

United States Life Tables, 2001

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Abstract

This report presents period life tables for the United States based on age-specific death rates in 2001. Data used to prepare these life tables are 2001 final mortality statistics; July 1, 2001, 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 2001 the overall expectation of life at birth was 77.2 years, representing an increase of 0.2 years from life expectancy in 2000. Between 2000 and 2001, life expectancy increased for both males and females and for both the white and black populations. Life expectancy increased by 0.3 years for black males (from 68.3 to 68.6) and black females (from 75.2 to 75.5). It increased by 0.1 year for white males (from 74.9 to 75.0) and white females (from 80.1 to 80.2).

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 2001 assumes a hypothetical cohort subject throughout its lifetime to the age-specific death rates prevailing for the actual population in 2001. 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 2001 are final numbers of deaths for the year 2001, postcensal population estimates for the year 2001, and data from the Medicare program of the Centers for Medicaid and Medicare Services.

The populations used to estimate the life tables shown in this report were produced under a collaborative agreement with the U.S. Census Bureau and are based on counts from the 2000 census. Reflecting the new guidelines issued in 1997 by the Office of Management and Budget (OMB), the 2000 census included an option for individuals to report more than one race as appropriate for themselves and household members (4). The 1997 OMB guidelines also provided

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for the reporting of Asian persons separately from Native Hawaiians or other Pacific Islanders. Under the prior OMB standards (issued in 1977), data for Asian or Pacific Islander persons were collected as a single group (5). Death certificates currently collect only one race for the decedent in the same categories as specified in the 1977 OMB guidelines (death certificate data do not report Asians separately from Native Hawaiians or other Pacific Islanders). Death certificate data by race (the numerators for death rates) are thus currently incompatible with the population data collected in the 2000 census (the denominators for the rates). To produce death rates for 2000 and 2001 it was necessary to “bridge” the reported population data for multiple-race persons back to single-race categories. In addition the 2000 census counts were modified to be consistent with the 1977 OMB race categories, that is, to report the data for Asian persons and Native Hawaiians or other Pacific Islanders as a combined category, Asian or Pacific Islanders, and to reflect age as of the census reference data (6). The procedures used to produce the “bridged” populations are described in separate publications (7,8). It is anticipated that “bridged” population data will be used over the next few years for computing population-based rates. Beginning with deaths occurring in 2003, some States will use multiple-race reporting. As States gradually begin to collect data on race according to the 1997 OMB guidelines, it is expected that use of the bridged populations will be discontinued.

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

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

Life tables can be classified in two ways according to the length of the age interval in which data are presented. A complete life table contains data for every single year of age. An abridged life table typically contains data by 5- or 10-year age intervals. A complete life table, of course, can be easily aggregated into 5- or 10-year age groups (see “Technical Notes” for instructions on how to do this). Other than the decennial life tables, U.S. life tables based on data prior to 1997 are abridged life tables constructed by reference to a “standard” table (8). The 2001 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 2001 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 2001 for the total population was 77.2 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, 51,820 persons out of the original 2001 synthetic life table cohort of 100,000 (or 52.0 percent) were alive at exact age 80. In other words, the probability that a person will survive from birth to age 80, given 2001 age-specific mortality, is 52 percent. Probabilities of survival can be calculated at any age by simply dividing the number of survivors at the terminal age by the number at the beginning age. For example, to calculate the probability of surviving from age 20 to age 85, one would divide the number of survivors at age 85 (35,943) by the number of survivors at age 20 (98,682), which results in a 36.4 percent probability of survival.

Explanation of the columns of the life table

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

Column 2—Probability of dying (q_x)—This column shows the probability of dying between ages x to $x + 1$. For example, for males in the age interval 20–21 years, the probability of dying is 0.001355 (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, 99,386 will complete the first year of life and enter the second; 99,200 will reach age 10; 98,933 will reach age 20; and 43,267 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, 751 will die in the first year of life; 133 will die between ages 20 and 21; and 953 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 98,377 for males in the age interval 20 to 21 years is the total number of years lived between the 20th and 21st birthdays by the 98,444 (column 3) males who reached their 20th birthday out of 100,000 males born alive (table 2).

Column 6—Total number of person-years lived (T_x)—This column shows the total number of person-years that would be lived after the beginning of the age interval x to $x + 1$ by the synthetic life table cohort. For example, the figure 5,463,663 is the total number of years lived after attaining age 20 by the 98,444 males reaching that age (table 2).

Column 7—Expectation of life (e_x)—The expectation of life at any given age is the average number of years remaining to be lived by those surviving to that age on the basis of a given set of age-specific rates of dying. It is derived by dividing the total person-years that would be lived above age x by the number of persons who survived to that age interval (T_x / l_x). Thus, the average remaining lifetime for males who reach age 20 is 55.5 years (5,463,663 divided by 98,444) (table 2).

Table A. Expectation of life by age, race, and sex: United States, 2001

Age	All races			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
0	77.2	74.4	79.8	77.7	75.0	80.2	72.2	68.6	75.5
1	76.7	74.0	79.3	77.1	74.5	79.6	72.2	68.6	75.4
5	72.8	70.1	75.4	73.2	70.6	75.7	68.3	64.8	71.5
10	67.9	65.2	70.4	68.3	65.6	70.8	63.4	59.8	66.6
15	62.9	60.2	65.5	63.3	60.7	65.8	58.5	54.9	61.7
20	58.1	55.5	60.6	58.5	56.0	60.9	53.7	50.3	56.8
25	53.4	50.9	55.7	53.8	51.3	56.1	49.1	45.8	52.0
30	48.6	46.2	50.9	49.0	46.6	51.2	44.5	41.4	47.2
35	43.9	41.5	46.0	44.2	41.9	46.3	39.9	36.9	42.5
40	39.2	37.0	41.3	39.5	37.3	41.6	35.5	32.5	38.0
45	34.7	32.5	36.6	34.9	32.8	36.9	31.2	28.4	33.6
50	30.3	28.2	32.1	30.5	28.4	32.3	27.1	24.4	29.3
55	26.0	24.0	27.7	26.1	24.2	27.8	23.3	20.8	25.3
60	21.9	20.1	23.4	22.0	20.2	23.5	19.7	17.5	21.5
65	18.1	16.4	19.4	18.2	16.5	19.5	16.4	14.4	17.9
70	14.6	13.1	15.7	14.6	13.2	15.7	13.5	11.7	14.7
75	11.5	10.2	12.4	11.5	10.2	12.3	10.8	9.3	11.7
80	8.8	7.7	9.4	8.7	7.7	9.3	8.6	7.3	9.2
85	6.5	5.7	6.9	6.4	5.6	6.7	6.7	5.7	7.0
90	4.8	4.2	5.0	4.6	4.1	4.8	5.1	4.5	5.3
95	3.6	3.2	3.7	3.4	3.0	3.4	3.9	3.6	4.0
100	2.7	2.5	2.8	2.4	2.3	2.5	3.0	2.9	3.0

Table B. Number of survivors by age, out of 100,000 born alive, by race and sex: United States, 2001

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	99,316	99,249	99,386	99,435	99,379	99,494	98,603	98,457	98,753
5	99,184	99,102	99,269	99,313	99,243	99,387	98,415	98,248	98,588
10	99,108	99,019	99,200	99,242	99,167	99,320	98,313	98,130	98,502
15	99,012	98,906	99,124	99,153	99,061	99,249	98,186	97,975	98,403
20	98,682	98,444	98,933	98,835	98,625	99,058	97,761	97,335	98,202
25	98,214	97,752	98,702	98,406	97,996	98,844	97,022	96,186	97,861
30	97,743	97,092	98,428	97,979	97,398	98,599	96,207	95,005	97,386
35	97,189	96,359	98,057	97,476	96,730	98,271	95,244	93,724	96,717
40	96,388	95,337	97,481	96,745	95,786	97,759	93,891	92,031	95,675
45	95,234	93,892	96,620	95,691	94,445	96,999	91,893	89,624	94,054
50	93,552	91,768	95,381	94,152	92,487	95,889	88,959	85,949	91,794
55	91,179	88,839	93,563	91,956	89,769	94,223	84,884	80,889	88,623
60	87,705	84,654	90,795	88,670	85,811	91,614	79,381	74,167	84,227
65	82,519	78,506	86,550	83,658	79,856	87,535	72,170	65,643	78,207
70	75,122	69,875	80,332	76,407	71,360	81,490	62,869	55,024	70,086
75	65,014	58,335	71,532	66,314	59,800	72,753	51,663	42,652	59,865
80	51,820	43,928	59,311	52,987	45,170	60,477	38,796	29,515	47,187
85	35,943	27,975	43,267	36,757	28,780	44,132	25,758	17,461	33,197
90	19,796	13,580	25,184	20,124	13,871	25,556	14,172	8,282	19,329
95	7,890	4,546	10,596	7,797	4,497	10,451	6,034	2,976	8,623
100	2,045	953	2,896	1,841	857	2,583	1,821	766	2,675

Results

Life expectancy in the United States

Tables 1–9 show complete life tables by race (white and black) and sex for 2001. Tables A and B summarize life expectancy and survival by age, race, and sex. Life expectancy at birth for 2001 represents the average number of years that a group of infants would live if the infants were to experience throughout life the age-specific death rates prevailing in 2001. In 2001 life expectancy at birth was

77.2 years, increasing by 0.2 years from 77.0 years in 2000. This increase is typical of the average yearly changes that occurred during the past 30 years in the United States. Throughout the past century, the trend in U.S. life expectancy was one of gradual improvement that has continued into the new century (11).

Life expectancy was 74.4 years for males, increasing by 0.1 year from 74.3 years in 2000. Life expectancy for females in 2001 was 79.8 years, increasing by 0.1 year from 79.7 years in 2000. The increase in life expectancy between 2000 and 2001 for females was primarily

the result of decreases in mortality from heart disease, cancer, stroke, Influenza and pneumonia, and congenital malformations. The increase in life expectancy for females could have been greater were it not for the offsetting effect of increases in mortality from homicide, Alzheimer's disease, kidney disease, unintentional injuries, and hypertension. For males, life expectancy increased primarily because of decreases in mortality from heart disease, cancer, stroke, Influenza and pneumonia, and Chronic lower respiratory diseases. The increase in life expectancy for males could have been greater were it not for the offsetting increases in mortality from homicide, unintentional injuries, suicide, Septicemia, and Alzheimer's disease (12).

The difference in life expectancy between the sexes was 5.4 years in 2001, unchanged from the previous year. From 1900 to 1975, the difference in life expectancy between the sexes increased from 2.0 years to 7.8 years. The increasing gap during these years is attributed to increases in male mortality due to ischemic heart disease and lung cancer, both of which increased largely as the result of men's early and widespread adoption of cigarette smoking (11,13). Since 1979 the difference in life expectancy between the sexes has narrowed from 7.8 years to 5.4 years, reflecting proportionately greater increases in lung cancer mortality for women than for men and proportionately larger decreases in heart disease mortality among men (11–13).

Between 2000 and 2001, life expectancy for the black population rose 0.3 years to 72.2 years. For the white population, life expectancy rose by 0.1 year to 77.7 years. The difference in life expectancy between the white and black populations was 5.5 years in 2001, 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 (80.2 years), followed by black females (75.5 years), white males (75.0 years), and black males (68.6 years). Between 2000 and 2001, life expectancy increased 0.3 years for black males (from 68.3 in 2000 to 68.6 in 2001). Black males experienced an unprecedented decline in life expectancy every year for 1984–89 (13), but annual increases in 1990–92 and 1994–2001. From 2000 to 2001, life expectancy for black females increased from 75.2 years to 75.5 years, an increase of 0.3 years. Life expectancy for white males rose 0.1 year, from 74.9 years in 2000 to 75.0 years in 2001. White female life expectancy increased during the same period by 0.1 year from 80.1 to 80.2 years. Overall, gains in life expectancy between 1980 and 2001 were 4.8 years for black males, 4.3 years for white males, 3.0 years for black females, and 2.1 years for white females (table 12).

The 2001 life table may be used to compare life expectancy at any age from birth onward. On the basis of mortality experienced in 2001, a person aged 65 years could expect to live an average of 18.1 more years for a total of 83.1 years, and a person aged 100 years could expect to live an additional 2.7 years on average (table A). Life expectancy at 100 years of age, particularly for the black population, should be interpreted with caution as these figures may be affected somewhat by age misreporting (9,15,16).

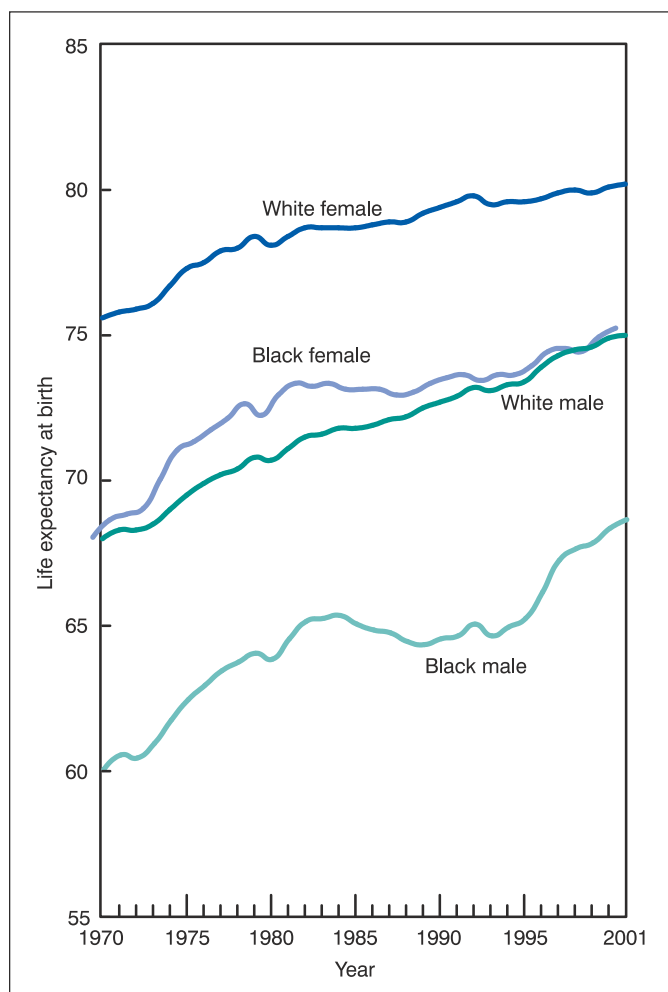


Figure 1. Life expectancy at birth by race and sex: 1970–2001

Survivorship in the United States

Table B summarizes the number of survivors out of 100,000 persons born alive (*lx*) by age, race, and sex. Table 10 shows trends in survivorship from 1900 to 2001. In 2001, 99.3 percent of all infants born in the United States survived the first year of life. In contrast, only 87.6 percent of infants born in 1900 survived the first year. Fifty-two percent of the 2001 synthetic life table cohort survived to age 80 years and about 2.0 percent survived to age 100. In 1900 the median age at death was 58 years and only 0.03 percent survived to age 100.

Among the four race-sex groups (figure 2, table B), white females have the highest median age at death with about 51 percent surviving to age 83. Of the original hypothetical cohort of 100,000 infant white females, 99.1 percent survive to age 20, 87.5 percent survive to age 65, and 44.1 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 79 years. However, white males have slightly higher survival rates than black females at the younger ages with 98.6 percent surviving to age 20 and 79.9 percent surviving to age 65 compared with 98.2 percent and 78.2 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 28.8 percent compared with 33.2 percent for black females. This crossover, which occurs at about age 72, is clearly shown in figure 2. The median age at death for black males is 72 years, 11 years less than that for white females; 97.3 percent of black males survive to age 20, 65.6 percent survive to age 65, and 17.5 percent survive to age 85. By age 100, there is very little difference between the white and black populations in terms of survival. Somewhat less than 1 percent of white and black males and about 2 percent of white and black females survive to age 100.

Plotting the percent surviving by age for the periods 1900–1902, 1949–51, and 2001 shows an increasingly “rectangular” survival curve 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 2001 is nearly flat until about age 50 after which the decline in survival becomes more rapid. Improvements in survival between

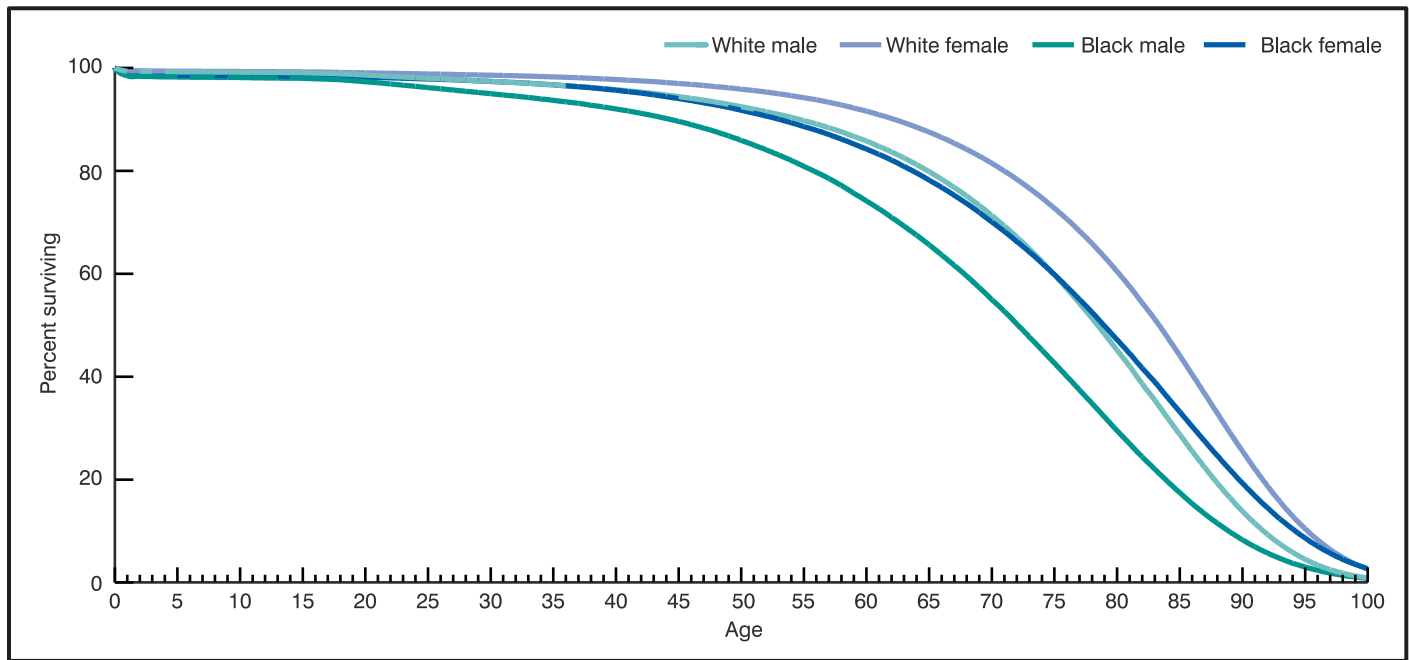


Figure 2. Percent surviving by age, race, and sex: United States, 2001

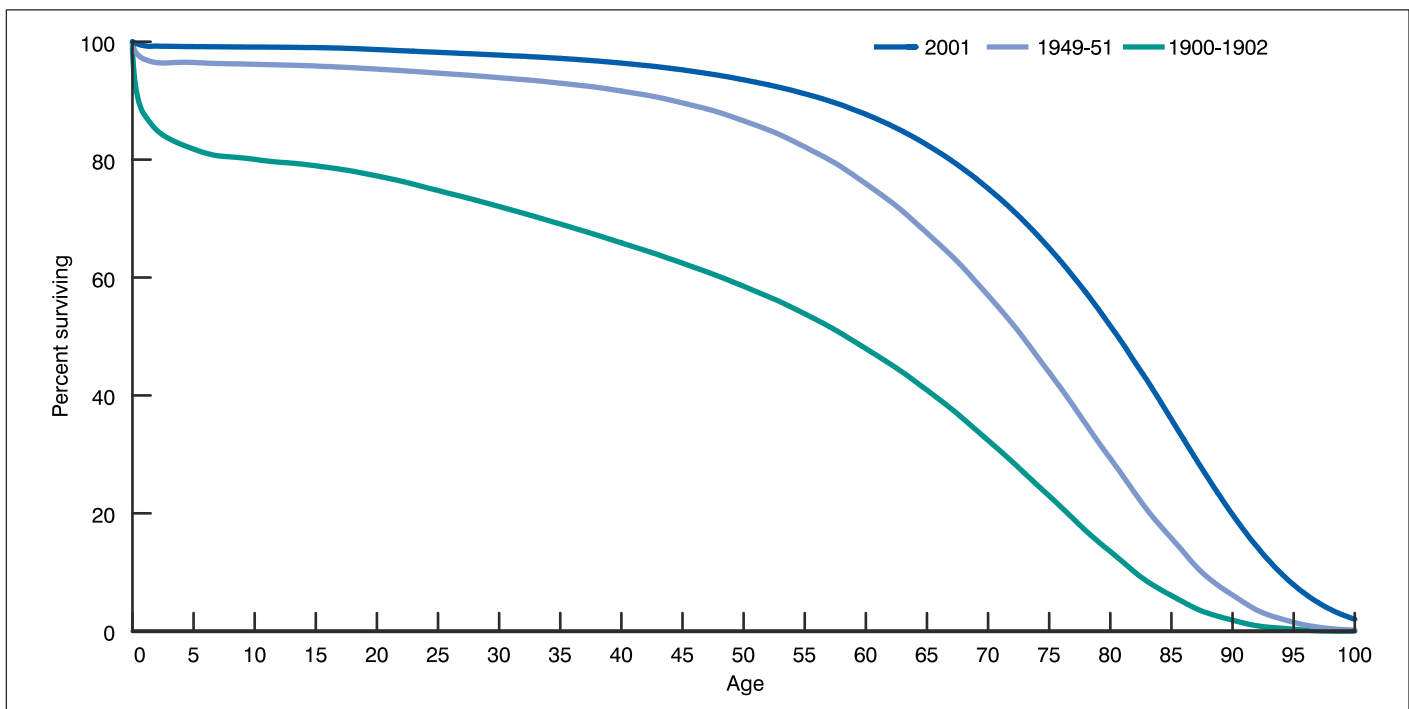


Figure 3. Percent surviving by age: Death-registration States, 1900–1902, and United States, 1949–51 and 2001

1900–1902 and 1949–51 occurred at all ages, although the largest improvements were among the younger population. Between 1949–51 and 2001, improvements occurred primarily for the older population.

References

- Shryock HS, Siegel JS, et al. The methods and materials of demography, vol 2. U.S. Bureau of the Census. Washington: U.S. Government Printing Office. 1971.
- Moriyama IM, Gustavus SO. Cohort mortality and survivorship, United States death-registration States, 1900–68. National Center for Health Statistics. Vital Health Stat 3(16). 1972.
- Preston SM, Heuveline P, Guillot M. Demography, measuring and modeling population processes. Oxford: Blackwell Publishers. 2001.
- Office of Management and Budget. Revisions to the standards for the classification of Federal data on race and ethnicity. Federal Register 62FR58782–58790. October 30, 1997. Available at: <http://www.whitehouse.gov/omb/fedreg/ombdir15.html>.
- Office of Management and Budget. Race and ethnic standards for Federal statistics and administrative reporting. Statistical policy directive 15. 1977.
- U.S. Census Bureau. Age, sex, race, and Hispanic origin information from the 1990 census: A comparison of census results with results where age and race have been modified, 1990. CPH-L-74. Washington: U.S. Department of Commerce. 1991.
- Ingram DD, Weed JA, Parker JD, Hamilton B, Schenker N, Arias E, Madans JH. U.S. Census 2000 with bridged race categories. National Center for Health Statistics. Vital Health Stat 2. 2003.
- Sirken MG. Comparison of two methods of constructing abridged life tables by reference to a “standard” table. National Center for Health Statistics. Vital Health Stat 2(4). 1966.
- Anderson RN. A method for constructing complete annual U.S. life tables. National Center for Health Statistics. Vital Health Stat 2(129). 1999.
- Armstrong RJ. Methodology of the national and State life tables. U.S. decennial life tables for 1989–91; vol 1 no 2. Hyattsville, Maryland: National Center for Health Statistics. 1998.
- Anderson RN. Some trends and comparisons of United States life table data: 1900–1991. U.S. decennial life tables for 1989–91; vol 1 no 3. Hyattsville, Maryland: National Center for Health Statistics. 1999.
- Arias E, Anderson RN, Kung HC, Murphy SL, Kochanek KD. Deaths: Final data for 2001. National vital statistics reports; vol 52 no 3. Hyattsville, Maryland: National Center for Health Statistics. 2003.
- Waldron I. Recent trends in sex mortality ratios for adults in developed countries. Soc Sci Med 36:451–62. 1993.
- Kochanek KD, Maurer JD, Rosenberg HM. Causes of death contributing to changes in life expectancy: United States, 1984–89. National Center for Health Statistics. Vital Health Stat 20(23). 1994.
- Kestenbaum B. A description of the extreme aged population based on improved Medicare enrollment data. Demography, 29:565–80. 1992.
- Coale AJ, Kisker EE. Defects in data on old-age mortality in the United States: New procedures for calculating mortality schedules and life tables at the highest ages. Asian and Pacific Population Forum, 4:1–31. 1990.
- Anderson RN, Arias E. The effect of revised populations on mortality statistics for the United States, 2000. National vital statistics reports; vol 51 no 9. Hyattsville, Maryland: National Center for Health Statistics. 2003.
- Greville TNE, Carlson GA. Estimated average length of life in the death-registration States. National Center for Health Statistics. Vital statistics—special reports. Vol 33 no 9. Washington: Public Health Service. 1951.
- Kestenbaum B. Recent mortality of the oldest old, from Medicare data. Paper presented at the 1997 meetings of the Population Association of America. March 27–29, 1997.
- Horiuchi S, Wilmoth JR. Deceleration in the age pattern of mortality at older ages. Demography, 35:391–412. 1998.
- Wilmoth JR. Are mortality rates falling at extremely high ages? An investigation based on a model proposed by Coale and Kisker. Population Studies, 49:281–95. 1995.

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Table 1. Life table for the total population: United States, 2001

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	0.006842	100,000	684	99,404	7,716,990	77.2
1-2	0.000518	99,316	51	99,290	7,617,586	76.7
2-3	0.000342	99,264	34	99,247	7,518,296	75.7
3-4	0.000256	99,231	25	99,218	7,419,048	74.8
4-5	0.000214	99,205	21	99,194	7,319,830	73.8
5-6	0.000171	99,184	17	99,175	7,220,636	72.8
6-7	0.000160	99,167	16	99,159	7,121,461	71.8
7-8	0.000144	99,151	14	99,144	7,022,302	70.8
8-9	0.000143	99,137	14	99,130	6,923,158	69.8
9-10	0.000149	99,123	15	99,115	6,824,028	68.8
10-11	0.000149	99,108	15	99,100	6,724,913	67.9
11-12	0.000159	99,093	16	99,085	6,625,813	66.9
12-13	0.000176	99,077	17	99,068	6,526,728	65.9
13-14	0.000211	99,060	21	99,049	6,427,659	64.9
14-15	0.000268	99,039	27	99,026	6,328,610	63.9
15-16	0.000361	99,012	36	98,995	6,229,584	62.9
16-17	0.000539	98,977	53	98,950	6,130,590	61.9
17-18	0.000690	98,923	68	98,889	6,031,640	61.0
18-19	0.000832	98,855	82	98,814	5,932,751	60.0
19-20	0.000919	98,773	91	98,727	5,833,937	59.1
20-21	0.000910	98,682	90	98,637	5,735,209	58.1
21-22	0.001000	98,592	99	98,543	5,636,572	57.2
22-23	0.000948	98,494	93	98,447	5,538,029	56.2
23-24	0.000945	98,400	93	98,354	5,439,582	55.3
24-25	0.000946	98,307	93	98,261	5,341,228	54.3
25-26	0.000920	98,214	90	98,169	5,242,967	53.4
26-27	0.000954	98,124	94	98,077	5,144,798	52.4
27-28	0.000945	98,030	93	97,984	5,046,721	51.5
28-29	0.000998	97,938	98	97,889	4,948,737	50.5
29-30	0.000989	97,840	97	97,792	4,850,848	49.6
30-31	0.001044	97,743	102	97,692	4,753,057	48.6
31-32	0.001027	97,641	100	97,591	4,655,365	47.7
32-33	0.001112	97,541	108	97,487	4,557,774	46.7
33-34	0.001211	97,432	118	97,373	4,460,287	45.8
34-35	0.001291	97,314	126	97,252	4,362,914	44.8
35-36	0.001412	97,189	137	97,120	4,265,662	43.9
36-37	0.001482	97,052	144	96,980	4,168,542	43.0
37-38	0.001647	96,908	160	96,828	4,071,562	42.0
38-39	0.001809	96,748	175	96,661	3,974,734	41.1
39-40	0.001915	96,573	185	96,481	3,878,074	40.2
40-41	0.002072	96,388	200	96,288	3,781,593	39.2
41-42	0.002169	96,189	209	96,084	3,685,304	38.3
42-43	0.002356	95,980	226	95,867	3,589,220	37.4
43-44	0.002613	95,754	250	95,629	3,493,353	36.5
44-45	0.002825	95,504	270	95,369	3,397,725	35.6
45-46	0.003046	95,234	290	95,089	3,302,356	34.7
46-47	0.003240	94,944	308	94,790	3,207,267	33.8
47-48	0.003564	94,636	337	94,467	3,112,477	32.9
48-49	0.003804	94,299	359	94,119	3,018,010	32.0
49-50	0.004130	93,940	388	93,746	2,923,890	31.1
50-51	0.004413	93,552	413	93,346	2,830,144	30.3
51-52	0.004622	93,139	430	92,924	2,736,798	29.4
52-53	0.005080	92,709	471	92,473	2,643,874	28.5
53-54	0.005370	92,238	495	91,990	2,551,401	27.7
54-55	0.006144	91,743	564	91,461	2,459,411	26.8
55-56	0.006106	91,179	557	90,900	2,367,950	26.0
56-57	0.007100	90,622	643	90,300	2,277,050	25.1
57-58	0.007754	89,979	698	89,630	2,186,750	24.3
58-59	0.008765	89,281	783	88,890	2,097,120	23.5
59-60	0.008964	88,498	793	88,102	2,008,230	22.7
60-61	0.010152	87,705	890	87,260	1,920,129	21.9
61-62	0.010869	86,815	944	86,343	1,832,869	21.1
62-63	0.012066	85,871	1,036	85,353	1,746,526	20.3
63-64	0.013155	84,835	1,116	84,277	1,661,173	19.6
64-65	0.014333	83,719	1,200	83,119	1,576,896	18.8
65-66	0.015584	82,519	1,286	81,876	1,493,777	18.1
66-67	0.016855	81,233	1,369	80,548	1,411,901	17.4

Table 1. Life table for the total population: United States, 2001—Con.

Age	Probability of dying between ages x to $x+1$	Number surviving to age x	Number dying between ages x to $x+1$	Person-years lived between ages x to $x+1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
67-68	0.018535	79,864	1,480	79,124	1,331,353	16.7
68-69	0.020125	78,384	1,578	77,595	1,252,229	16.0
69-70	0.021928	76,806	1,684	75,964	1,174,634	15.3
70-71	0.023668	75,122	1,778	74,233	1,098,670	14.6
71-72	0.025812	73,344	1,893	72,397	1,024,437	14.0
72-73	0.028285	71,451	2,021	70,440	952,040	13.3
73-74	0.031088	69,430	2,158	68,350	881,600	12.7
74-75	0.033548	67,271	2,257	66,143	813,249	12.1
75-76	0.036749	65,014	2,389	63,820	747,106	11.5
76-77	0.040177	62,625	2,516	61,367	683,286	10.9
77-78	0.043642	60,109	2,623	58,798	621,919	10.3
78-79	0.048232	57,486	2,773	56,100	563,122	9.8
79-80	0.052885	54,713	2,894	53,266	507,022	9.3
80-81	0.057067	51,820	2,957	50,341	453,756	8.8
81-82	0.065032	48,863	3,178	47,274	403,414	8.3
82-83	0.067581	45,685	3,087	44,141	356,141	7.8
83-84	0.077566	42,597	3,304	40,945	312,000	7.3
84-85	0.085272	39,293	3,351	37,618	271,054	6.9
85-86	0.093544	35,943	3,362	34,262	233,436	6.5
86-87	0.102375	32,580	3,335	30,913	199,175	6.1
87-88	0.111774	29,245	3,269	27,611	168,262	5.8
88-89	0.121744	25,976	3,162	24,395	140,651	5.4
89-90	0.132290	22,814	3,018	21,305	116,256	5.1
90-91	0.143407	19,796	2,839	18,376	94,952	4.8
91-92	0.155088	16,957	2,630	15,642	76,575	4.5
92-93	0.167323	14,327	2,397	13,128	60,933	4.3
93-94	0.180093	11,930	2,148	10,856	47,805	4.0
94-95	0.193378	9,781	1,891	8,836	36,949	3.8
95-96	0.207148	7,890	1,634	7,073	28,114	3.6
96-97	0.221372	6,255	1,385	5,563	21,041	3.4
97-98	0.236010	4,871	1,150	4,296	15,478	3.2
98-99	0.251018	3,721	934	3,254	11,182	3.0
99-100	0.266346	2,787	742	2,416	7,928	2.8
100 years and over	1.00000	2,045	2,045	5,512	5,512	2.7

Table 2. Life table for males: United States, 2001

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	0.007514	100,000	751	99,344	7,443,406	74.4
1-2	0.000561	99,249	56	99,221	7,344,062	74.0
2-3	0.000383	99,193	38	99,174	7,244,841	73.0
3-4	0.000287	99,155	28	99,141	7,145,668	72.1
4-5	0.000245	99,126	24	99,114	7,046,527	71.1
5-6	0.000190	99,102	19	99,093	6,947,413	70.1
6-7	0.000173	99,083	17	99,075	6,848,320	69.1
7-8	0.000149	99,066	15	99,059	6,749,245	68.1
8-9	0.000161	99,051	16	99,043	6,650,187	67.1
9-10	0.000163	99,035	16	99,027	6,551,143	66.1
10-11	0.000179	99,019	18	99,010	6,452,116	65.2
11-12	0.000186	99,001	18	98,992	6,353,106	64.2
12-13	0.000203	98,983	20	98,973	6,254,113	63.2
13-14	0.000256	98,963	25	98,950	6,155,140	62.2
14-15	0.000322	98,938	32	98,922	6,056,190	61.2
15-16	0.000463	98,906	46	98,883	5,957,268	60.2
16-17	0.000693	98,860	69	98,826	5,858,386	59.3
17-18	0.000929	98,791	92	98,746	5,759,560	58.3
18-19	0.001215	98,700	120	98,640	5,660,814	57.4
19-20	0.001376	98,580	136	98,512	5,562,175	56.4
20-21	0.001355	98,444	133	98,377	5,463,663	55.5
21-22	0.001498	98,311	147	98,237	5,365,285	54.6
22-23	0.001429	98,163	140	98,093	5,267,048	53.7
23-24	0.001379	98,023	135	97,956	5,168,955	52.7
24-25	0.001388	97,888	136	97,820	5,070,999	51.8
25-26	0.001312	97,752	128	97,688	4,973,179	50.9
26-27	0.001381	97,624	135	97,556	4,875,491	49.9
27-28	0.001330	97,489	130	97,424	4,777,935	49.0
28-29	0.001395	97,359	136	97,291	4,680,510	48.1
29-30	0.001356	97,224	132	97,158	4,583,219	47.1
30-31	0.001420	97,092	138	97,023	4,486,061	46.2
31-32	0.001402	96,954	136	96,886	4,389,039	45.3
32-33	0.001455	96,818	141	96,747	4,292,153	44.3
33-34	0.001598	96,677	155	96,600	4,195,405	43.4
34-35	0.001693	96,522	163	96,441	4,098,806	42.5
35-36	0.001861	96,359	179	96,269	4,002,365	41.5
36-37	0.001904	96,180	183	96,088	3,906,095	40.6
37-38	0.002144	95,997	206	95,894	3,810,007	39.7
38-39	0.002316	95,791	222	95,680	3,714,114	38.8
39-40	0.002425	95,569	232	95,453	3,618,434	37.9
40-41	0.002619	95,337	250	95,212	3,522,981	37.0
41-42	0.002761	95,087	263	94,956	3,427,769	36.0
42-43	0.002984	94,825	283	94,683	3,332,813	35.1
43-44	0.003308	94,542	313	94,385	3,238,129	34.3
44-45	0.003578	94,229	337	94,060	3,143,744	33.4
45-46	0.003869	93,892	363	93,710	3,049,684	32.5
46-47	0.004133	93,529	387	93,335	2,955,973	31.6
47-48	0.004602	93,142	429	92,928	2,862,638	30.7
48-49	0.004956	92,713	459	92,484	2,769,710	29.9
49-50	0.005269	92,254	486	92,011	2,677,227	29.0
50-51	0.005672	91,768	520	91,508	2,585,216	28.2
51-52	0.005921	91,247	540	90,977	2,493,708	27.3
52-53	0.006390	90,707	580	90,417	2,402,731	26.5
53-54	0.006657	90,127	600	89,827	2,312,314	25.7
54-55	0.007689	89,527	688	89,183	2,222,486	24.8
55-56	0.007635	88,839	678	88,500	2,133,303	24.0
56-57	0.008836	88,161	779	87,771	2,044,803	23.2
57-58	0.009609	87,382	840	86,962	1,957,032	22.4
58-59	0.010888	86,542	942	86,071	1,870,070	21.6
59-60	0.011055	85,600	946	85,127	1,783,999	20.8
60-61	0.012655	84,654	1,071	84,118	1,698,872	20.1
61-62	0.013447	83,582	1,124	83,020	1,614,754	19.3
62-63	0.014886	82,458	1,227	81,845	1,531,734	18.6
63-64	0.016144	81,231	1,311	80,575	1,449,889	17.8
64-65	0.017683	79,920	1,413	79,213	1,369,314	17.1
65-66	0.019336	78,506	1,518	77,747	1,290,101	16.4
66-67	0.020753	76,988	1,598	76,189	1,212,354	15.7

Table 2. Life table for males: United States, 2001—Con.

Age	Probability of dying between ages x to $x+1$	Number surviving to age x	Number dying between ages x to $x+1$	Person-years lived between ages x to $x+1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
67-68	0.022885	75,391	1,725	74,528	1,136,164	15.1
68-69	0.024918	73,665	1,836	72,748	1,061,636	14.4
69-70	0.027213	71,830	1,955	70,852	988,889	13.8
70-71	0.029353	69,875	2,051	68,850	918,037	13.1
71-72	0.032024	67,824	2,172	66,738	849,187	12.5
72-73	0.035287	65,652	2,317	64,494	782,449	11.9
73-74	0.038765	63,335	2,455	62,108	717,955	11.3
74-75	0.041805	60,880	2,545	59,608	655,848	10.8
75-76	0.045947	58,335	2,680	56,995	596,240	10.2
76-77	0.049957	55,655	2,780	54,265	539,245	9.7
77-78	0.054345	52,874	2,873	51,438	484,981	9.2
78-79	0.059778	50,001	2,989	48,506	433,543	8.7
79-80	0.065593	47,012	3,084	45,470	385,037	8.2
80-81	0.069941	43,928	3,072	42,392	339,566	7.7
81-82	0.080467	40,856	3,288	39,212	297,174	7.3
82-83	0.082817	37,568	3,111	36,013	257,962	6.9
83-84	0.094767	34,457	3,265	32,824	221,949	6.4
84-85	0.103118	31,192	3,216	29,583	189,125	6.1
85-86	0.112798	27,975	3,156	26,397	159,542	5.7
86-87	0.123054	24,820	3,054	23,293	133,144	5.4
87-88	0.133878	21,766	2,914	20,309	109,851	5.0
88-89	0.145260	18,852	2,738	17,482	89,543	4.7
89-90	0.157184	16,113	2,533	14,847	72,060	4.5
90-91	0.169625	13,580	2,304	12,429	57,214	4.2
91-92	0.182557	11,277	2,059	10,248	44,785	4.0
92-93	0.195942	9,218	1,806	8,315	34,537	3.7
93-94	0.209739	7,412	1,555	6,635	26,222	3.5
94-95	0.223901	5,857	1,311	5,202	19,588	3.3
95-96	0.238372	4,546	1,084	4,004	14,386	3.2
96-97	0.253091	3,462	876	3,024	10,382	3.0
97-98	0.267992	2,586	693	2,240	7,358	2.8
98-99	0.283003	1,893	536	1,625	5,118	2.7
99-100	0.298045	1,357	405	1,155	3,493	2.6
100 years and over	1.00000	953	953	2,338	2,338	2.5

Table 3. Life table for females: United States, 2001

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	0.006139	100,000	614	99,467	7,977,430	79.8
1-2	0.000472	99,386	47	99,363	7,877,963	79.3
2-3	0.000298	99,339	30	99,324	7,778,600	78.3
3-4	0.000224	99,310	22	99,298	7,679,276	77.3
4-5	0.000183	99,287	18	99,278	7,579,977	76.3
5-6	0.000150	99,269	15	99,262	7,480,699	75.4
6-7	0.000146	99,254	15	99,247	7,381,437	74.4
7-8	0.000140	99,240	14	99,233	7,282,190	73.4
8-9	0.000123	99,226	12	99,220	7,182,957	72.4
9-10	0.000135	99,214	13	99,207	7,083,737	71.4
10-11	0.000118	99,200	12	99,194	6,984,530	70.4
11-12	0.000130	99,189	13	99,182	6,885,336	69.4
12-13	0.000147	99,176	15	99,168	6,786,154	68.4
13-14	0.000163	99,161	16	99,153	6,686,985	67.4
14-15	0.000211	99,145	21	99,134	6,587,832	66.4
15-16	0.000253	99,124	25	99,111	6,488,698	65.5
16-17	0.000376	99,099	37	99,080	6,389,586	64.5
17-18	0.000436	99,062	43	99,040	6,290,506	63.5
18-19	0.000423	99,019	42	98,998	6,191,466	62.5
19-20	0.000437	98,977	43	98,955	6,092,468	61.6
20-21	0.000445	98,933	44	98,911	5,993,513	60.6
21-22	0.000479	98,889	47	98,866	5,894,602	59.6
22-23	0.000440	98,842	43	98,820	5,795,736	58.6
23-24	0.000491	98,798	48	98,774	5,696,916	57.7
24-25	0.000486	98,750	48	98,726	5,598,142	56.7
25-26	0.000514	98,702	51	98,677	5,499,416	55.7
26-27	0.000511	98,651	50	98,626	5,400,739	54.7
27-28	0.000551	98,601	54	98,574	5,302,113	53.8
28-29	0.000590	98,547	58	98,517	5,203,539	52.8
29-30	0.000616	98,488	61	98,458	5,105,022	51.8
30-31	0.000661	98,428	65	98,395	5,006,564	50.9
31-32	0.000642	98,363	63	98,331	4,908,169	49.9
32-33	0.000763	98,299	75	98,262	4,809,838	48.9
33-34	0.000819	98,224	80	98,184	4,711,576	48.0
34-35	0.000886	98,144	87	98,101	4,613,391	47.0
35-36	0.000961	98,057	94	98,010	4,515,291	46.0
36-37	0.001056	97,963	103	97,911	4,417,281	45.1
37-38	0.001151	97,859	113	97,803	4,319,370	44.1
38-39	0.001307	97,747	128	97,683	4,221,567	43.2
39-40	0.001409	97,619	138	97,550	4,123,884	42.2
40-41	0.001531	97,481	149	97,407	4,026,334	41.3
41-42	0.001580	97,332	154	97,255	3,928,927	40.4
42-43	0.001740	97,178	169	97,094	3,831,672	39.4
43-44	0.001931	97,009	187	96,916	3,734,578	38.5
44-45	0.002087	96,822	202	96,721	3,637,663	37.6
45-46	0.002245	96,620	217	96,511	3,540,942	36.6
46-47	0.002367	96,403	228	96,289	3,444,430	35.7
47-48	0.002558	96,175	246	96,052	3,348,141	34.8
48-49	0.002691	95,929	258	95,800	3,252,089	33.9
49-50	0.003031	95,671	290	95,526	3,156,290	33.0
50-51	0.003204	95,381	306	95,228	3,060,764	32.1
51-52	0.003371	95,075	320	94,915	2,965,536	31.2
52-53	0.003827	94,755	363	94,573	2,870,621	30.3
53-54	0.004135	94,392	390	94,197	2,776,048	29.4
54-55	0.004670	94,002	439	93,782	2,681,851	28.5
55-56	0.004653	93,563	435	93,345	2,588,069	27.7
56-57	0.005462	93,127	509	92,873	2,494,724	26.8
57-58	0.006015	92,619	557	92,340	2,401,851	25.9
58-59	0.006783	92,062	624	91,749	2,309,511	25.1
59-60	0.007026	91,437	642	91,116	2,217,761	24.3
60-61	0.007851	90,795	713	90,438	2,126,645	23.4
61-62	0.008514	90,082	767	89,698	2,036,207	22.6
62-63	0.009501	89,315	849	88,891	1,946,509	21.8
63-64	0.010446	88,466	924	88,004	1,857,618	21.0
64-65	0.011333	87,542	992	87,046	1,769,614	20.2
65-66	0.012269	86,550	1,062	86,019	1,682,567	19.4
66-67	0.013440	85,488	1,149	84,914	1,596,548	18.7

Table 3. Life table for females: United States, 2001—Con.

Age	Probability of dying between ages x to $x+1$	Number surviving to age x	Number dying between ages x to $x+1$	Person-years lived between ages x to $x+1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
67-68	0.014782	84,339	1,247	83,716	1,511,634	17.9
68-69	0.016033	83,093	1,332	82,427	1,427,918	17.2
69-70	0.017475	81,760	1,429	81,046	1,345,492	16.5
70-71	0.018957	80,332	1,523	79,570	1,264,446	15.7
71-72	0.020756	78,809	1,636	77,991	1,184,875	15.0
72-73	0.022680	77,173	1,750	76,298	1,106,884	14.3
73-74	0.025054	75,423	1,890	74,478	1,030,586	13.7
74-75	0.027220	73,533	2,002	72,532	956,108	13.0
75-76	0.029917	71,532	2,140	70,462	883,576	12.4
76-77	0.033122	69,392	2,298	68,242	813,114	11.7
77-78	0.036096	67,093	2,422	65,882	744,872	11.1
78-79	0.040288	64,671	2,605	63,369	678,990	10.5
79-80	0.044384	62,066	2,755	60,689	615,621	9.9
80-81	0.048711	59,311	2,889	57,867	554,933	9.4
81-82	0.055410	56,422	3,126	54,859	497,066	8.8
82-83	0.058363	53,296	3,111	51,740	442,207	8.3
83-84	0.067546	50,185	3,390	48,490	390,467	7.8
84-85	0.075399	46,795	3,528	45,031	341,976	7.3
85-86	0.083602	43,267	3,617	41,458	296,945	6.9
86-87	0.092418	39,650	3,664	37,818	255,487	6.4
87-88	0.101854	35,986	3,665	34,153	217,669	6.0
88-89	0.111914	32,320	3,617	30,512	183,516	5.7
89-90	0.122596	28,703	3,519	26,944	153,004	5.3
90-91	0.133891	25,184	3,372	23,498	126,061	5.0
91-92	0.145784	21,812	3,180	20,222	102,562	4.7
92-93	0.158253	18,632	2,949	17,158	82,340	4.4
93-94	0.171269	15,684	2,686	14,341	65,182	4.2
94-95	0.184795	12,998	2,402	11,797	50,841	3.9
95-96	0.198786	10,596	2,106	9,543	39,044	3.7
96-97	0.213189	8,489	1,810	7,585	29,502	3.5
97-98	0.227944	6,680	1,523	5,918	21,917	3.3
98-99	0.242983	5,157	1,253	4,530	15,999	3.1
99-100	0.258231	3,904	1,008	3,400	11,469	2.9
100 years and over	1.00000	2,896	2,896	8,069	8,069	2.8

Table 4. Life table for the white population: United States, 2001

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	0.005648	100,000	565	99,506	7,767,517	77.7
1-2	0.000464	99,435	46	99,412	7,668,011	77.1
2-3	0.000323	99,389	32	99,373	7,568,599	76.2
3-4	0.000237	99,357	24	99,345	7,469,226	75.2
4-5	0.000201	99,333	20	99,323	7,369,880	74.2
5-6	0.000161	99,313	16	99,305	7,270,557	73.2
6-7	0.000150	99,297	15	99,290	7,171,252	72.2
7-8	0.000140	99,282	14	99,275	7,071,962	71.2
8-9	0.000135	99,269	13	99,262	6,972,686	70.2
9-10	0.000132	99,255	13	99,249	6,873,425	69.3
10-11	0.000135	99,242	13	99,235	6,774,176	68.3
11-12	0.000143	99,229	14	99,222	6,674,941	67.3
12-13	0.000164	99,214	16	99,206	6,575,719	66.3
13-14	0.000202	99,198	20	99,188	6,476,513	65.3
14-15	0.000257	99,178	25	99,165	6,377,325	64.3
15-16	0.000345	99,153	34	99,136	6,278,159	63.3
16-17	0.000529	99,118	52	99,092	6,179,024	62.3
17-18	0.000672	99,066	67	99,033	6,079,932	61.4
18-19	0.000785	99,000	78	98,961	5,980,899	60.4
19-20	0.000875	98,922	87	98,879	5,881,938	59.5
20-21	0.000847	98,835	84	98,793	5,783,060	58.5
21-22	0.000933	98,752	92	98,705	5,684,266	57.6
22-23	0.000866	98,659	85	98,617	5,585,561	56.6
23-24	0.000849	98,574	84	98,532	5,486,944	55.7
24-25	0.000854	98,490	84	98,448	5,388,412	54.7
25-26	0.000833	98,406	82	98,365	5,289,964	53.8
26-27	0.000865	98,324	85	98,282	5,191,599	52.8
27-28	0.000856	98,239	84	98,197	5,093,317	51.8
28-29	0.000904	98,155	89	98,111	4,995,120	50.9
29-30	0.000886	98,066	87	98,023	4,897,009	49.9
30-31	0.000948	97,979	93	97,933	4,798,986	49.0
31-32	0.000932	97,886	91	97,841	4,701,054	48.0
32-33	0.001002	97,795	98	97,746	4,603,213	47.1
33-34	0.001092	97,697	107	97,644	4,505,466	46.1
34-35	0.001170	97,591	114	97,533	4,407,823	45.2
35-36	0.001273	97,476	124	97,414	4,310,289	44.2
36-37	0.001349	97,352	131	97,287	4,212,875	43.3
37-38	0.001505	97,221	146	97,148	4,115,588	42.3
38-39	0.001652	97,075	160	96,994	4,018,440	41.4
39-40	0.001749	96,914	169	96,830	3,921,446	40.5
40-41	0.001905	96,745	184	96,653	3,824,616	39.5
41-42	0.001965	96,560	190	96,466	3,727,964	38.6
42-43	0.002135	96,371	206	96,268	3,631,498	37.7
43-44	0.002368	96,165	228	96,051	3,535,230	36.8
44-45	0.002571	95,937	247	95,814	3,439,179	35.8
45-46	0.002751	95,691	263	95,559	3,343,365	34.9
46-47	0.002937	95,427	280	95,287	3,247,806	34.0
47-48	0.003269	95,147	311	94,992	3,152,519	33.1
48-49	0.003470	94,836	329	94,671	3,057,528	32.2
49-50	0.003751	94,507	354	94,330	2,962,856	31.4
50-51	0.004017	94,152	378	93,963	2,868,527	30.5
51-52	0.004228	93,774	396	93,576	2,774,563	29.6
52-53	0.004631	93,378	432	93,162	2,680,987	28.7
53-54	0.004956	92,945	461	92,715	2,587,825	27.8
54-55	0.005721	92,485	529	92,220	2,495,110	27.0
55-56	0.005674	91,956	522	91,695	2,402,890	26.1
56-57	0.006648	91,434	608	91,130	2,311,196	25.3
57-58	0.007251	90,826	659	90,497	2,220,066	24.4
58-59	0.008267	90,167	745	89,795	2,129,569	23.6
59-60	0.008405	89,422	752	89,046	2,039,774	22.8
60-61	0.009697	88,670	860	88,240	1,950,728	22.0
61-62	0.010291	87,811	904	87,359	1,862,487	21.2
62-63	0.011517	86,907	1,001	86,406	1,775,129	20.4
63-64	0.012629	85,906	1,085	85,364	1,688,722	19.7
64-65	0.013717	84,821	1,164	84,239	1,603,359	18.9
65-66	0.014973	83,658	1,253	83,031	1,519,119	18.2
66-67	0.016202	82,405	1,335	81,737	1,436,088	17.4

Table 4. Life table for the white population: United States, 2001—Con.

Age	Probability of dying between ages x to $x+1$	Number surviving to age x	Number dying between ages x to $x+1$	Person-years lived between ages x to $x+1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
67-68	0.017963	81,070	1,456	80,342	1,354,351	16.7
68-69	0.019406	79,614	1,545	78,841	1,274,009	16.0
69-70	0.021286	78,069	1,662	77,238	1,195,168	15.3
70-71	0.023178	76,407	1,771	75,521	1,117,930	14.6
71-72	0.025202	74,636	1,881	73,695	1,042,409	14.0
72-73	0.027708	72,755	2,016	71,747	968,714	13.3
73-74	0.030537	70,739	2,160	69,659	896,967	12.7
74-75	0.033030	68,579	2,265	67,446	827,308	12.1
75-76	0.036166	66,314	2,398	65,115	759,862	11.5
76-77	0.039668	63,915	2,535	62,648	694,747	10.9
77-78	0.043173	61,380	2,650	60,055	632,099	10.3
78-79	0.047806	58,730	2,808	57,326	572,044	9.7
79-80	0.052496	55,922	2,936	54,455	514,718	9.2
80-81	0.056778	52,987	3,008	51,482	460,264	8.7
81-82	0.064946	49,978	3,246	48,355	408,781	8.2
82-83	0.067531	46,732	3,156	45,154	360,426	7.7
83-84	0.077573	43,576	3,380	41,886	315,272	7.2
84-85	0.085569	40,196	3,440	38,476	273,385	6.8
85-86	0.093978	36,757	3,454	35,029	234,909	6.4
86-87	0.103018	33,302	3,431	31,587	199,880	6.0
87-88	0.112713	29,872	3,367	28,188	168,293	5.6
88-89	0.123086	26,505	3,262	24,873	140,105	5.3
89-90	0.134159	23,242	3,118	21,683	115,231	5.0
90-91	0.145951	20,124	2,937	18,656	93,548	4.6
91-92	0.158477	17,187	2,724	15,825	74,893	4.4
92-93	0.171752	14,463	2,484	13,221	59,067	4.1
93-94	0.185786	11,979	2,226	10,866	45,846	3.8
94-95	0.200585	9,754	1,956	8,775	34,980	3.6
95-96	0.216152	7,797	1,685	6,954	26,205	3.4
96-97	0.232484	6,112	1,421	5,401	19,250	3.1
97-98	0.249576	4,691	1,171	4,106	13,849	3.0
98-99	0.267416	3,520	941	3,049	9,743	2.8
99-100	0.285987	2,579	738	2,210	6,694	2.6
100 years and over	1.00000	1,841	1,841	4,484	4,484	2.4

Table 5. Life table for white males: United States, 2001

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	0.006209	100,000	621	99,455	7,502,748	75.0
1-2	0.000503	99,379	50	99,354	7,403,292	74.5
2-3	0.000364	99,329	36	99,311	7,303,938	73.5
3-4	0.000269	99,293	27	99,280	7,204,627	72.6
4-5	0.000229	99,266	23	99,255	7,105,348	71.6
5-6	0.000172	99,243	17	99,235	7,006,093	70.6
6-7	0.000160	99,226	16	99,218	6,906,858	69.6
7-8	0.000144	99,211	14	99,203	6,807,639	68.6
8-9	0.000148	99,196	15	99,189	6,708,436	67.6
9-10	0.000143	99,182	14	99,174	6,609,247	66.6
10-11	0.000159	99,167	16	99,159	6,510,073	65.6
11-12	0.000164	99,152	16	99,143	6,410,913	64.7
12-13	0.000188	99,135	19	99,126	6,311,770	63.7
13-14	0.000245	99,117	24	99,105	6,212,644	62.7
14-15	0.000316	99,092	31	99,077	6,113,539	61.7
15-16	0.000432	99,061	43	99,040	6,014,463	60.7
16-17	0.000658	99,018	65	98,986	5,915,423	59.7
17-18	0.000888	98,953	88	98,909	5,816,437	58.8
18-19	0.001130	98,865	112	98,809	5,717,528	57.8
19-20	0.001296	98,754	128	98,690	5,618,718	56.9
20-21	0.001246	98,625	123	98,564	5,520,029	56.0
21-22	0.001390	98,503	137	98,434	5,421,465	55.0
22-23	0.001300	98,366	128	98,302	5,323,031	54.1
23-24	0.001237	98,238	122	98,177	5,224,729	53.2
24-25	0.001227	98,116	120	98,056	5,126,552	52.2
25-26	0.001179	97,996	116	97,938	5,028,496	51.3
26-27	0.001244	97,880	122	97,819	4,930,558	50.4
27-28	0.001196	97,759	117	97,700	4,832,739	49.4
28-29	0.001275	97,642	125	97,579	4,735,038	48.5
29-30	0.001222	97,517	119	97,458	4,637,459	47.6
30-31	0.001283	97,398	125	97,336	4,540,001	46.6
31-32	0.001274	97,273	124	97,211	4,442,666	45.7
32-33	0.001315	97,149	128	97,085	4,345,455	44.7
33-34	0.001455	97,021	141	96,951	4,248,370	43.8
34-35	0.001555	96,880	151	96,805	4,151,419	42.9
35-36	0.001701	96,730	165	96,647	4,054,614	41.9
36-37	0.001755	96,565	170	96,480	3,957,966	41.0
37-38	0.001963	96,396	189	96,301	3,861,486	40.1
38-39	0.002153	96,206	207	96,103	3,765,185	39.1
39-40	0.002225	95,999	214	95,892	3,669,082	38.2
40-41	0.002454	95,786	235	95,668	3,573,190	37.3
41-42	0.002532	95,550	242	95,429	3,477,522	36.4
42-43	0.002750	95,309	262	95,177	3,382,093	35.5
43-44	0.003043	95,046	289	94,902	3,286,915	34.6
44-45	0.003296	94,757	312	94,601	3,192,013	33.7
45-46	0.003515	94,445	332	94,279	3,097,412	32.8
46-47	0.003771	94,113	355	93,935	3,003,133	31.9
47-48	0.004230	93,758	397	93,560	2,909,198	31.0
48-49	0.004556	93,361	425	93,149	2,815,638	30.2
49-50	0.004829	92,936	449	92,712	2,722,489	29.3
50-51	0.005197	92,487	481	92,247	2,629,778	28.4
51-52	0.005422	92,007	499	91,757	2,537,531	27.6
52-53	0.005810	91,508	532	91,242	2,445,774	26.7
53-54	0.006149	90,976	559	90,696	2,354,532	25.9
54-55	0.007162	90,417	648	90,093	2,263,836	25.0
55-56	0.007091	89,769	637	89,451	2,173,743	24.2
56-57	0.008278	89,132	738	88,764	2,084,292	23.4
57-58	0.008943	88,395	791	87,999	1,995,528	22.6
58-59	0.010244	87,604	897	87,155	1,907,529	21.8
59-60	0.010333	86,707	896	86,259	1,820,374	21.0
60-61	0.012061	85,811	1,035	85,293	1,734,115	20.2
61-62	0.012683	84,776	1,075	84,238	1,648,821	19.4
62-63	0.014195	83,701	1,188	83,107	1,564,583	18.7
63-64	0.015498	82,513	1,279	81,873	1,481,477	18.0
64-65	0.016958	81,234	1,378	80,545	1,399,604	17.2
65-66	0.018546	79,856	1,481	79,116	1,319,059	16.5
66-67	0.019952	78,375	1,564	77,593	1,239,943	15.8

Table 5. Life table for white males: United States, 2001—Con.

Age	Probability of dying between ages x to $x+1$	Number surviving to age x	Number dying between ages x to $x+1$	Person-years lived between ages x to $x+1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
67-68	0.022179	76,811	1,704	75,960	1,162,350	15.1
68-69	0.024085	75,108	1,809	74,203	1,086,390	14.5
69-70	0.026451	73,299	1,939	72,329	1,012,187	13.8
70-71	0.028731	71,360	2,050	70,335	939,858	13.2
71-72	0.031181	69,310	2,161	68,229	869,523	12.5
72-73	0.034494	67,149	2,316	65,990	801,294	11.9
73-74	0.038025	64,832	2,465	63,600	735,303	11.3
74-75	0.041166	62,367	2,567	61,083	671,703	10.8
75-76	0.045265	59,800	2,707	58,446	610,620	10.2
76-77	0.049356	57,093	2,818	55,684	552,174	9.7
77-78	0.053752	54,275	2,917	52,816	496,490	9.1
78-79	0.059270	51,358	3,044	49,836	443,673	8.6
79-80	0.065062	48,314	3,143	46,742	393,838	8.2
80-81	0.069530	45,170	3,141	43,600	347,096	7.7
81-82	0.080419	42,030	3,380	40,340	303,496	7.2
82-83	0.082501	38,650	3,189	37,055	263,156	6.8
83-84	0.094809	35,461	3,362	33,780	226,101	6.4
84-85	0.103387	32,099	3,319	30,440	192,321	6.0
85-86	0.113277	28,780	3,260	27,150	161,882	5.6
86-87	0.123817	25,520	3,160	23,940	134,731	5.3
87-88	0.135015	22,360	3,019	20,851	110,791	5.0
88-89	0.146874	19,341	2,841	17,921	89,940	4.7
89-90	0.159393	16,501	2,630	15,186	72,019	4.4
90-91	0.172567	13,871	2,394	12,674	56,834	4.1
91-92	0.186383	11,477	2,139	10,407	44,160	3.8
92-93	0.200825	9,338	1,875	8,400	33,752	3.6
93-94	0.215870	7,463	1,611	6,657	25,352	3.4
94-95	0.231487	5,852	1,355	5,174	18,695	3.2
95-96	0.247642	4,497	1,114	3,940	13,521	3.0
96-97	0.264292	3,383	894	2,936	9,581	2.8
97-98	0.281388	2,489	700	2,139	6,644	2.7
98-99	0.298875	1,789	535	1,521	4,505	2.5
99-100	0.316690	1,254	397	1,056	2,984	2.4
100 years and over	1.00000	857	857	1,928	1,928	2.3

Table 6. Life table for white females: United States, 2001

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	0.005059	100,000	506	99,558	8,021,551	80.2
1-2	0.000424	99,494	42	99,473	7,921,992	79.6
2-3	0.000281	99,452	28	99,438	7,822,519	78.7
3-4	0.000203	99,424	20	99,414	7,723,082	77.7
4-5	0.000172	99,404	17	99,395	7,623,668	76.7
5-6	0.000150	99,387	15	99,379	7,524,272	75.7
6-7	0.000140	99,372	14	99,365	7,424,893	74.7
7-8	0.000136	99,358	13	99,351	7,325,528	73.7
8-9	0.000121	99,344	12	99,338	7,226,177	72.7
9-10	0.000121	99,332	12	99,326	7,126,839	71.7
10-11	0.000109	99,320	11	99,315	7,027,513	70.8
11-12	0.000122	99,309	12	99,303	6,928,198	69.8
12-13	0.000138	99,297	14	99,291	6,828,895	68.8
13-14	0.000157	99,284	16	99,276	6,729,604	67.8
14-15	0.000195	99,268	19	99,258	6,630,328	66.8
15-16	0.000252	99,249	25	99,236	6,531,070	65.8
16-17	0.000392	99,224	39	99,204	6,431,834	64.8
17-18	0.000441	99,185	44	99,163	6,332,629	63.8
18-19	0.000413	99,141	41	99,121	6,233,466	62.9
19-20	0.000426	99,100	42	99,079	6,134,346	61.9
20-21	0.000425	99,058	42	99,037	6,035,267	60.9
21-22	0.000448	99,016	44	98,994	5,936,230	60.0
22-23	0.000400	98,972	40	98,952	5,837,236	59.0
23-24	0.000433	98,932	43	98,911	5,738,284	58.0
24-25	0.000456	98,889	45	98,867	5,639,374	57.0
25-26	0.000466	98,844	46	98,821	5,540,507	56.1
26-27	0.000461	98,798	46	98,775	5,441,686	55.1
27-28	0.000499	98,752	49	98,728	5,342,911	54.1
28-29	0.000516	98,703	51	98,678	5,244,183	53.1
29-30	0.000534	98,652	53	98,626	5,145,506	52.2
30-31	0.000598	98,599	59	98,570	5,046,880	51.2
31-32	0.000574	98,540	57	98,512	4,948,310	50.2
32-33	0.000678	98,484	67	98,451	4,849,798	49.2
33-34	0.000715	98,417	70	98,382	4,751,347	48.3
34-35	0.000774	98,347	76	98,309	4,652,965	47.3
35-36	0.000834	98,271	82	98,230	4,554,656	46.3
36-37	0.000930	98,189	91	98,143	4,456,427	45.4
37-38	0.001038	98,097	102	98,047	4,358,283	44.4
38-39	0.001147	97,996	112	97,939	4,260,237	43.5
39-40	0.001266	97,883	124	97,821	4,162,297	42.5
40-41	0.001353	97,759	132	97,693	4,064,476	41.6
41-42	0.001390	97,627	136	97,559	3,966,783	40.6
42-43	0.001518	97,491	148	97,417	3,869,224	39.7
43-44	0.001692	97,343	165	97,261	3,771,806	38.7
44-45	0.001847	97,179	179	97,089	3,674,545	37.8
45-46	0.001990	96,999	193	96,903	3,577,456	36.9
46-47	0.002102	96,806	204	96,704	3,480,554	36.0
47-48	0.002320	96,603	224	96,491	3,383,849	35.0
48-49	0.002397	96,379	231	96,263	3,287,359	34.1
49-50	0.002687	96,148	258	96,018	3,191,096	33.2
50-51	0.002857	95,889	274	95,752	3,095,077	32.3
51-52	0.003052	95,615	292	95,469	2,999,325	31.4
52-53	0.003478	95,323	332	95,158	2,903,856	30.5
53-54	0.003792	94,992	360	94,812	2,808,698	29.6
54-55	0.004319	94,632	409	94,427	2,713,887	28.7
55-56	0.004303	94,223	405	94,020	2,619,459	27.8
56-57	0.005081	93,817	477	93,579	2,525,439	26.9
57-58	0.005634	93,341	526	93,078	2,431,860	26.1
58-59	0.006390	92,815	593	92,518	2,338,782	25.2
59-60	0.006588	92,222	608	91,918	2,246,264	24.4
60-61	0.007485	91,614	686	91,271	2,154,346	23.5
61-62	0.008068	90,929	734	90,562	2,063,074	22.7
62-63	0.009038	90,195	815	89,787	1,972,513	21.9
63-64	0.009985	89,380	892	88,933	1,882,725	21.1
64-65	0.010763	88,487	952	88,011	1,793,792	20.3
65-66	0.011757	87,535	1,029	87,020	1,705,781	19.5
66-67	0.012854	86,506	1,112	85,950	1,618,760	18.7

Table 6. Life table for white females: United States, 2001—Con.

Age	Probability of dying between ages x to $x+1$	Number surviving to age x	Number dying between ages x to $x+1$	Person-years lived between ages x to $x+1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
67-68	0.014253	85,394	1,217	84,785	1,532,811	17.9
68-69	0.015328	84,177	1,290	83,532	1,448,025	17.2
69-70	0.016842	82,886	1,396	82,188	1,364,494	16.5
70-71	0.018486	81,490	1,506	80,737	1,282,305	15.7
71-72	0.020241	79,984	1,619	79,175	1,201,568	15.0
72-73	0.022162	78,365	1,737	77,497	1,122,394	14.3
73-74	0.024541	76,628	1,881	75,688	1,044,897	13.6
74-75	0.026683	74,748	1,995	73,751	969,209	13.0
75-76	0.029291	72,753	2,131	71,688	895,458	12.3
76-77	0.032591	70,622	2,302	69,471	823,771	11.7
77-78	0.035634	68,321	2,435	67,103	754,299	11.0
78-79	0.039844	65,886	2,625	64,573	687,196	10.4
79-80	0.044014	63,261	2,784	61,869	622,622	9.8
80-81	0.048428	60,477	2,929	59,012	560,754	9.3
81-82	0.055206	57,548	3,177	55,959	501,741	8.7
82-83	0.058407	54,371	3,176	52,783	445,782	8.2
83-84	0.067443	51,195	3,453	49,469	392,999	7.7
84-85	0.075626	47,742	3,611	45,937	343,530	7.2
85-86	0.083938	44,132	3,704	42,280	297,593	6.7
86-87	0.092937	40,428	3,757	38,549	255,313	6.3
87-88	0.102652	36,670	3,764	34,788	216,764	5.9
88-89	0.113107	32,906	3,722	31,045	181,976	5.5
89-90	0.124324	29,184	3,628	27,370	150,931	5.2
90-91	0.136323	25,556	3,484	23,814	123,561	4.8
91-92	0.149116	22,072	3,291	20,426	99,747	4.5
92-93	0.162714	18,781	3,056	17,253	79,321	4.2
93-94	0.177121	15,725	2,785	14,332	62,068	3.9
94-95	0.192336	12,940	2,489	11,695	47,736	3.7
95-96	0.208351	10,451	2,177	9,362	36,040	3.4
96-97	0.225152	8,273	1,863	7,342	26,678	3.2
97-98	0.242717	6,411	1,556	5,633	19,336	3.0
98-99	0.261017	4,855	1,267	4,221	13,703	2.8
99-100	0.280015	3,588	1,005	3,085	9,482	2.6
100 years and over	1.00000	2,583	2,583	6,397	6,397	2.5

Table 7. Life table for the black population: United States, 2001

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	0.013975	100,000	1,397	98,788	7,216,605	72.2
1-2	0.000802	98,603	79	98,563	7,117,816	72.2
2-3	0.000451	98,523	44	98,501	7,019,253	71.2
3-4	0.000364	98,479	36	98,461	6,920,752	70.3
4-5	0.000284	98,443	28	98,429	6,822,291	69.3
5-6	0.000232	98,415	23	98,404	6,723,862	68.3
6-7	0.000209	98,392	21	98,382	6,625,458	67.3
7-8	0.000164	98,372	16	98,364	6,527,076	66.4
8-9	0.000194	98,356	19	98,346	6,428,713	65.4
9-10	0.000238	98,336	23	98,325	6,330,367	64.4
10-11	0.000223	98,313	22	98,302	6,232,042	63.4
11-12	0.000235	98,291	23	98,280	6,133,740	62.4
12-13	0.000241	98,268	24	98,256	6,035,460	61.4
13-14	0.000266	98,244	26	98,231	5,937,204	60.4
14-15	0.000330	98,218	32	98,202	5,838,973	59.4
15-16	0.000459	98,186	45	98,163	5,740,771	58.5
16-17	0.000600	98,141	59	98,111	5,642,608	57.5
17-18	0.000851	98,082	83	98,040	5,544,497	56.5
18-19	0.001153	97,998	113	97,942	5,446,457	55.6
19-20	0.001267	97,885	124	97,823	5,348,515	54.6
20-21	0.001341	97,761	131	97,696	5,250,691	53.7
21-22	0.001501	97,630	147	97,557	5,152,996	52.8
22-23	0.001534	97,484	150	97,409	5,055,439	51.9
23-24	0.001591	97,334	155	97,257	4,958,030	50.9
24-25	0.001620	97,179	157	97,101	4,860,773	50.0
25-26	0.001571	97,022	152	96,946	4,763,672	49.1
26-27	0.001631	96,869	158	96,790	4,666,727	48.2
27-28	0.001678	96,711	162	96,630	4,569,936	47.3
28-29	0.001736	96,549	168	96,465	4,473,306	46.3
29-30	0.001810	96,382	174	96,294	4,376,841	45.4
30-31	0.001830	96,207	176	96,119	4,280,546	44.5
31-32	0.001746	96,031	168	95,947	4,184,427	43.6
32-33	0.002000	95,863	192	95,768	4,088,480	42.6
33-34	0.002195	95,672	210	95,567	3,992,713	41.7
34-35	0.002281	95,462	218	95,353	3,897,146	40.8
35-36	0.002506	95,244	239	95,125	3,801,793	39.9
36-37	0.002528	95,005	240	94,885	3,706,668	39.0
37-38	0.002818	94,765	267	94,632	3,611,783	38.1
38-39	0.003089	94,498	292	94,352	3,517,152	37.2
39-40	0.003343	94,206	315	94,049	3,422,799	36.3
40-41	0.003577	93,891	336	93,723	3,328,751	35.5
41-42	0.003825	93,555	358	93,376	3,235,027	34.6
42-43	0.004261	93,198	397	92,999	3,141,651	33.7
43-44	0.004712	92,800	437	92,582	3,048,652	32.9
44-45	0.005087	92,363	470	92,128	2,956,070	32.0
45-46	0.005492	91,893	505	91,641	2,863,942	31.2
46-47	0.005936	91,389	543	91,117	2,772,301	30.3
47-48	0.006348	90,846	577	90,558	2,681,184	29.5
48-49	0.006897	90,269	623	89,958	2,590,626	28.7
49-50	0.007678	89,647	688	89,303	2,500,668	27.9
50-51	0.008212	88,959	731	88,593	2,411,365	27.1
51-52	0.008371	88,228	739	87,859	2,322,772	26.3
52-53	0.009335	87,489	817	87,081	2,234,913	25.5
53-54	0.009769	86,673	847	86,249	2,147,832	24.8
54-55	0.010977	85,826	942	85,355	2,061,582	24.0
55-56	0.010834	84,884	920	84,424	1,976,227	23.3
56-57	0.012137	83,964	1,019	83,455	1,891,803	22.5
57-58	0.013429	82,945	1,114	82,388	1,808,349	21.8
58-59	0.014804	81,831	1,211	81,226	1,725,960	21.1
59-60	0.015364	80,620	1,239	80,001	1,644,735	20.4
60-61	0.015796	79,381	1,254	78,754	1,564,734	19.7
61-62	0.017591	78,127	1,374	77,440	1,485,980	19.0
62-63	0.019031	76,753	1,461	76,023	1,408,539	18.4
63-64	0.019948	75,292	1,502	74,541	1,332,517	17.7
64-65	0.021963	73,790	1,621	72,980	1,257,975	17.0
65-66	0.023179	72,170	1,673	71,333	1,184,995	16.4
66-67	0.025142	70,497	1,772	69,611	1,113,662	15.8

Table 7. Life table for the black population: United States, 2001—Con.

Age	Probability of dying between ages x to $x+1$	Number surviving to age x	Number dying between ages x to $x+1$	Person-years lived between ages x to $x+1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
67-68	0.026474	68,725	1,819	67,815	1,044,051	15.2
68-69	0.029440	66,905	1,970	65,920	976,236	14.6
69-70	0.031820	64,935	2,066	63,902	910,316	14.0
70-71	0.032559	62,869	2,047	61,846	846,414	13.5
71-72	0.036200	60,822	2,202	59,721	784,568	12.9
72-73	0.038233	58,620	2,241	57,500	724,847	12.4
73-74	0.041609	56,379	2,346	55,206	667,347	11.8
74-75	0.043869	54,033	2,370	52,848	612,140	11.3
75-76	0.047979	51,663	2,479	50,424	559,292	10.8
76-77	0.051121	49,184	2,514	47,927	508,869	10.3
77-78	0.054813	46,670	2,558	45,391	460,942	9.9
78-79	0.060196	44,112	2,655	42,784	415,551	9.4
79-80	0.064184	41,456	2,661	40,126	372,767	9.0
80-81	0.067194	38,796	2,607	37,492	332,641	8.6
81-82	0.074064	36,189	2,680	34,849	295,149	8.2
82-83	0.075509	33,508	2,530	32,243	260,300	7.8
83-84	0.085573	30,978	2,651	29,653	228,057	7.4
84-85	0.090693	28,327	2,569	27,043	198,404	7.0
85-86	0.097451	25,758	2,510	24,503	171,361	6.7
86-87	0.104600	23,248	2,432	22,032	146,858	6.3
87-88	0.112153	20,816	2,335	19,649	124,826	6.0
88-89	0.120123	18,482	2,220	17,372	105,177	5.7
89-90	0.128522	16,262	2,090	15,217	87,805	5.4
90-91	0.137361	14,172	1,947	13,198	72,588	5.1
91-92	0.146651	12,225	1,793	11,329	59,390	4.9
92-93	0.156403	10,432	1,632	9,616	48,061	4.6
93-94	0.166624	8,801	1,466	8,067	38,445	4.4
94-95	0.177323	7,334	1,301	6,684	30,377	4.1
95-96	0.188507	6,034	1,137	5,465	23,693	3.9
96-97	0.200182	4,896	980	4,406	18,228	3.7
97-98	0.212354	3,916	832	3,500	13,822	3.5
98-99	0.225024	3,085	694	2,737	10,322	3.3
99-100	0.238195	2,390	569	2,106	7,584	3.2
100 years and over	1.00000	1,821	1,821	5,479	5,479	3.0

Table 8. Life table for black males: United States, 2001

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	0.015431	100,000	1,543	98,653	6,855,691	68.6
1-2	0.000879	98,457	87	98,414	6,757,038	68.6
2-3	0.000516	98,370	51	98,345	6,658,624	67.7
3-4	0.000402	98,319	40	98,300	6,560,279	66.7
4-5	0.000330	98,280	32	98,264	6,461,980	65.8
5-6	0.000286	98,248	28	98,233	6,363,716	64.8
6-7	0.000241	98,219	24	98,208	6,265,482	63.8
7-8	0.000157	98,196	15	98,188	6,167,275	62.8
8-9	0.000240	98,180	24	98,169	6,069,087	61.8
9-10	0.000269	98,157	26	98,144	5,970,918	60.8
10-11	0.000291	98,130	29	98,116	5,872,775	59.8
11-12	0.000297	98,102	29	98,087	5,774,659	58.9
12-13	0.000287	98,073	28	98,058	5,676,572	57.9
13-14	0.000347	98,044	34	98,027	5,578,513	56.9
14-15	0.000362	98,010	35	97,993	5,480,486	55.9
15-16	0.000644	97,975	63	97,943	5,382,493	54.9
16-17	0.000892	97,912	87	97,868	5,284,550	54.0
17-18	0.001254	97,825	123	97,763	5,186,681	53.0
18-19	0.001780	97,702	174	97,615	5,088,918	52.1
19-20	0.001976	97,528	193	97,432	4,991,303	51.2
20-21	0.002098	97,335	204	97,233	4,893,872	50.3
21-22	0.002344	97,131	228	97,017	4,796,639	49.4
22-23	0.002407	96,903	233	96,787	4,699,621	48.5
23-24	0.002416	96,670	234	96,553	4,602,835	47.6
24-25	0.002597	96,437	250	96,311	4,506,281	46.7
25-26	0.002371	96,186	228	96,072	4,409,970	45.8
26-27	0.002522	95,958	242	95,837	4,313,898	45.0
27-28	0.002462	95,716	236	95,598	4,218,060	44.1
28-29	0.002477	95,480	237	95,362	4,122,462	43.2
29-30	0.002505	95,244	239	95,125	4,027,100	42.3
30-31	0.002670	95,005	254	94,879	3,931,975	41.4
31-32	0.002427	94,752	230	94,637	3,837,097	40.5
32-33	0.002685	94,522	254	94,395	3,742,460	39.6
33-34	0.002865	94,268	270	94,133	3,648,065	38.7
34-35	0.002918	93,998	274	93,861	3,553,932	37.8
35-36	0.003234	93,724	303	93,572	3,460,071	36.9
36-37	0.003147	93,421	294	93,274	3,366,499	36.0
37-38	0.003739	93,127	348	92,952	3,273,226	35.1
38-39	0.003846	92,778	357	92,600	3,180,273	34.3
39-40	0.004222	92,421	390	92,226	3,087,673	33.4
40-41	0.004296	92,031	395	91,834	2,995,447	32.5
41-42	0.004788	91,636	439	91,416	2,903,614	31.7
42-43	0.005240	91,197	478	90,958	2,812,197	30.8
43-44	0.005777	90,719	524	90,457	2,721,239	30.0
44-45	0.006331	90,195	571	89,910	2,630,782	29.2
45-46	0.007010	89,624	628	89,310	2,540,872	28.4
46-47	0.007600	88,996	676	88,658	2,451,562	27.5
47-48	0.008328	88,319	736	87,952	2,362,905	26.8
48-49	0.008945	87,584	783	87,192	2,274,953	26.0
49-50	0.009810	86,801	852	86,375	2,187,761	25.2
50-51	0.010601	85,949	911	85,493	2,101,386	24.4
51-52	0.010955	85,038	932	84,572	2,015,893	23.7
52-53	0.012160	84,106	1,023	83,595	1,931,320	23.0
53-54	0.012424	83,084	1,032	82,567	1,847,726	22.2
54-55	0.014164	82,051	1,162	81,470	1,765,158	21.5
55-56	0.014047	80,889	1,136	80,321	1,683,688	20.8
56-57	0.015357	79,753	1,225	79,141	1,603,367	20.1
57-58	0.017428	78,528	1,369	77,844	1,524,226	19.4
58-59	0.019357	77,160	1,494	76,413	1,446,382	18.7
59-60	0.019817	75,666	1,499	74,916	1,369,970	18.1
60-61	0.020553	74,167	1,524	73,404	1,295,053	17.5
61-62	0.022787	72,642	1,655	71,815	1,221,649	16.8
62-63	0.024230	70,987	1,720	70,127	1,149,834	16.2
63-64	0.025345	69,267	1,756	68,389	1,079,707	15.6
64-65	0.027676	67,511	1,868	66,577	1,011,318	15.0
65-66	0.029970	65,643	1,967	64,659	944,741	14.4
66-67	0.031857	63,676	2,029	62,661	880,082	13.8

Table 8. Life table for black males: United States, 2001—Con.

Age	Probability of dying between ages x to $x+1$	Number surviving to age x	Number dying between ages x to $x+1$	Person-years lived between ages x to $x+1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
67-68	0.033747	61,647	2,080	60,607	817,421	13.3
68-69	0.037256	59,567	2,219	58,457	756,814	12.7
69-70	0.040520	57,347	2,324	56,186	698,357	12.2
70-71	0.041640	55,024	2,291	53,878	642,171	11.7
71-72	0.046944	52,733	2,475	51,495	588,293	11.2
72-73	0.049850	50,257	2,505	49,004	536,798	10.7
73-74	0.053582	47,752	2,559	46,472	487,794	10.2
74-75	0.056233	45,193	2,541	43,923	441,321	9.8
75-76	0.060995	42,652	2,602	41,351	397,399	9.3
76-77	0.065106	40,050	2,608	38,747	356,047	8.9
77-78	0.070169	37,443	2,627	36,129	317,301	8.5
78-79	0.075570	34,815	2,631	33,500	281,172	8.1
79-80	0.082940	32,184	2,669	30,850	247,672	7.7
80-81	0.085852	29,515	2,534	28,248	216,822	7.3
81-82	0.094424	26,981	2,548	25,707	188,574	7.0
82-83	0.096914	24,434	2,368	23,250	162,867	6.7
83-84	0.106995	22,066	2,361	20,885	139,617	6.3
84-85	0.113879	19,705	2,244	18,583	118,732	6.0
85-86	0.121654	17,461	2,124	16,399	100,149	5.7
86-87	0.129754	15,337	1,990	14,342	83,751	5.5
87-88	0.138173	13,347	1,844	12,424	69,409	5.2
88-89	0.146905	11,502	1,690	10,658	56,985	5.0
89-90	0.155940	9,813	1,530	9,048	46,327	4.7
90-91	0.165268	8,282	1,369	7,598	37,280	4.5
91-92	0.174876	6,914	1,209	6,309	29,682	4.3
92-93	0.184748	5,705	1,054	5,178	23,372	4.1
93-94	0.194868	4,651	906	4,198	18,195	3.9
94-95	0.205215	3,744	768	3,360	13,997	3.7
95-96	0.215768	2,976	642	2,655	10,637	3.6
96-97	0.226504	2,334	529	2,070	7,982	3.4
97-98	0.237396	1,805	429	1,591	5,912	3.3
98-99	0.248416	1,377	342	1,206	4,321	3.1
99-100	0.259535	1,035	269	900	3,116	3.0
100 years and over	1.00000	766	766	2,215	2,215	2.9

Table 9. Life table for black females: United States, 2001

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	0.012472	100,000	1,247	98,926	7,546,774	75.5
1-2	0.000722	98,753	71	98,717	7,447,848	75.4
2-3	0.000385	98,681	38	98,662	7,349,131	74.5
3-4	0.000326	98,643	32	98,627	7,250,469	73.5
4-5	0.000236	98,611	23	98,600	7,151,841	72.5
5-6	0.000176	98,588	17	98,579	7,053,241	71.5
6-7	0.000177	98,571	17	98,562	6,954,662	70.6
7-8	0.000171	98,553	17	98,545	6,856,100	69.6
8-9	0.000146	98,537	14	98,529	6,757,555	68.6
9-10	0.000206	98,522	20	98,512	6,659,026	67.6
10-11	0.000153	98,502	15	98,494	6,560,514	66.6
11-12	0.000172	98,487	17	98,478	6,462,019	65.6
12-13	0.000193	98,470	19	98,460	6,363,541	64.6
13-14	0.000184	98,451	18	98,442	6,265,081	63.6
14-15	0.000298	98,433	29	98,418	6,166,639	62.6
15-16	0.000269	98,403	26	98,390	6,068,221	61.7
16-17	0.000297	98,377	29	98,362	5,969,831	60.7
17-18	0.000432	98,348	43	98,326	5,871,469	59.7
18-19	0.000498	98,305	49	98,281	5,773,142	58.7
19-20	0.000546	98,256	54	98,229	5,674,862	57.8
20-21	0.000596	98,202	59	98,173	5,576,632	56.8
21-22	0.000679	98,144	67	98,111	5,478,459	55.8
22-23	0.000688	98,077	67	98,044	5,380,348	54.9
23-24	0.000809	98,010	79	97,970	5,282,305	53.9
24-25	0.000711	97,931	70	97,896	5,184,335	52.9
25-26	0.000834	97,861	82	97,820	5,086,439	52.0
26-27	0.000810	97,779	79	97,740	4,988,619	51.0
27-28	0.000971	97,700	95	97,653	4,890,879	50.1
28-29	0.001062	97,605	104	97,553	4,793,227	49.1
29-30	0.001182	97,501	115	97,444	4,695,673	48.2
30-31	0.001078	97,386	105	97,334	4,598,229	47.2
31-32	0.001127	97,281	110	97,226	4,500,896	46.3
32-33	0.001382	97,172	134	97,104	4,403,669	45.3
33-34	0.001591	97,037	154	96,960	4,306,565	44.4
34-35	0.001714	96,883	166	96,800	4,209,605	43.5
35-36	0.001857	96,717	180	96,627	4,112,805	42.5
36-37	0.001972	96,537	190	96,442	4,016,178	41.6
37-38	0.001999	96,347	193	96,251	3,919,736	40.7
38-39	0.002420	96,154	233	96,038	3,823,485	39.8
39-40	0.002569	95,922	246	95,798	3,727,447	38.9
40-41	0.002941	95,675	281	95,535	3,631,649	38.0
41-42	0.002966	95,394	283	95,252	3,536,114	37.1
42-43	0.003399	95,111	323	94,949	3,440,862	36.2
43-44	0.003765	94,788	357	94,609	3,345,913	35.3
44-45	0.003992	94,431	377	94,242	3,251,303	34.4
45-46	0.004165	94,054	392	93,858	3,157,061	33.6
46-47	0.004485	93,662	420	93,452	3,063,203	32.7
47-48	0.004619	93,242	431	93,027	2,969,751	31.8
48-49	0.005134	92,811	477	92,573	2,876,725	31.0
49-50	0.005851	92,335	540	92,065	2,784,152	30.2
50-51	0.006163	91,794	566	91,512	2,692,087	29.3
51-52	0.006140	91,229	560	90,949	2,600,576	28.5
52-53	0.006934	90,669	629	90,354	2,509,627	27.7
53-54	0.007510	90,040	676	89,702	2,419,273	26.9
54-55	0.008291	89,364	741	88,993	2,329,571	26.1
55-56	0.008153	88,623	723	88,262	2,240,577	25.3
56-57	0.009457	87,900	831	87,485	2,152,316	24.5
57-58	0.010145	87,069	883	86,627	2,064,831	23.7
58-59	0.011078	86,186	955	85,708	1,978,204	23.0
59-60	0.011776	85,231	1,004	84,729	1,892,495	22.2
60-61	0.011986	84,227	1,010	83,723	1,807,766	21.5
61-62	0.013438	83,218	1,118	82,659	1,724,044	20.7
62-63	0.014941	82,100	1,227	81,486	1,641,385	20.0
63-64	0.015703	80,873	1,270	80,238	1,559,899	19.3
64-65	0.017534	79,603	1,396	78,905	1,479,661	18.6
65-66	0.017980	78,207	1,406	77,504	1,400,756	17.9
66-67	0.020035	76,801	1,539	76,032	1,323,252	17.2

Table 9. Life table for black females: United States, 2001—Con.

Age	Probability of dying between ages x to $x+1$	Number surviving to age x	Number dying between ages x to $x+1$	Person-years lived between ages x to $x+1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
67-68	0.021091	75,262	1,587	74,469	1,247,220	16.6
68-69	0.023720	73,675	1,748	72,801	1,172,751	15.9
69-70	0.025603	71,927	1,842	71,007	1,099,950	15.3
70-71	0.026151	70,086	1,833	69,169	1,028,944	14.7
71-72	0.028797	68,253	1,965	67,270	959,774	14.1
72-73	0.030484	66,288	2,021	65,277	892,504	13.5
73-74	0.033777	64,267	2,171	63,181	827,227	12.9
74-75	0.035934	62,096	2,231	60,980	764,045	12.3
75-76	0.039887	59,865	2,388	58,671	703,065	11.7
76-77	0.042500	57,477	2,443	56,256	644,394	11.2
77-78	0.045506	55,034	2,504	53,782	588,138	10.7
78-79	0.051056	52,530	2,682	51,189	534,356	10.2
79-80	0.053382	49,848	2,661	48,517	483,168	9.7
80-81	0.056793	47,187	2,680	45,847	434,650	9.2
81-82	0.063275	44,507	2,816	43,099	388,804	8.7
82-83	0.064294	41,691	2,680	40,351	345,705	8.3
83-84	0.075054	39,010	2,928	37,546	305,354	7.8
84-85	0.079960	36,082	2,885	34,640	267,808	7.4
85-86	0.086844	33,197	2,883	31,756	233,168	7.0
86-87	0.094179	30,314	2,855	28,887	201,412	6.6
87-88	0.101978	27,459	2,800	26,059	172,525	6.3
88-89	0.110258	24,659	2,719	23,300	146,466	5.9
89-90	0.119029	21,940	2,612	20,634	123,166	5.6
90-91	0.128305	19,329	2,480	18,089	102,532	5.3
91-92	0.138094	16,849	2,327	15,685	84,443	5.0
92-93	0.148407	14,522	2,155	13,444	68,758	4.7
93-94	0.159248	12,367	1,969	11,382	55,313	4.5
94-95	0.170624	10,397	1,774	9,510	43,931	4.2
95-96	0.182537	8,623	1,574	7,836	34,421	4.0
96-97	0.194987	7,049	1,375	6,362	26,584	3.8
97-98	0.207972	5,675	1,180	5,085	20,222	3.6
98-99	0.221486	4,495	995	3,997	15,138	3.4
99-100	0.235523	3,499	824	3,087	11,141	3.2
100 years and over	1.00000	2,675	2,675	8,054	8,054	3.0

Table 10. Survivorship by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2001

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

Age, race, and sex	Number of survivors out of 100,000 born alive (<i>L_x</i>)										
	2001	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	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	99,316	99,064	98,740	97,998	97,407	97,024	95,290	94,028	92,515	88,538	87,552
5	99,184	98,877	98,495	97,668	96,998	96,482	94,220	91,978	83,389	83,887	81,804
10	99,108	98,766	98,347	97,460	96,765	96,177	93,710	91,106	88,129	82,458	80,052
15	99,012	98,635	98,196	97,261	96,551	95,885	93,235	90,385	87,144	81,506	78,963
20	98,682	98,215	97,741	96,716	96,111	95,366	92,435	89,089	85,441	80,074	77,239
25	98,214	97,671	97,110	96,000	95,517	94,676	91,335	87,269	83,146	78,064	74,768
30	97,743	97,070	96,477	95,307	94,905	93,919	90,078	85,302	80,642	75,779	72,043
35	97,189	96,322	95,808	94,482	94,144	92,976	88,573	83,118	77,961	73,127	69,078
40	96,388	95,373	94,926	93,322	93,064	91,648	86,650	80,557	75,114	70,042	65,890
45	95,234	94,154	93,599	91,587	91,378	89,634	84,069	77,343	72,036	66,561	62,436
50	93,552	92,370	91,526	88,972	88,756	86,591	80,487	73,321	68,429	62,460	58,514
55	91,179	89,658	88,348	85,110	84,711	82,176	75,557	68,182	63,947	57,555	53,852
60	87,705	85,537	83,726	79,529	79,067	75,921	68,924	61,563	58,079	51,138	47,946
65	82,519	79,519	77,107	71,933	71,147	67,555	60,366	53,195	50,560	43,194	40,911
70	75,122	71,357	68,248	61,984	60,857	56,987	49,655	42,768	41,090	33,816	32,390
75	65,014	60,449	56,799	49,705	48,170	43,903	36,735	30,789	29,729	23,552	22,960
80	51,820	47,084	43,180	35,285	33,576	29,313	22,883	18,580	18,298	13,712	13,529
85	35,943	31,770	27,960	20,908	18,542	15,785	11,073	8,542	8,683	6,001	6,053
90	19,796	17,046	14,154	9,297	7,080	6,144	3,796	2,998	2,941	1,868	1,867
95	7,890	6,282	5,043	2,786	1,524	1,511	857	636	646	361	344
100	2,045	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	99,249	98,961	98,607	97,755	97,087	96,661	94,762	93,440	91,745	87,505	86,426
5	99,102	98,754	98,333	97,395	96,643	96,077	93,624	91,294	88,505	82,718	80,548
10	99,019	98,627	98,160	97,151	96,375	95,726	93,054	90,346	87,184	81,249	78,775
15	98,906	98,464	97,972	96,904	96,107	95,366	92,508	89,561	86,156	80,261	77,681
20	98,444	97,854	97,316	96,126	95,491	94,695	91,617	88,220	84,440	78,792	75,984
25	97,752	97,049	96,361	95,040	94,631	93,791	90,385	86,359	82,252	76,675	73,472
30	96,752	96,166	95,430	94,072	93,826	92,861	89,009	84,346	79,890	74,378	70,747
35	96,359	95,091	94,501	92,997	92,889	91,760	87,371	82,075	77,514	71,614	67,752
40	95,337	93,761	93,345	91,541	91,572	90,207	85,246	79,357	74,432	68,297	64,447
45	93,892	92,139	91,649	89,369	89,492	87,819	82,336	75,882	71,244	64,518	60,849
50	91,768	89,865	89,007	86,070	86,199	84,158	78,254	71,518	67,553	60,118	56,736
55	88,839	86,492	84,936	81,139	81,039	78,781	72,627	65,981	62,965	54,970	51,939
60	84,654	81,378	79,012	73,958	73,887	71,246	65,142	58,909	56,917	48,343	45,895
65	78,506	73,971	70,646	64,318	64,177	61,566	55,776	50,154	49,218	40,264	38,736
70	69,875	64,107	59,681	52,296	52,244	49,950	44,588	39,516	39,668	31,023	30,217
75	58,335	51,385	46,272	38,797	38,950	36,756	31,864	27,718	28,316	21,213	21,076
80	43,928	36,749	31,810	24,921	25,300	25,237	18,995	16,172	17,128	11,942	12,084
85	27,975	21,815	18,020	13,168	12,845	11,750	8,693	7,107	7,920	5,059	5,179
90	13,580	9,878	7,732	5,107	4,609	4,197	2,787	2,283	2,527	1,502	1,508
95	4,546	2,927	2,279	1,326	970	955	586	451	556	289	262
100	953	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	99,386	99,172	98,880	98,254	97,744	97,406	95,848	94,728	93,383	89,623	88,733
5	99,269	99,006	98,666	97,955	97,371	96,908	94,848	92,789	90,380	85,117	83,119
10	99,200	98,911	98,544	97,784	97,173	96,652	94,402	92,008	89,186	83,728	81,390
15	99,124	98,814	98,432	97,636	97,016	96,431	94,000	91,364	88,247	82,813	80,307
20	98,933	98,597	98,184	97,331	96,756	96,066	93,293	90,116	86,556	81,418	78,555
25	98,702	98,325	97,883	96,966	96,418	95,583	92,322	88,328	84,135	79,481	76,119
30	98,428	98,013	97,551	96,544	95,996	94,933	91,182	86,398	81,463	77,247	73,394
35	98,057	97,596	97,140	95,966	95,409	94,206	89,810	84,304	78,713	74,719	70,463
40	97,481	97,033	96,531	95,097	94,560	93,101	88,092	81,927	75,907	71,894	67,407
45	96,620	96,222	95,570	93,793	93,265	91,469	85,856	79,041	72,954	68,755	64,121
50	95,381	94,932	94,060	91,852	91,327	89,075	82,828	75,456	69,452	65,001	60,415
55	93,563	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 1919–21, and United States, 1929–31 to 2001—Con.

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

Age, race, and sex	Number of survivors out of 100,000 born alive (<i>L</i>)										
	2001	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	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	99,494	99,333	99,035	98,468	98,036	97,645	96,211	95,037	93,608	89,774	88,939
5	99,387	99,187	98,841	98,203	97,709	97,199	95,309	93,216	90,721	85,349	83,426
10	99,320	99,099	98,725	98,042	97,525	96,960	94,890	92,466	89,564	83,979	81,723
15	99,249	99,007	98,618	97,902	97,375	96,756	94,534	91,894	88,712	83,093	80,680
20	99,058	98,795	98,374	97,618	97,135	96,454	93,984	90,939	87,281	81,750	78,978
25	98,844	98,547	98,093	97,299	96,844	96,072	93,228	89,524	85,163	79,865	76,588
30	98,599	98,283	97,802	96,945	96,499	95,605	92,320	87,972	82,740	77,676	73,887
35	98,271	97,939	97,445	96,474	96,026	94,977	91,211	86,248	80,206	75,200	70,971
40	97,759	97,472	96,913	95,762	95,326	94,080	89,805	84,256	77,624	72,425	67,935
45	96,999	96,768	96,065	94,649	94,228	92,725	87,920	81,780	74,871	69,341	64,677
50	95,889	95,608	94,710	92,924	92,522	90,685	85,267	78,572	71,547	65,629	61,005
55	94,223	93,730	92,594	90,383	89,967	87,699	81,520	74,321	67,323	61,053	56,509
60	91,614	90,789	89,451	86,726	86,339	83,279	76,200	68,462	61,704	54,900	50,752
65	87,535	86,339	84,764	81,579	80,739	76,773	68,701	60,499	54,299	47,086	43,806
70	81,490	79,984	78,139	74,101	72,507	67,545	58,363	49,932	44,638	37,482	35,206
75	72,753	70,834	68,712	63,290	60,461	54,397	44,685	37,024	32,777	26,569	25,362
80	60,477	58,454	55,770	48,182	44,676	38,026	28,882	23,053	20,492	15,929	15,349
85	44,132	42,274	38,774	30,490	26,046	21,348	14,487	10,937	9,909	7,152	7,149
90	25,556	24,270	20,996	14,406	10,219	8,662	5,061	3,719	3,372	2,291	2,322
95	10,451	9,495	7,900	4,526	2,203	2,200	1,109	797	721	434	448
100	2,583	2,239	1,858	872	265	294	139	74	63	44	41
Black¹											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	98,603	98,187	97,885	96,731	95,732	95,407	92,584	92,035	90,379	79,784	76,609
5	98,415	97,884	97,522	96,207	95,051	94,482	90,983	89,303	86,174	70,691	66,222
10	98,313	97,720	97,322	95,928	94,745	94,060	90,339	88,258	84,690	68,437	63,410
15	98,186	97,539	97,134	95,661	94,460	93,646	89,591	87,156	83,180	66,410	61,060
20	97,761	96,925	96,652	94,887	93,880	92,738	87,839	84,386	79,641	63,165	57,931
25	97,022	95,972	95,804	93,513	92,925	91,321	85,210	80,320	74,973	59,608	54,512
30	96,207	94,809	94,680	91,934	91,699	89,584	82,194	75,962	70,492	56,112	51,287
35	95,244	93,260	93,288	89,977	90,046	87,402	78,683	71,141	65,865	52,125	48,007
40	93,891	91,239	91,439	87,304	87,766	84,478	74,466	65,974	61,244	47,866	44,518
45	91,893	88,689	88,834	83,700	84,501	80,507	69,284	59,827	56,442	43,054	40,628
50	88,959	85,285	85,044	78,938	80,172	74,976	62,702	53,141	51,422	37,800	36,103
55	84,884	80,635	79,816	72,826	73,893	67,660	54,846	45,558	45,803	32,233	31,404
60	79,381	74,335	72,913	65,250	65,795	58,593	46,318	37,654	39,418	26,046	25,698
65	72,170	66,154	64,391	56,102	56,038	48,649	37,838	30,015	32,738	19,806	20,474
70	62,869	56,192	54,617	45,785	45,434	38,616	29,654	22,505	25,585	14,021	14,960
75	51,663	44,827	43,274	34,262	34,531	28,968	21,798	15,546	18,011	9,139	9,956
80	38,796	33,149	31,711	23,710	24,815	20,003	14,408	9,589	11,376	5,158	5,750
85	25,758	21,352	19,939	15,044	15,337	12,433	8,326	4,900	5,794	2,414	2,782
90	14,172	11,646	10,713	8,087	7,195	6,394	4,077	2,044	2,317	913	1,054
95	6,034	4,729	4,463	3,252	1,777	2,010	1,557	638	689	324	296
100	1,821	1,376	1,360	1,036	214	301	399	120	129	77	57
Black male¹											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	98,457	98,023	97,703	96,394	95,301	94,911	91,772	91,268	89,499	78,065	74,674
5	98,248	97,688	97,300	95,826	94,570	93,921	90,082	88,412	85,195	68,589	64,385
10	98,130	97,501	97,061	95,497	94,234	93,453	89,393	87,311	83,768	66,377	61,730
15	97,975	97,268	96,826	95,161	93,874	92,965	88,610	86,152	82,332	64,478	59,667
20	97,335	96,301	96,132	94,053	93,108	91,941	86,968	83,621	79,057	61,426	56,733
25	96,186	94,809	94,827	91,904	91,825	90,285	84,227	79,516	74,540	57,736	53,285
30	95,005	93,070	93,125	89,584	90,270	88,327	80,979	75,083	70,344	54,073	49,867
35	93,724	90,827	91,080	86,885	88,331	85,940	77,221	70,049	65,873	49,865	46,541
40	92,031	87,948	88,490	83,441	85,744	82,832	72,780	64,710	61,353	45,414	42,989
45	89,624	84,467	84,997	78,976	82,075	78,686	67,346	58,432	56,589	40,563	39,230
50	85,949	79,984	80,065	73,282	77,239	72,891	60,495	51,748	51,880	35,427	34,766
55	80,889	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 1919–21, and United States, 1929–31 to 2001—Con.

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

Age, race, and sex	Number of survivors out of 100,000 born alive (L _x)										
	2001	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
Black male¹—Con.											
60	74,167	66,334	64,980	57,457	61,669	55,535	43,833	36,790	40,506	23,750	24,194
65	65,643	56,795	55,061	47,485	51,392	45,198	35,371	29,314	34,042	17,806	19,015
70	55,024	45,690	44,213	36,925	39,914	35,018	27,236	21,741	26,923	12,295	13,829
75	42,652	33,755	32,717	25,921	29,064	25,472	19,456	14,419	18,854	7,494	8,892
80	29,515	22,549	22,017	16,560	19,994	16,904	12,186	8,239	11,615	3,894	4,831
85	17,461	12,709	12,383	9,648	11,620	9,898	6,444	3,660	5,605	1,747	2,030
90	8,282	5,972	5,708	4,696	5,174	4,642	2,836	1,246	2,040	595	634
95	2,976	1,971	2,009	1,721	1,240	1,342	961	307	552	189	137
100	766	466	513	489	149	192	209	41	77	40	18
Black female¹											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	98,753	98,356	98,073	97,076	96,172	95,913	93,416	92,796	91,251	81,493	78,525
5	98,588	98,087	97,751	96,598	95,543	95,055	91,906	90,185	87,149	72,768	68,056
10	98,502	97,946	97,590	96,369	95,265	94,679	91,308	89,201	85,607	70,508	65,111
15	98,403	97,818	97,450	96,172	95,057	94,343	90,594	88,088	83,954	68,218	62,384
20	98,202	97,566	97,180	95,729	94,660	93,544	88,736	85,078	80,154	64,764	59,053
25	97,861	97,140	96,754	95,035	94,005	92,336	86,198	81,067	75,359	61,430	55,795
30	97,386	96,514	96,150	94,114	93,070	90,799	83,384	76,816	70,633	58,281	52,773
35	96,717	95,599	95,338	92,807	91,670	88,805	80,092	72,192	65,857	54,595	49,567
40	95,675	94,364	94,137	90,817	89,676	86,052	76,084	67,271	61,130	50,568	46,146
45	94,054	92,676	92,322	88,001	86,793	82,257	71,157	61,365	56,230	45,947	42,279
50	91,794	90,277	89,563	84,168	82,979	77,007	64,885	54,920	50,780	40,886	37,681
55	88,623	86,793	85,653	79,177	77,362	70,196	57,314	47,074	44,742	35,415	33,124
60	84,227	81,886	80,293	72,820	69,941	61,758	48,928	38,761	37,954	28,908	27,524
65	78,207	75,031	73,266	64,716	60,825	52,358	40,504	30,852	31,044	22,302	21,995
70	70,086	66,278	64,729	54,873	51,274	42,612	32,354	23,341	24,107	15,871	16,140
75	59,865	55,684	53,831	43,193	40,540	32,981	24,502	16,576	17,216	10,657	11,066
80	47,187	43,622	41,686	31,756	30,315	23,712	17,039	10,822	11,151	6,324	6,708
85	33,197	30,089	28,004	21,358	19,744	15,550	10,622	6,033	5,972	3,029	3,567
90	19,329	17,536	16,260	12,210	9,675	8,590	5,652	2,774	2,579	1,206	1,492
95	8,623	7,687	7,312	5,217	2,438	2,875	2,345	941	818	448	462
100	2,675	2,364	2,398	1,803	293	445	659	193	179	112	97

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

Table 11. Life expectancy by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2001

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

Age, race, and sex	Average number of years of life remaining (e_x)										
	2001	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
All races											
0	77.2	75.37	73.88	70.75	69.89	68.07	63.62	59.20	56.40	51.49	49.24
1	76.7	75.08	73.82	71.19	70.75	69.16	65.76	61.94	59.94	57.11	55.20
5	72.8	71.22	70.00	67.43	67.04	65.54	62.49	59.29	57.99	56.21	54.98
10	67.9	66.29	65.10	62.57	62.19	60.74	57.82	54.84	53.79	52.15	51.14
15	62.9	61.38	60.19	57.69	57.33	55.91	53.10	50.25	49.37	47.73	46.81
20	58.1	56.63	55.46	53.00	52.58	51.20	48.54	45.94	45.30	43.53	42.79
25	53.4	51.93	50.81	48.37	47.89	46.56	44.09	41.85	41.47	39.60	39.12
30	48.6	47.23	46.12	43.71	43.18	41.91	39.67	37.75	37.68	35.70	35.51
35	43.9	42.58	41.43	39.07	38.51	37.31	35.30	33.68	33.89	31.90	31.92
40	39.2	37.98	36.79	34.52	33.92	32.81	31.03	29.67	30.08	28.20	28.34
45	34.7	33.44	32.27	30.12	29.50	28.49	26.90	25.79	26.25	24.54	24.77
50	30.3	29.03	27.94	25.93	25.29	24.40	22.98	22.06	22.50	20.98	21.26
55	26.0	24.83	23.85	21.99	21.37	20.57	19.31	18.53	18.90	17.55	17.88
60	21.9	20.90	20.02	18.34	17.71	17.04	15.91	15.24	15.54	14.42	14.76
65	18.1	17.28	16.51	15.00	14.39	13.83	12.80	12.23	12.47	11.60	11.86
70	14.6	13.96	13.32	12.00	11.38	10.92	10.00	9.58	9.74	9.11	9.30
75	11.5	11.00	10.48	9.32	8.71	8.40	7.62	7.32	7.49	6.99	7.08
80	8.8	8.40	7.98	7.10	6.39	6.34	5.73	5.50	5.63	5.25	5.30
85	6.5	6.23	5.96	5.28	4.58	4.69	4.31	4.19	4.21	4.00	3.96
90	4.8	4.50	4.43	3.94	3.22	3.44	3.30	3.15	3.22	3.03	2.95
95	3.6	3.29	3.34	3.06	2.43	2.54	2.61	2.26	2.32	2.35	2.18
100	2.7	2.46	2.73	2.62	1.91	1.92	2.13	1.51	1.53	1.85	1.58
Male											
0	74.4	71.83	70.11	67.04	66.80	65.47	61.60	57.71	55.50	49.86	47.88
1	74.0	71.58	70.10	67.58	67.80	66.73	64.00	60.75	59.47	55.95	54.35
5	70.1	67.73	66.29	63.82	64.10	63.12	60.76	58.14	57.60	55.11	54.22
10	65.2	62.81	61.41	58.98	59.27	58.35	56.12	53.75	53.44	51.07	50.39
15	60.2	57.91	56.52	54.12	54.43	53.56	51.43	49.18	49.05	46.66	46.06
20	55.5	53.25	51.88	49.54	49.77	48.92	46.91	44.88	44.99	42.48	42.03
25	50.9	48.67	47.37	45.07	45.19	44.36	42.51	40.79	41.11	38.59	38.38
30	46.2	44.10	42.81	40.51	40.56	39.78	38.13	36.71	37.26	34.70	34.76
35	41.5	39.57	38.20	35.95	35.94	35.23	33.79	32.65	33.43	30.94	31.19
40	37.0	35.09	33.64	31.48	31.42	30.79	29.57	28.68	29.63	27.32	27.65
45	32.5	30.66	29.22	27.18	27.09	26.55	25.52	24.87	25.84	23.77	24.14
50	28.2	26.37	25.00	23.12	23.02	22.59	21.72	21.25	22.11	20.32	20.70
55	24.0	22.30	21.08	19.36	19.32	18.96	18.20	17.79	18.53	16.98	17.38
60	20.1	18.53	17.46	15.99	15.94	15.68	14.99	14.62	15.22	13.95	14.33
65	16.4	15.12	14.21	12.99	12.95	12.74	12.07	11.72	12.20	11.24	11.50
70	13.1	12.05	11.35	10.39	10.33	10.11	9.46	9.18	9.52	8.83	9.02
75	10.2	9.39	8.90	8.13	7.99	7.83	7.22	7.02	7.31	6.75	6.84
80	7.7	7.12	6.80	6.27	5.95	5.94	5.44	5.27	5.49	5.10	5.11
85	5.7	5.31	5.13	4.73	4.39	4.41	4.11	4.02	4.10	3.90	3.82
90	4.2	3.89	3.89	3.60	3.18	3.30	3.17	3.06	3.21	3.01	2.86
95	3.2	2.92	2.98	2.82	2.43	2.49	2.52	2.21	2.38	2.36	2.13
100	2.5	2.25	2.49	2.43	1.91	1.92	2.05	1.50	1.58	1.81	1.55
Female											
0	79.8	78.81	77.62	74.64	73.24	70.96	65.89	60.90	57.40	53.24	50.70
1	79.3	78.47	77.50	74.97	73.93	71.84	67.73	65.37	60.45	58.37	56.10
5	75.4	74.60	73.67	71.19	70.21	68.21	64.43	60.66	58.41	57.39	55.80
10	70.4	69.67	68.75	66.31	65.35	63.38	59.73	56.16	54.16	53.31	51.94
15	65.5	64.73	63.83	61.41	60.45	58.52	54.97	51.54	49.71	48.87	47.60
20	60.6	59.87	58.98	56.59	55.60	53.73	50.37	47.21	45.63	44.66	43.60
25	55.7	55.03	54.16	51.80	50.79	48.99	45.87	43.11	41.86	40.69	39.92
30	50.9	50.19	49.33	47.01	46.00	44.28	41.41	39.02	38.15	36.79	36.30
35	46.0	45.40	44.53	42.28	41.27	39.63	37.01	34.92	34.40	32.95	32.71
40	41.3	40.65	39.80	37.64	36.61	35.06	32.68	30.86	30.58	29.15	29.08
45	36.6	35.97	35.17	33.13	32.09	30.64	28.46	26.89	26.71	25.36	25.44
50	32.1	31.42	30.69	28.77	27.71	26.40	24.40	23.05	22.92	21.67	21.84
55	27.7	27.05	26.39	24.59	23.53	22.33	20.54	19.38	19.28	18.13	18.39

See footnote at end of table.

Table 11. Life expectancy by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2001—Con.

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

Age, race, and sex	Average number of years of life remaining (e_x)										
	2001	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
Female—Con.											
60	23.4	22.90	22.29	20.60	19.52	18.50	16.92	15.94	15.87	14.90	15.21
65	19.4	19.02	18.44	16.83	15.80	14.95	13.57	12.78	12.73	11.96	12.22
70	15.7	15.38	14.84	13.35	12.37	11.71	10.56	9.99	9.96	9.38	9.59
75	12.4	12.08	11.58	10.26	9.33	8.94	8.01	7.61	7.65	7.20	7.34
80	9.4	9.13	8.69	7.68	6.72	6.67	5.99	5.70	5.75	5.37	5.51
85	6.9	6.66	6.38	5.63	4.71	4.90	4.47	4.32	4.30	4.08	4.12
90	5.0	4.73	4.66	4.14	3.25	3.54	3.39	3.24	3.23	3.05	3.04
95	3.7	3.40	3.48	3.18	2.43	2.57	2.67	2.30	2.27	2.34	2.24
100	2.8	2.52	2.81	2.69	1.91	1.93	2.17	1.52	1.48	1.91	1.61
White											
0	77.7	76.13	74.53	71.62	70.73	69.02	64.92	60.86	57.42	51.90	49.64
1	77.1	75.72	74.35	71.91	71.38	69.95	66.84	63.46	60.87	57.46	55.47
5	73.2	71.84	70.52	68.12	67.64	66.29	63.52	60.75	58.86	56.51	55.18
10	68.3	66.92	65.62	63.26	62.79	61.48	58.83	56.29	54.65	52.43	51.34
15	63.3	61.99	60.71	58.37	57.92	56.65	54.09	51.69	50.21	48.01	47.01
20	58.5	57.23	55.98	53.66	53.16	51.91	49.47	47.28	46.04	43.77	43.17
25	53.8	52.50	51.30	49.00	48.44	47.22	44.92	43.02	42.07	39.79	39.26
30	49.0	47.76	46.59	44.28	43.69	42.52	40.40	38.76	38.17	35.86	35.51
35	44.2	43.06	41.86	39.58	38.97	37.86	35.93	34.50	34.27	32.03	32.01
40	39.5	38.41	37.17	34.95	34.33	33.29	31.54	30.33	30.38	28.29	28.28
45	34.9	33.81	32.60	30.48	29.84	28.88	27.29	26.29	26.45	24.60	24.82
50	30.5	29.34	28.21	26.21	25.57	24.70	23.26	22.42	22.64	21.01	21.18
55	26.1	25.08	24.05	22.19	21.58	20.77	19.47	18.75	18.97	17.57	17.91
60	22.0	21.08	20.16	18.48	17.84	17.15	15.98	15.37	15.57	14.43	14.73
65	18.2	17.40	16.59	15.08	14.44	13.86	12.80	12.28	12.47	11.60	11.87
70	14.6	14.02	13.35	12.01	11.37	10.89	9.96	9.58	9.72	9.10	9.31
75	11.5	11.03	10.47	9.27	8.65	8.34	7.55	7.30	7.47	6.98	7.08
80	8.7	8.39	7.95	7.01	6.33	6.27	5.64	5.45	5.59	5.22	5.30
85	6.4	6.20	5.90	5.19	4.53	4.62	4.20	4.12	4.15	3.97	3.95
90	4.6	4.46	4.36	3.84	3.20	3.41	3.16	3.10	3.17	3.00	2.93
95	3.4	3.25	3.25	2.92	2.43	2.53	2.45	2.22	2.28	2.29	2.16
100	2.4	2.43	2.62	2.41	1.91	1.92	1.95	1.48	1.50	1.71	1.56
White male											
0	75.0	72.72	70.82	67.94	67.55	66.31	62.81	59.12	56.34	50.23	48.23
1	74.5	72.35	70.70	68.33	68.34	67.41	64.98	62.04	60.24	56.26	54.61
5	70.6	68.48	66.87	64.55	64.61	63.77	61.68	59.38	58.31	55.37	54.43
10	65.6	63.55	61.98	59.69	59.78	58.98	57.03	54.96	54.15	51.32	50.59
15	60.7	58.65	57.09	54.83	54.93	54.18	52.33	50.39	49.74	46.91	46.25
20	56.0	53.96	52.45	50.22	50.25	49.52	47.76	46.02	45.60	42.71	42.19
25	51.3	49.33	47.92	45.70	45.65	44.93	43.28	41.78	41.60	38.79	38.52
30	46.6	44.71	43.31	41.07	40.97	40.29	38.80	37.54	37.65	34.87	34.88
35	41.9	40.12	38.66	36.43	36.31	35.68	34.36	33.33	33.74	31.08	31.29
40	37.3	35.57	34.04	31.87	31.73	31.17	30.03	29.22	29.86	27.43	27.74
45	32.8	31.07	29.55	27.48	27.34	26.87	25.87	25.28	26.00	23.86	24.21
50	28.4	26.71	25.26	23.34	23.22	22.83	21.96	21.51	22.22	20.39	20.76
55	24.2	22.56	21.25	19.51	19.45	19.11	18.34	17.97	18.59	17.03	17.42
60	20.2	18.71	17.56	16.07	16.01	15.76	15.05	14.72	15.25	13.98	14.35
65	16.5	15.24	14.26	13.02	12.97	12.75	12.07	11.77	12.21	11.25	11.51
70	13.2	12.11	11.35	10.38	10.29	10.07	9.42	9.20	9.51	8.83	9.03
75	10.2	9.40	8.87	8.06	7.92	7.77	7.17	7.02	7.30	6.75	6.84
80	7.7	7.11	6.76	6.18	5.89	5.88	5.38	5.26	5.47	5.09	5.10
85	5.6	5.28	5.09	4.63	4.34	4.35	4.02	3.99	4.06	3.88	3.81
90	4.1	3.85	3.83	3.49	3.16	3.27	3.06	3.03	3.18	2.99	2.85
95	3.0	2.88	2.91	2.67	2.43	2.48	2.40	2.19	2.36	2.31	2.12
100	2.3	2.21	2.41	2.20	1.91	1.92	1.96	1.49	1.58	1.68	1.55

See footnote at end of table.

Table 11. Life expectancy by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2001—Con.

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

Age, race, and sex	Average number of years of life remaining (e_x)										
	2001	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
White female											
0	80.2	79.45	78.22	75.49	74.19	72.03	67.29	62.67	58.53	53.62	51.08
1	79.6	78.99	77.98	75.66	74.68	72.77	68.93	64.93	61.51	58.69	56.39
5	75.7	75.10	74.13	71.86	70.92	69.09	65.57	62.17	59.43	57.67	56.03
10	70.8	70.16	69.21	66.97	66.05	64.26	60.85	57.65	55.17	53.57	52.15
15	65.8	65.23	64.29	62.07	61.15	59.39	56.07	53.00	50.67	49.12	47.79
20	60.9	60.36	59.44	57.24	56.29	54.56	51.38	48.52	46.46	44.88	43.77
25	56.1	55.51	54.60	52.42	51.45	49.77	46.78	44.25	42.55	40.88	40.05
30	51.2	50.65	49.76	47.60	46.63	45.00	42.21	39.99	38.72	36.96	36.42
35	46.3	45.82	44.93	42.82	41.84	40.28	37.70	35.73	34.86	33.09	32.82
40	41.6	41.03	40.16	38.12	37.13	35.64	33.25	31.52	30.94	29.26	29.17
45	36.9	36.30	35.49	33.54	32.53	31.12	28.90	27.39	26.98	25.45	25.51
50	32.3	31.71	30.96	29.11	28.08	26.76	24.72	23.41	23.12	21.74	21.89
55	27.8	27.29	26.61	24.85	23.81	22.58	20.73	19.60	19.40	18.18	18.43
60	23.5	23.09	22.45	20.79	19.69	18.64	17.00	16.05	15.93	14.92	15.23
65	19.5	19.14	18.55	16.93	15.88	15.00	13.56	12.81	12.75	11.97	12.23
70	15.7	15.46	14.89	13.37	12.38	11.68	10.50	9.98	9.94	9.38	9.59
75	12.3	12.11	11.58	10.21	9.28	8.87	7.92	7.56	7.62	7.20	7.33
80	9.3	9.12	8.65	7.59	6.67	6.59	5.88	5.63	5.70	5.35	5.50
85	6.7	6.62	6.32	5.54	4.66	4.83	4.34	4.24	4.24	4.06	4.10
90	4.8	4.69	4.59	4.05	3.23	3.51	3.24	3.17	3.16	3.00	3.02
95	3.4	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
Black¹											
0	72.2	69.16	68.52	64.11	63.91	60.73	53.85	48.53	47.03	35.87	33.80
1	72.2	69.43	68.99	65.27	65.75	62.65	57.15	51.71	51.01	43.84	43.00
5	68.3	65.64	65.25	61.62	62.21	59.25	54.13	49.25	49.44	45.34	45.55
10	63.4	60.75	60.38	56.79	57.41	54.50	49.50	44.80	45.26	41.74	42.46
15	58.5	55.86	55.49	51.94	52.57	49.73	44.89	40.37	41.02	38.02	39.04
20	53.7	51.19	50.75	47.34	47.88	45.19	40.73	36.62	37.72	34.86	36.03
25	49.1	46.67	46.18	43.00	43.35	40.85	36.91	33.32	34.91	31.72	33.04
30	44.5	42.22	41.69	38.70	38.89	36.59	33.17	30.07	31.98	28.43	29.96
35	39.9	37.87	37.28	34.48	34.56	32.44	29.53	26.94	29.07	25.39	26.82
40	35.5	33.65	32.98	30.46	30.39	28.48	26.06	23.82	26.07	22.41	23.73
45	31.2	29.55	28.87	26.65	26.46	24.75	22.82	20.97	23.17	19.58	20.67
50	27.1	25.62	25.03	23.11	22.74	21.38	19.94	18.22	20.17	16.84	17.95
55	23.3	21.95	21.50	19.83	19.45	18.41	17.43	15.80	17.33	14.33	15.23
60	19.7	18.59	18.29	16.83	16.53	15.87	15.18	13.62	14.72	12.16	13.06
65	16.4	15.56	15.37	14.16	13.96	13.59	13.02	11.49	12.22	10.22	10.87
70	13.5	12.87	12.67	11.77	11.63	11.48	10.93	9.54	9.90	8.59	8.96
75	10.8	10.48	10.32	9.89	9.52	9.48	8.97	7.84	8.00	7.08	7.24
80	8.6	8.30	8.17	8.20	7.28	7.62	7.31	6.19	6.22	5.80	5.79
85	6.7	6.51	6.54	6.54	5.27	5.79	5.91	4.92	4.88	4.80	4.56
90	5.1	4.94	5.13	5.09	3.48	3.97	4.64	3.83	3.84	4.26	3.60
95	3.9	3.82	4.08	4.28	2.43	2.70	3.51	2.83	2.90	3.31	2.82
100	3.0	2.91	3.58	3.93	1.91	1.94	2.57	1.87	1.94	2.27	2.18
Black male¹											
0	68.6	64.47	64.10	60.00	61.48	58.91	52.26	47.55	47.14	34.05	32.54
1	68.6	64.76	64.60	61.24	63.50	61.06	55.93	51.08	51.63	42.53	42.46
5	64.8	60.98	60.86	57.60	59.98	57.69	52.95	48.69	50.18	44.25	45.06
10	59.8	56.09	56.01	52.79	55.19	52.96	48.34	44.27	45.99	40.65	41.90
15	54.9	51.22	51.14	47.96	50.39	48.23	43.74	39.83	41.75	36.77	38.26
20	50.3	46.71	46.48	43.49	45.78	43.73	39.52	35.95	38.36	33.46	35.11
25	45.8	42.40	42.09	39.45	41.38	39.49	35.72	32.67	35.54	30.44	32.21
30	41.4	38.14	37.81	35.40	37.05	35.31	32.05	29.45	32.51	27.33	29.25
35	36.9	34.02	33.60	31.42	32.81	31.21	28.48	26.39	29.54	24.42	26.16
40	32.5	30.05	29.51	27.61	28.72	27.29	25.06	23.36	26.53	21.57	23.12
45	28.4	26.18	25.61	24.03	24.89	23.59	21.88	20.59	23.55	18.85	20.09
50	24.4	22.50	22.03	20.69	21.28	20.25	19.06	17.92	20.47	16.21	17.34
55	20.8	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 1919–21, and United States, 1929–31 to 2001—Con.

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

Age, race, and sex	Average number of years of life remaining (e_x)										
	2001	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
Black male¹—Con.											
60	17.5	16.01	15.89	14.93	15.29	14.91	14.37	13.15	14.74	11.67	12.62
65	14.4	13.27	13.29	12.53	12.84	12.75	12.21	10.87	12.07	9.74	10.38
70	11.7	10.88	10.94	10.40	10.81	10.74	10.11	8.78	9.58	8.00	8.33
75	9.3	8.84	8.90	8.76	8.93	8.83	8.17	6.99	7.61	6.58	6.60
80	7.3	7.01	7.03	7.35	6.87	7.07	6.58	5.42	5.83	5.53	5.12
85	5.7	5.58	5.61	5.92	5.08	5.38	5.34	4.30	4.53	4.48	4.04
90	4.5	4.24	4.47	4.68	3.42	3.78	4.23	3.42	3.60	4.01	3.21
95	3.6	3.37	3.62	3.92	2.43	2.64	3.20	2.54	2.61	3.15	2.50
100	2.9	2.63	3.24	3.61	1.91	1.93	2.29	1.68	1.64	2.14	1.89
Black female¹											
0	75.5	73.73	72.88	68.32	66.47	62.70	55.56	49.51	46.92	37.67	35.04
1	75.4	73.96	73.31	69.37	68.10	64.37	58.46	52.33	50.39	45.15	43.54
5	71.5	70.16	69.54	65.70	64.54	60.93	55.40	49.81	48.70	46.42	46.04
10	66.6	65.26	64.65	60.85	59.72	56.17	50.75	45.33	44.54	42.84	43.02
15	61.7	60.34	59.74	55.97	54.85	51.36	46.13	40.87	40.36	39.18	39.79
20	56.8	55.49	54.90	51.22	50.07	46.77	42.04	37.22	37.15	36.14	36.89
25	52.0	50.72	50.13	46.57	45.40	42.35	38.20	33.93	34.35	32.97	33.90
30	47.2	46.03	45.43	42.00	40.83	38.02	34.40	30.67	31.48	29.61	30.70
35	42.5	41.45	40.79	37.56	36.41	33.82	30.83	27.47	28.58	26.44	27.52
40	38.0	36.96	36.28	33.32	32.16	29.82	27.19	24.30	25.60	23.34	24.37
45	33.6	32.58	31.94	29.31	28.14	26.07	23.89	21.39	22.61	20.43	21.36
50	29.3	28.38	27.84	25.52	24.31	22.67	20.95	18.60	19.76	17.65	18.67
55	25.3	24.41	24.00	21.97	20.89	19.62	18.38	16.27	17.09	14.98	15.88
60	21.5	20.71	20.42	18.66	17.83	16.95	16.10	14.22	14.69	12.78	13.60
65	17.9	17.37	17.13	15.67	15.12	14.54	13.95	12.24	12.41	10.82	11.38
70	14.7	14.32	14.05	13.02	12.46	12.29	11.82	10.38	10.25	9.22	9.62
75	11.7	11.56	11.37	10.85	10.10	10.15	9.81	8.62	8.37	7.55	7.90
80	9.2	9.05	8.95	8.87	7.66	8.15	8.02	6.90	6.58	6.05	6.48
85	7.0	6.99	7.09	7.00	5.44	6.15	6.41	5.48	5.22	5.09	5.10
90	5.3	5.24	5.47	5.41	3.52	4.13	4.96	4.20	4.07	4.50	4.01
95	4.0	3.97	4.30	4.58	2.43	2.74	3.71	3.09	3.18	3.45	3.15
100	3.0	2.97	3.69	4.20	1.91	1.94	2.70	2.04	2.23	2.39	2.49

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

Table 12. Estimated life expectancy at birth in years, by race and sex: Death-registration States, 1900–28, and United States, 1929–2001

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

Area and year	All races			White			Black ²		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
United States ¹									
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 ³	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 ⁴	69.9	66.6	73.4	70.8	67.4	74.4	63.7	61.0	66.6
1962 ⁴	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	65.2	71.0	60.0	58.1	62.5
1947	66.8	64.4	69.7	67.6	65.2	70.5	59.7	57.9	61.9
1946	66.7	64.4	69.4	67.5	65.1	70.3	59.1	57.5	61.0
1945	65.9	63.6	67.9	66.8	64.4	69.5	57.7	56.1	59.6
1944	65.2	63.6	66.8	66.2	64.5	68.4	56.6	55.8	57.7
1943	63.3	62.4	64.4	64.2	63.2	65.7	55.6	55.4	56.1
1942	66.2	64.7	67.9	67.3	65.9	69.4	56.6	55.4	58.2
1941	64.8	63.1	66.8	66.2	64.4	68.5	53.8	52.5	55.3
1940	62.9	60.8	65.2	64.2	62.1	66.6	53.1	51.5	54.9

See footnotes at end of table.

Table 12. Estimated life expectancy at birth in years, by race and sex: Death-registration States, 1900–28, and United States, 1929–2001—Con.

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

Area and year	All races			White			Black ²		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
United States¹—Con.									
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

¹Alaska included in 1959 and Hawaii in 1960.²Prior to 1970, data for the black population are not available. Data shown for 1900–69 are for the nonwhite population. See "Technical Notes."³Deaths based on a 50-percent sample.⁴Figures by race exclude data for residents of New Jersey; see "Technical Notes."

Technical Notes

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

Available since 1945, the annual life tables are based on deaths occurring during the calendar year and on midyear postcensal population estimates provided by the U.S. Census Bureau. From 1945 to 1996, the annual life tables were abridged life tables and were constructed by reference to a standard table (8). Beginning with 1997 mortality data, complete life tables are constructed using a new methodology (9,10). Also for 1997, life expectancy and other life table values were shown for ages 85 to 100 years for the first time as part of the annual U.S. life tables. Previously, the annual life tables were closed at age 85. Extension of the oldest age interval was implemented by NCHS for several reasons: survival in the United States is such that approximately 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 1929–31 were limited to the death-registration areas. Life tables for 1900–1902 and 1909–11 were constructed using mortality data from the 1900 death-registration States (10 States and the District of Columbia) and for 1919–21 from the 1920 death-registration States (34 States and the District of Columbia). The tables for 1929–31 through 1958 cover the coterminous United States. Decennial life table values for the 3-year period 1959–61 were derived from data that include both Alaska and Hawaii for each year (tables 10 and 11). Data for each year shown in table 12 include Alaska beginning in 1959 and Hawaii beginning in 1960. However, it is not believed that the inclusion of these two States materially affects life table values.

Revised life table values—Life table values for 1960–69, 1970–79, and 1980–89 were constructed using the U.S. decennial life tables for 1959–61, 1969–71, and 1979–81, respectively, as the standard tables. The life table values for years prior to 1989 appearing in this publication are based on revised intercensal estimates of the populations for those years. As a result, the life table values for these years may differ from the life table values for those years published in *Vital Statistics of the United States* for 1989 and earlier years. Life table values for 1991–99 are based on postcensal population estimates of the population enumerated in the 1990 decennial census while life table values for 2000 and 2001 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 2000–2001. A comparison of life expectancy values for 2000 estimated alternately with 1990-based postcensal estimates of the 2000 population and population estimates based on the 2000 census revealed that life expectancy values estimated using the 2000 census population estimates were slightly higher throughout the entire age range (17). Life

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

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

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

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

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

These figures were estimated by weighted averages using population distributions as the weights. For example, life expectancy at age 20 years 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 age 20 years.

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

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

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

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

and estimated as of July 1 for all other years. Life tables for the United States for 2001 are estimated using postcensal estimates published in 2001 based on the 2000 census estimated as of July 1, 2001. Life tables for 2000 shown in this report have been re-computed, based on revised populations that are consistent with the 2000 census. These estimates were produced under a collaborative arrangement with the U.S. Census Bureau and are based on the 2000 census counts by age, race, and sex, modified to be consistent with the Office of Management and Budget race categories as of 1977 and historical categories for death data (5). The modified procedures are described in detail elsewhere (7,8). Life tables previously published in annual reports of final data for 1991–99 were based on postcensal population estimates derived from the 1990 census. The 1991–99 life tables will be re-estimated using 2000-based intercensal estimates once these become available.

Medicare data—Death rates at the oldest ages based on Medicare data are known to be more accurate than those based on vital statistics and census data. Consequently, q_x values calculated for ages 85 to 99 years are based on Medicare data prepared by the Centers for Medicaid and Medicare 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 2001 life tables, 1997 Medicare data were used as 2001 data were not available in time for the preparation of this report.

Methodology

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

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

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

where D is the total number of deaths and D^a is the total number of deaths for which age is stated. F is then applied by multiplying it times the number of deaths in each age group. Table I shows values for F by race and sex used to adjust the 2001 mortality data.

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

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

where D_0 is the number of infant deaths adjusted for not-reported age, and B^t and B^{t-1} are the numbers of births in years t and $t-1$, respectively. Table II shows separation factors and numbers of births by race and sex for 2000–2001.

Table I. Values for F used to adjust for not-stated age based on 2001 mortality data

Race and sex	Total deaths	Total deaths for which age was not stated	F
Total	2,416,425	422	1.00017467
Male	1,183,421	331	1.00027978
Female	1,233,004	91	1.00007381
White	2,079,691	320	1.00015389
Male	1,011,218	255	1.00025223
Female	1,068,473	65	1.00006084
Black	287,709	88	1.00030596
Male	145,908	67	1.00045940
Female	141,801	21	1.00014812

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

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

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

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

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

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

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

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

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

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

Table II. Births in 2000 and 2001, deaths in 2001 of infants born in 2000 and 2001, 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									
2000	4,058,814	2,076,969	1,981,845	3,194,005	1,636,081	1,557,924	622,598	316,115	306,483
2001	4,025,933	2,057,922	1,968,011	3,177,626	1,625,511	1,552,115	606,156	307,834	298,322
Deaths in 2001 of infants born in									
2000	3,556	1,963	1,593	2,239	1,239	1,000	1,127	607	520
2001	24,012	13,514	10,498	15,716	8,860	6,856	7,371	4,157	3,214
Separation factor (f)	0.129	0.127	0.132	0.125	0.123	0.127	0.133	0.127	0.139

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Abriding the complete life table

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

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

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

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

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

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

Table V. Abridged life table for the total population: United States, 2001

Age	Probability of dying between ages x to $x+n$	Number surviving to age x	Number dying between ages x to $x+n$	Person-years lived between ages x to $x+n$	Total number of person-years lived above age x	Expectation of life at age x
	${}_nq_x$	l_x	${}_nd_x$	${}_nL_x$	T_x	e_x
0–1	0.006842	100,000	684	99,404	7,716,990	77.2
1–5	0.001329	99,316	132	396,950	7,617,586	76.7
5–10	0.000767	99,184	76	495,723	7,220,636	72.8
10–15	0.000962	99,108	95	495,329	6,724,913	67.9
15–20	0.003336	99,012	330	494,375	6,229,584	62.9
20–25	0.004739	98,682	468	492,242	5,735,209	58.1
25–30	0.004798	98,214	471	489,911	5,242,967	53.4
30–35	0.005672	97,743	554	487,395	4,753,057	48.6
35–40	0.008237	97,189	801	484,069	4,265,662	43.9
40–45	0.011977	96,388	1,154	479,237	3,781,593	39.2
45–50	0.017658	95,234	1,682	472,212	3,302,356	34.7
50–55	0.025369	93,552	2,373	462,194	2,830,144	30.3
55–60	0.038098	91,179	3,474	447,822	2,367,950	26.0
60–65	0.059131	87,705	5,186	426,352	1,920,129	21.9
65–70	0.089641	82,519	7,397	395,107	1,493,777	18.1
70–75	0.134547	75,122	10,107	351,564	1,098,670	14.6
75–80	0.202951	65,014	13,195	293,351	747,106	11.5
80–85	0.306389	51,820	15,877	220,319	453,756	8.8
85–90	0.449242	35,943	16,147	138,485	233,436	6.5
90–95	0.601437	19,796	11,906	66,838	94,952	4.8
95–100	0.740837	7,890	5,845	22,602	28,114	3.6
100 years and over	1.000000	2,045	2,045	5,512	5,512	2.7

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