United States Life Tables, 2004

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Abstract

This report presents period life tables for the United States based on age-specific death rates in 2004. Data used to prepare these life tables are 2004 final mortality statistics; July 1, 2004, 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 2004, the overall expectation of life at birth was 77.8 years, representing an increase of 0.4 year from life expectancy in 2003. Between 2003 and 2004, life expectancy increased for males and females, and for both the white and black populations. Life expectancy increased by 0.5 years (from 72.6 to 73.1) for the black population and by 0.4 year (from 77.9 to 78.3) for the white population. Both males and females in each race group experienced increases in life expectancy between 2003 and 2004. The greatest increase was experienced by black males with an increase of 0.6 year (from 68.9 to 69.5). Life expectancy increased by 0.4 year for black females (from 75.9 to 76.3), for white females (from 80.4 to 80.8), and for white males (from 75.3 to 75.7).

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).

Keywords: life expectancy • life tables • survival • death rates • race

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 2004 assumes a hypothetical cohort subject throughout its lifetime to the age-specific death rates prevailing for the actual population in 2004. 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 2004 are final numbers of deaths for the year 2004, postcensal population estimates for the year 2004, 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 consistent with the postcensal estimates of 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 Hawaiian or other Pacific Islanders. Under the prior OMB standards (issued in 1977), data for Asian or Pacific Islander persons were collected as a single group (5). Beginning with deaths occurring in 2003, some states implemented multiple-race categories on the death certificate. Most states continue to 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 Hawaiian or other Pacific Islanders). Death certificate data by race for these states (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 2000–2004 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 Hawaiian or other Pacific Islanders as a combined category, Asian or Pacific Islander, 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). It is anticipated that "bridged" population data will be used over the next few years for computing population-based rates. Multiple-race data for those states that implemented the 1997 OMB guidelines in 2003 are bridged back to single race categories. Once all states are collecting 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 84 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 2004 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 2004 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 2004 for the total population was 77.8 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, 53,925 persons out of the original 2004 synthetic life table cohort of 100,000 (or 53.9 percent) were alive at exact age 80. In other words, the probability that a person will survive from birth to age 80, given 2004 age-specific mortality, is 54 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 (38,329) by the number of survivors at age 20 (98,709), which results in a 38.8 percent probability of survival.

Explanation of the columns of the life table

Column 1—(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 0.001266 (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, 99,391 will complete the first year of life and enter the second; 99,218 will reach age 10; 98,944 will reach age 20; and 45,438 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, 747 will die in the first year of life; 125 between ages 20 and 21; and 1,261 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 98,424 for males in the age interval 20–21 years is the total number of years lived between the 20th and 21st birthdays by the 98,486 (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.

Table A. Expectation of life by age, race, and sex: United States, 2004

Age	All races			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
0.	77.8	75.2	80.4	78.3	75.7	80.8	73.1	69.5	76.3
1.	77.4	74.7	79.9	77.7	75.2	80.2	73.1	69.6	76.3
5.	73.5	70.8	76.0	73.8	71.3	76.3	69.2	65.7	72.4
10.	68.5	65.9	71.0	68.9	66.3	71.3	64.3	60.8	67.5
15.	63.6	61.0	66.1	63.9	61.4	66.4	59.4	55.9	62.5
20.	58.8	56.2	61.2	59.1	56.6	61.5	54.6	51.2	57.7
25.	54.0	51.6	56.3	54.4	52.0	56.6	50.0	46.7	52.8
30.	49.3	46.9	51.5	49.6	47.3	51.8	45.4	42.3	48.1
35.	44.5	42.2	46.6	44.8	42.6	46.9	40.8	37.8	43.4
40.	39.9	37.6	41.9	40.1	37.9	42.1	36.3	33.4	38.8
45.	35.3	33.1	37.2	35.5	33.4	37.4	31.9	29.1	34.3
50.	30.9	28.8	32.7	31.1	29.1	32.9	27.8	25.1	30.1
55.	26.6	24.7	28.3	26.7	24.9	28.4	24.0	21.5	26.0
60.	22.5	20.8	24.0	22.6	20.9	24.1	20.4	18.2	22.2
65.	18.7	17.1	20.0	18.7	17.2	20.0	17.1	15.2	18.6
70.	15.1	13.7	16.2	15.1	13.7	16.2	14.1	12.4	15.3
75.	11.9	10.7	12.8	11.9	10.7	12.8	11.4	9.9	12.2
80.	9.1	8.2	9.8	9.1	8.1	9.7	9.1	8.0	9.6
85.	6.8	6.1	7.2	6.7	6.0	7.1	7.1	6.3	7.5
90.	5.0	4.4	5.2	4.9	4.3	5.1	5.5	4.9	5.7
95.	3.6	3.2	3.7	3.5	3.1	3.6	4.2	3.8	4.3
100	2.6	2.3	2.6	2.5	2.2	2.5	3.2	2.9	3.2

For example, the figure 5,537,328 is the total number of years lived after attaining age 20 by the 98,486 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 56.2 years (5,537,328 divided by 98,486) (Table 2).

Results

Life expectancy in the United States

Tables 1–9 show complete life tables by race (white and black) and sex for 2004. Tables A and B summarize life expectancy and survival by age, race, and sex. Life expectancy at birth for 2004 represents the average number of years that a group of infants would live if the infants were to experience throughout life the age-specific

Table B. Number of survivors by age, out of 100,000 born alive, by race and sex: United States, 2004

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.	99,320	99,253	99,391	99,434	99,378	99,493	98,616	98,475	98,763
5.	99,202	99,124	99,283	99,327	99,261	99,397	98,441	98,285	98,603
10.	99,129	99,043	99,218	99,261	99,187	99,339	98,334	98,171	98,503
15.	99,036	98,936	99,142	99,175	99,085	99,268	98,210	98,030	98,396
20.	98,709	98,486	98,944	98,856	98,655	99,068	97,809	97,436	98,195
25.	98,246	97,809	98,710	98,420	98,020	98,849	97,131	96,415	97,865
30.	97,776	97,148	98,442	97,992	97,418	98,608	96,321	95,241	97,402
35.	97,250	96,455	98,088	97,512	96,784	98,292	95,404	94,011	96,774
40.	96,517	95,527	97,555	96,831	95,915	97,809	94,200	92,504	95,849
45.	95,406	94,154	96,709	95,797	94,617	97,047	92,396	90,366	94,347
50.	93,735	92,078	95,445	94,249	92,680	95,896	89,614	86,946	92,146
55.	91,357	89,089	93,676	92,044	89,894	94,282	85,599	81,898	89,063
60.	88,038	85,067	91,058	88,908	86,103	91,810	80,282	75,282	84,923
65.	83,114	79,213	87,043	84,145	80,450	87,930	73,268	66,782	79,231
70.	76,191	71,168	81,200	77,338	72,531	82,206	64,578	56,723	71,774
75.	66,605	60,336	72,748	67,756	61,683	73,794	53,914	44,994	62,028
80.	53,925	46,461	61,045	54,953	47,622	62,031	41,332	31,985	49,714
85.	38,329	30,619	45,438	39,024	31,324	46,175	28,260	20,021	35,600
90.	22,219	15,948	27,782	22,460	16,145	28,082	16,403	10,432	21,627
95.	9,419	5,808	12,448	9,330	5,720	12,362	7,554	4,180	10,374
100	2,510	1,261	3,460	2,381	1,175	3,299	2,534	1,178	3,559

death rates prevailing in 2004. In 2004, life expectancy at birth was 77.8 years, increasing by 0.4 year from 77.4 years in 2003. [The 2003 U.S. life tables figures presented in this report are revised estimates. The original "United States Life Tables, 2003" report, published in April 2006 contained an error. A copy of the revised report is available from: http://www.cdc.gov/nchs/data/nvsr/nvsr54/nvsr54_14.pdf]. 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 in 2004 was 75.2 years for males, increasing by 0.5 year from 74.7 years in 2003. Life expectancy for females was 80.4 years, increasing by 0.4 year from 80.0 years in 2003. The increase in life expectancy between 2003 and 2004 for females was primarily the result of decreases in mortality from diseases of heart, malignant neoplasms, cerebrovascular diseases, chronic lower respiratory diseases, and pneumonia. The increase in life expectancy for females could have been greater than 0.4 year were it not for the offsetting effect of increases in mortality from accidents, suicide, Alzheimer's disease, and maternal conditions. For males, life expectancy increased primarily because of decreases in mortality from diseases of heart, malignant neoplasms, cerebrovascular diseases, chronic lower respiratory diseases, and pneumonia. The increase in life expectancy for males could have been greater than 0.5 year were it not for the offsetting increases in mortality from accidents, hypertension, and suicide (12).

The difference in life expectancy between the sexes was 5.2 years in 2004, down by 0.1 year from 2003. 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 5.2 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 2003 and 2004, life expectancy for the black population rose 0.5 year to 73.1 years. For the white population, life expectancy rose by 0.4 year to 78.3 years. The difference in life expectancy between the white and black populations was 5.2 years in 2004, 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 (80.8 years), followed by black females (76.3 years), white males (75.7 years), and black males (69.5 years). Between 2003 and 2004, life expectancy increased 0.6 year for black males (from 68.9 in 2003 to 69.5 in 2004). Black males experienced an unprecedented decline in life expectancy every year for 1984–1989 (14), but annual increases in 1990–1992 and 1994–2004. From 2003 to 2004, life expectancy for black females increased from 75.9 years to 76.3 years, an increase of 0.4 year. Life expectancy for white males rose 0.4 year, from 75.3 years in 2003 to
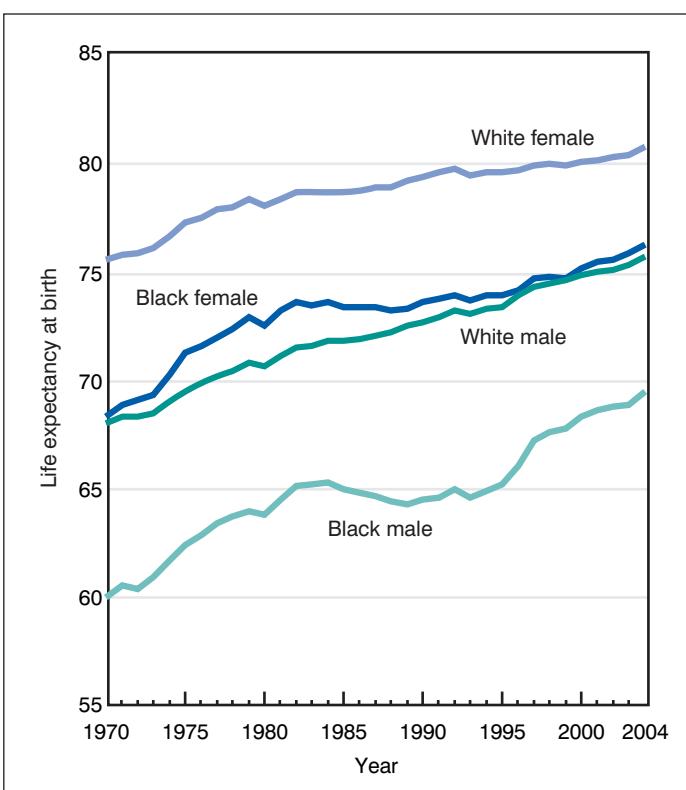
Figure 1. Life expectancy at birth, by race and sex: 1970–2004

75.7 years in 2004. White female life expectancy increased during the same period by 0.4 year from 80.4 to 80.8 years. Overall, gains in life expectancy between 1980 and 2004 were 5.7 years for black males, 5.0 years for white males, 3.8 years for black females, and 2.7 years for white females (Table 12).

The 2004 life table may be used to compare life expectancy at any age from birth onward. On the basis of mortality experienced in 2004, a person aged 65 years could expect to live an average of 18.7 more years for a total of 83.7 years, and a person aged 100 years could expect to live an additional 2.6 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 2004. In 2004, 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-four percent of the 2004 synthetic life table cohort survived to age 80 and about 2.5 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 and Table B), white females have the highest median age at death with about 49.6 percent
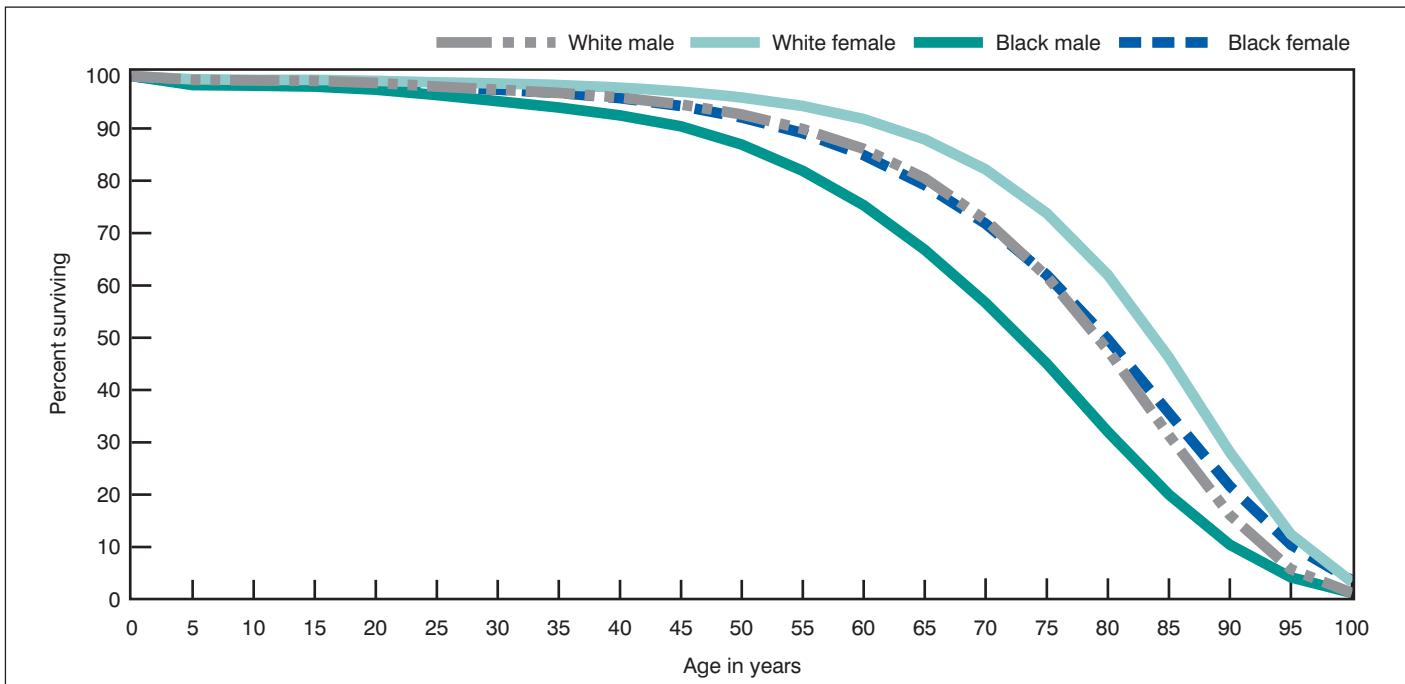
Figure 2. Percentage surviving by age, race, and sex: United States, 2004

surviving to age 84. Of the original hypothetical cohort of 100,000 infant white females, 99.1 percent survive to age 20, 87.9 percent survive to age 65, and 46.2 percent survive to age 85. For white males and black females, the pattern of survival by age is similar. These groups have approximately the same median age at death of about 80 years. However, white males have slightly higher survival rates than black females at the younger ages with 98.7 percent surviving to age 20 and 80.5 percent surviving to age 65 compared with 98.2 percent and 79.2 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 31.3 percent compared with 35.6 percent for black females. This crossover, which occurs at about age 74, is clearly shown in Figure 2. The median age at death for black males is 73 years, 11 years less than that for white females. 97.4 percent of black males survive to age 20, 66.8 percent to age 65, and 20.0 percent to age 85. By age 100, there is very little difference between the white and black populations in terms of survival. Approximately 1 percent of white and black males and 3 percent of white and black females, respectively, survive to age 100.

Plotting the percentage surviving by age for the periods 1900–1902, 1949–1951, and 2004 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 2004 is nearly flat until about age 50 after which the decline in survival becomes more rapid. Improvements in survival between 1900–1902 and 1949–1951 occurred at all ages, although the largest improvements were among the younger population. Between 1949–1951 and 2004, improvements occurred primarily for the older population.
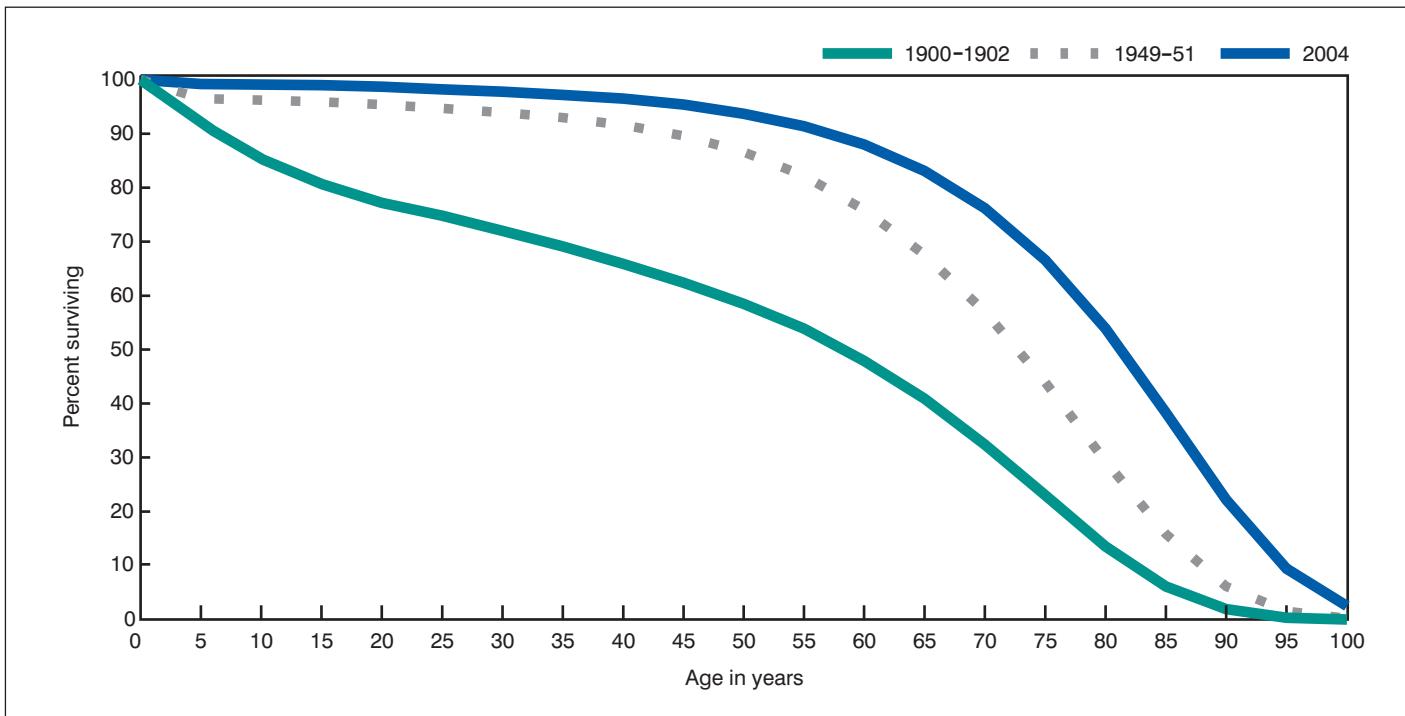
Figure 3. Percentage surviving by age: Death-registration states, 1900–1902, United States, 1949–1951, and 2004

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List of Detailed Tables

Table 1. Life table for the total population: United States, 2004

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	0.006799	100,000	680	99,403	7,783,712	77.8
1–2	0.000483	99,320	48	99,296	7,684,309	77.4
2–3	0.000297	99,272	29	99,257	7,585,013	76.4
3–4	0.000224	99,243	22	99,232	7,485,755	75.4
4–5	0.000188	99,220	19	99,211	7,386,524	74.4
5–6	0.000171	99,202	17	99,193	7,287,313	73.5
6–7	0.000161	99,185	16	99,177	7,188,119	72.5
7–8	0.000151	99,169	15	99,161	7,088,943	71.5
8–9	0.000136	99,154	14	99,147	6,989,781	70.5
9–10	0.000119	99,140	12	99,134	6,890,634	69.5
10–11.	0.000106	99,129	11	99,123	6,791,500	68.5
11–12.	0.000112	99,118	11	99,112	6,692,377	67.5
12–13	0.000149	99,107	15	99,100	6,593,264	66.5
13–14	0.000227	99,092	23	99,081	6,494,164	65.5
14–15	0.000337	99,070	33	99,053	6,395,084	64.6
15–16	0.000460	99,036	46	99,014	6,296,031	63.6
16–17	0.000579	98,991	57	98,962	6,197,017	62.6
17–18	0.000684	98,933	68	98,900	6,098,055	61.6
18–19	0.000763	98,866	75	98,828	5,999,155	60.7
19–20	0.000819	98,790	81	98,750	5,900,327	59.7
20–21	0.000873	98,709	86	98,666	5,801,578	58.8
21–22	0.000926	98,623	91	98,577	5,702,911	57.8
22–23	0.000960	98,532	95	98,484	5,604,334	56.9
23–24	0.000972	98,437	96	98,389	5,505,850	55.9
24–25	0.000969	98,341	95	98,294	5,407,460	55.0
25–26	0.000960	98,246	94	98,199	5,309,166	54.0
26–27	0.000954	98,152	94	98,105	5,210,967	53.1
27–28	0.000952	98,058	93	98,012	5,112,862	52.1
28–29	0.000958	97,965	94	97,918	5,014,850	51.2
29–30	0.000973	97,871	95	97,824	4,916,932	50.2
30–31	0.000994	97,776	97	97,727	4,819,109	49.3
31–32	0.001023	97,679	100	97,629	4,721,382	48.3
32–33	0.001063	97,579	104	97,527	4,623,753	47.4
33–34	0.001119	97,475	109	97,420	4,526,226	46.4
34–35	0.001192	97,366	116	97,308	4,428,805	45.5
35–36	0.001275	97,250	124	97,188	4,331,497	44.5
36–37	0.001373	97,126	133	97,059	4,234,310	43.6
37–38	0.001493	96,993	145	96,920	4,137,250	42.7
38–39	0.001634	96,848	158	96,769	4,040,330	41.7
39–40	0.001788	96,690	173	96,603	3,943,562	40.8
40–41	0.001945	96,517	188	96,423	3,846,959	39.9
41–42	0.002107	96,329	203	96,227	3,750,536	38.9
42–43	0.002287	96,126	220	96,016	3,654,308	38.0
43–44	0.002494	95,906	239	95,787	3,558,292	37.1
44–45	0.002727	95,667	261	95,537	3,462,506	36.2
45–46	0.002982	95,406	284	95,264	3,366,969	35.3
46–47	0.003246	95,122	309	94,967	3,271,705	34.4
47–48	0.003520	94,813	334	94,646	3,176,738	33.5
48–49	0.003799	94,479	359	94,300	3,082,092	32.6
49–50	0.004088	94,120	385	93,928	2,987,792	31.7
50–51	0.004404	93,735	413	93,529	2,893,864	30.9
51–52	0.004750	93,323	443	93,101	2,800,335	30.0
52–53	0.005113	92,879	475	92,642	2,707,234	29.1
53–54	0.005488	92,404	507	92,151	2,614,592	28.3
54–55	0.005879	91,897	540	91,627	2,522,441	27.4
55–56	0.006295	91,357	575	91,070	2,430,814	26.6
56–57	0.006754	90,782	613	90,475	2,339,744	25.8
57–58	0.007280	90,169	656	89,841	2,249,269	24.9
58–59	0.007903	89,512	707	89,159	2,159,428	24.1
59–60	0.008633	88,805	767	88,422	2,070,269	23.3
60–61	0.009493	88,038	836	87,621	1,981,848	22.5
61–62	0.010449	87,203	911	86,747	1,894,227	21.7
62–63	0.011447	86,291	988	85,798	1,807,480	20.9
63–64	0.012428	85,304	1060	84,774	1,721,683	20.2
64–65	0.013408	84,244	1130	83,679	1,636,909	19.4

Table 1. Life table for the total population: United States, 2004—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
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
65–66	0.014473	83,114	1203	82,513	1,553,230	18.7
66–67	0.015703	81,911	1286	81,268	1,470,718	18.0
67–68	0.017081	80,625	1377	79,936	1,389,450	17.2
68–69	0.018623	79,248	1476	78,510	1,309,513	16.5
69–70	0.020322	77,772	1580	76,982	1,231,004	15.8
70–71	0.022104	76,191	1684	75,349	1,154,022	15.1
71–72	0.024023	74,507	1790	73,612	1,078,673	14.5
72–73	0.026216	72,717	1906	71,764	1,005,060	13.8
73–74	0.028745	70,811	2035	69,793	933,296	13.2
74–75	0.031561	68,776	2171	67,690	863,503	12.6
75–76	0.034427	66,605	2293	65,458	795,812	11.9
76–77	0.037379	64,312	2404	63,110	730,354	11.4
77–78	0.040756	61,908	2523	60,646	667,244	10.8
78–79	0.044764	59,385	2658	58,056	606,597	10.2
79–80	0.049395	56,727	2802	55,326	548,542	9.7
80–81	0.054471	53,925	2937	52,456	493,216	9.1
81–82	0.059772	50,987	3048	49,463	440,760	8.6
82–83	0.065438	47,940	3137	46,371	391,297	8.2
83–84	0.071598	44,803	3208	43,199	344,925	7.7
84–85	0.078516	41,595	3266	39,962	301,727	7.3
85–86	0.085898	38,329	3292	36,683	261,765	6.8
86–87	0.093895	35,037	3290	33,392	225,082	6.4
87–88	0.102542	31,747	3255	30,119	191,690	6.0
88–89	0.111875	28,491	3187	26,898	161,571	5.7
89–90	0.121928	25,304	3085	23,761	134,673	5.3
90–91	0.132733	22,219	2949	20,744	110,912	5.0
91–92	0.144318	19,270	2781	17,879	90,168	4.7
92–93	0.156707	16,489	2584	15,197	72,289	4.4
93–94	0.169922	13,905	2363	12,723	57,092	4.1
94–95	0.183975	11,542	2123	10,480	44,369	3.8
95–96	0.198875	9,419	1873	8,482	33,889	3.6
96–97	0.214620	7,545	1619	6,736	25,407	3.4
97–98	0.231201	5,926	1370	5,241	18,671	3.2
98–99	0.248600	4,556	1133	3,990	13,430	2.9
99–100	0.266786	3,423	913	2,967	9,440	2.8
100 or over	1.00000	2,510	2510	6,473	6,473	2.6

Table 2. Life table for males: United States, 2004

Age	Probability of dying between ages x to x+1 q(x)	Number surviving to age x l(x)	Number dying between ages x to x+1 d(x)	Person-years lived between ages x to x+1 L(x)	Total number of person-years lived above age x T(x)	Expectation of life at age x e(x)
0–1	0.007475	100,000	747	99,344	7,517,501	75.2
1–2	0.000508	99,253	50	99,227	7,418,157	74.7
2–3	0.000326	99,202	32	99,186	7,318,929	73.8
3–4	0.000250	99,170	25	99,157	7,219,744	72.8
4–5	0.000208	99,145	21	99,135	7,120,586	71.8
5–6	0.000191	99,124	19	99,115	7,021,451	70.8
6–7	0.000182	99,105	18	99,096	6,922,336	69.8
7–8	0.000171	99,087	17	99,079	6,823,240	68.9
8–9	0.000152	99,070	15	99,063	6,724,161	67.9
9–10	0.000125	99,055	12	99,049	6,625,098	66.9
10–11.	0.000105	99,043	10	99,038	6,526,049	65.9
11–12.	0.000111	99,033	11	99,027	6,427,011	64.9
12–13	0.000162	99,022	16	99,014	6,327,984	63.9
13–14	0.000274	99,006	27	98,992	6,228,970	62.9
14–15	0.000431	98,978	43	98,957	6,129,978	61.9
15–16	0.000608	98,936	60	98,906	6,031,021	61.0
16–17	0.000777	98,876	77	98,837	5,932,116	60.0
17–18	0.000935	98,799	92	98,753	5,833,278	59.0
18–19	0.001064	98,706	105	98,654	5,734,526	58.1
19–20	0.001166	98,601	115	98,544	5,635,872	57.2
20–21	0.001266	98,486	125	98,424	5,537,328	56.2
21–22	0.001360	98,362	134	98,295	5,438,904	55.3
22–23	0.001419	98,228	139	98,158	5,340,609	54.4
23–24	0.001435	98,089	141	98,018	5,242,451	53.4
24–25	0.001419	97,948	139	97,878	5,144,433	52.5
25–26	0.001390	97,809	136	97,741	5,046,554	51.6
26–27	0.001365	97,673	133	97,606	4,948,813	50.7
27–28	0.001344	97,540	131	97,474	4,851,207	49.7
28–29	0.001336	97,408	130	97,343	4,753,733	48.8
29–30	0.001341	97,278	130	97,213	4,656,390	47.9
30–31	0.001352	97,148	131	97,082	4,559,177	46.9
31–32	0.001371	97,017	133	96,950	4,462,094	46.0
32–33	0.001408	96,884	136	96,815	4,365,144	45.1
33–34	0.001469	96,747	142	96,676	4,268,329	44.1
34–35	0.001553	96,605	150	96,530	4,171,653	43.2
35–36	0.001653	96,455	159	96,375	4,075,123	42.2
36–37	0.001770	96,296	170	96,210	3,978,747	41.3
37–38	0.001911	96,125	184	96,033	3,882,537	40.4
38–39	0.002075	95,942	199	95,842	3,786,504	39.5
39–40	0.002254	95,742	216	95,635	3,690,662	38.5
40–41	0.002438	95,527	233	95,410	3,595,027	37.6
41–42	0.002632	95,294	251	95,168	3,499,617	36.7
42–43	0.002853	95,043	271	94,907	3,404,448	35.8
43–44	0.003113	94,772	295	94,624	3,309,541	34.9
44–45	0.003412	94,477	322	94,316	3,214,917	34.0
45–46	0.003735	94,154	352	93,979	3,120,601	33.1
46–47	0.004071	93,803	382	93,612	3,026,622	32.3
47–48	0.004428	93,421	414	93,214	2,933,010	31.4
48–49	0.004806	93,007	447	92,784	2,839,796	30.5
49–50	0.005206	92,560	482	92,319	2,747,012	29.7
50–51	0.005648	92,078	520	91,818	2,654,693	28.8
51–52	0.006121	91,558	560	91,278	2,562,875	28.0
52–53	0.006594	90,998	600	90,698	2,471,597	27.2
53–54	0.007045	90,398	637	90,079	2,380,899	26.3
54–55	0.007488	89,761	672	89,425	2,290,819	25.5
55–56	0.007946	89,089	708	88,735	2,201,394	24.7
56–57	0.008459	88,381	748	88,007	2,112,659	23.9
57–58	0.009064	87,633	794	87,236	2,024,652	23.1
58–59	0.009810	86,839	852	86,413	1,937,416	22.3
59–60	0.010706	85,987	921	85,527	1,851,002	21.5
60–61	0.011763	85,067	1,001	84,566	1,765,476	20.8
61–62	0.012934	84,066	1,087	83,522	1,680,909	20.0
62–63	0.014159	82,979	1,175	82,391	1,597,387	19.3
63–64	0.015362	81,804	1,257	81,175	1,514,996	18.5
64–65	0.016558	80,547	1,334	79,880	1,433,820	17.8

Table 2. Life table for males: United States, 2004—Con.

Age	Probability of dying between ages x to x+1 $q(_x)$	Number surviving to age x $l(_x)$	Number dying between ages x to x+1 $d(_x)$	Person-years lived between ages x to x+1 $L(_x)$	Total number of person-years lived above age x $T(_x)$	Expectation of life at age x $e(_x)$
65–66	0.017847	79,213	1,414	78,507	1,353,940	17.1
66–67	0.019331	77,800	1,504	77,048	1,275,433	16.4
67–68	0.020992	76,296	1,602	75,495	1,198,386	15.7
68–69	0.022858	74,694	1,707	73,840	1,122,891	15.0
69–70	0.024921	72,987	1,819	72,077	1,049,050	14.4
70–71	0.027065	71,168	1,926	70,205	976,973	13.7
71–72	0.029363	69,242	2,033	68,225	906,768	13.1
72–73	0.032031	67,209	2,153	66,132	838,543	12.5
73–74	0.035178	65,056	2,289	63,912	772,411	11.9
74–75	0.038734	62,767	2,431	61,552	708,499	11.3
75–76	0.042414	60,336	2,559	59,057	646,947	10.7
76–77	0.046171	57,777	2,668	56,443	587,891	10.2
77–78	0.050325	55,109	2,773	53,723	531,448	9.6
78–79	0.055085	52,336	2,883	50,894	477,725	9.1
79–80	0.060498	49,453	2,992	47,957	426,831	8.6
80–81	0.066557	46,461	3,092	44,915	378,873	8.2
81–82	0.072986	43,369	3,165	41,786	333,958	7.7
82–83	0.079682	40,204	3,204	38,602	292,172	7.3
83–84	0.086593	37,000	3,204	35,398	253,570	6.9
84–85	0.094013	33,796	3,177	32,207	218,172	6.5
85–86	0.102498	30,619	3,138	29,050	185,965	6.1
86–87	0.111640	27,481	3,068	25,947	156,915	5.7
87–88	0.121472	24,413	2,965	22,930	130,968	5.4
88–89	0.132023	21,447	2,832	20,031	108,039	5.0
89–90	0.143319	18,616	2,668	17,282	88,007	4.7
90–91	0.155383	15,948	2,478	14,709	70,726	4.4
91–92	0.168232	13,470	2,266	12,337	56,017	4.2
92–93	0.181880	11,204	2,038	10,185	43,680	3.9
93–94	0.196334	9,166	1,800	8,266	33,496	3.7
94–95	0.211592	7,366	1,559	6,587	25,229	3.4
95–96	0.227645	5,808	1,322	5,147	18,642	3.2
96–97	0.244476	4,486	1,097	3,937	13,496	3.0
97–98	0.262057	3,389	888	2,945	9,559	2.8
98–99	0.280351	2,501	701	2,150	6,614	2.6
99–100	0.299312	1,800	539	1,530	4,463	2.5
100 or over	1.00000	1,261	1,261	2,933	2,933	2.3

Table 3. Life table for females: United States, 2004

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	0.006091	100,000	609	99,465	8,038,173	80.4
1–2	0.000457	99,391	45	99,368	7,938,708	79.9
2–3	0.000267	99,346	26	99,332	7,839,340	78.9
3–4	0.000197	99,319	20	99,309	7,740,008	77.9
4–5	0.000168	99,299	17	99,291	7,640,699	76.9
5–6	0.000151	99,283	15	99,275	7,541,408	76.0
6–7	0.000138	99,268	14	99,261	7,442,132	75.0
7–8	0.000129	99,254	13	99,248	7,342,871	74.0
8–9	0.000120	99,241	12	99,235	7,243,624	73.0
9–10	0.000112	99,229	11	99,224	7,144,388	72.0
10–11.	0.000107	99,218	11	99,213	7,045,165	71.0
11–12.	0.000113	99,208	11	99,202	6,945,952	70.0
12–13	0.000135	99,196	13	99,190	6,846,750	69.0
13–14	0.000178	99,183	18	99,174	6,747,560	68.0
14–15	0.000237	99,165	23	99,154	6,648,386	67.0
15–16	0.000306	99,142	30	99,127	6,549,232	66.1
16–17	0.000371	99,112	37	99,093	6,450,105	65.1
17–18	0.000421	99,075	42	99,054	6,351,012	64.1
18–19	0.000446	99,033	44	99,011	6,251,958	63.1
19–20	0.000453	98,989	45	98,967	6,152,947	62.2
20–21	0.000456	98,944	45	98,922	6,053,981	61.2
21–22	0.000464	98,899	46	98,876	5,955,059	60.2
22–23	0.000471	98,853	47	98,830	5,856,183	59.2
23–24	0.000481	98,807	47	98,783	5,757,353	58.3
24–25	0.000492	98,759	49	98,735	5,658,571	57.3
25–26	0.000506	98,710	50	98,686	5,559,836	56.3
26–27	0.000522	98,661	51	98,635	5,461,150	55.4
27–28	0.000541	98,609	53	98,582	5,362,515	54.4
28–29	0.000565	98,556	56	98,528	5,263,933	53.4
29–30	0.000593	98,500	58	98,471	5,165,405	52.4
30–31	0.000627	98,442	62	98,411	5,066,934	51.5
31–32	0.000667	98,380	66	98,347	4,968,523	50.5
32–33	0.000712	98,314	70	98,279	4,870,176	49.5
33–34	0.000764	98,244	75	98,207	4,771,897	48.6
34–35	0.000825	98,169	81	98,129	4,673,690	47.6
35–36	0.000892	98,088	88	98,045	4,575,561	46.6
36–37	0.000971	98,001	95	97,953	4,477,516	45.7
37–38	0.001071	97,906	105	97,853	4,379,563	44.7
38–39	0.001190	97,801	116	97,743	4,281,710	43.8
39–40	0.001321	97,684	129	97,620	4,183,967	42.8
40–41	0.001453	97,555	142	97,485	4,086,347	41.9
41–42	0.001586	97,414	154	97,336	3,988,863	40.9
42–43	0.001727	97,259	168	97,175	3,891,526	40.0
43–44	0.001883	97,091	183	97,000	3,794,351	39.1
44–45	0.002055	96,908	199	96,809	3,697,351	38.2
45–46	0.002243	96,709	217	96,601	3,600,542	37.2
46–47	0.002439	96,492	235	96,375	3,503,941	36.3
47–48	0.002633	96,257	253	96,130	3,407,567	35.4
48–49	0.002819	96,004	271	95,868	3,311,436	34.5
49–50	0.003005	95,733	288	95,589	3,215,568	33.6
50–51	0.003204	95,445	306	95,292	3,119,979	32.7
51–52	0.003432	95,139	327	94,976	3,024,687	31.8
52–53	0.003695	94,813	350	94,638	2,929,711	30.9
53–54	0.004000	94,462	378	94,273	2,835,073	30.0
54–55	0.004346	94,085	409	93,880	2,740,800	29.1
55–56	0.004725	93,676	443	93,454	2,646,920	28.3
56–57	0.005137	93,233	479	92,994	2,553,465	27.4
57–58	0.005594	92,754	519	92,495	2,460,472	26.5
58–59	0.006110	92,235	564	91,954	2,367,977	25.7
59–60	0.006697	91,672	614	91,365	2,276,024	24.8
60–61	0.007389	91,058	673	90,721	2,184,659	24.0
61–62	0.008167	90,385	738	90,016	2,093,938	23.2
62–63	0.008977	89,647	805	89,244	2,003,922	22.4
63–64	0.009776	88,842	868	88,408	1,914,677	21.6
64–65	0.010581	87,974	931	87,508	1,826,269	20.8

Table 3. Life table for females: United States, 2004—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
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
65–66	0.011466	87,043	998	86,544	1,738,761	20.0
66–67	0.012498	86,045	1,075	85,507	1,652,218	19.2
67–68	0.013661	84,969	1,161	84,389	1,566,711	18.4
68–69	0.014966	83,809	1,254	83,181	1,482,322	17.7
69–70	0.016407	82,554	1,355	81,877	1,399,140	16.9
70–71	0.017945	81,200	1,457	80,471	1,317,263	16.2
71–72	0.019617	79,743	1,564	78,960	1,236,792	15.5
72–73	0.021503	78,178	1,681	77,338	1,157,831	14.8
73–74	0.023635	76,497	1,808	75,593	1,080,494	14.1
74–75	0.025987	74,689	1,941	73,719	1,004,900	13.5
75–76	0.028358	72,748	2,063	71,717	931,182	12.8
76–77	0.030849	70,685	2,181	69,595	859,465	12.2
77–78	0.033818	68,505	2,317	67,346	789,870	11.5
78–79	0.037481	66,188	2,481	64,948	722,524	10.9
79–80	0.041792	63,707	2,662	62,376	657,576	10.3
80–81	0.046463	61,045	2,836	59,627	595,200	9.8
81–82	0.051306	58,208	2,986	56,715	535,574	9.2
82–83	0.056613	55,222	3,126	53,659	478,858	8.7
83–84	0.062608	52,096	3,262	50,465	425,200	8.2
84–85	0.069533	48,834	3,396	47,136	374,735	7.7
85–86	0.076645	45,438	3,483	43,697	327,598	7.2
86–87	0.084411	41,956	3,542	40,185	283,901	6.8
87–88	0.092876	38,414	3,568	36,630	243,716	6.3
88–89	0.102085	34,847	3,557	33,068	207,086	5.9
89–90	0.112081	31,289	3,507	29,536	174,018	5.6
90–91	0.122907	27,782	3,415	26,075	144,482	5.2
91–92	0.134602	24,368	3,280	22,728	118,407	4.9
92–93	0.147201	21,088	3,104	19,536	95,680	4.5
93–94	0.160735	17,984	2,891	16,538	76,144	4.2
94–95	0.175225	15,093	2,645	13,771	59,606	3.9
95–96	0.190689	12,448	2,374	11,261	45,835	3.7
96–97	0.207132	10,075	2,087	9,031	34,574	3.4
97–98	0.224550	7,988	1,794	7,091	25,543	3.2
98–99	0.242924	6,194	1,505	5,442	18,452	3.0
99–100	0.262224	4,689	1,230	4,075	13,010	2.8
100 or over	1.00000	3,460	3,460	8,935	8,935	2.6

Table 4. Life table for the white population: United States, 2004

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	0.005657	100,000	566	99,502	7,828,980	78.3
1–2	0.000436	99,434	43	99,413	7,729,477	77.7
2–3	0.000266	99,391	26	99,378	7,630,065	76.8
3–4	0.000199	99,364	20	99,355	7,530,687	75.8
4–5	0.000174	99,345	17	99,336	7,431,332	74.8
5–6	0.000154	99,327	15	99,320	7,331,996	73.8
6–7	0.000146	99,312	15	99,305	7,232,677	72.8
7–8	0.000138	99,298	14	99,291	7,133,372	71.8
8–9	0.000125	99,284	12	99,278	7,034,081	70.8
9–10	0.000107	99,271	11	99,266	6,934,803	69.9
10–11.	0.000094	99,261	9	99,256	6,835,537	68.9
11–12.	0.000098	99,251	10	99,247	6,736,281	67.9
12–13	0.000136	99,242	13	99,235	6,637,035	66.9
13–14	0.000215	99,228	21	99,218	6,537,800	65.9
14–15	0.000326	99,207	32	99,191	6,438,582	64.9
15–16	0.000451	99,175	45	99,152	6,339,391	63.9
16–17	0.000568	99,130	56	99,102	6,240,239	63.0
17–18	0.000670	99,073	66	99,040	6,141,138	62.0
18–19	0.000742	99,007	73	98,970	6,042,097	61.0
19–20	0.000788	98,934	78	98,895	5,943,127	60.1
20–21	0.000832	98,856	82	98,815	5,844,232	59.1
21–22	0.000876	98,773	86	98,730	5,745,418	58.2
22–23	0.000901	98,687	89	98,643	5,646,687	57.2
23–24	0.000907	98,598	89	98,553	5,548,045	56.3
24–25	0.000897	98,509	88	98,464	5,449,491	55.3
25–26	0.000882	98,420	87	98,377	5,351,027	54.4
26–27	0.000870	98,333	86	98,291	5,252,650	53.4
27–28	0.000863	98,248	85	98,206	5,154,359	52.5
28–29	0.000866	98,163	85	98,121	5,056,154	51.5
29–30	0.000880	98,078	86	98,035	4,958,033	50.6
30–31	0.000900	97,992	88	97,948	4,859,998	49.6
31–32	0.000927	97,904	91	97,858	4,762,051	48.6
32–33	0.000967	97,813	95	97,765	4,664,193	47.7
33–34	0.001022	97,718	100	97,668	4,566,427	46.7
34–35	0.001092	97,618	107	97,565	4,468,759	45.8
35–36	0.001174	97,512	114	97,454	4,371,194	44.8
36–37	0.001268	97,397	124	97,335	4,273,739	43.9
37–38	0.001383	97,274	135	97,206	4,176,404	42.9
38–39	0.001516	97,139	147	97,066	4,079,197	42.0
39–40	0.001660	96,992	161	96,911	3,982,132	41.1
40–41	0.001807	96,831	175	96,743	3,885,220	40.1
41–42	0.001957	96,656	189	96,561	3,788,477	39.2
42–43	0.002123	96,467	205	96,364	3,691,916	38.3
43–44	0.002312	96,262	223	96,151	3,595,551	37.4
44–45	0.002525	96,039	242	95,918	3,499,400	36.4
45–46	0.002757	95,797	264	95,665	3,403,482	35.5
46–47	0.002999	95,533	287	95,390	3,307,817	34.6
47–48	0.003248	95,246	309	95,092	3,212,428	33.7
48–49	0.003500	94,937	332	94,771	3,117,336	32.8
49–50	0.003761	94,605	356	94,427	3,022,565	31.9
50–51	0.004046	94,249	381	94,058	2,928,138	31.1
51–52	0.004362	93,868	409	93,663	2,834,080	30.2
52–53	0.004701	93,458	439	93,238	2,740,417	29.3
53–54	0.005061	93,019	471	92,783	2,647,179	28.5
54–55	0.005444	92,548	504	92,296	2,554,395	27.6
55–56	0.005850	92,044	539	91,775	2,462,099	26.7
56–57	0.006298	91,506	576	91,218	2,370,324	25.9
57–58	0.006814	90,929	620	90,620	2,279,107	25.1
58–59	0.007428	90,310	671	89,974	2,188,487	24.2
59–60	0.008153	89,639	731	89,274	2,098,513	23.4
60–61	0.009012	88,908	801	88,507	2,009,239	22.6
61–62	0.009968	88,107	878	87,668	1,920,732	21.8
62–63	0.010960	87,229	956	86,751	1,833,064	21.0
63–64	0.011926	86,273	1,029	85,758	1,746,313	20.2
64–65	0.012889	85,244	1,099	84,694	1,660,555	19.5

Table 4. Life table for the white population: United States, 2004—Con.

Age	Probability of dying between ages x to x+1 q(x)	Number surviving to age x l(x)	Number dying between ages x to x+1 d(x)	Person-years lived between ages x to x+1 L(x)	Total number of person-years lived above age x T(x)	Expectation of life at age x e(x)
65–66	0.013942	84,145	1,173	83,558	1,575,861	18.7
66–67	0.015175	82,972	1,259	82,342	1,492,303	18.0
67–68	0.016564	81,713	1,353	81,036	1,409,960	17.3
68–69	0.018122	80,359	1,456	79,631	1,328,924	16.5
69–70	0.019837	78,903	1,565	78,120	1,249,293	15.8
70–71	0.021635	77,338	1,673	76,501	1,171,173	15.1
71–72	0.023575	75,665	1,784	74,773	1,094,671	14.5
72–73	0.025789	73,881	1,905	72,928	1,019,899	13.8
73–74	0.028337	71,975	2,040	70,956	946,971	13.2
74–75	0.031168	69,936	2,180	68,846	876,015	12.5
75–76	0.034030	67,756	2,306	66,603	807,169	11.9
76–77	0.036976	65,450	2,420	64,240	740,566	11.3
77–78	0.040377	63,030	2,545	61,758	676,325	10.7
78–79	0.044458	60,485	2,689	59,141	614,568	10.2
79–80	0.049203	57,796	2,844	56,374	555,427	9.6
80–81	0.054399	54,953	2,989	53,458	499,052	9.1
81–82	0.059806	51,963	3,108	50,409	445,595	8.6
82–83	0.065588	48,855	3,204	47,253	395,185	8.1
83–84	0.071885	45,651	3,282	44,010	347,932	7.6
84–85	0.078968	42,369	3,346	40,697	303,922	7.2
85–86	0.086576	39,024	3,379	37,334	263,225	6.7
86–87	0.094832	35,645	3,380	33,955	225,891	6.3
87–88	0.103776	32,265	3,348	30,591	191,936	5.9
88–89	0.113444	28,917	3,280	27,276	161,345	5.6
89–90	0.123874	25,636	3,176	24,048	134,069	5.2
90–91	0.135098	22,460	3,034	20,943	110,021	4.9
91–92	0.147146	19,426	2,858	17,997	89,077	4.6
92–93	0.160045	16,568	2,652	15,242	71,080	4.3
93–94	0.173814	13,916	2,419	12,707	55,839	4.0
94–95	0.188466	11,497	2,167	10,414	43,132	3.8
95–96	0.204007	9,330	1,903	8,379	32,718	3.5
96–97	0.220434	7,427	1,637	6,608	24,339	3.3
97–98	0.237733	5,790	1,376	5,102	17,731	3.1
98–99	0.255879	4,413	1,129	3,849	12,629	2.9
99–100	0.274837	3,284	903	2,833	8,781	2.7
100 or over	1.00000	2,381	2,381	5,948	5,948	2.5

Table 5. Life table for white males: United States, 2004

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	0.006219	100,000	622	99,453	7,570,373	75.7
1–2	0.000455	99,378	45	99,355	7,470,921	75.2
2–3	0.000300	99,333	30	99,318	7,371,565	74.2
3–4	0.000222	99,303	22	99,292	7,272,247	73.2
4–5	0.000197	99,281	20	99,271	7,172,955	72.2
5–6	0.000174	99,261	17	99,253	7,073,684	71.3
6–7	0.000167	99,244	17	99,236	6,974,431	70.3
7–8	0.000158	99,228	16	99,220	6,875,195	69.3
8–9	0.000140	99,212	14	99,205	6,775,976	68.3
9–10	0.000115	99,198	11	99,192	6,676,771	67.3
10–11.	0.000096	99,187	9	99,182	6,577,578	66.3
11–12.	0.000101	99,177	10	99,172	6,478,396	65.3
12–13	0.000152	99,167	15	99,160	6,379,224	64.3
13–14	0.000261	99,152	26	99,139	6,280,065	63.3
14–15	0.000414	99,126	41	99,106	6,180,925	62.4
15–16	0.000585	99,085	58	99,056	6,081,820	61.4
16–17	0.000747	99,027	74	98,990	5,982,764	60.4
17–18	0.000896	98,953	89	98,909	5,883,773	59.5
18–19	0.001015	98,865	100	98,814	5,784,865	58.5
19–20	0.001107	98,764	109	98,710	5,686,050	57.6
20–21	0.001196	98,655	118	98,596	5,587,341	56.6
21–22	0.001280	98,537	126	98,474	5,488,745	55.7
22–23	0.001329	98,411	131	98,345	5,390,271	54.8
23–24	0.001336	98,280	131	98,214	5,291,926	53.8
24–25	0.001312	98,149	129	98,084	5,193,711	52.9
25–26	0.001275	98,020	125	97,957	5,095,627	52.0
26–27	0.001243	97,895	122	97,834	4,997,670	51.1
27–28	0.001217	97,773	119	97,714	4,899,836	50.1
28–29	0.001207	97,654	118	97,595	4,802,122	49.2
29–30	0.001212	97,536	118	97,477	4,704,527	48.2
30–31	0.001225	97,418	119	97,359	4,607,049	47.3
31–32	0.001246	97,299	121	97,238	4,509,691	46.3
32–33	0.001285	97,178	125	97,115	4,412,453	45.4
33–34	0.001346	97,053	131	96,987	4,315,337	44.5
34–35	0.001429	96,922	139	96,853	4,218,350	43.5
35–36	0.001528	96,784	148	96,710	4,121,497	42.6
36–37	0.001642	96,636	159	96,556	4,024,787	41.6
37–38	0.001781	96,477	172	96,391	3,928,231	40.7
38–39	0.001942	96,305	187	96,212	3,831,840	39.8
39–40	0.002119	96,118	204	96,016	3,735,628	38.9
40–41	0.002299	95,915	221	95,804	3,639,612	37.9
41–42	0.002487	95,694	238	95,575	3,543,807	37.0
42–43	0.002694	95,456	257	95,327	3,448,232	36.1
43–44	0.002930	95,199	279	95,059	3,352,905	35.2
44–45	0.003196	94,920	303	94,768	3,257,846	34.3
45–46	0.003483	94,617	330	94,452	3,163,077	33.4
46–47	0.003784	94,287	357	94,109	3,068,626	32.5
47–48	0.004106	93,930	386	93,737	2,974,517	31.7
48–49	0.004449	93,544	416	93,336	2,880,780	30.8
49–50	0.004814	93,128	448	92,904	2,787,443	29.9
50–51	0.005219	92,680	484	92,438	2,694,539	29.1
51–52	0.005655	92,196	521	91,936	2,602,101	28.2
52–53	0.006094	91,675	559	91,396	2,510,165	27.4
53–54	0.006518	91,116	594	90,819	2,418,770	26.5
54–55	0.006938	90,522	628	90,208	2,327,950	25.7
55–56	0.007371	89,894	663	89,563	2,237,742	24.9
56–57	0.007859	89,232	701	88,881	2,148,179	24.1
57–58	0.008442	88,531	747	88,157	2,059,298	23.3
58–59	0.009172	87,783	805	87,381	1,971,141	22.5
59–60	0.010059	86,978	875	86,541	1,883,760	21.7
60–61	0.011113	86,103	957	85,625	1,797,220	20.9
61–62	0.012281	85,146	1,046	84,623	1,711,595	20.1
62–63	0.013499	84,100	1,135	83,533	1,626,972	19.3
63–64	0.014686	82,965	1,218	82,356	1,543,439	18.6
64–65	0.015862	81,747	1,297	81,098	1,461,083	17.9

Table 5. Life table for white males: United States, 2004—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
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
65–66	0.017141	80,450	1,379	79,761	1,379,985	17.2
66–67	0.018630	79,071	1,473	78,335	1,300,224	16.4
67–68	0.020307	77,598	1,576	76,810	1,221,890	15.7
68–69	0.022193	76,022	1,687	75,179	1,145,079	15.1
69–70	0.024273	74,335	1,804	73,433	1,069,901	14.4
70–71	0.026430	72,531	1,917	71,572	996,468	13.7
71–72	0.028743	70,614	2,030	69,599	924,896	13.1
72–73	0.031428	68,584	2,155	67,506	855,297	12.5
73–74	0.034595	66,429	2,298	65,280	787,790	11.9
74–75	0.038169	64,131	2,448	62,907	722,511	11.3
75–76	0.041843	61,683	2,581	60,392	659,604	10.7
76–77	0.045584	59,102	2,694	57,755	599,212	10.1
77–78	0.049763	56,408	2,807	55,004	541,457	9.6
78–79	0.054620	53,601	2,928	52,137	486,453	9.1
79–80	0.060204	50,673	3,051	49,148	434,316	8.6
80–81	0.066477	47,622	3,166	46,039	385,168	8.1
81–82	0.073126	44,457	3,251	42,831	339,129	7.6
82–83	0.080046	41,206	3,298	39,556	296,298	7.2
83–84	0.087161	37,907	3,304	36,255	256,741	6.8
84–85	0.094768	34,603	3,279	32,964	220,486	6.4
85–86	0.103554	31,324	3,244	29,702	187,523	6.0
86–87	0.113038	28,080	3,174	26,493	157,820	5.6
87–88	0.123254	24,906	3,070	23,371	131,327	5.3
88–89	0.134235	21,836	2,931	20,371	107,956	4.9
89–90	0.146007	18,905	2,760	17,525	87,585	4.6
90–91	0.158594	16,145	2,560	14,865	70,060	4.3
91–92	0.172016	13,584	2,337	12,416	55,196	4.1
92–93	0.186284	11,248	2,095	10,200	42,780	3.8
93–94	0.201404	9,152	1,843	8,231	32,580	3.6
94–95	0.217371	7,309	1,589	6,515	24,349	3.3
95–96	0.234174	5,720	1,340	5,051	17,834	3.1
96–97	0.251788	4,381	1,103	3,829	12,784	2.9
97–98	0.270182	3,278	886	2,835	8,955	2.7
98–99	0.289309	2,392	692	2,046	6,120	2.6
99–100	0.309115	1,700	526	1,437	4,074	2.4
100 or over	1.00000	1,175	1,175	2,636	2,636	2.2

Table 6. Life table for white females: United States, 2004

Age	Probability of dying between ages x to x+1 q(x)	Number surviving to age x l(x)	Number dying between ages x to x+1 d(x)	Person-years lived between ages x to x+1 L(x)	Total number of person-years lived above age x T(x)	Expectation of life at age x e(x)
0–1	0.005066	100,000	507	99,555	8,078,669	80.8
1–2	0.000416	99,493	41	99,473	7,979,115	80.2
2–3	0.000231	99,452	23	99,440	7,879,642	79.2
3–4	0.000175	99,429	17	99,420	7,780,202	78.2
4–5	0.000151	99,412	15	99,404	7,680,781	77.3
5–6	0.000133	99,397	13	99,390	7,581,377	76.3
6–7	0.000124	99,383	12	99,377	7,481,987	75.3
7–8	0.000117	99,371	12	99,365	7,382,610	74.3
8–9	0.000109	99,359	11	99,354	7,283,245	73.3
9–10	0.000099	99,349	10	99,344	7,183,891	72.3
10–11.	0.000092	99,339	9	99,334	7,084,547	71.3
11–12.	0.000096	99,330	10	99,325	6,985,213	70.3
12–13	0.000119	99,320	12	99,314	6,885,888	69.3
13–14	0.000167	99,308	17	99,300	6,786,574	68.3
14–15	0.000233	99,292	23	99,280	6,687,274	67.3
15–16	0.000309	99,268	31	99,253	6,587,994	66.4
16–17	0.000380	99,238	38	99,219	6,488,741	65.4
17–18	0.000431	99,200	43	99,179	6,389,522	64.4
18–19	0.000451	99,157	45	99,135	6,290,343	63.4
19–20	0.000449	99,113	44	99,090	6,191,208	62.5
20–21	0.000442	99,068	44	99,046	6,092,118	61.5
21–22	0.000441	99,024	44	99,003	5,993,072	60.5
22–23	0.000440	98,981	44	98,959	5,894,069	59.5
23–24	0.000443	98,937	44	98,915	5,795,110	58.6
24–25	0.000450	98,893	45	98,871	5,696,195	57.6
25–26	0.000459	98,849	45	98,826	5,597,324	56.6
26–27	0.000469	98,803	46	98,780	5,498,498	55.7
27–28	0.000484	98,757	48	98,733	5,399,717	54.7
28–29	0.000503	98,709	50	98,684	5,300,984	53.7
29–30	0.000527	98,660	52	98,634	5,202,300	52.7
30–31	0.000557	98,608	55	98,580	5,103,666	51.8
31–32	0.000593	98,553	58	98,524	5,005,086	50.8
32–33	0.000635	98,494	62	98,463	4,906,562	49.8
33–34	0.000684	98,432	67	98,398	4,808,099	48.8
34–35	0.000741	98,365	73	98,328	4,709,701	47.9
35–36	0.000806	98,292	79	98,252	4,611,373	46.9
36–37	0.000880	98,212	86	98,169	4,513,121	46.0
37–38	0.000971	98,126	95	98,078	4,414,951	45.0
38–39	0.001077	98,031	106	97,978	4,316,873	44.0
39–40	0.001191	97,925	117	97,867	4,218,895	43.1
40–41	0.001305	97,809	128	97,745	4,121,028	42.1
41–42	0.001420	97,681	139	97,612	4,023,284	41.2
42–43	0.001546	97,542	151	97,467	3,925,672	40.2
43–44	0.001690	97,391	165	97,309	3,828,205	39.3
44–45	0.001850	97,227	180	97,137	3,730,896	38.4
45–46	0.002029	97,047	197	96,948	3,633,759	37.4
46–47	0.002214	96,850	214	96,743	3,536,811	36.5
47–48	0.002393	96,636	231	96,520	3,440,068	35.6
48–49	0.002557	96,404	247	96,281	3,343,548	34.7
49–50	0.002718	96,158	261	96,027	3,247,267	33.8
50–51	0.002889	95,896	277	95,758	3,151,240	32.9
51–52	0.003091	95,619	296	95,472	3,055,482	32.0
52–53	0.003337	95,324	318	95,165	2,960,010	31.1
53–54	0.003639	95,006	346	94,833	2,864,845	30.2
54–55	0.003989	94,660	378	94,471	2,770,012	29.3
55–56	0.004374	94,282	412	94,076	2,675,541	28.4
56–57	0.004787	93,870	449	93,645	2,581,465	27.5
57–58	0.005243	93,421	490	93,176	2,487,820	26.6
58–59	0.005756	92,931	535	92,664	2,394,644	25.8
59–60	0.006338	92,396	586	92,103	2,301,980	24.9
60–61	0.007028	91,810	645	91,488	2,209,877	24.1
61–62	0.007803	91,165	711	90,810	2,118,389	23.2
62–63	0.008605	90,454	778	90,065	2,027,580	22.4
63–64	0.009386	89,676	842	89,255	1,937,515	21.6
64–65	0.010169	88,834	903	88,382	1,848,260	20.8

Table 6. Life table for white females: United States, 2004—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
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
65–66	0.011039	87,930	971	87,445	1,759,878	20.0
66–67	0.012065	86,960	1,049	86,435	1,672,433	19.2
67–68	0.013229	85,911	1,137	85,342	1,585,998	18.5
68–69	0.014540	84,774	1,233	84,158	1,500,655	17.7
69–70	0.015988	83,542	1,336	82,874	1,416,497	17.0
70–71	0.017535	82,206	1,442	81,485	1,333,624	16.2
71–72	0.019223	80,764	1,553	79,988	1,252,138	15.5
72–73	0.021123	79,212	1,673	78,375	1,172,150	14.8
73–74	0.023264	77,539	1,804	76,637	1,093,775	14.1
74–75	0.025619	75,735	1,940	74,765	1,017,138	13.4
75–76	0.027978	73,794	2,065	72,762	942,374	12.8
76–77	0.030458	71,730	2,185	70,637	869,612	12.1
77–78	0.033446	69,545	2,326	68,382	798,974	11.5
78–79	0.037165	67,219	2,498	65,970	730,592	10.9
79–80	0.041559	64,721	2,690	63,376	664,622	10.3
80–81	0.046299	62,031	2,872	60,595	601,246	9.7
81–82	0.051190	59,159	3,028	57,645	540,651	9.1
82–83	0.056564	56,131	3,175	54,543	483,006	8.6
83–84	0.062668	52,956	3,319	51,297	428,462	8.1
84–85	0.069752	49,637	3,462	47,906	377,166	7.6
85–86	0.077062	46,175	3,558	44,396	329,260	7.1
86–87	0.085061	42,617	3,625	40,804	284,864	6.7
87–88	0.093796	38,992	3,657	37,163	244,060	6.3
88–89	0.103316	35,334	3,651	33,509	206,897	5.9
89–90	0.113667	31,684	3,601	29,883	173,388	5.5
90–91	0.124894	28,082	3,507	26,329	143,505	5.1
91–92	0.137038	24,575	3,368	22,891	117,177	4.8
92–93	0.150136	21,207	3,184	19,615	94,285	4.4
93–94	0.164220	18,023	2,960	16,543	74,670	4.1
94–95	0.179312	15,064	2,701	13,713	58,127	3.9
95–96	0.195426	12,362	2,416	11,154	44,414	3.6
96–97	0.212566	9,946	2,114	8,889	33,259	3.3
97–98	0.230721	7,832	1,807	6,929	24,370	3.1
98–99	0.249870	6,025	1,506	5,272	17,441	2.9
99–100	0.269973	4,520	1,220	3,910	12,169	2.7
100 or over	1.00000	3,299	3,299	8,259	8,259	2.5

Table 7. Life table for the black population: United States, 2004

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	0.013836	100,000	1,384	98,785	7,307,690	73.1
1–2	0.000715	98,616	71	98,581	7,208,905	73.1
2–3	0.000441	98,546	43	98,524	7,110,324	72.2
3–4	0.000348	98,502	34	98,485	7,011,800	71.2
4–5	0.000279	98,468	27	98,454	6,913,315	70.2
5–6	0.000261	98,441	26	98,428	6,814,860	69.2
6–7	0.000237	98,415	23	98,403	6,716,433	68.2
7–8	0.000216	98,392	21	98,381	6,618,029	67.3
8–9	0.000195	98,370	19	98,361	6,519,648	66.3
9–10	0.000176	98,351	17	98,343	6,421,288	65.3
10–11.	0.000166	98,334	16	98,326	6,322,945	64.3
11–12.	0.000175	98,318	17	98,309	6,224,619	63.3
12–13	0.000215	98,300	21	98,290	6,126,310	62.3
13–14	0.000296	98,279	29	98,265	6,028,021	61.3
14–15	0.000412	98,250	40	98,230	5,929,756	60.4
15–16	0.000546	98,210	54	98,183	5,831,526	59.4
16–17	0.000684	98,156	67	98,122	5,733,343	58.4
17–18	0.000825	98,089	81	98,048	5,635,221	57.5
18–19	0.000957	98,008	94	97,961	5,537,172	56.5
19–20	0.001076	97,914	105	97,861	5,439,212	55.6
20–21	0.001197	97,809	117	97,750	5,341,350	54.6
21–22	0.001318	97,692	129	97,627	5,243,600	53.7
22–23	0.001415	97,563	138	97,494	5,145,973	52.7
23–24	0.001485	97,425	145	97,353	5,048,479	51.8
24–25	0.001535	97,280	149	97,205	4,951,126	50.9
25–26	0.001582	97,131	154	97,054	4,853,921	50.0
26–27	0.001633	96,977	158	96,898	4,756,867	49.1
27–28	0.001679	96,819	163	96,738	4,659,969	48.1
28–29	0.001716	96,656	166	96,573	4,563,231	47.2
29–30	0.001750	96,490	169	96,406	4,466,658	46.3
30–31	0.001787	96,321	172	96,235	4,370,252	45.4
31–32	0.001834	96,149	176	96,061	4,274,017	44.5
32–33	0.001894	95,973	182	95,882	4,177,955	43.5
33–34	0.001972	95,791	189	95,697	4,082,073	42.6
34–35	0.002071	95,602	198	95,503	3,986,376	41.7
35–36	0.002185	95,404	208	95,300	3,890,873	40.8
36–37	0.002322	95,196	221	95,085	3,795,573	39.9
37–38	0.002498	94,975	237	94,856	3,700,488	39.0
38–39	0.002717	94,738	257	94,609	3,605,631	38.1
39–40	0.002968	94,480	280	94,340	3,511,023	37.2
40–41	0.003224	94,200	304	94,048	3,416,683	36.3
41–42	0.003493	93,896	328	93,732	3,322,635	35.4
42–43	0.003804	93,568	356	93,390	3,228,903	34.5
43–44	0.004175	93,212	389	93,017	3,135,513	33.6
44–45	0.004604	92,823	427	92,609	3,042,495	32.8
45–46	0.005069	92,396	468	92,161	2,949,886	31.9
46–47	0.005553	91,927	510	91,672	2,857,725	31.1
47–48	0.006066	91,417	555	91,139	2,766,053	30.3
48–49	0.006609	90,862	600	90,562	2,674,913	29.4
49–50	0.007180	90,262	648	89,938	2,584,351	28.6
50–51	0.007808	89,614	700	89,264	2,494,414	27.8
51–52	0.008477	88,914	754	88,537	2,405,150	27.1
52–53	0.009143	88,160	806	87,757	2,316,613	26.3
53–54	0.009782	87,354	854	86,927	2,228,856	25.5
54–55	0.010412	86,500	901	86,049	2,141,929	24.8
55–56	0.011086	85,599	949	85,124	2,055,880	24.0
56–57	0.011841	84,650	1,002	84,149	1,970,756	23.3
57–58	0.012664	83,648	1,059	83,118	1,886,607	22.6
58–59	0.013566	82,588	1,120	82,028	1,803,489	21.8
59–60	0.014553	81,468	1,186	80,875	1,721,461	21.1
60–61	0.015649	80,282	1,256	79,654	1,640,586	20.4
61–62	0.016852	79,026	1,332	78,360	1,560,932	19.8
62–63	0.018111	77,694	1,407	76,991	1,482,572	19.1
63–64	0.019367	76,287	1,477	75,548	1,405,581	18.4
64–65	0.020611	74,810	1,542	74,039	1,330,032	17.8

Table 7. Life table for the black population: United States, 2004—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
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
65–66	0.021872	73,268	1,602	72,467	1,255,994	17.1
66–67	0.023225	71,665	1,664	70,833	1,183,527	16.5
67–68	0.024722	70,001	1,731	69,136	1,112,694	15.9
68–69	0.026443	68,270	1,805	67,368	1,043,558	15.3
69–70	0.028399	66,465	1,888	65,521	976,190	14.7
70–71	0.030458	64,578	1,967	63,594	910,669	14.1
71–72	0.032622	62,611	2,042	61,589	847,075	13.5
72–73	0.035091	60,568	2,125	59,506	785,485	13.0
73–74	0.037939	58,443	2,217	57,334	725,980	12.4
74–75	0.041114	56,226	2,312	55,070	668,646	11.9
75–76	0.044494	53,914	2,399	52,714	613,576	11.4
76–77	0.047980	51,515	2,472	50,279	560,862	10.9
77–78	0.051600	49,043	2,531	47,778	510,582	10.4
78–79	0.055361	46,513	2,575	45,225	462,804	10.0
79–80	0.059313	43,938	2,606	42,635	417,579	9.5
80–81	0.063575	41,332	2,628	40,018	374,944	9.1
81–82	0.068116	38,704	2,636	37,386	334,927	8.7
82–83	0.072872	36,068	2,628	34,754	297,541	8.2
83–84	0.077918	33,439	2,606	32,137	262,787	7.9
84–85	0.083465	30,834	2,574	29,547	230,651	7.5
85–86	0.089464	28,260	2,528	26,996	201,104	7.1
86–87	0.095844	25,732	2,466	24,499	174,107	6.8
87–88	0.102622	23,266	2,388	22,072	149,609	6.4
88–89	0.109816	20,878	2,293	19,732	127,537	6.1
89–90	0.117441	18,585	2,183	17,494	107,805	5.8
90–91	0.125513	16,403	2,059	15,373	90,311	5.5
91–92	0.134046	14,344	1,923	13,383	74,937	5.2
92–93	0.143055	12,421	1,777	11,533	61,555	5.0
93–94	0.152550	10,644	1,624	9,832	50,022	4.7
94–95	0.162543	9,021	1,466	8,287	40,190	4.5
95–96	0.173041	7,554	1,307	6,901	31,902	4.2
96–97	0.184052	6,247	1,150	5,672	25,002	4.0
97–98	0.195578	5,097	997	4,599	19,329	3.8
98–99	0.207621	4,100	851	3,675	14,731	3.6
99–100	0.220178	3,249	715	2,891	11,056	3.4
100 or over	1.00000	2,534	2,534	8,164	8,164	3.2

Table 8. Life table for black males: United States, 2004

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	0.015251	100,000	1,525	98,662	6,951,867	69.5
1–2	0.000764	98,475	75	98,437	6,853,205	69.6
2–3	0.000469	98,400	46	98,377	6,754,768	68.6
3–4	0.000395	98,354	39	98,334	6,656,391	67.7
4–5	0.000306	98,315	30	98,300	6,558,057	66.7
5–6	0.000282	98,285	28	98,271	6,459,758	65.7
6–7	0.000260	98,257	26	98,244	6,361,487	64.7
7–8	0.000238	98,231	23	98,220	6,263,243	63.8
8–9	0.000207	98,208	20	98,198	6,165,023	62.8
9–10	0.000173	98,188	17	98,179	6,066,825	61.8
10–11.	0.000149	98,171	15	98,163	5,968,646	60.8
11–12.	0.000157	98,156	15	98,148	5,870,483	59.8
12–13	0.000220	98,141	22	98,130	5,772,335	58.8
13–14	0.000354	98,119	35	98,102	5,674,205	57.8
14–15	0.000549	98,084	54	98,057	5,576,103	56.9
15–16	0.000774	98,030	76	97,992	5,478,046	55.9
16–17	0.001002	97,955	98	97,905	5,380,053	54.9
17–18	0.001232	97,856	121	97,796	5,282,148	54.0
18–19	0.001443	97,736	141	97,665	5,184,352	53.0
19–20	0.001628	97,595	159	97,515	5,086,687	52.1
20–21	0.001816	97,436	177	97,347	4,989,171	51.2
21–22	0.002001	97,259	195	97,162	4,891,824	50.3
22–23	0.002148	97,064	208	96,960	4,794,662	49.4
23–24	0.002247	96,856	218	96,747	4,697,702	48.5
24–25	0.002310	96,638	223	96,527	4,600,955	47.6
25–26	0.002365	96,415	228	96,301	4,504,429	46.7
26–27	0.002422	96,187	233	96,070	4,408,128	45.8
27–28	0.002463	95,954	236	95,836	4,312,057	44.9
28–29	0.002486	95,718	238	95,599	4,216,221	44.0
29–30	0.002498	95,480	239	95,360	4,120,623	43.2
30–31	0.002508	95,241	239	95,122	4,025,262	42.3
31–32	0.002528	95,002	240	94,882	3,930,141	41.4
32–33	0.002568	94,762	243	94,640	3,835,258	40.5
33–34	0.002638	94,519	249	94,394	3,740,618	39.6
34–35	0.002739	94,269	258	94,140	3,646,224	38.7
35–36	0.002864	94,011	269	93,877	3,552,083	37.8
36–37	0.003013	93,742	282	93,601	3,458,207	36.9
37–38	0.003196	93,459	299	93,310	3,364,606	36.0
38–39	0.003411	93,161	318	93,002	3,271,296	35.1
39–40	0.003657	92,843	340	92,673	3,178,294	34.2
40–41	0.003908	92,504	362	92,323	3,085,621	33.4
41–42	0.004190	92,142	386	91,949	2,993,298	32.5
42–43	0.004557	91,756	418	91,547	2,901,349	31.6
43–44	0.005040	91,338	460	91,108	2,809,802	30.8
44–45	0.005627	90,878	511	90,622	2,718,694	29.9
45–46	0.006270	90,366	567	90,083	2,628,073	29.1
46–47	0.006934	89,800	623	89,488	2,537,990	28.3
47–48	0.007644	89,177	682	88,836	2,448,501	27.5
48–49	0.008393	88,495	743	88,124	2,359,665	26.7
49–50	0.009187	87,753	806	87,349	2,271,541	25.9
50–51	0.010064	86,946	875	86,509	2,184,192	25.1
51–52	0.011005	86,071	947	85,598	2,097,683	24.4
52–53	0.011933	85,124	1,016	84,616	2,012,085	23.6
53–54	0.012806	84,108	1,077	83,570	1,927,469	22.9
54–55	0.013648	83,031	1,133	82,465	1,843,900	22.2
55–56	0.014537	81,898	1,191	81,303	1,761,435	21.5
56–57	0.015530	80,707	1,253	80,081	1,680,132	20.8
57–58	0.016606	79,454	1,319	78,794	1,600,052	20.1
58–59	0.017783	78,135	1,389	77,440	1,521,257	19.5
59–60	0.019070	76,745	1,464	76,013	1,443,818	18.8
60–61	0.020497	75,282	1,543	74,510	1,367,804	18.2
61–62	0.022059	73,739	1,627	72,925	1,293,294	17.5
62–63	0.023685	72,112	1,708	71,258	1,220,369	16.9
63–64	0.025285	70,404	1,780	69,514	1,149,111	16.3
64–65	0.026839	68,624	1,842	67,703	1,079,597	15.7

Table 8. Life table for black males: United States, 2004—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
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
65–66	0.028379	66,782	1,895	65,835	1,011,894	15.2
66–67	0.030016	64,887	1,948	63,913	946,059	14.6
67–68	0.031833	62,939	2,004	61,938	882,146	14.0
68–69	0.033959	60,936	2,069	59,901	820,209	13.5
69–70	0.036412	58,866	2,143	57,795	760,308	12.9
70–71	0.039000	56,723	2,212	55,617	702,513	12.4
71–72	0.041701	54,511	2,273	53,374	646,896	11.9
72–73	0.044791	52,238	2,340	51,068	593,522	11.4
73–74	0.048385	49,898	2,414	48,691	542,454	10.9
74–75	0.052433	47,484	2,490	46,239	493,763	10.4
75–76	0.056858	44,994	2,558	43,715	447,524	9.9
76–77	0.061463	42,436	2,608	41,132	403,810	9.5
77–78	0.066078	39,827	2,632	38,512	362,678	9.1
78–79	0.070525	37,196	2,623	35,884	324,167	8.7
79–80	0.074852	34,572	2,588	33,279	288,282	8.3
80–81	0.079369	31,985	2,539	30,715	255,004	8.0
81–82	0.084186	29,446	2,479	28,207	224,288	7.6
82–83	0.089130	26,967	2,404	25,765	196,082	7.3
83–84	0.094326	24,564	2,317	23,405	170,316	6.9
84–85	0.100022	22,247	2,225	21,134	146,911	6.6
85–86	0.106859	20,021	2,139	18,952	125,777	6.3
86–87	0.114094	17,882	2,040	16,862	106,826	6.0
87–88	0.121742	15,842	1,929	14,877	89,964	5.7
88–89	0.129815	13,913	1,806	13,010	75,086	5.4
89–90	0.138325	12,107	1,675	11,270	62,076	5.1
90–91	0.147283	10,432	1,536	9,664	50,807	4.9
91–92	0.156698	8,896	1,394	8,199	41,143	4.6
92–93	0.166576	7,502	1,250	6,877	32,944	4.4
93–94	0.176925	6,252	1,106	5,699	26,067	4.2
94–95	0.187746	5,146	966	4,663	20,368	4.0
95–96	0.199041	4,180	832	3,764	15,705	3.8
96–97	0.210807	3,348	706	2,995	11,941	3.6
97–98	0.223039	2,642	589	2,348	8,946	3.4
98–99	0.235729	2,053	484	1,811	6,598	3.2
99–100	0.248866	1,569	390	1,374	4,787	3.1
100 or over	1.00000	1,178	1,178	3,414	3,414	2.9

Table 9. Life table for black females: United States, 2004

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	0.012367	100,000	1,237	98,912	7,631,147	76.3
1–2	0.000664	98,763	66	98,731	7,532,235	76.3
2–3	0.000413	98,698	41	98,677	7,433,504	75.3
3–4	0.000300	98,657	30	98,642	7,334,827	74.3
4–5	0.000251	98,627	25	98,615	7,236,185	73.4
5–6	0.000239	98,603	24	98,591	7,137,570	72.4
6–7	0.000212	98,579	21	98,569	7,038,979	71.4
7–8	0.000194	98,558	19	98,549	6,940,411	70.4
8–9	0.000183	98,539	18	98,530	6,841,862	69.4
9–10	0.000180	98,521	18	98,512	6,743,332	68.4
10–11.	0.000183	98,503	18	98,494	6,644,820	67.5
11–12.	0.000193	98,485	19	98,476	6,546,326	66.5
12–13	0.000211	98,466	21	98,456	6,447,850	65.5
13–14	0.000236	98,445	23	98,434	6,349,394	64.5
14–15	0.000270	98,422	27	98,409	6,250,960	63.5
15–16	0.000311	98,396	31	98,380	6,152,551	62.5
16–17	0.000357	98,365	35	98,347	6,054,171	61.5
17–18	0.000407	98,330	40	98,310	5,955,824	60.6
18–19	0.000458	98,290	45	98,267	5,857,514	59.6
19–20	0.000510	98,245	50	98,220	5,759,246	58.6
20–21	0.000564	98,195	55	98,167	5,661,026	57.7
21–22	0.000622	98,139	61	98,109	5,562,859	56.7
22–23	0.000675	98,078	66	98,045	5,464,750	55.7
23–24	0.000725	98,012	71	97,977	5,366,705	54.8
24–25	0.000773	97,941	76	97,903	5,268,729	53.8
25–26	0.000827	97,865	81	97,825	5,170,825	52.8
26–27	0.000888	97,784	87	97,741	5,073,000	51.9
27–28	0.000950	97,698	93	97,651	4,975,259	50.9
28–29	0.001008	97,605	98	97,556	4,877,608	50.0
29–30	0.001066	97,506	104	97,454	4,780,052	49.0
30–31	0.001131	97,402	110	97,347	4,682,598	48.1
31–32	0.001206	97,292	117	97,234	4,585,250	47.1
32–33	0.001286	97,175	125	97,112	4,488,017	46.2
33–34	0.001373	97,050	133	96,983	4,390,904	45.2
34–35	0.001472	96,917	143	96,845	4,293,921	44.3
35–36	0.001576	96,774	153	96,698	4,197,076	43.4
36–37	0.001701	96,622	164	96,539	4,100,378	42.4
37–38	0.001873	96,457	181	96,367	4,003,838	41.5
38–39	0.002097	96,277	202	96,176	3,907,471	40.6
39–40	0.002354	96,075	226	95,962	3,811,296	39.7
40–41	0.002618	95,849	251	95,723	3,715,334	38.8
41–42	0.002877	95,598	275	95,460	3,619,611	37.9
42–43	0.003141	95,322	299	95,173	3,524,151	37.0
43–44	0.003415	95,023	325	94,861	3,428,978	36.1
44–45	0.003707	94,698	351	94,523	3,334,118	35.2
45–46	0.004016	94,347	379	94,158	3,239,595	34.3
46–47	0.004342	93,969	408	93,765	3,145,437	33.5
47–48	0.004688	93,561	439	93,341	3,051,672	32.6
48–49	0.005056	93,122	471	92,887	2,958,331	31.8
49–50	0.005446	92,651	505	92,399	2,865,444	30.9
50–51	0.005872	92,146	541	91,876	2,773,045	30.1
51–52	0.006326	91,605	579	91,316	2,681,169	29.3
52–53	0.006784	91,026	618	90,717	2,589,854	28.5
53–54	0.007237	90,408	654	90,081	2,499,137	27.6
54–55	0.007699	89,754	691	89,409	2,409,055	26.8
55–56	0.008203	89,063	731	88,698	2,319,647	26.0
56–57	0.008771	88,332	775	87,945	2,230,949	25.3
57–58	0.009404	87,558	823	87,146	2,143,004	24.5
58–59	0.010108	86,734	877	86,296	2,055,858	23.7
59–60	0.010888	85,858	935	85,390	1,969,562	22.9
60–61	0.011765	84,923	999	84,423	1,884,172	22.2
61–62	0.012737	83,924	1,069	83,389	1,799,749	21.4
62–63	0.013760	82,855	1,140	82,285	1,716,359	20.7
63–64	0.014792	81,715	1,209	81,110	1,634,075	20.0
64–65	0.015832	80,506	1,275	79,869	1,552,964	19.3

Table 9. Life table for black females: United States, 2004—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
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
65–66	0.016911	79,231	1,340	78,562	1,473,096	18.6
66–67	0.018088	77,892	1,409	77,187	1,394,534	17.9
67–68	0.019396	76,483	1,483	75,741	1,317,347	17.2
68–69	0.020891	74,999	1,567	74,216	1,241,606	16.6
69–70	0.022582	73,432	1,658	72,603	1,167,390	15.9
70–71	0.024369	71,774	1,749	70,900	1,094,787	15.3
71–72	0.026271	70,025	1,840	69,105	1,023,887	14.6
72–73	0.028449	68,185	1,940	67,216	954,782	14.0
73–74	0.030961	66,246	2,051	65,220	887,567	13.4
74–75	0.033756	64,195	2,167	63,111	822,346	12.8
75–76	0.036692	62,028	2,276	60,890	759,235	12.2
76–77	0.039724	59,752	2,374	58,565	698,346	11.7
77–78	0.042980	57,378	2,466	56,145	639,781	11.2
78–79	0.046547	54,912	2,556	53,634	583,635	10.6
79–80	0.050466	52,356	2,642	51,035	530,001	10.1
80–81	0.054761	49,714	2,722	48,353	478,966	9.6
81–82	0.059340	46,991	2,788	45,597	430,614	9.2
82–83	0.064202	44,203	2,838	42,784	385,016	8.7
83–84	0.069414	41,365	2,871	39,929	342,232	8.3
84–85	0.075173	38,494	2,894	37,047	302,303	7.9
85–86	0.081132	35,600	2,888	34,156	265,256	7.5
86–87	0.087515	32,712	2,863	31,280	231,100	7.1
87–88	0.094346	29,849	2,816	28,441	199,820	6.7
88–89	0.101645	27,033	2,748	25,659	171,379	6.3
89–90	0.109437	24,285	2,658	22,956	145,720	6.0
90–91	0.117741	21,627	2,546	20,354	122,764	5.7
91–92	0.126579	19,081	2,415	17,873	102,409	5.4
92–93	0.135971	16,666	2,266	15,533	84,536	5.1
93–94	0.145935	14,400	2,101	13,349	69,003	4.8
94–95	0.156486	12,298	1,925	11,336	55,654	4.5
95–96	0.167638	10,374	1,739	9,504	44,318	4.3
96–97	0.179403	8,635	1,549	7,860	34,814	4.0
97–98	0.191788	7,086	1,359	6,406	26,954	3.8
98–99	0.204798	5,727	1,173	5,140	20,548	3.6
99–100	0.218431	4,554	995	4,057	15,407	3.4
100 or more	1.00000	3,559	3,559	11,351	11,351	3.2

Table 10. Survivorship by age, race, and sex: Death-registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2004

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and the District of Columbia (D.C.); 1919–1921, 34 states and D.C. 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_x)										
	2004	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
All races											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,320	99,064	98,740	97,998	97,407	97,024	95,290	94,028	92,515	88,538	87,552
5	99,202	98,877	98,495	97,668	96,998	96,482	94,220	91,978	83,389	83,887	81,804
10	99,129	98,766	98,347	97,460	96,765	96,177	93,710	91,106	88,129	82,458	80,052
15	99,036	98,635	98,196	97,261	96,551	95,885	93,235	90,385	87,144	81,506	78,963
20	98,709	98,215	97,741	96,716	96,111	95,366	92,435	89,089	85,441	80,074	77,239
25	98,246	97,671	97,110	96,000	95,517	94,676	91,335	87,269	83,146	78,046	74,768
30	97,776	97,070	96,477	95,307	94,905	93,919	90,078	85,302	80,642	75,779	72,043
35	97,250	96,322	95,808	94,482	94,144	92,976	88,573	83,118	77,961	73,127	69,078
40	96,517	95,373	94,926	93,322	93,064	91,648	86,650	80,557	75,114	70,042	65,890
45	95,406	94,154	93,599	91,587	91,378	89,634	84,069	77,343	72,036	66,561	62,436
50	93,735	92,370	91,526	88,972	88,756	86,591	80,487	73,321	68,429	62,460	58,514
55	91,357	89,658	88,348	85,110	84,711	82,176	75,557	68,182	63,947	57,555	53,852
60	88,038	85,537	83,726	79,529	79,067	75,921	68,924	61,563	58,079	51,138	47,946
65	83,114	79,519	77,107	71,933	71,147	67,555	60,366	53,195	50,560	43,194	40,911
70	76,191	71,357	68,248	61,984	60,857	56,987	49,655	42,768	41,090	33,816	32,390
75	66,605	60,449	56,799	49,705	48,170	43,903	36,735	30,789	29,729	23,552	22,960
80	53,925	47,084	43,180	35,285	33,576	29,313	22,883	18,580	18,298	13,712	13,529
85	38,329	31,770	27,960	20,908	18,542	15,785	11,073	8,542	8,683	6,001	6,053
90	22,219	17,046	14,154	9,297	7,080	6,144	3,796	2,998	2,941	1,868	1,867
95	9,419	6,282	5,043	2,786	1,524	1,511	857	636	646	361	344
100	2,510	1,424	1,150	542	183	199	123	62	67	40	31
Male											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,253	98,961	98,607	97,755	97,087	96,661	94,762	93,440	91,745	87,505	86,426
5	99,124	98,754	98,333	97,395	96,643	96,077	93,624	91,294	88,505	82,718	80,548
10	99,043	98,627	98,160	97,151	96,375	95,726	93,054	90,346	87,184	81,249	78,775
15	98,936	98,464	97,972	96,904	96,107	95,366	92,508	89,561	86,156	80,261	77,681
20	98,486	97,854	97,316	96,126	95,491	94,695	91,617	88,220	84,440	78,792	75,984
25	97,809	97,049	96,361	95,040	94,631	93,791	90,385	86,359	82,252	76,675	73,472
30	97,148	96,166	95,430	94,072	93,826	92,861	89,009	84,346	79,890	74,378	70,747
35	96,455	95,091	94,501	92,997	92,889	91,760	87,371	82,075	77,514	71,614	67,752
40	95,527	93,761	93,345	91,541	91,572	90,207	85,246	79,357	74,432	68,297	64,447
45	94,154	92,139	91,649	89,369	89,492	87,819	82,336	75,882	71,244	64,518	60,849
50	92,078	89,865	89,007	86,070	86,199	84,158	78,254	71,518	67,553	60,118	56,736
55	89,089	86,492	84,936	81,139	81,039	78,781	72,627	65,981	62,965	54,970	51,939
60	85,067	81,378	79,012	73,958	73,887	71,246	65,142	58,909	56,917	48,343	45,895
65	79,213	73,971	70,646	64,318	64,177	61,566	55,776	50,154	49,218	40,264	38,736
70	71,168	64,107	59,681	52,296	52,244	49,950	44,588	39,516	39,668	31,023	30,217
75	60,336	51,385	46,272	38,797	38,950	36,756	31,864	27,718	28,316	21,213	21,076
80	46,461	36,749	31,810	24,921	25,300	25,237	18,995	16,172	17,128	11,942	12,084
85	30,619	21,815	18,020	13,168	12,845	11,750	8,693	7,107	7,920	5,059	5,179
90	15,948	9,878	7,732	5,107	4,609	4,197	2,787	2,283	2,527	1,502	1,508
95	5,808	2,927	2,279	1,326	970	955	586	451	556	289	262
100	1,261	529	423	222	117	121	78	40	62	33	22
Female											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,391	99,172	98,880	98,254	97,744	97,406	95,848	94,728	93,383	89,623	88,733
5	99,283	99,006	98,666	97,955	97,371	96,908	94,848	92,789	90,380	85,117	83,119
10	99,218	98,911	98,544	97,784	97,173	96,652	94,402	92,008	89,186	83,728	81,390
15	99,142	98,814	98,432	97,636	97,016	96,431	94,000	91,364	88,247	82,813	80,307
20	98,944	98,597	98,184	97,331	96,756	96,066	93,293	90,116	86,556	81,418	78,555
25	98,710	98,325	97,883	96,966	96,418	95,583	92,322	88,328	84,135	79,481	76,119
30	98,442	98,013	97,551	96,544	95,996	94,933	91,182	86,398	81,463	77,247	73,394
35	98,088	97,596	97,140	95,966	95,409	94,206	89,810	84,304	78,713	74,719	70,463
40	97,555	97,033	96,531	95,097	94,560	93,101	88,092	81,927	75,907	71,894	67,407
45	96,709	96,222	95,570	93,793	93,265	91,469	85,856	79,041	72,954	68,755	64,121
50	95,445	94,932	94,060	91,852	91,327	89,075	82,828	75,456	69,452	65,001	60,415
55	93,676	92,881	91,760	89,066	88,451	85,694	78,708	70,832	65,099	60,392	55,908

See footnote at end of table.

Table 10. Survivorship by age, race, and sex: Death-registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2004—Con.

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and the District of Columbia (D.C.); 1919–1921, 34 states and D.C. 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_x)										
	2004	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
Female—Con.											
60	91,058	89,742	88,414	85,139	84,430	80,890	73,093	64,795	59,438	54,226	50,155
65	87,043	85,075	83,520	79,698	78,462	74,119	65,523	56,924	52,126	46,438	43,246
70	81,200	78,522	76,720	71,955	70,100	64,873	55,449	46,774	42,741	36,916	34,721
75	72,748	69,287	67,186	61,107	58,394	52,111	42,425	34,600	31,344	26,155	24,994
80	61,045	56,986	54,372	46,445	43,063	36,486	27,524	21,578	19,613	15,682	15,129
85	45,438	41,115	37,772	29,538	25,269	20,668	13,972	10,322	9,515	7,051	7,063
90	27,782	23,666	20,578	14,160	10,056	8,548	5,044	3,656	3,314	2,269	2,306
95	12,448	9,346	7,862	4,565	2,193	2,207	1,195	807	728	441	452
100	3,460	2,251	1,927	954	264	298	179	82	72	49	43
White											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,434	99,233	98,898	98,224	97,714	97,278	95,685	94,392	92,780	88,709	87,762
5	99,327	99,068	98,675	97,930	97,353	96,790	94,713	92,466	89,771	84,147	82,071
10	99,261	98,966	98,536	97,733	97,131	96,502	94,228	91,627	88,536	82,734	80,371
15	99,175	98,843	98,391	97,546	96,928	96,228	93,792	90,982	87,633	81,816	79,344
20	98,856	98,455	97,939	97,036	96,508	95,763	93,117	89,933	86,159	80,407	77,998
25	98,420	97,972	97,340	96,406	95,965	95,169	92,213	88,454	84,106	78,392	75,202
30	97,992	97,451	96,774	95,824	95,440	94,536	91,185	86,836	81,787	76,167	72,317
35	97,512	96,810	96,192	95,152	94,798	93,750	89,941	85,004	79,277	73,568	69,522
40	96,831	96,000	95,427	94,190	93,870	92,616	88,318	82,803	76,642	70,525	66,082
45	95,797	94,932	94,257	92,681	92,374	90,847	86,069	79,989	73,705	67,090	62,920
50	94,249	93,326	92,384	90,306	89,958	88,110	82,833	76,340	70,250	62,994	58,647
55	92,044	90,833	89,427	86,688	86,173	84,027	78,218	71,551	65,875	58,163	54,450
60	88,908	86,943	85,031	81,323	80,811	78,066	71,785	65,100	60,013	51,822	48,288
65	84,145	81,123	78,585	73,889	73,102	69,850	63,201	56,655	52,411	43,904	41,505
70	77,338	73,106	69,801	63,991	62,834	59,189	52,165	45,841	42,736	34,484	32,902
75	67,756	62,175	58,299	51,586	49,895	45,688	38,610	33,406	31,086	24,151	23,356
80	54,953	48,583	44,409	36,659	34,697	30,438	23,976	20,260	19,149	14,100	13,794
85	39,024	32,850	28,768	21,578	19,017	16,239	11,483	9,325	9,078	6,178	6,192
90	22,460	17,571	14,471	9,433	7,149	6,201	3,819	3,066	2,991	1,918	1,919
95	9,330	6,416	5,067	2,743	1,521	1,500	801	636	643	364	355
100	2,381	1,423	1,105	487	183	196	98	58	62	38	31
White male											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,378	99,138	98,769	97,994	97,408	96,931	95,188	93,768	91,975	87,674	86,655
5	99,261	98,956	98,519	97,671	97,015	96,403	94,150	91,738	88,842	82,972	80,864
10	99,187	98,839	98,357	97,441	96,758	96,069	93,601	90,810	87,530	81,519	79,109
15	99,085	98,686	98,176	97,208	96,503	95,727	93,089	90,074	86,546	80,549	78,037
20	98,655	98,134	97,525	96,480	95,908	95,104	92,293	88,904	84,997	79,116	76,376
25	98,020	97,430	96,616	95,524	95,106	94,294	91,241	87,371	83,061	77,047	73,907
30	97,418	96,662	95,783	94,716	94,401	93,489	90,092	85,707	80,888	74,810	71,219
35	96,784	95,731	94,980	93,843	93,589	92,543	88,713	83,812	78,441	72,108	68,245
40	95,915	94,588	93,984	92,631	92,427	91,173	86,880	81,457	75,733	68,848	64,954
45	94,617	93,167	92,494	90,725	90,533	89,002	84,285	78,345	72,696	65,115	61,369
50	92,680	91,124	90,105	87,690	87,424	85,601	80,521	74,288	69,107	60,741	57,274
55	89,894	88,022	86,303	83,001	82,463	80,496	75,156	68,981	64,574	55,622	52,491
60	86,103	83,182	80,625	75,969	75,485	73,172	67,787	61,933	58,498	48,987	46,452
65	80,450	75,962	72,393	66,343	65,834	63,541	58,305	52,964	50,663	40,862	39,245
70	72,531	66,181	61,384	54,138	53,825	51,735	46,739	41,880	40,873	31,527	30,640
75	61,683	53,308	47,712	40,324	40,207	38,104	33,404	29,471	29,205	21,585	21,387
80	47,622	38,245	32,788	25,885	25,993	24,005	19,860	17,221	17,655	12,160	12,266
85	31,324	22,720	18,538	13,527	13,065	12,015	9,013	7,572	8,154	5,145	5,252
90	16,145	10,214	7,891	5,125	4,600	4,209	2,812	2,356	2,568	1,523	1,523
95	5,720	2,988	2,279	1,274	956	942	552	461	556	289	263
100	1,175	523	404	189	115	118	65	40	61	31	22

See footnote at end of table.

Table 10. Survivorship by age, race, and sex: Death-registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2004—Con.

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and the District of Columbia (D.C.); 1919–1921, 34 states and D.C. 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_x)										
	2004	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
White female											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,493	99,333	99,035	98,468	98,036	97,645	96,211	95,037	93,608	89,774	88,939
5	99,397	99,187	98,841	98,203	97,709	97,199	95,309	93,216	90,721	85,349	83,426
10	99,339	99,099	98,725	98,042	97,525	96,960	94,890	92,466	89,564	83,979	81,723
15	99,268	99,007	98,618	97,902	97,375	96,756	94,534	91,894	88,712	83,093	80,680
20	99,068	98,795	98,374	97,618	97,135	96,454	93,984	90,939	87,281	81,750	78,978
25	98,849	98,547	98,093	97,299	96,844	96,072	93,228	89,524	85,163	79,865	76,588
30	98,608	98,283	97,802	96,945	96,499	95,605	92,320	87,972	82,740	77,676	73,887
35	98,292	97,939	97,445	96,474	96,026	94,977	91,211	86,248	80,206	75,200	70,971
40	97,809	97,472	96,913	95,762	95,326	94,080	89,805	84,256	77,624	72,425	67,935
45	97,047	96,768	96,065	94,649	94,228	92,725	87,920	81,780	74,871	69,341	64,677
50	95,896	95,608	94,710	92,924	92,522	90,685	85,267	78,572	71,547	65,629	61,005
55	94,282	93,730	92,594	90,383	89,967	87,699	81,520	74,321	67,323	61,053	56,509
60	91,810	90,789	89,451	86,726	86,339	83,279	76,200	68,462	61,704	54,900	50,752
65	87,930	86,339	84,764	81,579	80,739	76,773	68,701	60,499	54,299	47,086	43,806
70	82,206	79,984	78,139	74,101	72,507	67,545	58,363	49,932	44,638	37,482	35,206
75	73,794	70,834	68,712	63,290	60,461	54,397	44,685	37,024	32,777	26,569	25,362
80	62,031	58,454	55,770	48,182	44,676	38,026	28,882	23,053	20,492	15,929	15,349
85	46,175	42,274	38,774	30,490	26,046	21,348	14,487	10,937	9,909	7,152	7,149
90	28,082	24,270	20,996	14,406	10,219	8,662	5,061	3,719	3,372	2,291	2,322
95	12,362	9,495	7,900	4,526	2,203	2,200	1,109	797	721	434	448
100	3,299	2,239	1,858	872	265	294	139	74	63	44	41
Black[1]											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	98,616	98,187	97,885	96,731	95,732	95,407	92,584	92,035	90,379	79,784	76,609
5	98,441	97,884	97,522	96,207	95,051	94,482	90,983	89,303	86,174	70,691	66,222
10	98,334	97,720	97,322	95,928	94,745	94,060	90,339	88,258	84,690	68,437	63,410
15	98,210	97,539	97,134	95,661	94,460	93,646	89,591	87,156	83,180	66,410	61,060
20	97,809	96,925	96,652	94,887	93,880	92,738	87,839	84,386	79,641	63,165	57,931
25	97,131	95,972	95,804	93,513	92,925	91,321	85,210	80,320	74,973	59,608	54,512
30	96,321	94,809	94,680	91,934	91,699	89,584	82,194	75,962	70,492	56,112	51,287
35	95,404	93,260	93,288	89,977	90,046	87,402	78,683	71,141	65,865	52,125	48,007
40	94,200	91,239	91,439	87,304	87,766	84,478	74,466	65,974	61,244	47,866	44,518
45	92,396	88,689	88,834	83,700	84,501	80,507	69,284	59,827	56,442	43,054	40,628
50	89,614	85,285	85,044	78,938	80,172	74,976	62,702	53,141	51,422	37,800	36,103
55	85,599	80,635	79,816	72,826	73,893	67,660	54,846	45,558	45,803	32,233	31,404
60	80,282	74,335	72,913	65,250	65,795	58,593	46,318	37,654	39,418	26,046	25,698
65	73,268	66,154	64,391	56,102	56,038	48,649	37,838	30,015	32,738	19,806	20,474
70	64,578	56,192	54,617	45,785	45,434	38,616	29,654	22,505	25,585	14,021	14,960
75	53,914	44,872	43,274	34,262	34,531	28,968	21,798	15,546	18,011	9,139	9,956
80	41,332	33,149	31,711	23,710	24,815	20,003	14,408	9,589	11,376	5,158	5,750
85	28,260	21,352	19,939	15,044	15,337	12,433	8,326	4,900	5,794	2,414	2,782
90	16,403	11,646	10,713	8,087	7,195	6,394	4,077	2,044	2,317	913	1,054
95	7,554	4,729	4,463	3,252	1,777	2,010	1,557	638	689	324	296
100	2,534	1,376	1,360	1,036	214	301	399	120	129	77	57
Black male[1]											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	98,475	98,023	97,703	96,394	95,301	94,911	91,772	91,268	89,499	78,065	74,674
5	98,285	97,688	97,300	95,826	94,570	93,921	90,082	88,412	85,195	68,589	64,385
10	98,171	97,501	97,061	95,497	94,234	93,453	89,393	87,311	83,768	66,377	61,730
15	98,030	97,268	96,826	95,161	93,874	92,965	88,610	86,152	82,332	64,478	59,667
20	97,436	96,301	96,132	94,053	93,108	91,941	86,968	83,621	79,057	61,426	56,733
25	96,415	94,809	94,827	91,904	91,825	90,285	84,227	79,516	74,540	57,736	53,285
30	95,241	93,070	93,125	89,584	90,270	88,327	80,979	75,083	70,344	54,073	49,867
35	94,011	90,827	91,080	86,885	88,331	85,940	77,221	70,049	65,873	49,865	46,541
40	92,504	87,948	88,490	83,441	85,744	82,832	72,780	64,710	61,353	45,414	42,989
45	90,366	84,467	84,997	78,976	82,075	78,686	67,346	58,432	56,589	40,563	39,230
50	86,946	79,984	80,065	73,282	77,239	72,891	60,495	51,748	51,880	35,427	34,766
55	81,898	74,095	73,413	66,101	70,351	65,122	52,426	44,436	46,581	29,754	29,987

See footnote at end of table.

Table 10. Survivorship by age, race, and sex: Death-registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2004—Con.

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and the District of Columbia (D.C.); 1919–1921, 34 states and D.C. 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_x)										
	2004	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
Black male[1]—Con.											
60	75,282	66,334	64,980	57,457	61,669	55,535	43,833	36,790	40,506	23,750	24,194
65	66,782	56,795	55,061	47,485	51,392	45,198	35,371	29,314	34,042	17,806	19,015
70	56,723	45,690	44,213	36,925	39,914	35,018	27,236	21,741	26,923	12,295	13,829
75	44,994	33,755	32,717	25,921	29,064	25,472	19,456	14,419	18,854	7,494	8,892
80	31,985	22,549	22,017	16,560	19,994	16,904	12,186	8,239	11,615	3,894	4,831
85	20,021	12,709	12,383	9,648	11,620	9,898	6,444	3,660	5,605	1,747	2,030
90	10,432	5,972	5,708	4,696	5,174	4,642	2,836	1,246	2,040	595	634
95	4,180	1,971	2,009	1,721	1,240	1,342	961	307	552	189	137
100	1,178	466	513	489	149	192	209	41	77	40	18
Black female[1]											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	98,763	98,356	98,073	97,076	96,172	95,913	93,416	92,796	91,251	81,493	78,525
5	98,603	98,087	97,751	96,598	95,543	95,055	91,906	90,185	87,149	72,768	68,056
10	98,503	97,946	97,590	96,369	95,265	94,679	91,308	89,201	85,607	70,508	65,111
15	98,396	97,818	97,450	96,172	95,057	94,343	90,594	88,088	83,954	68,218	62,384
20	98,195	97,566	97,180	95,729	94,660	93,544	88,736	85,078	80,154	64,764	59,053
25	97,865	97,140	96,754	95,035	94,005	92,336	86,198	81,067	75,359	61,430	55,795
30	97,402	96,514	96,150	94,114	93,070	90,799	83,384	76,816	70,633	58,281	52,773
35	96,774	95,599	95,338	92,807	91,670	88,805	80,092	72,192	65,857	54,595	49,567
40	95,849	94,364	94,137	90,817	89,676	86,052	76,084	67,271	61,130	50,568	46,146
45	94,347	92,676	92,322	88,001	86,793	82,257	71,157	61,365	56,230	45,947	42,279
50	92,146	90,277	89,563	84,168	82,979	77,007	64,885	54,920	50,780	40,886	37,681
55	89,063	86,793	85,653	79,177	77,362	70,196	57,314	47,074	44,742	35,415	33,124
60	84,923	81,886	80,293	72,820	69,941	61,758	48,928	38,761	37,954	28,908	27,524
65	79,231	75,031	73,266	64,716	60,825	52,358	40,504	30,852	31,044	22,302	21,995
70	71,774	66,278	64,729	54,873	51,274	42,612	32,354	23,341	24,107	15,871	16,140
75	62,028	55,684	53,831	43,193	40,540	32,981	24,502	16,576	17,216	10,657	11,066
80	49,714	43,622	41,686	31,756	30,315	23,712	17,039	10,822	11,151	6,324	6,708
85	35,600	30,089	28,004	21,358	19,744	15,550	10,622	6,033	5,972	3,029	3,567
90	21,627	17,536	16,260	12,210	9,675	8,590	5,652	2,774	2,579	1,206	1,492
95	10,374	7,687	7,312	5,217	2,438	2,875	2,345	941	818	448	462
100	3,559	2,364	2,398	1,803	293	445	659	193	179	112	97

[1]For 1939–1941 and 1949–1951, 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 1919–1921, and United States, 1929–1931 to 2004

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and the District of Columbia (D.C.); 1919–1921, 34 states and D.C. 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)										
	2004	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
All races											
0	77.8	75.37	73.88	70.75	69.89	68.07	63.62	59.20	56.40	51.49	49.24
1	77.4	75.08	73.82	71.19	70.75	69.16	65.76	61.94	59.94	57.11	55.20
5	73.5	71.22	70.00	67.43	67.04	65.54	62.49	59.29	57.99	56.21	54.98
10	68.5	66.29	65.10	62.57	62.19	60.74	57.82	54.84	53.79	52.15	51.14
15	63.6	61.38	60.19	57.69	57.33	55.91	53.10	50.25	49.37	47.73	46.81
20	58.8	56.63	55.46	53.00	52.58	51.20	48.54	45.94	45.30	43.53	42.79
25	54.0	51.93	50.81	48.37	47.89	46.56	44.09	41.85	41.47	39.60	39.12
30	49.3	47.23	46.12	43.71	43.18	41.91	39.67	37.75	37.68	35.70	35.51
35	44.5	42.58	41.43	39.07	38.51	37.31	35.30	33.68	33.89	31.90	31.92
40	39.9	37.98	36.79	34.52	33.92	32.81	31.03	29.67	30.08	28.20	28.34
45	35.3	33.44	32.27	30.12	29.50	28.49	26.90	25.79	26.25	24.54	24.77
50	30.9	29.03	27.94	25.93	25.29	24.40	22.98	22.06	22.50	20.98	21.26
55	26.6	24.83	23.85	21.99	21.37	20.57	19.31	18.53	18.90	17.55	17.88
60	22.5	20.90	20.02	18.34	17.71	17.04	15.91	15.24	15.54	14.42	14.76
65	18.7	17.28	16.51	15.00	14.39	13.83	12.80	12.23	12.47	11.60	11.86
70	15.1	13.96	13.32	12.00	11.38	10.92	10.00	9.58	9.74	9.11	9.30
75	11.9	11.00	10.48	9.32	8.71	8.40	7.62	7.32	7.49	6.99	7.08
80	9.1	8.40	7.98	7.10	6.39	6.34	5.73	5.50	5.63	5.25	5.30
85	6.8	6.23	5.96	5.28	4.58	4.69	4.31	4.19	4.21	4.00	3.96
90	5.0	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	2.6	2.46	2.73	2.62	1.91	1.92	2.13	1.51	1.53	1.85	1.58
Male											
0	75.2	71.83	70.11	67.04	66.80	65.47	61.60	57.71	55.50	49.86	47.88
1	74.7	71.58	70.10	67.58	67.80	66.73	64.00	60.75	59.47	55.95	54.35
5	70.8	67.73	66.29	63.82	64.10	63.12	60.76	58.14	57.60	55.11	54.22
10	65.9	62.81	61.41	58.98	59.27	58.35	56.12	53.75	53.44	51.07	50.39
15	61.0	57.91	56.52	54.12	54.43	53.56	51.43	49.18	49.05	46.66	46.06
20	56.2	53.25	51.88	49.54	49.77	48.92	46.91	44.88	44.99	42.48	42.03
25	51.6	48.67	47.37	45.07	45.19	44.36	42.51	40.79	41.11	38.59	38.38
30	46.9	44.10	42.81	40.51	40.56	39.78	38.13	36.71	37.26	34.70	34.76
35	42.2	39.57	38.20	35.95	35.94	35.23	33.79	32.65	33.43	30.94	31.19
40	37.6	35.09	33.64	31.48	31.42	30.79	29.57	28.68	29.63	27.32	27.65
45	33.1	30.66	29.22	27.18	27.09	26.55	25.52	24.87	25.84	23.77	24.14
50	28.8	26.37	25.00	23.12	23.02	22.59	21.72	21.25	22.11	20.32	20.70
55	24.7	22.30	21.08	19.36	19.32	18.96	18.20	17.79	18.53	16.98	17.38
60	20.8	18.53	17.46	15.99	15.94	15.68	14.99	14.62	15.22	13.95	14.33
65	17.1	15.12	14.21	12.99	12.95	12.74	12.07	11.72	12.20	11.24	11.50
70	13.7	12.05	11.35	10.39	10.33	10.11	9.46	9.18	9.52	8.83	9.02
75	10.7	9.39	8.90	8.13	7.99	7.83	7.22	7.02	7.31	6.75	6.84
80	8.2	7.12	6.80	6.27	5.95	5.94	5.44	5.27	5.49	5.10	5.11
85	6.1	5.31	5.13	4.73	4.39	4.41	4.11	4.02	4.10	3.90	3.82
90	4.4	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	2.3	2.25	2.49	2.43	1.91	1.92	2.05	1.50	1.58	1.81	1.55
Female											
0	80.4	78.81	77.62	74.64	73.24	70.96	65.89	60.90	57.40	53.24	50.70
1	79.9	78.47	77.50	74.97	73.93	71.84	67.73	65.37	60.45	58.37	56.10
5	76.0	74.60	73.67	71.19	70.21	68.21	64.43	60.66	58.41	57.39	55.80
10	71.0	69.67	68.75	66.31	65.35	63.38	59.73	56.16	54.16	53.31	51.94
15	66.1	64.73	63.83	61.41	60.45	58.52	54.97	51.54	49.71	48.87	47.60
20	61.2	59.87	58.98	56.59	55.60	53.73	50.37	47.21	45.63	44.66	43.60
25	56.3	55.03	54.16	51.80	50.79	48.99	45.87	43.11	41.86	40.69	39.92
30	51.5	50.19	49.33	47.01	46.00	44.28	41.41	39.02	38.15	36.79	36.30
35	46.6	45.40	44.53	42.28	41.27	39.63	37.01	34.92	34.40	32.95	32.71
40	41.9	40.65	39.80	37.64	36.61	35.06	32.68	30.86	30.58	29.15	29.08
45	37.2	35.97	35.17	33.13	32.09	30.64	28.46	26.89	26.71	25.36	25.44
50	32.7	31.42	30.69	28.77	27.71	26.40	24.40	23.05	22.92	21.67	21.84
55	28.3	27.05	26.39	24.59	23.53	22.33	20.54	19.38	19.28	18.13	18.39

See footnote at end of table.

Table 11. Life expectancy by age, race, and sex: Death-registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2004—Con.

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and the District of Columbia (D.C.); 1919–1921, 34 states and D.C. 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)										
	2004	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
Female—Con.											
60	24.0	22.90	22.29	20.60	19.52	18.50	16.92	15.94	15.87	14.90	15.21
65	20.0	19.02	18.44	16.83	15.80	14.95	13.57	12.78	12.73	11.96	12.22
70	16.2	15.38	14.84	13.35	12.37	11.71	10.56	9.99	9.96	9.38	9.59
75	12.8	12.08	11.58	10.26	9.33	8.94	8.01	7.61	7.65	7.20	7.34
80	9.8	9.13	8.69	7.68	6.72	6.67	5.99	5.70	5.75	5.37	5.51
85	7.2	6.66	6.38	5.63	4.71	4.90	4.47	4.32	4.30	4.08	4.12
90	5.2	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	2.6	2.52	2.81	2.69	1.91	1.93	2.17	1.52	1.48	1.91	1.61
White											
0	78.3	76.13	74.53	71.62	70.73	69.02	64.92	60.86	57.42	51.90	49.64
1	77.7	75.72	74.35	71.91	71.38	69.95	66.84	63.46	60.87	57.46	55.47
5	73.8	71.84	70.52	68.12	67.64	66.29	63.52	60.75	58.86	56.51	55.18
10	68.9	66.92	65.62	63.26	62.79	61.48	58.83	56.29	54.65	52.43	51.34
15	63.9	61.99	60.71	58.37	57.92	56.65	54.09	51.69	50.21	48.01	47.01
20	59.1	57.23	55.98	53.66	53.16	51.91	49.47	47.28	46.04	43.77	43.17
25	54.4	52.50	51.30	49.00	48.44	47.22	44.92	43.02	42.07	39.79	39.26
30	49.6	47.76	46.59	44.28	43.69	42.52	40.40	38.76	38.17	35.86	35.51
35	44.8	43.06	41.86	39.58	38.97	37.86	35.93	34.50	34.27	32.03	32.01
40	40.1	38.41	37.17	34.95	34.33	33.29	31.54	30.33	30.38	28.29	28.28
45	35.5	33.81	32.60	30.48	29.84	28.88	27.29	26.29	26.45	24.60	24.82
50	31.1	29.34	28.21	26.21	25.57	24.70	23.26	22.42	22.64	21.01	21.18
55	26.7	25.08	24.05	22.19	21.58	20.77	19.47	18.75	18.97	17.57	17.91
60	22.6	21.08	20.16	18.48	17.84	17.15	15.98	15.37	15.57	14.43	14.73
65	18.7	17.40	16.59	15.08	14.44	13.86	12.80	12.28	12.47	11.60	11.87
70	15.1	14.02	13.35	12.01	11.37	10.89	9.96	9.58	9.72	9.10	9.31
75	11.9	11.03	10.47	9.27	8.65	8.34	7.55	7.30	7.47	6.98	7.08
80	9.1	8.39	7.95	7.01	6.33	6.27	5.64	5.45	5.59	5.22	5.30
85	6.7	6.20	5.90	5.19	4.53	4.62	4.20	4.12	4.15	3.97	3.95
90	4.9	4.46	4.36	3.84	3.20	3.41	3.16	3.10	3.17	3.00	2.93
95	3.5	3.25	3.25	2.92	2.43	2.53	2.45	2.22	2.28	2.29	2.16
100	2.5	2.43	2.62	2.41	1.91	1.92	1.95	1.48	1.50	1.71	1.56
White male											
0	75.7	72.72	70.82	67.94	67.55	66.31	62.81	59.12	56.34	50.23	48.23
1	75.2	72.35	70.70	68.33	68.34	67.41	64.98	62.04	60.24	56.26	54.61
5	71.3	68.48	66.87	64.55	64.61	63.77	61.68	59.38	58.31	55.37	54.43
10	66.3	63.55	61.98	59.69	59.78	58.98	57.03	54.96	54.15	51.32	50.59
15	61.4	58.65	57.09	54.83	54.93	54.18	52.33	50.39	49.74	46.91	46.25
20	56.6	53.96	52.45	50.22	50.25	49.52	47.76	46.02	45.60	42.71	42.19
25	52.0	49.33	47.92	45.70	45.65	44.93	43.28	41.78	41.60	38.79	38.52
30	47.3	44.71	43.31	41.07	40.97	40.29	38.80	37.54	37.65	34.87	34.88
35	42.6	40.12	38.66	36.43	36.31	35.68	34.36	33.33	33.74	31.08	31.29
40	37.9	35.57	34.04	31.87	31.73	31.17	30.03	29.22	29.86	27.43	27.74
45	33.4	31.07	29.55	27.48	27.34	26.87	25.87	25.28	26.00	23.86	24.21
50	29.1	26.71	25.26	23.34	23.22	22.83	21.96	21.51	22.22	20.39	20.76
55	24.9	22.56	21.25	19.51	19.45	19.11	18.34	17.97	18.59	17.03	17.42
60	20.9	18.71	17.56	16.07	16.01	15.76	15.05	14.72	15.25	13.98	14.35
65	17.2	15.24	14.26	13.02	12.97	12.75	12.07	11.77	12.21	11.25	11.51
70	13.7	12.11	11.35	10.38	10.29	10.07	9.42	9.20	9.51	8.83	9.03
75	10.7	9.40	8.87	8.06	7.92	7.77	7.17	7.02	7.30	6.75	6.84
80	8.1	7.11	6.76	6.18	5.89	5.88	5.38	5.26	5.47	5.09	5.10
85	6.0	5.28	5.09	4.63	4.34	4.35	4.02	3.99	4.06	3.88	3.81
90	4.3	3.85	3.83	3.49	3.16	3.27	3.06	3.03	3.18	2.99	2.85
95	3.1	2.88	2.91	2.67	2.43	2.48	2.40	2.19	2.36	2.31	2.12
100	2.2	2.21	2.41	2.20	1.91	1.92	1.96	1.49	1.58	1.68	1.55

See footnote at end of table.

Table 11. Life expectancy by age, race, and sex: Death-registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2004—Con.

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and the District of Columbia (D.C.); 1919–1921, 34 states and D.C. 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)										
	2004	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
White female											
0	80.8	79.45	78.22	75.49	74.19	72.03	67.29	62.67	58.53	53.62	51.08
1	80.2	78.99	77.98	75.66	74.68	72.77	68.93	64.93	61.51	58.69	56.39
5	76.3	75.10	74.13	71.86	70.92	69.09	65.57	62.17	59.43	57.67	56.03
10	71.3	70.16	69.21	66.97	66.05	64.26	60.85	57.65	55.17	53.57	52.15
15	66.4	65.23	64.29	62.07	61.15	59.39	56.07	53.00	50.67	49.12	47.79
20	61.5	60.36	59.44	57.24	56.29	54.56	51.38	48.52	46.46	44.88	43.77
25	56.6	55.51	54.60	52.42	51.45	49.77	46.78	44.25	42.55	40.88	40.05
30	51.8	50.65	49.76	47.60	46.63	45.00	42.21	39.99	38.72	36.96	36.42
35	46.9	45.82	44.93	42.82	41.84	40.28	37.70	35.73	34.86	33.09	32.82
40	42.1	41.03	40.16	38.12	37.13	35.64	33.25	31.52	30.94	29.26	29.17
45	37.4	36.30	35.49	33.54	32.53	31.12	28.90	27.39	26.98	25.45	25.51
50	32.9	31.71	30.96	29.11	28.08	26.76	24.72	23.41	23.12	21.74	21.89
55	28.4	27.29	26.61	24.85	23.81	22.58	20.73	19.60	19.40	18.18	18.43
60	24.1	23.09	22.45	20.79	19.69	18.64	17.00	16.05	15.93	14.92	15.23
65	20.0	19.14	18.55	16.93	15.88	15.00	13.56	12.81	12.75	11.97	12.23
70	16.2	15.46	14.89	13.37	12.38	11.68	10.50	9.98	9.94	9.38	9.59
75	12.8	12.11	11.58	10.21	9.28	8.87	7.92	7.56	7.62	7.20	7.33
80	9.7	9.12	8.65	7.59	6.67	6.59	5.88	5.63	5.70	5.35	5.50
85	7.1	6.62	6.32	5.54	4.66	4.83	4.34	4.24	4.24	4.06	4.10
90	5.1	4.69	4.59	4.05	3.23	3.51	3.24	3.17	3.16	3.00	3.02
95	3.6	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
Black[1]											
0	73.1	69.16	68.52	64.11	63.91	60.73	53.85	48.53	47.03	35.87	33.80
1	73.1	69.43	68.99	65.27	65.75	62.65	57.15	51.71	51.01	43.84	43.00
5	69.2	65.64	65.25	61.62	62.21	59.25	54.13	49.25	49.44	45.34	45.55
10	64.3	60.75	60.38	56.79	57.41	54.50	49.50	44.80	45.26	41.74	42.46
15	59.4	55.86	55.49	51.94	52.57	49.73	44.89	40.37	41.02	38.02	39.04
20	54.6	51.19	50.75	47.34	47.88	45.19	40.73	36.62	37.72	34.86	36.03
25	50.0	46.67	46.18	43.00	43.35	40.85	36.91	33.32	34.91	31.72	33.04
30	45.4	42.22	41.69	38.70	38.89	36.59	33.17	30.07	31.98	28.43	29.96
35	40.8	37.87	37.28	34.48	34.56	32.44	29.53	26.94	29.07	25.39	26.82
40	36.3	33.65	32.98	30.46	30.39	28.48	26.06	23.82	26.07	22.41	23.73
45	31.9	29.55	28.87	26.65	26.46	24.75	22.82	20.97	23.17	19.58	20.67
50	27.8	25.62	25.03	23.11	22.74	21.38	19.94	18.22	20.17	16.84	17.95
55	24.0	21.95	21.50	19.83	19.45	18.41	17.43	15.80	17.33	14.33	15.23
60	20.4	18.59	18.29	16.83	16.53	15.87	15.18	13.62	14.72	12.16	13.06
65	17.1	15.56	15.37	14.16	13.96	13.59	13.02	11.49	12.22	10.22	10.87
70	14.1	12.87	12.67	11.77	11.63	11.48	10.93	9.54	9.90	8.59	8.96
75	11.4	10.48	10.32	9.89	9.52	9.48	8.97	7.84	8.00	7.08	7.24
80	9.1	8.30	8.17	8.20	7.28	7.62	7.31	6.19	6.22	5.80	5.79
85	7.1	6.51	6.54	6.54	5.27	5.79	5.91	4.92	4.88	4.80	4.56
90	5.5	4.94	5.13	5.09	3.48	3.97	4.64	3.83	3.84	4.26	3.60
95	4.2	3.82	4.08	4.28	2.43	2.70	3.51	2.83	2.90	3.31	2.82
100	3.2	2.91	3.58	3.93	1.91	1.94	2.57	1.87	1.94	2.27	2.18
Black male[1]											
0	69.5	64.47	64.10	60.00	61.48	58.91	52.26	47.55	47.14	34.05	32.54
1	69.6	64.76	64.60	61.24	63.50	61.06	55.93	51.08	51.63	42.53	42.46
5	65.7	60.98	60.86	57.60	59.98	57.69	52.95	48.69	50.18	44.25	45.06
10	60.8	56.09	56.01	52.79	55.19	52.96	48.34	44.27	45.99	40.65	41.90
15	55.9	51.22	51.14	47.96	50.39	48.23	43.74	39.83	41.75	36.77	38.26
20	51.2	46.71	46.48	43.49	45.78	43.73	39.52	35.95	38.36	33.46	35.11
25	46.7	42.40	42.09	39.45	41.38	39.49	35.72	32.67	35.54	30.44	32.21
30	42.3	38.14	37.81	35.40	37.05	35.31	32.05	29.45	32.51	27.33	29.25
35	37.8	34.02	33.60	31.42	32.81	31.21	28.48	26.39	29.54	24.42	26.16
40	33.4	30.05	29.51	27.61	28.72	27.29	25.06	23.36	26.53	21.57	23.12
45	29.1	26.18	25.61	24.03	24.89	23.59	21.88	20.59	23.55	18.85	20.09
50	25.1	22.50	22.03	20.69	21.28	20.25	19.06	17.92	20.47	16.21	17.34
55	21.5	19.08	18.79	17.66	18.11	17.36	16.60	15.46	17.50	13.82	14.69

See footnote at end of table.

Table 11. Life expectancy by age, race, and sex: Death-registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2004—Con.

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and the District of Columbia (D.C.); 1919–1921, 34 states and D.C. 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)										
	2004	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
Black male[1]—Con.											
60	18.2	16.01	15.89	14.93	15.29	14.91	14.37	13.15	14.74	11.67	12.62
65	15.2	13.27	13.29	12.53	12.84	12.75	12.21	10.87	12.07	9.74	10.38
70	12.4	10.88	10.94	10.40	10.81	10.74	10.11	8.78	9.58	8.00	8.33
75	9.9	8.84	8.90	8.76	8.93	8.83	8.17	6.99	7.61	6.58	6.60
80	8.0	7.01	7.03	7.35	6.87	7.07	6.58	5.42	5.83	5.53	5.12
85	6.3	5.58	5.61	5.92	5.08	5.38	5.34	4.30	4.53	4.48	4.04
90	4.9	4.24	4.47	4.68	3.42	3.78	4.23	3.42	3.60	4.01	3.21
95	3.8	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
Black female[1]											
0	76.3	73.73	72.88	68.32	66.47	62.70	55.56	49.51	46.92	37.67	35.04
1	76.3	73.96	73.31	69.37	68.10	64.37	58.46	52.33	50.39	45.15	43.54
5	72.4	70.16	69.54	65.70	64.54	60.93	55.40	49.81	48.70	46.42	46.04
10	67.5	65.26	64.65	60.85	59.72	56.17	50.75	45.33	44.54	42.84	43.02
15	62.5	60.34	59.74	55.97	54.85	51.36	46.13	40.87	40.36	39.18	39.79
20	57.7	55.49	54.90	51.22	50.07	46.77	42.04	37.22	37.15	36.14	36.89
25	52.8	50.72	50.13	46.57	45.40	42.35	38.20	33.93	34.35	32.97	33.90
30	48.1	46.03	45.43	42.00	40.83	38.02	34.40	30.67	31.48	29.61	30.70
35	43.4	41.45	40.79	37.56	36.41	33.82	30.83	27.47	28.58	26.44	27.52
40	38.8	36.96	36.28	33.32	32.16	29.82	27.19	24.30	25.60	23.34	24.37
45	34.3	32.58	31.94	29.31	28.14	26.07	23.89	21.39	22.61	20.43	21.36
50	30.1	28.38	27.84	25.52	24.31	22.67	20.95	18.60	19.76	17.65	18.67
55	26.0	24.41	24.00	21.97	20.89	19.62	18.38	16.27	17.09	14.98	15.88
60	22.2	20.71	20.42	18.66	17.83	16.95	16.10	14.22	14.69	12.78	13.60
65	18.6	17.37	17.13	15.67	15.12	14.54	13.95	12.24	12.41	10.82	11.38
70	15.3	14.32	14.05	13.02	12.46	12.29	11.82	10.38	10.25	9.22	9.62
75	12.2	11.56	11.37	10.85	10.10	10.15	9.81	8.62	8.37	7.55	7.90
80	9.6	9.05	8.95	8.87	7.66	8.15	8.02	6.90	6.58	6.05	6.48
85	7.5	6.99	7.09	7.00	5.44	6.15	6.41	5.48	5.22	5.09	5.10
90	5.7	5.24	5.47	5.41	3.52	4.13	4.96	4.20	4.07	4.50	4.01
95	4.3	3.97	4.30	4.58	2.43	2.74	3.71	3.09	3.18	3.45	3.15
100	3.2	2.97	3.69	4.20	1.91	1.94	2.70	2.04	2.23	2.39	2.49

[1]For 1939–1941 and 1949–1951, 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, 1900–1928, and United States, 1929–2004

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

	All races			White			Black[1]		
Area and year	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
United States[2]									
2004	77.8	75.2	80.4	78.3	75.7	80.8	73.1	69.5	76.3
2003[3]	77.4	74.7	80.0	77.9	75.3	80.4	72.6	68.9	75.9
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[4]	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[5]	69.9	66.6	73.4	70.8	67.4	74.4	63.7	61.0	66.6
1962[5]	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

See footnotes at end of table.

Table 12. Estimated life expectancy at birth in years, by race and sex: Death-registration states, 1900–1928, and United States, 1929–2004—Con.

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

Area and year	All races			White			Black[1]		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
United States[2]—Con.									
1941	64.8	63.1	66.8	66.2	64.4	68.5	53.8	52.5	55.3
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
Death-registration states									
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

[1]Prior to 1970, data for the black population are not available. Data shown for 1900–1969 are for the nonwhite population. See "Technical Notes."
[2]Alaska included in 1959 and Hawaii in 1960.
[3]Estimates for 2003 have been revised. The revised U.S. Life Tables are available from: http://www.cdc.gov/nchs/data/nvsr/nvsr54/nvsr54_14.pdf.
[4]Deaths based on a 50-percent sample.
[5]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 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: survival in the U.S. is such that over one-third of the population survives beyond age 85, improvements have occurred in age reporting at older ages, and high quality old-age mortality data are available from the Medicare program.

Geographic coverage—The geographic areas covered in life tables before 1929–1931 were limited to the death-registration areas. Life tables for 1900–1902 and 1909–1911 were constructed using mortality data from the 1900 death-registration states (10 states and the District of Columbia (D.C.)) and for 1919–1921 from the 1920 death-registration states (34 states and D.C.). The tables for 1929–1931 through 1958 cover the coterminous United States. Decennial life table values for the 3-year period 1959–1961 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 1960–1969, 1970–1979, and 1980–1989 were constructed using the U.S. decennial life tables for 1959–1961, 1969–1971, and 1979–1981, 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 1991–1999 are based on postcensal population estimates of the population enumerated in the 1990 decennial census, whereas life table values for 2000–2004 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 2000–2004. 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). Revised life table values for

1991–1999 using the census 2000-based new intercensal population estimates will be estimated by NCHS in the upcoming year.

New Jersey data, 1962–1964—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 1949–1951 and 1959–1961 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 1939–1941. Figures were missing for the following groups:

Years	Race and sex
1900–1902	Total white, total black
1909–1911	Total white, total black
1919–1921	Total, male, female, total white, total black
1929–1931	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
1900–1945	Total
1900–1947	Male
1900–1947	Female
1900–1950	White
1900–1944	White male
1900–1944	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 2004 are estimated using postcensal estimates published in

2004 based on the 2000 census estimated as of July 1, 2004. 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 U.S. Office of Management and Budget racial categories as of 1977 and historical categories for death data (5). The modified procedures are described in detail elsewhere (7). 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 1991–1999 life tables will be re-estimated using 2000 census based intercensal population estimates.

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 are based on Medicare data collected 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 2004 life tables, pooled 1999–2001 Medicare data were used as 2004 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.

$$F = \frac{D}{D^a} \quad [1]$$

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 2004 mortality data.

Interpolation of P_x and D_x—Anomalies, both random and those associated with reporting age at death, can be problematic when using vital statistics and census data by single years of age to estimate the probability of death (1). Graduation techniques are often used to eliminate these anomalies and to derive a smooth curve by age. Beer's ordinary minimized fifth difference formula is used to obtain smoothed values of P_x and D_x (see reference 1 for details on the application of Beer's method).

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

Table I. Values for F used to adjust for not-stated age based on 2004 mortality data

Race and sex	Total deaths	Total deaths for which age was not stated	F
Total.	2,397,615	346	1.00014433
Male	1,181,668	274	1.00023193
Female.	1,215,947	72	1.00005922
White	2,056,643	269	1.00013081
Male	1,007,266	218	1.00021647
Female.	1,049,377	51	1.00004860
Black	287,315	64	1.00022280
Male	145,970	46	1.00031523
Female.	141,345	18	1.00012736

$$q_0 = \frac{D_0\,(1-f)}{B^t} + \frac{D_0\,f}{B^{t-1}} \quad [2]$$

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 2003–2004.

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*+½). This simplification is generally considered acceptable when age intervals are 1 year of age in length (1). Under this assumption, $l_x = L_x + ½d_x$ 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, $N_x = P_x + ½D_x$ 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

$$q_x = \frac{D_x}{N_x} = \frac{D_x}{P_x + \frac{1}{2}D_x} \quad [3]$$

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 over 85 years can be expressed using the formula

$$q_x = q_{x-1} \cdot e^k \quad [4]$$

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

$$k_x = \ln(q_x) - \ln(q_{x-1}) \quad [5]$$

Table II. Births in 2003 and 2004, deaths in 2004 of infants born in 2003 and 2004, 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									
2003	4,089,950	2,093,535	1,996,415	3,225,848	1,652,146	1,573,702	599,847	305,207	294,640
2004	4,112,052	2,104,661	2,007,391	3,222,928	1,650,697	1,572,231	616,074	313,896	302,178
Deaths in 2004 of infants born in									
2003	3,397	1,918	1,479	2,191	1,229	962	1,032	585	447
2004	24,539	13,800	10,739	16,040	9,036	7,004	7,462	4,184	3,278
Separation factor (f)	0.122	0.122	0.121	0.120	0.120	0.121	0.122	0.123	0.120

Values for k_x are then obtained from the Medicare data. Table III shows values for k by age, race, and sex based on pooled 1991–2001 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, $_\infty q_{100}$ is set equal to 1.0 because 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

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

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

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

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 is calculated assuming that the survivor function declines linearly between age x and $x + 1$. This gives the formula

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

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

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

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

Table III. k values by age, race, and sex based on insured Medicare data: United States, 1999–2001

	Total			White			Black		
Age	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
84–85	0.0898549	0.0864076	0.0973817	0.0919802	0.0886566	0.0996705	0.0694068	0.0661179	0.0762840
85–86	0.0890116	0.0854434	0.0965147	0.0910896	0.0876323	0.0987562	0.0688880	0.0655157	0.0757369
86–87	0.0880989	0.0844055	0.0955687	0.0901240	0.0865277	0.0977568	0.0683365	0.0648788	0.0751511
87–88	0.0871128	0.0832905	0.0945386	0.0890791	0.0853392	0.0966665	0.0677509	0.0642060	0.0745247
88–89	0.0860496	0.0820954	0.0934192	0.0879507	0.0840634	0.0954797	0.0671298	0.0634964	0.0738556
89–90	0.0849057	0.0808174	0.0922055	0.0867350	0.0826974	0.0941908	0.0664719	0.0627488	0.0731420
90–91	0.0836777	0.0794545	0.0908927	0.0854283	0.0812389	0.0927947	0.0657759	0.0619625	0.0723820
91–92	0.0823627	0.0780047	0.0894765	0.0840275	0.0796860	0.0912868	0.0650407	0.0611368	0.0715737
92–93	0.0809582	0.0764671	0.0879531	0.0825300	0.0780378	0.0896628	0.0642651	0.0602711	0.0707155
93–94	0.0794625	0.0748414	0.0863193	0.0809339	0.0762943	0.0879197	0.0634483	0.0593651	0.0698059
94–95	0.0778742	0.0731281	0.0845728	0.0792383	0.0744563	0.0860552	0.0625893	0.0584185	0.0688436
95–96	0.0761930	0.0713287	0.0827124	0.0774428	0.0725258	0.0840682	0.0616877	0.0574315	0.0678274
96–97	0.0744195	0.0694455	0.0807379	0.0755487	0.0705060	0.0819591	0.0607430	0.0564044	0.0667565
97–98	0.0725553	0.0674822	0.0786508	0.0735578	0.0684012	0.0797298	0.0597550	0.0553376	0.0656304
98–99	0.0706028	0.0654433	0.0764537	0.0714736	0.0662171	0.0773840	0.0587237	0.0542321	0.0644489

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

Race and sex	s
Total, both sexes	−0.001370
Male	−0.001496
Female	−0.001487
White, both sexes	−0.001460
Male	−0.001602
Female	−0.001584
Black, both sexes	−0.000761
Male	−0.000848
Female	−0.000842

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.

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

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

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

Abridging 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 ($_n q_x$, $_n d_x$, and $_n L_x$). Thus, $_5 q_{20}$ 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, $_n q_x$, $_n d_x$, and $_n L_x$ must be recalculated in the abridged life table. It is simplest to begin with $_n d_x$. The calculations are made for all but the final age interval as follows:

$$_n d_x = l_x - l_{x+n}$$

$$_n q_x = \frac{_n d_x}{l_x}$$

$$_n L_x = T_x - T_{x+n}$$

Note that for the open-ended interval, ages 100 years 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 2004 U.S. total population abridged from Table 1.

Table V. Life table for the total population: United States, 2004

Age	Probability of dying between ages x to $x+n$ $_n q_x$	Number surviving to age x l_x	Number dying between ages x to $x+n$ $_n d_x$	Person-years lived between ages x to $x+n$ $_n L_x$	Total number of person-years lived above age x T_x	Expectation of life at age x e_x
0–1	0.006799	100,000	680	99,403	7,783,712	77.8
1–5	0.001192	99,320	118	396,996	7,684,309	77.4
5–10	0.000738	99,202	73	495,813	7,287,313	73.5
10–15	0.000930	99,129	92	495,469	6,791,500	68.5
15–20	0.003302	99,036	327	494,453	6,296,031	63.6
20–25	0.004691	98,709	463	492,411	5,801,578	58.8
25–30	0.004787	98,246	470	490,058	5,309,166	54.0
30–35	0.005380	97,776	526	487,611	4,819,109	49.3
35–40	0.007540	97,250	733	484,539	4,331,497	44.5
40–45	0.011506	96,517	1111	479,990	3,846,959	39.9
45–50	0.017511	95,406	1671	473,105	3,366,969	35.3
50–55	0.025373	93,735	2378	463,050	2,893,864	30.9
55–60	0.036327	91,357	3319	448,966	2,430,814	26.6
60–65	0.055934	88,038	4924	428,618	1,981,848	22.5
65–70	0.083290	83,114	6923	399,208	1,553,230	18.7
70–75	0.125821	76,191	9586	358,210	1,154,022	15.1
75–80	0.190381	66,605	12680	302,596	795,812	11.9
80–85	0.289212	53,925	15596	231,451	493,216	9.1
85–90	0.420316	38,329	16110	150,853	261,765	6.8
90–95	0.576098	22,219	12800	77,023	110,912	5.0
95–99	0.733501	9,419	6909	27,415	33,889	3.6
100 or more	1.000000	2,510	2510	6,473	6,473	2.6

Contents

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