

## United States Life Tables, 2002

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### Abstract

This report presents period life tables for the United States based on age-specific death rates in 2002. Data used to prepare these life tables are 2002 final mortality statistics; July 1, 2002, population estimates based on the 2000 decennial census and data from the Medicare program. Presented are complete life tables by age, race, and sex. In 2002 the overall expectation of life at birth was 77.3 years, representing an increase of 0.1 years from life expectancy in 2001. Between 2001 and 2002, life expectancy increased for both males and females. Life expectancy increased by 0.2 years for black males (from 68.6 to 68.8). It increased by 0.1 year for white males (from 75.0 to 75.1), for white females (from 80.2 to 80.3), and for black females (from 75.5 to 75.6).

### Introduction

There are two types of life tables—the cohort (or generation) life table and the period (or current) life table. The cohort life table presents the mortality experience of a particular birth cohort, all persons born in the year 1900, for example, from the moment of birth through consecutive ages in successive calendar years. Based on age-specific death rates observed through consecutive calendar years, the cohort life table reflects the mortality experience of an actual cohort from birth until no lives remain in the group. To prepare just a single complete cohort life table requires data over many years. It is usually not feasible to construct cohort life tables entirely on the basis of observed data for real cohorts due to data unavailability or incompleteness (1). For example, a life table representation of the mortality experience of a cohort of persons born in 1970 would require the use of data projection techniques to estimate deaths into the future (2,3).

Unlike the cohort life table, the period life table does not represent the mortality experience of an actual birth cohort. Rather, the period

life table presents what would happen to a hypothetical (or synthetic) cohort if it experienced throughout its entire life the mortality conditions of a particular period in time. Thus, for example, a period life table for 2002 assumes a hypothetical cohort subject throughout its lifetime to the age-specific death rates prevailing for the actual population in 2002. The period life table may thus be characterized as rendering a “snapshot” of current mortality experience, and shows the long-range implications of a set of age-specific death rates that prevailed in a given year. In this report the term “life table” refers only to the period life table and not to the cohort life table.

### Data and Methods

The data used to prepare the U.S. life tables for 2002 are final numbers of deaths for the year 2002, postcensal population estimates for the year 2002, and data from the Medicare program of the Centers for Medicare and Medicaid Services.

The populations used to estimate the life tables shown in this report were produced under a collaborative agreement with the U.S. Census Bureau and are based on counts from the 2000 census. Reflecting the new guidelines issued in 1997 by the Office of Management and Budget (OMB), the 2000 census included an option for individuals to report more than one race as appropriate for themselves and household members (4). The 1997 OMB guidelines also provided for the reporting of Asian persons separately from Native Hawaiians or other Pacific Islanders. Under the prior OMB standards (issued in 1977), data for Asian or Pacific Islander persons were collected as a

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single group (5). Death certificates currently collect only one race for the decedent in the same categories as specified in the 1977 OMB guidelines (death certificate data do not report Asians separately from Native Hawaiians or other Pacific Islanders). Death certificate data by race (the numerators for death rates) are thus currently incompatible with the population data collected in the 2000 census (the denominators for the rates). To produce death rates for 2000–2002 it was necessary to “bridge” the reported population data for multiple-race persons back to single-race categories. In addition the 2000 census counts were modified to be consistent with the 1977 OMB race categories, that is, to report the data for Asian persons and Native Hawaiians or other Pacific Islanders as a combined category, Asian or Pacific Islanders, and to reflect age as of the census reference data (6). The procedures used to produce the “bridged” populations are described in separate publications (7,8). It is anticipated that “bridged” population data will be used over the next few years for computing population-based rates. Beginning with deaths occurring in 2003, some States will use multiple-race reporting. As States gradually begin to collect data on race according to the 1997 OMB guidelines, it is expected that use of the bridged populations will be discontinued.

Readers should keep in mind that the population data used to compile death rates by race are based on special estimation procedures. They are not true counts. This is the case even for the 2000 populations that are based on the 2000 census. The estimation procedures used to develop these populations contain some error (7). Over the next several years, additional information will be incorporated in the estimation procedures, possibly resulting in further revisions of the population estimates (see “[Technical Notes](#)”).

Data from the Medicare program are used to calculate probabilities of dying for ages greater than 85 years (see “[Technical Notes](#)”).

Life tables can be classified in two ways according to the length of the age interval in which data are presented. A complete life table contains data for every single year of age. An abridged life table typically contains data by 5- or 10-year age intervals. A complete life table, of course, can be easily aggregated into 5- or 10-year age groups (see “[Technical Notes](#)” for instructions on how to do this). Other than the decennial life tables, U.S. life tables based on data prior to 1997 are abridged life tables constructed by reference to a standard table (8). The 2002 U.S. life tables are complete life tables calculated using a method implemented with the 1997 life tables and are similar to the U.S. Decennial Life Tables (9,10). See “[Technical Notes](#)” for more information on the method used to construct the life tables in this report.

**Expectation of life**—The most frequently used life table statistic is life expectancy ( $e_x$ ), which is the average number of years of life remaining for persons who have attained a given age ( $x$ ). Life expectancy and other life table values for each age in 2002 are shown for the total population and by race and sex in [tables 1–9](#). Life expectancy is summarized by age, race, and sex in [table A](#).

Life expectancy at birth ( $e_0$ ) for 2002 for the total population was 77.3 years. This represents the average number of years that the members of the hypothetical life table cohort may expect to live at the time of birth ([table A](#)).

**Survivors to specified ages**—Another way of assessing the longevity of the synthetic life table cohort is by determining the proportion who survive to specified ages. The  $l_x$  column of the life table provides the data for computing the proportion. [Table B](#) summarizes the number

of survivors by age, race, and sex. To illustrate, 52,178 persons out of the original 2002 synthetic life table cohort of 100,000 (or 52.0 percent) were alive at exact age 80. In other words, the probability that a person will survive from birth to age 80, given 2002 age-specific mortality, is 52 percent. Probabilities of survival can be calculated at any age by simply dividing the number of survivors at the terminal age by the number at the beginning age. For example, to calculate the probability of surviving from age 20 to age 85, one would divide the number of survivors at age 85 (36,304) by the number of survivors at age 20 (98,672), which results in a 36.8 percent probability of survival.

## Explanation of the columns of the life table

**Column 1—Age ( $x$  to  $x + 1$ )**—This column shows the age interval between the two exact ages indicated. For instance, “20–21” means the 1-year interval between the 20th and 21st birthdays.

**Column 2—Probability of dying ( $q_x$ )**—This column shows the probability of dying between ages  $x$  to  $x + 1$ . For example, for males in the age interval 20–21 years, the probability of dying is 0.001389 ([table 2](#)). The “probability of dying” column forms the basis of the life table; all subsequent columns are derived from it.

**Column 3—Number surviving ( $l_x$ )**—This column shows the number of persons from the original synthetic cohort of 100,000 live births, who survive to the beginning of each age interval. The  $l_x$  values are computed from the  $q_x$  values, which are successively applied to the remainder of the original 100,000 persons still alive at the beginning of each age interval. Thus out of 100,000 female babies born alive, 99,373 will complete the first year of life and enter the second; 99,199 will reach age 10; 98,922 will reach age 20; and 43,542 will live to age 85 ([table 3](#)).

**Column 4—Number dying ( $d_x$ )**—This column shows the number dying in each successive age interval out of the original 100,000 live births. For example, out of 100,000 males born alive, 764 will die in the first year of life; 137 will die between ages 20 and 21; and 1,005 will die after reaching age 100 ([table 2](#)). Each figure in column 4 is the difference between two successive figures in column 3.

**Column 5—Person-years lived ( $L_x$ )**—This column shows the number of person-years lived by the synthetic life table cohort within an age interval  $x$  to  $x + 1$ . Each figure in column 5 represents the total time (in years) lived between two indicated birthdays by all those reaching the earlier birthday. Thus, the figure 98,368 for males in the age interval 20 to 21 years is the total number of years lived between the 20th and 21st birthdays by the 98,436 (column 3) males who reached their 20th birthday out of 100,000 males born alive ([table 2](#)).

**Column 6—Total number of person-years lived ( $T_x$ )**—This column shows the total number of person-years that would be lived after the beginning of the age interval  $x$  to  $x + 1$  by the synthetic life table cohort. For example, the figure 5,474,580 is the total number of years lived after attaining age 20 by the 98,436 males reaching that age ([table 2](#)).

**Column 7—Expectation of life ( $e_x$ )**—The expectation of life at any given age is the average number of years remaining to be lived by those surviving to that age on the basis of a given set of age-specific rates of dying. It is derived by dividing the total person-years that would be lived above age  $x$  by the number of persons who survived to that age interval ( $T_x/l_x$ ). Thus, the average remaining lifetime for males who reach age 20 is 55.6 years (5,474,580 divided by 98,436) ([table 2](#)).

**Table A. Expectation of life by age, race, and sex: United States, 2002**

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	All races			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
0	77.3	74.5	79.9	77.7	75.1	80.3	72.3	68.8	75.6
1	76.8	74.1	79.4	77.2	74.6	79.7	72.4	68.8	75.6
5	72.9	70.2	75.4	73.3	70.7	75.8	68.5	65.0	71.7
10	67.9	65.3	70.5	68.3	65.7	70.8	63.6	60.1	66.8
15	63.0	60.3	65.5	63.4	60.8	65.9	58.7	55.2	61.8
20	58.2	55.6	60.7	58.6	56.1	61.0	53.9	50.5	57.0
25	53.5	51.0	55.8	53.8	51.4	56.1	49.3	46.0	52.1
30	48.7	46.3	51.0	49.0	46.7	51.2	44.7	41.6	47.4
35	44.0	41.6	46.1	44.3	42.0	46.4	40.1	37.1	42.7
40	39.3	37.0	41.4	39.6	37.4	41.6	35.6	32.8	38.1
45	34.8	32.6	36.7	35.0	32.9	36.9	31.3	28.5	33.7
50	30.3	28.3	32.2	30.5	28.5	32.4	27.3	24.6	29.5
55	26.1	24.1	27.7	26.2	24.3	27.9	23.4	21.0	25.4
60	22.0	20.2	23.5	22.1	20.3	23.6	19.9	17.6	21.6
65	18.2	16.6	19.5	18.2	16.6	19.5	16.6	14.6	18.0
70	14.7	13.2	15.8	14.7	13.3	15.8	13.5	11.8	14.7
75	11.5	10.3	12.4	11.5	10.3	12.3	10.9	9.5	11.7
80	8.8	7.8	9.4	8.7	7.7	9.3	8.6	7.5	9.2
85	6.5	5.7	6.9	6.4	5.7	6.8	6.6	5.8	7.0
90	4.8	4.2	5.0	4.7	4.1	4.9	5.1	4.5	5.3
95	3.6	3.2	3.7	3.4	3.0	3.5	3.9	3.6	4.0
100	2.7	2.5	2.8	2.4	2.3	2.5	3.0	2.9	3.0

**Table B. Number of survivors by age, out of 100,000 born alive, by race and sex: United States, 2002**

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	All races			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,303	99,236	99,373	99,421	99,358	99,488	98,568	98,461	98,678
5	99,180	99,097	99,267	99,311	99,234	99,391	98,384	98,249	98,524
10	99,105	99,014	99,199	99,241	99,157	99,328	98,279	98,131	98,433
15	99,008	98,900	99,120	99,151	99,052	99,255	98,144	97,966	98,328
20	98,672	98,436	98,922	98,823	98,605	99,054	97,740	97,368	98,125
25	98,204	97,746	98,688	98,389	97,972	98,834	97,024	96,263	97,792
30	97,740	97,091	98,424	97,972	97,387	98,597	96,192	95,040	97,325
35	97,196	96,367	98,064	97,477	96,726	98,278	95,230	93,750	96,666
40	96,419	95,381	97,500	96,768	95,822	97,772	93,890	92,049	95,657
45	95,255	93,929	96,627	95,690	94,455	96,990	91,967	89,758	94,070
50	93,563	91,809	95,364	94,131	92,483	95,853	89,075	86,201	91,783
55	91,188	88,850	93,572	91,934	89,738	94,214	85,023	81,124	88,664
60	87,711	84,637	90,826	88,636	85,742	91,621	79,540	74,381	84,326
65	82,607	78,556	86,680	83,707	79,874	87,624	72,354	65,695	78,492
70	75,335	70,087	80,556	76,551	71,514	81,638	63,388	55,483	70,656
75	65,310	58,680	71,800	66,534	60,070	72,949	52,292	43,295	60,492
80	52,178	44,370	59,621	53,271	45,546	60,712	39,458	30,229	47,799
85	36,304	28,478	43,542	37,049	29,216	44,342	26,315	18,192	33,611
90	20,052	13,925	25,411	20,339	14,178	25,741	14,458	8,704	19,514
95	8,028	4,715	10,737	7,915	4,648	10,571	6,143	3,166	8,668
100	2,095	1,005	2,954	1,882	901	2,631	1,849	829	2,671

## Results

### Life expectancy in the United States

Tables 1–9 show complete life tables by race (white and black) and sex for 2002. Tables A and B summarize life expectancy and survival by age, race, and sex. Life expectancy at birth for 2002 represents the average number of years that a group of infants would

live if the infants were to experience throughout life the age-specific death rates prevailing in 2002. In 2002 life expectancy at birth was 77.3 years, increasing by 0.1 year from 77.2 years in 2001. This increase is typical of the average yearly changes that occurred during the last 30 years in the United States. Throughout the past century, the trend in U.S. life expectancy was one of gradual improvement that has continued into the new century (11).

Life expectancy was 74.5 years for males, increasing by 0.1 year from 74.4 years in 2001. Life expectancy for females in 2002 was 79.9 years, increasing by 0.1 year from 79.8 years in 2001. The increase in life expectancy between 2001 and 2002 for females was primarily the result of decreases in mortality from heart disease, cancer, homicide, cerebrovascular disease, and chronic lower respiratory disease. The increase in life expectancy for females could have been greater were it not for the offsetting effect of increases in mortality from accidents, Alzheimer's disease, pneumonia, perinatal conditions, and septicemia. For males, life expectancy increased primarily because of decreases in mortality from heart disease, homicide, cancer, cerebrovascular disease, and HIV disease. The increase in life expectancy for males could have been greater were it not for the offsetting increases in mortality from accidents, diabetes, septicemia, perinatal conditions, and Alzheimer's disease (12).

The difference in life expectancy between the sexes was 5.4 years in 2002, unchanged from the previous year. From 1900 to 1975, the difference in life expectancy between the sexes increased from 2.0 years to 7.8 years. The increasing gap during these years is attributed to increases in male mortality due to ischemic heart disease and lung cancer, both of which increased largely as the result of men's early and widespread adoption of cigarette smoking (11,13). Since 1979 the difference in life expectancy between the sexes has narrowed from 7.8 years to 5.4 years, reflecting proportionately greater increases in lung cancer mortality for women than for men and proportionately larger decreases in heart disease mortality among men (11,13).

Between 2001 and 2002, life expectancy for the black population rose 0.1 year to 72.3 years. For the total white population, life expectancy remained at 77.7 years. The difference in life expectancy between the white and black populations was 5.4 years in 2002, a historically record low level. The white-black difference in life expectancy narrowed from 14.6 years in 1900 to 5.7 years in 1982, but increased to 7.1 years in 1993 before beginning to decline again in 1994 (7.0 years). The increase in the gap from 1983 to 1993 was largely the result of increases in mortality among the black male population due to HIV infection and homicide (11,14).

Among the four race-sex groups (figure 1), white females continued to have the highest life expectancy at birth (80.3 years), followed

by black females (75.6 years), white males (75.1 years), and black males (68.8 years). Between 2001 and 2002, life expectancy increased 0.2 years for black males (from 68.6 in 2001 to 68.8 in 2002). Black males experienced an unprecedented decline in life expectancy every year for 1984–89 (13), but annual increases in 1990–92 and 1994–2002. From 2001 to 2002, life expectancy for black females increased from 75.5 years to 75.6 years, an increase of 0.1 year. Life expectancy for white males rose 0.1 year, from 75.0 years in 2001 to 75.1 years in 2002. White female life expectancy increased during the same period by 0.1 year from 80.2 to 80.3 years. Overall, gains in life expectancy between 1980 and 2002 were 5.0 years for black males, 4.4 years for white males, 3.1 years for black females, and 2.2 years for white females (table 12).

The 2002 life table may be used to compare life expectancy at any age from birth onward. On the basis of mortality experienced in 2002, a person aged 65 years could expect to live an average of 18.2 more years for a total of 83.2 years, and a person age 100 years could expect to live an additional 2.7 years on average (table A). Life expectancy at 100 years of age, particularly for the black population, should be interpreted with caution as these figures may be affected somewhat by age misreporting (9,15,16).

### Survivorship in the United States

Table B summarizes the number of survivors out of 100,000 persons born alive ( $l_x$ ) by age, race, and sex. Table 10 shows trends in survivorship from 1900 to 2002. In 2002, 99.3 percent of all infants born in the United States survived the first year of life. In contrast, only 87.6 percent of infants born in 1900 survived the first year. Fifty-two percent of the 2002 synthetic life table cohort survived to age 80 and about 2.0 percent survived to age 100. In 1900 the median age at death was 58 years and only 0.03 percent survived to age 100.

Among the four race-sex groups (figure 2, table B), white females have the highest median age at death with about 51 percent surviving to age 83. Of the original hypothetical cohort of 100,000 infant white females, 99.1 percent survive to age 20, 87.6 percent survive to age 65, and 44.3 percent survive to age 85. For white males and black

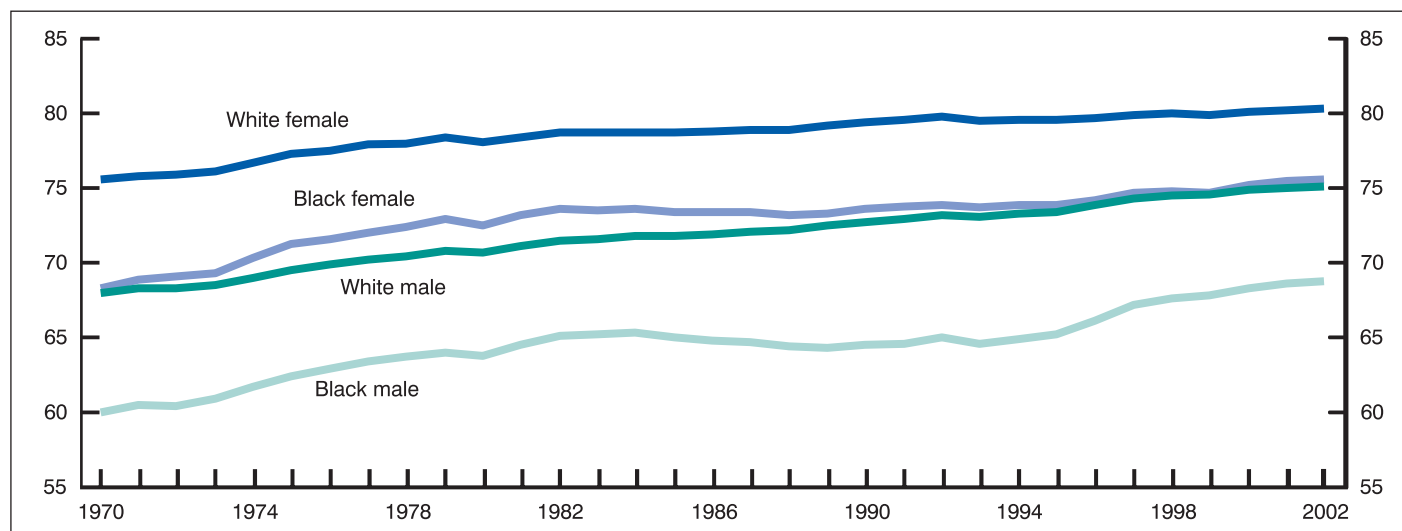
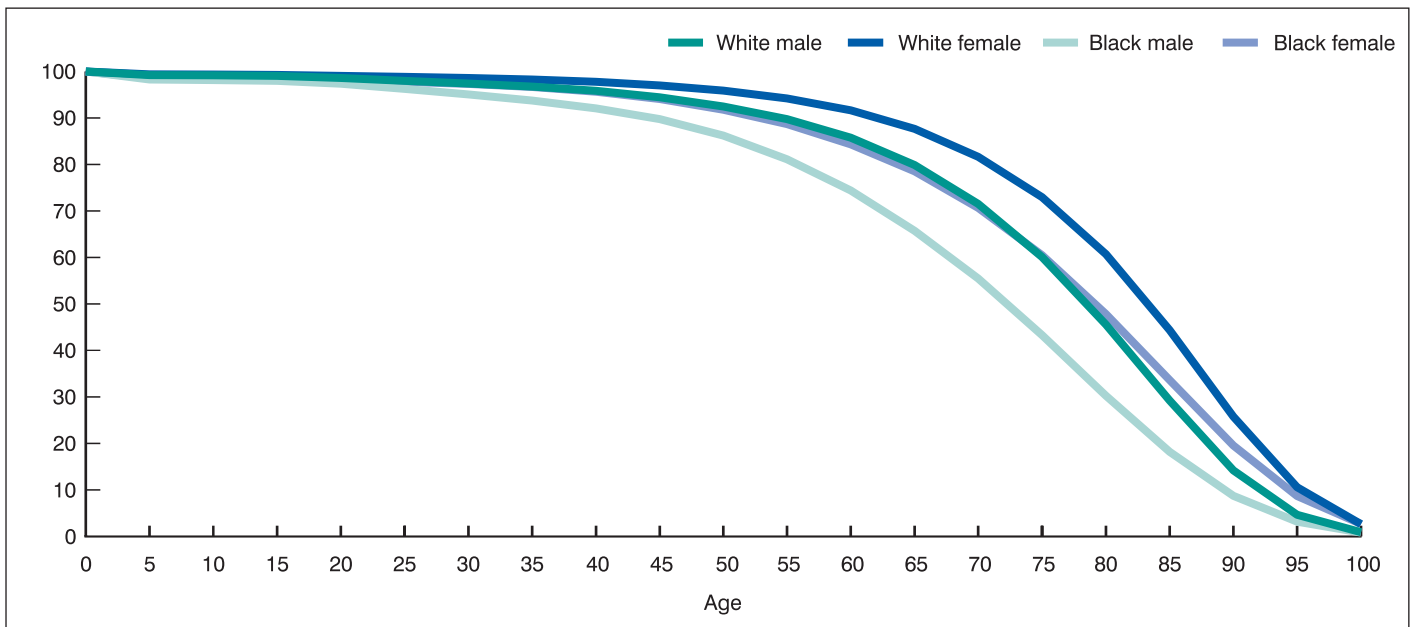


Figure 1. Life expectancy at birth by race and sex: 1970–2002

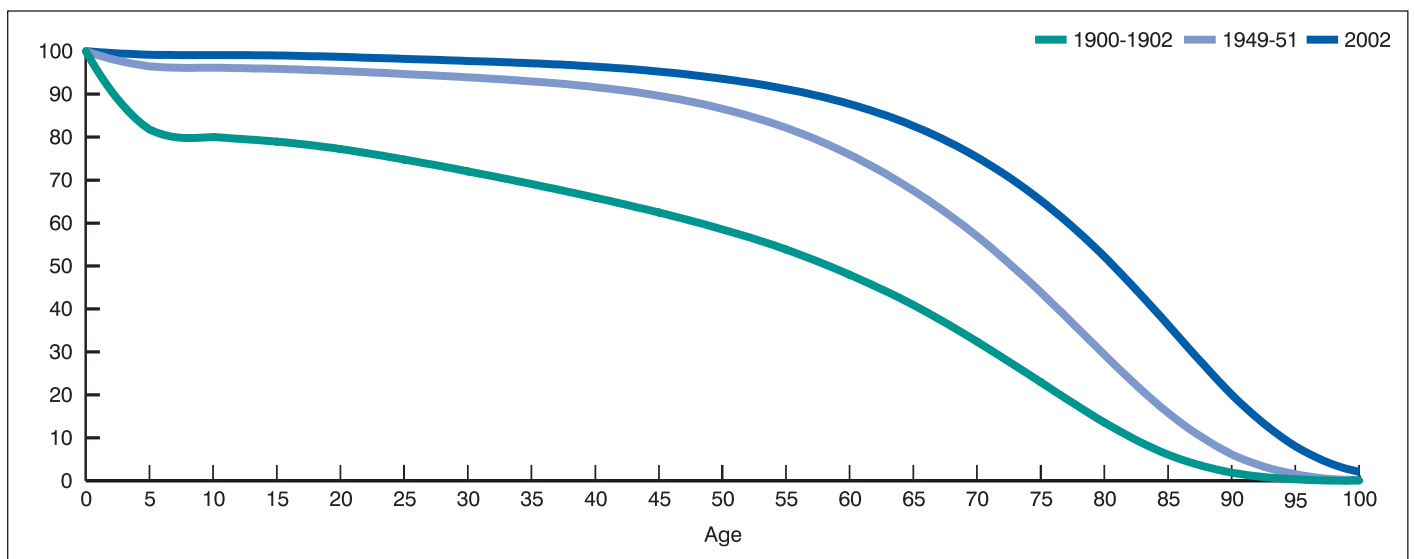


**Figure 2. Percent surviving by age, race, and sex: United States, 2002**

females, the pattern of survival by age is similar. These groups have approximately the same median age at death of about 79 years. However, white males have slightly higher survival rates than black females at the younger ages with 98.6 percent surviving to age 20 and 79.9 percent surviving to age 65 compared with 98.1 percent and 78.5 percent, respectively, for black females. At the older ages, in contrast, black female survival surpasses white male survival. At age 85, white male survival is 29.2 percent compared with 33.6 percent for black females. This crossover, which occurs at about age 72, is clearly shown in [figure 2](#). The median age at death for black males is 72 years, 11 years less than that for white females. 97.4 percent of black males survive to age 20, 65.7 percent to age 65, and 18.2 percent to age 85. By age 100, there is very little difference between the white and black populations in terms of survival. Somewhat less than 1 percent of white

and black males and about 2.6 percent of white and black females survive to age 100.

Plotting the percent surviving by age for the periods 1900–1902, 1949–51, and 2002 shows an increasingly rectangular survival curve ([figure 3](#)). That is, the survival curve has become increasingly flat in response to progressively lower mortality, particularly at the younger ages, and increasingly vertical at the older ages. The survival curve for 1900–1902 shows a rapid decline in survival in the first few years of life and a relatively steady decline thereafter. In contrast, the survival curve for 2002 is nearly flat until about age 50 after which the decline in survival becomes more rapid. Improvements in survival between 1900–1902 and 1949–51 occurred at all ages, although the largest improvements were among the younger population. Between 1949–51 and 2002, improvements occurred primarily for the older population.



**Figure 3. Percent surviving by age: Death-registration States, 1900–1902, and United States, 1949–51 and 2002**



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Table 1. Life table for the total population: United States, 2002

Age	Probability of dying between ages $x$ to $x+1$	Number surviving to age $x$	Number dying between ages $x$ to $x+1$	Person-years lived between ages $x$ to $x+1$	Total number of person-years lived above age $x$	Expectation of life at age $x$
	$q(x)$	$l(x)$	$d(x)$	$L(x)$	$T(x)$	$e(x)$
0-1	0.006971	100,000	697	99,389	7,725,787	77.3
1-2	0.000472	99,303	47	99,279	7,626,399	76.8
2-3	0.000324	99,256	32	99,240	7,527,119	75.8
3-4	0.000239	99,224	24	99,212	7,427,879	74.9
4-5	0.000203	99,200	20	99,190	7,328,667	73.9
5-6	0.000176	99,180	17	99,171	7,229,477	72.9
6-7	0.000144	99,163	14	99,155	7,130,306	71.9
7-8	0.000142	99,148	14	99,141	7,031,151	70.9
8-9	0.000152	99,134	15	99,127	6,932,009	69.9
9-10	0.000145	99,119	14	99,112	6,832,883	68.9
10-11	0.000151	99,105	15	99,097	6,733,771	67.9
11-12	0.000153	99,090	15	99,082	6,634,674	67.0
12-13	0.000186	99,075	18	99,065	6,535,592	66.0
13-14	0.000225	99,056	22	99,045	6,436,526	65.0
14-15	0.000266	99,034	26	99,021	6,337,481	64.0
15-16	0.000346	99,008	34	98,990	6,238,460	63.0
16-17	0.000573	98,973	57	98,945	6,139,470	62.0
17-18	0.000680	98,917	67	98,883	6,040,525	61.1
18-19	0.000849	98,849	84	98,807	5,941,642	60.1
19-20	0.000942	98,765	93	98,719	5,842,835	59.2
20-21	0.000934	98,672	92	98,626	5,744,116	58.2
21-22	0.000985	98,580	97	98,532	5,645,490	57.3
22-23	0.000939	98,483	93	98,437	5,546,958	56.3
23-24	0.000949	98,391	93	98,344	5,448,521	55.4
24-25	0.000948	98,297	93	98,251	5,350,177	54.4
25-26	0.000930	98,204	91	98,158	5,251,927	53.5
26-27	0.000953	98,113	94	98,066	5,153,768	52.5
27-28	0.000913	98,019	90	97,974	5,055,703	51.6
28-29	0.000940	97,930	92	97,884	4,957,728	50.6
29-30	0.000994	97,838	97	97,789	4,859,845	49.7
30-31	0.001024	97,740	100	97,690	4,762,056	48.7
31-32	0.001063	97,640	104	97,588	4,664,365	47.8
32-33	0.001061	97,536	104	97,485	4,566,777	46.8
33-34	0.001185	97,433	115	97,375	4,469,293	45.9
34-35	0.001251	97,317	122	97,257	4,371,917	44.9
35-36	0.001369	97,196	133	97,129	4,274,661	44.0
36-37	0.001454	97,063	141	96,992	4,177,532	43.0
37-38	0.001568	96,922	152	96,846	4,080,540	42.1
38-39	0.001718	96,770	166	96,686	3,983,694	41.2
39-40	0.001913	96,603	185	96,511	3,887,008	40.2
40-41	0.002072	96,419	200	96,319	3,790,497	39.3
41-42	0.002236	96,219	215	96,111	3,694,178	38.4
42-43	0.002357	96,004	226	95,890	3,598,067	37.5
43-44	0.002634	95,777	252	95,651	3,502,177	36.6
44-45	0.002826	95,525	270	95,390	3,406,525	35.7
45-46	0.003061	95,255	292	95,109	3,311,135	34.8
46-47	0.003301	94,964	313	94,807	3,216,026	33.9
47-48	0.003509	94,650	332	94,484	3,121,219	33.0
48-49	0.003888	94,318	367	94,135	3,026,735	32.1
49-50	0.004134	93,951	388	93,757	2,932,600	31.2
50-51	0.004422	93,563	414	93,356	2,838,843	30.3
51-52	0.004822	93,149	449	92,925	2,745,487	29.5
52-53	0.005003	92,700	464	92,468	2,652,563	28.6
53-54	0.005549	92,236	512	91,980	2,560,094	27.8
54-55	0.005845	91,724	536	91,456	2,468,114	26.9
55-56	0.006719	91,188	613	90,882	2,376,658	26.1
56-57	0.006616	90,576	599	90,276	2,285,776	25.2
57-58	0.007621	89,976	686	89,634	2,195,500	24.4
58-59	0.008344	89,291	745	88,918	2,105,866	23.6
59-60	0.009429	88,546	835	88,128	2,016,948	22.8
60-61	0.009747	87,711	855	87,283	1,928,820	22.0
61-62	0.010877	86,856	945	86,384	1,841,536	21.2
62-63	0.011905	85,911	1,023	85,400	1,755,153	20.4
63-64	0.012956	84,888	1,100	84,338	1,669,753	19.7
64-65	0.014099	83,789	1,181	83,198	1,585,414	18.9
65-66	0.015308	82,607	1,265	81,975	1,502,217	18.2
66-67	0.016474	81,343	1,340	80,673	1,420,242	17.5

**Table 1. Life table for the total population: United States, 2002—Con.**

Age	Probability of dying between ages $x$ to $x+1$	Number surviving to age $x$	Number dying between ages $x$ to $x+1$	Person-years lived between ages $x$ to $x+1$	Total number of person-years lived above age $x$	Expectation of life at age $x$
	$q(x)$	$l(x)$	$d(x)$	$L(x)$	$T(x)$	$e(x)$
67-68	0.018214	80,003	1,457	79,274	1,339,569	16.7
68-69	0.019623	78,545	1,541	77,775	1,260,295	16.0
69-70	0.021672	77,004	1,669	76,170	1,182,520	15.4
70-71	0.023635	75,335	1,781	74,445	1,106,350	14.7
71-72	0.025641	73,555	1,886	72,612	1,031,905	14.0
72-73	0.027663	71,669	1,983	70,678	959,294	13.4
73-74	0.030539	69,686	2,128	68,622	888,616	12.8
74-75	0.033276	67,558	2,248	66,434	819,994	12.1
75-76	0.036582	65,310	2,389	64,115	753,560	11.5
76-77	0.039775	62,921	2,503	61,670	689,444	11.0
77-78	0.043338	60,418	2,618	59,109	627,775	10.4
78-79	0.047219	57,800	2,729	56,435	568,666	9.8
79-80	0.052518	55,071	2,892	53,624	512,230	9.3
80-81	0.057603	52,178	3,006	50,676	458,606	8.8
81-82	0.062260	49,173	3,061	47,642	407,930	8.3
82-83	0.071461	46,111	3,295	44,464	360,288	7.8
83-84	0.073437	42,816	3,144	41,244	315,825	7.4
84-85	0.084888	39,672	3,368	37,988	274,581	6.9
85-86	0.093123	36,304	3,381	34,614	236,593	6.5
86-87	0.101914	32,923	3,355	31,246	201,979	6.1
87-88	0.111270	29,568	3,290	27,923	170,733	5.8
88-89	0.121196	26,278	3,185	24,686	142,810	5.4
89-90	0.131694	23,093	3,041	21,573	118,125	5.1
90-91	0.142761	20,052	2,863	18,621	96,552	4.8
91-92	0.154390	17,189	2,654	15,862	77,931	4.5
92-93	0.166569	14,535	2,421	13,325	62,069	4.3
93-94	0.179282	12,114	2,172	11,028	48,744	4.0
94-95	0.192507	9,942	1,914	8,985	37,716	3.8
95-96	0.206215	8,028	1,656	7,201	28,730	3.6
96-97	0.220375	6,373	1,404	5,671	21,530	3.4
97-98	0.234947	4,968	1,167	4,385	15,859	3.2
98-99	0.249887	3,801	950	3,326	11,474	3.0
99-100	0.265146	2,851	756	2,473	8,148	2.9
100+	1.00000	2,095	2,095	5,675	5,675	2.7



Table 2. Life table for males: United States, 2002

Age	Probability of dying between ages $x$ to $x+1$	Number surviving to age $x$	Number dying between ages $x$ to $x+1$	Person-years lived between ages $x$ to $x+1$	Total number of person-years lived above age $x$	Expectation of life at age $x$
	$q(x)$	$l(x)$	$d(x)$	$L(x)$	$T(x)$	$e(x)$
0-1	0.007639	100,000	764	99,332	7,454,202	74.5
1-2	0.000525	99,236	52	99,210	7,354,870	74.1
2-3	0.000366	99,184	36	99,166	7,255,660	73.2
3-4	0.000275	99,148	27	99,134	7,156,494	72.2
4-5	0.000234	99,120	23	99,109	7,057,360	71.2
5-6	0.000188	99,097	19	99,088	6,958,251	70.2
6-7	0.000161	99,079	16	99,071	6,859,163	69.2
7-8	0.000160	99,063	16	99,055	6,760,093	68.2
8-9	0.000169	99,047	17	99,038	6,661,038	67.3
9-10	0.000158	99,030	16	99,022	6,562,000	66.3
10-11	0.000175	99,014	17	99,006	6,462,977	65.3
11-12	0.000176	98,997	17	98,988	6,363,972	64.3
12-13	0.000224	98,980	22	98,969	6,264,983	63.3
13-14	0.000262	98,957	26	98,944	6,166,015	62.3
14-15	0.000319	98,932	32	98,916	6,067,070	61.3
15-16	0.000435	98,900	43	98,878	5,968,155	60.3
16-17	0.000749	98,857	74	98,820	5,869,276	59.4
17-18	0.000908	98,783	90	98,738	5,770,456	58.4
18-19	0.001211	98,693	119	98,633	5,671,718	57.5
19-20	0.001396	98,574	138	98,505	5,573,085	56.5
20-21	0.001389	98,436	137	98,368	5,474,580	55.6
21-22	0.001445	98,299	142	98,228	5,376,212	54.7
22-23	0.001390	98,157	136	98,089	5,277,984	53.8
23-24	0.001421	98,021	139	97,951	5,179,895	52.8
24-25	0.001390	97,882	136	97,814	5,081,943	51.9
25-26	0.001345	97,746	131	97,680	4,984,130	51.0
26-27	0.001380	97,614	135	97,547	4,886,450	50.1
27-28	0.001305	97,479	127	97,416	4,788,903	49.1
28-29	0.001305	97,352	127	97,289	4,691,487	48.2
29-30	0.001381	97,225	134	97,158	4,594,199	47.3
30-31	0.001408	97,091	137	97,023	4,497,041	46.3
31-32	0.001454	96,954	141	96,884	4,400,018	45.4
32-33	0.001392	96,813	135	96,746	4,303,134	44.4
33-34	0.001577	96,678	152	96,602	4,206,388	43.5
34-35	0.001644	96,526	159	96,447	4,109,786	42.6
35-36	0.001778	96,367	171	96,282	4,013,340	41.6
36-37	0.001872	96,196	180	96,106	3,917,058	40.7
37-38	0.002012	96,016	193	95,919	3,820,952	39.8
38-39	0.002219	95,823	213	95,716	3,725,033	38.9
39-40	0.002396	95,610	229	95,495	3,629,316	38.0
40-41	0.002656	95,381	253	95,254	3,533,821	37.0
41-42	0.002828	95,128	269	94,993	3,438,567	36.1
42-43	0.002969	94,859	282	94,718	3,343,574	35.2
43-44	0.003284	94,577	311	94,422	3,248,856	34.4
44-45	0.003577	94,266	337	94,098	3,154,434	33.5
45-46	0.003837	93,929	360	93,749	3,060,336	32.6
46-47	0.004251	93,569	398	93,370	2,966,588	31.7
47-48	0.004464	93,171	416	92,963	2,873,218	30.8
48-49	0.004950	92,755	459	92,525	2,780,255	30.0
49-50	0.005278	92,296	487	92,052	2,687,729	29.1
50-51	0.005699	91,809	523	91,547	2,595,677	28.3
51-52	0.006177	91,286	564	91,004	2,504,130	27.4
52-53	0.006429	90,722	583	90,430	2,413,126	26.6
53-54	0.007023	90,138	633	89,822	2,322,696	25.8
54-55	0.007324	89,505	656	89,178	2,232,874	24.9
55-56	0.008418	88,850	748	88,476	2,143,696	24.1
56-57	0.008317	88,102	733	87,736	2,055,220	23.3
57-58	0.009468	87,369	827	86,956	1,967,485	22.5
58-59	0.010380	86,542	898	86,093	1,880,529	21.7
59-60	0.011759	85,644	1,007	85,140	1,794,436	21.0
60-61	0.012102	84,637	1,024	84,124	1,709,296	20.2
61-62	0.013509	83,612	1,129	83,048	1,625,172	19.4
62-63	0.014882	82,483	1,227	81,869	1,542,124	18.7
63-64	0.016114	81,255	1,309	80,601	1,460,255	18.0
64-65	0.017381	79,946	1,390	79,251	1,379,655	17.3
65-66	0.018911	78,556	1,486	77,814	1,300,403	16.6
66-67	0.020372	77,071	1,570	76,286	1,222,590	15.9

**Table 2. Life table for males: United States, 2002—Con.**

Age	Probability of dying between ages $x$ to $x+1$	Number surviving to age $x$	Number dying between ages $x$ to $x+1$	Person-years lived between ages $x$ to $x+1$	Total number of person-years lived above age $x$	Expectation of life at age $x$
	$q(x)$	$l(x)$	$d(x)$	$L(x)$	$T(x)$	$e(x)$
67-68	0.022407	75,501	1,692	74,655	1,146,304	15.2
68-69	0.024342	73,809	1,797	72,911	1,071,649	14.5
69-70	0.026741	72,012	1,926	71,050	998,738	13.9
70-71	0.029215	70,087	2,048	69,063	927,688	13.2
71-72	0.031974	68,039	2,176	66,951	858,626	12.6
72-73	0.034055	65,864	2,243	64,742	791,674	12.0
73-74	0.038019	63,621	2,419	62,411	726,932	11.4
74-75	0.041207	61,202	2,522	59,941	664,521	10.9
75-76	0.045193	58,680	2,652	57,354	604,580	10.3
76-77	0.049570	56,028	2,777	54,639	547,226	9.8
77-78	0.053571	53,251	2,853	51,824	492,586	9.3
78-79	0.058418	50,398	2,944	48,926	440,762	8.7
79-80	0.064983	47,454	3,084	45,912	391,836	8.3
80-81	0.070275	44,370	3,118	42,811	345,924	7.8
81-82	0.076358	41,252	3,150	39,677	303,113	7.3
82-83	0.086728	38,102	3,305	36,450	263,436	6.9
83-84	0.088481	34,798	3,079	33,258	226,986	6.5
84-85	0.102159	31,719	3,240	30,098	193,728	6.1
85-86	0.111749	28,478	3,182	26,887	163,630	5.7
86-87	0.121909	25,296	3,084	23,754	136,742	5.4
87-88	0.132632	22,212	2,946	20,739	112,988	5.1
88-89	0.143909	19,266	2,773	17,880	92,249	4.8
89-90	0.155721	16,494	2,568	15,209	74,370	4.5
90-91	0.168047	13,925	2,340	12,755	59,160	4.2
91-92	0.180858	11,585	2,095	10,537	46,405	4.0
92-93	0.194119	9,490	1,842	8,569	35,868	3.8
93-94	0.207788	7,648	1,589	6,853	27,299	3.6
94-95	0.221818	6,059	1,344	5,387	20,446	3.4
95-96	0.236154	4,715	1,113	4,158	15,059	3.2
96-97	0.250737	3,601	903	3,150	10,901	3.0
97-98	0.265499	2,698	716	2,340	7,752	2.9
98-99	0.280370	1,982	556	1,704	5,411	2.7
99-100	0.295272	1,426	421	1,216	3,707	2.6
100+	1.00000	1,005	1,005	2,492	2,492	2.5

Table 3. Life table for females: United States, 2002

Age	Probability of dying between ages $x$ to $x+1$	Number surviving to age $x$	Number dying between ages $x$ to $x+1$	Person-years lived between ages $x$ to $x+1$	Total number of person-years lived above age $x$	Expectation of life at age $x$
	$q(x)$	$l(x)$	$d(x)$	$L(x)$	$T(x)$	$e(x)$
0-1	0.006271	100,000	627	99,449	7,985,456	79.9
1-2	0.000418	99,373	42	99,352	7,886,007	79.4
2-3	0.000281	99,331	28	99,317	7,786,655	78.4
3-4	0.000201	99,303	20	99,294	7,687,338	77.4
4-5	0.000170	99,284	17	99,275	7,588,044	76.4
5-6	0.000163	99,267	16	99,259	7,488,769	75.4
6-7	0.000127	99,250	13	99,244	7,389,510	74.5
7-8	0.000123	99,238	12	99,232	7,290,266	73.5
8-9	0.000133	99,226	13	99,219	7,191,034	72.5
9-10	0.000132	99,212	13	99,206	7,091,815	71.5
10-11	0.000126	99,199	12	99,193	6,992,610	70.5
11-12	0.000130	99,187	13	99,180	6,893,416	69.5
12-13	0.000145	99,174	14	99,167	6,794,236	68.5
13-14	0.000186	99,160	18	99,150	6,695,069	67.5
14-15	0.000210	99,141	21	99,131	6,595,919	66.5
15-16	0.000253	99,120	25	99,108	6,496,788	65.5
16-17	0.000389	99,095	39	99,076	6,397,680	64.6
17-18	0.000440	99,057	44	99,035	6,298,604	63.6
18-19	0.000466	99,013	46	98,990	6,199,569	62.6
19-20	0.000457	98,967	45	98,945	6,100,578	61.6
20-21	0.000454	98,922	45	98,899	6,001,634	60.7
21-22	0.000502	98,877	50	98,852	5,902,734	59.7
22-23	0.000467	98,827	46	98,804	5,803,882	58.7
23-24	0.000453	98,781	45	98,759	5,705,078	57.8
24-25	0.000486	98,736	48	98,712	5,606,319	56.8
25-26	0.000498	98,688	49	98,664	5,507,607	55.8
26-27	0.000510	98,639	50	98,614	5,408,943	54.8
27-28	0.000507	98,589	50	98,564	5,310,329	53.9
28-29	0.000565	98,539	56	98,511	5,211,765	52.9
29-30	0.000599	98,483	59	98,454	5,113,253	51.9
30-31	0.000632	98,424	62	98,393	5,014,800	51.0
31-32	0.000668	98,362	66	98,329	4,916,406	50.0
32-33	0.000724	98,296	71	98,261	4,818,077	49.0
33-34	0.000786	98,225	77	98,187	4,719,816	48.1
34-35	0.000853	98,148	84	98,106	4,621,630	47.1
35-36	0.000958	98,064	94	98,017	4,523,524	46.1
36-37	0.001034	97,970	101	97,920	4,425,506	45.2
37-38	0.001120	97,869	110	97,814	4,327,586	44.2
38-39	0.001221	97,759	119	97,700	4,229,772	43.3
39-40	0.001433	97,640	140	97,570	4,132,072	42.3
40-41	0.001493	97,500	146	97,427	4,034,502	41.4
41-42	0.001653	97,355	161	97,274	3,937,075	40.4
42-43	0.001750	97,194	170	97,108	3,839,801	39.5
43-44	0.001995	97,023	194	96,927	3,742,693	38.6
44-45	0.002091	96,830	202	96,729	3,645,766	37.7
45-46	0.002304	96,627	223	96,516	3,549,037	36.7
46-47	0.002376	96,405	229	96,290	3,452,521	35.8
47-48	0.002577	96,176	248	96,052	3,356,231	34.9
48-49	0.002859	95,928	274	95,791	3,260,179	34.0
49-50	0.003031	95,654	290	95,509	3,164,389	33.1
50-51	0.003194	95,364	305	95,211	3,068,880	32.2
51-52	0.003522	95,059	335	94,892	2,973,669	31.3
52-53	0.003634	94,724	344	94,552	2,878,777	30.4
53-54	0.004142	94,380	391	94,185	2,784,225	29.5
54-55	0.004434	93,989	417	93,781	2,690,040	28.6
55-56	0.005100	93,572	477	93,334	2,596,260	27.7
56-57	0.005006	93,095	466	92,862	2,502,926	26.9
57-58	0.005886	92,629	545	92,357	2,410,064	26.0
58-59	0.006441	92,084	593	91,787	2,317,707	25.2
59-60	0.007266	91,491	665	91,158	2,225,920	24.3
60-61	0.007576	90,826	688	90,482	2,134,761	23.5
61-62	0.008476	90,138	764	89,756	2,044,279	22.7
62-63	0.009201	89,374	822	88,963	1,954,523	21.9
63-64	0.010101	88,552	894	88,104	1,865,561	21.1
64-65	0.011149	87,657	977	87,169	1,777,456	20.3
65-66	0.012107	86,680	1,049	86,155	1,690,288	19.5
66-67	0.013059	85,631	1,118	85,071	1,604,132	18.7

**Table 3. Life table for females: United States, 2002—Con.**

Age	Probability of dying between ages $x$ to $x+1$	Number surviving to age $x$	Number dying between ages $x$ to $x+1$	Person-years lived between ages $x$ to $x+1$	Total number of person-years lived above age $x$	Expectation of life at age $x$
	$q(x)$	$l(x)$	$d(x)$	$L(x)$	$T(x)$	$e(x)$
67-68	0.014571	84,512	1,231	83,897	1,519,061	18.0
68-69	0.015591	83,281	1,298	82,632	1,435,164	17.2
69-70	0.017396	81,982	1,426	81,269	1,352,533	16.5
70-71	0.018991	80,556	1,530	79,791	1,271,263	15.8
71-72	0.020454	79,026	1,616	78,218	1,191,472	15.1
72-73	0.022525	77,410	1,744	76,538	1,113,254	14.4
73-74	0.024633	75,666	1,864	74,734	1,036,716	13.7
74-75	0.027135	73,802	2,003	72,801	961,981	13.0
75-76	0.030098	71,800	2,161	70,719	889,180	12.4
76-77	0.032631	69,639	2,272	68,503	818,461	11.8
77-78	0.036094	67,366	2,432	66,151	749,958	11.1
78-79	0.039472	64,935	2,563	63,653	683,807	10.5
79-80	0.044110	62,372	2,751	60,996	620,154	9.9
80-81	0.049300	59,621	2,939	58,151	559,158	9.4
81-82	0.053298	56,681	3,021	55,171	501,007	8.8
82-83	0.062179	53,660	3,337	51,992	445,836	8.3
83-84	0.064550	50,324	3,248	48,700	393,844	7.8
84-85	0.075055	47,075	3,533	45,309	345,144	7.3
85-86	0.083221	43,542	3,624	41,730	299,836	6.9
86-87	0.091996	39,919	3,672	38,082	258,105	6.5
87-88	0.101390	36,246	3,675	34,409	220,023	6.1
88-89	0.111404	32,571	3,629	30,757	185,614	5.7
89-90	0.122037	28,943	3,532	27,177	154,857	5.4
90-91	0.133280	25,411	3,387	23,717	127,681	5.0
91-92	0.145119	22,024	3,196	20,426	103,964	4.7
92-93	0.157532	18,828	2,966	17,345	83,538	4.4
93-94	0.170488	15,862	2,704	14,510	66,193	4.2
94-95	0.183953	13,158	2,420	11,947	51,683	3.9
95-96	0.197880	10,737	2,125	9,675	39,736	3.7
96-97	0.212217	8,613	1,828	7,699	30,061	3.5
97-98	0.226905	6,785	1,540	6,015	22,363	3.3
98-99	0.241875	5,245	1,269	4,611	16,347	3.1
99-100	0.257053	3,977	1,022	3,465	11,737	3.0
100+	1.00000	2,954	2,954	8,271	8,271	2.8

**Table 4. Life table for the white population: United States, 2002**

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages $x$ to $x+1$	Number surviving to age $x$	Number dying between ages $x$ to $x+1$	Person-years lived between ages $x$ to $x+1$	Total number of person-years lived above age $x$	Expectation of life at age $x$
	$q(x)$	$l(x)$	$d(x)$	$L(x)$	$T(x)$	$e(x)$
0-1	0.005786	100,000	579	99,493	7,773,586	77.7
1-2	0.000426	99,421	42	99,400	7,674,093	77.2
2-3	0.000294	99,379	29	99,364	7,574,693	76.2
3-4	0.000217	99,350	22	99,339	7,475,329	75.2
4-5	0.000178	99,328	18	99,319	7,375,990	74.3
5-6	0.000164	99,311	16	99,302	7,276,670	73.3
6-7	0.000137	99,294	14	99,287	7,177,368	72.3
7-8	0.000134	99,281	13	99,274	7,078,080	71.3
8-9	0.000139	99,267	14	99,260	6,978,806	70.3
9-10	0.000129	99,254	13	99,247	6,879,546	69.3
10-11	0.000137	99,241	14	99,234	6,780,299	68.3
11-12	0.000137	99,227	14	99,220	6,681,065	67.3
12-13	0.000166	99,213	16	99,205	6,581,845	66.3
13-14	0.000214	99,197	21	99,186	6,482,639	65.4
14-15	0.000252	99,176	25	99,163	6,383,453	64.4
15-16	0.000339	99,151	34	99,134	6,284,290	63.4
16-17	0.000574	99,117	57	99,089	6,185,156	62.4
17-18	0.000673	99,060	67	99,027	6,086,067	61.4
18-19	0.000819	98,994	81	98,953	5,987,040	60.5
19-20	0.000907	98,913	90	98,868	5,888,087	59.5
20-21	0.000878	98,823	87	98,779	5,789,219	58.6
21-22	0.000925	98,736	91	98,690	5,690,440	57.6
22-23	0.000852	98,645	84	98,603	5,591,749	56.7
23-24	0.000873	98,561	86	98,518	5,493,147	55.7
24-25	0.000871	98,475	86	98,432	5,394,629	54.8
25-26	0.000843	98,389	83	98,347	5,296,197	53.8
26-27	0.000859	98,306	84	98,264	5,197,850	52.9
27-28	0.000804	98,221	79	98,182	5,099,586	51.9
28-29	0.000861	98,142	84	98,100	5,001,404	51.0
29-30	0.000881	98,058	86	98,015	4,903,304	50.0
30-31	0.000933	97,972	91	97,926	4,805,289	49.0
31-32	0.000962	97,880	94	97,833	4,707,363	48.1
32-33	0.000948	97,786	93	97,740	4,609,530	47.1
33-34	0.001089	97,693	106	97,640	4,511,791	46.2
34-35	0.001126	97,587	110	97,532	4,414,150	45.2
35-36	0.001222	97,477	119	97,417	4,316,618	44.3
36-37	0.001311	97,358	128	97,294	4,219,201	43.3
37-38	0.001441	97,230	140	97,160	4,121,907	42.4
38-39	0.001557	97,090	151	97,015	4,024,747	41.5
39-40	0.001762	96,939	171	96,854	3,927,732	40.5
40-41	0.001937	96,768	187	96,675	3,830,878	39.6
41-42	0.002060	96,581	199	96,481	3,734,204	38.7
42-43	0.002176	96,382	210	96,277	3,637,722	37.7
43-44	0.002422	96,172	233	96,056	3,541,445	36.8
44-45	0.002601	95,939	250	95,814	3,445,390	35.9
45-46	0.002813	95,690	269	95,555	3,349,575	35.0
46-47	0.003046	95,421	291	95,275	3,254,020	34.1
47-48	0.003221	95,130	306	94,977	3,158,745	33.2
48-49	0.003531	94,823	335	94,656	3,063,768	32.3
49-50	0.003790	94,489	358	94,310	2,969,112	31.4
50-51	0.004027	94,131	379	93,941	2,874,803	30.5
51-52	0.004408	93,752	413	93,545	2,780,862	29.7
52-53	0.004590	93,338	428	93,124	2,687,317	28.8
53-54	0.005134	92,910	477	92,671	2,594,193	27.9
54-55	0.005400	92,433	499	92,183	2,501,521	27.1
55-56	0.006281	91,934	577	91,645	2,409,338	26.2
56-57	0.006178	91,356	564	91,074	2,317,693	25.4
57-58	0.007171	90,792	651	90,466	2,226,619	24.5
58-59	0.007835	90,141	706	89,788	2,136,153	23.7
59-60	0.008929	89,434	799	89,035	2,046,365	22.9
60-61	0.009231	88,636	818	88,227	1,957,330	22.1
61-62	0.010338	87,818	908	87,364	1,869,103	21.3
62-63	0.011358	86,910	987	86,416	1,781,739	20.5
63-64	0.012422	85,923	1,067	85,389	1,695,323	19.7
64-65	0.013533	84,855	1,148	84,281	1,609,934	19.0



**Table 4. Life table for the white population: United States, 2002—Con.**

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages $x$ to $x+1$	Number surviving to age $x$	Number dying between ages $x$ to $x+1$	Person-years lived between ages $x$ to $x+1$	Total number of person-years lived above age $x$	Expectation of life at age $x$
	$q(x)$	$l(x)$	$d(x)$	$L(x)$	$T(x)$	$e(x)$
65-66	0.014755	83,707	1,235	83,089	1,525,653	18.2
66-67	0.015904	82,472	1,312	81,816	1,442,564	17.5
67-68	0.017714	81,160	1,438	80,441	1,360,748	16.8
68-69	0.019078	79,723	1,521	78,962	1,280,306	16.1
69-70	0.021107	78,202	1,651	77,376	1,201,344	15.4
70-71	0.023189	76,551	1,775	75,663	1,123,968	14.7
71-72	0.025066	74,776	1,874	73,839	1,048,304	14.0
72-73	0.027119	72,902	1,977	71,913	974,466	13.4
73-74	0.030071	70,925	2,133	69,858	902,553	12.7
74-75	0.032822	68,792	2,258	67,663	832,694	12.1
75-76	0.036095	66,534	2,402	65,333	765,032	11.5
76-77	0.039266	64,132	2,518	62,873	699,698	10.9
77-78	0.042885	61,614	2,642	60,293	636,825	10.3
78-79	0.046951	58,972	2,769	57,587	576,532	9.8
79-80	0.052171	56,203	2,932	54,737	518,945	9.2
80-81	0.057361	53,271	3,056	51,743	464,208	8.7
81-82	0.062294	50,215	3,128	48,651	412,465	8.2
82-83	0.071537	47,087	3,368	45,403	363,814	7.7
83-84	0.073624	43,719	3,219	42,109	318,411	7.3
84-85	0.085207	40,500	3,451	38,774	276,302	6.8
85-86	0.093581	37,049	3,467	35,315	237,528	6.4
86-87	0.102583	33,582	3,445	31,859	202,212	6.0
87-88	0.112237	30,137	3,382	28,446	170,353	5.7
88-89	0.122567	26,754	3,279	25,115	141,907	5.3
89-90	0.133593	23,475	3,136	21,907	116,792	5.0
90-91	0.145335	20,339	2,956	18,861	94,885	4.7
91-92	0.157808	17,383	2,743	16,012	76,024	4.4
92-93	0.171027	14,640	2,504	13,388	60,012	4.1
93-94	0.185002	12,136	2,245	11,014	46,624	3.8
94-95	0.199738	9,891	1,976	8,903	35,611	3.6
95-96	0.215239	7,915	1,704	7,063	26,708	3.4
96-97	0.231503	6,212	1,438	5,493	19,644	3.2
97-98	0.248522	4,774	1,186	4,180	14,152	3.0
98-99	0.266287	3,587	955	3,110	9,971	2.8
99-100	0.284780	2,632	750	2,257	6,861	2.6
100+	1.00000	1,882	1,882	4,604	4,604	2.4

**Table 5. Life table for white males: United States, 2002**

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages $x$ to $x+1$	Number surviving to age $x$	Number dying between ages $x$ to $x+1$	Person-years lived between ages $x$ to $x+1$	Total number of person-years lived above age $x$	Expectation of life at age $x$
	$q(x)$	$l(x)$	$d(x)$	$L(x)$	$T(x)$	$e(x)$
0-1	0.006417	100,000	642	99,439	7,510,519	75.1
1-2	0.000467	99,358	46	99,335	7,411,080	74.6
2-3	0.000328	99,312	33	99,296	7,311,745	73.6
3-4	0.000249	99,279	25	99,267	7,212,449	72.6
4-5	0.000209	99,255	21	99,244	7,113,182	71.7
5-6	0.000173	99,234	17	99,225	7,013,938	70.7
6-7	0.000155	99,217	15	99,209	6,914,713	69.7
7-8	0.000153	99,201	15	99,194	6,815,504	68.7
8-9	0.000150	99,186	15	99,179	6,716,310	67.7
9-10	0.000138	99,171	14	99,164	6,617,131	66.7
10-11	0.000161	99,157	16	99,150	6,517,967	65.7
11-12	0.000158	99,142	16	99,134	6,418,818	64.7
12-13	0.000202	99,126	20	99,116	6,319,684	63.8
13-14	0.000244	99,106	24	99,094	6,220,568	62.8
14-15	0.000296	99,082	29	99,067	6,121,475	61.8
15-16	0.000426	99,052	42	99,031	6,022,408	60.8
16-17	0.000734	99,010	73	98,974	5,923,376	59.8
17-18	0.000885	98,937	88	98,894	5,824,403	58.9
18-19	0.001151	98,850	114	98,793	5,725,509	57.9
19-20	0.001325	98,736	131	98,671	5,626,716	57.0
20-21	0.001294	98,605	128	98,541	5,528,046	56.1
21-22	0.001338	98,478	132	98,412	5,429,504	55.1
22-23	0.001253	98,346	123	98,284	5,331,093	54.2
23-24	0.001300	98,223	128	98,159	5,232,808	53.3
24-25	0.001257	98,095	123	98,033	5,134,650	52.3
25-26	0.001202	97,972	118	97,913	5,036,617	51.4
26-27	0.001233	97,854	121	97,793	4,938,704	50.5
27-28	0.001145	97,733	112	97,677	4,840,911	49.5
28-29	0.001173	97,621	115	97,564	4,743,233	48.6
29-30	0.001230	97,507	120	97,447	4,645,669	47.6
30-31	0.001290	97,387	126	97,324	4,548,223	46.7
31-32	0.001316	97,261	128	97,197	4,450,899	45.8
32-33	0.001252	97,133	122	97,072	4,353,702	44.8
33-34	0.001465	97,012	142	96,941	4,256,629	43.9
34-35	0.001482	96,869	144	96,798	4,159,689	42.9
35-36	0.001578	96,726	153	96,650	4,062,891	42.0
36-37	0.001683	96,573	163	96,492	3,966,241	41.1
37-38	0.001866	96,411	180	96,321	3,869,750	40.1
38-39	0.002025	96,231	195	96,133	3,773,429	39.2
39-40	0.002226	96,036	214	95,929	3,677,295	38.3
40-41	0.002507	95,822	240	95,702	3,581,366	37.4
41-42	0.002649	95,582	253	95,455	3,485,665	36.5
42-43	0.002772	95,329	264	95,196	3,390,209	35.6
43-44	0.003072	95,064	292	94,918	3,295,013	34.7
44-45	0.003350	94,772	317	94,614	3,200,094	33.8
45-46	0.003558	94,455	336	94,287	3,105,481	32.9
46-47	0.003962	94,119	373	93,932	3,011,194	32.0
47-48	0.004138	93,746	388	93,552	2,917,262	31.1
48-49	0.004527	93,358	423	93,147	2,823,710	30.2
49-50	0.004870	92,935	453	92,709	2,730,563	29.4
50-51	0.005229	92,483	484	92,241	2,637,854	28.5
51-52	0.005661	91,999	521	91,739	2,545,614	27.7
52-53	0.005912	91,478	541	91,208	2,453,875	26.8
53-54	0.006474	90,937	589	90,643	2,362,667	26.0
54-55	0.006755	90,349	610	90,043	2,272,024	25.1
55-56	0.007871	89,738	706	89,385	2,181,981	24.3
56-57	0.007766	89,032	691	88,686	2,092,596	23.5
57-58	0.008873	88,341	784	87,949	2,003,909	22.7
58-59	0.009717	87,557	851	87,131	1,915,961	21.9
59-60	0.011121	86,706	964	86,224	1,828,829	21.1
60-61	0.011375	85,742	975	85,254	1,742,606	20.3
61-62	0.012838	84,766	1,088	84,222	1,657,352	19.6
62-63	0.014135	83,678	1,183	83,087	1,573,130	18.8
63-64	0.015409	82,495	1,271	81,860	1,490,043	18.1
64-65	0.016620	81,224	1,350	80,549	1,408,183	17.3

**Table 5. Life table for white males: United States, 2002—Con.**

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages $x$ to $x+1$	Number surviving to age $x$	Number dying between ages $x$ to $x+1$	Person-years lived between ages $x$ to $x+1$	Total number of person-years lived above age $x$	Expectation of life at age $x$
	$q(x)$	$l(x)$	$d(x)$	$L(x)$	$T(x)$	$e(x)$
65-66	0.018184	79,874	1,452	79,148	1,327,634	16.6
66-67	0.019668	78,422	1,542	77,651	1,248,486	15.9
67-68	0.021785	76,879	1,675	76,042	1,170,836	15.2
68-69	0.023639	75,205	1,778	74,316	1,094,794	14.6
69-70	0.026049	73,427	1,913	72,470	1,020,478	13.9
70-71	0.028633	71,514	2,048	70,490	948,008	13.3
71-72	0.031275	69,466	2,173	68,380	877,518	12.6
72-73	0.033339	67,294	2,244	66,172	809,138	12.0
73-74	0.037412	65,050	2,434	63,833	742,966	11.4
74-75	0.040664	62,617	2,546	61,344	679,132	10.8
75-76	0.044647	60,070	2,682	58,729	617,789	10.3
76-77	0.048946	57,388	2,809	55,984	559,059	9.7
77-78	0.053039	54,580	2,895	53,132	503,075	9.2
78-79	0.058065	51,685	3,001	50,184	449,943	8.7
79-80	0.064456	48,684	3,138	47,115	399,759	8.2
80-81	0.069812	45,546	3,180	43,956	352,644	7.7
81-82	0.076341	42,366	3,234	40,749	308,689	7.3
82-83	0.086981	39,132	3,404	37,430	267,940	6.8
83-84	0.088920	35,728	3,177	34,140	230,510	6.5
84-85	0.102473	32,551	3,336	30,883	196,370	6.0
85-86	0.112276	29,216	3,280	27,575	165,487	5.7
86-87	0.122723	25,935	3,183	24,344	137,911	5.3
87-88	0.133822	22,752	3,045	21,230	113,567	5.0
88-89	0.145577	19,708	2,869	18,273	92,337	4.7
89-90	0.157985	16,839	2,660	15,509	74,064	4.4
90-91	0.171043	14,178	2,425	12,966	58,556	4.1
91-92	0.184737	11,753	2,171	10,668	45,590	3.9
92-93	0.199051	9,582	1,907	8,628	34,922	3.6
93-94	0.213963	7,675	1,642	6,854	26,294	3.4
94-95	0.229442	6,033	1,384	5,341	19,440	3.2
95-96	0.245455	4,648	1,141	4,078	14,099	3.0
96-97	0.261957	3,507	919	3,048	10,021	2.9
97-98	0.278902	2,589	722	2,228	6,973	2.7
98-99	0.296235	1,867	553	1,590	4,746	2.5
99-100	0.313893	1,314	412	1,108	3,155	2.4
100+	1.00000	901	901	2,048	2,048	2.3

**Table 6. Life table for white females: United States, 2002**

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages $x$ to $x+1$	Number surviving to age $x$	Number dying between ages $x$ to $x+1$	Person-years lived between ages $x$ to $x+1$	Total number of person-years lived above age $x$	Expectation of life at age $x$
	$q(x)$	$l(x)$	$d(x)$	$L(x)$	$T(x)$	$e(x)$
0-1	0.005124	100,000	512	99,549	8,027,376	80.3
1-2	0.000384	99,488	38	99,469	7,927,827	79.7
2-3	0.000258	99,449	26	99,437	7,828,359	78.7
3-4	0.000184	99,424	18	99,415	7,728,922	77.7
4-5	0.000146	99,406	15	99,398	7,629,508	76.8
5-6	0.000153	99,391	15	99,383	7,530,109	75.8
6-7	0.000117	99,376	12	99,370	7,430,726	74.8
7-8	0.000113	99,364	11	99,358	7,331,356	73.8
8-9	0.000128	99,353	13	99,346	7,231,998	72.8
9-10	0.000120	99,340	12	99,334	7,132,651	71.8
10-11	0.000113	99,328	11	99,323	7,033,317	70.8
11-12	0.000116	99,317	11	99,311	6,933,994	69.8
12-13	0.000128	99,306	13	99,299	6,834,683	68.8
13-14	0.000182	99,293	18	99,284	6,735,384	67.8
14-15	0.000204	99,275	20	99,265	6,636,100	66.8
15-16	0.000248	99,255	25	99,242	6,536,835	65.9
16-17	0.000405	99,230	40	99,210	6,437,593	64.9
17-18	0.000448	99,190	44	99,167	6,338,383	63.9
18-19	0.000464	99,145	46	99,122	6,239,216	62.9
19-20	0.000457	99,099	45	99,077	6,140,093	62.0
20-21	0.000435	99,054	43	99,032	6,041,017	61.0
21-22	0.000487	99,011	48	98,987	5,941,984	60.0
22-23	0.000424	98,963	42	98,942	5,842,998	59.0
23-24	0.000415	98,921	41	98,900	5,744,056	58.1
24-25	0.000457	98,880	45	98,857	5,645,156	57.1
25-26	0.000458	98,834	45	98,812	5,546,299	56.1
26-27	0.000459	98,789	45	98,766	5,447,487	55.1
27-28	0.000441	98,744	44	98,722	5,348,721	54.2
28-29	0.000530	98,700	52	98,674	5,249,999	53.2
29-30	0.000515	98,648	51	98,623	5,151,324	52.2
30-31	0.000560	98,597	55	98,570	5,052,702	51.2
31-32	0.000594	98,542	59	98,513	4,954,132	50.3
32-33	0.000629	98,483	62	98,452	4,855,619	49.3
33-34	0.000697	98,421	69	98,387	4,757,167	48.3
34-35	0.000758	98,353	75	98,316	4,658,780	47.4
35-36	0.000855	98,278	84	98,236	4,560,464	46.4
36-37	0.000929	98,194	91	98,149	4,462,228	45.4
37-38	0.001003	98,103	98	98,054	4,364,079	44.5
38-39	0.001081	98,005	106	97,952	4,266,025	43.5
39-40	0.001292	97,899	127	97,836	4,168,073	42.6
40-41	0.001360	97,772	133	97,706	4,070,238	41.6
41-42	0.001468	97,639	143	97,568	3,972,532	40.7
42-43	0.001572	97,496	153	97,419	3,874,964	39.7
43-44	0.001771	97,343	172	97,257	3,777,545	38.8
44-45	0.001853	97,170	180	97,080	3,680,288	37.9
45-46	0.002069	96,990	201	96,890	3,583,208	36.9
46-47	0.002134	96,790	207	96,686	3,486,318	36.0
47-48	0.002305	96,583	223	96,472	3,389,631	35.1
48-49	0.002545	96,361	245	96,238	3,293,159	34.2
49-50	0.002725	96,115	262	95,984	3,196,922	33.3
50-51	0.002844	95,853	273	95,717	3,100,937	32.4
51-52	0.003180	95,581	304	95,429	3,005,220	31.4
52-53	0.003290	95,277	313	95,120	2,909,791	30.5
53-54	0.003827	94,963	363	94,782	2,814,671	29.6
54-55	0.004081	94,600	386	94,407	2,719,890	28.8
55-56	0.004737	94,214	446	93,991	2,625,483	27.9
56-57	0.004646	93,768	436	93,550	2,531,492	27.0
57-58	0.005541	93,332	517	93,073	2,437,942	26.1
58-59	0.006041	92,815	561	92,534	2,344,869	25.3
59-60	0.006858	92,254	633	91,938	2,252,334	24.4
60-61	0.007219	91,621	661	91,291	2,160,396	23.6
61-62	0.008015	90,960	729	90,595	2,069,106	22.7
62-63	0.008790	90,231	793	89,834	1,978,510	21.9
63-64	0.009672	89,438	865	89,005	1,888,676	21.1
64-65	0.010707	88,573	948	88,099	1,799,671	20.3

**Table 6. Life table for white females: United States, 2002—Con.**

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages $x$ to $x+1$	Number surviving to age $x$	Number dying between ages $x$ to $x+1$	Person-years lived between ages $x$ to $x+1$	Total number of person-years lived above age $x$	Expectation of life at age $x$
	$q(x)$	$l(x)$	$d(x)$	$L(x)$	$T(x)$	$e(x)$
65-66	0.011652	87,624	1,021	87,114	1,711,572	19.5
66-67	0.012542	86,603	1,086	86,060	1,624,458	18.8
67-68	0.014109	85,517	1,207	84,914	1,538,398	18.0
68-69	0.015102	84,311	1,273	83,674	1,453,484	17.2
69-70	0.016851	83,037	1,399	82,338	1,369,810	16.5
70-71	0.018562	81,638	1,515	80,881	1,287,472	15.8
71-72	0.019881	80,123	1,593	79,326	1,206,592	15.1
72-73	0.022023	78,530	1,729	77,665	1,127,265	14.4
73-74	0.024158	76,800	1,855	75,873	1,049,600	13.7
74-75	0.026635	74,945	1,996	73,947	973,727	13.0
75-76	0.029541	72,949	2,155	71,871	899,780	12.3
76-77	0.032085	70,794	2,271	69,658	827,909	11.7
77-78	0.035606	68,522	2,440	67,303	758,251	11.1
78-79	0.039183	66,083	2,589	64,788	690,948	10.5
79-80	0.043811	63,493	2,782	62,103	626,160	9.9
80-81	0.049136	60,712	2,983	59,220	564,058	9.3
81-82	0.053288	57,729	3,076	56,190	504,838	8.7
82-83	0.062062	54,652	3,392	52,956	448,647	8.2
83-84	0.064527	51,261	3,308	49,607	395,691	7.7
84-85	0.075300	47,953	3,611	46,147	346,084	7.2
85-86	0.083577	44,342	3,706	42,489	299,937	6.8
86-87	0.092538	40,636	3,760	38,756	257,448	6.3
87-88	0.102211	36,876	3,769	34,991	218,692	5.9
88-89	0.112621	33,107	3,728	31,242	183,701	5.5
89-90	0.123790	29,378	3,637	27,560	152,459	5.2
90-91	0.135737	25,741	3,494	23,994	124,899	4.9
91-92	0.148475	22,247	3,303	20,596	100,905	4.5
92-93	0.162015	18,944	3,069	17,410	80,309	4.2
93-94	0.176360	15,875	2,800	14,475	62,899	4.0
94-95	0.191509	13,075	2,504	11,823	48,424	3.7
95-96	0.207455	10,571	2,193	9,475	36,601	3.5
96-97	0.224184	8,378	1,878	7,439	27,126	3.2
97-98	0.241673	6,500	1,571	5,714	19,687	3.0
98-99	0.259895	4,929	1,281	4,289	13,973	2.8
99-100	0.278812	3,648	1,017	3,139	9,684	2.7
100+	1.00000	2,631	2,631	6,545	6,545	2.5



**Table 7. Life table for the black population: United States, 2002**

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages $x$ to $x+1$	Number surviving to age $x$	Number dying between ages $x$ to $x+1$	Person-years lived between ages $x$ to $x+1$	Total number of person-years lived above age $x$	Expectation of life at age $x$
	$q(x)$	$l(x)$	$d(x)$	$L(x)$	$T(x)$	$e(x)$
0-1	0.014324	100,000	1,432	98,742	7,232,280	72.3
1-2	0.000715	98,568	71	98,532	7,133,538	72.4
2-3	0.000475	98,497	47	98,474	7,035,005	71.4
3-4	0.000351	98,450	35	98,433	6,936,532	70.5
4-5	0.000323	98,416	32	98,400	6,838,099	69.5
5-6	0.000237	98,384	23	98,372	6,739,699	68.5
6-7	0.000193	98,361	19	98,351	6,641,326	67.5
7-8	0.000182	98,342	18	98,333	6,542,975	66.5
8-9	0.000219	98,324	22	98,313	6,444,642	65.5
9-10	0.000234	98,302	23	98,291	6,346,329	64.6
10-11	0.000226	98,279	22	98,268	6,248,038	63.6
11-12	0.000229	98,257	23	98,246	6,149,770	62.6
12-13	0.000287	98,235	28	98,220	6,051,524	61.6
13-14	0.000281	98,206	28	98,193	5,953,304	60.6
14-15	0.000356	98,179	35	98,161	5,855,111	59.6
15-16	0.000403	98,144	40	98,124	5,756,950	58.7
16-17	0.000621	98,104	61	98,074	5,658,826	57.7
17-18	0.000782	98,043	77	98,005	5,560,752	56.7
18-19	0.001091	97,967	107	97,913	5,462,747	55.8
19-20	0.001226	97,860	120	97,800	5,364,834	54.8
20-21	0.001336	97,740	131	97,675	5,267,034	53.9
21-22	0.001455	97,609	142	97,538	5,169,359	53.0
22-23	0.001500	97,467	146	97,394	5,071,821	52.0
23-24	0.001513	97,321	147	97,247	4,974,427	51.1
24-25	0.001544	97,174	150	97,099	4,877,180	50.2
25-26	0.001614	97,024	157	96,945	4,780,081	49.3
26-27	0.001704	96,867	165	96,785	4,683,136	48.3
27-28	0.001723	96,702	167	96,619	4,586,351	47.4
28-29	0.001645	96,536	159	96,456	4,489,732	46.5
29-30	0.001914	96,377	184	96,284	4,393,276	45.6
30-31	0.001821	96,192	175	96,105	4,296,992	44.7
31-32	0.001921	96,017	184	95,925	4,200,887	43.8
32-33	0.001927	95,833	185	95,740	4,104,962	42.8
33-34	0.002060	95,648	197	95,549	4,009,222	41.9
34-35	0.002311	95,451	221	95,341	3,913,673	41.0
35-36	0.002550	95,230	243	95,109	3,818,332	40.1
36-37	0.002638	94,987	251	94,862	3,723,223	39.2
37-38	0.002634	94,737	250	94,612	3,628,361	38.3
38-39	0.003055	94,487	289	94,343	3,533,749	37.4
39-40	0.003275	94,199	309	94,044	3,439,406	36.5
40-41	0.003380	93,890	317	93,731	3,345,362	35.6
41-42	0.003855	93,573	361	93,392	3,251,631	34.7
42-43	0.003964	93,212	369	93,027	3,158,238	33.9
43-44	0.004560	92,842	423	92,631	3,065,211	33.0
44-45	0.004890	92,419	452	92,193	2,972,580	32.2
45-46	0.005368	91,967	494	91,720	2,880,387	31.3
46-47	0.005712	91,473	522	91,212	2,788,667	30.5
47-48	0.006158	90,951	560	90,671	2,697,455	29.7
48-49	0.007116	90,391	643	90,069	2,606,784	28.8
49-50	0.007498	89,748	673	89,411	2,516,715	28.0
50-51	0.008139	89,075	725	88,712	2,427,304	27.3
51-52	0.008855	88,350	782	87,959	2,338,592	26.5
52-53	0.008963	87,567	785	87,175	2,250,633	25.7
53-54	0.009769	86,783	848	86,359	2,163,458	24.9
54-55	0.010615	85,935	912	85,479	2,077,100	24.2
55-56	0.011999	85,023	1,020	84,512	1,991,621	23.4
56-57	0.011532	84,002	969	83,518	1,907,108	22.7
57-58	0.012844	83,034	1,066	82,500	1,823,590	22.0
58-59	0.014229	81,967	1,166	81,384	1,741,090	21.2
59-60	0.015599	80,801	1,260	80,171	1,659,706	20.5
60-61	0.015966	79,540	1,270	78,905	1,579,535	19.9
61-62	0.017455	78,271	1,366	77,587	1,500,630	19.2
62-63	0.018794	76,904	1,445	76,182	1,423,043	18.5
63-64	0.020060	75,459	1,514	74,702	1,346,861	17.8
64-65	0.021524	73,945	1,592	73,149	1,272,159	17.2

**Table 7. Life table for the black population: United States, 2002—Con.**

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages $x$ to $x+1$	Number surviving to age $x$	Number dying between ages $x$ to $x+1$	Person-years lived between ages $x$ to $x+1$	Total number of person-years lived above age $x$	Expectation of life at age $x$
	$q(x)$	$l(x)$	$d(x)$	$L(x)$	$T(x)$	$e(x)$
65-66	0.022796	72,354	1,649	71,529	1,199,009	16.6
66-67	0.024325	70,704	1,720	69,844	1,127,480	15.9
67-68	0.025655	68,984	1,770	68,100	1,057,636	15.3
68-69	0.027527	67,215	1,850	66,290	989,536	14.7
69-70	0.030236	65,364	1,976	64,376	923,247	14.1
70-71	0.031995	63,388	2,028	62,374	858,871	13.5
71-72	0.035663	61,360	2,188	60,266	796,497	13.0
72-73	0.037718	59,172	2,232	58,056	736,231	12.4
73-74	0.040272	56,940	2,293	55,793	678,175	11.9
74-75	0.043089	54,647	2,355	53,469	622,382	11.4
75-76	0.047056	52,292	2,461	51,062	568,913	10.9
76-77	0.050811	49,831	2,532	48,565	517,851	10.4
77-78	0.054350	47,299	2,571	46,014	469,285	9.9
78-79	0.057266	44,729	2,561	43,448	423,271	9.5
79-80	0.064253	42,167	2,709	40,813	379,823	9.0
80-81	0.067906	39,458	2,679	38,118	339,011	8.6
81-82	0.070228	36,778	2,583	35,487	300,893	8.2
82-83	0.080722	34,196	2,760	32,815	265,406	7.8
83-84	0.079195	31,435	2,490	30,190	232,590	7.4
84-85	0.090888	28,946	2,631	27,630	202,400	7.0
85-86	0.097660	26,315	2,570	25,030	174,770	6.6
86-87	0.104825	23,745	2,489	22,500	149,740	6.3
87-88	0.112394	21,256	2,389	20,061	127,239	6.0
88-89	0.120382	18,867	2,271	17,731	107,178	5.7
89-90	0.128799	16,596	2,137	15,527	89,446	5.4
90-91	0.137657	14,458	1,990	13,463	73,920	5.1
91-92	0.146967	12,468	1,832	11,552	60,457	4.8
92-93	0.156739	10,636	1,667	9,802	48,905	4.6
93-94	0.166982	8,969	1,498	8,220	39,103	4.4
94-95	0.177704	7,471	1,328	6,807	30,883	4.1
95-96	0.188912	6,143	1,161	5,563	24,076	3.9
96-97	0.200613	4,983	1,000	4,483	18,513	3.7
97-98	0.212810	3,983	848	3,559	14,030	3.5
98-99	0.225508	3,136	707	2,782	10,471	3.3
99-100	0.238708	2,428	580	2,139	7,689	3.2
100+	1.00000	1,849	1,849	5,550	5,550	3.0

**Table 8. Life table for black males: United States, 2002**

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages $x$ to $x+1$	Number surviving to age $x$	Number dying between ages $x$ to $x+1$	Person-years lived between ages $x$ to $x+1$	Total number of person-years lived above age $x$	Expectation of life at age $x$
	$q(x)$	$l(x)$	$d(x)$	$L(x)$	$T(x)$	$e(x)$
0-1	0.015395	100,000	1,539	98,650	6,876,522	68.8
1-2	0.000815	98,461	80	98,420	6,777,872	68.8
2-3	0.000540	98,380	53	98,354	6,679,452	67.9
3-4	0.000427	98,327	42	98,306	6,581,098	66.9
4-5	0.000373	98,285	37	98,267	6,482,792	66.0
5-6	0.000263	98,249	26	98,236	6,384,525	65.0
6-7	0.000200	98,223	20	98,213	6,286,289	64.0
7-8	0.000186	98,203	18	98,194	6,188,076	63.0
8-9	0.000270	98,185	27	98,171	6,089,882	62.0
9-10	0.000279	98,158	27	98,144	5,991,711	61.0
10-11	0.000252	98,131	25	98,118	5,893,567	60.1
11-12	0.000268	98,106	26	98,093	5,795,448	59.1
12-13	0.000354	98,080	35	98,062	5,697,355	58.1
13-14	0.000352	98,045	34	98,028	5,599,293	57.1
14-15	0.000455	98,011	45	97,988	5,501,265	56.1
15-16	0.000518	97,966	51	97,941	5,403,277	55.2
16-17	0.000906	97,915	89	97,871	5,305,336	54.2
17-18	0.001132	97,826	111	97,771	5,207,465	53.2
18-19	0.001649	97,716	161	97,635	5,109,694	52.3
19-20	0.001912	97,555	187	97,461	5,012,059	51.4
20-21	0.002060	97,368	201	97,268	4,914,598	50.5
21-22	0.002258	97,167	219	97,058	4,817,330	49.6
22-23	0.002306	96,948	224	96,836	4,720,272	48.7
23-24	0.002336	96,724	226	96,611	4,623,436	47.8
24-25	0.002438	96,499	235	96,381	4,526,825	46.9
25-26	0.002484	96,263	239	96,144	4,430,444	46.0
26-27	0.002584	96,024	248	95,900	4,334,300	45.1
27-28	0.002593	95,776	248	95,652	4,238,400	44.3
28-29	0.002439	95,528	233	95,411	4,142,748	43.4
29-30	0.002670	95,295	254	95,168	4,047,337	42.5
30-31	0.002561	95,040	243	94,919	3,952,169	41.6
31-32	0.002724	94,797	258	94,668	3,857,251	40.7
32-33	0.002547	94,539	241	94,418	3,762,583	39.8
33-34	0.002695	94,298	254	94,171	3,668,165	38.9
34-35	0.003123	94,044	294	93,897	3,573,994	38.0
35-36	0.003457	93,750	324	93,588	3,480,097	37.1
36-37	0.003521	93,426	329	93,262	3,386,509	36.2
37-38	0.003356	93,097	312	92,941	3,293,247	35.4
38-39	0.003931	92,785	365	92,602	3,200,307	34.5
39-40	0.004018	92,420	371	92,234	3,107,704	33.6
40-41	0.004250	92,049	391	91,853	3,015,470	32.8
41-42	0.004682	91,657	429	91,443	2,923,617	31.9
42-43	0.004920	91,228	449	91,004	2,832,174	31.0
43-44	0.005410	90,779	491	90,534	2,741,171	30.2
44-45	0.005867	90,288	530	90,023	2,650,637	29.4
45-46	0.006645	89,758	596	89,460	2,560,614	28.5
46-47	0.007212	89,162	643	88,841	2,471,153	27.7
47-48	0.007738	88,519	685	88,177	2,382,313	26.9
48-49	0.009069	87,834	797	87,436	2,294,136	26.1
49-50	0.009607	87,038	836	86,619	2,206,700	25.4
50-51	0.010434	86,201	899	85,752	2,120,081	24.6
51-52	0.011466	85,302	978	84,813	2,034,329	23.8
52-53	0.011736	84,324	990	83,829	1,949,517	23.1
53-54	0.012882	83,334	1,073	82,797	1,865,687	22.4
54-55	0.013817	82,261	1,137	81,692	1,782,890	21.7
55-56	0.015549	81,124	1,261	80,493	1,701,198	21.0
56-57	0.015056	79,863	1,202	79,262	1,620,704	20.3
57-58	0.016680	78,660	1,312	78,004	1,541,443	19.6
58-59	0.018483	77,348	1,430	76,633	1,463,438	18.9
59-60	0.020253	75,919	1,538	75,150	1,386,805	18.3
60-61	0.021157	74,381	1,574	73,594	1,311,655	17.6
61-62	0.022425	72,807	1,633	71,991	1,238,061	17.0
62-63	0.024843	71,175	1,768	70,290	1,166,070	16.4
63-64	0.026032	69,406	1,807	68,503	1,095,780	15.8
64-65	0.028167	67,600	1,904	66,648	1,027,277	15.2

**Table 8. Life table for black males: United States, 2002—Con.**

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages $x$ to $x+1$	Number surviving to age $x$	Number dying between ages $x$ to $x+1$	Person-years lived between ages $x$ to $x+1$	Total number of person-years lived above age $x$	Expectation of life at age $x$
	$q(x)$	$l(x)$	$d(x)$	$L(x)$	$T(x)$	$e(x)$
65-66	0.029344	65,695	1,928	64,732	960,629	14.6
66-67	0.030784	63,768	1,963	62,786	895,897	14.0
67-68	0.032442	61,805	2,005	60,802	833,111	13.5
68-69	0.035282	59,800	2,110	58,745	772,309	12.9
69-70	0.038245	57,690	2,206	56,587	713,564	12.4
70-71	0.040816	55,483	2,265	54,351	656,978	11.8
71-72	0.045549	53,219	2,424	52,007	602,626	11.3
72-73	0.048428	50,795	2,460	49,565	550,620	10.8
73-74	0.052073	48,335	2,517	47,076	501,055	10.4
74-75	0.055073	45,818	2,523	44,556	453,978	9.9
75-76	0.059165	43,295	2,562	42,014	409,422	9.5
76-77	0.064715	40,733	2,636	39,415	367,408	9.0
77-78	0.067787	38,097	2,583	36,806	327,993	8.6
78-79	0.072996	35,515	2,592	34,218	291,187	8.2
79-80	0.081816	32,922	2,694	31,575	256,969	7.8
80-81	0.087335	30,229	2,640	28,909	225,394	7.5
81-82	0.088502	27,589	2,442	26,368	196,485	7.1
82-83	0.099494	25,147	2,502	23,896	170,117	6.8
83-84	0.094660	22,645	2,144	21,573	146,221	6.5
84-85	0.112654	20,501	2,310	19,347	124,648	6.1
85-86	0.120346	18,192	2,189	17,097	105,301	5.8
86-87	0.128359	16,003	2,054	14,975	88,204	5.5
87-88	0.136687	13,948	1,907	12,995	73,229	5.2
88-89	0.145325	12,042	1,750	11,167	60,234	5.0
89-90	0.154263	10,292	1,588	9,498	49,067	4.8
90-91	0.163491	8,704	1,423	7,993	39,569	4.5
91-92	0.172995	7,281	1,260	6,651	31,576	4.3
92-93	0.182761	6,022	1,101	5,471	24,925	4.1
93-94	0.192772	4,921	949	4,447	19,453	4.0
94-95	0.203008	3,972	806	3,569	15,007	3.8
95-96	0.213448	3,166	676	2,828	11,438	3.6
96-97	0.224068	2,490	558	2,211	8,609	3.5
97-98	0.234843	1,932	454	1,705	6,398	3.3
98-99	0.245745	1,478	363	1,297	4,693	3.2
99-100	0.256744	1,115	286	972	3,396	3.0
100+	1.00000	829	829	2,424	2,424	2.9

**Table 9. Life table for black females: United States, 2002**

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages $x$ to $x+1$	Number surviving to age $x$	Number dying between ages $x$ to $x+1$	Person-years lived between ages $x$ to $x+1$	Total number of person-years lived above age $x$	Expectation of life at age $x$
	$q(x)$	$l(x)$	$d(x)$	$L(x)$	$T(x)$	$e(x)$
0-1	0.013220	100,000	1,322	98,837	7,557,649	75.6
1-2	0.000613	98,678	61	98,648	7,458,812	75.6
2-3	0.000408	98,617	40	98,597	7,360,164	74.6
3-4	0.000272	98,577	27	98,564	7,261,567	73.7
4-5	0.000270	98,550	27	98,537	7,163,003	72.7
5-6	0.000209	98,524	21	98,513	7,064,466	71.7
6-7	0.000185	98,503	18	98,494	6,965,953	70.7
7-8	0.000177	98,485	17	98,476	6,867,458	69.7
8-9	0.000167	98,468	16	98,459	6,768,982	68.7
9-10	0.000186	98,451	18	98,442	6,670,523	67.8
10-11	0.000200	98,433	20	98,423	6,572,081	66.8
11-12	0.000189	98,413	19	98,404	6,473,658	65.8
12-13	0.000219	98,394	22	98,384	6,375,254	64.8
13-14	0.000207	98,373	20	98,363	6,276,871	63.8
14-15	0.000254	98,353	25	98,340	6,178,508	62.8
15-16	0.000284	98,328	28	98,314	6,080,168	61.8
16-17	0.000328	98,300	32	98,283	5,981,854	60.9
17-18	0.000419	98,267	41	98,247	5,883,571	59.9
18-19	0.000512	98,226	50	98,201	5,785,324	58.9
19-20	0.000513	98,176	50	98,151	5,687,123	57.9
20-21	0.000604	98,125	59	98,096	5,588,973	57.0
21-22	0.000664	98,066	65	98,034	5,490,877	56.0
22-23	0.000714	98,001	70	97,966	5,392,843	55.0
23-24	0.000723	97,931	71	97,896	5,294,877	54.1
24-25	0.000698	97,860	68	97,826	5,196,981	53.1
25-26	0.000808	97,792	79	97,752	5,099,155	52.1
26-27	0.000891	97,713	87	97,669	5,001,403	51.2
27-28	0.000927	97,626	91	97,581	4,903,733	50.2
28-29	0.000925	97,535	90	97,490	4,806,152	49.3
29-30	0.001229	97,445	120	97,385	4,708,662	48.3
30-31	0.001153	97,325	112	97,269	4,611,277	47.4
31-32	0.001205	97,213	117	97,155	4,514,008	46.4
32-33	0.001367	97,096	133	97,030	4,416,853	45.5
33-34	0.001487	96,963	144	96,891	4,319,823	44.6
34-35	0.001581	96,819	153	96,742	4,222,932	43.6
35-36	0.001746	96,666	169	96,582	4,126,190	42.7
36-37	0.001850	96,497	178	96,408	4,029,608	41.8
37-38	0.001989	96,319	192	96,223	3,933,200	40.8
38-39	0.002280	96,127	219	96,017	3,836,978	39.9
39-40	0.002617	95,908	251	95,782	3,740,960	39.0
40-41	0.002615	95,657	250	95,532	3,645,178	38.1
41-42	0.003126	95,407	298	95,258	3,549,646	37.2
42-43	0.003114	95,108	296	94,960	3,454,388	36.3
43-44	0.003816	94,812	362	94,631	3,359,428	35.4
44-45	0.004026	94,451	380	94,260	3,264,797	34.6
45-46	0.004249	94,070	400	93,870	3,170,536	33.7
46-47	0.004405	93,671	413	93,464	3,076,666	32.8
47-48	0.004783	93,258	446	93,035	2,983,201	32.0
48-49	0.005422	92,812	503	92,560	2,890,167	31.1
49-50	0.005692	92,309	525	92,046	2,797,606	30.3
50-51	0.006189	91,783	568	91,499	2,705,560	29.5
51-52	0.006628	91,215	605	90,913	2,614,061	28.7
52-53	0.006589	90,611	597	90,312	2,523,148	27.8
53-54	0.007141	90,014	643	89,692	2,432,836	27.0
54-55	0.007910	89,371	707	89,017	2,343,143	26.2
55-56	0.009022	88,664	800	88,264	2,254,126	25.4
56-57	0.008613	87,864	757	87,486	2,165,862	24.7
57-58	0.009679	87,107	843	86,686	2,078,376	23.9
58-59	0.010768	86,264	929	85,800	1,991,691	23.1
59-60	0.011831	85,335	1,010	84,830	1,905,891	22.3
60-61	0.011824	84,326	997	83,827	1,821,061	21.6
61-62	0.013521	83,329	1,127	82,765	1,737,233	20.8
62-63	0.014018	82,202	1,152	81,626	1,654,468	20.1
63-64	0.015432	81,050	1,251	80,424	1,572,842	19.4
64-65	0.016374	79,799	1,307	79,145	1,492,418	18.7



**Table 9. Life table for black females: United States, 2002—Con.**

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages $x$ to $x+1$	Number surviving to age $x$	Number dying between ages $x$ to $x+1$	Person-years lived between ages $x$ to $x+1$	Total number of person-years lived above age $x$	Expectation of life at age $x$
	$q(x)$	$l(x)$	$d(x)$	$L(x)$	$T(x)$	$e(x)$
65-66	0.017783	78,492	1,396	77,794	1,413,273	18.0
66-67	0.019446	77,096	1,499	76,347	1,335,479	17.3
67-68	0.020548	75,597	1,553	74,820	1,259,132	16.7
68-69	0.021847	74,044	1,618	73,235	1,184,311	16.0
69-70	0.024438	72,426	1,770	71,541	1,111,076	15.3
70-71	0.025775	70,656	1,821	69,746	1,039,535	14.7
71-72	0.028768	68,835	1,980	67,845	969,790	14.1
72-73	0.030438	66,855	2,035	65,837	901,945	13.5
73-74	0.032519	64,820	2,108	63,766	836,107	12.9
74-75	0.035398	62,712	2,220	61,602	772,341	12.3
75-76	0.039437	60,492	2,386	59,299	710,739	11.7
76-77	0.042360	58,107	2,461	56,876	651,440	11.2
77-78	0.046255	55,645	2,574	54,358	594,564	10.7
78-79	0.047926	53,071	2,544	51,800	540,206	10.2
79-80	0.053997	50,528	2,728	49,164	488,406	9.7
80-81	0.056930	47,799	2,721	46,439	439,243	9.2
81-82	0.060278	45,078	2,717	43,720	392,804	8.7
82-83	0.071023	42,361	3,009	40,857	349,084	8.2
83-84	0.071252	39,352	2,804	37,950	308,228	7.8
84-85	0.080358	36,548	2,937	35,080	270,277	7.4
85-86	0.087277	33,611	2,933	32,145	235,197	7.0
86-87	0.094648	30,678	2,904	29,226	203,053	6.6
87-88	0.102486	27,774	2,846	26,351	173,826	6.3
88-89	0.110807	24,928	2,762	23,547	147,475	5.9
89-90	0.119622	22,166	2,652	20,840	123,929	5.6
90-91	0.128944	19,514	2,516	18,256	103,089	5.3
91-92	0.138782	16,998	2,359	15,818	84,833	5.0
92-93	0.149146	14,639	2,183	13,547	69,014	4.7
93-94	0.160042	12,456	1,993	11,459	55,467	4.5
94-95	0.171474	10,462	1,794	9,565	44,008	4.2
95-96	0.183446	8,668	1,590	7,873	34,443	4.0
96-97	0.195958	7,078	1,387	6,385	26,570	3.8
97-98	0.209007	5,691	1,189	5,096	20,185	3.5
98-99	0.222589	4,502	1,002	4,001	15,089	3.4
99-100	0.236696	3,500	828	3,085	11,088	3.2
100+	1.00000	2,671	2,671	8,003	8,003	3.0

**Table 10. Survivorship by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2002**

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Age, race, and sex	Number of survivors out of 100,000 born alive ( <i>L</i> )										
	2002	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
<b>All races</b>											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,303	99,064	98,740	97,998	97,407	97,024	95,290	94,028	92,515	88,538	87,552
5	99,180	98,877	98,495	97,668	96,998	96,482	94,220	91,978	83,389	83,887	81,804
10	99,105	98,766	98,347	97,460	96,765	96,177	93,710	91,106	88,129	82,458	80,052
15	99,008	98,635	98,196	97,261	96,551	95,885	93,235	90,385	87,144	81,506	78,963
20	98,672	98,215	97,741	96,716	96,111	95,366	92,435	89,089	85,441	80,074	77,239
25	98,204	97,671	97,110	96,000	95,517	94,676	91,335	87,269	83,146	78,046	74,768
30	97,740	97,070	96,477	95,307	94,905	93,919	90,078	85,302	80,642	75,779	72,043
35	97,196	96,322	95,808	94,482	94,144	92,976	88,573	83,118	77,961	73,127	69,078
40	96,419	95,373	94,926	93,322	93,064	91,648	86,650	80,557	75,114	70,042	65,890
45	95,255	94,154	93,599	91,587	91,378	89,634	84,069	77,343	72,036	66,561	62,436
50	93,563	92,370	91,526	88,972	88,756	86,591	80,487	73,321	68,429	62,460	58,514
55	91,188	89,658	88,348	85,110	84,711	82,176	75,557	68,182	63,947	57,555	53,852
60	87,711	85,537	83,726	79,529	79,067	75,921	68,924	61,563	58,079	51,138	47,946
65	82,607	79,519	77,107	71,933	71,147	67,555	60,366	53,195	50,560	43,194	40,911
70	75,335	71,357	68,248	61,984	60,857	56,987	49,655	42,768	41,090	33,816	32,390
75	65,310	60,449	56,799	49,705	48,170	43,903	36,735	30,789	29,729	23,552	22,960
80	52,178	47,084	43,180	35,285	33,576	29,313	22,883	18,580	18,298	13,712	13,529
85	36,304	31,770	27,960	20,908	18,542	15,785	11,073	8,542	8,683	6,001	6,053
90	20,052	17,046	14,154	9,297	7,080	6,144	3,796	2,998	2,941	1,868	1,867
95	8,028	6,282	5,043	2,786	1,524	1,511	857	636	646	361	344
100	2,095	1,424	1,150	542	183	199	123	62	67	40	31
<b>Male</b>											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,236	98,961	98,607	97,755	97,087	96,661	94,762	93,440	91,745	87,505	86,426
5	99,097	98,754	98,333	97,395	96,643	96,077	93,624	91,294	88,505	82,718	80,548
10	99,014	98,627	98,160	97,151	96,375	95,726	93,054	90,346	87,184	81,249	78,775
15	98,900	98,464	97,972	96,904	96,107	95,366	92,508	89,561	86,156	80,261	77,681
20	98,436	97,854	97,316	96,126	95,491	94,695	91,617	88,220	84,440	78,792	75,984
25	97,746	97,049	96,361	95,040	94,631	93,791	90,385	86,359	82,252	76,675	73,472
30	97,091	96,166	95,430	94,072	93,826	92,861	89,009	84,346	79,890	74,378	70,747
35	96,367	95,091	94,501	92,997	92,889	91,760	87,371	82,075	77,514	71,614	67,752
40	95,381	93,761	93,345	91,541	91,572	90,207	85,246	79,357	74,432	68,297	64,447
45	93,929	92,139	91,649	89,369	89,492	87,819	82,336	75,882	71,244	64,518	60,849
50	91,809	89,865	89,007	86,070	86,199	84,158	78,254	71,518	67,553	60,118	56,736
55	88,850	86,492	84,936	81,139	81,039	78,781	72,627	65,981	62,965	54,970	51,939
60	84,637	81,378	79,012	73,958	73,887	71,246	65,142	58,909	56,917	48,343	45,895
65	78,556	73,971	70,646	64,318	64,177	61,566	55,776	50,154	49,218	40,264	38,736
70	70,087	64,107	59,681	52,296	52,244	49,950	44,588	39,516	39,668	31,023	30,217
75	58,680	51,385	46,272	38,797	38,950	36,756	31,864	27,718	28,316	21,213	21,076
80	44,370	36,749	31,810	24,921	25,300	25,237	18,995	16,172	17,128	11,942	12,084
85	28,478	21,815	18,020	13,168	12,845	11,750	8,693	7,107	7,920	5,059	5,179
90	13,925	9,878	7,732	5,107	4,609	4,197	2,787	2,283	2,527	1,502	1,508
95	4,715	2,927	2,279	1,326	970	955	586	451	556	289	262
100	1,005	529	423	222	117	121	78	40	62	33	22
<b>Female</b>											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,373	99,172	98,880	98,254	97,744	97,406	95,848	94,728	93,383	89,623	88,733
5	99,267	99,006	98,666	97,955	97,371	96,908	94,848	92,789	90,380	85,117	83,119
10	99,199	98,911	98,544	97,784	97,173	96,652	94,402	92,008	89,186	83,728	81,390
15	99,120	98,814	98,432	97,636	97,016	96,431	94,000	91,364	88,247	82,813	80,307
20	98,922	98,597	98,184	97,331	96,756	96,066	93,293	90,116	86,556	81,418	78,555
25	98,688	98,325	97,883	96,966	96,418	95,583	92,322	88,328	84,135	79,481	76,119
30	98,424	98,013	97,551	96,544	95,996	94,933	91,182	86,398	81,463	77,247	73,394
35	98,064	97,596	97,140	95,966	95,409	94,206	89,810	84,304	78,713	74,719	70,463
40	97,500	97,033	96,531	95,097	94,560	93,101	88,092	81,927	75,907	71,894	67,407
45	96,627	96,222	95,570	93,793	93,265	91,469	85,856	79,041	72,954	68,755	64,121
50	95,364	94,932	94,060	91,852	91,327	89,075	82,828	75,456	69,452	65,001	60,415
55	93,572	92,881	91,760	89,066	88,451	85,694	78,708	70,832	65,099	60,392	55,908

See footnotes at end of table.

**Table 10. Survivorship by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2002—Con.**

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Age, race, and sex	Number of survivors out of 100,000 born alive (L <sub>x</sub> )										
	2002	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
<b>Female—Con.</b>											
60 . . . . .	90,826	89,742	88,414	85,139	84,430	80,890	73,093	64,795	59,438	54,226	50,155
65 . . . . .	86,680	85,075	83,520	79,698	78,462	74,119	65,523	56,924	52,126	46,438	43,246
70 . . . . .	80,556	78,522	76,720	71,955	70,100	64,873	55,449	46,774	42,741	36,916	34,721
75 . . . . .	71,800	69,287	67,186	61,107	58,394	52,111	42,425	34,600	31,344	26,155	24,994
80 . . . . .	59,821	56,986	54,372	46,445	43,063	36,486	27,524	21,578	19,613	15,682	15,129
85 . . . . .	43,542	41,115	37,772	29,538	25,269	20,668	13,972	10,322	9,515	7,051	7,063
90 . . . . .	25,411	23,666	20,578	14,160	10,056	8,548	5,044	3,656	3,314	2,269	2,306
95 . . . . .	10,737	9,346	7,862	4,565	2,193	2,207	1,195	807	728	441	452
100 . . . . .	2,954	2,251	1,927	954	264	298	179	82	72	49	43
<b>White</b>											
0 . . . . .	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1 . . . . .	99,421	99,233	98,898	98,224	97,714	97,278	95,685	94,392	92,780	88,709	87,762
5 . . . . .	99,311	99,068	98,675	97,930	97,353	96,790	94,713	92,466	89,771	84,147	82,071
10 . . . . .	99,241	98,966	98,536	97,733	97,131	96,502	94,228	91,627	88,536	82,734	80,371
15 . . . . .	99,151	98,843	98,391	97,546	96,928	96,228	93,792	90,982	87,633	81,816	79,344
20 . . . . .	98,823	98,455	97,939	97,036	96,508	95,763	93,117	89,933	86,159	80,407	77,998
25 . . . . .	98,389	97,972	97,340	96,406	95,965	95,169	92,213	88,454	84,106	78,392	75,202
30 . . . . .	97,972	97,451	96,774	95,824	95,440	94,536	91,185	86,836	81,787	76,167	72,317
35 . . . . .	97,477	96,810	96,192	95,152	94,798	93,750	89,941	85,004	79,277	73,568	69,522
40 . . . . .	96,768	96,000	95,427	94,190	93,870	92,616	88,318	82,803	76,642	70,525	66,082
45 . . . . .	95,690	94,932	94,257	92,681	92,374	90,847	86,069	79,989	73,705	67,090	62,920
50 . . . . .	94,131	93,326	92,384	90,306	89,958	88,110	82,833	76,340	70,250	62,994	58,647
55 . . . . .	91,934	90,833	89,427	86,688	86,173	84,027	78,218	71,551	65,875	58,163	54,450
60 . . . . .	88,636	86,943	85,031	81,323	80,811	78,066	71,785	65,100	60,013	51,822	48,288
65 . . . . .	83,707	81,123	78,585	73,889	73,102	69,850	63,201	56,655	52,411	43,904	41,505
70 . . . . .	76,551	73,106	69,801	63,991	62,834	59,189	52,165	45,841	42,736	34,484	32,902
75 . . . . .	66,534	62,175	58,299	51,586	49,895	45,688	38,610	33,406	31,086	24,151	23,356
80 . . . . .	53,271	48,583	44,409	36,659	34,697	30,438	23,976	20,260	19,149	14,100	13,794
85 . . . . .	37,049	32,850	28,768	21,578	19,017	16,239	11,483	9,325	9,078	6,178	6,192
90 . . . . .	20,339	17,571	14,471	9,433	7,149	6,201	3,819	3,066	2,991	1,918	1,919
95 . . . . .	7,915	6,416	5,067	2,743	1,521	1,500	801	636	643	364	355
100 . . . . .	1,882	1,423	1,105	487	183	196	98	58	62	38	31
<b>White male</b>											
0 . . . . .	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1 . . . . .	99,358	99,138	98,769	97,994	97,408	96,931	95,188	93,768	91,975	87,674	86,655
5 . . . . .	99,234	98,956	98,519	97,671	97,015	96,403	94,150	91,738	88,842	82,972	80,864
10 . . . . .	99,157	98,839	98,357	97,441	96,758	96,069	93,601	90,810	87,530	81,519	79,109
15 . . . . .	99,052	98,686	98,176	97,208	96,503	95,728	93,089	90,074	86,546	80,549	78,037
20 . . . . .	98,605	98,134	97,525	96,480	95,908	95,104	92,293	88,904	84,997	79,116	76,376
25 . . . . .	97,972	97,430	96,616	95,524	95,106	94,294	91,241	87,371	83,061	77,047	73,907
30 . . . . .	97,387	96,662	95,783	94,716	94,401	93,489	90,092	85,707	80,888	74,810	71,219
35 . . . . .	96,726	95,731	94,980	93,843	93,589	92,543	88,713	83,812	78,441	72,108	68,245
40 . . . . .	95,822	94,588	93,984	92,631	92,427	91,173	86,880	81,457	75,733	68,848	64,954
45 . . . . .	94,455	93,167	92,494	90,725	90,533	89,002	84,285	78,345	72,696	65,115	61,369
50 . . . . .	92,483	91,124	90,105	87,690	87,424	85,601	80,521	74,288	69,107	60,741	57,274
55 . . . . .	89,738	88,022	86,303	83,001	82,463	80,496	75,156	68,981	64,574	55,622	52,491
60 . . . . .	85,742	83,182	80,625	75,969	75,485	73,172	67,787	61,933	58,498	48,987	46,452
65 . . . . .	79,874	75,962	72,393	66,343	65,834	63,541	58,305	52,964	50,663	40,862	39,245
70 . . . . .	71,514	66,181	61,384	54,138	53,825	51,735	46,739	41,880	40,873	31,527	30,640
75 . . . . .	60,070	53,308	47,712	40,324	40,207	38,104	33,404	29,471	29,205	21,585	21,387
80 . . . . .	45,546	38,245	32,788	25,885	25,993	24,005	19,860	17,221	17,655	12,160	12,266
85 . . . . .	29,216	22,720	18,538	13,527	13,065	12,015	9,013	7,572	8,154	5,145	5,252
90 . . . . .	14,178	10,214	7,891	5,125	4,600	4,209	2,812	2,356	2,568	1,523	1,523
95 . . . . .	4,648	2,988	2,279	1,274	956	942	552	461	556	289	263
100 . . . . .	901	523	404	189	115	118	65	40	61	31	22

See footnotes at end of table.

**Table 10. Survivorship by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2002—Con.**

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Age, race, and sex	Number of survivors out of 100,000 born alive ( <i>L</i> )										
	2002	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
<b>White female</b>											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,488	99,333	99,035	98,468	98,036	97,645	96,211	95,037	93,608	89,774	88,939
5	99,391	99,187	98,841	98,203	97,709	97,199	95,309	93,216	90,721	85,349	83,426
10	99,328	99,099	98,725	98,042	97,525	96,960	94,890	92,466	89,564	83,979	81,723
15	99,255	99,007	98,618	97,902	97,375	96,756	94,534	91,894	88,712	83,093	80,680
20	99,054	98,795	98,374	97,618	97,135	96,454	93,984	90,939	87,281	81,750	78,978
25	98,834	98,547	98,093	97,299	96,844	96,072	93,228	89,524	85,163	79,865	76,588
30	98,597	98,283	97,802	96,945	96,499	95,605	92,320	87,972	82,740	77,676	73,887
35	98,278	97,939	97,445	96,474	96,026	94,977	91,211	86,248	80,206	75,200	70,971
40	97,772	97,472	96,913	95,762	95,326	94,080	89,805	84,256	77,624	72,425	67,935
45	96,990	96,768	96,065	94,649	94,228	92,725	87,920	81,780	74,871	69,341	64,677
50	95,853	95,608	94,710	92,924	92,522	90,685	85,267	78,572	71,547	65,629	61,005
55	94,214	93,730	92,594	90,383	89,967	87,699	81,520	74,321	67,323	61,053	56,509
60	91,621	90,789	89,451	86,726	86,339	83,279	76,200	68,462	61,704	54,900	50,752
65	87,624	86,339	84,764	81,579	80,739	76,773	68,701	60,499	54,299	47,086	43,806
70	81,638	79,984	78,139	74,101	72,507	67,545	58,363	49,932	44,638	37,482	35,206
75	72,949	70,834	68,712	63,290	60,461	54,397	44,685	37,024	32,777	26,569	25,362
80	60,712	58,454	55,770	48,182	44,676	38,026	28,882	23,053	20,492	15,929	15,349
85	44,342	42,274	38,774	30,490	26,046	21,348	14,487	10,937	9,909	7,152	7,149
90	25,741	24,270	20,996	14,406	10,219	8,662	5,061	3,719	3,372	2,291	2,322
95	10,571	9,495	7,900	4,526	2,203	2,200	1,109	797	721	434	448
100	2,631	2,239	1,858	872	265	294	139	74	63	44	41
<b>Black</b>											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	98,568	98,187	97,885	96,731	95,732	95,407	92,584	92,035	90,379	79,784	76,609
5	98,384	97,884	97,522	96,207	95,051	94,482	90,983	89,303	86,174	70,691	66,222
10	98,279	97,720	97,322	95,928	94,745	94,060	90,339	88,258	84,690	68,437	63,410
15	98,144	97,539	97,134	95,661	94,460	93,646	89,591	87,156	83,180	66,410	61,060
20	97,740	96,925	96,652	94,887	93,880	92,738	87,839	84,386	79,641	63,165	57,931
25	97,024	95,972	95,804	93,513	92,925	91,321	85,210	80,320	74,973	59,608	54,512
30	96,192	94,809	94,680	91,934	91,699	89,584	82,194	75,962	70,492	56,112	51,287
35	95,230	93,260	93,288	89,977	90,046	87,402	78,683	71,141	65,865	52,125	48,007
40	93,890	91,239	91,439	87,304	87,766	84,478	74,466	65,974	61,244	47,866	44,518
45	91,967	88,689	88,834	83,700	84,501	80,507	69,284	59,827	56,442	43,054	40,628
50	89,075	85,285	85,044	78,938	80,172	74,976	62,702	53,141	51,422	37,800	36,103
55	85,023	80,635	79,816	72,826	73,893	67,660	54,846	45,558	45,803	32,233	31,404
60	79,540	74,335	72,913	65,250	65,795	58,593	46,318	37,654	39,418	26,046	25,698
65	72,354	66,154	64,391	56,102	56,038	48,649	37,838	30,015	32,738	19,806	20,474
70	63,388	56,192	54,617	45,785	45,434	38,616	29,654	22,505	25,585	14,021	14,960
75	52,292	44,822	43,274	34,262	34,531	28,968	21,798	15,546	18,011	9,139	9,956
80	39,458	33,149	31,711	23,710	24,815	20,003	14,408	9,589	11,376	5,158	5,750
85	26,315	21,352	19,939	15,044	15,337	12,433	8,326	4,900	5,794	2,414	2,782
90	14,458	11,646	10,713	8,087	7,195	6,394	4,077	2,044	2,317	913	1,054
95	6,143	4,729	4,463	3,252	1,777	2,010	1,557	638	689	324	296
100	1,849	1,376	1,360	1,036	214	301	399	120	129	77	57
<b>Black male</b>											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	98,461	98,023	97,703	96,394	95,301	94,911	91,772	91,268	89,499	78,065	74,674
5	98,249	97,688	97,300	95,826	94,570	93,921	90,082	88,412	85,195	68,589	64,385
10	98,131	97,501	97,061	95,497	94,234	93,453	89,393	87,311	83,768	66,377	61,730
15	97,966	97,268	96,826	95,161	93,874	92,965	88,610	86,152	82,332	64,478	59,667
20	97,368	96,301	96,132	94,053	93,108	91,941	86,968	83,621	79,057	61,426	56,733
25	96,263	94,809	94,827	91,904	91,825	90,285	84,227	79,516	74,540	57,736	53,285
30	95,040	93,070	93,125	89,584	90,270	88,327	80,979	75,083	70,344	54,073	49,867
35	93,750	90,827	91,080	86,885	88,331	85,940	77,221	70,049	65,873	49,865	46,541
40	92,049	87,948	88,490	83,441	85,744	82,832	72,780	64,710	61,353	45,414	42,989
45	89,758	84,467	84,997	78,976	82,075	78,686	67,346	58,432	56,589	40,563	39,230
50	86,201	79,984	80,065	73,282	77,239	72,891	60,495	51,748	51,880	35,427	34,766
55	81,124	74,095	73,413	66,101	70,351	65,122	52,426	44,436	46,581	29,754	29,987

See footnotes at end of table.

**Table 10. Survivorship by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2002—Con.**

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Age, race, and sex	Number of survivors out of 100,000 born alive ( <i>L<sub>x</sub></i> )										
	2002	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
<b>Black male—Con.</b>											
60 . . . . .	74,381	66,334	64,980	57,457	61,669	55,535	43,833	36,790	40,506	23,750	24,194
65 . . . . .	65,695	56,795	55,061	47,485	51,392	45,198	35,371	29,314	34,042	17,806	19,015
70 . . . . .	55,483	45,690	44,213	36,925	39,914	35,018	27,236	21,741	26,923	12,295	13,829
75 . . . . .	43,295	33,755	32,717	25,921	29,064	25,472	19,456	14,419	18,854	7,494	8,892
80 . . . . .	30,229	22,549	22,017	16,560	19,994	16,904	12,186	8,239	11,615	3,894	4,831
85 . . . . .	18,192	12,709	12,383	9,648	11,620	9,898	6,444	3,660	5,605	1,747	2,030
90 . . . . .	8,704	5,972	5,708	4,696	5,174	4,642	2,836	1,246	2,040	595	634
95 . . . . .	3,166	1,971	2,009	1,721	1,240	1,342	961	307	552	189	137
100 . . . . .	829	466	513	489	149	192	209	41	77	40	18
<b>Black female</b>											
0 . . . . .	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1 . . . . .	98,678	98,356	98,073	97,076	96,172	95,913	93,416	92,796	91,251	81,493	78,525
5 . . . . .	98,524	98,087	97,751	96,598	95,543	95,055	91,906	90,185	87,149	72,768	68,056
10 . . . . .	98,433	97,946	97,590	96,369	95,265	94,679	91,308	89,201	85,607	70,508	65,111
15 . . . . .	98,328	97,818	97,450	96,172	95,057	94,343	90,594	88,088	83,954	68,218	62,384
20 . . . . .	98,125	97,566	97,180	95,729	94,660	93,544	88,736	85,078	80,154	64,764	59,053
25 . . . . .	97,792	97,140	96,754	95,035	94,005	92,336	86,198	81,067	75,359	61,430	55,795
30 . . . . .	97,325	96,514	96,150	94,114	93,070	90,799	83,384	76,816	70,633	58,281	52,773
35 . . . . .	96,666	95,599	95,338	92,807	91,670	88,805	80,092	72,192	65,857	54,595	49,567
40 . . . . .	95,657	94,364	94,137	90,817	89,676	86,052	76,084	67,271	61,130	50,568	46,146
45 . . . . .	94,070	92,676	92,322	88,001	86,793	82,257	71,157	61,365	56,230	45,947	42,279
50 . . . . .	91,783	90,277	89,563	84,168	82,979	77,007	64,885	54,920	50,780	40,886	37,681
55 . . . . .	88,664	86,793	85,653	79,177	77,362	70,196	57,314	47,074	44,742	35,415	33,124
60 . . . . .	84,326	81,886	80,293	72,820	69,941	61,758	48,928	38,761	37,954	28,908	27,524
65 . . . . .	78,492	75,031	73,266	64,716	60,825	52,358	40,504	30,852	31,044	22,302	21,995
70 . . . . .	70,656	66,278	64,729	54,873	51,274	42,612	32,354	23,341	24,107	15,871	16,140
75 . . . . .	60,492	55,684	53,831	43,193	40,540	32,981	24,502	16,576	17,216	10,657	11,066
80 . . . . .	47,799	43,622	41,686	31,756	30,315	23,712	17,039	10,822	11,151	6,324	6,708
85 . . . . .	33,611	30,089	28,004	21,358	19,744	15,550	10,622	6,033	5,972	3,029	3,567
90 . . . . .	19,514	17,536	16,260	12,210	9,675	8,590	5,652	2,774	2,579	1,206	1,492
95 . . . . .	8,668	7,687	7,312	5,217	2,438	2,875	2,345	941	818	448	462
100 . . . . .	2,671	2,364	2,398	1,803	293	445	659	193	179	112	97

<sup>1</sup>For 1939–41 and 1949–51, data shown are for the entire nonwhite population. During these periods, life tables were not constructed for the black population. See "Technical Notes."



**Table 11. Life expectancy by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2002**

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Age, race, and sex	Average number of years of life remaining ( $e_x$ )										
	2002	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
<b>All races</b>											
0	77.3	75.37	73.88	70.75	69.89	68.07	63.62	59.20	56.40	51.49	49.24
1	76.8	75.08	73.82	71.19	70.75	69.16	65.76	61.94	59.94	57.11	55.20
5	72.9	71.22	70.00	67.43	67.04	65.54	62.49	59.29	57.99	56.21	54.98
10	67.9	66.29	65.10	62.57	62.19	60.74	57.82	54.84	53.79	52.15	51.14
15	63.0	61.38	60.19	57.69	57.33	55.91	53.10	50.25	49.37	47.73	46.81
20	58.2	56.63	55.46	53.00	52.58	51.20	48.54	45.94	45.30	43.53	42.79
25	53.5	51.93	50.81	48.37	47.89	46.56	44.09	41.85	41.47	39.60	39.12
30	48.7	47.23	46.12	43.71	43.18	41.91	39.67	37.75	37.68	35.70	35.51
35	44.0	42.58	41.43	39.07	38.51	37.31	35.30	33.68	33.89	31.90	31.92
40	39.3	37.98	36.79	34.52	33.92	32.81	31.03	29.67	30.08	28.20	28.34
45	34.8	33.44	32.27	30.12	29.50	28.49	26.90	25.79	26.25	24.54	24.77
50	30.3	29.03	27.94	25.93	25.29	24.40	22.98	22.06	22.50	20.98	21.26
55	26.1	24.83	23.85	21.99	21.37	20.57	19.31	18.53	18.90	17.55	17.88
60	22.0	20.90	20.02	18.34	17.71	17.04	15.91	15.24	15.54	14.42	14.76
65	18.2	17.28	16.51	15.00	14.39	13.83	12.80	12.23	12.47	11.60	11.86
70	14.7	13.96	13.32	12.00	11.38	10.92	10.00	9.58	9.74	9.11	9.30
75	11.5	11.00	10.48	9.32	8.71	8.40	7.62	7.32	7.49	6.99	7.08
80	8.8	8.40	7.98	7.10	6.39	6.34	5.73	5.50	5.63	5.25	5.30
85	6.5	6.23	5.96	5.28	4.58	4.69	4.31	4.19	4.21	4.00	3.96
90	4.8	4.50	4.43	3.94	3.22	3.44	3.30	3.15	3.22	3.03	2.95
95	3.6	3.29	3.34	3.06	2.43	2.54	2.61	2.26	2.32	2.35	2.18
100	2.7	2.46	2.73	2.62	1.91	1.92	2.13	1.51	1.53	1.85	1.58
<b>Male</b>											
0	74.5	71.83	70.11	67.04	66.80	65.47	61.60	57.71	55.50	49.86	47.88
1	74.1	71.58	70.10	67.58	67.80	66.73	64.00	60.75	59.47	55.95	54.35
5	70.2	67.73	66.29	63.82	64.10	63.12	60.76	58.14	57.60	55.11	54.22
10	65.3	62.81	61.41	58.98	59.27	58.35	56.12	53.75	53.44	51.07	50.39
15	60.3	57.91	56.52	54.12	54.43	53.56	51.43	49.18	49.05	46.66	46.06
20	55.6	53.25	51.88	49.54	49.77	48.92	46.91	44.88	44.99	42.48	42.03
25	51.0	48.67	47.37	45.07	45.19	44.36	42.51	40.79	41.11	38.59	38.38
30	46.3	44.10	42.81	40.51	40.56	39.78	38.13	36.71	37.26	34.70	34.76
35	41.6	39.57	38.20	35.95	35.94	35.23	33.79	32.65	33.43	30.94	31.19
40	37.0	35.09	33.64	31.48	31.42	30.79	29.57	28.68	29.63	27.32	27.65
45	32.6	30.66	29.22	27.18	27.09	26.55	25.52	24.87	25.84	23.77	24.14
50	28.3	26.37	25.00	23.12	23.02	22.59	21.72	21.25	22.11	20.32	20.70
55	24.1	22.30	21.08	19.36	19.32	18.96	18.20	17.79	18.53	16.98	17.38
60	20.2	18.53	17.46	15.99	15.94	15.68	14.99	14.62	15.22	13.95	14.33
65	16.6	15.12	14.21	12.99	12.95	12.74	12.07	11.72	12.20	11.24	11.50
70	13.2	12.05	11.35	10.39	10.33	10.11	9.46	9.18	9.52	8.83	9.02
75	10.3	9.39	8.90	8.13	7.99	7.83	7.22	7.02	7.31	6.75	6.84
80	7.8	7.12	6.80	6.27	5.95	5.94	5.44	5.27	5.49	5.10	5.11
85	5.7	5.31	5.13	4.73	4.39	4.41	4.11	4.02	4.10	3.90	3.82
90	4.2	3.89	3.89	3.60	3.18	3.30	3.17	3.06	3.21	3.01	2.86
95	3.2	2.92	2.98	2.82	2.43	2.49	2.52	2.21	2.38	2.36	2.13
100	2.5	2.25	2.49	2.43	1.91	1.92	2.05	1.50	1.58	1.81	1.55
<b>Female</b>											
0	79.9	78.81	77.62	74.64	73.24	70.96	65.89	60.90	57.40	53.24	50.70
1	79.4	78.47	77.50	74.97	73.93	71.84	67.73	63.37	60.45	58.37	56.10
5	75.4	74.60	73.67	71.19	70.21	68.21	64.43	60.66	58.41	57.39	55.80
10	70.5	69.67	68.75	66.31	65.35	63.38	59.73	56.16	54.16	53.31	51.94
15	65.5	64.73	63.83	61.41	60.45	58.52	54.97	51.54	49.71	48.87	47.60
20	60.7	59.87	58.98	56.59	55.60	53.73	50.37	47.21	45.63	44.66	43.60
25	55.8	55.03	54.16	51.80	50.79	48.99	45.87	43.11	41.86	40.69	39.92
30	51.0	50.19	49.33	47.01	46.00	44.28	41.41	39.02	38.15	36.79	36.30
35	46.1	45.40	44.53	42.28	41.27	39.63	37.01	34.92	34.40	32.95	32.71
40	41.4	40.65	39.80	37.64	36.61	35.06	32.68	30.86	30.58	29.15	29.08
45	36.7	35.97	35.17	33.13	32.09	30.64	28.46	26.89	26.71	25.36	25.44
50	32.2	31.42	30.69	28.77	27.71	26.40	24.40	23.05	22.92	21.67	21.84
55	27.7	27.05	26.39	24.59	23.53	22.33	20.54	19.38	19.28	18.13	18.39

See footnotes at end of table.

**Table 11. Life expectancy by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2002—Con.**

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Age, race, and sex	Average number of years of life remaining ( $e_x$ )										
	2002	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
<b>Female—Con.</b>											
60 . . . . .	23.5	22.90	22.29	20.60	19.52	18.50	16.92	15.94	15.87	14.90	15.21
65 . . . . .	19.5	19.02	18.44	16.83	15.80	14.95	13.57	12.78	12.73	11.96	12.22
70 . . . . .	15.8	15.38	14.84	13.35	12.37	11.71	10.56	9.99	9.96	9.38	9.59
75 . . . . .	12.4	12.08	11.58	10.26	9.33	8.94	8.01	7.61	7.65	7.20	7.34
80 . . . . .	9.4	9.13	8.69	7.68	6.72	6.67	5.99	5.70	5.75	5.37	5.51
85 . . . . .	6.9	6.66	6.38	5.63	4.71	4.90	4.47	4.32	4.30	4.08	4.12
90 . . . . .	5.0	4.73	4.66	4.14	3.25	3.54	3.39	3.24	3.23	3.05	3.04
95 . . . . .	3.7	3.40	3.48	3.18	2.43	2.57	2.67	2.30	2.27	2.34	2.24
100 . . . . .	2.8	2.52	2.81	2.69	1.91	1.93	2.17	1.52	1.48	1.91	1.61
<b>White</b>											
0 . . . . .	77.7	76.13	74.53	71.62	70.73	69.02	64.92	60.86	57.42	51.90	49.64
1 . . . . .	77.2	75.72	74.35	71.91	71.38	69.95	66.84	63.46	60.87	57.46	55.47
5 . . . . .	73.3	71.84	70.52	68.12	67.64	66.29	63.52	60.75	58.86	56.51	55.18
10 . . . . .	68.3	66.92	65.62	63.26	62.79	61.48	58.83	56.29	54.65	52.43	51.34
15 . . . . .	63.4	61.99	60.71	58.37	57.92	56.65	54.09	51.69	50.21	48.01	47.01
20 . . . . .	58.6	57.23	55.98	53.66	53.16	51.91	49.47	47.28	46.04	43.77	43.17
25 . . . . .	53.8	52.50	51.30	49.00	48.44	47.22	44.92	43.02	42.07	39.79	39.26
30 . . . . .	49.0	47.76	46.59	44.28	43.69	42.52	40.40	38.76	38.17	35.86	35.51
35 . . . . .	44.3	43.06	41.86	39.58	38.97	37.86	35.93	34.50	34.27	32.03	32.01
40 . . . . .	39.6	38.41	37.17	34.95	34.33	33.29	31.54	30.33	30.38	28.29	28.28
45 . . . . .	35.0	33.81	32.60	30.48	29.84	28.88	27.29	26.29	26.45	24.60	24.82
50 . . . . .	30.5	29.34	28.21	26.21	25.57	24.70	23.26	22.42	22.64	21.01	21.18
55 . . . . .	26.2	25.08	24.05	22.19	21.58	20.77	19.47	18.75	18.97	17.57	17.91
60 . . . . .	22.1	21.08	20.16	18.48	17.84	17.15	15.98	15.37	15.57	14.43	14.73
65 . . . . .	18.2	17.40	16.59	15.08	14.44	13.86	12.80	12.28	12.47	11.60	11.87
70 . . . . .	14.7	14.02	13.35	12.01	11.37	10.89	9.96	9.58	9.72	9.10	9.31
75 . . . . .	11.5	11.03	10.47	9.27	8.65	8.34	7.55	7.30	7.47	6.98	7.08
80 . . . . .	8.7	8.39	7.95	7.01	6.33	6.27	5.64	5.45	5.59	5.22	5.30
85 . . . . .	6.4	6.20	5.90	5.19	4.53	4.62	4.20	4.12	4.15	3.97	3.95
90 . . . . .	4.7	4.46	4.36	3.84	3.20	3.41	3.16	3.10	3.17	3.00	2.93
95 . . . . .	3.4	3.25	3.25	2.92	2.43	2.53	2.45	2.22	2.28	2.29	2.16
100 . . . . .	2.4	2.43	2.62	2.41	1.91	1.92	1.95	1.48	1.50	1.71	1.56
<b>White male</b>											
0 . . . . .	75.1	72.72	70.82	67.94	67.55	66.31	62.81	59.12	56.34	50.23	48.23
1 . . . . .	74.6	72.35	70.70	68.33	68.34	67.41	64.98	62.04	60.24	56.26	54.61
5 . . . . .	70.7	68.48	66.87	64.55	64.61	63.77	61.68	59.38	58.31	55.37	54.43
10 . . . . .	65.7	63.55	61.98	59.69	59.78	58.98	57.03	54.96	54.15	51.32	50.59
15 . . . . .	60.8	58.65	57.09	54.83	54.93	54.18	52.33	50.39	49.74	46.91	46.25
20 . . . . .	56.1	53.96	52.45	50.22	50.25	49.52	47.76	46.02	45.60	42.71	42.19
25 . . . . .	51.4	49.33	47.92	45.70	45.65	44.93	43.28	41.78	41.60	38.79	38.52
30 . . . . .	46.7	44.71	43.31	41.07	40.97	40.29	38.80	37.54	37.65	34.87	34.88
35 . . . . .	42.0	40.12	38.66	36.43	36.31	35.68	34.36	33.33	33.74	31.08	31.29
40 . . . . .	37.4	35.57	34.04	31.87	31.73	31.17	30.03	29.22	29.86	27.43	27.74
45 . . . . .	32.9	31.07	29.55	27.48	27.34	26.87	25.87	25.28	26.00	23.86	24.21
50 . . . . .	28.5	26.71	25.26	23.34	23.22	22.83	21.96	21.51	22.22	20.39	20.76
55 . . . . .	24.3	22.56	21.25	19.51	19.45	19.11	18.34	17.97	18.59	17.03	17.42
60 . . . . .	20.3	18.71	17.56	16.07	16.01	15.76	15.05	14.72	15.25	13.98	14.35
65 . . . . .	16.6	15.24	14.26	13.02	12.97	12.75	12.07	11.77	12.21	11.25	11.51
70 . . . . .	13.3	12.11	11.35	10.38	10.29	10.07	9.42	9.20	9.51	8.83	9.03
75 . . . . .	10.3	9.40	8.87	8.06	7.92	7.77	7.17	7.02	7.30	6.75	6.84
80 . . . . .	7.7	7.11	6.76	6.18	5.89	5.88	5.38	5.26	5.47	5.09	5.10
85 . . . . .	5.7	5.28	5.09	4.63	4.34	4.35	4.02	3.99	4.06	3.88	3.81
90 . . . . .	4.1	3.85	3.83	3.49	3.16	3.27	3.06	3.03	3.18	2.99	2.85
95 . . . . .	3.0	2.88	2.91	2.67	2.43	2.48	2.40	2.19	2.36	2.31	2.12
100 . . . . .	2.3	2.21	2.41	2.20	1.91	1.92	1.96	1.49	1.58	1.68	1.55

See footnotes at end of table.

**Table 11. Life expectancy by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2002—Con.**

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Age, race, and sex	Average number of years of life remaining ( $e_x$ )										
	2002	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
<b>White female</b>											
0	80.3	79.45	78.22	75.49	74.19	72.03	67.29	62.67	58.53	53.62	51.08
1	79.7	78.99	77.98	75.66	74.68	72.77	68.93	64.93	61.51	58.69	56.39
5	75.8	75.10	74.13	71.86	70.92	69.09	65.57	62.17	59.43	57.67	56.03
10	70.8	70.16	69.21	66.97	66.05	64.26	60.85	57.65	55.17	53.57	52.15
15	65.9	65.23	64.29	62.07	61.15	59.39	56.07	53.00	50.67	49.12	47.79
20	61.0	60.36	59.44	57.24	56.29	54.56	51.38	48.52	46.46	44.88	43.77
25	56.1	55.51	54.60	52.42	51.45	49.77	46.78	44.25	42.55	40.88	40.05
30	51.2	50.65	49.76	47.60	46.63	45.00	42.21	39.99	38.72	36.96	36.42
35	46.4	45.82	44.93	42.82	41.84	40.28	37.70	35.73	34.86	33.09	32.82
40	41.6	41.03	40.16	38.12	37.13	35.64	33.25	31.52	30.94	29.26	29.17
45	36.9	36.30	35.49	33.54	32.53	31.12	28.90	27.39	26.98	25.45	25.51
50	32.4	31.71	30.96	29.11	28.08	26.76	24.72	23.41	23.12	21.74	21.89
55	27.9	27.29	26.61	24.85	23.81	22.58	20.73	19.60	19.40	18.18	18.43
60	23.6	23.09	22.45	20.79	19.69	18.64	17.00	16.05	15.93	14.92	15.23
65	19.5	19.14	18.55	16.93	15.88	15.00	13.56	12.81	12.75	11.97	12.23
70	15.8	15.46	14.89	13.37	12.38	11.68	10.50	9.98	9.94	9.38	9.59
75	12.3	12.11	11.58	10.21	9.28	8.87	7.92	7.56	7.62	7.20	7.33
80	9.3	9.12	8.65	7.59	6.67	6.59	5.88	5.63	5.70	5.35	5.50
85	6.8	6.62	6.32	5.54	4.66	4.83	4.34	4.24	4.24	4.06	4.10
90	4.9	4.69	4.59	4.05	3.23	3.51	3.24	3.17	3.16	3.00	3.02
95	3.5	3.36	3.39	3.04	2.43	2.56	2.47	2.24	2.20	2.27	2.21
100	2.5	2.49	2.70	2.49	1.91	1.92	1.95	1.48	1.42	1.74	1.58
<b>Black</b>											
0	72.3	69.16	68.52	64.11	63.91	60.73	53.85	48.53	47.03	35.87	33.80
1	72.4	69.43	68.99	65.27	65.75	62.65	57.15	51.71	51.01	43.84	43.00
5	68.5	65.64	65.25	61.62	62.21	59.25	54.13	49.25	49.44	45.34	45.55
10	63.6	60.75	60.38	56.79	57.41	54.50	49.50	44.80	45.26	41.74	42.46
15	58.7	55.86	55.49	51.94	52.57	49.73	44.89	40.37	41.02	38.02	39.04
20	53.9	51.19	50.75	47.34	47.88	45.19	40.73	36.62	37.72	34.86	36.03
25	49.3	46.67	46.18	43.00	43.35	40.85	36.91	33.32	34.91	31.72	33.04
30	44.7	42.22	41.69	38.70	38.89	36.59	33.17	30.07	31.98	28.43	29.96
35	40.1	37.87	37.28	34.48	34.56	32.44	29.53	26.94	29.07	25.39	26.82
40	35.6	33.65	32.98	30.46	30.39	28.48	26.06	23.82	26.07	22.41	23.73
45	31.3	29.55	28.87	26.65	26.46	24.75	22.82	20.97	23.17	19.58	20.67
50	27.3	25.62	25.03	23.11	22.74	21.38	19.94	18.22	20.17	16.84	17.95
55	23.4	21.95	21.50	19.83	19.45	18.41	17.43	15.80	17.33	14.33	15.23
60	19.9	18.59	18.29	16.83	16.53	15.87	15.18	13.62	14.72	12.16	13.06
65	16.6	15.56	15.37	14.16	13.96	13.59	13.02	11.49	12.22	10.22	10.87
70	13.5	12.87	12.67	11.77	11.63	11.48	10.93	9.54	9.90	8.59	8.96
75	10.9	10.48	10.32	9.89	9.52	9.48	8.97	7.84	8.00	7.08	7.24
80	8.6	8.30	8.17	8.20	7.28	7.62	7.31	6.19	6.22	5.80	5.79
85	6.6	6.51	6.54	6.54	5.27	5.79	5.91	4.92	4.88	4.80	4.56
90	5.1	4.94	5.13	5.09	3.48	3.97	4.64	3.83	3.84	4.26	3.60
95	3.9	3.82	4.08	4.28	2.43	2.70	3.51	2.83	2.90	3.31	2.82
100	3.0	2.91	3.58	3.93	1.91	1.94	2.57	1.87	1.94	2.27	2.18
<b>Black male</b>											
0	68.8	64.47	64.10	60.00	61.48	58.91	52.26	47.55	47.14	34.05	32.54
1	68.8	64.76	64.60	61.24	63.50	61.06	55.93	51.08	51.63	42.53	42.46
5	65.0	60.98	60.86	57.60	59.98	57.69	52.95	48.69	50.18	44.25	45.06
10	60.1	56.09	56.01	52.79	55.19	52.96	48.34	44.27	45.99	40.65	41.90
15	55.2	51.22	51.14	47.96	50.39	48.23	43.74	39.83	41.75	36.77	38.26
20	50.5	46.71	46.48	43.49	45.78	43.73	39.52	35.95	38.36	33.46	35.11
25	46.0	42.40	42.09	39.45	41.38	39.49	35.72	32.67	35.54	30.44	32.21
30	41.6	38.14	37.81	35.40	37.05	35.31	32.05	29.45	32.51	27.33	29.25
35	37.1	34.02	33.60	31.42	32.81	31.21	28.48	26.39	29.54	24.42	26.16
40	32.8	30.05	29.51	27.61	28.72	27.29	25.06	23.36	26.53	21.57	23.12
45	28.5	26.18	25.61	24.03	24.89	23.59	21.88	20.59	23.55	18.85	20.09
50	24.6	22.50	22.03	20.69	21.28	20.25	19.06	17.92	20.47	16.21	17.34
55	21.0	19.08	18.79	17.66	18.11	17.36	16.60	15.46	17.50	13.82	14.69

See footnotes at end of table.

**Table 11. Life expectancy by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2002—Con.**

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Age, race, and sex	Average number of years of life remaining ( $e_x$ )										
	2002	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
<b>Black male—Con.</b>											
60 . . . . .	17.6	16.01	15.89	14.93	15.29	14.91	14.37	13.15	14.74	11.67	12.62
65 . . . . .	14.6	13.27	13.29	12.53	12.84	12.75	12.21	10.87	12.07	9.74	10.38
70 . . . . .	11.8	10.88	10.94	10.40	10.81	10.74	10.11	8.78	9.58	8.00	8.33
75 . . . . .	9.5	8.84	8.90	8.76	8.93	8.83	8.17	6.99	7.61	6.58	6.60
80 . . . . .	7.5	7.01	7.03	7.35	6.87	7.07	6.58	5.42	5.83	5.53	5.12
85 . . . . .	5.8	5.58	5.61	5.92	5.08	5.38	5.34	4.30	4.53	4.48	4.04
90 . . . . .	4.5	4.24	4.47	4.68	3.42	3.78	4.23	3.42	3.60	4.01	3.21
95 . . . . .	3.6	3.37	3.62	3.92	2.43	2.64	3.20	2.54	2.61	3.15	2.50
100 . . . . .	2.9	2.63	3.24	3.61	1.91	1.93	2.29	1.68	1.64	2.14	1.89
<b>Black female</b>											
0 . . . . .	75.6	73.73	72.88	68.32	66.47	62.70	55.56	49.51	46.92	37.67	35.04
1 . . . . .	75.6	73.96	73.31	69.37	68.10	64.37	58.46	52.33	50.39	45.15	43.54
5 . . . . .	71.7	70.16	69.54	65.70	64.54	60.93	55.40	49.81	48.70	46.42	46.04
10 . . . . .	66.8	65.26	64.65	60.85	59.72	56.17	50.75	45.33	44.54	42.84	43.02
15 . . . . .	61.8	60.34	59.74	55.97	54.85	51.36	46.13	40.87	40.36	39.18	39.79
20 . . . . .	57.0	55.49	54.90	51.22	50.07	46.77	42.04	37.22	37.15	36.14	36.89
25 . . . . .	52.1	50.72	50.13	46.57	45.40	42.35	38.20	33.93	34.35	32.97	33.90
30 . . . . .	47.4	46.03	45.43	42.00	40.83	38.02	34.40	30.67	31.48	29.61	30.70
35 . . . . .	42.7	41.45	40.79	37.56	36.41	33.82	30.83	27.47	28.58	26.44	27.52
40 . . . . .	38.1	36.96	36.28	33.32	32.16	29.82	27.19	24.30	25.60	23.34	24.37
45 . . . . .	33.7	32.58	31.94	29.31	28.14	26.07	23.89	21.39	22.61	20.43	21.36
50 . . . . .	29.5	28.38	27.84	25.52	24.31	22.67	20.95	18.60	19.76	17.65	18.67
55 . . . . .	25.4	24.41	24.00	21.97	20.89	19.62	18.38	16.27	17.09	14.98	15.88
60 . . . . .	21.6	20.71	20.42	18.66	17.83	16.95	16.10	14.22	14.69	12.78	13.60
65 . . . . .	18.0	17.37	17.13	15.67	15.12	14.54	13.95	12.24	12.41	10.82	11.38
70 . . . . .	14.7	14.32	14.05	13.02	12.46	12.29	11.82	10.38	10.25	9.22	9.62
75 . . . . .	11.7	11.56	11.37	10.85	10.10	10.15	9.81	8.62	8.37	7.55	7.90
80 . . . . .	9.2	9.05	8.95	8.87	7.66	8.15	8.02	6.90	6.58	6.05	6.48
85 . . . . .	7.0	6.99	7.09	7.00	5.44	6.15	6.41	5.48	5.22	5.09	5.10
90 . . . . .	5.3	5.24	5.47	5.41	3.52	4.13	4.96	4.20	4.07	4.50	4.01
95 . . . . .	4.0	3.97	4.30	4.58	2.43	2.74	3.71	3.09	3.18	3.45	3.15
100 . . . . .	3.0	2.97	3.69	4.20	1.91	1.94	2.70	2.04	2.23	2.39	2.49

<sup>1</sup>For 1939–41 and 1949–51, data shown are for the entire nonwhite population. During these periods, life tables were not constructed for the black population. See Technical Notes.

**Table 12. Estimated life expectancy at birth in years, by race and sex: Death-registration States, 1900–28, and United States, 1929–2002**

[For selected years, life table values shown are estimates; see "Technical Notes." Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Area and year	All races			White			Black <sup>2</sup>		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
United States <sup>1</sup>									
2002	77.3	74.5	79.9	77.7	75.1	80.3	72.3	68.8	75.6
2001	77.2	74.4	79.8	77.7	75.0	80.2	72.2	68.6	75.5
2000	77.0	74.3	79.7	77.6	74.9	80.1	71.9	68.3	75.2
1999	76.7	73.9	79.4	77.3	74.6	79.9	71.4	67.8	74.7
1998	76.7	73.8	79.5	77.3	74.5	80.0	71.3	67.6	74.8
1997	76.5	73.6	79.4	77.2	74.3	79.9	71.1	67.2	74.7
1996	76.1	73.1	79.1	76.8	73.9	79.7	70.2	66.1	74.2
1995	75.8	72.5	78.9	76.5	73.4	79.6	69.6	65.2	73.9
1994	75.7	72.4	79.0	76.5	73.3	79.6	69.5	64.9	73.9
1993	75.5	72.2	78.8	76.3	73.1	79.5	69.2	64.6	73.7
1992	75.8	72.3	79.1	76.5	73.2	79.8	69.6	65.0	73.9
1991	75.5	72.0	78.9	76.3	72.9	79.6	69.3	64.6	73.8
1990	75.4	71.8	78.8	76.1	72.7	79.4	69.1	64.5	73.6
1989	75.1	71.7	78.5	75.9	72.5	79.2	68.8	64.3	73.3
1988	74.9	71.4	78.3	75.6	72.2	78.9	68.9	64.4	73.2
1987	74.9	71.4	78.3	75.6	72.1	78.9	69.1	64.7	73.4
1986	74.7	71.2	78.2	75.4	71.9	78.8	69.1	64.8	73.4
1985	74.7	71.1	78.2	75.3	71.8	78.7	69.3	65.0	73.4
1984	74.7	71.1	78.2	75.3	71.8	78.7	69.5	65.3	73.6
1983	74.6	71.0	78.1	75.2	71.6	78.7	69.4	65.2	73.5
1982	74.5	70.8	78.1	75.1	71.5	78.7	69.4	65.1	73.6
1981	74.1	70.4	77.8	74.8	71.1	78.4	68.9	64.5	73.2
1980	73.7	70.0	77.4	74.4	70.7	78.1	68.1	63.8	72.5
1979	73.9	70.0	77.8	74.6	70.8	78.4	68.5	64.0	72.9
1978	73.5	69.6	77.3	74.1	70.4	78.0	68.1	63.7	72.4
1977	73.3	69.5	77.2	74.0	70.2	77.9	67.7	63.4	72.0
1976	72.9	69.1	76.8	73.6	69.9	77.5	67.2	62.9	71.6
1975	72.6	68.8	76.6	73.4	69.5	77.3	66.8	62.4	71.3
1974	72.0	68.2	75.9	72.8	69.0	76.7	66.0	61.7	70.3
1973	71.4	67.6	75.3	72.2	68.5	76.1	65.0	60.9	69.3
1972 <sup>3</sup>	71.2	67.4	75.1	72.0	68.3	75.9	64.7	60.4	69.1
1971	71.1	67.4	75.0	72.0	68.3	75.8	64.6	60.5	68.9
1970	70.8	67.1	74.7	71.7	68.0	75.6	64.1	60.0	68.3
1969	70.5	66.8	74.4	71.4	67.7	75.3	64.5	60.6	68.6
1968	70.2	66.6	74.1	71.1	67.5	75.0	64.1	60.4	67.9
1967	70.5	67.0	74.3	71.4	67.8	75.2	64.9	61.4	68.5
1966	70.2	66.7	73.9	71.1	67.5	74.8	64.2	60.9	67.6
1965	70.2	66.8	73.8	71.1	67.6	74.8	64.3	61.2	67.6
1964	70.2	66.8	73.7	71.0	67.7	74.7	64.2	61.3	67.3
1963 <sup>4</sup>	69.9	66.6	73.4	70.8	67.4	74.4	63.7	61.0	66.6
1962 <sup>4</sup>	70.1	66.9	73.5	70.9	67.7	74.5	64.2	61.6	66.9
1961	70.2	67.1	73.6	71.0	67.8	74.6	64.5	62.0	67.1
1960	69.7	66.6	73.1	70.6	67.4	74.1	63.6	61.1	66.3
1959	69.9	66.8	73.2	70.7	67.5	74.2	63.9	61.3	66.5
1958	69.6	66.6	72.9	70.5	67.4	73.9	63.4	61.0	65.8
1957	69.5	66.4	72.7	70.3	67.2	73.7	63.0	60.7	65.5
1956	69.7	66.7	72.9	70.5	67.5	73.9	63.6	61.3	66.1
1955	69.6	66.7	72.8	70.5	67.4	73.7	63.7	61.4	66.1
1954	69.6	66.7	72.8	70.5	67.5	73.7	63.4	61.1	65.9
1953	68.8	66.0	72.0	69.7	66.8	73.0	62.0	59.7	64.5
1952	68.6	65.8	71.6	69.5	66.6	72.6	61.4	59.1	63.8
1951	68.4	65.6	71.4	69.3	66.5	72.4	61.2	59.2	63.4
1950	68.2	65.6	71.1	69.1	66.5	72.2	60.8	59.1	62.9
1949	68.0	65.2	70.7	68.8	66.2	71.9	60.6	58.9	62.7
1948	67.2	64.6	69.9	68.0	65.5	71.0	60.0	58.1	62.5
1947	66.8	64.4	69.7	67.6	65.2	70.5	59.7	57.9	61.9
1946	66.7	64.4	69.4	67.5	65.1	70.3	59.1	57.5	61.0
1945	65.9	63.6	67.9	66.8	64.4	69.5	57.7	56.1	59.6
1944	65.2	63.6	66.8	66.2	64.5	68.4	56.6	55.8	57.7
1943	63.3	62.4	64.4	64.2	63.2	65.7	55.6	55.4	56.1
1942	66.2	64.7	67.9	67.3	65.9	69.4	56.6	55.4	58.2
1941	64.8	63.1	66.8	66.2	64.4	68.5	53.8	52.5	55.3

See footnotes at end of table.

**Table 12. Estimated life expectancy at birth in years, by race and sex: Death-registration States, 1900–28, and United States, 1929–2002—Con.**

[For selected years, life table values shown are estimates; see "Technical Notes." Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Area and year	All races			White			Black <sup>2</sup>		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
<b>United States<sup>1</sup></b>									
1940 . . . . .	62.9	60.8	65.2	64.2	62.1	66.6	53.1	51.5	54.9
1939 . . . . .	63.7	62.1	65.4	64.9	63.3	66.6	54.5	53.2	56.0
1938 . . . . .	63.5	61.9	65.3	65.0	63.2	66.8	52.9	51.7	54.3
1937 . . . . .	60.0	58.0	62.4	61.4	59.3	63.8	50.3	48.3	52.5
1936 . . . . .	58.5	56.6	60.6	59.8	58.0	61.9	49.0	47.0	51.4
1935 . . . . .	61.7	59.9	63.9	62.9	61.0	65.0	53.1	51.3	55.2
1934 . . . . .	61.1	59.3	63.3	62.4	60.5	64.6	51.8	50.2	53.7
1933 . . . . .	63.3	61.7	65.1	64.3	62.7	66.3	54.7	53.5	56.0
1932 . . . . .	62.1	61.0	63.5	63.2	62.0	64.5	53.7	52.8	54.6
1931 . . . . .	61.1	59.4	63.1	62.6	60.8	64.7	50.4	49.5	51.5
1930 . . . . .	59.7	58.1	61.6	61.4	59.7	63.5	48.1	47.3	49.2
1929 . . . . .	57.1	55.8	58.7	58.6	57.2	60.3	46.7	45.7	47.8
<b>Death-registration States</b>									
1928 . . . . .	56.8	55.6	58.3	58.4	57.0	60.0	46.3	45.6	47.0
1927 . . . . .	60.4	59.0	62.1	62.0	60.5	63.9	48.2	47.6	48.9
1926 . . . . .	56.7	55.5	58.0	58.2	57.0	59.6	44.6	43.7	45.6
1925 . . . . .	59.0	57.6	60.6	60.7	59.3	62.4	45.7	44.9	46.7
1924 . . . . .	59.7	58.1	61.5	61.4	59.8	63.4	46.6	45.5	47.8
1923 . . . . .	57.2	56.1	58.5	58.3	57.1	59.6	48.3	47.7	48.9
1922 . . . . .	59.6	58.4	61.0	60.4	59.1	61.9	52.4	51.8	53.0
1921 . . . . .	60.8	60.0	61.8	61.8	60.8	62.9	51.5	51.6	51.3
1920 . . . . .	54.1	53.6	54.6	54.9	54.4	55.6	45.3	45.5	45.2
1919 . . . . .	54.7	53.5	56.0	55.8	54.5	57.4	44.5	44.5	44.4
1918 . . . . .	39.1	36.6	42.2	39.8	37.1	43.2	31.1	29.9	32.5
1917 . . . . .	50.9	48.4	54.0	52.0	49.3	55.3	38.8	37.0	40.8
1916 . . . . .	51.7	49.6	54.3	52.5	50.2	55.2	41.3	39.6	43.1
1915 . . . . .	54.5	52.5	56.8	55.1	53.1	57.5	38.9	37.5	40.5
1914 . . . . .	54.2	52.0	56.8	54.9	52.7	57.5	38.9	37.1	40.8
1913 . . . . .	52.5	50.3	55.0	53.0	50.8	55.7	38.4	36.7	40.3
1912 . . . . .	53.5	51.5	55.9	53.9	51.9	56.2	37.9	35.9	40.0
1911 . . . . .	52.6	50.9	54.4	53.0	51.3	54.9	36.4	34.6	38.2
1910 . . . . .	50.0	48.4	51.8	50.3	48.6	52.0	35.6	33.8	37.5
1909 . . . . .	52.1	50.5	53.8	52.5	50.9	54.2	35.7	34.2	37.3
1908 . . . . .	51.1	49.5	52.8	51.5	49.9	53.3	34.9	33.8	36.0
1907 . . . . .	47.6	45.6	49.9	48.1	46.0	50.4	32.5	31.1	34.0
1906 . . . . .	48.7	46.9	50.8	49.3	47.3	51.4	32.9	31.8	33.9
1905 . . . . .	48.7	47.3	50.2	49.1	47.6	50.6	31.3	29.6	33.1
1904 . . . . .	47.6	46.2	49.1	48.0	46.6	49.5	30.8	29.1	32.7
1903 . . . . .	50.5	49.1	52.0	50.9	49.5	52.5	33.1	31.7	34.6
1902 . . . . .	51.5	49.8	53.4	51.9	50.2	53.8	34.6	32.9	36.4
1901 . . . . .	49.1	47.6	50.6	49.4	48.0	51.0	33.7	32.2	35.3
1900 . . . . .	47.3	46.3	48.3	47.6	46.6	48.7	33.0	32.5	33.5

<sup>1</sup>Alaska included in 1959 and Hawaii in 1960.<sup>2</sup>Prior to 1970, data for the black population are not available. Data shown for 1900–69 are for the nonwhite population. See "Technical Notes."<sup>3</sup>Deaths based on a 50-percent sample.<sup>4</sup>Figures by race exclude data for residents of New Jersey; see "Technical Notes."



## Technical Notes

*The life table program*—Three series of complete life tables are prepared by the National Center for Health Statistics (NCHS) for the U.S. population—decennial, annual preliminary, and annual final. The U.S. decennial life tables are based on decennial census data and deaths for a 3-year period around the census year. Preliminary life tables are based on a substantial sample (approximately 90 percent) of death records. Estimates of life expectancy from the preliminary series are published annually. The annual final life tables (referred to in this section as annual life tables) are based on a complete count of all reported deaths.

Available since 1945, the annual life tables are based on deaths occurring during the calendar year and on midyear postcensal population estimates provided by the U.S. Census Bureau. From 1945 to 1996, the annual life tables were abridged life tables and were constructed by reference to a standard table (8). Beginning with 1997 mortality data, complete life tables are constructed using a new methodology (9,10). Also for 1997, life expectancy and other life table values were shown for ages 85 to 100 years for the first time as part of the annual U.S. life tables. Previously, the annual life tables were closed at age 85. Extension of the oldest age interval was implemented by NCHS for several reasons: 1) survival in the U.S. is such that approximately one-third of the population survives beyond age 85, 2) improvements have occurred in age reporting at older ages, and 3) high quality old-age mortality data are available from the Medicare program.

*Geographic coverage*—The geographic areas covered in life tables before 1929–31 were limited to the death-registration areas. Life tables for 1900–1902 and 1909–11 were constructed using mortality data from the 1900 death-registration States (10 States and the District of Columbia) and for 1919–21 from the 1920 death-registration States (34 States and the District of Columbia). The tables for 1929–31 through 1958 cover the coterminous United States. Decennial life table values for the 3-year period 1959–61 were derived from data that include both Alaska and Hawaii for each year (tables 10 and 11). Data for each year shown in table 12 include Alaska beginning in 1959 and Hawaii beginning in 1960. However, it is not believed that the inclusion of these two States materially affects life table values.

*Revised life table values*—Life table values for 1960–69, 1970–79, and 1980–89 were constructed using the U.S. decennial life tables for 1959–61, 1969–71, and 1979–81, respectively, as the standard tables. The life table values for years prior to 1989 appearing in this publication are based on revised intercensal estimates of the populations for those years. As a result, the life table values for these years may differ from the life table values for those years published in *Vital Statistics of the United States* for 1989 and earlier years. Life table values for 1991–99 are based on postcensal population estimates of the population enumerated in the 1990 decennial census while life table values for 2000–2002 are based on population estimates of the population enumerated in the 2000 decennial census. As a result, life expectancy values across the 1990s are not comparable to those estimated for 2000–2002. A comparison of life expectancy values for 2000 estimated alternately with 1990-based postcensal estimates of the 2000 population and population estimates based on the 2000 census revealed that life expectancy values estimated using the 2000 census population estimates were slightly higher throughout the entire age range (17). Life

table values for the 1991–99 period will be re-calculated when intercensal population estimates based on the 2000 decennial census become available.

*New Jersey data, 1962–64*—The life tables for 1962 and 1963 for the six population groups involving race do not include data from New Jersey, which omitted the item on race from its certificates of live birth, death, and fetal death in use at the beginning of 1962. The item was restored during the latter part of 1962. However, the certificate revision without this item was used for most of 1962 as well as for 1963. For computing vital rates, populations by age, race, and sex (excluding New Jersey) were estimated to obtain comparable denominators. Approximately 7 percent of the New Jersey death records for 1964 did not contain the race designation. When the records were being electronically processed for this State, the “race not stated” deaths were proportionally allocated to white or to black.

*Nonresidents*—Beginning in 1970, the deaths of nonresidents of the United States have been excluded from the life table statistics.

*Estimation of life table functions*—For some years, it was necessary to estimate life table functions for some race-sex groups. In tables 10 and 11, figures for the black population during the periods 1949–51 and 1959–61 were estimated using figures for the nonwhite population. Life table functions were also missing in tables 10 and 11 for race-sex groups for the periods from 1900–1902 to 1939–41. Figures were missing for the following groups:

Years	Race and sex
1900–1902 . . . . .	Total white, total black
1909–11 . . . . .	Total white, total black
1919–21 . . . . .	Total, male, female, total white, total black
1929–31 . . . . .	Total, male, female, total white, total black

These figures were estimated by weighted averages using population distributions as the weights. For example, life expectancy at age 20 for the total black population was estimated by a weighted average of black male and black female life expectancies at age 20, using as weights the population distribution by sex of the black population aged 20 years.

Annual life tables were initiated in 1945 for white males, white females, all other males, and all other females. The figures in table 12 by race and sex for the following years were estimated using a procedure other than the abridged life table methodology (18).

Years	Race and sex
1900–45 . . . . .	Total
1900–47 . . . . .	Male
1900–47 . . . . .	Female
1900–50 . . . . .	White
1900–44 . . . . .	White male
1900–44 . . . . .	White female

Annual life table functions were not calculated for the black population prior to 1970. In table 12, life expectancy for the black population for years prior to 1970 are estimated using figures for the total nonwhite population.

*Population bases for computing life tables*—Populations used for computing life tables shown in this report represent the population residing in the United States, enumerated as of April 1 for census years



and estimated as of July 1 for all other years. Life tables for the United States for 2002 are estimated using postcensal estimates published in 2002 based on the 2000 census estimated as of July 1, 2002. Life tables for 2000 shown in this report have been recomputed, based on revised populations that are consistent with the 2000 census. These estimates were produced under a collaborative arrangement with the U.S. Census Bureau and are based on the 2000 census counts by age, race, and sex, modified to be consistent with the Office of Management and Budget race categories as of 1977 and historical categories for death data (5). The modified procedures are described in detail elsewhere (7,8). Life tables previously published in annual reports of final data for 1991 to 1999 were based on postcensal population estimates derived from the 1990 census. The 1991–99 life tables will be re-estimated using 2000-based intercensal estimates once these become available.

**Medicare data**—Death rates at the oldest ages based on Medicare data are known to be more accurate than those based on vital statistics and census data. Consequently,  $q_x$  values calculated for ages 85 to 99 years are based on Medicare data prepared by the Centers for Medicare and Medicaid Services. Medicare data were limited to the group insured for hospital insurance as age reporting is considered best among this group (10,15,16). For the 2002 life tables, 1997 Medicare data were used as 2002 data were not available in time for the preparation of this report.

**Methodology**

A more detailed treatment of the methodology used to calculate these life tables is contained in a separate report (9). Calculation of the complete life table is derived from the probability of death ( $q_x$ ) which depends on the number of deaths ( $D_x$ ) and the midyear population ( $P_x$ ) for each single year of age ( $x$ ) observed during the calendar year of interest.

**Adjustment for deaths for which age was not reported**—An adjustment must be made to account for the small proportion of deaths each year for which age is not reported. The number of deaths in each age category is adjusted proportionally to account for those with not-stated ages. The following factor is used to make the adjustment. This factor ( $F$ ) is calculated for each race-sex group for which life tables are constructed.

$$F = \frac{D}{D^a} \tag{1}$$

where  $D$  is the total number of deaths and  $D^a$  is the total number of deaths for which age is stated.  $F$  is then applied by multiplying it times the number of deaths in each age group. Table I shows values for  $F$  by race and sex used to adjust the 2002 mortality data.

**Calculation of  $q_0$** — $q_0$  is calculated by using a birth cohort method employing a separation factor ( $f$ ) defined as the proportion of infant deaths in year  $t$  occurring to infants born in the previous year ( $t-1$ ).  $f$  can be calculated by categorizing infant deaths by date of birth. The probability of death in the first year is calculated as

$$q_0 = \frac{D_0(1-f)}{B^t} + \frac{D_0 f}{B^{t-1}} \tag{2}$$

where  $D_0$  is the number of infant deaths adjusted for not-reported age, and  $B^t$  and  $B^{t-1}$  are the numbers of births in years  $t$  and  $t-1$ , respectively. Table II shows separation factors and numbers of births by race and sex for 2001–2002.

**Table I. Values for  $F$  used to adjust for not-stated age based on 2002 mortality data**

Race and sex	Total deaths	Total deaths for which age was not stated	$F$
Total . . . . .	2,443,387	357	1.00014613
Male . . . . .	1,199,264	282	1.00023520
Female . . . . .	1,244,123	75	1.00006029
White . . . . .	2,102,589	286	1.00013604
Male . . . . .	1,025,196	230	1.00022440
Female . . . . .	1,077,393	56	1.00005198
Black . . . . .	290,051	57	1.00019656
Male . . . . .	146,835	40	1.00027249
Female . . . . .	143,216	17	1.00011872

**Calculation of  $q_x$  for ages 1–84**— $q_x$  is calculated assuming that  $l_x$  (number of survivors at exact age  $x$  in the life table population) declines linearly between  $x$  and  $x+1$ , i.e., that deaths between exact age  $x$  and  $x+1$  occur on average at age  $x+1/2$ . This simplification is generally considered acceptable when age intervals are 1 year of age in length (1). Under this assumption,  $l_x = L_x + 1/2 d_x$  where  $L_x$  is the average life table population at risk of dying between ages  $x$  and  $x+1$  and  $d_x$  is the number of deaths occurring between age  $x$  and  $x+1$ .  $q_x$  is then

$$q_x = \frac{d_x}{l_x} = \frac{d_x}{L_x + \frac{1}{2} d_x}$$

One can make the same assumption for the observed population, i.e., that the observed population aged  $x$  at risk of dying at the beginning of the year ( $N_x$ ) declines linearly between ages  $x$  and  $x+1$ . Under this assumption,  $N_x = P_x + 1/2 D_x$  where  $P_x$  is the midyear population or average observed population at risk of dying between ages  $x$  and  $x+1$  and  $D_x$  is the observed number of deaths occurring between ages  $x$  and  $x+1$ .  $q_x$  is calculated as

$$q_x = \frac{D_x}{N_x} = \frac{D_x}{P_x + \frac{1}{2} D_x} \tag{3}$$

For  $x = 1$  to 84,  $D_x$  is the observed number of deaths adjusted for not-stated age and  $P_x$  is the observed population at risk of dying between ages  $x$  and  $x + 1$ .

**Use of Medicare data at ages 85 to 99 years**—There is ample evidence that the rate of increase in  $q_x$  declines above age 85 (9,16,19–21). The change in  $q_x$  for ages above 85 years can be expressed using the formula

$$q_x = q_{x-1} \cdot e^k \tag{4}$$

where  $k_x$  denotes the age-specific rate of mortality change with age (16,20). Solving for  $k_x$  gives

$$k_x = \ln(q_x) - \ln(q_{x-1}) \tag{5}$$

Values for  $k_x$  are then obtained from the Medicare data. Table III shows values for  $k$  by age, race, and sex based on 1997 Medicare data. These data show clearly a declining rate of increase in  $q_x$  over age 85 years. These  $k_x$  values are then used to obtain  $q_x$  values for ages 85 to 99 years using equation 4. This method allows for flexibility in cases where the Medicare data are not available in a timely fashion. In these cases, Medicare data for the previous year can be used to calculate  $k_x$  values. Finally,  ${}_0q_{100}$  is set equal to 1.0

**Table II. Births in 2001 and 2002, deaths in 2002 of infants born in 2001 and 2002, and separation factors by race and sex: United States**

	Total			White			Black		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Births									
2001 . . . . .	4,025,933	2,057,922	1,968,011	3,177,626	1,625,511	1,552,115	606,156	307,834	298,322
2002 . . . . .	4,021,726	2,057,979	1,963,747	3,174,760	1,626,303	1,548,457	593,691	301,498	292,193
Deaths in 2002 of infants born in									
2001 . . . . .	3,458	1,974	1,484	2,261	1,311	950	1,038	574	464
2002 . . . . .	17,380	13,747	10,834	16,110	9,124	6,986	7,488	4,079	3,408
Separation factor (f) . . . . .	0.123	0.126	0.120	0.123	0.126	0.120	0.122	0.123	0.120

**Table III. k values by age, race, and sex based on insured Medicare data: United States, 1997**

Age	Total			White			Black		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
84-85 . . . . .	0.092590	0.089728	0.103281	0.093742	0.09136	0.10428	0.071864	0.066047	0.082589
85-86 . . . . .	0.090210	0.087018	0.100251	0.091842	0.08897	0.10185	0.070794	0.064457	0.081079
86-87 . . . . .	0.087830	0.084308	0.097221	0.089942	0.08658	0.09942	0.069724	0.062867	0.079569
87-88 . . . . .	0.085450	0.081598	0.094191	0.088042	0.08419	0.09699	0.068654	0.061277	0.078059
88-89 . . . . .	0.083070	0.078888	0.091161	0.086142	0.0818	0.09456	0.067584	0.059687	0.076549
89-90 . . . . .	0.080690	0.076178	0.088131	0.084242	0.07941	0.09213	0.066514	0.058097	0.075039
90-91 . . . . .	0.078310	0.073468	0.085101	0.082342	0.07702	0.0897	0.065444	0.056507	0.073529
91-92 . . . . .	0.075930	0.070758	0.082071	0.080442	0.07463	0.08727	0.064374	0.054917	0.072019
92-93 . . . . .	0.073550	0.068048	0.079041	0.078542	0.07224	0.08484	0.063304	0.053327	0.070509
93-94 . . . . .	0.071170	0.065338	0.076011	0.076642	0.06985	0.08241	0.062234	0.051737	0.068999
94-95 . . . . .	0.068790	0.062628	0.072981	0.074742	0.06746	0.07998	0.061164	0.050147	0.067489
95-96 . . . . .	0.066410	0.059918	0.069951	0.072842	0.06507	0.07755	0.060094	0.048557	0.065979
96-97 . . . . .	0.064030	0.057208	0.066921	0.070942	0.06268	0.07512	0.059024	0.046967	0.064469
97-98 . . . . .	0.061650	0.054498	0.063891	0.069042	0.06029	0.07269	0.057954	0.045377	0.062959
98-99 . . . . .	0.059270	0.051788	0.060861	0.067142	0.0579	0.07026	0.056884	0.043787	0.061449

since all will die at some point in this open-ended age interval. Once  $q_x$  is obtained for each single year of age, the other life table functions may be easily calculated.

*Survivor function ( $l_x$ )*—The life table radix,  $l_0$ , is set at 100,000. For ages greater than 0, the number of survivors remaining at exact age  $x$  is calculated as

$$l_x = l_{x-1} (1 - q_{x-1}) \quad [6]$$

*Decrement function ( $d_x$ )*—The number of deaths occurring between age  $x$  and  $x + 1$  is calculated from the survivor function.

$$d_x = l_x - l_{x+1} = l_x q_x \quad [7]$$

Note that  ${}_{\infty}d_{100} = {}_{\infty}l_{100}$  since  ${}_{\infty}q_{100} = 1.0$ .

*Person-years lived ( $L_x$ )*—Person-years lived for ages 1 to 99 years is calculated assuming that the survivor function declines linearly between age  $x$  and  $x + 1$ . This gives the formula

$$L_x = \frac{1}{2} (l_x + l_{x+1}) = l_x - \frac{1}{2} d_x \quad [8]$$

For  $x = 0$ , the separation factor  $f$  is used to calculate  $L_0$ .

$$L_0 = f l_0 + (1 - f) l_1$$

${}_{\infty}L_{100}$  is calculated by surviving the life table cohort from age 100 using equations 4, 5, and 6 until  $L_x$  at these ages is essentially zero (somewhere between ages 110 and 120).  $q_x$  for these ages can be

extrapolated from the Medicare data using equation 4. However,  $k_x$  values must be estimated for these ages.  $k_x$  can be modeled as a linear function of age

$$k_x = k_{85} + (x - 85)s \quad [9]$$

where  $s$  is the slope of the change in  $k_x$  by age and  $k_{85}$  is calculated as  $[\ln(q_{88}/q_{81})]/7$  in order to minimize the effects of random fluctuations (16,21).  $s$  can be obtained by treating equation 9 as a linear regression model. Calculated values for  $s$  are shown in table IV. The predicted values for  $k_x$  are then used to calculate  $q_x$  above age 100 using equation 4. The corresponding  $L_x$  values for ages 100 years and over are then summed to give  ${}_{\infty}L_{100}$ .

*Person-years lived at and above age  $x$  ( $T_x$ )*— $T_x$  is calculated by summing  $L_x$  values at and above age  $x$ .

$$T_x = \sum_{t=0}^{\infty} L_{x+t} \quad [10]$$

*Life expectancy at age  $x$  ( $e_x$ )*—Life expectancy at exact age  $x$  is calculated as

$$e_x = \frac{T_x}{l_x} \quad [11]$$

**Table IV. Slope of the change in *k* values (*s*) by race and sex**

Race and sex	<i>s</i>
Total, both sexes . . . . .	-0.002379
Male . . . . .	-0.002710
Female . . . . .	-0.003031
White, both sexes . . . . .	-0.001902
Male . . . . .	-0.002390
Female . . . . .	-0.002427
Black, both sexes . . . . .	-0.001074
Male . . . . .	-0.001586
Female . . . . .	-0.001512

**Abriding the complete life table**

An abridged or collapsed version of the complete life table can be easily calculated in which life table functions are shown for 5-year rather than single-year age intervals. It is often desirable to summarize the life table and save space when publishing life table data by single years of age. The abridgement of the complete life table is simplified by an important property of three of the six life table functions. The  $l_x$ ,  $T_x$ , and  $e_x$  functions describe exact age  $x$ , i.e., the beginning of the age interval  $x$  to  $x + n$  ( $n$  denotes the length of the age interval for 5-year age intervals  $n = 5$ ). Life expectancy at age 20 ( $e_{20}$ ), for example, has the same value regardless of whether the age

interval is 20–21 years or 20–25 years. Thus, the values  $l_x$ ,  $T_x$ , and  $e_x$  can be extracted at 5-year intervals from the complete life table and placed into the abridged life table (compare  $l_x$ ,  $T_x$ , and  $e_x$  in [table V](#) with the same functions in [table 1](#)). It is also illustrative to compare values for  $e_x$  and  $l_x$  in [tables A](#) and [B](#) with their corresponding values presented in [tables 1–9](#). The  $q_x$ ,  $d_x$ , and  $L_x$  functions, in contrast, describe the age interval  $x$  to  $x + n$ . In fact, for abridged life tables, the notation for these functions is different ( ${}_nq_x$ ,  ${}_nd_x$ , and  ${}_nL_x$ ). Thus,  ${}_5q_{20}$  is the probability of dying between ages 20 and 25 years and will obviously be somewhat larger than  $q_{20}$ , the probability of dying between ages 20 and 21 years. Taking this into account,  ${}_nq_x$ ,  ${}_nd_x$ , and  ${}_nL_x$  must be recalculated in the abridged life table. It is simplest to begin with  ${}_nd_x$ . The calculations are made for all but the final age interval as follows:

$${}_nd_x = l_x - l_{x+n}$$

$${}_nq_x = \frac{{}_nd_x}{l_x}$$

$${}_nL_x = T_x - T_{x+n}$$

Note that for the open-ended interval, ages 100 and over:  ${}_{\infty}d_{100} = l_{100}$ ,  ${}_{\infty}q_{100} = 1.0$ , and  ${}_{\infty}L_{100} = T_{100}$ . [Table V](#) shows each of the life table functions for the 2001 U.S. total population abridged from [table 1](#).

**Table V. Abridged life table for the total population: United States, 2002**

Age	Probability of dying between ages $x$ to $x+n$	Number surviving to age $x$	Number dying between ages $x$ to $x+n$	Person-years lived between ages $x$ to $x+n$	Total number of person-years lived above age $x$	Expectation of life at age $x$
	${}_nq_x$	$l_x$	${}_nd_x$	${}_nL_x$	$T_x$	$e_x$
0–1 . . . . .	0.006971	100,000	697	99,389	7,725,787	77.3
1–5 . . . . .	0.001238	99,303	123	396,921	7,626,399	76.8
5–10 . . . . .	0.000759	99,180	75	495,706	7,229,477	72.9
0–15 . . . . .	0.000980	99,105	97	495,311	6,733,771	67.9
15–20 . . . . .	0.003386	99,008	335	494,345	6,238,460	63.0
0–25 . . . . .	0.004747	98,672	468	492,189	5,744,116	58.2
25–30 . . . . .	0.004722	98,204	464	489,871	5,251,927	53.5
30–35 . . . . .	0.005572	97,740	545	487,395	4,762,056	48.7
35–40 . . . . .	0.007996	97,196	777	484,164	4,274,661	44.0
40–45 . . . . .	0.012066	96,419	1,163	479,362	3,790,497	39.3
45–50 . . . . .	0.017765	95,255	1,692	472,292	3,311,135	34.8
50–55 . . . . .	0.025380	93,563	2,375	462,186	2,838,843	30.3
55–60 . . . . .	0.038135	91,188	3,478	447,838	2,376,658	26.1
60–65 . . . . .	0.058187	87,711	5,104	426,603	1,928,820	22.0
65–70 . . . . .	0.088029	82,607	7,272	395,866	1,502,217	18.2
70–75 . . . . .	0.133076	75,335	10,025	352,791	1,106,350	14.7
75–80 . . . . .	0.201067	65,310	13,132	294,954	753,560	11.5
80–85 . . . . .	0.304230	52,178	15,874	222,013	458,606	8.8
85–90 . . . . .	0.447667	36,304	16,252	140,041	236,593	6.5
90–95 . . . . .	0.599618	20,052	12,024	67,822	96,552	4.8
95–100 . . . . .	0.739020	8,028	5,933	23,056	28,730	3.6
100+ . . . . .	1.000000	2,095	2,095	5,675	5,675	2.7

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