from 1959-61.

The death rate for tuberculosis among white widows also declined substantially between 1949-51 and 1959-61 (table 1). Less than 3 percent of the 2,110 white widows who died from this cause during 1959-61 were under 45 years of age at the time of death. At ages 20-24 years, however, the death rate for tuberculosis was higher for white widows than the corresponding rate for white divorced women (table 3).

As measured by SMR's, divorced white women still had the highest mortality from tuberculosis in 1959-61 (table 2). But the differential in mortality for this cause between married and divorced white women was smaller for 1959-61 (SMR = 245) than for 1949-51 (SMR = 267).

Malignant neoplasm of digestive organs and peritoneum.—Mortality from this cause decreased for each marital group of white women between 1949-51 and 1959-61 (table 1), but Malignant neoplasms of the digestive system for 1959-61 still accounted for a larger proportion of deaths from Malignant neoplasms among white women than any other site group. In 1959-61 there were 114,125 deaths attributed to these neoplasms, constituting 34.4 percent of all deaths from cancer among white women. About 56 percent of the deaths among white women attributed to Malignant neoplasm of the digestive system in 1959-61 were assigned to primary sites in the stomach (20,471 deaths) and large intestines (43,747 deaths). Owing to the steady decrease in Malignant neoplasm of stomach and the relatively stable rate for Malignant neoplasm of the large intestine, the relative contribution of the two sites altered between 1930 and 1959-61. Among white women in 1930-32, Malignant neoplasm of stomach was the major source of mortality for the site group—37.4 percent of the deaths, compared with 23.8 percent of

the deaths from Malignant neoplasm of the large intestine.

Except for the very high death rates at older ages for white widows, the 1959-61 mortality differentials by marital status for Malignant neoplasm of the stomach are not large.

Age in years	Single	Married	Widowed	Divorced
	Rate per 100,000 population			
Total, 15 and over .	5.4	6.9	49.7	9.4
15-19	-	0.0	0.0	0.0
20-24	0.1	0.1	0.0	0.0
25-29	0.4	0.2	0.0	0.6
30-34	0.9	0.8	0.0	0.4
35-39	2.6	1.2	0.3	1.2
40-44	4.1	2.6	2.9	3.3
45-49	5.1	3.9	5.9	3.6
50-54	7.8	6.6	7.5	7.4
55-59	9.9	9.6	12.1	14.1
60-64	17.5	18.9	23.0	13.8
65-69	20.0	29.1	37.4	29.7
70-74	47.0	46.5	54.0	45.1
75-79	60.6	68.1	81.0	70.2
80-84	96.6	106.7	115.7	126.5
85 and over	125.7	121.8	147.7	198.6

For Malignant neoplasm of large intestine age-specific death rates are in general markedly higher for single white women than for married white women:

Age in years	Single	Married	Widowed	Divorced
	Rate per 100,000 population			
Total, 15 and over .	15.0	15.9	94.5	23.9
15-19	0.1	0.0	0.0	0.0
20-24	0.3	0.3	0.0	0.4
25-29	0.8	0.5	0.0	1.1
30-34	1.7	1.2	4.0	1.7
35-39	5.4	2.9	3.3	3.8
40-44	9.6	5.3	6.4	5.7
45-49	16.2	10.8	11.5	12.5
50-54	27.1	18.9	19.2	22.7
55-59	37.5	29.3	33.7	31.4
60-64	56.1	44.8	51.4	57.4
65-69	80.7	63.1	70.8	79.0
70-74	109.1	91.2	103.5	100.6
75-79	161.9	137.5	147.8	154.5
80-84	200.6	186.1	215.0	214.3
85 and over	292.6	212.7	258.1	223.4

The relatively high death rates for Malignant neoplasm of the large intestine for single white women compared with the corresponding rates for married white women are consistent with the findings of Fraumeni, *et al,*[9] who found an excess frequency of deaths from cancer of this site among nuns, especially those at postmenopausal ages, compared with the death rate at these ages for the total white female population.

Malignant neoplasm of respiratory system.—In contrast to the large increases for each marital group of white men, for white women mortality from this cause increased only slightly between 1949-51 and 1959-61 for each of the marital groups (tables 1 and 8). As measured by SMR's, there is little difference in mortality from this cause for single and ever-married white women, but mortality for widowed and divorced white women is higher than for the other two marital groups (table 2). About 91 percent of Malignant neoplasms of this group of sites for white women are attributed to lung cancer. The Advisory Committee on Smoking and Health appointed by the Surgeon General of the Public Health Service in 1962[10] found that the data for women, though less extensive, pointed in the same direction as that for men—that is, cigarette smoking is causally related to lung cancer, and the magnitude of the effect far outweighs all other factors. The finding that for 1959-61 widowed and divorced persons have higher mortality from lung cancer and the incrimination of cigarette smoking by the Advisory Committee are consistent with the data reported by Haenszel, *et al*[11] and Hammond, *et al*[12] that within each age group the proportion of current regular cigarette smokers is lowest among single women and highest among women who are divorced or separated. The data on nuns reported by a number of authors, including Nix [13] and Taylor,[14] show that lung cancer is rarely seen in nuns, who did not smoke once they had entered religious orders. These findings for nuns are consistent with those for 1959-61 described above for the total single white population at ages 15 years and over.

Malignant neoplasm of breast.—The mortality experience for breast cancer for separate cohorts of white women (a group of white women born during the same 5-year period) is shown at successive 5-year intervals for the period 1914-64 in table 5. The oldest cohort for whom data are shown was born in 1870-74 and the youngest in 1940-44. The older age groups (60-64 years and older) had substantial decreases in mortality from breast cancer over this 50-year period, while the younger age groups had about the same or increased mortality. For white women at ages 30-34 years mortality from breast cancer increased from 4.5 deaths per 100,000 in 1914 to 6.4 deaths per 100,000 in 1964. In general these data show that for recent years successively younger cohorts of white women are at higher risk of dying from breast cancer during early adulthood than their predecessors and at lower risk at older ages. The relative stability in the age-adjusted death rate for breast cancer during the last 30 years or more (between 24 and 25 deaths per 100,000 white women), commented on by several investigators,[15,16] results from the offsetting of the substantial decreases in the death rate for older women by the moderate but steady increases in the rate for young women. As observed by Kraus and Oppenheimer,[17] the decreases during the last two decades for older women have not been negligible. Between 1939 and 1964 they amounted to 12 percent for the 60-64-year age group; and to 11 percent for the 65-69 age group (table 5).

A comparison of the 1959-61 age-specific death rates for breast cancer for each marital status group, with the corresponding rates for 1949-51 shows that the changes between these two periods were most favorable for single white women and least favorable for married white women. For single white women there were decreases in the death rate for breast cancer for every age group except 25-34 years; while for married white women there were increases for every age group in the span 25-69 years, except 35-44 years:

Age in years	Single		Married	
	1959-61	1949-51	1959-61	1949-51
	Rate per 100,000 population			
15-19	-	0.1	0.0	0.1
20-24	0.1	0.2	0.2	0.2
25-34	3.7	3.5	3.8	3.6
35-44	25.5	28.2	18.8	19.4
45-54	66.8	70.4	48.3	43.6
55-59	85.4	107.2	62.9	62.1
60-64	107.6	118.0	73.0	71.0
65-69	123.1	130.2	81.4	79.1
70-74	143.9	156.6	94.1	101.7
75 and over	202.2	220.1	123.9	124.1

Age in years	Widowed		Divorced	
	1959-61	1949-51	1959-61	1949-51
	Rate per 100,000 population			
15-19				
20-24		3.9		1.2
25-34	3.1	5.9	4.7	4.2
35-44	21.1	23.9	23.0	18.0
45-54	51.8	50.9	48.0	51.7
55-59	61.1	65.2	76.1	65.9
60-64	75.9	75.1	84.9	88.1
65-69	85.3	83.2	93.3	120.1
70-74	98.4	103.1	111.5	151.0
75 and over	149.7	150.5	158.4	229.5

Despite the decreases between 1959-61 and 1949-51 in mortality from breast cancer for single white women for all age groups except 25-34 years the death rate for this cause for 1959-61 was still much higher for single than for ever-married white women at ages 35 years and over (table 3).

The higher mortality for single than for ever-married white women conforms to the findings in a number of studies of excess mortality from breast cancer among nuns.[23-26] Also, the reversal in mortality differentials after age 35-44 years for single and married white women was found by Logan,[27] Lilienfeld,[28,29] and other investigators.

That the increases in mortality from breast cancer are real is suggested by Cutler and his colleagues in the End Results Group[18] who report that the patient survival rates increased slowly but steadily during 1940-64, particularly among patients with the disease that had spread to regional lymph nodes or adjacent tissues. Cutler and others also reported that the proportion of tumors found to be localized in the breast increased slowly, but continuously from 38 percent in the 1940's to 46 percent in the period 1960-64.

Examination of breast cancer mortality experience in the United States for the 50-year period 1914-64 supports the observation of MacMahon[15] that the break at the menopausal period reported by early investigators[19-22] is an artifact produced by cross-sectional study of incidence and mortality changes that have occurred along cohort lines. Death rates at 5-year intervals during 1914-64 for the United States for 14 cohorts of white women born in successive 5-year periods fail to level off during the usual menopausal years; instead the rates continue steadily upward throughout the life span, as may be verified by plotting on an arithmetic scale the mortality experience for any cohort of white women for whom the data are shown in table 5.

The British Registrar-General's *Decennial Supplement* for 1930-32 has become one of the most frequent references appearing in the literature on mortality by marital status.[30] From the detailed classification of deaths by cause in these reports for single and married women, together with an estimate of the number of live births for married women, there emerged the complex pattern still being investigated on the relationship between breast cancer and fertility. None of the above-mentioned or remaining investigators of this subject included in the bibliography of the present report[31-41] claim to have adequately tested a hypothesis on causation of breast cancer. But by demonstrating the close interrelation among a number of items clearly associated with the disease they may have narrowed the field of research.

Malignant neoplasm of the cervix uteri.—Cohort analysis shows that the death rate for Malignant neoplasm of cervix uteri decreased during 1949-64 for each 5-year-age group of white women (table 7). These decreases are consistent with the findings of Cutler et al[18] that there has been a very substantial decrease in the incidence rate for invasive cancers of cervix—a decrease of more than 40 percent in Connecticut. These investigators also report that the survival rates for patients with cancers of the cervix increased from the 1940's through 1955-59, but have levelled off. Among patients with regional spread of disease, survival rates have levelled off since 1950-54. The mortality curve for this disease does not continue to rise with advancing age. For example, for the cohorts of white women born, respectively, during 1900-04, and 1905-09, the peak of the mortality curve occurred for the age group 50-54 years (table 7). This drop in the death rate at older ages reflects the findings of Cutler et al that invasive cancers of the cervix appear at earlier ages than cancers in other parts of the female reproductive system.

Bailar[42] found in a study of cases reported from a special survey of all uterine (cervix or corpus) cancer diagnosed in Connecticut residents from 1935 through 1951 that a tumor reported on a death certificate as "uterus" had nearly a 40 percent probability of being cervical in origin. Consequently it appears that the death rate for cancer of the *cervix uteri* is understated. For 1959-61 Malignant neoplasm of cervix uteri had

considerably lower death rates for single white women, compared with the corresponding rates for married, widowed, or divorced white women (table 3).

Epidemiological characteristics of cervical cancer have been under investigation for more than a century. The mortality differential for this cause is even greater when the risk for married white women is compared with that for nuns than when the risk for married white women is compared with that for all single white women.[23-25] In view of the virtual absence of squamous cell carcinoma of the cervix in nuns, most investigators are of the opinion that this disease does not occur unless a certain factor related to sexual intercourse is present.[37-38,43-56] The many studies attesting to the infrequency of this disease among Jewish women have been summarized by Sorby[44] Wolff[45] Davidsohn[46] Sugar and Levy[47] Kennaway[48] and, more recently (1964), by Lundin *et al.*[49] The last group of investigators studied the relation of the etiology of cervical cancer to such factors as socioeconomic status and age at first marriage and first pregnancy. The data used were from a vaginal cytologic survey of women in Memphis, Tennessee, classified according to the socioeconomic status of the census tract in which they lived. They found that for white women, age at first pregnancy, age at first marriage, and the socioeconomic area of residence were definitely associated with histologically confirmed cases of invasive and intraepithelial carcinoma of the cervix. Their data showed a low but measurable incidence of cervical cancer in Jewish women, which seemed to indicate that marital relations, pregnancy, and poverty are not in themselves primarily responsible for this disease. They observed that although the reason for the low rates in Jewish women is unknown it could be lack of exposure to a hypothetical carcinogenic factor—perhaps an infectious agent or a chemical carcinogen in smegma. They were unable to decide whether circumcision or differences in sexual behavior are responsible for the favorable selection in Jewish women.

Schonberg *et al*[55] reports that in a cytologic survey of 2,161 women in Tijuana, Mexico, 135 abnormal smears and 51 cervical carcinomas were found. This high incidence showed the importance of screening programs in the lower socioeconomic groups. The rarity of cervical cancer in Jewish women was again confirmed in a study published in 1966 by Stewart *et al.*[77]

Leukemia and aleukemia.—The steady rise in leukemia mortality for white women, observed since 1910 levelled off during 1954-59 for every 5-year-age group (except 35-39) in the span 20-74 years and then turned downward (table 7). The corresponding rates at older ages, however, continued their steep climb through 1964. The downturn at the younger ages before 1959-61 was not sufficient to offset the continuing rise in mortality from this cause at the older ages. Consequently age-adjusted rates for leukemia for 1959-61 are higher than for 1949-51 for each marital group of white women except those who are divorced (table 1).

Although married white women have somewhat lower mortality from this cause than unmarried white women, leukemia exhibits less variation in mortality by marital status than any of the other causes in table 2.

Age-specific rates for leukemia for 1959-61, compared with those for 1949-51, were generally lower for married, widowed and divorced white women at ages under 60 years, but were higher at older ages:

Age in years	Single		Married	
	1959-61	1949-51	1959-61	1949-51
	Rate per 100,000 population			
15-19	1.8	1.7	1.6	1.3
20-24	2.2	1.8	1.2	1.4
25-34	2.4	2.2	1.9	2.0
35-44	3.3	3.2	2.6	3.0
45-54	5.4	4.8	5.0	5.0
55-59	8.0	8.2	7.9	9.0
60-64	13.4	10.9	11.6	11.4
65-69	14.1	12.1	18.1	14.7
70-74	22.9	17.5	24.8	19.2
75 and over	33.0	23.2	33.5	24.3

Age in years	Widowed		Divorced	
	1959-61	1949-51	1959-61	1949-51
	Rate per 100,000 population			
15-19		9.1		2.3
20-24	2.7	1.9	0.7	1.2
25-34	1.8	3.4	2.8	1.6
35-44	3.3	4.2	2.3	3.6
45-54	5.5	6.7	4.5	6.0
55-59	8.3	9.4	9.8	7.4
60-64	12.7	11.2	11.7	18.7
65-69	17.9	15.1	21.6	19.7
70-74	25.7	19.0	20.5	25.2
75 and over	39.2	22.1	47.4	48.0

The wide publicity beginning in 1956 on the biologic effects on man of ionizing radiation may have led to more careful use of medical X-rays.[57] Other explanations of the favorable change in mortality for leukemia at younger ages may include refinements in diagnostic accuracy and postponement of death from this cause as a result of improved therapy. Cutler et al[18] reported that patient survival rates increased substantially during the period 1940-65 for the acute leukemias and for the lymphatic type of chronic leukemia. The proportion of acute leukemias treated by chemotherapy or hormone therapy increased from 8 percent in 1940-49 to 79 percent in 1960-64. The corresponding increase for chronic leukemia was from 3 to 47 percent.

Diabetes mellitus.—The death rate for this cause for white women rose during 1949-64 for each 5-year age group in the span 30-44 years, but declined at older ages (table 7). There was also a drop in mortality at ages 20-24 and 25-29 years. This pattern of change during 1949-64 for white women differs from the corresponding pattern for white men. For them the rise in the death rate during 1954-64 extended over a much greater span of life—for every 5-year age group except 20-24 and 25-29 years (table 15). Despite the unfavorable trend in mortality from diabetes for white men, for 1959-61, the death rate for this cause was still much higher at ages 55 years and over for white women than for white men. About 91 percent of the 45,222 deaths from diabetes among white women in 1959-61 occurred after age 54 years; and about 83 percent of the 31,464 deaths of white men occurred after this age.

Age-adjusted death rates for white women show lower mortality from diabetes for each marital group for 1959-61, compared with that for 1949-51 (table 1). For married white women this drop in mortality reflects lower death rates for 1959-61 compared with those for 1949-51, for every age group except 25-34 years, for this group the rate remained about the same; but for the unmarried groups, particularly for single white women, the drop in mortality results from the offsetting of substantial increases in the death rate for diabetes at ages 25-34 and 35-44 years by decreases in the rate for almost all remaining age groups:

Age in years	Single		Married	
	1959-61	1949-51	1959-61	1949-51
	Rate per 100,000 population			
15-19	0.7	1.2	0.6	1.5
20-24	1.5	1.6	0.8	1.1
25-34	5.1	3.9	1.6	1.5
35-44	7.5	4.7	2.4	2.5
45-54	8.8	9.4	8.0	11.5
55-59	17.2	20.9	22.7	38.1
60-64	31.5	32.2	50.3	74.7
65-69	44.3	47.3	84.3	111.6
70-74	70.2	71.9	130.6	162.1
75 and over	100.2	114.5	184.6	193.9

Age in years	Widowed		Divorced	
	1959-61	1949-51	1959-61	1949-51
	Rate per 100,000 population			
15-19	9.4	9.1	1.7	4.6
20-24	2.7	1.9	2.6	2.0
25-34	2.7	2.5	4.0	3.5
35-44	5.5	4.2	5.3	4.2
45-54	12.7	16.1	8.9	10.5
55-59	31.2	43.5	19.7	33.5
60-64	57.0	81.2	41.6	65.0
65-69	96.4	120.7	71.7	86.9
70-74	141.9	163.2	100.6	170.8
75 and over	199.8	195.4	130.7	269.5

Beginning with age 55-59 years age-specific death rates for diabetes for single white women were lower than the corresponding rates for married white women. But, at younger ages the reverse relationship existed—age-specific death rates for this cause for married white women were lower than the corresponding rates for single white women. Joslin et al[58] suggested that this relatively high death rate for

young single diabetics may be explained to some extent by their hesitation to marry. The trait for diabetes is recessive, and genetic carriers, with improvement in the survival rate, are increasing in number. The carrier does not necessarily develop diabetes during his lifetime, but may transmit the recessive trait to his offspring. Data from the National Health Survey show a steady increase in the prevalence of diabetes in the United States over the following periods: July 1959-June 1961; July 1963-June 1965; and July 1965-June 1967. The increases occurred for each one of the following broad age groups: 15 years and over, under 45 years, and 45-64 years.[59] The estimated number of diabetics in the United States, based on National Health Survey data for July 1964-June 1965 was 2,300,000, of whom 58 percent were female. According to Forsham *et al*[60] before the discovery of insulin in 1922, maternal mortality among diabetic women often reached 25 to 30 percent, whereas in the 1960's less than 1 percent of diabetic mothers succumbed during pregnancy. However, fetal mortality associated with diabetes in the mother is still high.

Diabetes is one of three causes shown in table 2 (the others being cirrhosis of liver and homicide) for which mortality for 1959-61, as measured by SMR's, was lower for single than for married white women. This conforms to the clinical finding that diabetes occurs more frequently in women who have borne children than in nonparous women.[60]

Vascular lesions affecting the central nervous system.—For white women there were slight increases in the death rate for vascular lesions for each 5-year age group in the span 20-34 years; but for the remaining age groups there were substantial decreases in mortality from this cause (table 7).

These decreases are reflected in the lower age-adjusted death rates for 1959-61, compared with those for 1949-51, for single, married, and divorced white women (table 1).

For 1959-61 single white women had a higher risk of death from vascular lesions than did married white women (table 2). These SMR's were based on the age-specific death rates for each of the four marital groups of white women shown in table 3.

Arteriosclerotic heart disease, including coronary disease (ASHD).—At ages under 60 years there was little change during 1949-64 in the death rates for ASHD for

white women; but for each 5-year age group over the span 60-84 years the death rate for this cause increased substantially (table 7).

Age-adjusted death rates show that for each marital group of white women except divorced, mortality from ASHD was higher for 1959-61 than for 1949-51, with the greatest increase for white widows (table 1). But these increases were relatively smaller than the corresponding increases for white men; and for each marital status group, mortality from this cause continued to be higher for white men than for white women. For 1959-61 the death rate for ASHD for single white men was about 1.4 times the corresponding rate for single white women; and the death rate for ever-married white men was about 1.9 times that for ever-married white women.

Mortality differentials for this cause by marital status as measured by SMR's were smaller for white women than for white men (tables 2 and 10). Married white women had the most favorable level of mortality from ASHD and white widows had the least favorable among the ever-married group. In contrast to the pattern for single white men (table 10) single white women had lower mortality from this cause than did ever-married white women.

Lew[61] observed that for 1949-51 the differentials in mortality from arteriosclerotic heart disease by marital status are considerably greater at ages under 45 years than at older ages. It appeared to him that this indicated that factors associated with marital status (biologic selectivity of marriage and the more favorable environment of the married) have a definite influence on the level of mortality from arteriosclerotic heart disease. For 1959-61 the relative differentials in mortality from this disease by marital status are greater at ages 15-44 years than at older ages for single and widowed white women (based on figures in table 3).

Cirrhosis of liver.—Death rates for this cause increased during 1914-64 for virtually every 5-year age group of white women in the span 30-64 years, with the greatest increases during the usual menopausal and postmenopausal years (at ages 45-49 and 50-54 years), when mortality from Cirrhosis of the liver more than doubled (table 6).

For many age groups in each of the marital classes mortality for this cause was higher for white women for 1959-61 than for 1949-51:

Age in years	Single		Married	
	1959-61	1949-51	1959-61	1949-51
	Rate per 100,000 population			
15-19	0.3	0.3	0.3	0.2
20-24	0.4	0.7	0.2	0.2
25-34	2.8	2.2	1.3	1.6
35-44	7.2	5.6	6.8	6.1
45-54	12.2	9.3	15.7	11.3
55-59	12.1	10.8	16.3	14.4
60-64	13.3	11.9	17.5	18.0
65-69	13.7	13.8	18.0	19.3
70-74	14.7	16.2	19.3	21.5
75 and over	16.7	26.7	22.7	28.3

Age in years	Widowed		Divorced	
	1959-61	1949-51	1959-61	1949-51
	Rate per 100,000 population			
15-19				
20-24		5.8	0.7	0.8
25-34	8.5	8.3	11.1	9.4
35-44	25.9	19.8	32.0	21.1
45-54	32.1	21.5	40.1	27.5
55-59	25.1	20.9	32.7	27.6
60-64	22.7	20.6	31.9	20.9
65-69	23.1	20.6	28.1	24.2
70-74	22.2	25.0	26.7	37.7
75 and over	23.7	30.7	29.5	24.0

By far the greatest increase was for divorced white women at ages 45-54 years.

As mentioned above, Cirrhosis of the liver is one of only three diseases shown in table 2 for which mortality, as measured by SMR's, is lower for single than for married white women. Again for 1959-61, as for 1949-51, the death rate for this cause is much higher for widowed and divorced white women than for married white women.

About 28 percent of the deaths from cirrhosis among white women in 1959-61 were medically certified as having been associated with alcoholism. There is considerable variation by marital status in this percentage: divorced, 41.1; married, 29.6; single, 23.7; and widowed, 22.2 percent. The precise relationship of alcoholism to Cirrhosis of the liver has not been established. Other possible contributing factors in the etiology of cirrhosis are dietary deficiencies, diseases of the bile duct, chemical toxins, and infections.[62] The Metropolitan Life Insurance Company reports generally higher mortality rates from cirrhosis at the lower socioeconomic levels.[63] When mortality from Cirrhosis of the liver among the Industrial and Standard Ordinary policyholders (representing a higher socioeconomic group than do Industrial policyholders), and the general U.S. population was compared, it was found that the age-adjusted death rate for women of all ages combined from Cirrhosis of the liver was 27 percent higher among female Industrial policyholders than among Standard Ordinary policyholders; and 19 percent higher among females in the general population than among the Standard Ordinary policyholders.

Motor vehicle accidents.—For each marital status group of white women, the 1959-61 death rate for Motor vehicle accidents was somewhat higher than the corresponding death rate for 1949-51, after adjusting for the differing age compositions in the two periods (table 1).

A salient feature of mortality by marital status from motor vehicle accidents is the extremely high level of the death rates for white widows at ages under 45 years, particularly at ages 15-19 years (122.7 deaths per 100,000), and at ages 20-24 years (65.6 deaths per 100,000). Also divorced white women at these ages had death rates for motor vehicle accidents which, although lower than the corresponding rates for widowed white women, were much higher than those for either single or married white women (table 3). Another striking feature is that for every age group except 20-24 and 25-34 years, married white women had higher death rates for motor vehicle accidents than did single white women.

Bayó in his analysis of the 1960-62 mortality experience of mother beneficiaries, (widowed women) under the Old-age, Survivors, and Disability Insurance system (OASDI), observes that the mortality curve by age is upward, as is to be expected, except that there is a sharp dip in the curve at ages 25-29 years, similar to the dip in the 1959-61 mortality curve by age for white widows.[64] For the total population of white widows most of this dip in the 1959-61 curve at ages 25-29 years is attributable to the high level of mortality from Motor vehicle accidents at ages 15-19 and 20-24 years. As is shown below, if for every 5-year age group of white widows in 1959-61, the death rates for Motor vehicle accidents are substracted from the total death rates, the remaining death rates exhibit a much smaller dip at ages 25-29 years:

Age in years	All causes (1)	Motor vehicle accidents (2)	All causes except motor vehicle accidents
15-19	283.2	122.7	160.5
20-24	213.4	65.6	147.8
25-29	143.6	52.8	90.8
30-34	210.7	41.7	169.0
35-39	247.5	32.5	215.0
40-44	358.5	20.0	338.5
45-49	505.0	18.7	486.3
50-54	704.3	18.6	685.7
55-59	959.6	16.5	943.1
60-64	1,538.8	17.4	1,521.4
65-69	2,405.7	19.4	2,386.3
70-74	3,857.5	21.1	3,836.4
75-79	6,479.2	23.9	6,455.3
80-84	11,184.7	24.4	11,160.3
85 and over	21,113.3	20.5	21,092.8

Age in years	Widowed 1959-61	Widowed 1949-51	Divorced 1959-61	Divorced 1949-51
	Rate per 100,000 white women			
15-19	---	9.1	13.8	13.8
20-24	10.9	7.7	10.8	11.6
25-34	15.6	13.9	25.2	17.4
35-44	13.2	14.2	25.4	20.7
45-54	16.8	16.2	23.1	22.0
55-59	16.0	13.5	18.0	18.0
60-64	14.1	13.2	21.7	27.5
65-69	11.0	12.9	21.2	17.9
70-74	10.9	10.0	14.4	23.4
75 and over	8.5	8.7	24.2	16.0

For Motor vehicle accidents the ratio of the death rate for white widows to that for white wives decreased steadily with advance in age, from 7.6 at ages 15-19 years and 6.0 at ages 20-24 years, to 0.87 at ages 75 years and over. Compared with the values of this ratio, the values of the ratio of the death rate for motor vehicle accidents for white divorced women to that for white wives are smaller, with the greatest value of the latter ratio (4.5) at ages 25-34 years.

Suicide.—Of the four marital groups only white divorced women had a substantially higher age-adjusted suicide rate for 1959-61 than for 1949-51 (table 1). But the apparent stability in the total suicide rate for single white women results from the offsetting of increases in the rate for age groups under 45 years by decreases in this rate for most age groups over 45 years. Also young widowed white women (20-24 and 25-34 years) had higher suicide rates for 1959-61 than for 1949-51:

Age in years	Single 1959-61	Single 1949-51	Married 1959-61	Married 1949-51
	Rate per 100,000 white women			
15-19	1.3	1.3	2.4	3.1
20-24	3.8	3.4	2.5	3.1
25-34	10.0	6.0	4.7	4.5
35-44	11.1	8.2	6.8	7.2
45-54	10.4	10.2	9.0	8.9
55-59	9.6	12.0	8.8	9.1
60-64	9.6	10.5	8.6	8.4
65-69	8.7	11.0	8.0	8.4
70-74	9.8	11.0	6.1	6.3
75 and over	5.1	7.1	5.7	5.5

The 1959-61 Suicide rate did not increase for any of the marital classes of white women with advance in age to the end of life. Instead the death rate for this cause peaked at ages 45-54 years for married and widowed white women, and at ages 35-44 years for single and divorced white women, and then generally declined during the remainder of the life span.

Despite these changes between 1949-51 and 1959-61, age-specific Suicide rates for 1959-61 in each marital class continued to be higher for white men than for white women and higher for white women than for women of other races (tables 3 and 11).

As measured by SMR's, for 1959-61 Suicide among divorced white women was about three times the level among married white women; and that among widowed white women was about 1.7 times the level among married white women.

Homicide.—After allowing for the different age distributions in the two periods 1959-61 and 1949-51, it was found that death rates for Homicide for the former period are somewhat higher for each of the marital classes of white women than the corresponding rates for 1949-51 (table 1). The greatest absolute increase was for divorced white women—from 5.4 deaths per 100,000 for 1949-51 to 7.5 deaths for 1959-61. For this latter period the death rate for Homicide for divorced white men was 3.9 times that for divorced white women. Despite the above-mentioned increases in the Homicide rate for white women in 1959-61 they continued to have by far the lowest mortality from Homicide among the four color-sex groups.

In contrast to the 1959-61 pattern for white men, the risk of death from Homicide for white women as measured by SMR's was greater for married and widowed than for single women (tables 2 and 10). For white women, as for white men, the greatest risk of death from Homicide was for the divorced group.

PART II. DIFFERENTIAL MORTALITY BY MARITAL STATUS
FOR WHITE MEN

MORTALITY FOR ALL CAUSES

According to the 1960 census a greater proportion of white men in the United States than ever before are married.[5] Large increases in the percentage of married men occurred both during 1940-50 and during 1950-60. With few exceptions in each 5-year age group from 15 to 85 years the percent single and percent widowed decreased, and the percent married and the percent divorced increased, both between 1940 and 1950 and between 1950 and 1960.

While there was a marked decrease in the death rates for white men at every age during 1940-50, these rates levelled off between 1950 and 1960. There is now considerable evidence that this stationary level of mortality during the last half of the 1950's actually marked an upturn in mortality for white men. The changes in mortality trend by age for the white male population in the United States during 1954-63 are shown below:

Age in years	Rate of change in percent	95-percent confidence limits[1]	
		Upper	Lower
1-4	-1.99	-1.74	-2.25
5-14	-1.71	-1.47	-1.95
15-24	-1.38	-1.21	-1.56
25-34	-0.44	-0.28	-0.61
35-44	-0.29	-0.17	-0.41
45-54	+0.01	+0.09	-0.06
55-64	+0.07	+0.13	-0.02
65-74	+0.50	+0.54	+0.45
75-84	-0.02	+0.04	-0.07
85 and over	+1.70	+1.78	+1.61

[1]The probability is 95 percent that the true rate of change (in percent) had a value between the upper and lower limits shown. These average rates of change were obtained by fitting the age-specific death rates for 1954-63 to a straight line by the method of least squares.

The descending trend for the age groups under 45 years slowed down during this 10-year period, compared with the decline in the corresponding death rates for prior years. For the age groups between 45 and 75 years there was an upturn in mortality between 1954 and 1963. The 1959-61 mortality by marital status for white men may be more readily assessed against this levelling off of the formerly declining death rate at ages under 45 years, and

the upturn in mortality at ages 45 years and over. As discussed below, this upturn is attributable to higher death rates for widowed and divorced white men.

Changes from 1940 in mortality for each marital class.—The total death rate for single white men 15 years of age and over was higher for 1949-51 than for 1940; but was lower for 1959-61 than for 1949-51:

Period	Total death rate	Age-adjusted death rate
	Rate per 100,000 population	
1959-61	752.0	752.0
1949-51	762.5	802.1
1940	682.7	818.8

Similarly, for single white men, as for single white women, the reduction in total mortality between 1949-51 and 1959-61 is attributable in part to the marked increase in the percent of single white men at ages 15-19 years which is a result of the baby boom in the late 1940's (from 38.1 percent for 1950 to 46.5 percent for 1960).[5] Age-adjusted rates show that mortality in the single white male population decreased about 8 percent between 1940 and 1959-61. This favorable change resulted from lower death rates at ages 15-44 years for 1949-51 compared with those for 1940; and from lower death rates for every age group from 15-74 years except for 20-24 years for 1959-61 compared with those for 1949-51:

Age in years	1959-61	1949-51	1940
	Rate per 100,000 population		
15 and over	752.0	762.5	682.7
15-19	121.5	129.1	162.8
20-24	205.6	196.5	245.1
25-34	276.4	308.9	398.1
35-44	614.7	735.7	805.5
45-54	1,419.0	1,629.3	1,624.6
55-59	2,315.2	2,851.2	2,767.7
60-64	3,653.5	3,988.3	3,742.5
65-69	5,303.5	5,410.1	5,190.2
70-74	7,509.0	7,804.9	7,436.1
75 and over	13,889.8	13,848.4	13,173.0

The rise in the death rate for single white men at ages 20-24 years reflects in part higher mortality from motor vehicle accidents and suicides.

Unlike the pattern for the single white male population 15 years and over, the total death rate for married white men was lower for 1949-51 than for 1940, and was somewhat higher for 1959-61 than for 1949-51. With the effect of the changing age composition held constant, however, the level of mortality for married white men was 15 percent lower for 1949-51 than for 1940; and about 5 percent lower for 1959-61 than for 1949-51:

Period	Total death rate	Age-adjusted death rate
	Rate per 100,000 population	
1959-61	1,274.7	1,274.7
1949-51	1,200.5	1,337.2
1940	1,292.6	1,570.7

The greater total death rate for married white men for 1959-61 compared with that for 1949-51 is attributable to the increase in the proportion of married white men at older ages, when the risk of death is greater. The percent of men at ages 55 years and over, for example, increased from 25.2 percent for 1950 to 27.4 percent for 1960.[5] On the other hand for every age group in the span 15 years and over the death rate for married white men was lower for 1959-61 than for 1949-51; and lower for the latter period than for 1940:

Age in years	1959-61	1949-51	1940
	Rate per 100,000 population		
15 and over	1,274.7	1,200.5	1,292.6
15-19	122.7	144.8	210.1
20-24	115.8	128.5	172.8
25-34	128.7	147.2	216.5
35-44	276.6	322.1	418.9
45-54	793.2	868.0	980.4
55-59	1,545.6	1,715.7	1,827.7
60-64	2,445.1	2,529.4	2,705.6
65-69	3,623.5	3,653.1	3,939.4
70-74	5,245.0	5,457.3	6,052.4
75 and over	10,133.2	10,187.7	11,445.3

Both the total rate and the age-adjusted death rate for white widowers indicate an increase in mortality for this marital class for 1959-61 compared with corresponding mortality for 1949-51:

Period	Total death rate	Age-adjusted death rate
	Rate per 100,000 population	
1959-61	8,847.9	8,847.9
1949-51	7,166.6	8,023.3
1940	7,161.8	9,292.1

This rise in mortality reflects higher death rates for 1959-61 for every age group except 25-34 years and 35-44 years:

Age in years	1959-61	1949-51	1940
	Rate per 100,000 population		
15 and over	8,847.9	7,166.6	7,161.8
15-19	390.6	89.8	1,187.3
20-24	626.1	496.1	777.3
25-34	498.9	633.4	775.5
35-44	797.0	928.3	1,057.1
45-54	1,741.5	1,733.7	1,924.6
55-59	2,742.0	2,630.6	3,102.1
60-64	3,907.5	3,620.6	4,059.4
65-69	5,529.6	4,850.8	5,634.7
70-74	7,311.7	6,817.6	7,929.5
75 and over	15,670.1	14,082.2	16,327.3

This higher mortality for white widowers may be explained in part by the undercoverage and misclassification in the census of widowers as single or married and by the hypothesis of greater selection in marriage. The hypothesis of "selection in remarriage" considered by Sheps[4] and other investigators holds that persons who become widowed and are in good health tend to remarry, while the ill who are widowed tend to remain widowed and be classified as such in both the census and on the death certificate. There is evidence that this hypothesis is more applicable to white widowers than to white widows. White widows in the population have been outnumbering white widowers by a steadily increasing margin—a consequence of the higher mortality among white men than among white women, and also of the higher remarriage rate of white widowers. According to the 1960 census the ratio of white widows to white widowers was about 4 to 1, compared with only about 3 to 1 for 1950.[5] The unfavorable change in

mortality for white widowers recorded for 1959-61 followed a substantial improvement for 1949-51 compared with the corresponding mortality for 1940. At every age the death rate for white widowers was lower for 1949-51 than the corresponding rate for 1940. Particularly impressive was the drop in mortality for the younger age groups. These decreases reflect the control of tuberculosis and other infectious and communicable diseases that formerly took a high toll of life among young adults.

For divorced white men, as for widowed white men, both the total death rate and the age-adjusted death rate show an increase in mortality for 1959-61 compared with the corresponding mortality for 1949-51:

Period	Total death rate	Age-adjusted death rate
	Rate per 100,000 population	
1959-61	3,155.9	3,155.9
1949-51	2,605.0	3,021.5
1940	2,942.8	3,520.4

This rise in mortality reflects higher death rates for 1959-61 at ages 45 years and over:

Age in years	1959-61	1949-51	1940
	Rate per 100,000 population		
15 and over	3,155.9	2,605.0	2,942.8
15-19	189.1	195.7	605.3
20-24	359.5	333.4	479.6
25-34	516.0	533.0	783.1
35-44	1,110.2	1,140.1	1,340.3
45-54	2,473.1	2,245.9	2,514.4
55-59	3,948.6	3,562.3	3,833.9
60-64	5,436.4	4,795.6	5,192.0
65-69	7,256.3	6,603.9	7,337.7
70-74	9,315.9	9,223.1	11,422.7
75 and over	16,031.6	17,355.2	21,588.3

At younger ages, except for 20-24 years, the death rates for divorced white men were somewhat lower for 1959-61 than the corresponding rates for 1949-51 but higher at most older ages.

At every age these death rates were lower for 1949-51 than for 1940. Among the numerous factors that have been advanced to account for the relatively high mortality among divorced white men are an adverse selection, especially after middle age, by remarriage, and

the loss of the stabilizing influence of family life. The role of chronic diseases, such as Cirrhosis of the liver, particularly when associated with alcoholism, will be considered later in the discussion on selected diseases. Such diseases may have been factors in the dissolutions of the marriages as well as in the higher risk of death once the persons were divorced. Although the number of divorced white men increased from 972,435 for 1950 to 1,141,384 in 1960 (in keeping with the growth in the population) the percent of white men enumerated as divorced remained about the same for 1960 (2.1 percent).

Standardized mortality ratios.—If the 1959-61 death rates for married white men at ages 15 years and over had occurred in the white male populations of each of the other three marital classes (single, widowed, and divorced), then the quotient of the observed number of deaths divided by the expected number, expressed as a percentage, would give the following standardized mortality ratios:

Marital status	Observed deaths	Expected deaths	SMR's
Single	274,937	186,024	148
Married	1,479,504	1,479,504	100
Widowed	474,361	308,810	154
Divorced	108,586	48,691	223

For white men the lowest mortality is still found for the married population, the next most favorable for the single group, and the highest for widowed and divorced persons.

A comparison of these 1959-61 SMR's with the corresponding SMR's for 1949-51 and for 1940 indicates that the rank of marital classes by mortality for these earlier years was about the same as that for 1959-61:

Marital status	1959-61 SMR's	1949-51 SMR's	1940 SMR's
Single	148	152	134
Married	100	100	100
Widowed	154	138	145
Divorced	223	211	221

The following SMR's were obtained by dividing white men into only two groups, i.e., single and ever-married:

Marital status	1959-61 SMR's	1949-51 SMR's	1940 SMR's
Single	133	140	123
Ever-married ...	100	100	100

The resulting SMR's show the single status as more favorable than do SMR's obtained by a comparison of the death rate for single white men with that for white men who had married one or more times and were still married at the time of death.

Excess Risk of Death by Age, for the Single, Widowed and Divorced Classes.—The number of excess deaths per 100,000 potential survivors, as defined by Sheps,[4] using married white men as the favorable status group (see page 3 for the method of computation) are shown below by age for each of the unmarried groups of white men.

Period and age in years	Single	Widowed	Divorced
1959-61			
20-24	89.9	510.9	244.0
25-34	147.9	370.7	387.8
35-44	339.0	521.8	835.9
45-54	630.8	955.9	1,693.3
55-59	781.7	1,215.2	2,440.7
60-64	1,238.7	1,499.1	3,066.3
65-69	1,743.2	1,977.8	3,769.4
70-74	2,389.3	2,181.1	4,296.2
1949-51			
20-24	68.1	368.1	205.2
25-34	161.9	486.9	386.4
35-44	414.9	608.2	820.6
45-54	768.0	873.3	1,390.0
55-59	1,155.3	930.9	1,878.8
60-64	1,496.8	1,119.5	2,225.0
65-69	1,823.6	1,243.1	3,062.7
70-74	2,483.1	1,438.8	3,983.2
1940			
20-24	72.4	605.5	307.3
25-34	182.0	540.2	567.8
35-44	388.2	640.9	925.3
45-54	650.6	953.5	1,549.2
55-59	957.5	1,298.1	2,043.5
60-64	1,065.7	1,391.4	2,555.5
65-69	1,302.1	1,764.8	3,537.7
70-74	1,472.8	1,998.0	5,716.3

For 1959-61, for every age group in the span 20-69 years the excess risk for single white men was lower than the corresponding risk for widowed or divorced white men. The remarkable fact is that these more favorable differentials for the single compared with mortality for the widowed and divorced white men persist at ages 60-64 and 65-69 years of age. Part of the explanation may be that a proportion of the 103,626 single white men in these two age groups are Catholic priests and brothers. Madigan has studied total mortality for large samples of the approximately 72,000 priests and brothers in the United States and has proposed the hypothesis that the typically high degree of role satisfaction experienced by order priests more than offsets the curtailing effects upon length of life caused by the excessive life stresses they undergo.[65-69]

A contrasting feature of the comparison of these risks for 1949-51 with those for 1959-61 to that found for white women is that, for every age group except for 20-24 years, the excess risks for 1959-61 are lower than for the earlier period.

Similarly, when the excess number of deaths per 100,000 potential survivors are calculated for single white men using as the population at risk the survivors in the white male "ever-married" group (i.e., married, widowed, and divorced), the results show increases in excess risk of death with advance in age:

Age in years	1959-61	1949-51	1940
20-24	83.7	62.4	66.5
25-34	138.1	151.4	169.3
35-44	313.8	387.4	356.8
45-54	561.0	699.4	575.4
55-59	655.5	1,044.1	812.7
60-64	1,046.4	1,322.5	850.4
65-69	1,433.5	1,554.5	930.8
70-74	1,904.1	2,066.1	873.0

The excess risk when measured using as the population at risk the survivors in the ever-married group is, however, lower than when the population at risk is limited to the survivors in the married group. As noted earlier, inasmuch as persons who marry face the risk of dissolution of their marriage by death or divorce, the ever-married group may constitute the better base on which to measure the excess risk of death for single persons.

For white widowers this method of analysis yielded no breaks in the increase of excess risk with advance in age for 1949-51, but for both 1940 and 1959-61 very high excess risks were found for young white widowers. The excess risk for white widowers at ages 20-24 years for 1959-61 reflects unusually high rates for motor vehicle accidents (275.1 deaths per 100,000 population), and suicide (142.3 per 100,000). For 1940 there are no cause-specific death rates available separately by color for widowers, but there are data that suggest that for

this year the excess risk of death for white widowers at ages under 25 years is attributable, in great part, to accidental deaths and tuberculosis. For white and all other widowers together the principal causes of death at ages 20-24 years in 1940 were accidental deaths (345.5 deaths per 100,000); and tuberculosis, all forms (274.0 deaths per 100,000). For 1949-51 for widowers at ages 20-24 years, accidents (224.4 deaths per 100,000) and homicide (80.9 deaths per 100,000) were the two leading causes of death.

Young has suggested that widowhood seems to accelerate aging most in the younger age groups, attaching to the widowed the mortality risk of married persons several years older.[70] The excess risk figures for 1959-61 for white widows at ages under 35 years are consistent with the findings in a number of earlier studies. Young believes that young people may be especially vulnerable, because spouses often die very suddenly at these ages, many from accidents, so that the shock is greater.

For divorced white men the excess number of deaths, compared with that for married white men, increased with advance in age for each of the three periods 1959-61, 1949-51, and 1940. For 1949-51 and 1959-61 this excess at ages 20-34 years reflects in part high death rates for Motor vehicle accidents, other accidents, and Suicide. As recently as 1949-51 tuberculosis was still a frequent cause of death among divorced white men in the younger age groups (e.g., 44.7 deaths per 100,000 at ages 25-34 years).

MORTALITY FOR SPECIFIED CAUSES

Tuberculosis, all forms.—For the white male population mortality from Tuberculosis, all forms, decreased from 146.9 deaths per 100,000 population for 1914, the first year for which age-color-sex-specific death rates for this cause are available, to 7.7 deaths per 100,000 population for 1960. Looking back at the experience for all races combined, (because separate death rates by cause for white and all other men were not available by marital status before 1949-51) it should be noted that as late as 1940 there were still 17,417 marriages dissolved by the death of the male spouse from tuberculosis.[1] By 1949-51 the average number of marriages dissolved by the death of the husband from tuberculosis had been reduced to 10,973 per year; and by 1959-61, to 3,851 per year.

As shown by the comparison with the corresponding age-adjusted death rates, no appreciable part of the reduction in mortality from tuberculosis in each of the marital classes of white men for 1959-61 compared with the corresponding rates for 1949-51 is attributable to the changing age composition of the white male population (table 8). For each of the marital classes the standard population used to obtain these 1949-51 age-adjusted rates was the 1960 white male population in the marital class, classified in the same age groups as those for which age-specific rates are shown in table 11. The downward trend in the tuberculosis death rate for the white male population in the 1940's continued through the 1950's. The death rates from Tuberculosis, all forms, were lower for 1959-61, (table 11) compared with the corresponding rates for 1949-51, for each age group in each of the four marital classes. Most of the deaths from tuberculosis in 1959-61 were from Tuberculosis of the respiratory system, with a national death rate of 5.5 per 100,000 population, compared with that of 0.4 for Tuberculosis, other forms.

Loss of life from tuberculosis among white widowers has been greatly reduced at younger ages. For example, white widowers at ages 25-34 years experienced a death rate of 84.7 per 100,000 population for 1949-51 and 6.9 per 100,000 for 1959-61.

Cross-sectional death rates for Tuberculosis, all forms, for white men (that is, death rates that enable comparison of risks experienced by different age groups of the population at the same point in calendar time) suggest that mortality from this disease increases with advance in age. For example, for 1959-61 the death rate for Tuberculosis, all forms, for white males increased almost steadily from 0.2 deaths per 100,000 white males at ages 15-19 years to 52.2 deaths per 100,000 at ages 75 years and over. Similarly, for each marital status group of white men, this death rate for 1959-61 increased with advance in age, except for some fluctuation in the death rate for divorced white men for older age groups (table 9).

However, when the mortality experience from tuberculosis for any separate cohort of white men (a group of white men born during the same 5-year period) is examined at 5-year intervals, the seeming upturn of the death rate for tuberculosis with advance in age is found to be an artifact resulting from the mixture of cohorts with differing mortality experiences. Thus, the cohort of white men born in 1890-94 experienced the

following death rates from Tuberculosis, all forms during the 50-year period 1914-64:

Year of death	Age at death	Death rate per 100,000
1914	20-24	118.2
1919	25-29	136.1
1924	30-34	92.9
1929	35-39	92.5
1934	40-44	81.5
1939	45-49	81.0
1944	50-54	88.0
1949	55-59	71.0
1954	60-64	38.2
1959	65-69	36.7
1964	70-74	30.0

For this cohort of white men mortality from tuberculosis peaked during early adulthood (at ages 25-29 years) and then declined almost steadily throughout the remainder of the life span. Similarly, for the other cohorts whose mortality experience is shown in table 12, the death rate for tuberculosis reached a high point well before the middle years of life and then turned downward. The downturn was much steeper for more recently born cohorts than for their predecessors. Another fact shown by the data in table 12 is that successively younger cohorts of white males are at lower risk of dying from tuberculosis at almost every age than their predecessors.

In the white male population large differences in mortality from tuberculosis by marital class prevailed for both 1949-51 and 1959-61 as shown by the SMR's (table 10). Similarly, as above, for all causes of death, these SMR's were obtained by the indirect method of applying a standard set of rates to each population group to calculate an "expected" number of deaths for each marital class. Then the observed numbers of deaths were divided by the corresponding "expected" numbers, and the results expressed as SMR's. For 1959-61 the standard rates used were the 1959-61 age-specific death rates for tuberculosis for white married men at ages 15 years and over; and for 1949-51, the standard rates were the corresponding 1949-51 death rates. For both periods the lowest mortality from tuberculosis was for married men, the next most favorable for widowers, with the highest mortality for single and divorced men, with much larger SMR's for divorced than for single men. The relatively favorable mortality experience for tuberculosis for white widowers for 1949-51 and 1959-61 is in contrast with the 1940 experience for the combined white and all other widower population, especially

during young adulthood and the middle years of life. For 1940 for every age group, the death rates for tuberculosis for widowers were greatly in excess of those for married men. At ages under 45 years death rates for tuberculosis for widowers were also greater than the corresponding rates for single and divorced men, with particularly large differentials at ages 20-24 and 25-34 years:

Age in years	Single	Married	Widowed	Divorced
	Rate per 100,000 population: 1940			
20-24	45.6	27.6	274.0	79.6
25-34	98.5	35.4	277.4	118.4
35-44	161.5	52.2	227.1	217.4
45-54	195.3	71.0	212.7	245.7
55-59	215.9	79.0	228.2	239.9
60-64	192.5	84.1	176.4	237.4
65-69	173.3	83.2	139.9	178.9
70-74	166.2	84.6	132.4	182.9
75 and over	153.1	71.4	92.8	238.0

The decreased mortality from tuberculosis among white widowers in more recent years may reflect in part less frequent deaths from tuberculosis among those who were survivors of marriages that had been terminated by the death of a spouse who had the disease. The relatively high risk of death from tuberculosis among the widowed group at younger and middle ages may be explained in part by increased risk of infection among young spouses and by marriages between patients in tuberculosis sanatoriums.[71,72]

The following SMR's obtained by dividing white men into only two groups show the single class as having a somewhat smaller unfavorable mortality differential from tuberculosis than is shown by the SMR's obtained by a comparison of the death rate for tuberculosis for single white men with that for white men who had married one or more times, and who were still married at the time of death.

Marital status	1959-61 SMR's	1949-51 SMR's
Single	294.1	301.4
Ever-married	100.0	100.0

Excess risk of death from Tuberculosis, all forms, for the single, widowed, and divorced white men has been calculated from the mortality rates in table 9 and is shown in figure 1. For 1959-61 there is a consistent increase in these excess risks at older ages for the single
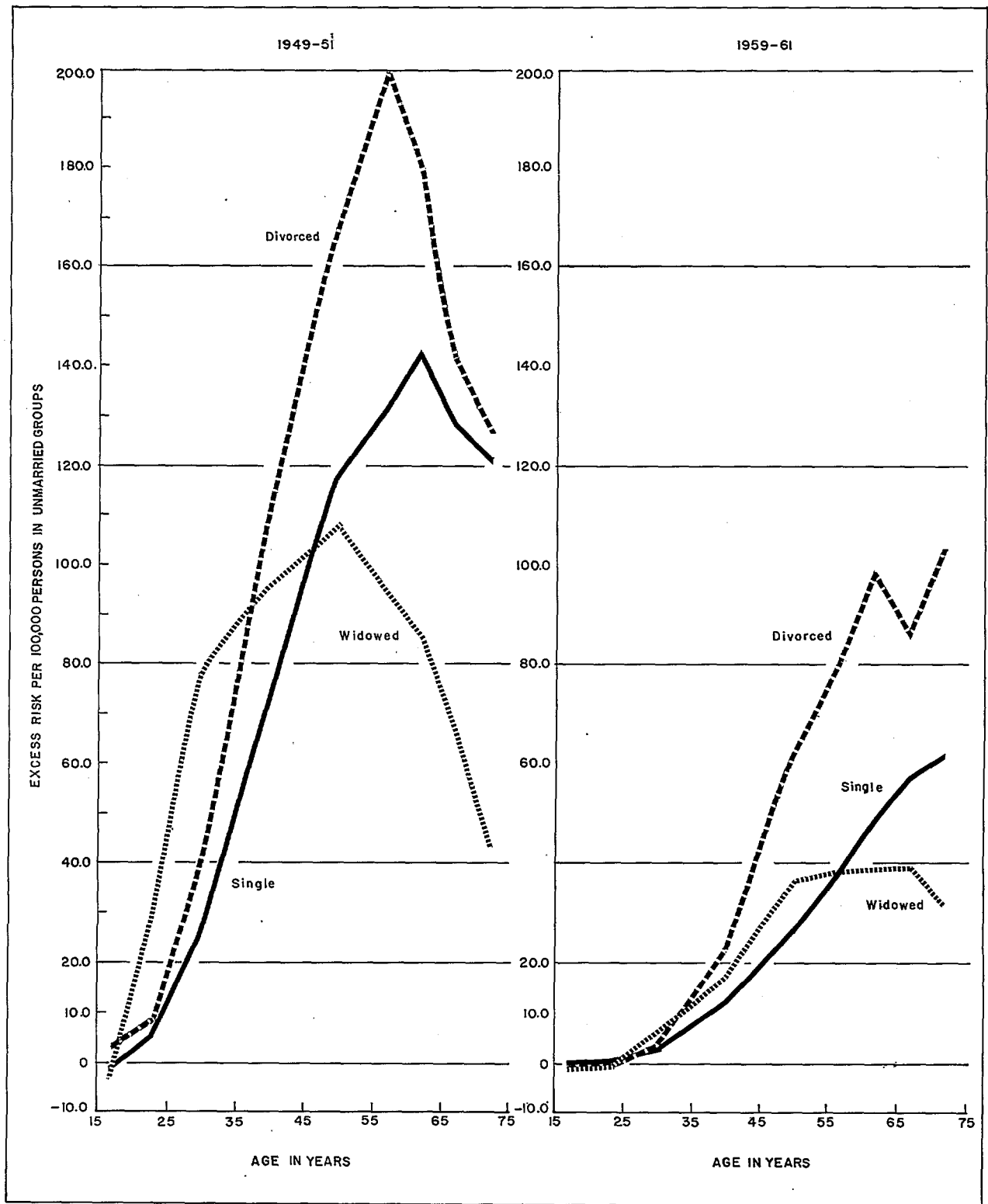
Figure 1. Excess risk of death per 100,000 population for tuberculosis, all forms, in the unmarried white male population, by age: United States, 1949-51 and 1959-61.
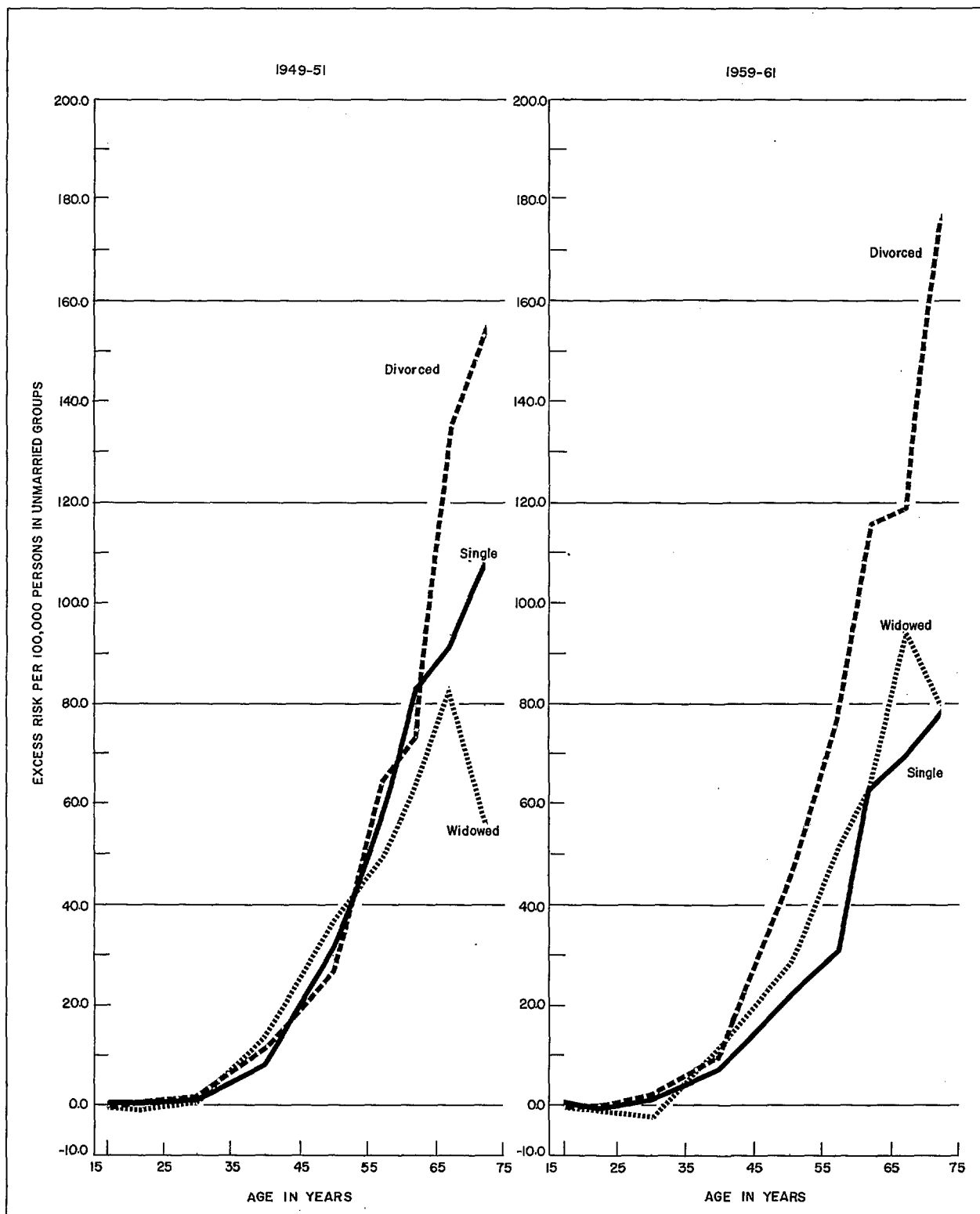
Figure 2. Excess risk of death per 100,000 population for malignant neoplasm of digestive organs and peritoneum in the unmarried white male population, by age: United States, 1949-51 and 1959-61.

and divorced groups, but for white widowers there is little change in the additional risk of death from tuberculosis over the span 45-74 years of age. The 1949-51 figures show that in this earlier period there was a greater relative excess in mortality from tuberculosis among young white widowers than for 1959-61. The peak excess risk (107.2 deaths per 100,000 population) occurred at ages 45-54 years; and at ages 35-44 years the excess risk was almost as high (95.6 deaths per 100,000). For single white men the highest excess risk occurred at ages 60-64 years, and for divorced white males at ages 55-59 years.

Malignant neoplasms of digestive organs and peritoneum.—A reduction in the death rate for this cause occurred at almost every age for each of the marital status groups (table 13).

For 1959-61, as for 1949-51, death rates for this cause for almost every age group of each marital class of white men were higher than the corresponding death rates for white women, but lower than the rates for all other men (tables 3 and 11). Beginning with the age group 25-34 years, age-specific death rates for 1959-61 for Malignant neoplasm of the digestive organs. and peritoneum were higher for divorced white men than for any other marital group of white men (table 11). Beginning with the age group 35-44 years, white widows had in general higher mortality from this cause than did single or married white men.

For 1959-61 as for 1949-51 the excess risk of death from these neoplasms for the unmarried groups of white men compared with that for married white men was small at ages under 45 years but rose rapidly with advance in age, especially for widowed white men (fig. 2).

Malignant Neoplasm of Respiratory System.—In both 1949-51 and 1959-61, crude death rates for Malignant neoplasm of the respiratory system were highest in the white male population. Moreover, in the 15-year span from 1949 to 1964, mortality from these neoplasms increased for white men in every 5-year age group after age 30 (table 15). In all of these age groups, rates for the more recently born cohorts showed an increase of at least 50 percent over those for men born 15 years earlier, and in all 5-year age groups after age 65 this increase exceeded 100 percent except at 80-84 years. For example, white men who were 65-69 years of age in 1949 suffered a death rate from this disease of 105.7 per 100,000, while for white men who were 65-69 years of age in 1964, the rate was 270.5 per 100,000.

Age-adjusted death rates for 1949-51, compared with those for 1959-61 also indicate a marked increase in

mortality from these neoplasms in each of the marital status groups in the white male population (table 8). The widowed and divorced groups showed the greatest increase. In 1949-51 the age-adjusted death rate for white widowers was 112.5 per 100,000 and in 1959-61 the corresponding rate was 214.6 per 100,000. Similarly the age-adjusted death rates for this cause for divorced white men increased from 78.0 per 100,000 for 1949-51 to 142.7 per 100,000 for 1959-61.

For every age group shown in table 11, beginning with 25-34 years, widowed and divorced white men had higher death rates for this cause than married white men. For single white men this death rate was higher than the corresponding death rate for married white men throughout the life span.

The greater SMR's for widowed and divorced white men for Malignant neoplasm of respiratory system (table 10), together with the findings of Haenszel and others[11] that more divorced and widowed men smoke cigarettes than married men for each 10-year age group between 25 and 55 years, are consistent with the findings of the Surgeon General's Advisory Committee that cancer of the lung is causally related to cigarette smoking.[10]

Malignant Neoplasm of Male Genital Organs.—For the male population the following titles of the International Statistical Classification of Disease, issued in 1955, are included in this group of neoplasms: Malignant neoplasm of prostate (ICD No. 177); Malignant neoplasm of testis (ICD No. 178); and Malignant neoplasm of other and unspecified male genital organs (ICD No. 179).

For 1959-61 Malignant neoplasm of prostate was the cause of about 94 percent of the 40,478 deaths attributed to Malignant neoplasm of the male genital organs. During 1949-64 the number of deaths per 100,000 white male population from this group of malignant neoplasms rose from 16.6 for 1949 to a peak of 18.1 for 1956, and then dropped to 17.3 for 1964. During this 15-year period reductions in mortality from this cause occurred for every 5-year age group of white men in the age span 40-84 years (table 15). Considering, for example, the mortality experience at 60-64 years of age for four cohorts of white men born in successive 5-year periods during 1885-1904, the decline in mortality from these neoplasms was as follows:

Period of birth of cohort	Age at death	Year of death	Death rate per 100,000
1900-04	60-64	1964	29.6
1895-99	60-64	1959	29.6
1890-94	60-64	1954	32.6
1885-89	60-64	1949	34.2

Part of this reduction may be attributable to earlier diagnosis and successful treatment. On the other hand, there were slight increases in mortality from these neoplasms for some younger age groups (including 15-19 and 35-39 years).

Age-adjusted death rates show that mortality from these malignant neoplasms was lower for 1959-61 for every marital group except white widowers, compared with the corresponding mortality for 1949-51 (table 8). For white widowers there was an increase in mortality of about 7 percent. This is one of the few causes of death for which single white men had lower mortality, as measured by SMR's, than married or ever-married white men, both for 1959-61 and for 1949-51 (table 10).

For 1959-61 widowed and divorced white men had higher mortality from Malignant neoplasms of genital organs, as measured by SMR's, than did married white men (table 10). For 1959-61 single white men at ages 20-54 years had a small excess risk of death from Malignant neoplasms of genital organs over that for ever-married white men at these ages (table 11). But at older ages (65-69 and 70-74 years) ever-married white men experienced an excess risk of death over that for single men. At ages 55 years and over white widowers had higher death rates for this cause than white married men; and white divorced men had higher rates than white married men for each 5-year age group in the span 20-74.

Leukemia and aleukemia.—Despite only a moderate increase in mortality from Leukemia for the entire white male population for 1959-61 as compared with 1949-51, for white widowers the rate for this cause for 1959-61 was 1.7 times the comparable age-adjusted death rate for 1949-51 (table 8). Inasmuch as age-adjusted death rates for this cause for 1949-51 are somewhat higher than unadjusted death rates for this period, part of this marked increase in the death rate for leukemia for white widowers for 1959-61 as compared with that for 1949-51 is attributable to the different age compositions of the populations for the two periods. But, cohort analysis suggests that the large increase in this death rate for older white widowers is consistent with the fact that for white males born before 1930-34 the death rate for leukemia continued to increase with advance in age (table 15). The moderate upturn in mortality from Leukemia and aleukemia in the total white male population between 1949 and 1961 (from 6.7 to 8.9 deaths per 100,000 population) resulted from the offsetting of continuing declines in the death rate for this cause for children and young adults by the increases

in this rate for white men at ages 35 years and over, with the greatest relative increases at ages 65 years and over. From the peak rate for 1961, mortality from leukemia dropped to 8.7 deaths per 100,000 for 1964.

Death rates for leukemia for each of the six cohorts in the white male population born during successive 5-year periods in 1930-59 declined almost steadily with advance in age during 1949-64; but the death rate for this cause within the cohorts born earlier rose with advance in age.

Widowed and divorced white men in the older age groups have somewhat higher death rates for leukemia than married or single white men in the corresponding age groups (table 11). But this disease shows less variation in age-specific death rates by marital status than the other causes shown in table 11.

Diabetes mellitus.—More recently born white men 25 years of age and over have had higher death rates from Diabetes mellitus at every age than did their predecessors (table 15). The death rate for this cause has increased for each 5-year age group over the span 25 to 50 years since at least 1949 (the first year the Sixth Revision of the International Classification of Disease was used); and for each 5-year age group from 50 to 85 years, since at least 1954.

Despite these increases in mortality for white men, together with substantial decreases for white women (table 1), Diabetes mellitus for 1959-61 remained one of the few diseases for which mortality among men is lower than among women (tables 3 and 11). This favorable mortality for white men results for the most part from lower death rates for this cause for married men than for married women at ages 15-19, 20-24, 55-59 years, and thereafter in the life span. Also, white widowers at ages 15-19, 20-24, 65-69 and thereafter have lower death rates for this cause than do white widows at these ages. On the other hand, single white men have much higher mortality rates for diabetes than do single white women, except at ages 15-19 years, when the rates for both sexes are low; and divorced white men have higher rates than do divorced white women, except at ages 15-19 and 20-24 years.

Age-adjusted death rates by marital status indicate that the increase in mortality from diabetes for 1959-61 compared with that for 1949-51 occurred in the unmarried group of white men, particularly among white widowers (table 8). For this group the age-adjusted rate was 93.7 deaths per 100,000 for 1949-51 compared with 114.9 for 1959-61. For single white men this death rate increased from 8.1 to 9.1 deaths per 100,000; and for

divorced white men from 32.8 to 37.7 deaths per 100,000. On the other hand, for married white men the age-adjusted death rate for diabetes declined from 18.6 for 1949-51 to 17.6 deaths per 100,000 for 1959-61.

For both 1959-61 and 1949-51 white married men had by far lower mortality from diabetes, as measured by SMR's, than did unmarried white men (table 10). In contrast married white women have higher death rates compared with those for single white women. Joslin and others concluded in 1940 after an analysis of his own patients and a review of the medical literature on diabetes and marital status that the incidence of diabetes is higher among married women than among single women, but lower among married men than among single men.[58] That this pattern still exists is suggested by the 1959-61 data (tables 2 and 10). The SMR for Diabetes mellitus is less than 100 for single white women and greater than 100 for single white men. Data from the National Health Survey for the period July 1964 to June 1965 show that the ratio of the prevalence of diabetes among females to that among males is 1.4 and that the ratio increases with age.[59]

Vascular lesions affecting central nervous system.—During the 15-year period 1949-64 the mortality rate for vascular lesions decreased among white men for every 5-year age group over the span 35-84 years. The greatest relative decrease (13 percent) occurred for the 75-79-year age group (table 15). These decreases are consistent with the fact that age-adjusted death rates show that mortality from this cause for white men was lower for every marital group for 1959-61 except widowed compared with corresponding rates for 1949-51 (table 8). The 1959-61 death rate for the widowed group was 17 percent higher than the 1949-51 age-adjusted rate. Death rates for both recently and earlier born cohorts increased with advance in age (table 15).

A striking feature of the death rates by marital status for vascular lesions is the high level of mortality from this disease for unmarried white men (single, widowed, and divorced), compared with that for married white men, not only at younger ages but throughout middle and older ages (table 11). This marked variation in mortality by marital status for white men after young adulthood is in contrast to the small variation by marital status in mortality from this disease for white women in the same age groups. In middle and old age the death rate for vascular lesions for single white women is higher than that for white wives (table 3). At ages 45-54 years the death rate for single white men is 2.0 times that for

white husbands at these ages; and at ages 70-74 years, 1.4 times that for white husbands (table 11).

Arteriosclerotic heart disease, including coronary disease (ASHD).—During the 15-year period 1949-64 mortality from Arteriosclerotic heart disease, including coronary disease increased among white men for every 5-year age group over the span 30-84 years (table 15). The greatest relative increase between 1949 and 1964 (28.1 percent) occurred for the age groups 65-69 years and 70-74 years. But the increases at younger ages were also substantial: 17.3 percent at ages 30-34 years, 17.0 percent at ages 35-39 years, and 16.4 percent at ages 40-44 years. These total increases are consistent with those for the different marital groups. Age-adjusted death rates show that for each marital group, mortality from ASHD was higher for 1959-61 than for 1949-51 (table 8). The relative increase in the age-adjusted death rates from this cause for single white men was about the same as that for ever-married white men (about 19 percent). In the latter group white widowers had the greatest increase in mortality from ASHD (about 43 percent).

The 1959-61 risk of dying from ASHD as measured by SMR's was higher for single, widowed, and divorced white men than for married white men (table 10). Both for 1959-61 and 1949-51 excess mortality from this cause was greatest for divorced white men. The ASHD mortality differentials between the unmarried groups (single, widowed, and divorced) and the married group were greater for 1959-61 than for 1949-51.

Lew has described a variety of reasons why it is difficult to evaluate the real trend from coronary disease.[61] He thinks the difficulty will remain until there is more uniformity in the description of specific types of heart disease on death certificates and recognition that a hypothesis of multiple causation appears to be more consistent with the known facts. He maintains that coding and analysis of a single cause of death, so useful in considering the etiology of acute communicable diseases, have not been fruitful in dealing with chronic diseases.

The excess risk of death from ASHD for single white men over the risk for ever-married white men increased rapidly with advance in age. Also the excess risk of death from this cause for both widowed and divorced white men over the risk for married white men increased with advance in age. For each marital group the pattern of excess risk of death from ASHD with advance in age for 1949-51 was in general similar to the above-described pattern for 1959-61. But with few exceptions the

amounts of excess risks for 1959-61 were greater than the corresponding amounts for 1949-51.

Although the excess risk of death from ASHD for single white men was greatest at older ages, there was a substantially higher risk for single white men at younger ages. This suggests that biologic selectivity of marriage and/or the favorable environment of the married may influence the differentials by marital status for arteriosclerotic heart disease.

Inasmuch as the rising death rate for ASHD has been associated with increased cigarette smoking,[10] the high level of mortality from this disease among divorced and widowed white men conforms to the finding by Haenszel and others,[11] that divorced and widowed white men have relatively fewer nonsmokers than married white men at all ages.

A number of studies since 1962 have shown that more cigarette smokers develop coronary heart disease (especially myocardial infarction) and die from the disease than do nonsmokers.[73]

As measured by SMR's for 1959-61 divorced and widowed white men had the highest ASHD rates (table 10). Single white men had a ratio about 32 percent higher than that for married white men. This ranking by SMR's was about the same for 1949-51.

Motor vehicle accidents.—The age-adjusted death rate for motor vehicle accidents for 1949-51 was lower for single white men than the corresponding rate for 1959-61 (table 8). For all other marital groups there was a reduction in this rate for 1959-61 compared with 1949-51. This rise in motor vehicle mortality for single white men reflects higher death rates for 1959-61 for the age groups 15-19 years and 20-24 years:

Age in years	1959-61	1949-51
	Rate per 100,000 population	
15 and over	60.5	58.4
15-19	51.9	46.0
20-24	94.9	75.2
25-34	58.1	60.3
35-44	41.5	46.4
45-54	40.1	48.3
55-59	41.2	60.3
60-64	49.8	69.0
65-69	58.2	77.4
70-74	71.4	98.1
75 and over	88.5	119.9

The 1959-61 death rate for Motor vehicle accidents was much higher for single than for married white men at all ages except 15-19 years (table 11). In contrast the death rate from this cause for single white women is lower than for married white women except at ages 20-24 and 25-34 years (table 3). Widowed and divorced white men suffer even higher death rates for Motor vehicle accidents at every age than do single white men. For all three unmarried groups of white men the highest death rate was at ages 20-24 years: 94.9 deaths per 100,000 for single white men; 275.1 for widowed white men; and 188.3 for divorced white men.

For each of the marital groups of white men, a sizable percentage of those at older ages dying from Motor vehicle accidents were pedestrians (table 11). For example, at ages 65-69 years, these percentages reported for pedestrians were about 57 percent for single white men; 25 percent for married white men; 34 percent for widowed white men; and 39 percent for divorced white men.

All other accidents.—Age-adjusted death rates for these accidents excluding motor vehicle accidents were lower for 1959-61 than for 1949-51 for each of the marital groups of white men (table 8).

At virtually every age death rates for this cause were higher for single than for married white men and higher for divorced than for single white men (table 11). Widowed white men had higher death rates for these accidents than divorced white men at ages 15-19, 20-24, and 25-34 years; but thereafter this death rate is higher for divorced than for widowed white men.

The level of mortality for this cause is only about one-half as high for white women as for white men. But, the ranking by marital status of the death rates for these accidents excluding motor vehicle accidents does not differ much from that for white men (tables 2 and 10). For most ages the death rate for this cause is higher for single than for married white women; higher for divorced than for single white women; and very much higher for widowed than for divorced white women at younger ages (15-19, 20-24, and 25-34 years) (table 3).

The five major causes of these other accidental fatalities in 1959-61 were accidental falls (with greater relative frequency with advance in age), accident caused by fire and explosion of combustible material, accidental drowning, accident caused by firearms, and accidental poisoning by solid and liquid substances.

Suicide.—When adjusted for differing age compositions the 1959-61 Suicide rates for single and

married white men were found to be only negligibly lower than the corresponding rates for 1949-51 (table 8). But this relative stability resulted from the offsetting of substantial decreases in the Suicide rate for single and married white men at ages 35 years and over by increases in this rate for younger single and married white men:

Age in years	Single		Married	
	1959-61	1949-51	1959-61	1949-51
	Rate per 100,000 population			
15-19	5.4	3.6	8.3	6.2
20-24	13.1	10.5	8.4	7.0
25-34	26.7	23.4	10.8	9.7
35-44	37.1	39.0	17.9	18.2
45-54	48.0	52.4	27.6	27.4
55-59	55.9	74.0	33.3	34.4
60-64	57.4	78.3	32.9	38.0
65-69	61.6	84.9	32.1	39.3
70-74	74.2	90.6	33.5	39.5
75 and over	84.5	89.3	40.0	40.8

Age in years	Widowed		Divorced	
	1959-61	1949-51	1959-61	1949-51
	Rate per 100,000 population			
15-19	26.0		6.8	14.5
20-24	142.3	78.0	34.1	30.7
25-34	88.0	80.9	65.7	53.9
35-44	103.6	73.9	96.3	87.8
45-54	97.1	75.7	108.9	100.4
55-59	88.1	71.5	118.0	97.2
60-64	82.5	70.5	118.8	116.1
65-69	72.3	72.5	92.5	112.3
70-74	78.7	71.8	108.6	124.4
75 and over	81.8	76.2	121.0	139.1

The substantially higher Suicide rate for widowed white men for 1959-61 compared with the corresponding Suicide rates for 1949-51 (table 8) results from higher rates for 1959-61 for every age group except 65-69 years. The 1959-61 Suicide rates for divorced white men were higher compared with the rates for 1949-51, for every age group except 15-19 years and at ages 65 years and over.

Durkheim was the first well known sociologist to emphasize the connection between both widowhood and Suicide and divorce and Suicide.[74] He thought that the protection within the married state was greater for men than women. About the relationship between suicide and widowhood he stated:

> . . . The suicides occurring at the crisis of widowhood, of which we have already spoken are really due to domestic anomy, resulting from the death of husband or wife. A family catastrophe occurs which affects the survivor. He is not adapted to the new situation in which he finds himself and accordingly offers less resistance to suicide.

In all countries that he studied he found that the Suicide rate for divorced persons was higher than that for any other marital group.

The excess number of suicides per 100,000 population for each of the unmarried groups of white men, computed as described on page 3, are shown below (using married white men as the favorable status group):

Period and age in years	Single	Widowed	Divorced
1959-61			
20-24	4.7	133.9	25.7
25-34	15.9	77.2	54.9
35-44	19.2	85.7	78.4
45-54	20.4	69.5	81.3
55-59	22.6	54.8	84.7
60-64	24.5	49.6	85.9
65-69	29.5	40.2	60.4
70-74	40.7	45.2	75.1
1949-51			
20-24	3.5	71.0	23.7
25-34	13.7	71.2	44.2
35-44	20.8	55.7	69.6
45-54	25.0	48.3	73.0
55-59	39.6	37.1	62.8
60-64	40.3	32.5	78.1
65-69	45.6	33.2	73.0
70-74	51.1	32.3	84.9

These indexes show an excessively high risk for Suicide for young white widowers, especially at ages under 45 years. In contrast to the trend of these indexes for most causes of death, for white widowers the excess risk of Suicide decreases with advance in age up to 70 years.

The above figures also show that for young single white men (at ages under 35 years), the excess risk of Suicide is higher for 1959-61 than the corresponding risk for 1949-51, but at older ages there has been a drop in this risk.

Homicide.—The total death rate for Homicide and injury purposely inflicted by other persons was about the same for 1964 (3.9 deaths per 100,000 population) as for 1949 (4.1 deaths per 100,000). But during this 15-year period this total rate reflects the offsetting of an increase in mortality for this cause for every 5-year age group of white males under 35 years, except for the age groups 5-9 years, and a decline in mortality from this cause for all 5-year age groups over 40 years except for the age groups 50-54 years and 55-59 years.

The higher Homicide rate for 1959-61 as compared with that for 1949-51 for young white men 20-24, 25-34, and 35-44 years of age results from increases in the rate for single and divorced white men at these ages, but not for married and widowed white men except for widowed white men at ages 25-34 years, for whom the 1959-61 rate was slightly higher than that for 1949-51:

Age in years	Single		Married	
	1959-61	1949-51	1959-61	1949-51
	Rate per 100,000 population			
20-24	5.9	4.7	5.1	4.6
25-34	8.9	7.4	4.4	4.5
35-44	9.7	9.3	4.2	5.0
45-54	7.6	8.5	3.9	4.0
55-59	5.6	7.9	3.3	3.4
60-64	7.0	6.7	2.6	3.3
65-69	5.2	7.9	2.6	2.7
70-74	6.4	9.6	2.1	2.8
75 and over	5.3	6.7	1.9	2.1

Age in years	Widowed		Divorced	
	1959-61	1949-51	1959-61	1949-51
	Rate per 100,000 population			
20-24	9.5	22.3	21.8	20.5
25-34	22.4	21.5	37.3	28.4
35-44	13.3	21.6	34.0	27.5
45-54	10.5	15.5	28.1	23.8
55-59	11.5	8.7	20.7	21.0
60-64	9.6	5.2	17.5	13.7
65-69	6.3	6.5	10.0	13.2
70-74	5.9	2.7	12.1	12.8
75 and over	3.6	4.1	11.0	12.5

As suggested by the above cross-sectional death rates (that is, rates experienced by different age groups at the same point in calendar time) for none of the marital groups of white men does the Homicide rate increase with advance in age. Instead this rate peaks at ages 25-34 years or earlier and then, with some fluctuation, declines at older ages. That this peaking during early adulthood is not an artifact resulting from the mixture of cohorts with differing mortality experience is shown by the homicide experience during 1924-64 of the cohort of white men born in 1900-04:

Age at death	Year of death	Death rate per 100,000
20-24	1924	9.9
25-29	1929	13.9
30-34	1934	15.2
35-39	1939	8.2
40-44	1944	6.3
45-49	1949	6.1
50-54	1954	4.4
55-59	1959	4.1
60-64	1964	4.5

Only at ages 15-19 years is the Homicide rate for married white men higher than that for single white men (table 11). Little reliability may be attached to the very high rates for widowed and divorced white males at ages 15-19 years owing to the small number of teenagers in these two marital groups.

As measured by SMR's the Homicide rates for divorced and widowed white men are, respectively, about seven and three times the rate for white husbands (table 10). These differences in mortality from Homicide for widowed and divorced white males compared with the married are well above the average differences for all causes.

For all ages combined, the Homicide rates for single, married, widowed, and divorced white men are about five, two, four and four times the corresponding rates for white women in these four marital groups (tables 1 and 8).

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Table 1. Comparison of age-adjusted death rates[1] for white women for selected causes of death, by marital status: United States, 1949-51 and 1959-61

[Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955]

Cause of death	Single		Ever married							
			Total		Married		Widowed		Divorced	
	1959-61	1949-51	1959-61	1949-51	1959-61	1949-51	1959-61	1949-51	1959-61	1949-51
All causes-----------------------	591.4	651.1	1,128.6	1,259.0	533.9	646.5	4,487.6	4,659.8	971.9	1,230.4
Tuberculosis, all forms--------001-019	3.2	14.4	3.6	15.3	2.3	11.2	10.1	27.9	6.5	29.9
Malignant neoplasm of digestive organs and peritoneum----------------150-159	34.7	40.3	73.2	86.3	41.0	50.2	255.9	288.6	60.5	80.2
Malignant neoplasm of respiratory system------------------------160-164	4.4	4.1	10.2	8.8	7.0	5.9	28.0	25.0	13.2	11.5
Malignant neoplasm of breast-------170	24.6	27.1	41.0	40.4	31.3	30.3	94.7	95.7	43.2	46.3
Malignant neoplasm of female genital organs------------------------171-176	18.0	19.7	38.6	46.5	27.9	34.7	94.5	106.4	56.0	72.7
Leukemia and aleukemia-------------204	4.4	3.7	7.7	6.6	5.3	5.0	21.4	15.1	6.7	7.6
Diabetes mellitus-------------------260	9.0	9.7	30.0	36.2	16.5	21.7	107.7	118.5	18.9	28.0
Vascular lesions affecting central nervous system----------------330-334	82.0	84.2	169.5	182.3	63.7	84.0	773.5	735.5	113.4	154.4
Arteriosclerotic heart disease, including coronary disease--------420	155.7	130.7	330.5	271.9	132.7	122.0	1,459.6	1,109.6	227.4	243.1
Cirrhosis of liver-----------------581	3.7	3.6	11.7	10.7	8.8	7.9	24.1	24.1	27.9	20.6
Motor vehicle accidents------E810-E835	14.6	12.6	12.7	12.2	10.7	10.2	20.8	20.5	25.6	24.9
All other accidents-E800-E802,E840-E962	18.0	25.0	24.5	28.9	9.9	14.1	104.7	161.0	28.3	37.0
Suicide----------------------E970-E979	4.7	4.3	7.9	7.8	6.5	6.6	12.0	11.7	22.3	19.9
Homicide---------------E964,E980-E985	1.0	0.7	1.9	1.7	1.7	1.6	1.8	1.5	7.5	5.4

[1]For each of the marital classes the standard population used to obtain the 1949-51 age-adjusted rates was 3 times the 1960 white female population in the specified marital group, classified in the same age groups as those for which age-specific rates are shown in table 3. The death rate for 1959-61 serves as both the crude rate and as the age-adjusted death rate for comparison with the age-adjusted rate for 1949-51.

Table 2. Standardized marital status-mortality ratios[1] for white women for selected causes of death: United States, 1959-61

[Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955]

Cause of death	Single (compared with married)	Single[2] (compared with ever married)	Married	Widowed	Divorced
All causes--------------------	130	105	100	145	144
Tuberculosis, all forms----001-019	237	200	100	143	245
Malignant neoplasm of digestive organs and peritoneum-----150-159	115	103	100	123	116
Malignant neoplasm of respiratory system-------------------160-164	104	96	100	118	153
Malignant neoplasm of breast---170	146	140	100	111	114
Malignant neoplasm of female genital organs-----------171-176	114	105	100	118	165
Leukemia and aleukemia---------204	106	103	100	110	107
Diabetes mellitus-------------260	66	63	100	111	90
Vascular lesions affecting central nervous system------------330-334	128	99	100	147	135
Arteriosclerotic heart disease, including coronary disease----420	126	98	100	148	130
Cirrhosis of liver------------581	84	74	100	131	264
Motor vehicle accidents--E810-E835	103	96	100	110	228
All other accidents-----E800-E802,E840-E962	172	126	100	184	237
Suicide-----------------E970-E979	116	99	100	166	319
Homicide-----------E964,E980-E985	51	47	100	128	451

[1]The standardized mortality ratios are expressed, after adjustment for age by the indirect method, in terms of the corresponding cause-specific death rates for married white women.

[2]The second SMR for the single group is expressed in terms of the death rates for the ever married group. Data refer to white women 15 years of age and over.

Table 3. Comparison of average annual death rates for white and all other women for selected causes of death, by marital status: United States, 1959-61

[Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955]

| Cause of death and age | Single | | Ever married | | | | | | | |
| | | | Total | | Married | | Widowed | | Divorced | |
	White	All other	White	All other	White	All other	White	All other	White	All other
Tuberculosis, all forms (001-019)										
Total, 15 years and over--------	3.2	11.0	3.6	12.7	2.3	9.6	10.1	24.0	6.5	20.4
15-19 years-------------------------	0.2	1.6	0.1	1.3	0.1	1.0	-	27.3	-	-
20-24 years-------------------------	0.8	7.7	0.3	4.1	0.3	3.8	2.7	-	1.5	16.7
25-34 years-------------------------	3.6	23.2	0.9	8.5	0.8	7.8	3.1	20.2	3.2	15.0
35-44 years-------------------------	6.9	43.2	2.3	13.5	2.1	11.8	5.5	22.3	7.1	25.7
45-54 years-------------------------	8.2	1 30.6	3.2	12.0	2.7	9.6	5.7	20.3	7.5	19.2
55-59 years-------------------------	6.7	1 24.1	3.4	14.5	3.0	12.6	4.4	19.5	6.9	9.1
60-64 years-------------------------	8.5	25.4	4.3	19.8	3.3	16.7	6.4	22.8	7.3	32.4
65-69 years-------------------------	10.5	25.5	6.2	20.7	5.1	16.1	7.7	24.0	6.9	33.7
70-74 years-------------------------	12.6	25.1	9.1	22.0	7.4	14.7	10.3	25.1	13.0	45.0
75 years and over-------------------	24.3	25.8	17.0	31.6	13.9	21.3	17.9	34.3	16.1	12.9
Malignant neoplasm of digestive organs and peritoneum (150-159)										
Total, 15 years and over---------	34.7	13.7	73.2	60.1	41.0	32.7	255.9	181.8	60.5	53.8
15-19 years-------------------------	0.2	0.4	0.0	0.3	0.0	0.3	-	-	-	-
20-24 years-------------------------	0.6	0.9	0.6	1.2	0.6	1.2	-	-	0.7	-
25-34 years-------------------------	2.7	4.1	2.3	3.8	2.2	3.6	5.3	4.6	2.6	8.3
35-44 years-------------------------	16.7	23.9	10.2	16.8	10.0	15.4	12.4	26.7	12.5	24.3
45-54 years-------------------------	46.6	1 68.3	36.3	55.6	35.1	46.7	44.9	90.8	42.0	68.8
55-59 years-------------------------	76.7	1 106.8	75.5	108.6	72.1	90.9	86.9	147.0	86.5	107.9
60-64 years-------------------------	131.4	182.6	125.4	163.4	118.0	128.8	141.7	208.8	133.8	158.7
65-69 years-------------------------	185.7	155.6	185.5	190.3	172.8	145.8	202.3	226.2	202.8	221.2
70-74 years-------------------------	268.0	179.8	268.8	234.1	248.5	170.9	284.8	264.3	271.6	333.2
75 years and over-------------------	462.7	258.0	481.8	309.1	396.8	242.4	508.7	325.5	449.3	283.8
Malignant neoplasm of respiratory system (160-164)										
Total, 15 years and over---------	4.4	2.3	10.2	9.0	7.0	5.5	28.0	23.0	13.2	13.2
15-19 years-------------------------	0.0	0.1	0.1	-	0.1	-	-	-	-	-
20-24 years-------------------------	0.1	0.1	0.1	0.1	0.1	-	-	-	0.4	2.8
25-34 years-------------------------	0.8	0.2	0.6	0.9	0.6	0.8	0.4	-	1.0	2.8
35-44 years-------------------------	3.5	8.6	3.4	3.6	3.2	3.0	4.9	7.7	6.4	6.6
45-54 years-------------------------	8.9	1 13.4	9.7	12.7	9.2	10.5	12.9	18.9	14.6	23.9
55-59 years-------------------------	14.6	1 19.6	15.1	17.6	13.8	13.5	18.6	25.9	23.6	21.9
60-64 years-------------------------	19.0	16.2	19.4	23.4	18.7	18.9	20.3	28.7	26.7	29.2
65-69 years-------------------------	26.0	22.6	24.5	23.2	22.4	17.9	27.4	26.9	28.1	38.5
70-74 years-------------------------	30.0	25.1	30.7	27.2	28.3	24.8	32.3	27.8	41.7	45.0
75 years and over-------------------	37.0	22.1	41.6	28.7	36.8	27.5	43.0	29.0	45.6	25.8
Malignant neoplasm of breast (170)										
Total, 15 years and over---------	24.6	9.3	41.0	31.8	31.3	22.9	94.7	69.5	43.2	36.8
15-19 years-------------------------	-	-	0.0	0.5	0.0	0.5	-	-	-	-
20-24 years-------------------------	0.1	0.3	0.2	0.4	0.2	0.3	-	6.6	-	2.8
25-34 years-------------------------	3.7	5.4	3.8	5.2	3.8	5.2	3.1	7.4	4.7	5.0
35-44 years-------------------------	25.5	33.9	19.1	23.1	18.8	21.9	21.1	30.0	23.0	31.9
45-54 years-------------------------	66.8	1 60.7	48.6	47.1	48.3	42.4	51.8	66.5	48.0	51.9
55-59 years-------------------------	85.4	1 60.1	63.1	55.0	62.9	48.1	61.1	67.5	76.1	69.5
60-64 years-------------------------	107.6	76.3	74.3	69.3	73.0	57.0	75.9	82.7	84.9	100.4
65-69 years-------------------------	123.1	65.1	83.3	62.9	81.4	53.6	85.3	71.0	93.3	57.7
70-74 years-------------------------	143.9	71.1	96.9	73.6	94.1	61.5	98.4	78.9	111.5	108.0
75 years and over-------------------	202.2	84.8	143.8	90.8	123.9	67.5	149.7	95.8	158.4	129.0

See footnotes at end of table.

Table 3. Comparison of average annual death rates for white and all other women for selected causes of death, by marital status: United States, 1959-61--Con.

[Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955]

Cause of death and age	Single White	Single All other	Ever married Total White	Total All other	Married White	Married All other	Widowed White	Widowed All other	Divorced White	Divorced All other
Malignant neoplasm of female genital organs (171-176)										
Total, 15 years and over---------	18.0	15.9	38.6	54.1	27.9	36.6	94.5	127.2	56.0	67.1
15-19 years--------------------------	0.5	1.0	0.8	0.8	0.8	0.8	9.4	-	-	-
20-24 years--------------------------	0.8	1.9	1.0	2.0	1.0	1.9	2.7	6.6	1.9	2.8
25-34 years--------------------------	3.4	15.2	4.3	10.0	4.2	9.3	8.9	21.2	7.3	18.3
35-44 years--------------------------	20.0	50.7	16.9'	34.9	15.9	30.7	30.5	69.9	33.3	53.1
45-54 years--------------------------	46.8	[1]86.0	40.5	74.7	37.8	64.4	55.7	111.9	65.5	100.9
55-59 years--------------------------	62.0	[1]88.7	59.1	102.2	55.9	83.1	69.6	142.8	81.3	120.7
60-64 years--------------------------	91.0	141.0	75.8	129.7	70.8	104.7	82.1	161.3	117.7	142.5
65-69 years--------------------------	103.5	127.3	91.3	126.2	84.2	98.5	99.0	145.6	121.8	201.9
70-74 years--------------------------	100.7	108.7	102.7	131.8	95.0	116.2	107.3	140.8	140.9	108.0
75 years and over--------------------	115.6	110.6	123.7	133.1	110.6	98.1	126.9	141.6	170.0	116.1
Malignant neoplasm of cervix uteri (171)										
Total, 15 years and over --------	3.0	8.0	13.7	29.0	10.2	20.5	29.7	64.0	28.6	38.7
15-19 years--------------------------	0.0	0.2	0.0	0.3	0.0	0.3	-	-	-	-
20-24 years--------------------------	0.2	0.9	0.3	0.7	0.3	0.7	2.7	-	1.9	-
25-34 years--------------------------	1.2	9.6	2.8	7.1	2.7	6.5	7.1	16.6	5.5	13.3
35-44 years--------------------------	5.3	35.0	9.8	24.2	8.9	21.2	18.3	47.6	24.4	39.4
45-54 years--------------------------	9.8	[1]45.1	17.3	43.2	15.3	36.9	27.5	67.7	35.2	54.2
55-59 years--------------------------	9.3	[1]45.1	20.4	50.4	17.7	39.1	27.2	73.3	40.1	60.3
60-64 years--------------------------	13.7	41.6	22.9	58.1	20.1	47.0	26.0	72.1	51.3	61.5
65-69 years--------------------------	12.2	36.8	25.7	63.7	21.2	47.8	30.4	74.8	47.2	105.8
70-74 years--------------------------	13.4	16.7'	28.3	53.7	23.7	45.1	30.8	58.6	57.5	45.0
75 years and over--------------------	16.8	40.5	33.9	59.2	29.3	40.0	34.9	63.8	60.9	64.5
Leukemia and aleukemia (204)										
Total, 15 years and over---------	4.4	1.9	7.7	4.9	5.3	3.6	21.4	10.5	6.7	5.6
15-19 years--------------------------	1.8	1.3	1.6	1.0	1.6	0.8	-	-	-	17.4
20-24 years--------------------------	2.2	1.6	1.2	1.3	1.2	1.3	2.7	-	0.7	2.8
25-34 years--------------------------	2.4	1.3	1.9	1.7	1.9	1.7	1.8	1.8	2.8	1.1
35-44 years--------------------------	3.3	2.5	2.6	3.3	2.6	3.3	3.3	4.8	2.3	1.3
45-54 years--------------------------	5.4	6.4	5.0	5.5	5.0	4.6	5.5	7.4	4.5	11.7
55-59 years--------------------------	8.0	[1]3.0	8.0	8.5	7.9	7.2	8.3	11.4	9.8	7.3
60-64 years--------------------------	13.4	4.6	11.9	12.8	11.6	10.6	12.7	14.9	11.7	22.7
65-69 years--------------------------	14.1	11.3	18.1	8.8	18.1	6.3	17.9	10.7	21.6	14.4
70-74 years--------------------------	22.9	8.4	25.2	12.1	24.8	11.3	25.7	12.6	20.5	9.0
75 years and over--------------------	33.0	3.7	38.0	12.7	35.5	8.9	39.2	13.9	47.4	-
Diabetes mellitus (260)										
Total, 15 years and over---------	9.0	11.1	30.0	41.1	16.5	24.6	107.7	115.6	18.9	32.0
15-19 years--------------------------	0.7	1.4	0.6	2.5	0.6	2.3	9.4	27.3	1.7	-
20-24 years--------------------------	1.5	2.8	0.8	0.7	0.8	0.7	2.7	-	2.6	2.8
25-34 years--------------------------	5.1	7.8	1.7	3.3	1.6	3.1	2.7	3.7	4.0	6.1
35-44 years--------------------------	7.5	21.8	2.6	10.6	2.4	9.1	5.5	28.2	5.3	11.1
45-54 years--------------------------	8.8	[1]45.7	8.4	39.2	8.0	34.2	12.7	63.3	8.9	33.8
55-59 years--------------------------	17.2	[1]84.2	24.1	82.6	22.7	71.4	31.2	107.4	19.7	78.6
60-64 years--------------------------	31.5	94.8	51.9	132.0	50.3	112.4	57.0	157.2	41.6	136.0
65-69 years--------------------------	44.3	116.0	88.8	131.0	84.3	114.9	96.4	144.4	71.7	134.6
70-74 years--------------------------	70.2	138.0	136.1	151.9	130.6	121.8	141.9	168.0	100.6	144.1
75 years and over--------------------	100.2	140.1	193.3	164.1	184.6	165.2	199.8	163.6	130.7	180.6

See footnotes at end of table.

[Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955]

Cause of death and age	Single White	Single All other	Ever married Total White	Ever married Total All other	Married White	Married All other	Widowed White	Widowed All other	Divorced White	Divorced All other
Vascular lesions affecting central nervous system (330-334)										
Total, 15 years and over------------	82.0	46.4	169.5	221.2	63.7	102.0	773.5	766.1	113.4	137.8
15-19 years----------------	1.1	2.1	1.2	2.8	1.0	2.8	37.8	-	-	-
20-24 years----------------	1.9	5.0	1.8	5.0	1.7	4.8	2.7	13.2	3.7	5.6
25-34 years----------------	5.4	19.1	3.3	13.9	3.2	13.1	7.1	40.5	5.8	13.8
35-44 years----------------	15.5	59.3	9.7	52.6	9.2	46.9	16.6	107.5	17.2	66.4
45-54 years----------------	38.8	[1]187.0	32.5	154.7	30.4	131.0	45.5	266.6	47.4	137.1
55-59 years----------------	65.2	[1]303.8	68.5	308.0	64.5	236.0	81.2	470.1	88.2	263.3
60-64 years----------------	131.7	439.2	139.1	544.2	128.5	380.7	160.8	765.4	164.0	447.0
65-69 years----------------	251.0	599.8	248.4	695.2	240.7	486.2	304.5	875.6	313.2	601.0
70-74 years----------------	518.3	757.0	544.7	961.7	500.9	652.1	578.2	1127.6	581.4	909.4
75 years and over----------	1901.7	1397.0	1921.9	1632.2	1335.9	1134.1	2104.7	1756.2	1844.5	1367.4
Arteriosclerotic heart disease including coronary disease (420)										
Total, 15 years and over------------	155.7	51.8	330.5	238.0	132.7	103.9	1459.6	846.3	227.4	162.5
15-19 years----------------	0.1	0.5	0.3	0.5	0.2	0.5	18.9	-	-	-
20-24 years----------------	0.7	2.8	0.4	1.4	0.3	1.5	5.5	-	1.1	-
25-34 years----------------	4.8	11.5	1.7	8.2	1.6	7.8	8.0	18.4	3.7	9.4
35-44 years----------------	21.1	69.3	12.0	41.2	11.1	36.3	25.8	90.3	23.7	50.0
45-54 years----------------	72.2	181.1	61.9	161.9	57.2	133.3	95.1	282.4	89.2	182.6
55-59 years----------------	158.2	[1]333.8	176.6	346.0	162.9	265.6	224.8	509.2	218.6	411.4
60-64 years----------------	345.9	575.6	378.8	600.1	346.4	433.7	449.2	822.3	425.6	534.4
65-69 years----------------	594.3	625.2	696.5	735.0	630.5	516.5	787.9	918.9	734.3	730.8
70-74 years----------------	1078.2	1062.3	1229.4	1054.5	1097.0	727.6	1333.3	1232.9	1275.1	900.4
75 years and over----------	3386.2	1868.8	3289.0	1878.6	2257.6	1166.0	3611.5	2054.2	3106.5	1612.5
Cirrhosis of liver (581)										
Total, 15 years and over------------	3.7	7.9	11.7	13.3	8.8	10.3	24.1	22.5	27.9	27.0
15-19 years----------------	0.3	0.5	0.3	0.3	0.3	0.3	-	-	-	-
20-24 years----------------	0.4	2.3	0.2	0.9	0.2	0.9	-	-	0.7	-
25-34 years----------------	2.8	18.0	1.6	7.6	1.3	6.3	8.5	25.8	11.1	21.6
35-44 years----------------	7.2	36.4	8.3	16.5	6.8	13.4	25.9	38.8	32.0	34.5
45-54 years----------------	12.2	29.6	18.2	21.8	15.7	17.7	32.1	36.4	40.1	32.7
55-59 years----------------	12.1	24.1	18.6	17.7	16.3	14.6	25.1	25.1	32.7	12.8
60-64 years----------------	13.3	16.2	19.5	17.6	17.5	13.1	22.7	22.8	31.9	25.9
65-69 years----------------	13.7	11.3	20.3	11.7	18.0	8.6	23.1	12.8	28.1	38.5
70-74 years----------------	14.7	8.4	21.1	12.4	19.3	8.5	22.2	14.4	26.7	18.0
75 years and over----------	16.7	22.1	23.5	10.7	22.7	10.7	23.7	10.2	29.5	38.7
Motor vehicle accidents (E810-E835)										
Total, 15 years and over------------	14.6	12.6	12.7	11.8	10.7	10.3	20.8	17.2	25.6	17.7
15-19 years----------------	16.0	11.0	17.7	10.3	16.2	9.8	122.7	27.3	68.8	34.8
20-24 years----------------	17.9	15.8	12.0	10.8	10.9	10.0	65.6	46.1	48.2	25.1
25-34 years----------------	10.7	14.8	9.1	10.7	8.0	9.8	45.4	28.5	35.9	17.2
35-44 years----------------	7.1	13.6	9.0	10.8	7.9	9.6	24.5	18.7	24.4	18.6
45-54 years----------------	6.9	9.7	11.6	12.4	10.6	11.2	18.6	16.7	18.8	15.7
55-59 years----------------	10.1	[1]13.6	13.9	12.2	13.0	9.8	16.5	17.0	20.0	14.6
60-64 years----------------	12.7	18.5	16.2	14.7	15.6	12.1	17.4	18.2	18.5	13.0
65-69 years----------------	16.0	11.3	18.4	14.6	17.9	12.7	19.4	16.0	13.8	19.2
70-74 years----------------	20.1	4.2	21.5	16.3	21.7	12.4	21.1	17.6	24.6	36.0
75 years and over----------	24.8	25.8	24.2	13.2	26.7	12.4	23.4	13.4	29.5	12.9

See footnotes at end of table.

Table 3. Comparison of average annual death rates for white and all other women for selected causes of death, by marital status: United States, 1959-61--Con.

[Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955]

Cause of death and age	Single White	Single All other	Ever married Total White	Ever married Total All other	Married White	Married All other	Widowed White	Widowed All other	Divorced White	Divorced All other
Motor vehicle accidents to pedestrians (E812)										
Total, 15 years and over---------	1.8	2.6	2.0	3.2	1.1	2.0	6.8	8.3	4.0	4.6
15-19 years---------------------	0.8	1.4	0.8	1.0	0.7	1.0	-	-	3.4	-
20-24 years---------------------	0.7	1.8	0.4	1.0	0.4	0.9	-	13.2	1.5	-
25-34 years---------------------	1.0	3.5	0.5	1.8	0.4	1.7	1.3	3.7	2.6	2.8
35-44 years---------------------	1.1	5.7	0.7	2.0	0.6	1.7	1.5	4.0	2.2	4.0
45-54 years---------------------	1.8	3.8	1.4	2.9	1.2	2.1	3.0	5.8	3.8	4.1
55-59 years---------------------	3.0	9.1	2.3	4.9	1.7	2.8	3.5	8.4	7.8	11.0
60-64 years---------------------	4.2	13.9	3.0	7.4	2.0	4.6	5.0	11.4	5.0	3.2
65-69 years---------------------	7.0	8.5	4.5	7.6	2.9	4.6	6.7	9.9	4.9	9.6
70-74 years---------------------	10.1	4.2	6.9	9.2	4.1	4.5	8.9	10.8	10.3	36.0
75 years and over--------------	14.6	18.4	9.1	8.1	6.0	6.2	10.0	8.7	14.3	-
All other accidents (E800-E802, E840-E965)										
Total, 15 years and over---------	18.0	14.4	24.5	24.8	9.9	14.6	104.7	68.7	28.3	26.5
15-19 years---------------------	3.9	6.1	4.7	8.8	4.6	8.2	18.9	54.6	6.9	17.4
20-24 years---------------------	5.3	10.1	3.8	9.2	3.5	8.8	35.6	19.7	12.0	19.5
25-34 years---------------------	9.5	22.4	4.3	11.2	3.9	10.1	13.8	33.1	13.7	18.3
35-44 years---------------------	11.1	31.4	6.2	15.8	5.4	14.1	15.0	32.6	18.2	19.9
45-54 years---------------------	12.6	[1]31.2	9.6	18.6	8.1	14.8	18.7	31.5	22.3	29.7
55-59 years---------------------	14.8	[1]19.6	11.6	25.6	9.7	15.9	16.4	46.0	25.8	27.4
60-64 years---------------------	26.1	41.6	15.8	37.0	12.7	25.0	21.5	52.1	28.1	45.3
65-69 years---------------------	34.3	56.6	25.7	45.1	21.4	31.7	30.8	55.5	39.9	62.5
70-74 years---------------------	72.3	83.6	54.5	7.0	43.4	53.0	61.8	81.0	90.3	54.0
75 years and over--------------	326.1	147.4	258.1	156.5	150.3	88.8	291.4	172.8	261.3	154.8
Suicide (E970-E979)[2]										
Total, 15 years and over---------	4.7	2.2	7.9	3.1	6.5	2.6	12.0	4.8	22.3	5.2
15-19 years---------------------	1.3	1.4	2.7	1.8	2.4	1.8	-	-	13.8	-
20-24 years---------------------	3.8	2.6	2.8	2.3	2.5	2.1	10.9	13.2	10.8	5.6
25-34 years---------------------	10.0	5.2	5.4	3.2	4.7	3.0	15.6	5.5	25.2	5.5
35-44 years---------------------	11.1	2.9	7.7	3.5	6.8	2.8	13.2	7.7	25.4	8.0
45-54 years---------------------	10.4	2.1	10.3	2.9	9.0	2.4	16.8	4.8	23.1	2.9
55-59 years---------------------	9.6	[1]1.4	19.7	3.0	8.8	2.6	16.0	3.9	18.0	1.8
60-64 years---------------------	9.6	-	10.6	4.0	8.6	2.9	14.1	4.9	21.7	9.7
65-69 years---------------------	8.7	-	9.6	3.5	7.9	1.2	11.0	5.6	21.2	-
70-74 years---------------------	9.8	-	8.9	2.5	6.1	1.1	10.9	3.3	14.4	-
75 years and over--------------	5.1	-	8.1	3.4	5.7	0.9	8.5	4.1	24.2	-
Homicide (E964, E980-E985)										
Total, 15 years and over---------	1.0	11.6	1.9	13.7	1.7	13.7	1.8	10.6	7.5	25.0
15-19 years---------------------	0.9	5.1	2.4	16.4	2.3	16.0	9.4	54.6	8.6	17.4
20-24 years---------------------	1.3	14.9	2.2	17.5	1.9	16.6	13.7	39.5	10.8	39.0
25-34 years---------------------	1.7	28.7	2.3	20.4	1.9	18.9	8.0	44.2	11.9	34.3
35-44 years---------------------	1.3	24.3	2.3	18.2	1.9	16.0	6.5	33.7	9.4	30.5
45-54 years---------------------	0.6	13.4	2.0	9.5	1.7	8.0	2.7	12.7	6.7	19.2
55-59 years---------------------	0.5	[1]3.0	1.4	7.4	1.2	7.5	1.7	7.3	4.1	7.3
60-64 years---------------------	0.6	-	1.2	4.1	1.1	3.5	1.3	4.9	2.9	3.2
65-69 years---------------------	0.9	-	0.9	3.7	0.8	2.9	1.0	4.1	0.4	9.6
70-74 years---------------------	1.1	-	1.4	2.7	1.5	2.8	1.3	2.7	1.4	-
75 years and over--------------	1.6	-	1.6	3.6	1.7	0.9	1.4	4.3	6.3	-

[1]Corrected by removing 21,000 "mistallied Indians" from the denominator of the rate. Reported rate was multiplied by 1.3158 to obtain corrected rate. For details of revision, see appendix.

[2]Does not include late effects of self-inflicted injury (E963).

Table 4. Death rates for tuberculosis, all forms (ICD Nos. 001-019) for white women, by birth cohort and age at death: death rates at 5-year intervals, 1914-64

[Rates per 100,000 population in age group]

Age at death	Cohort and period of birth														
	1940-1944	1935-1939	1930-1934	1925-1929	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894	1885-1889	1880-1884	1875-1879	1870-1874
15-19 years ----	0.2	0.9	5.4	14.4	20.3	25.9	49.4	65.5	80.9	71.1					
20-24 years ----	0.2	0.6	1.5	11.8	29.5	39.5	53.4	97.7	114.3	138.0	121.4				
25-29 years ----		0.4	0.9	2.7	15.6	31.2	46.3	62.2	93.2	105.3	138.5	128.0			
30-34 years ----			0.8	1.8	3.9	16.0	33.1	41.8	52.4	80.0	83.1	126.3	123.2		
35-39 years ----				1.4	2.4	5.3	17.0	29.7	37.2	45.3	64.0	77.1	109.2	112.8	
40-44 years ----					1.6	3.4	5.8	15.5	25.5	33.1	43.3	58.5	68.8	99.0	102.6
45-49 years ----						2.3	3.9	6.0	15.3	21.7	33.0	41.0	54.2	63.0	86.4
50-54 years ----							2.8	4.3	5.7	13.3	24.4	31.3	42.2	55.1	64.8
55-59 years ----								2.7	4.1	6.0	15.5	26.3	37.3	46.7	59.6
60-64 years ----									3.2	5.4	7.2	21.2	32.8	45.2	57.7
65-69 years ----										4.4	6.7	11.7	25.9	41.2	57.0
70-74 years ----											7.3	9.8	16.8	34.7	52.4
75-79 years ----												10.1	13.7	21.5	43.3
80-84 years ----													14.9	21.2	27.9

NOTE: At ages 20-45 years the first figure in each row, moving from right to left, is the death rate for data year 1914, the second figure for 1919, the third figure for 1924, and the last figure for 1964. At ages 15-19 years the last figure is for 1959.

Table 5. Death rates for malignant neoplasm of breast (ICD No. 170) for white women, by birth cohort and age at death: death rates at 5-year intervals, 1914-64

[Rates per 100,000 population in age group]

Age at death	Cohort and period of birth														
	1940-1944	1935-1939	1930-1934	1925-1929	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894	1885-1889	1880-1884	1875-1879	1870-1874
20-24 years ----	0.4	0.2	0.2	0.3	0.2	0.2	0.4	0.4	0.3	0.5	0.2				
25-29 years ----		1.9	1.5	1.5	1.8	1.6	1.4	1.6	1.3	1.6	1.6	1.7			
30-34 years ----			6.4	6.5	5.9	6.0	5.4	5.2	5.0	5.3	5.4	4.6	4.5		
35-39 years ----				14.0	13.4	13.0	14.4	13.8	12.9	12.6	13.6	13.2	12.6	14.1	
40-44 years ----					25.8	25.5	26.0	26.9	26.2	26.1	25.0	24.8	25.5	25.4	25.7
45-49 years ----						43.7	42.1	42.7	40.5	39.3	40.7	42.7	41.3	41.6	38.4
50-54 years ----							62.8	56.4	55.1	54.7	52.1	53.1	58.3	58.3	55.2
55-59 years ----								70.6	67.3	64.9	69.0	70.4	73.9	71.3	67.5
60-64 years ----									76.1	76.3	75.8	76.6	77.3	86.5	87.5
65-69 years ----										88.9	86.4	86.7	88.0	93.1	99.9
70-74 years ----											98.9	97.2	107.1	108.0	111.8
75-79 years ----												112.1	117.6	130.4	134.8
80-84 years ----													139.4	150.4	157.9

NOTE: At ages under 45 years the first figure in each row, moving from right to left, is the death rate for data year 1914, the second figure for 1919, the third figure for 1924, and the last figure for 1964.

Table 6. Death rates for cirrhosis of liver (ICD No. 581) for white women, by birth cohort and age at death: death rates at 5-year intervals, 1914-64

[Rates per 100,000 population in age group]

Age at death in years	Cohort and period of birth														
	1940-1944	1935-1939	1930-1934	1925-1929	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894	1885-1889	1880-1884	1875-1879	1870-1874
20-24 years----	0.3	0.3	0.3	0.3	0.6	0.5	0.4	0.4	0.2	0.1	0.4				
25-29 years----		0.9	0.9	1.1	1.1	1.1	0.8	0.8	0.8	0.5	0.6	1.3			
30-34 years----			2.6	2.7	2.5	2.8	2.1	2.4	1.9	1.7	1.3	1.2	2.2		
35-39 years----				6.8	5.7	5.6	5.2	4.2	3.3	3.0	2.9	2.3	2.1	5.1	
40-44 years----					11.8	10.9	10.0	8.9	5.4	5.5	5.4	5.7	3.8	3.9	8.5
45-49 years----						.18.2	15.9	12.2	10.9	8.5	7.8	7.8	8.3	6.8	7.0
50-54 years----							22.4	18.8	14.6	13.6	10.9	10.4	11.5	10.3	10.6
55-59 years----								23.8	18.2	16.0	14.8	14.6	14.0	14.6	13.6
60-64 years----									22.9	18.4	17.2	18.6	17.7	18.3	17.9
65-69 years----										22.7	18.9	21.1	19.7	23.4	25.7
70-74 years----											18.7	20.1	22.5	22.9	31.3
75-79 years----												20.0	24.4	25.8	27.1
80-84 years----													18.9	.21.5	29.9

NOTE: At ages 20-45 years the first figure in each row, moving from right to left, is the death rate for data year 1914, the second figure for 1919, the third figure for 1924, and the last figure for 1964.

Table 7. Death rates for specified causes, for white women, by birth cohort and age at death: United States, 1949, 1954, 1959, and 1964

[Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955]

Cause of death and age	Cohort and period of birth														
	1940-1944	1935-1939	1930-1934	1925-1929	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894	1885-1889	1880-1884	1875-1879	1870-1874
Malignant neoplasm of cervix uteri (171)	Rates per 100,000 population in age group														
20-24 years	0.2	0.3	0.4	0.3											
25-29 years		1.2	1.1	1.6	1.9										
30-34 years			4.0	4.1	4.1	5.5									
35-39 years				6.1	8.1	8.2	9.8								
40-44 years					10.9	11.4	13.7	14.9							
45-49 years						12.9	15.2	18.1	21.5						
50-54 years							16.6	18.4	23.0	23.1					
55-59 years								17.8	19.9	23.9	25.5				
60-64 years									19.6	22.5	25.2	26.6			
65-69 years										22.2	25.2	27.4	28.3		
70-74 years											23.1	27.0	30.0	32.5	
75-79 years												26.5	30.4	37.5	31.2
80-84 years													30.3	34.6	33.9
Leukemia and aleukemia (204)															
20-24 years	1.5	1.5	1.8	1.7											
25-29 years		1.5	1.9	1.8	1.8										
30-34 years			2.0	2.1	2.2	2.0									
35-39 years				2.8	2.4	2.2	2.4								
40-44 years					3.3	2.9	3.4	2.8							
45-49 years						4.5	4.4	5.2	4.3						
50-54 years							5.9	6.1	6.1	6.4					
55-59 years								8.8	8.2	8.9	8.7				
60-64 years									10.5	11.7	11.1	10.4			
65-69 years										17.5	17.6	17.1	14.6		
70-74 years											24.8	25.8	24.3	20.3	
75-79 years												33.5	32.4	27.9	21.7
80-84 years													41.5	39.2	31.8
Diabetes mellitus (260)															
20-24 years	0.9	1.0	1.0	1.5											
25-29 years		1.5	1.5	1.5	1.8										
30-34 years			2.3	2.4	2.0	1.5									
35-39 years				2.5	1.9	2.3	2.1								
40-44 years					3.8	3.2	2.9	3.7							
45-49 years						5.4	5.6	5.4	7.5						
50-54 years							11.6	12.2	13.5	18.3					
55-59 years								23.9	26.0	30.8	42.0				
60-64 years									42.7	52.0	57.9	77.5			
65-69 years										75.7	83.4	96.1	114.0		
70-74 years											122.6	130.7	136.3	165.9	
75-79 years												162.8	163.5	169.2	189.3
80-84 years													197.5	188.2	191.7

NOTE: Except for the age group 80-84 years the first figure in each row, moving from right to left, is the death rate for data year 1949, the second figure for 1954, the third figure for 1959, and the fourth figure for 1964. For the age group 80-84 years the first figure is for 1954.

Table 7. Death rates for specified causes, for white women, by birth cohort and age at death: United States, 1949, 1954, 1959, and 1964—Con.

[Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955]

Cause of death and age	Cohort and period of birth														
	1940-1944	1935-1939	1930-1934	1925-1929	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894	1885-1889	1880-1884	1875-1879	1870-1874
Vascular lesions affecting central nervous system (330-334)	Rates per 100,000 population in age group														
20-24 years	1.7	1.9	2.2	1.4											
25-29 years		2.6	2.4	2.2	2.3										
30-34 years			4.4	4.9	4.3	4.0									
35-39 years			.	7.6	6.8	8.1	8.8								
40-44 years					13.9	13.6	16.7	18.3							
45-49 years						25.4	24.5	32.6	40.5						
50-54 years							40.0	43.6	58.7	71.9					
55-59 years								64.4	75.5	95.4	117.0				
60-64 years									114.8	146.1	174.3	206.1			
65-69 years										242.9	277.1	314.3	359.0		
70-74 years											478.7	553.3	600.8	678.9	
75-79 years												953.6	1118.1	1132.6	1182.5
80-84 years													1871.0	2095.0	1953.1
Arteriosclerotic heart disease, including coronary disease (420)															
20-24 years	0.6	0.4	0.6	0.9											
25-29 years		1.3	0.8	1.2	1.2										
30-34 years			2.8	3.3	3.0	3.3									
35-39 years				7.4	7.0	7.5	7.5								
40-44 years					19.7	18.7	17.3	18.3							
45-49 years						42.5	41.1	40.2	43.3						
50-54 years							93.1	89.3	89.3	89.4					
55-59 years								181.8	180.7	180.6	183.0				
60-64 years									362.9	374.1	353.7	354.1			
65-69 years										686.7	696.1	661.6	610.1		
70-74 years											1191.1	1189.0	1133.8	1071.3	
75-79 years												2013.2	2037.9	1891.1	1704.8
80-84 years													3448.8	3399.5	2985.0
Homicide (E964,E980-E985)															
20-24 years	1.7	1.8	1.6	1.7											
25-29 years		2.5	2.5	1.9	1.9										
30-34 years			2.9	2.3	1.8	1.7									
35-39 years				2.5	2.4	2.2	2.4								
40-44 years					2.2	2.0	1.9	1.6							
45-49 years						1.9	1.7	2.0	2.4						
50-54 years							1.9	1.9	1.9	1.4					
55-59 years								1.4	1.2	1.2	1.0				
60-64 years									1.7	1.1	0.8	1.3			
65-69 years										1.6	1.1	1.1	0.8		
70-74 years											1.4	1.2	0.9	0.6	
75-79 years												1.2	1.0	1.2	1.3
80-84 years													1.7	1.7	0.9

NOTE: Except for the age group 80-84 years the first figure in each row, moving from right to left, is the death rate for data year 1949, the second figure for 1954, the third figure for 1959, and the fourth figure for 1964. For the age group 80-84 years the first figure is for 1954.

Table 8. Comparison of age-adjusted death rates[1] for white men for selected causes of death, by marital status: United States, 1949-51 and 1959-61

[Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955]

| Cause of death | Single | | Ever married | | | | | | | |
| | | | Total | | Married | | Widowed | | Divorced | |
	1959-61	1949-51	1959-61	1949-51	1959-61	1949-51	1959-61	1949-51	1959-61	1949-51
All causes -----------------------	752.0	802.1	1,651.7	1,692.6	1,274.7	1,337.2	8,847.9	8,023.3	3,155.9	3,021.5
Tuberculosis, all forms --------001-019	9.7	36.5	11.1	33.7	7.7	25.8	56.5	106.7	57.0	154.1
Malignant neoplasm of digestive organs and peritoneum----------------150-159	33.6	39.8	97.6	108.7	80.2	90.6	446.5	455.7	139.8	147.0
Malignant neoplasm of respiratory system-------------------------160-164	21.2	15.0	68.0	41.2	59.0	36.5	214.6	112.5	142.7	78.0
Malignant neoplasm of male genital organs-----------------------177-179	8.5	8.7	29.8	30.8	22.4	23.9	187.0	174.6	33.7	35.1
Leukemia and aleukemia-------------204	5.3	4.6	12.2	9.8	10.7	9.1	43.4	25.9	14.2	11.1
Diabetes mellitus-----------------260	9.1	8.1	22.4	22.6	17.6	18.6	114.9	93.7	37.7	32.8
Vascular lesions affecting central nervous system----------------330-334	61.7	63.4	172.0	180.8	121.5	136.4	1,219.2	1,042.3	243.1	260.3
Arteriosclerotic heart disease, including coronary disease--------420	214.2	179.2	618.1	517.6	489.7	426.5	3,171.8	2,218.7	971.9	782.1
Cirrhosis of liver-----------------581	14.2	12.0	24.0	20.3	18.0	16.1	89.4	63.6	125.0	80.2
Motor vehicle accidents ------E810-E835	60.5	56.8	34.8	38.0	30.3	32.7	81.5	88.6	113.9	114.4
All other accidents -E800-E802,E840-E962	46.2	55.5	44.9	57.9	34.8	45.4	194.7	231.1	151.1	156.8
Suicide----------------------E970-E979	19.2	19.3	26.8	27.5	22.2	22.9	82.4	73.8	96.2	90.2
Homicide----------------E964,E980-E985	5.1	4.6	4.6	4.8	3.8	4.1	6.6	6.2	26.8	22.6

[1]For each of the marital classes the standard population used to obtain the 1949-51 age-adjusted rates was 3 times the 1960 white male population in the specified marital group classified in the same age groups as those for which age-specific rates are shown in table 3. The death rate for 1959-61 serves as both the crude rate and as the age-adjusted death rate for comparison with the age-adjusted rate for 1949-51.

Table 9. Death rates for tuberculosis, all forms, for white men, 15 years and over, by marital status and age: United States, 1949-51 and 1959-61

[Deaths are those attributed to category numbers 001-019 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1949-51 and to the Seventh Revision for 1959-61]

Age	Single		Married		Widowed		Divorced	
	1959-61	1949-51	1959-61	1949-51	1959-61	1949-51	1959-61	1949-51
	Rates per 100,000 population							
Total, 15 years and over-------------	9.7	37.6	7.7	24.4	56.5	110.3	57.0	146.3
15-19 years---------------	0.1	2.7	0.1	3.8	-	-	-	7.2
20-24 years---------------	0.5	8.3	0.2	3.5	-	33.4	-	11.7
25-34 years---------------	3.4	31.5	0.6	6.7	6.9	84.7	4.6	44.7
35-44 years---------------	14.6	87.6	2.2	15.7	19.4	111.3	25.2	126.1
45-54 years---------------	33.3	145.6	6.4	28.2	42.8	135.4	68.0	196.2
55-59 years---------------	51.2	173.3	11.9	42.7	50.2	137.0	92.7	242.4
60-64 years---------------	64.7	193.3	16.7	50.7	55.6	136.3	114.8	230.4
65-69 years---------------	79.9	187.2	23.0	59.2	62.3	126.3	109.6	200.9
70-74 years---------------	90.2	180.4	28.9	59.4	60.6	102.7	132.2	186.1
75 years and over--------	97.4	173.2	37.9	64.2	61.3	82.6	104.9	220.4

Table 10. Standardized marital status-mortality ratios[1] for white men for selected causes of death: United States, 1959-61

[Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955]

Cause of death	Single (compared with married)	Single[2] (compared with ever married)	Married	Widowed	Divorced
All causes-------------------------	148	133	100	154	223
Tuberculosis, all forms-------001-019	382	294	100	217	667
Malignant neoplasm of digestive organs and peritoneum--------------150-159	125	119	100	126	155
Malignant neoplasm of respiratory system-----------------------160-164	116	108	100	126	213
Malignant neoplasm of male genital organs------------------------177-179	95	90	100	123	137
Leukemia and aleukemia-----------204	119	118	100	108	121
Diabetes mellitus----------------260	146	134	100	141	192
Vascular lesions affecting central nervous system--------------330-334	137	121	100	150	181
Arteriosclerotic heart disease, including coronary disease--------420	132	120	100	146	177
Cirrhosis of liver---------------581	257	203	100	242	622
Motor vehicle accidents-----E810-E835	129	121	100	199	380
All other accidents--------E800-E802,E840-E962	151	140	100	227	420
Suicide------------------E970-E979	153	137	100	239	408
Homicide-------------E964,E980-E985	103	91	100	269	722

[1]The standardized mortality ratios are expressed, after adjustment for age by the indirect method, in terms of the corresponding cause-specific death rates for white married men.

[2]The second SMR for the single group is expressed in terms of the death rates for the ever married groups. Data refer to white men 15 years of age and over.

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Table 11. Comparison of average annual death rates for white and all other men for selected causes of death, by marital status: United States, 1959-61

[Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955]

Cause of death and age	Single		Ever married							
			Total		Married		Widowed		Divorced	
	White	All other	White	All other	White	All other	White	All other	White	All other
Tuberculosis, all forms (001-019)										
Total, 15 years and over---------	9.7	22.2	11.1	30.3	7.7	22.6	56.5	107.6	57.0	84.5
15-19 years-----------------------	0.1	1.0	0.1	1.1	0.1	1.1	-	-	-	-
20-24 years-----------------------	0.5	3.4	0.2	1.6	0.2	1.6	-	-	-	-
25-34 years-----------------------	3.4	25.9	0.7	7.2	0.6	6.2	6.9	57.9	4.6	24.7
35-44 years-----------------------	14.6	69.0	2.9	19.2	2.2	15.8	19.4	73.2	25.2	69.0
45-54 years-----------------------	33.3	93.1	9.0	34.2	6.4	27.1	42.8	101.9	68.0	110.6
55-59 years-----------------------	51.2	[1]105.1	16.1	47.1	11.9	35.0	50.2	124.4	92.7	136.4
60-64 years-----------------------	64.7	128.4	22.4	62.1	16.7	49.3	55.6	127.2	114.8	116.2
65-69 years-----------------------	79.9	124.0	29.5	60.7	23.0	50.5	62.3	97.6	109.6	99.5
70-74 years-----------------------	90.2	118.4	37.1	78.3	28.9	64.1	60.6	108.3	132.2	193.9
75 years and over-----------------	97.4	170.5	47.5	90.7	37.9	71.2	61.3	118.6	104.9	143.1
Malignant neoplasm of digestive organs and peritoneum (150-159)										
Total, 15 years and over---------	33.6	29.8	97.6	105.2	80.2	83.9	446.5	366.2	139.8	165.5
15-19 years-----------------------	0.3	0.9	0.1	-	0.1	-	-	-	-	-
20-24 years-----------------------	0.7	0.9	0.8	2.5	0.8	2.5	-	-	0.7	-
25-34 years-----------------------	3.2	7.9	2.6	5.0	2.5	4.7	-	17.8	4.0	10.6
35-44 years-----------------------	17.5	38.0	10.9	22.6	10.6	20.5	22.4	68.6	20.2	47.3
45-54 years-----------------------	67.4	124.6	47.5	85.7	45.6	75.9	73.8	185.7	90.8	184.9
55-59 years-----------------------	134.7	[1]206.7	108.4	168.2	104.0	150.6	154.3	291.9	180.5	272.9
60-64 years-----------------------	240.8	347.0	185.1	285.9	177.4	255.7	240.3	422.4	292.1	479.2
65-69 years-----------------------	338.8	337.6	282.4	353.6	269.3	326.8	362.5	447.2	387.1	473.9
70-74 years-----------------------	459.8	489.1	399.9	404.5	381.4	361.9	460.7	507.0	556.7	623.8
75 years and over-----------------	630.9	545.5	621.4	447.8	570.0	408.5	707.6	508.0	721.8	486.7
Malignant neoplasm of respiratory system (160-164)										
Total, 15 years and over---------	21.2	18.3	68.0	58.4	59.0	47.6	214.6	169.8	142.7	130.3
15-19 years-----------------------	0.2	0.1	0.1	-	0.0	-	-	-	-	-
20-24 years-----------------------	0.3	0.2	0.2	0.2	0.2	0.3	-	-	-	-
25-34 years-----------------------	1.6	2.5	1.6	2.3	1.5	2.3	3.5	-	4.1	3.5
35-44 years-----------------------	12.1	27.0	10.3	18.0	9.8	16.3	18.8	42.1	27.2	44.9
45-54 years-----------------------	55.3	98.0	51.8	63.9	48.6	56.1	84.7	130.4	127.7	155.7
55-59 years-----------------------	133.3	[1]160.1	120.2	117.8	72.6	104.6	180.9	184.6	242.4	256.7
60-64 years-----------------------	204.4	209.7	181.4	179.6	70.9	157.8	245.5	260.1	351.3	388.4
65-69 years-----------------------	244.9	223.1	224.1	179.4	210.2	161.3	292.1	229.9	396.1	336.5
70-74 years-----------------------	241.8	205.6	232.2	159.9	217.6	142.3	275.1	188.9	390.9	379.4
75 years and over-----------------	189.4	189.1	190.4	129.6	178.5	110.9	205.4	154.3	300.4	219.5
Malignant neoplasm of male genital organs (177-179)										
Total, 15 years and over---------	8.5	6.9	29.8	40.6	22.4	29.6	187.0	189.2	33.7	45.9
15-19 years-----------------------	0.5	0.3	0.9	1.1	0.9	1.1	-	-	-	-
20-24 years-----------------------	1.6	0.7	1.2	0.2	1.2	0.3	-	-	1.4	-
25-34 years-----------------------	2.3	0.6	1.8	0.3	1.8	0.4	-	-	2.1	-
35-44 years-----------------------	3.0	2.8	1.6	1.8	1.6	1.7	1.2	-	3.5	5.4
45-54 years-----------------------	3.3	10.6	3.1	10.4	3.0	8.7	2.6	36.3	6.3	16.8
55-59 years-----------------------	10.9	[1]34.8	12.0	37.0	11.5	34.0	18.0	59.2	19.3	53.2
60-64 years-----------------------	31.4	67.9	29.8	87.1	28.5	77.8	39.4	138.6	46.4	108.9
65-69 years-----------------------	61.8	129.7	67.8	153.6	66.1	136.0	75.0	221.3	93.4	222.7
70-74 years-----------------------	117.1	186.9	136.1	227.0	131.5	212.5	152.9	260.9	162.9	311.9
75 years and over-----------------	282.7	282.1	329.1	356.5	301.9	315.8	375.1	416.5	378.2	439.0

See footnote at end of table.

Table 11. Comparison of average annual death rates for white and all other men for selected causes of death, by marital status: United States, 1959-61--Con.

[Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955]

Cause of death and age	Single		Ever married							
			Total		Married		Widowed		Divorced	
	White	All other	White	All other	White	All other	White	All other	White	All other
Leukemia and aleukemia (204)										
Total, 15 years and over-----------------	5.3	3.2	12.2	7.2	10.7	6.4	43.4	17.2	14.2	8.1
15-19 years-----------------	2.9	2.2	1.0	1.1	1.0	1.1	-	-	-	-
20-24 years-----------------	2.7	2.7	2.1	1.7	2.1	1.6	-	-	2.7	7.9
25-34 years-----------------	3.0	3.0	2.4	2.4	2.4	2.5	1.7	4.5	3.3	-
35-44 years-----------------	4.0	3.8	3.7	3.5	3.7	3.3	3.0	-	4.0	8.5
45-54 years-----------------	7.5	3.8	7.1	5.4	7.0	5.2	7.1	7.1	9.0	8.8
55-59 years-----------------	10.4	[1]9.2	12.6	10.3	12.4	9.8	13.6	16.0	17.1	6.9
60-64 years-----------------	19.0	13.3	20.6	14.8	20.2	15.0	22.7	12.3	27.4	18.2
65-69 years-----------------	28.8	7.6	32.2	19.9	31.8	19.5	35.0	22.8	34.2	14.2
70-74 years-----------------	42.9	15.6	43.0	24.9	42.4	26.0	44.9	21.7	51.4	25.3
75 years and over-----------	53.9	18.6	65.9	25.2	64.0	23.5	69.1	28.7	70.2	9.5
Diabetes mellitus (260)										
Total, 15 years and over-----------------	9.1	9.1	22.4	25.1	17.6	19.9	114.9	89.0	37.7	40.8
15-19 years-----------------	0.4	0.9	0.3	2.2	0.3	2.2	-	-	-	-
20-24 years-----------------	1.6	2.2	0.5	0.9	0.5	0.9	-	-	1.4	-
25-34 years-----------------	6.4	7.6	2.1	2.4	1.8	2.2	6.9	4.5	12.2	5.9
35-44 years-----------------	11.8	17.0	3.9	7.5	3.5	6.7	7.9	20.3	19.8	18.6
45-54 years-----------------	19.9	34.6	9.7	19.8	9.0	17.7	16.9	39.5	26.8	41.6
55-59 years-----------------	34.1	[1]46.6	21.5	36.6	20.1	32.7	37.4	65.2	41.2	57.8
60-64 years-----------------	50.9	72.3	36.2	65.6	33.6	55.9	62.1	112.0	57.4	116.2
65-69 years-----------------	72.5	91.5	60.2	78.1	56.2	70.2	83.8	104.7	93.4	118.5
70-74 years-----------------	88.9	93.4	90.9	99.6	83.3	88.6	122.7	124.8	109.3	168.6
75 years and over-----------	128.6	86.8	155.4	107.4	139.0	97.1	184.1	125.5	165.9	76.3
Vascular lesions affecting central nervous system (330-334)										
Total, 15 years and over-----------------	61.7	56.8	172.0	233.2	121.5	170.4	1219.2	1064.4	243.1	299.5
15-19 years-----------------	1.3	2.0	2.0	3.2	1.9	3.4	-	-	6.8	-
20-24 years-----------------	2.2	4.9	1.9	3.2	1.8	3.0	19.0	26.3	1.4	7.9
25-34 years-----------------	6.1	15.7	3.3	9.9	3.2	9.6	8.6	26.7	7.2	17.6
35-44 years-----------------	21.6	79.3	10.1	42.9	9.4	38.9	29.1	126.2	29.8	92.2
45-54 years-----------------	70.2	207.5	37.7	142.5	35.0	126.2	78.5	360.3	96.0	249.5
55-59 years-----------------	137.1	[1]454.0	91.0	289.4	84.6	249.5	151.4	596.8	199.3	464.8
60-64 years-----------------	267.9	541.8	180.7	523.0	167.3	456.2	274.9	900.8	370.7	660.7
65-69 years-----------------	487.3	709.5	351.0	732.3	321.4	626.6	517.4	1120.4	643.2	1094.7
70-74 years-----------------	846.6	903.3	670.3	1001.7	620.8	856.1	842.2	1389.4	1032.6	1391.0
75 years and over-----------	1997.9	1441.3	1954.1	1636.3	1646.2	1335.3	2482.4	2114.3	2354.1	1612.7
Arteriosclerotic heart disease, including coronary disease (420)										
Total, 15 years and over-----------------	214.2	110.1	618.1	375.8	489.7	276.6	3171.8	1646.5	971.9	563.1
15-19 years-----------------	0.4	0.6	1.4	3.2	1.2	3.4	52.1	-	-	-
20-24 years-----------------	1.5	3.4	1.1	2.0	1.0	2.0	9.5	-	4.8	-
25-34 years-----------------	13.5	27.1	9.7	13.5	9.3	12.7	19.0	40.1	25.1	30.6
35-44 years-----------------	113.8	142.5	83.3	79.2	79.9	72.9	144.7	182.3	193.0	173.6
45-54 years-----------------	439.0	414.2	338.4	270.4	323.4	239.6	530.2	620.2	682.7	538.0
55-59 years-----------------	800.7	[1]676.9	687.6	520.4	656.0	452.3	939.6	1020.1	1283.5	874.2
60-64 years-----------------	1325.0	1141.3	1093.2	893.3	1039.0	775.8	1462.1	1483.6	1884.5	1419.4
65-69 years-----------------	1967.4	1348.4	1596.8	1170.6	1506.9	997.0	2080.9	1796.8	2556.3	1833.9
70-74 years-----------------	2766.2	1959.3	2243.6	1466.8	2090.8	1224.5	2783.4	2113.1	3289.9	2099.1
75 years and over-----------	4926.2	2916.7	4356.6	2329.8	3662.7	1816.7	5532.8	3111.1	5510.3	2891.5

See footnote at end of table.

Table 11. Comparison of average annual death rates for white and all other men for selected causes of death, by marital status: United States, 1959-61—Con.

[Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955]

Cause of death and age	Single White	Single All other	Ever married — Total White	Total All other	Married White	Married All other	Widowed White	Widowed All other	Divorced White	Divorced All other
Cirrhosis of liver (581)										
Total, 15 years and over---------	14.2	15.8	24.0	20.3	18.0	15.7	89.4	53.8	125.0	77.2
15-19 years----------------------------	0.1	0.1	0.1	-	0.1	-	-	-	-	-
20-24 years----------------------------	0.4	1.3	0.2	0.6	0.2	0.6	-	-	0.7	-
25-34 years----------------------------	5.7	21.2	1.7	6.0	1.4	5.3	3.5	8.9	15.8	27.1
35-44 years----------------------------	33.9	62.3	11.4	17.7	8.8	14.2	63.6	65.4	93.4	75.2
45-54 years----------------------------	68.7	79.4	32.1	31.0	24.9	23.6	126.4	95.6	195.2	115.9
55-59 years----------------------------	81.4	[1]58.5	44.0	33.9	34.4	26.9	132.3	66.2	211.8	115.6
60-64 years----------------------------	89.5	75.3	44.5	36.1	34.7	29.7	117.5	61.7	176.9	90.8
65-69 years----------------------------	101.0	61.0	55.2	31.7	42.2	22.8	130.4	59.1	175.5	94.8
70-74 years----------------------------	82.5	34.3	51.8	27.7	41.3	23.3	88.9	38.1	123.6	50.6
75 years and over-------------------	60.2	43.4	46.8	19.8	40.2	18.1	56.5	23.4	82.9	-
Motor vehicle accidents (E810-E835)										
Total, 15 years and over---------	60.5	53.7	34.8	44.4	30.3	40.7	81.5	72.1	113.9	88.9
15-19 years----------------------------	51.9	34.2	60.8	50.9	58.8	50.4	156.3	132.3	128.3	-
20-24 years----------------------------	94.9	75.5	50.9	51.0	47.4	49.9	275.1	131.6	188.3	94.3
25-34 years----------------------------	58.1	69.9	34.6	44.8	31.6	42.6	167.5	102.4	146.3	100.0
35-44 years----------------------------	41.5	61.3	27.1	40.8	24.4	37.8	95.1	84.1	110.9	89.1
45-54 years----------------------------	40.1	67.6	28.7	43.8	25.5	-39.9	74.5	90.1	100.2	76.1
55-59 years----------------------------	41.2	[1]58.5	30.8	41.7	27.0	36.5	74.2	71.2	88.4	90.2
60-64 years----------------------------	49.8	69.4	34.7	48.9	30.3	41.5	67.2	79.7	94.3	105.3
65-69 years----------------------------	58.2	66.8	40.3	48.1	34.3	41.4	75.8	66.1	95.3	109.0
70-74 years----------------------------	71.4	84.1	49.5	41.0	40.2	35.7	81.7	55.5	117.2	50.6
75 years and over-------------------	88.5	49.6	66.6	53.8	54.1	47.7	85.5	61.2	126.9	95.4
Motor vehicle traffic accidents to pedestrians (E812)										
Total, 15 years and over---------	6.5	11.5	5.5	10.6	3.7	8.2	31.8	34.2	24.3	27.2
15-19 years----------------------------	2.5	4.1	2.6	7.6	2.7	7.8	-	-	-	-
20-24 years----------------------------	3.3	8.4	1.6	4.8	1.6	4.8	-	-	4.1	7.9
25-34 years----------------------------	4.0	15.1	1.5	5.1	1.4	4.6	5.2	47.3	8.1	17.6
35-44 years----------------------------	8.4	19.8	2.1	7.1	1.7	6.3	11.5	17.1	14.1	20.1
45-54 years----------------------------	12.7	31.5	3.5	9.9	2.6	8.2	12.1	31.6	25.0	22.1
55-59 years----------------------------	18.5	[1]31.1	6.0	13.1	4.3	9.4	20.7	38.1	35.2	37.0
60-64 years----------------------------	25.2	42.8	7.9	18.1	6.2	14.1	17.5	35.1	35.8	47.2
65-69 years----------------------------	33.1	53.4	11.2	21.0	8.5	16.2	25.6	33.1	37.5	71.1
70-74 years----------------------------	46.5	65.4	17.2	23.6	12.3	19.5	33.6	32.9	57.2	50.6
75 years and over-------------------	60.8	43.4	30.9	33.9	21.2	26.5	45.8	43.6	74.5	66.8
All other accidents (E800-E802,E840-E962)										
Total, 15 years and over---------	46.2	68.5	44.9	61.2	34.8	50.6	194.7	169.8	151.1	132.1
15-19 years----------------------------	26.8	43.0	28.6	47.6	28.8	45.9	52.1	198.4	13.5	-
20-24 years----------------------------	35.3	54.5	28.4	39.6	27.4	38.2	104.3	158.0	66.2	94.3
25-34 years----------------------------	41.6	79.9	26.1	42.0	24.7	39.9	84.6	142.5	78.6	81.2
35-44 years----------------------------	58.2	131.8	28.9	53.7	25.8	48.4	82.4	151.1	131.0	127.1
45-54 years----------------------------	79.4	137.6	36.9	64.1	31.4	55.8	94.0	153.3	169.7	141.6
55-59 years----------------------------	85.7	[1]111.6	42.1	67.2	35.6	54.9	89.2	153.5	167.4	141.1
60-64 years----------------------------	94.6	138.8	47.1	80.2	39.2	61.6	94.9	163.3	174.0	203.3
65-69 years----------------------------	136.6	148.8	56.3	73.0	45.5	49.8	107.8	155.1	193.5	170.6
70-74 years----------------------------	168.3	168.2	72.1	91.0	56.6	70.3	121.3	140.4	214.4	202.3
75 years and over-------------------	350.4	254.2	224.5	154.6	154.1	105.1	341.4	230.8	383.3	190.9

See footnote at end of table.

Table 11. Comparison of average annual death rates for white and all other men for selected causes of death, by marital status: United States, 1959-61—Con.

[Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955]

| Cause of death and age | Single | | Ever married | | | | | | | |
| | | | Total | | Married | | Widowed | | Divorced | |
	White	All other	White	All other	White	All other	White	All other	White	All other
Suicide (E970-E979)										
Total, 15 years and over---------	19.2	10.8	26.8	12.2	22.2	10.8	82.4	24.1	96.2	25.5
15-19 years--------------------------	5.4	3.3	8.4	4.3	8.3	4.5	26.0	–	6.8	–
20-24 years--------------------------	13.1	11.0	9.1	9.2	8.4	8.7	142.3	79.0	34.1	15.7
25-34 years--------------------------	26.7	20.8	12.2	12.3	10.8	11.5	88.0	66.8	65.7	23.5
35-44 years--------------------------	37.1	20.8	20.5	10.5	17.9	9.3	103.6	35.8	96.3	24.8
45-54 years--------------------------	48.0	17.1	31.4	12.7	27.6	11.4	97.1	21.3	108.9	31.9
55-59 years--------------------------	55.9	[1]22.9	38.1	14.1	33.3	13.0	88.1	25.1	118.0	13.9
60-64 years--------------------------	57.4	23.6	38.9	14.8	32.9	12.6	82.5	22.8	118.8	36.3
65-69 years--------------------------	61.6	21.0	38.1	14.4	32.1	12.1	72.3	22.0	92.5	28.4
70-74 years--------------------------	74.2	12.5	43.4	10.3	33.5	7.7	78.7	18.2	108.6	8.4
75 years and over--------------------	84.5	37.2	56.3	15.3	40.0	11.1	81.8	21.3	121.0	28.6
Homicide (E964,E980-E985)										
Total, 15 years and over---------	5.1	57.2	4.6	49.6	3.8	45.8	6.6	59.3	26.8	129.7
15-19 years--------------------------	2.7	23.6	6.4	55.2	5.8	54.9	26.0	66.1	27.0	60.1
20-24 years--------------------------	5.9	67.5	5.5	63.6	5.1	62.0	9.5	131.6	21.8	141.4
25-34 years--------------------------	8.9	119.1	5.2	67.9	4.4	63.1	22.4	262.7	37.3	174.1
35-44 years--------------------------	9.7	115.8	5.0	62.4	4.2	55.7	13.3	165.2	34.0	165.0
45-54 years--------------------------	7.6	68.0	4.8	45.9	3.9	39.1	10.5	104.3	28.1	128.3
55-59 years--------------------------	5.6	[1]24.7	4.2	28.2	3.3	24.1	11.5	58.2	20.7	48.6
60-64 years--------------------------	7.0	31.0	3.6	26.7	2.6	21.9	9.6	42.7	17.5	79.9
65-69 years--------------------------	5.2	28.6	3.2	20.2	2.6	15.8	6.3	30.7	10.0	71.1
70-74 years--------------------------	6.4	15.6	3.1	14.2	2.1	12.1	5.9	18.2	12.1	33.7
75 years and over--------------------	5.3	27.9	2.6	15.1	1.9	10.4	3.6	21.3	11.0	38.2

[1]Corrected by removing 21,000 "mistallied Indians " from the denominator of the rate. Reported rate was multiplied by 1.1921 to obtain corrected rate. For details of revision see appendix.

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Table 12. Tuberculosis, all forms (ICD Nos. 001-019) for white men, by birth cohort and age at death: death rates at 5-year intervals, 1914-64

[Rates per 100,000 population in age group]

Age at death	Cohort and period of birth														
	1940-1944	1935-1939	1930-1934	1925-1929	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894	1885-1889	1880-1884	1875-1879	1870-1874
15-19 years ----	0.2	0.5	3.6	9.3	11.5	14.4	26.3	33.6	50.8	50.7					
20-24 years ----	0.2	0.4	1.6	8.7	30.4	25.3	35.2	61.3	74.9	115.5	118.2				
25-29 years ----		0.5	0.9	2.6	12.2	34.6	35.5	50.1	77.6	92.5	136.1	140.0			
30-34 years ----			0.8	1.8	4.1	17.7	40.4	43.8	58.4	83.6	92.9	146.2	156.1		
35-39 years ----				2.1	·3.3	7.1	25.0	51.0	53.5	66.9	92.5	102.6	150.6	166.1	
40-44 years ----					3.0	5.6	11.4	37.1	57.1	66.9	81.5	100:9	104.5	158.3	185.3
45-49 years ----						4.8	9.6	16.4	45.9	70.9	81.0	94.7	105.3	110.1	157.4
50-54 years ----							9.2	15.2	24.5	57.3	88.0	93.7	98.8	109.6	112.8
55-59· years ----								13.9	21.6	31.6	71.0	99.8	98.1	101.6	113.0
60-64 years ----									18.6	27.6	38.2	85.4	101.8	97.4	105.5
65-69 years ----										23.9	36.7	49.7	93.4	101.8	103.4
70-74 years ----											30.0	43.2	56.9	83.4	95.8
75-79 years ----												39.3	50.2	62.1	90.7
80-84 years ----													42.5	51.2	64.9

NOTE: At ages 20-45 years the first figure in each row, moving from right to left, is the death rate for data year 1914, the second figure for 1919, the third figure for 1924, and the last figure for 1964. At ages 15-19 years the last figure is for 1959.

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Table 13. Death rates for malignant neoplasms of digestive organs and peritoneum, for white men 15 years and over, by marital status and age: United States, 1949-51 and 1959-61

[Deaths are those attributed to category numbers 150-159 of the Seventh Revision of the International Lists, 1955. Deaths are classified according to the Sixth Revision for 1949-51 and to the Seventh Revision for 1959-61]

Age	Single 1959-61	Single 1949-51	Married 1959-61	Married 1949-51	Widowed 1959-61	Widowed 1949-51	Divorced 1959-61	Divorced 1949-51
	Rates per 100,000 population							
Total, 15 years and over	33.6	37.1	80.2	80.9	446.5	416.1	139.8	122.2
15-19 years	0.3	0.6	0.1	0.5	-	-	-	-
20-24 years	0.7	1.2	0.8	0.9	-	-	0.7	1.5
25-34 years	3.2	3.8	2.5	3.0	-	7.6	4.0	3.7
35-44 years	17.5	20.8	10.6	13.2	22.4	26.9	20.2	24.7
45-54 years	67.4	83.4	45.6	52.3	73.8	88.8	90.8	79.3
55-59 years	134.2	182.3	104.0	125.9	154.3	174.8	180.5	189.3
60-64 years	240.8	286.4	177.4	203.6	240.3	266.7	292.1	276.2
65-69 years	338.8	388.1	269.3	297.7	362.5	378.8	387.1	432.2
70-74 years	459.8	539.0	381.4	430.9	460.7	487.5	556.7	582.7
75 years and over	630.9	696.5	570.0	609.4	707.6	698.4	721.8	881.6

Table 14. Death rates for cirrhosis of liver (ICD No. 581) for white men, by birth cohort and age at death: death rates at 5-year intervals, 1914-64

[Rates per 100,000 population in age group]

Age at death	1940-1944	1935-1939	1930-1934	1925-1929	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894	1885-1889	1880-1884	1875-1879	1870-1874
20-24 years	0.2	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.4				
25-29 years		1.2	1.2	0.8	1.0	1.3	1.0	1.2	0.7	0.8	0.6	1.6			
30-34 years			3.9	3.1	3.0	3.2	3.3	2.4	2.5	1.9	1.9	1.6	5.8		
35-39 years				10.0	8.0	8.9	9.6	7.0	6.1	5.1	5.0	4.4	4.3	10.0	
40-44 years					18.5	18.8	16.6	14.1	12.0	11.4	11.0	9.0	7.3	8.8	17.6
45-49 years						31.7	29.2	26.0	23.6	17.7	18.0	16.1	13.8	13.2	13.4
50-54 years							44.1	40.9	35.4	29.3	25.2	25.7	24.7	20.8	22.4
55-59 years								52.6	47.4	40.2	39.0	34.9	37.3	33.9	29.9
60-64 years									58.1	46.4	46.2	44.0	44.8	43.7	42.4
65-69 years										62.0	58.2	54.7	51.8	46.0	51.0
70-74 years											53.8	50.6	51.8	46.0	51.9
75-79 years												46.3	48.1	48.8	55.2
80-84 years													41.8	48.8	49.4

NOTE: At ages 20-45 years the first figure in each row, moving from right to left, is the death rate for data year 1914, the second figure for 1919, the third figure for 1924, and the last figure for 1964.

Table 15. Death rates for specified causes, for white men, by birth cohort and age at death: United States, 1949, 1954, 1959, and 1964

[Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955]

Cause of death and age	Cohort and period of birth														
	1940–1944	1935–1939	1930–1934	1925–1929	1920–1924	1915–1919	1910–1914	1905–1909	1900–1904	1895–1899	1890–1894	1885–1889	1880–1884	1875–1879	1870–1874
Malignant neoplasm of respiratory system (160-164)	Rates per 100,000 population in age group														
20-24 years	0.4	0.2	0.6	0.4											
25-29 years		0.6	0.6	0.7	0.8										
30-34 years			2.2	2.5	1.8	1.4									
35-39 years				7.1	6.1	4.3	4.3								
40-44 years					17.5	14.2	14.0	10.9							
45-49 years						39.5	34.2	31.5	25.1						
50-54 years							77.6	69.6	59.3	49.2					
55-59 years								138.5	120.0	100.4	79.3				
60-64 years									203.9	177.9	137.9	103.4			
65-69 years										270.5	211.7	163.5	105.7		
70-74 years											278.0	214.8	157.2	116.7	
75-79 years												260.3	184.3	139.4	105.9
80-84 years													201.7	155.6	126.1
Malignant neoplasm of genital organs (177-179)															
20-24 years	1.3	1.2	1.8	1.6											
25-29 years		2.2	1.7	2.3	2.1										
30-34 years			1.8	1.8	2.0	2.0									
35-39 years				1.9	2.1	1.8	1.8								
40-44 years					1.4	1.8	1.6	1.8							
45-49 years						2.0	1.9	2.8	2.6						
50-54 years							4.3	4.1	4.3	6.3					
55-59 years								12.0	12.8	13.9	14.1				
60-64 years									29.6	29.6	32.6	34.2			
65-69 years										66.9	67.5	73.2	71.0		
70-74 years											136.5	130.1	142.3	144.5	
75-79 years												228.5	226.9	261.8	259.3
80-84 years													349.7	373.9	402.3
Leukemia and aleukemia (204)															
20-24 years	2.0	2.4	2.1	2.4											
25-29 years		2.3	2.2	2.2	2.4										
30-34 years			2.7	2.5	2.8	2.4									
35-39 years				3.0	3.3	2.9	3.0								
40-44 years					3.9	4.5	4.0	3.6							
45-49 years						5.4	5.4	5.4	5.3						
50-54 years							8.6	8.8	9.2	7.7					
55-59 years								12.1	12.6	11.9	12.0				
60-64 years									19.2	20.3	18.6	17.6			
65-69 years										33.1	32.5	28.3	22.2		
70-74 years											44.0	42.4	39.1	26.5	
75-79 years												62.3	53.0	48.7	39.5
80-84 years													72.6	62.2	57.1
Diabetes mellitus (260)															
20-24 years	0.9	1.1	1.3	1.2											
25-29 years		2.3	2.1	2.3	1.5										
30-34 years			3.8	3.5	2.6	2.5									
35-39 years				4.6	3.6	3.6	3.2								
40-44 years					5.4	4.6	5.0	3.9							
45-49 years						7.9	7.9	7.0	7.1						
50-54 years							14.2	12.8	12.7	14.4					
55-59 years								23.7	23.9	21.4	24.8				
60-64 years									40.2	35.6	36.7	41.6			
65-69 years										61.1	59.2	58.3	64.3		
70-74 years											92.4	86.4	88.7	98.9	
75-79 years												131.0	125.5	123.9	137.6
80-84 years													172.6	156.3	158.6

NOTE: Except for the age group 80-84 years the first figure in each row, moving from right to left, is the death rate for data year 1949, the second figure for 1954, the third figure for 1959, and the fourth figure for 1964. For the age group 80-84 years the first figure is for 1954.

Table 15. Death rates for specified causes, for white men, by birth cohort and age at death: United States, 1949, 1954, 1959, and 1964--Con.

[Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955]

Rates per 100,000 population in age group

Vascular lesions affecting central nervous system (330-334)

Cause of death and age	1940-1944	1935-1939	1930-1934	1925-1929	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894	1885-1889	1880-1884	1875-1879	1870-1874
20-24 years	2.1	2.1	2.2	1.8											
25-29 years		2.8	2.9	2.6	2.2										
30-34 years			4.9	4.5	4.6	3.9									
35-39 years				7.9	7.9	9.0	9.4								
40-44 years					13.8	14.1	17.7	19.7							
45-49 years						26.6	27.5	33.0	36.3						
50-54 years							50.9	57.2	64.6	71.3					
55-59 years								93.7	101.1	117.6	133.6				
60-64 years									172.3	191.2	215.0	240.3			
65-69 years										336.2	369.7	404.9	415.2		
70-74 years											615.3	687.5	709.0	752.1	
75-79 years												1129.0	1250.2	1242.9	1294.3
80-84 years													1979.8	2238.3	2110.5

Arteriosclerotic heart disease including coronary disease (420)

Cause of death and age	1940-1944	1935-1939	1930-1934	1925-1929	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894	1885-1889	1880-1884	1875-1879	1870-1874
20-24 years	1.3	1.7	1.2	1.6											
25-29 years		4.3	5.0	4.6	4.4										
30-34 years			15.6	16.3	15.6	13.3									
35-39 years				50.9	50.0	47.9	43.5								
40-44 years					127.0	122.8	116.2	109.1							
45-49 years						251.1	253.7	241.8	230.8						
50-54 years							445.4	455.6	434.2	409.1					
55-59 years								736.2	711.6	676.6	653.5				
60-64 years									1099.2	1102.7	1012.5	968.7			
65-69 years										1671.6	1604.3	1474.1	1304.7		
70-74 years											2350.5	2214.5	2012.4	1828.8	
75-79 years												3230.2	3127.2	2813.4	2561.8
80-84 years													4740.1	4597.4	4115.3

Homicide (E964, E980-E985)

Cause of death and age	1940-1944	1935-1939	1930-1934	1925-1929	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894	1885-1889	1880-1884	1875-1879	1870-1874
20-24 years	6.4	6.0	5.8	5.3											
25-29 years		7.2	5.3	5.6	6.2										
30-34 years			6.7	5.6	5.1	6.0									
35-39 years				6.4	5.7	5.7	6.4								
40-44 years					5.9	5.1	5.8	6.8							
45-49 years						5.8	5.3	5.7	6.1						
50-54 years							5.7	4.8	4.4	4.8					
55-59 years								4.9	4.1	3.8	4.8				
60-64 years									4.5	4.5	3.3	4.6			
65-69 years										3.0	3.8	3.1	4.0		
70-74 years											2.7	3.0	3.1	4.2	
75-79 years												2.6	3.5	2.9	4.6
80-84 years													3.9	2.1	4.0

NOTE: Except for the age group 80-84 years the first figure in each row, moving from right to left, is the death rate for data year 1949, the second figure for 1954, the third figure for 1959, and the fourth figure for 1964. For the age group 80-84 years the first figure is for 1954.

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