

United States Life Tables, 2011

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Abstract

Objectives—This report presents complete period life tables for the United States by race, Hispanic origin, and sex, based on age-specific death rates in 2011.

Methods—Data used to prepare the 2011 life tables are 2011 final mortality statistics; July 1, 2011, population estimates based on the 2010 decennial census; and 2011 Medicare data for persons aged 66–99. The methodology used to estimate the 2011 life tables was first implemented with data year 2008. The methodology used to estimate the life tables for the Hispanic population remains unchanged from that developed for the publication of life tables by Hispanic origin for data year 2006.

Results—In 2011, the overall expectation of life at birth was 78.7 years—unchanged from 2010. Between 2010 and 2011, life expectancy at birth increased for both males (from 76.2 to 76.3) and females (81.0 to 81.1), and for the white population (78.9 to 79.0), the black population (75.1 to 75.3), the Hispanic population (81.4 to 81.6), and the non-Hispanic black population (74.7 to 74.9).

Keywords: life expectancy • survival • race • Hispanic origin

Introduction

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

Unlike the cohort life table, the period life table does not represent the mortality experience of an actual birth cohort. Rather, it presents what would happen to a hypothetical cohort if it experienced throughout its entire life the mortality conditions of a particular period in time. For example, a period life table for 2011 assumes a hypothetical cohort that is subject throughout its lifetime to the age-specific death rates prevailing for the actual population in 2011. 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.

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, whereas an abridged life table typically contains data by 5- or 10-year age intervals. A complete life table can easily be aggregated into 5- or 10-year age groups to produce an abridged life table (refer to the [Technical Notes](#) at the end of this report for instructions). 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 (4). This report presents complete period life tables by race, Hispanic origin, race for the non-Hispanic population, and sex. The life tables by Hispanic origin are based on death rates that have been adjusted for Hispanic origin misclassification. (See [Technical Notes](#) for a detailed description of the methodology used to estimate Hispanic origin life tables.)

Data and Methods

The data used to prepare the U.S. life tables for 2011 are final numbers of deaths for the year 2011; July 1, 2011, population estimates based on the 2010 decennial census; and age-specific death and population counts for Medicare beneficiaries aged 66–99 for the year 2011 from the Centers for Medicare & Medicaid Services (CMS). Data from the Medicare program are used to supplement vital statistics and census data for ages 66 and over. The U.S. life tables by Hispanic origin are based on death rates that have been adjusted for race and ethnicity misclassification on death certificates



(see [Technical Notes](#) for a detailed description of the data sets and methodology used).

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 2011 are shown for the total population by race, Hispanic origin, and sex in [Tables 1–18](#). Life expectancy is summarized by age, race, Hispanic origin, and sex in [Table A](#).

Life expectancy at birth, e_0 , for 2011 for the total population was 78.7 years. This represents the average number of years that the members of the hypothetical life table cohort can expect to live at the time of birth ([Table A](#)).

Survivors to specified ages

Another way of assessing the longevity of the period life table cohort is by determining the proportion that survives to specified ages. The l_x column of the life table provides the data for computing this proportion. [Table B](#) summarizes the number of survivors by age, race, Hispanic origin, and sex. To illustrate, 57,493 persons out of the original 2011 hypothetical life table cohort of 100,000 (or 57.5%) were alive at exact age 80. In other words, the probability that a person will survive from birth to age 80, given 2011 age-specific mortality, is 57.5%. 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 (41,733) by the number of survivors at age 20 (98,917), which results in a 42.2% probability of survival.

Explanation of the columns of the life table

Column 1. Age (between x and $x + 1$)—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)—Shows the probability of dying between ages x and $x + 1$. For example, for males in the age interval 20–21, the probability of dying is 0.001085 ([Table 2](#)). This column forms the basis of the life table; all subsequent columns are derived from it.

Column 3. Number surviving (l_x)—Shows the number of persons from the original hypothetical 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 females born alive, 99,448 will complete the first year of life and enter the second; 99,302 will reach age 10; 99,106 will reach age 20; and 48,470 will live to age 85 ([Table 3](#)).

Column 4. Number dying (d_x)—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, 658 will die in the first year of life; 107 between ages 20 and 21; and 987 after reaching age 100 ([Table 2](#)). Each value in column 4 is the difference between two successive values in column 3.

Column 5. Person-years lived (L_x)—Shows the number of person-years lived by the hypothetical life table cohort within an age interval x to $x + 1$. Each value in column 5 represents the total time (in years) lived between two indicated birthdays by all those reaching the earlier birthday. Thus, the value 98,685 for males in the age interval 20–21 is the total number of years lived between the 20th and 21st birthdays by the 98,739 males (column 3) who reached their 20th birthday out of 100,000 males born alive ([Table 2](#)).

Column 6. Total number of person-years lived (T_x)—Shows the total number of person-years that would be lived after the beginning of the age interval x to $x + 1$ by the hypothetical life table cohort. For example, the value 5,646,602 is the total number of years lived after attaining age 20 by the 98,739 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, based on a given set of age-specific rates of dying. It is derived by dividing the total person-years that would be lived beyond 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 57.2 years (5,646,602 divided by 98,739) ([Table 2](#)).

Results

Life expectancy in the United States

[Tables 1–18](#) show complete life tables for 2011 by race (white and black), Hispanic origin, race for the non-Hispanic population, and sex. [Table A](#) summarizes life expectancy by age, race, Hispanic origin, and sex. Life expectancy at birth for 2011 represents the average number of years that a group of infants would live if they were to experience throughout life the age-specific death rates prevailing in 2011. In 2011, life expectancy at birth was 78.7 years, unchanged from 2010.

Changes in mortality levels by age and cause of death can have a major effect on changes in life expectancy. Although causes of death changed in 2011 from 2010, life expectancy at birth for the total population did not change. Decreases in mortality from cancer, heart disease, stroke, and HIV disease were offset by increases in mortality from unintentional injuries, Influenza and pneumonia, suicide, and Chronic liver disease and cirrhosis. Decreases in mortality from cancer, heart disease, stroke, and HIV disease generated an increase in life expectancy among the male population. This increase in life expectancy for males was offset somewhat by increases in mortality from unintentional injuries, Influenza and pneumonia, suicide, and congenital malformations. Similarly, the increase in life expectancy for the female population was mainly brought about by decreases in mortality for heart disease, cancer, and stroke. For females, however, the increase in life expectancy was offset by increases in mortality from unintentional injuries, Influenza and pneumonia, Chronic liver disease and cirrhosis, and Chronic lower respiratory diseases (5).

The difference in life expectancy between the sexes was 4.8 years in 2011, unchanged from 2010. From 1900 to 1975, the difference in life expectancy between the sexes increased from 2.0 years to 7.8 years ([Table 19](#)). 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

Table A. Expectation of life, by age, race, Hispanic origin, race for the non-Hispanic population, and sex: United States, 2011

Age	All races and origins			White			Black			Hispanic ¹			Non-Hispanic white ¹			Non-Hispanic black ¹		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
0.....	78.7	76.3	81.1	79.0	76.6	81.3	75.3	72.2	78.2	81.6	79.0	83.8	78.8	76.4	81.1	74.9	71.7	77.9
1.....	78.2	75.8	80.5	78.4	76.0	80.6	75.2	72.1	78.0	81.0	78.5	83.2	78.2	75.9	80.4	74.8	71.6	77.7
5.....	74.3	71.9	76.6	74.4	72.1	76.7	71.3	68.2	74.1	77.1	74.5	79.3	74.2	71.9	76.5	70.9	67.8	73.8
10.....	69.3	66.9	71.6	69.5	67.1	71.8	66.4	63.3	69.1	72.1	69.6	74.3	69.3	67.0	71.5	66.0	62.8	68.8
15.....	64.4	62.0	66.7	64.5	62.2	66.8	61.4	58.4	64.2	67.1	64.6	69.3	64.3	62.0	66.6	61.1	57.9	63.9
20.....	59.5	57.2	61.7	59.7	57.4	61.9	56.6	53.6	59.3	62.3	59.8	64.4	59.5	57.2	61.7	56.3	53.2	59.0
25.....	54.8	52.5	56.9	54.9	52.7	57.0	52.0	49.1	54.4	57.5	55.1	59.5	54.7	52.6	56.8	51.6	48.7	54.2
30.....	50.0	47.9	52.0	50.1	48.0	52.2	47.3	44.6	49.6	52.6	50.3	54.6	50.0	47.9	52.0	47.0	44.2	49.4
35.....	45.3	43.2	47.2	45.4	43.4	47.3	42.7	40.1	44.9	47.8	45.6	49.7	45.3	43.3	47.2	42.4	39.7	44.7
40.....	40.6	38.6	42.4	40.7	38.7	42.6	38.1	35.5	40.3	43.0	40.9	44.8	40.6	38.6	42.4	37.8	35.2	40.0
45.....	36.0	34.0	37.8	36.1	34.2	37.9	33.6	31.1	35.7	38.3	36.2	40.0	36.0	34.1	37.7	33.3	30.8	35.5
50.....	31.5	29.7	33.2	31.6	29.8	33.3	29.3	26.9	31.3	33.7	31.7	35.3	31.5	29.7	33.2	29.1	26.6	31.1
55.....	27.2	25.5	28.8	27.3	25.6	28.8	25.3	23.0	27.1	29.3	27.4	30.8	27.2	25.6	28.8	25.1	22.8	26.9
60.....	23.1	21.6	24.5	23.2	21.6	24.5	21.5	19.4	23.2	25.0	23.3	26.3	23.1	21.6	24.5	21.3	19.3	23.0
65.....	19.2	17.8	20.3	19.2	17.8	20.3	18.0	16.2	19.4	20.9	19.3	22.0	19.1	17.8	20.3	17.9	16.1	19.2
70.....	15.5	14.3	16.5	15.5	14.3	16.4	14.7	13.2	15.8	17.0	15.7	17.9	15.4	14.3	16.4	14.6	13.1	15.7
75.....	12.1	11.1	12.9	12.1	11.0	12.8	11.7	10.4	12.5	13.4	12.3	14.1	12.0	11.0	12.8	11.7	10.4	12.5
80.....	9.1	8.2	9.6	9.0	8.2	9.6	9.1	8.0	9.6	10.2	9.2	10.6	9.0	8.2	9.6	9.0	8.0	9.6
85.....	6.5	5.9	6.9	6.5	5.8	6.8	6.8	6.0	7.2	7.4	6.6	7.6	6.5	5.8	6.8	6.8	6.0	7.2
90.....	4.6	4.1	4.8	4.5	4.0	4.7	5.1	4.5	5.3	5.2	4.6	5.2	4.5	4.0	4.7	5.1	4.5	5.3
95.....	3.2	2.9	3.3	3.1	2.8	3.2	3.8	3.4	3.9	3.6	3.2	3.5	3.1	2.8	3.2	3.8	3.4	3.9
100.....	2.3	2.1	2.3	2.2	2.0	2.2	2.8	2.6	2.9	2.5	2.3	2.4	2.2	2.0	2.2	2.9	2.6	2.9

¹Life tables by Hispanic origin are based on death rates that have been adjusted for race and ethnicity misclassification on death certificates.
SOURCE: CDC/NCHS, National Vital Statistics System.

Table B. Number of survivors out of 100,000 born alive, by age, race, Hispanic origin, race for non-Hispanic population, and sex: United States, 2011

Age	All races and origins			White			Black			Hispanic ¹			Non-Hispanic white ¹			Non-Hispanic black ¹		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	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	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1.....	99,394	99,342	99,448	99,489	99,447	99,534	98,850	98,740	98,964	99,490	99,451	99,523	99,493	99,448	99,542	98,857	98,750	98,967
5.....	99,289	99,226	99,356	99,391	99,338	99,447	98,698	98,570	98,829	99,397	99,350	99,438	99,398	99,341	99,457	98,691	98,568	98,824
10.....	99,230	99,160	99,302	99,334	99,275	99,397	98,616	98,481	98,756	99,347	99,296	99,393	99,340	99,277	99,406	98,603	98,473	98,746
15.....	99,159	99,077	99,246	99,267	99,195	99,343	98,525	98,370	98,686	99,287	99,225	99,343	99,272	99,197	99,352	98,504	98,355	98,672
20.....	98,917	98,739	99,106	99,034	98,875	99,203	98,206	97,894	98,531	99,095	98,942	99,249	99,034	98,875	99,202	98,169	97,854	98,510
25.....	98,493	98,116	98,888	98,626	98,285	98,987	97,616	96,987	98,257	98,776	98,468	99,106	98,610	98,263	98,973	97,543	96,891	98,220
30.....	98,017	97,449	98,612	98,165	97,644	98,717	96,934	95,986	97,878	98,447	97,989	98,946	98,118	97,583	98,673	96,811	95,818	97,812
35.....	97,465	96,722	98,237	97,627	96,936	98,358	96,148	94,948	97,324	98,068	97,449	98,746	97,540	96,836	98,269	95,969	94,709	97,216
40.....	96,784	95,866	97,733	96,967	96,100	97,879	95,159	93,723	96,552	97,590	96,812	98,435	96,832	95,950	97,743	94,919	93,403	96,399
45.....	95,816	94,691	96,973	96,024	94,950	97,152	93,796	92,108	95,419	96,906	95,936	97,957	95,839	94,750	96,963	93,488	91,706	95,213
50.....	94,281	92,831	95,764	94,528	93,120	95,996	91,712	89,673	93,658	95,809	94,567	97,145	94,287	92,865	95,750	91,326	89,156	93,406
55.....	91,975	90,009	93,972	92,292	90,375	94,278	88,487	85,786	91,045	94,097	92,404	95,887	92,005	90,081	93,978	88,009	85,126	90,744
60.....	88,746	85,999	91,515	89,174	86,495	91,929	83,864	80,083	87,402	91,661	89,248	94,155	88,854	86,183	91,583	83,221	79,213	86,978
65.....	84,368	80,723	88,027	84,915	81,380	88,535	77,760	72,557	82,581	88,218	84,911	91,554	84,574	81,072	88,148	76,934	71,466	82,013
70.....	78,184	73,558	82,807	78,803	74,318	83,371	69,915	63,341	75,956	83,045	78,616	87,384	78,425	73,991	82,938	68,979	62,216	75,226
75.....	69,513	63,804	75,184	70,134	64,578	75,747	60,041	52,185	67,206	75,688	70,035	81,063	69,725	64,234	75,280	59,052	51,097	66,358
80.....	57,493	50,846	64,010	58,030	51,513	64,517	47,885	39,372	55,549	65,221	58,368	71,531	57,615	51,184	64,030	46,938	38,383	54,695
85.....	41,733	34,665	48,470	42,075	35,102	48,829	33,579	25,356	40,709	50,440	42,690	57,134	41,722	34,804	48,410	32,748	24,587	39,964
90.....	23,798	17,846	29,226	23,895	17,970	29,346	19,251	12,924	24,558	31,891	24,599	37,422	23,667	17,750	29,066	18,675	12,467	24,035
95.....	9,097	5,812	11,914	8,973	5,723	11,777	8,241	4,767	11,057	14,233	9,550	17,098	8,880	5,662	11,656	8,003	4,584	10,798
100.....	1,928	987	2,672	1,826	925	2,544	2,355	1,144	3,278	3,745	2,090	4,408	1,807	926	2,518	2,316	1,101	3,201

¹Life tables by Hispanic origin are based on death rates that have been adjusted for race and ethnicity misclassification on death certificates.
SOURCE: CDC/NCHS, National Vital Statistics System.

(6,7). Between 1979 and 2013, the difference in life expectancy between the sexes narrowed from 7.8 years to 4.8 years (Table 19). The general decline in the sex difference since 1979 reflects proportionately greater increases in lung cancer mortality for women than for men and proportionately larger decreases in heart disease mortality among men (6,7).

The 2011 life table may be used to compare life expectancy at any age from birth onward. On the basis of mortality experienced in 2011, a person aged 65 could expect to live an average of 19.2 more years, for a total of 84.2 years; a person aged 85 could expect to live an additional 6.5 years, for a total of 91.5 years; and a person aged 100 could expect to live an additional 2.3 years, on average (Table A).

Life expectancy by race

Between 2010 and 2011, life expectancy increased 0.2 years, to 75.3 years, for the black population, and increased 0.1 years, to 79.0 years, for the white population. The difference in life expectancy between the white and black populations was 3.7 years in 2011, 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 (Table 19). 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 (7).

Among the four race-sex groups (Figure 1), white females continued to have the highest life expectancy at birth (81.3 years),

followed by black females (78.2), white males (76.6), and black males (72.2). Between 2010 and 2011, life expectancy increased 0.4 years for black males (from 71.8 to 72.2) and 0.2 years for black females (from 78.0 to 78.2). Black males experienced a decline in life expectancy every year for 1984–1989 (12), followed by annual increases in 1990–1992, 1994–2004, and 2005–2011. Between 2010 and 2011, life expectancy increased 0.1 years for white males (from 76.5 to 76.6). Life expectancy did not increase between 2010 and 2011 for white females (81.3). Overall, gains in life expectancy between 1980 and 2011 were 8.4 years for black males, 5.9 years for white males, 5.7 years for black females, and 3.2 years for white females (Table 19).

Life expectancy by Hispanic origin

Between 2010 and 2011, life expectancy increased 0.2 years for the non-Hispanic black population (from 74.7 to 74.9) and for the Hispanic population (from 81.4 to 81.6). It remained at 78.8 years for the non-Hispanic white population (Table A). In 2011, the Hispanic population had a life expectancy advantage at birth of 2.8 years over the non-Hispanic white population and 6.7 years over the non-Hispanic black population. The U.S. life tables by Hispanic origin are based on death rates that have been adjusted for race and ethnicity misclassification on death certificates (see Technical Notes for a detailed description of the methodology).

Among the six Hispanic-origin race-sex groups (Figure 2), Hispanic females continued to have the highest life expectancy at

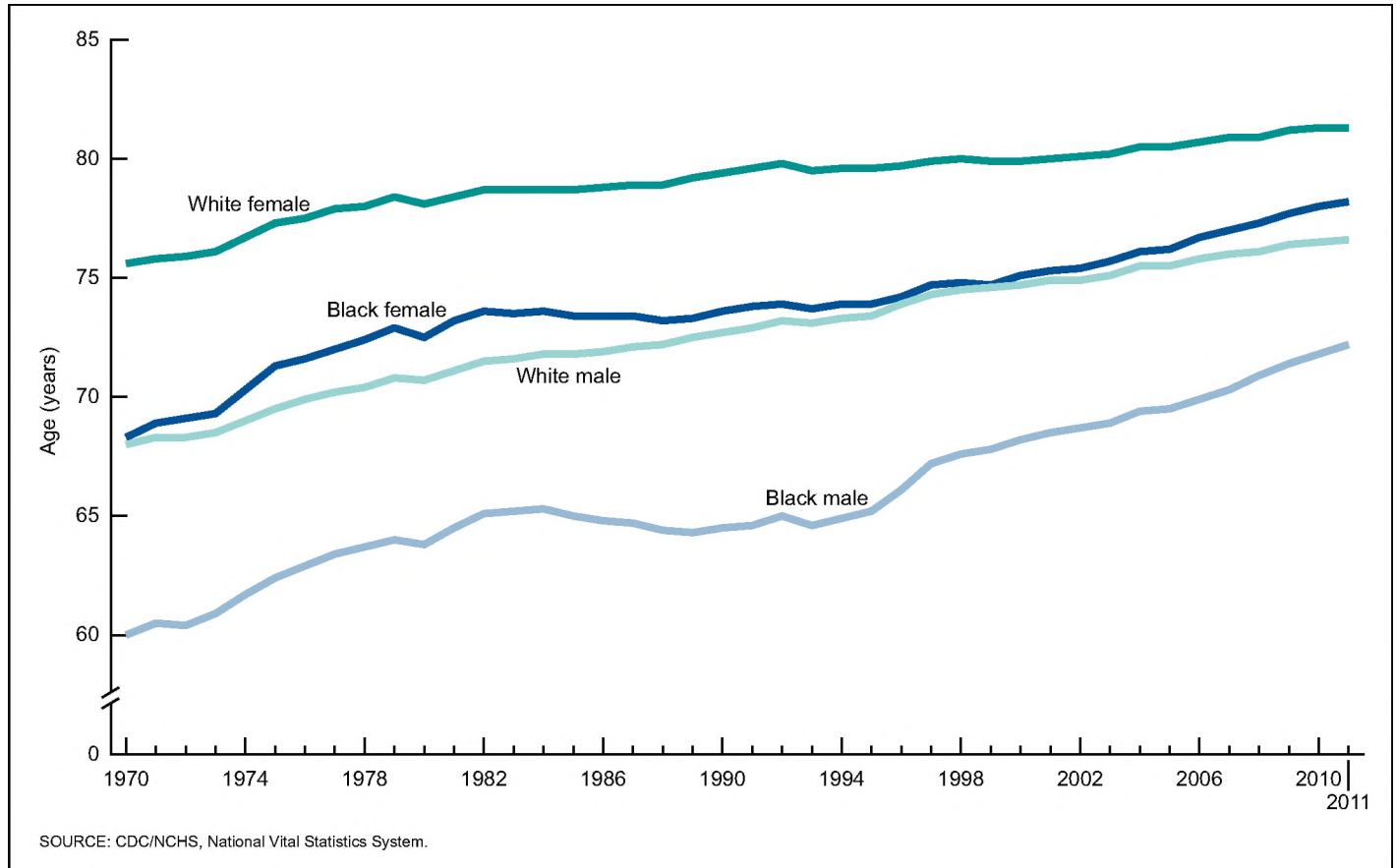


Figure 1. Life expectancy at birth, by race and sex: 1970–2011

birth (83.8 years), followed by non-Hispanic white females (81.1), Hispanic males (79.0), non-Hispanic black females (77.9), non-Hispanic white males (76.4), and non-Hispanic black males (71.7). The smallest difference is between Hispanic and non-Hispanic white females, with Hispanic females having an advantage of 2.7 years. The largest difference is between Hispanic females and non-Hispanic black males, with Hispanic females having a life expectancy at birth 12.1 years greater.

The Hispanic mortality advantage is also evident in the effect produced on life expectancy at birth when race and Hispanic origin are considered separately. Until 2006, U.S. life tables were produced by race (white and black), irrespective of Hispanic origin. When the Hispanic population is excluded from the two race groups and only the non-Hispanic black and non-Hispanic white populations are included, life expectancy at birth declines. For example, for the black population, irrespective of Hispanic origin, life expectancy at birth was 75.3 years in 2011 but was 74.9 years when only the non-Hispanic segment of the black population was included. Similarly, life expectancy for the white population, irrespective of Hispanic origin, was 79.0 years in 2011, but was 78.8 years when only the non-Hispanic segment of the white population was included. The effect of the Hispanic mortality advantage on race-specific life expectancy was also observed for each race-sex group. (See [Technical Notes](#) for a detailed description of the methodology used to estimate the Hispanic origin life tables.)

Survivorship in the United States

[Table B](#) summarizes the number of survivors out of 100,000 persons born alive (l_x), by age, race, Hispanic origin, and sex, for 2011. [Table 20](#) shows trends in survivorship from 1900 to 2011. In 2011, 99.4% of all infants born in the United States survived the first year of life, compared with only 87.6% of infants born in 1900. Of the 2011 period life table cohort, 57.5% survived to age 80 and 1.9% survived to age 100. In 1900, 13.5% of the life table cohort survived to age 80 and only 0.03% survived to age 100 ([Table 20](#)). The U.S. life tables by Hispanic origin are based on death rates that have been adjusted for race and ethnicity misclassification on death certificates (see [Technical Notes](#) for a detailed description of the methodology).

Survivorship by race

Among the four race-sex groups ([Table B](#)), white females have the highest median age at death, with about 52.3% surviving to age 84. Of the original hypothetical cohort of 100,000 infant white females, 99.2% survive to age 20, 88.5% survive to age 65, and 48.8% survive to age 85. White males have slightly higher survival rates than black females at the younger ages, with 98.9% surviving to age 20 compared with 98.5% of black females. At the older ages, however, black female survival surpasses white male survival. By age 85, white male survival is 35.1%, compared with 40.7% for black females. The median age at death for black males is close to 76 years, about 9 years less than for white females. Among black males, 97.9% survive to age 20, 72.6% to age 65, and 25.4% to age

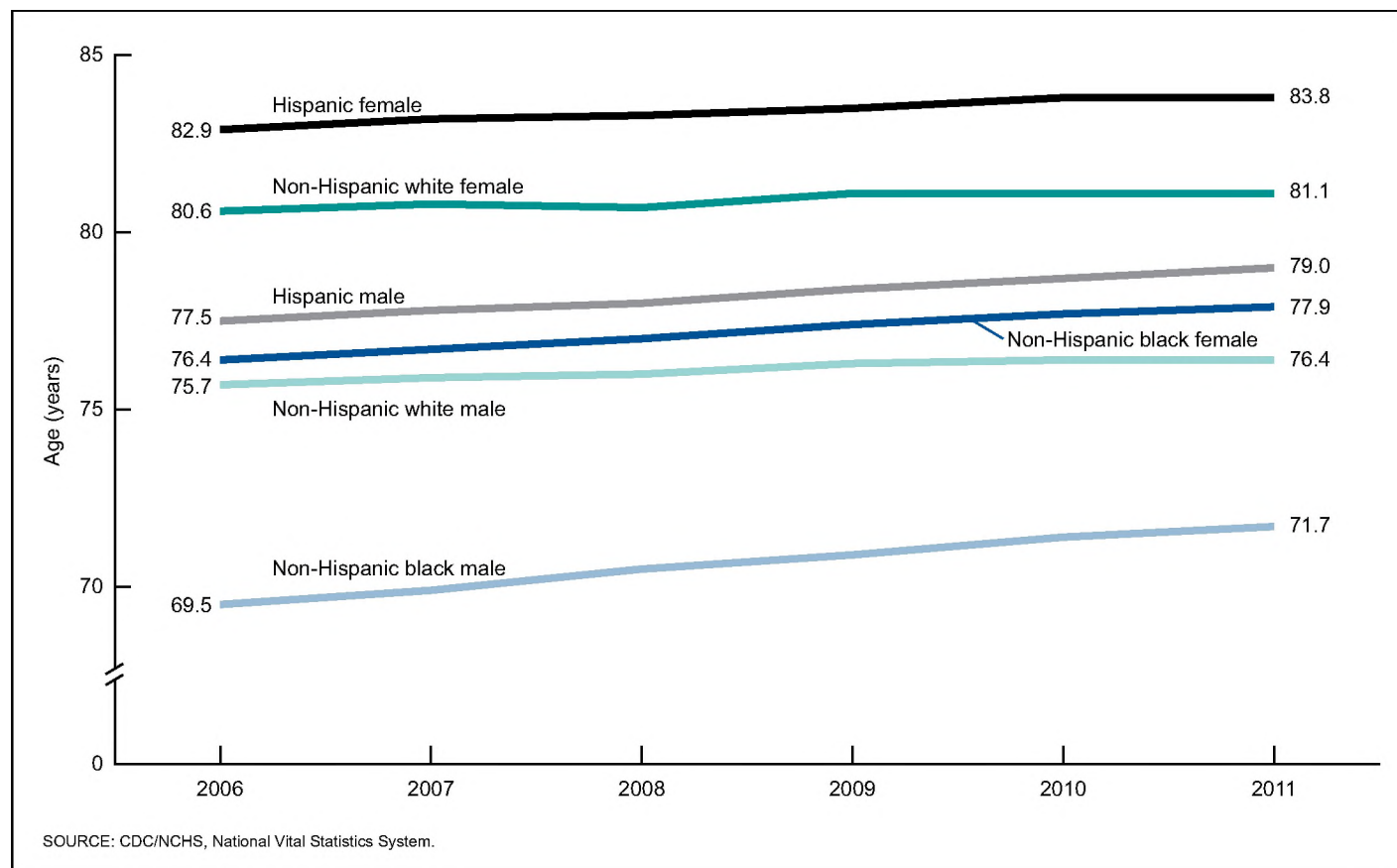


Figure 2. Life expectancy at birth, by Hispanic origin, race, and sex: United States, 2006–2011

85. By age 100, there is very little difference between the white and black populations in terms of survival. Around 1% of white and black males and around 3% of white and black females survive to age 100.

Survivorship by Hispanic origin

In 2011, 99.5% of Hispanic and non-Hispanic white infants survived the first year of life, compared with 98.9% of non-Hispanic black infants. Ninety-nine percent of both the Hispanic and non-Hispanic white populations survived to age 20, while 98.2% of the non-Hispanic black population survived to age 20. By age 65, the Hispanic population has a clear survival advantage compared with the other two populations. Overall, 88.2% of the Hispanic population survived to age 65, compared with 84.6% of the non-Hispanic white and 76.9% of the non-Hispanic black populations. The Hispanic survival advantage increases with age so that by age 85, 50.4% of the Hispanic population has survived, compared with 41.7% of the non-Hispanic white and 32.7% of the non-Hispanic black populations.

Among the six Hispanic-origin race-sex groups, Hispanic females have the highest median age at death, with 49.8% surviving to age 87 (Figure 3). The group with the next highest median age at death is non-Hispanic white females, with 48.4% surviving to age 85. Hispanic males had 49.4% surviving to age 83, followed by non-Hispanic black females with 49.1% surviving to age 82, non-Hispanic white males with 51.2% surviving to age 80, and non-Hispanic black males with 48.7% surviving to age 76 (see Technical Notes).

References

1. Shryock HS, Siegel JS, Larmon EA. The methods and materials of demography, vol 2. U.S. Bureau of the Census. Washington, DC: U.S. Government Printing Office. 1971.
2. Moriyama IM, Gustavus SO. Cohort mortality and survivorship, United States death-registration states, 1900–1968. National Center for Health Statistics. Vital Health Stat 3(16). 1972. Available from: http://www.cdc.gov/nchs/data/series/sr_03/sr03_016.pdf.
3. Preston SH, Heuveline P, Guillot M. Demography: Measuring and modeling population processes. Oxford, U.K.: Blackwell Publishers. 2001.
4. 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. Available from: http://www.cdc.gov/nchs/data/series/sr_02/sr02_004.pdf.
5. Kenneth KD, Murphy SL, Xu JQ. Deaths: Final data for 2011. National vital statistics reports; vol 63 no 3. Hyattsville, MD: National Center for Health Statistics. 2015. Available from: http://www.cdc.gov/nchs/data/nvsr/nvsr63/nvsr63_03.pdf.
6. Waldron I. Recent trends in sex mortality ratios for adults in developed countries. Soc Sci Med 36(4):451–62. 1993.
7. 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. Available from: http://www.cdc.gov/nchs/data/series/sr_20/sr20_023.pdf.
8. Anderson RN. Method for constructing complete annual U.S. life tables. National Center for Health Statistics. Vital Health Stat 2(129). 1999. Available from: http://www.cdc.gov/nchs/data/series/sr_02/sr02_129.pdf.

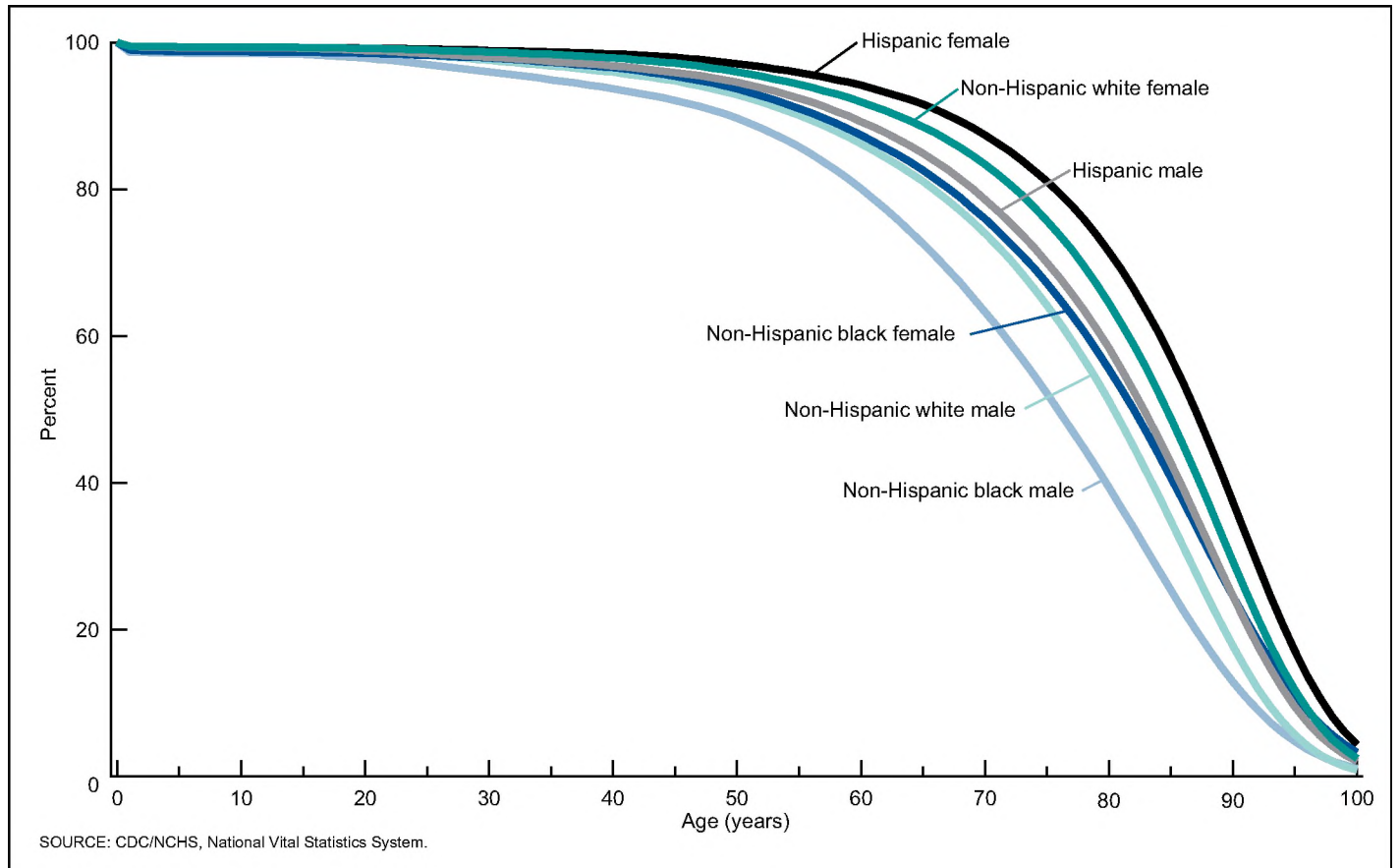


Figure 3. Percentage surviving, by Hispanic origin, race, age, and sex: United States, 2011

9. Arias E, Rostron BL, Tejada-Vera B. United States life tables, 2005. National vital statistics reports; vol 58 no 10. Hyattsville, MD: National Center for Health Statistics. 2010. Available from: http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58_10.pdf.
10. Arias E. United States life tables, 2008. National vital statistics reports; vol 61 no 3. Hyattsville, MD: National Center for Health Statistics. 2012. Available from: http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_03.pdf.
11. Arias E. United States life tables by Hispanic origin. National Center for Health Statistics. Vital Health Stat 2(152). 2010. Available from: http://www.cdc.gov/nchs/data/series/sr_02/sr02_152.pdf.
12. Arias E, Schauman WS, Eschbach K, et al. The validity of race and Hispanic origin reporting on death certificates in the United States. National Center for Health Statistics. Vital Health Stat 2(148). 2008. Available from: http://www.cdc.gov/nchs/data/series/sr_02/sr02_148.pdf.
13. Arias E, Eschbach K, Schauman WS, Backlund EL, Sorlie PD. The Hispanic mortality advantage and ethnic misclassification on U.S. death certificates. Am J Public Health 100 Suppl 1:S171–7. 2010.
14. Arias E. United States life tables, 2009. National vital statistics reports; vol 62 no 7. Hyattsville, MD: National Center for Health Statistics. 2014. Available from: http://www.cdc.gov/nchs/data/nvsr/nvsr62/nvsr62_07.pdf.
15. Greville TNE, Carlson GA. Estimated average length of life in the death-registration states. National Center for Health Statistics. Vital statistics—Special reports 33(9). Washington, DC: Public Health Service. 1951.
16. Office of Management and Budget. Revisions to the standards for the classification of federal data on race and ethnicity. Fed Regist 62(210):58782–90. 1997. Available from: http://www.whitehouse.gov/omb/fedreg_1997standards.
17. Office of Management and Budget. Race and ethnic standards for federal statistics and administrative reporting. Statistical Policy Directive 15. 1977. Available from: <http://wonder.cdc.gov/WONDER/help/populations/bridged-race/Directive15.html>.
18. Ingram DD, Parker JD, Schenker N, et al. United States Census 2000 population with bridged race categories. National Center for Health Statistics. Vital Health Stat 2(135). 2003. Available from: http://www.cdc.gov/nchs/data/series/sr_02/sr02_135.pdf.
19. 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, DC: U.S. Department of Commerce. 1991.
20. Bell FC, Miller ML. Life tables for the United States Social Security Area 1900–2100. Actuarial Study No. 120. SSA Pub. No. 11–11536. Baltimore, MD: Social Security Administration, Office of the Chief Actuary. 2005. Available from: http://www.ssa.gov/oact/NOTES/pdf_studies/study120.pdf.
21. Research Data Assistance Center. Introduction to the use of Medicare data for research. Minneapolis, MN: University of Minnesota School of Public Health. 2004.
22. Mathews TJ, MacDorman MF. Infant mortality statistics from the 2010 period linked birth/infant death data set. National vital statistics reports; vol 62 no 8. Hyattsville, MD: National Center for Health Statistics. 2013. Available from: http://www.cdc.gov/nchs/data/nvsr/nvsr62/nvsr62_08.pdf.
23. National Center for Health Statistics. User guide to the 2011 period linked birth/infant death public use file. Available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/DVS/periodlinked/LinkPE11Guide.pdf.
24. Turra CM, Elo IT. The impact of salmon bias on the Hispanic mortality advantage: New evidence from Social Security data. Popul Res Policy Rev 27(5):515–30. 2008.
25. Chiang CL. The life table and its applications. Malabar, FL: Krieger Publishing. 1984.
26. Thatcher AR, Kannisto V, Vaupel JW. The force of mortality at ages 80 to 120. Odense, Denmark: Odense University Press. 1998.
27. Andreev KF, Bourbeau RR. Frailty modeling of Canadian and Swedish mortality at adult and advanced ages. In: Population Association of America 2007 Annual Meeting Program. Silver Spring, MD: PAA. 2007.
28. Elo IT, Turra CM, Kestenbaum B, Ferguson BR. Mortality among elderly Hispanics in the United States: Past evidence and new results. Demography 41(1):109–28. 2004.
29. Brass W. On the scale of mortality. In: Brass W, editor. Biological aspects of demography: 69–110. London, UK: Taylor and Francis. 1971.
30. Himes CL, Preston SH, Condran GA. A relational model of mortality at older ages in low mortality countries. Popul Stud 48(2):269–91. 1994.
31. Preston SH, Elo IT. Black mortality at very old ages in official U.S. life tables: A skeptical appraisal. Popul Dev Rev 32(3):557–65. 2006.

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Table 1. Life table for the total population: United States, 2011Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table01.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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	0.006058	100,000	606	99,470	7,870,915	78.7
1-2	0.000415	99,394	41	99,374	7,771,445	78.2
2-3	0.000264	99,353	26	99,340	7,672,071	77.2
3-4	0.000208	99,327	21	99,316	7,572,731	76.2
4-5	0.000167	99,306	17	99,298	7,473,415	75.3
5-6	0.000151	99,289	15	99,282	7,374,117	74.3
6-7	0.000134	99,274	13	99,268	7,274,835	73.3
7-8	0.000120	99,261	12	99,255	7,175,567	72.3
8-9	0.000106	99,249	11	99,244	7,076,312	71.3
9-10	0.000092	99,239	9	99,234	6,977,068	70.3
10-11	0.000084	99,230	8	99,225	6,877,834	69.3
11-12	0.000090	99,221	9	99,217	6,778,609	68.3
12-13	0.000117	99,212	12	99,207	6,679,392	67.3
13-14	0.000172	99,201	17	99,192	6,580,185	66.3
14-15	0.000246	99,184	24	99,171	6,480,993	65.3
15-16	0.000326	99,159	32	99,143	6,381,822	64.4
16-17	0.000404	99,127	40	99,107	6,282,679	63.4
17-18	0.000486	99,087	48	99,063	6,183,572	62.4
18-19	0.000570	99,039	56	99,011	6,084,509	61.4
19-20	0.000655	98,982	65	98,950	5,985,499	60.5
20-21	0.000743	98,917	73	98,881	5,886,549	59.5
21-22	0.000826	98,844	82	98,803	5,787,668	58.6
22-23	0.000886	98,762	88	98,719	5,688,865	57.6
23-24	0.000919	98,675	91	98,630	5,590,146	56.7
24-25	0.000930	98,584	92	98,538	5,491,517	55.7
25-26	0.000934	98,493	92	98,447	5,392,978	54.8
26-27	0.000943	98,400	93	98,354	5,294,532	53.8
27-28	0.000958	98,308	94	98,261	5,196,178	52.9
28-29	0.000983	98,214	96	98,165	5,097,917	51.9
29-30	0.001016	98,117	100	98,067	4,999,752	51.0
30-31	0.001055	98,017	103	97,966	4,901,685	50.0
31-32	0.001094	97,914	107	97,860	4,803,719	49.1
32-33	0.001132	97,807	111	97,751	4,705,859	48.1
33-34	0.001167	97,696	114	97,639	4,608,107	47.2
34-35	0.001203	97,582	117	97,523	4,510,468	46.2
35-36	0.001250	97,465	122	97,404	4,412,945	45.3
36-37	0.001313	97,343	128	97,279	4,315,541	44.3
37-38	0.001389	97,215	135	97,148	4,218,262	43.4
38-39	0.001476	97,080	143	97,008	4,121,114	42.5
39-40	0.001576	96,937	153	96,860	4,024,106	41.5
40-41	0.001685	96,784	163	96,702	3,927,245	40.6
41-42	0.001813	96,621	175	96,533	3,830,543	39.6
42-43	0.001972	96,446	190	96,351	3,734,009	38.7
43-44	0.002171	96,256	209	96,151	3,637,659	37.8
44-45	0.002405	96,047	231	95,931	3,541,508	36.9
45-46	0.002652	95,816	254	95,688	3,445,577	36.0
46-47	0.002910	95,561	278	95,422	3,349,888	35.1
47-48	0.003196	95,283	305	95,131	3,254,466	34.2
48-49	0.003513	94,979	334	94,812	3,159,335	33.3
49-50	0.003851	94,645	364	94,463	3,064,523	32.4
50-51	0.004204	94,281	396	94,083	2,970,060	31.5
51-52	0.004563	93,884	428	93,670	2,875,977	30.6
52-53	0.004928	93,456	461	93,226	2,782,307	29.8
53-54	0.005304	92,995	493	92,749	2,689,081	28.9
54-55	0.005702	92,502	527	92,238	2,596,332	28.1
55-56	0.006131	91,975	564	91,693	2,504,094	27.2
56-57	0.006596	91,411	603	91,109	2,412,401	26.4
57-58	0.007096	90,808	644	90,486	2,321,292	25.6
58-59	0.007621	90,164	687	89,820	2,230,806	24.7
59-60	0.008164	89,476	730	89,111	2,140,986	23.9
60-61	0.008732	88,746	775	88,359	2,051,875	23.1

See footnote at end of table.

Table 1. Life table for the total population: United States, 2011—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table01.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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
61-62	0.009335	87,971	821	87,560	1,963,516	22.3
62-63	0.009983	87,150	870	86,715	1,875,956	21.5
63-64	0.010715	86,280	924	85,818	1,789,241	20.7
64-65	0.011568	85,355	987	84,862	1,703,423	20.0
65-66	0.012586	84,368	1,062	83,837	1,618,562	19.2
66-67	0.013763	83,306	1,147	82,733	1,534,725	18.4
67-68	0.015057	82,160	1,237	81,541	1,451,992	17.7
68-69	0.016380	80,923	1,326	80,260	1,370,451	16.9
69-70	0.017756	79,597	1,413	78,890	1,290,191	16.2
70-71	0.019299	78,184	1,509	77,429	1,211,301	15.5
71-72	0.021039	76,675	1,613	75,868	1,133,871	14.8
72-73	0.022997	75,062	1,726	74,199	1,058,003	14.1
73-74	0.025182	73,335	1,847	72,412	983,805	13.4
74-75	0.027634	71,489	1,975	70,501	911,392	12.7
75-76	0.030322	69,513	2,108	68,459	840,892	12.1
76-77	0.033309	67,405	2,245	66,283	772,432	11.5
77-78	0.036740	65,160	2,394	63,963	706,149	10.8
78-79	0.040688	62,766	2,554	61,489	642,186	10.2
79-80	0.045172	60,212	2,720	58,852	580,697	9.6
80-81	0.050072	57,493	2,879	56,053	521,844	9.1
81-82	0.055306	54,614	3,020	53,103	465,791	8.5
82-83	0.061241	51,593	3,160	50,013	412,688	8.0
83-84	0.067893	48,434	3,288	46,789	362,674	7.5
84-85	0.075594	45,145	3,413	43,439	315,885	7.0
85-86	0.084649	41,733	3,533	39,966	272,446	6.5
86-87	0.094437	38,200	3,607	36,396	232,480	6.1
87-88	0.105152	34,593	3,637	32,774	196,083	5.7
88-89	0.116835	30,955	3,617	29,147	163,309	5.3
89-90	0.129516	27,338	3,541	25,568	134,163	4.9
90-91	0.143215	23,798	3,408	22,094	108,595	4.6
91-92	0.157937	20,389	3,220	18,779	86,501	4.2
92-93	0.173671	17,169	2,982	15,678	67,722	3.9
93-94	0.190385	14,187	2,701	12,837	52,043	3.7
94-95	0.208029	11,486	2,389	10,292	39,207	3.4
95-96	0.226531	9,097	2,061	8,066	28,915	3.2
96-97	0.245796	7,036	1,729	6,171	20,849	3.0
97-98	0.265711	5,307	1,410	4,602	14,677	2.8
98-99	0.286142	3,897	1,115	3,339	10,075	2.6
99-100	0.306941	2,782	854	2,355	6,736	2.4
100 and over	1.000000	1,928	1,928	4,382	4,382	2.3

SOURCE: CDC/NCHS, National Vital Statistics System.

Table 2. Life table for males: United States, 2011Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table02.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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	0.006575	100,000	658	99,427	7,629,389	76.3
1-2	0.000445	99,342	44	99,320	7,529,961	75.8
2-3	0.000301	99,298	30	99,283	7,430,641	74.8
3-4	0.000240	99,268	24	99,256	7,331,358	73.9
4-5	0.000183	99,244	18	99,235	7,232,101	72.9
5-6	0.000169	99,226	17	99,218	7,132,866	71.9
6-7	0.000150	99,210	15	99,202	7,033,648	70.9
7-8	0.000134	99,195	13	99,188	6,934,446	69.9
8-9	0.000115	99,181	11	99,176	6,835,258	68.9
9-10	0.000097	99,170	10	99,165	6,736,082	67.9
10-11	0.000085	99,160	8	99,156	6,636,917	66.9
11-12	0.000092	99,152	9	99,147	6,537,761	65.9
12-13	0.000132	99,143	13	99,136	6,438,613	64.9
13-14	0.000213	99,130	21	99,119	6,339,477	64.0
14-15	0.000323	99,109	32	99,093	6,240,358	63.0
15-16	0.000439	99,077	43	99,055	6,141,265	62.0
16-17	0.000552	99,033	55	99,006	6,042,210	61.0
17-18	0.000675	98,979	67	98,945	5,943,204	60.0
18-19	0.000807	98,912	80	98,872	5,844,259	59.1
19-20	0.000942	98,832	93	98,785	5,745,387	58.1
20-21	0.001085	98,739	107	98,685	5,646,602	57.2
21-22	0.001216	98,632	120	98,572	5,547,917	56.2
22-23	0.001310	98,512	129	98,447	5,449,345	55.3
23-24	0.001353	98,383	133	98,316	5,350,898	54.4
24-25	0.001358	98,250	133	98,183	5,252,582	53.5
25-26	0.001351	98,116	133	98,050	5,154,399	52.5
26-27	0.001349	97,984	132	97,918	5,056,349	51.6
27-28	0.001353	97,852	132	97,785	4,958,431	50.7
28-29	0.001371	97,719	134	97,652	4,860,646	49.7
29-30	0.001399	97,585	137	97,517	4,762,994	48.8
30-31	0.001432	97,449	140	97,379	4,665,477	47.9
31-32	0.001464	97,309	143	97,238	4,568,098	46.9
32-33	0.001496	97,167	145	97,094	4,470,860	46.0
33-34	0.001528	97,021	148	96,947	4,373,766	45.1
34-35	0.001563	96,873	151	96,797	4,276,819	44.1
35-36	0.001613	96,722	156	96,643	4,180,022	43.2
36-37	0.001682	96,565	162	96,484	4,083,378	42.3
37-38	0.001764	96,403	170	96,318	3,986,894	41.4
38-39	0.001857	96,233	179	96,144	3,890,576	40.4
39-40	0.001964	96,054	189	95,960	3,794,432	39.5
40-41	0.002083	95,866	200	95,766	3,698,472	38.6
41-42	0.002227	95,666	213	95,560	3,602,706	37.7
42-43	0.002414	95,453	230	95,338	3,507,147	36.7
43-44	0.002653	95,223	253	95,096	3,411,809	35.8
44-45	0.002939	94,970	279	94,830	3,316,713	34.9
45-46	0.003243	94,691	307	94,537	3,221,882	34.0
46-47	0.003563	94,384	336	94,216	3,127,345	33.1
47-48	0.003922	94,047	369	93,863	3,033,129	32.3
48-49	0.004320	93,679	405	93,476	2,939,266	31.4
49-50	0.004749	93,274	443	93,052	2,845,790	30.5
50-51	0.005193	92,831	482	92,590	2,752,738	29.7
51-52	0.005647	92,349	522	92,088	2,660,148	28.8
52-53	0.006122	91,827	562	91,546	2,568,060	28.0
53-54	0.006630	91,265	605	90,963	2,476,514	27.1
54-55	0.007181	90,660	651	90,335	2,385,551	26.3
55-56	0.007779	90,009	700	89,659	2,295,216	25.5
56-57	0.008415	89,309	752	88,933	2,205,557	24.7
57-58	0.009074	88,557	804	88,156	2,116,624	23.9
58-59	0.009727	87,754	854	87,327	2,028,469	23.1
59-60	0.010371	86,900	901	86,450	1,941,141	22.3
60-61	0.011034	85,999	949	85,525	1,854,692	21.6

See footnote at end of table.

Table 2. Life table for males: United States, 2011—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table02.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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
61–62	0.011738	85,050	998	84,551	1,769,167	20.8
62–63	0.012489	84,052	1,050	83,527	1,684,616	20.0
63–64	0.013335	83,002	1,107	82,449	1,601,089	19.3
64–65	0.014319	81,895	1,173	81,309	1,518,641	18.5
65–66	0.015482	80,723	1,250	80,098	1,437,332	17.8
66–67	0.016824	79,473	1,337	78,804	1,357,234	17.1
67–68	0.018330	78,136	1,432	77,420	1,278,430	16.4
68–69	0.019900	76,703	1,526	75,940	1,201,010	15.7
69–70	0.021539	75,177	1,619	74,367	1,125,070	15.0
70–71	0.023396	73,558	1,721	72,697	1,050,702	14.3
71–72	0.025476	71,837	1,830	70,922	978,005	13.6
72–73	0.027794	70,007	1,946	69,034	907,083	13.0
73–74	0.030350	68,061	2,066	67,028	838,049	12.3
74–75	0.033204	65,995	2,191	64,900	771,021	11.7
75–76	0.036345	63,804	2,319	62,645	706,121	11.1
76–77	0.039788	61,485	2,446	60,262	643,477	10.5
77–78	0.043720	59,039	2,581	57,748	583,215	9.9
78–79	0.048335	56,458	2,729	55,093	525,467	9.3
79–80	0.053650	53,729	2,883	52,287	470,374	8.8
80–81	0.059565	50,846	3,029	49,332	418,086	8.2
81–82	0.065848	47,817	3,149	46,243	368,754	7.7
82–83	0.072956	44,669	3,259	43,039	322,511	7.2
83–84	0.080741	41,410	3,343	39,738	279,472	6.7
84–85	0.089357	38,066	3,402	36,366	239,734	6.3
85–86	0.099650	34,665	3,454	32,938	203,368	5.9
86–87	0.110901	31,211	3,461	29,480	170,430	5.5
87–88	0.123146	27,749	3,417	26,041	140,950	5.1
88–89	0.136412	24,332	3,319	22,672	114,910	4.7
89–90	0.150710	21,013	3,167	19,429	92,237	4.4
90–91	0.166038	17,846	2,963	16,364	72,808	4.1
91–92	0.182374	14,883	2,714	13,526	56,443	3.8
92–93	0.199676	12,169	2,430	10,954	42,918	3.5
93–94	0.217880	9,739	2,122	8,678	31,964	3.3
94–95	0.236903	7,617	1,804	6,715	23,286	3.1
95–96	0.256636	5,812	1,492	5,067	16,571	2.9
96–97	0.276954	4,321	1,197	3,722	11,505	2.7
97–98	0.297713	3,124	930	2,659	7,782	2.5
98–99	0.318755	2,194	699	1,844	5,123	2.3
99–100	0.339914	1,495	508	1,241	3,279	2.2
100 and over	1.000000	987	987	2,038	2,038	2.1

SOURCE: CDC/NCHS, National Vital Statistics System.

Table 3. Life table for females: United States, 2011Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table03.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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	0.005516	100,000	552	99,514	8,105,137	81.1
1-2	0.000382	99,448	38	99,429	8,005,623	80.5
2-3	0.000225	99,410	22	99,399	7,906,193	79.5
3-4	0.000175	99,388	17	99,379	7,806,794	78.5
4-5	0.000151	99,371	15	99,363	7,707,415	77.6
5-6	0.000132	99,356	13	99,349	7,608,052	76.6
6-7	0.000117	99,342	12	99,337	7,508,703	75.6
7-8	0.000106	99,331	10	99,326	7,409,366	74.6
8-9	0.000096	99,320	10	99,316	7,310,041	73.6
9-10	0.000088	99,311	9	99,306	7,210,725	72.6
10-11	0.000084	99,302	8	99,298	7,111,419	71.6
11-12	0.000087	99,294	9	99,289	7,012,121	70.6
12-13	0.000102	99,285	10	99,280	6,912,831	69.6
13-14	0.000129	99,275	13	99,269	6,813,551	68.6
14-15	0.000166	99,262	16	99,254	6,714,283	67.6
15-16	0.000207	99,246	21	99,235	6,615,029	66.7
16-17	0.000247	99,225	25	99,213	6,515,793	65.7
17-18	0.000286	99,201	28	99,187	6,416,580	64.7
18-19	0.000320	99,172	32	99,157	6,317,394	63.7
19-20	0.000351	99,141	35	99,123	6,218,237	62.7
20-21	0.000384	99,106	38	99,087	6,119,114	61.7
21-22	0.000416	99,068	41	99,047	6,020,027	60.8
22-23	0.000445	99,027	44	99,005	5,920,980	59.8
23-24	0.000467	98,983	46	98,959	5,821,976	58.8
24-25	0.000486	98,936	48	98,912	5,723,016	57.8
25-26	0.000505	98,888	50	98,863	5,624,104	56.9
26-27	0.000526	98,838	52	98,812	5,525,241	55.9
27-28	0.000553	98,786	55	98,759	5,426,429	54.9
28-29	0.000587	98,732	58	98,703	5,327,670	54.0
29-30	0.000627	98,674	62	98,643	5,228,967	53.0
30-31	0.000673	98,612	66	98,579	5,130,324	52.0
31-32	0.000721	98,546	71	98,510	5,031,745	51.1
32-33	0.000766	98,475	75	98,437	4,933,235	50.1
33-34	0.000805	98,399	79	98,360	4,834,798	49.1
34-35	0.000842	98,320	83	98,279	4,736,439	48.2
35-36	0.000888	98,237	87	98,193	4,638,160	47.2
36-37	0.000947	98,150	93	98,103	4,539,967	46.3
37-38	0.001017	98,057	100	98,007	4,441,864	45.3
38-39	0.001099	97,957	108	97,903	4,343,856	44.3
39-40	0.001192	97,850	117	97,791	4,245,953	43.4
40-41	0.001291	97,733	126	97,670	4,148,162	42.4
41-42	0.001402	97,607	137	97,538	4,050,492	41.5
42-43	0.001535	97,470	150	97,395	3,952,954	40.6
43-44	0.001695	97,320	165	97,238	3,855,558	39.6
44-45	0.001879	97,155	183	97,064	3,758,321	38.7
45-46	0.002070	96,973	201	96,873	3,661,256	37.8
46-47	0.002268	96,772	220	96,662	3,564,384	36.8
47-48	0.002486	96,553	240	96,433	3,467,721	35.9
48-49	0.002725	96,313	262	96,181	3,371,289	35.0
49-50	0.002977	96,050	286	95,907	3,275,107	34.1
50-51	0.003245	95,764	311	95,609	3,179,200	33.2
51-52	0.003514	95,454	335	95,286	3,083,591	32.3
52-53	0.003776	95,118	359	94,938	2,988,305	31.4
53-54	0.004029	94,759	382	94,568	2,893,367	30.5
54-55	0.004289	94,377	405	94,175	2,798,799	29.7
55-56	0.004564	93,972	429	93,758	2,704,624	28.8
56-57	0.004875	93,543	456	93,315	2,610,866	27.9
57-58	0.005234	93,087	487	92,844	2,517,551	27.0
58-59	0.005647	92,600	523	92,339	2,424,707	26.2
59-60	0.006103	92,077	562	91,796	2,332,369	25.3
60-61	0.006589	91,515	603	91,214	2,240,572	24.5

See footnote at end of table.

Table 3. Life table for females: United States, 2011—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table03.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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
61-62	0.007104	90,912	646	90,589	2,149,359	23.6
62-63	0.007665	90,266	692	89,921	2,058,769	22.8
63-64	0.008303	89,575	744	89,203	1,968,849	22.0
64-65	0.009050	88,831	804	88,429	1,879,646	21.2
65-66	0.009953	88,027	876	87,589	1,791,217	20.3
66-67	0.011001	87,151	959	86,671	1,703,628	19.5
67-68	0.012124	86,192	1,045	85,670	1,616,957	18.8
68-69	0.013250	85,147	1,128	84,583	1,531,287	18.0
69-70	0.014419	84,019	1,211	83,413	1,446,704	17.2
70-71	0.015718	82,807	1,302	82,157	1,363,291	16.5
71-72	0.017201	81,506	1,402	80,805	1,281,135	15.7
72-73	0.018896	80,104	1,514	79,347	1,200,330	15.0
73-74	0.020818	78,590	1,636	77,772	1,120,983	14.3
74-75	0.022996	76,954	1,770	76,069	1,043,211	13.6
75-76	0.025387	75,184	1,909	74,230	967,142	12.9
76-77	0.028090	73,276	2,058	72,247	892,911	12.2
77-78	0.031225	71,217	2,224	70,106	820,665	11.5
78-79	0.034786	68,994	2,400	67,794	750,559	10.9
79-80	0.038792	66,594	2,583	65,302	682,766	10.3
80-81	0.043109	64,010	2,759	62,631	617,463	9.6
81-82	0.047800	61,251	2,928	59,787	554,833	9.1
82-83	0.053181	58,323	3,102	56,772	495,046	8.5
83-84	0.059365	55,221	3,278	53,582	438,273	7.9
84-85	0.066859	51,943	3,473	50,207	384,691	7.4
85-86	0.075391	48,470	3,654	46,643	334,484	6.9
86-87	0.084744	44,816	3,798	42,917	287,841	6.4
87-88	0.095072	41,018	3,900	39,068	244,924	6.0
88-89	0.106427	37,119	3,950	35,143	205,855	5.5
89-90	0.118857	33,168	3,942	31,197	170,712	5.1
90-91	0.132396	29,226	3,869	27,291	139,515	4.8
91-92	0.147063	25,356	3,729	23,492	112,224	4.4
92-93	0.162859	21,627	3,522	19,866	88,732	4.1
93-94	0.179765	18,105	3,255	16,478	68,866	3.8
94-95	0.197737	14,851	2,937	13,382	52,388	3.5
95-96	0.216706	11,914	2,582	10,623	39,006	3.3
96-97	0.236577	9,332	2,208	8,228	28,382	3.0
97-98	0.257228	7,124	1,833	6,208	20,154	2.8
98-99	0.278515	5,292	1,474	4,555	13,946	2.6
99-100	0.300271	3,818	1,146	3,245	9,391	2.5
100 and over	1.000000	2,672	2,672	6,146	6,146	2.3

SOURCE: CDC/NCHS, National Vital Statistics System.

Table 4. Life table for the white population: United States, 2011Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table04.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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	0.005109	100,000	511	99,551	7,895,065	79.0
1-2	0.000386	99,489	38	99,470	7,795,514	78.4
2-3	0.000240	99,451	24	99,439	7,696,044	77.4
3-4	0.000200	99,427	20	99,417	7,596,605	76.4
4-5	0.000158	99,407	16	99,399	7,497,188	75.4
5-6	0.000142	99,391	14	99,384	7,397,789	74.4
6-7	0.000127	99,377	13	99,371	7,298,405	73.4
7-8	0.000115	99,365	11	99,359	7,199,034	72.5
8-9	0.000101	99,353	10	99,348	7,099,675	71.5
9-10	0.000089	99,343	9	99,339	7,000,327	70.5
10-11	0.000081	99,334	8	99,330	6,900,988	69.5
11-12	0.000086	99,326	8	99,322	6,801,658	68.5
12-13	0.000112	99,318	11	99,312	6,702,336	67.5
13-14	0.000164	99,307	16	99,298	6,603,024	66.5
14-15	0.000236	99,290	23	99,279	6,503,725	65.5
15-16	0.000313	99,267	31	99,251	6,404,447	64.5
16-17	0.000388	99,236	39	99,217	6,305,196	63.5
17-18	0.000467	99,197	46	99,174	6,205,979	62.6
18-19	0.000548	99,151	54	99,124	6,106,805	61.6
19-20	0.000628	99,097	62	99,065	6,007,681	60.6
20-21	0.000712	99,034	71	98,999	5,908,616	59.7
21-22	0.000791	98,964	78	98,925	5,809,617	58.7
22-23	0.000850	98,885	84	98,843	5,710,692	57.8
23-24	0.000882	98,801	87	98,758	5,611,849	56.8
24-25	0.000895	98,714	88	98,670	5,513,091	55.8
25-26	0.000901	98,626	89	98,582	5,414,421	54.9
26-27	0.000912	98,537	90	98,492	5,315,839	53.9
27-28	0.000927	98,447	91	98,402	5,217,347	53.0
28-29	0.000953	98,356	94	98,309	5,118,945	52.0
29-30	0.000986	98,262	97	98,214	5,020,636	51.1
30-31	0.001025	98,165	101	98,115	4,922,422	50.1
31-32	0.001065	98,065	104	98,013	4,824,307	49.2
32-33	0.001102	97,960	108	97,906	4,726,295	48.2
33-34	0.001134	97,852	111	97,797	4,628,388	47.3
34-35	0.001167	97,741	114	97,684	4,530,591	46.4
35-36	0.001211	97,627	118	97,568	4,432,907	45.4
36-37	0.001271	97,509	124	97,447	4,335,339	44.5
37-38	0.001344	97,385	131	97,320	4,237,892	43.5
38-39	0.001430	97,254	139	97,185	4,140,572	42.6
39-40	0.001528	97,115	148	97,041	4,043,387	41.6
40-41	0.001634	96,967	158	96,888	3,946,346	40.7
41-42	0.001759	96,808	170	96,723	3,849,458	39.8
42-43	0.001915	96,638	185	96,546	3,752,735	38.8
43-44	0.002110	96,453	204	96,351	3,656,190	37.9
44-45	0.002339	96,250	225	96,137	3,559,838	37.0
45-46	0.002582	96,024	248	95,900	3,463,701	36.1
46-47	0.002833	95,776	271	95,641	3,367,801	35.2
47-48	0.003112	95,505	297	95,357	3,272,160	34.3
48-49	0.003416	95,208	325	95,045	3,176,804	33.4
49-50	0.003740	94,883	355	94,705	3,081,758	32.5
50-51	0.004078	94,528	385	94,335	2,987,053	31.6
51-52	0.004420	94,142	416	93,934	2,892,718	30.7
52-53	0.004766	93,726	447	93,503	2,798,784	29.9
53-54	0.005120	93,279	478	93,041	2,705,281	29.0
54-55	0.005495	92,802	510	92,547	2,612,240	28.1
55-56	0.005899	92,292	544	92,020	2,519,694	27.3
56-57	0.006339	91,748	582	91,457	2,427,674	26.5
57-58	0.006818	91,166	622	90,855	2,336,217	25.6
58-59	0.007328	90,544	664	90,213	2,245,362	24.8
59-60	0.007860	89,881	706	89,528	2,155,149	24.0
60-61	0.008415	89,174	750	88,799	2,065,622	23.2

See footnote at end of table.

Table 4. Life table for the white population: United States, 2011—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table04.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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
61–62	0.009004	88,424	796	88,026	1,976,823	22.4
62–63	0.009646	87,628	845	87,205	1,888,797	21.6
63–64	0.010382	86,782	901	86,332	1,801,592	20.8
64–65	0.011248	85,881	966	85,398	1,715,260	20.0
65–66	0.012285	84,915	1,043	84,394	1,629,861	19.2
66–67	0.013480	83,872	1,131	83,307	1,545,468	18.4
67–68	0.014784	82,742	1,223	82,130	1,462,161	17.7
68–69	0.016109	81,518	1,313	80,862	1,380,031	16.9
69–70	0.017484	80,205	1,402	79,504	1,299,169	16.2
70–71	0.019042	78,803	1,501	78,053	1,219,665	15.5
71–72	0.020818	77,302	1,609	76,498	1,141,612	14.8
72–73	0.022805	75,693	1,726	74,830	1,065,115	14.1
73–74	0.025017	73,967	1,850	73,042	990,285	13.4
74–75	0.027484	72,116	1,982	71,125	917,243	12.7
75–76	0.030164	70,134	2,116	69,077	846,118	12.1
76–77	0.033184	68,019	2,257	66,890	777,041	11.4
77–78	0.036677	65,762	2,412	64,556	710,151	10.8
78–79	0.040650	63,350	2,575	62,062	645,595	10.2
79–80	0.045163	60,775	2,745	59,402	583,533	9.6
80–81	0.050134	58,030	2,909	56,575	524,131	9.0
81–82	0.055416	55,121	3,055	53,593	467,556	8.5
82–83	0.061397	52,066	3,197	50,468	413,962	8.0
83–84	0.068175	48,869	3,332	47,203	363,495	7.4
84–85	0.076044	45,538	3,463	43,806	316,291	6.9
85–86	0.084781	42,075	3,567	40,291	272,485	6.5
86–87	0.094818	38,508	3,651	36,682	232,194	6.0
87–88	0.105828	34,856	3,689	33,012	195,512	5.6
88–89	0.117852	31,168	3,673	29,331	162,500	5.2
89–90	0.130923	27,494	3,600	25,695	133,169	4.8
90–91	0.145061	23,895	3,466	22,162	107,475	4.5
91–92	0.160270	20,429	3,274	18,792	85,313	4.2
92–93	0.176532	17,154	3,028	15,640	66,521	3.9
93–94	0.193814	14,126	2,738	12,757	50,881	3.6
94–95	0.212055	11,388	2,415	10,181	38,124	3.3
95–96	0.231174	8,973	2,074	7,936	27,943	3.1
96–97	0.251064	6,899	1,732	6,033	20,007	2.9
97–98	0.271599	5,167	1,403	4,465	13,974	2.7
98–99	0.292631	3,764	1,101	3,213	9,509	2.5
99–100	0.313996	2,662	836	2,244	6,296	2.4
100 and over	1.000000	1,826	1,826	4,052	4,052	2.2

SOURCE: CDC/NCHS, National Vital Statistics System.

Table 5. Life table for white males: United States, 2011Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table05.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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	0.005535	100,000	554	99,515	7,659,433	76.6
1-2	0.000418	99,447	42	99,426	7,559,918	76.0
2-3	0.000277	99,405	28	99,391	7,460,492	75.1
3-4	0.000229	99,377	23	99,366	7,361,101	74.1
4-5	0.000167	99,355	17	99,346	7,261,735	73.1
5-6	0.000159	99,338	16	99,330	7,162,389	72.1
6-7	0.000143	99,322	14	99,315	7,063,059	71.1
7-8	0.000129	99,308	13	99,302	6,963,743	70.1
8-9	0.000112	99,295	11	99,290	6,864,442	69.1
9-10	0.000094	99,284	9	99,279	6,765,152	68.1
10-11	0.000083	99,275	8	99,271	6,665,873	67.1
11-12	0.000089	99,267	9	99,262	6,566,602	66.2
12-13	0.000127	99,258	13	99,251	6,467,340	65.2
13-14	0.000202	99,245	20	99,235	6,368,088	64.2
14-15	0.000306	99,225	30	99,210	6,268,853	63.2
15-16	0.000415	99,195	41	99,174	6,169,643	62.2
16-17	0.000522	99,154	52	99,128	6,070,469	61.2
17-18	0.000638	99,102	63	99,070	5,971,341	60.3
18-19	0.000763	99,039	76	99,001	5,872,271	59.3
19-20	0.000891	98,963	88	98,919	5,773,270	58.3
20-21	0.001025	98,875	101	98,824	5,674,351	57.4
21-22	0.001149	98,774	114	98,717	5,575,527	56.4
22-23	0.001238	98,660	122	98,599	5,476,810	55.5
23-24	0.001281	98,538	126	98,475	5,378,211	54.6
24-25	0.001289	98,412	127	98,348	5,279,736	53.6
25-26	0.001285	98,285	126	98,222	5,181,388	52.7
26-27	0.001287	98,159	126	98,095	5,083,166	51.8
27-28	0.001295	98,032	127	97,969	4,985,071	50.9
28-29	0.001317	97,905	129	97,841	4,887,102	49.9
29-30	0.001349	97,776	132	97,710	4,789,261	49.0
30-31	0.001386	97,644	135	97,577	4,691,551	48.0
31-32	0.001423	97,509	139	97,440	4,593,974	47.1
32-33	0.001458	97,370	142	97,299	4,496,534	46.2
33-34	0.001489	97,228	145	97,156	4,399,235	45.2
34-35	0.001522	97,084	148	97,010	4,302,079	44.3
35-36	0.001570	96,936	152	96,860	4,205,069	43.4
36-37	0.001637	96,784	158	96,705	4,108,209	42.4
37-38	0.001717	96,625	166	96,542	4,011,505	41.5
38-39	0.001809	96,459	175	96,372	3,914,962	40.6
39-40	0.001915	96,285	184	96,193	3,818,590	39.7
40-41	0.002031	96,100	195	96,003	3,722,398	38.7
41-42	0.002171	95,905	208	95,801	3,626,395	37.8
42-43	0.002355	95,697	225	95,584	3,530,594	36.9
43-44	0.002594	95,472	248	95,348	3,435,010	36.0
44-45	0.002880	95,224	274	95,087	3,339,662	35.1
45-46	0.003185	94,950	302	94,799	3,244,575	34.2
46-47	0.003503	94,647	332	94,482	3,149,776	33.3
47-48	0.003854	94,316	363	94,134	3,055,295	32.4
48-49	0.004236	93,952	398	93,753	2,961,161	31.5
49-50	0.004641	93,554	434	93,337	2,867,408	30.6
50-51	0.005059	93,120	471	92,885	2,774,070	29.8
51-52	0.005487	92,649	508	92,395	2,681,186	28.9
52-53	0.005935	92,141	547	91,867	2,588,791	28.1
53-54	0.006415	91,594	588	91,300	2,496,924	27.3
54-55	0.006937	91,006	631	90,691	2,405,624	26.4
55-56	0.007505	90,375	678	90,036	2,314,933	25.6
56-57	0.008111	89,697	727	89,333	2,224,897	24.8
57-58	0.008737	88,969	777	88,580	2,135,564	24.0
58-59	0.009360	88,192	825	87,779	2,046,984	23.2
59-60	0.009974	87,366	871	86,931	1,959,205	22.4
60-61	0.010604	86,495	917	86,036	1,872,274	21.6

See footnote at end of table.

Table 5. Life table for white males: United States, 2011—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table05.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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
61-62	0.011276	85,578	965	85,095	1,786,238	20.9
62-63	0.012007	84,613	1,016	84,105	1,701,143	20.1
63-64	0.012850	83,597	1,074	83,060	1,617,038	19.3
64-65	0.013848	82,523	1,143	81,951	1,533,978	18.6
65-66	0.015034	81,380	1,223	80,768	1,452,027	17.8
66-67	0.016400	80,156	1,315	79,499	1,371,259	17.1
67-68	0.017917	78,842	1,413	78,136	1,291,759	16.4
68-69	0.019481	77,429	1,508	76,675	1,213,624	15.7
69-70	0.021114	75,921	1,603	75,119	1,136,949	15.0
70-71	0.022988	74,318	1,708	73,464	1,061,829	14.3
71-72	0.025101	72,609	1,823	71,698	988,366	13.6
72-73	0.027439	70,787	1,942	69,816	916,668	12.9
73-74	0.030023	68,845	2,067	67,811	846,852	12.3
74-75	0.032932	66,778	2,199	65,678	779,041	11.7
75-76	0.036068	64,578	2,329	63,414	713,363	11.0
76-77	0.039531	62,249	2,461	61,019	649,949	10.4
77-78	0.043564	59,788	2,605	58,486	588,930	9.9
78-79	0.048194	57,184	2,756	55,806	530,444	9.3
79-80	0.053550	54,428	2,915	52,971	474,638	8.7
80-81	0.059588	51,513	3,070	49,979	421,667	8.2
81-82	0.065918	48,444	3,193	46,847	371,689	7.7
82-83	0.073081	45,250	3,307	43,597	324,841	7.2
83-84	0.081020	41,944	3,398	40,244	281,244	6.7
84-85	0.089324	38,545	3,443	36,824	241,000	6.3
85-86	0.099884	35,102	3,506	33,349	204,176	5.8
86-87	0.111452	31,596	3,521	29,835	170,827	5.4
87-88	0.124067	28,075	3,483	26,333	140,992	5.0
88-89	0.137755	24,591	3,388	22,898	114,659	4.7
89-90	0.152529	21,204	3,234	19,587	91,761	4.3
90-91	0.168383	17,970	3,026	16,457	72,174	4.0
91-92	0.185291	14,944	2,769	13,559	55,718	3.7
92-93	0.203204	12,175	2,474	10,938	42,158	3.5
93-94	0.222050	9,701	2,154	8,624	31,220	3.2
94-95	0.241733	7,547	1,824	6,635	22,596	3.0
95-96	0.262131	5,723	1,500	4,972	15,962	2.8
96-97	0.283104	4,222	1,195	3,625	10,989	2.6
97-98	0.304492	3,027	922	2,566	7,364	2.4
98-99	0.326122	2,105	687	1,762	4,798	2.3
99-100	0.347813	1,419	493	1,172	3,036	2.1
100 and over	1.000000	925	925	1,864	1,864	2.0

SOURCE: CDC/NCHS, National Vital Statistics System.

Table 6. Life table for white females: United States, 2011Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table06.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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	0.004661	100,000	466	99,589	8,126,919	81.3
1-2	0.000352	99,534	35	99,516	8,027,329	80.6
2-3	0.000201	99,499	20	99,489	7,927,813	79.7
3-4	0.000170	99,479	17	99,470	7,828,324	78.7
4-5	0.000149	99,462	15	99,455	7,728,854	77.7
5-6	0.000124	99,447	12	99,441	7,629,399	76.7
6-7	0.000110	99,435	11	99,429	7,529,958	75.7
7-8	0.000100	99,424	10	99,419	7,430,529	74.7
8-9	0.000091	99,414	9	99,409	7,331,110	73.7
9-10	0.000083	99,405	8	99,401	7,231,701	72.7
10-11	0.000079	99,397	8	99,393	7,132,300	71.8
11-12	0.000082	99,389	8	99,385	7,032,907	70.8
12-13	0.000096	99,381	10	99,376	6,933,522	69.8
13-14	0.000125	99,371	12	99,365	6,834,146	68.8
14-15	0.000163	99,359	16	99,351	6,734,781	67.8
15-16	0.000205	99,343	20	99,332	6,635,431	66.8
16-17	0.000247	99,322	25	99,310	6,536,098	65.8
17-18	0.000286	99,298	28	99,284	6,436,788	64.8
18-19	0.000320	99,269	32	99,253	6,337,505	63.8
19-20	0.000350	99,238	35	99,220	6,238,251	62.9
20-21	0.000381	99,203	38	99,184	6,139,031	61.9
21-22	0.000412	99,165	41	99,145	6,039,847	60.9
22-23	0.000439	99,124	44	99,102	5,940,703	59.9
23-24	0.000461	99,081	46	99,058	5,841,600	59.0
24-25	0.000480	99,035	48	99,011	5,742,542	58.0
25-26	0.000498	98,987	49	98,963	5,643,531	57.0
26-27	0.000518	98,938	51	98,913	5,544,569	56.0
27-28	0.000542	98,887	54	98,860	5,445,656	55.1
28-29	0.000572	98,833	57	98,805	5,346,796	54.1
29-30	0.000608	98,777	60	98,747	5,247,991	53.1
30-31	0.000649	98,717	64	98,685	5,149,244	52.2
31-32	0.000693	98,653	68	98,618	5,050,559	51.2
32-33	0.000733	98,584	72	98,548	4,951,941	50.2
33-34	0.000768	98,512	76	98,474	4,853,393	49.3
34-35	0.000801	98,436	79	98,397	4,754,919	48.3
35-36	0.000842	98,358	83	98,316	4,656,522	47.3
36-37	0.000896	98,275	88	98,231	4,558,206	46.4
37-38	0.000964	98,187	95	98,139	4,459,975	45.4
38-39	0.001043	98,092	102	98,041	4,361,836	44.5
39-40	0.001134	97,990	111	97,934	4,263,795	43.5
40-41	0.001230	97,879	120	97,818	4,165,860	42.6
41-42	0.001338	97,758	131	97,693	4,068,042	41.6
42-43	0.001466	97,627	143	97,556	3,970,349	40.7
43-44	0.001619	97,484	158	97,405	3,872,793	39.7
44-45	0.001793	97,326	175	97,239	3,775,388	38.8
45-46	0.001975	97,152	192	97,056	3,678,149	37.9
46-47	0.002162	96,960	210	96,855	3,581,093	36.9
47-48	0.002371	96,750	229	96,636	3,484,238	36.0
48-49	0.002601	96,521	251	96,395	3,387,602	35.1
49-50	0.002846	96,270	274	96,133	3,291,207	34.2
50-51	0.003106	95,996	298	95,847	3,195,074	33.3
51-52	0.003367	95,698	322	95,537	3,099,227	32.4
52-53	0.003616	95,376	345	95,203	3,003,690	31.5
53-54	0.003851	95,031	366	94,848	2,908,487	30.6
54-55	0.004088	94,665	387	94,471	2,813,639	29.7
55-56	0.004339	94,278	409	94,073	2,719,168	28.8
56-57	0.004628	93,869	434	93,652	2,625,094	28.0
57-58	0.004973	93,434	465	93,202	2,531,443	27.1
58-59	0.005383	92,970	500	92,719	2,438,241	26.2
59-60	0.005842	92,469	540	92,199	2,345,521	25.4
60-61	0.006332	91,929	582	91,638	2,253,322	24.5

See footnote at end of table.

Table 6. Life table for white females: United States, 2011—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table06.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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
61–62	0.006849	91,347	626	91,034	2,161,684	23.7
62–63	0.007415	90,721	673	90,385	2,070,650	22.8
63–64	0.008061	90,049	726	89,686	1,980,265	22.0
64–65	0.008818	89,323	788	88,929	1,890,580	21.2
65–66	0.009734	88,535	862	88,104	1,801,651	20.3
66–67	0.010792	87,673	946	87,200	1,713,547	19.5
67–68	0.011923	86,727	1,034	86,210	1,626,346	18.8
68–69	0.013056	85,693	1,119	85,134	1,540,136	18.0
69–70	0.014225	84,574	1,203	83,973	1,455,003	17.2
70–71	0.015535	83,371	1,295	82,724	1,371,030	16.4
71–72	0.017054	82,076	1,400	81,376	1,288,307	15.7
72–73	0.018781	80,676	1,515	79,919	1,206,930	15.0
73–74	0.020723	79,161	1,640	78,341	1,127,012	14.2
74–75	0.022878	77,521	1,773	76,634	1,048,671	13.5
75–76	0.025250	75,747	1,913	74,791	972,037	12.8
76–77	0.027990	73,835	2,067	72,801	897,246	12.2
77–78	0.031146	71,768	2,235	70,650	824,445	11.5
78–79	0.034731	69,533	2,415	68,325	753,795	10.8
79–80	0.038746	67,118	2,601	65,817	685,470	10.2
80–81	0.043080	64,517	2,779	63,127	619,652	9.6
81–82	0.047808	61,738	2,952	60,262	556,525	9.0
82–83	0.053223	58,786	3,129	57,222	496,263	8.4
83–84	0.059515	55,657	3,312	54,001	439,041	7.9
84–85	0.067166	52,345	3,516	50,587	385,040	7.4
85–86	0.075456	48,829	3,684	46,987	334,452	6.8
86–87	0.085024	45,145	3,838	43,226	287,465	6.4
87–88	0.095610	41,306	3,949	39,332	244,240	5.9
88–89	0.107271	37,357	4,007	35,353	204,908	5.5
89–90	0.120055	33,350	4,004	31,348	169,555	5.1
90–91	0.133997	29,346	3,932	27,380	138,207	4.7
91–92	0.149117	25,414	3,790	23,519	110,827	4.4
92–93	0.165414	21,624	3,577	19,836	87,308	4.0
93–94	0.182862	18,047	3,300	16,397	67,473	3.7
94–95	0.201411	14,747	2,970	13,262	51,076	3.5
95–96	0.220982	11,777	2,602	10,476	37,814	3.2
96–97	0.241467	9,174	2,215	8,067	27,338	3.0
97–98	0.262733	6,959	1,828	6,045	19,271	2.8
98–99	0.284617	5,131	1,460	4,401	13,227	2.6
99–100	0.306939	3,670	1,127	3,107	8,826	2.4
100 and over	1.000000	2,544	2,544	5,719	5,719	2.2

SOURCE: CDC/NCHS, National Vital Statistics System.

Table 7. Life table for the black population: United States, 2011Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table07.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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	0.011502	100,000	1,150	99,001	7,533,429	75.3
1-2	0.000607	98,850	60	98,820	7,434,429	75.2
2-3	0.000410	98,790	40	98,770	7,335,609	74.3
3-4	0.000280	98,749	28	98,736	7,236,839	73.3
4-5	0.000245	98,722	24	98,710	7,138,104	72.3
5-6	0.000215	98,698	21	98,687	7,039,394	71.3
6-7	0.000187	98,676	18	98,667	6,940,707	70.3
7-8	0.000163	98,658	16	98,650	6,842,040	69.4
8-9	0.000140	98,642	14	98,635	6,743,390	68.4
9-10	0.000120	98,628	12	98,622	6,644,755	67.4
10-11	0.000108	98,616	11	98,611	6,546,133	66.4
11-12	0.000115	98,606	11	98,600	6,447,522	65.4
12-13	0.000153	98,594	15	98,587	6,348,922	64.4
13-14	0.000226	98,579	22	98,568	6,250,335	63.4
14-15	0.000326	98,557	32	98,541	6,151,767	62.4
15-16	0.000429	98,525	42	98,504	6,053,226	61.4
16-17	0.000529	98,483	52	98,457	5,954,722	60.5
17-18	0.000638	98,431	63	98,399	5,856,266	59.5
18-19	0.000758	98,368	75	98,330	5,757,866	58.5
19-20	0.000883	98,293	87	98,250	5,659,536	57.6
20-21	0.001017	98,206	100	98,156	5,561,286	56.6
21-22	0.001145	98,107	112	98,050	5,463,130	55.7
22-23	0.001242	97,994	122	97,933	5,365,079	54.7
23-24	0.001298	97,873	127	97,809	5,267,146	53.8
24-25	0.001324	97,745	129	97,681	5,169,337	52.9
25-26	0.001341	97,616	131	97,551	5,071,656	52.0
26-27	0.001366	97,485	133	97,419	4,974,106	51.0
27-28	0.001394	97,352	136	97,284	4,876,687	50.1
28-29	0.001432	97,216	139	97,147	4,779,403	49.2
29-30	0.001476	97,077	143	97,005	4,682,256	48.2
30-31	0.001522	96,934	148	96,860	4,585,251	47.3
31-32	0.001569	96,786	152	96,710	4,488,391	46.4
32-33	0.001620	96,635	157	96,556	4,391,680	45.4
33-34	0.001679	96,478	162	96,397	4,295,124	44.5
34-35	0.001748	96,316	168	96,232	4,198,727	43.6
35-36	0.001836	96,148	176	96,059	4,102,495	42.7
36-37	0.001940	95,971	186	95,878	4,006,436	41.7
37-38	0.002056	95,785	197	95,687	3,910,558	40.8
38-39	0.002178	95,588	208	95,484	3,814,871	39.9
39-40	0.002310	95,380	220	95,270	3,719,387	39.0
40-41	0.002457	95,159	234	95,043	3,624,117	38.1
41-42	0.002629	94,926	250	94,801	3,529,075	37.2
42-43	0.002839	94,676	269	94,542	3,434,274	36.3
43-44	0.003094	94,407	292	94,261	3,339,732	35.4
44-45	0.003389	94,115	319	93,956	3,245,471	34.5
45-46	0.003697	93,796	347	93,623	3,151,515	33.6
46-47	0.004025	93,450	376	93,261	3,057,892	32.7
47-48	0.004415	93,073	411	92,868	2,964,631	31.9
48-49	0.004881	92,662	452	92,436	2,871,763	31.0
49-50	0.005406	92,210	499	91,961	2,779,327	30.1
50-51	0.005959	91,712	546	91,438	2,687,366	29.3
51-52	0.006518	91,165	594	90,868	2,595,928	28.5
52-53	0.007099	90,571	643	90,249	2,505,060	27.7
53-54	0.007713	89,928	694	89,581	2,414,810	26.9
54-55	0.008373	89,234	747	88,861	2,325,229	26.1
55-56	0.009090	88,487	804	88,085	2,236,368	25.3
56-57	0.009860	87,683	865	87,251	2,148,283	24.5
57-58	0.010664	86,818	926	86,355	2,061,033	23.7
58-59	0.011475	85,892	986	85,400	1,974,677	23.0
59-60	0.012286	84,907	1,043	84,385	1,889,278	22.3
60-61	0.013145	83,864	1,102	83,313	1,804,892	21.5

See footnote at end of table.

Table 7. Life table for the black population: United States, 2011—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table07.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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
61–62	0.014056	82,761	1,163	82,180	1,721,580	20.8
62–63	0.014971	81,598	1,222	80,987	1,639,400	20.1
63–64	0.015906	80,376	1,278	79,737	1,558,413	19.4
64–65	0.016914	79,098	1,338	78,429	1,478,676	18.7
65–66	0.018071	77,760	1,405	77,058	1,400,247	18.0
66–67	0.019441	76,355	1,484	75,613	1,323,189	17.3
67–68	0.020960	74,871	1,569	74,086	1,247,576	16.7
68–69	0.022542	73,301	1,652	72,475	1,173,490	16.0
69–70	0.024196	71,649	1,734	70,782	1,101,015	15.4
70–71	0.025906	69,915	1,811	69,010	1,030,233	14.7
71–72	0.027689	68,104	1,886	67,161	961,224	14.1
72–73	0.029712	66,218	1,967	65,235	894,062	13.5
73–74	0.032007	64,251	2,056	63,223	828,828	12.9
74–75	0.034630	62,194	2,154	61,117	765,605	12.3
75–76	0.037486	60,041	2,251	58,915	704,488	11.7
76–77	0.040247	57,790	2,326	56,627	645,572	11.2
77–78	0.043586	55,464	2,417	54,255	588,946	10.6
78–79	0.047699	53,047	2,530	51,781	534,690	10.1
79–80	0.052079	50,516	2,631	49,201	482,909	9.6
80–81	0.056852	47,885	2,722	46,524	433,708	9.1
81–82	0.061846	45,163	2,793	43,766	387,184	8.6
82–83	0.067901	42,370	2,877	40,931	343,417	8.1
83–84	0.074532	39,493	2,943	38,021	302,486	7.7
84–85	0.081262	36,549	2,970	35,064	264,465	7.2
85–86	0.088508	33,579	2,972	32,093	229,400	6.8
86–87	0.096294	30,607	2,947	29,134	197,307	6.4
87–88	0.104641	27,660	2,894	26,213	168,173	6.1
88–89	0.113567	24,766	2,813	23,359	141,960	5.7
89–90	0.123088	21,953	2,702	20,602	118,601	5.4
90–91	0.133215	19,251	2,565	17,969	97,999	5.1
91–92	0.143955	16,686	2,402	15,485	80,030	4.8
92–93	0.155309	14,284	2,218	13,175	64,545	4.5
93–94	0.167271	12,066	2,018	11,057	51,370	4.3
94–95	0.179830	10,048	1,807	9,144	40,313	4.0
95–96	0.192969	8,241	1,590	7,446	31,169	3.8
96–97	0.206659	6,651	1,374	5,963	23,724	3.6
97–98	0.220869	5,276	1,165	4,693	17,760	3.4
98–99	0.235554	4,111	968	3,627	13,067	3.2
99–100	0.250668	3,142	788	2,749	9,440	3.0
100 and over	1.000000	2,355	2,355	6,691	6,691	2.8

SOURCE: CDC/NCHS, National Vital Statistics System.

Table 8. Life table for black males: United States, 2011Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table08.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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	0.012602	100,000	1,260	98,919	7,219,226	72.2
1-2	0.000628	98,740	62	98,709	7,120,308	72.1
2-3	0.000462	98,678	46	98,655	7,021,599	71.2
3-4	0.000333	98,632	33	98,616	6,922,944	70.2
4-5	0.000295	98,599	29	98,585	6,824,328	69.2
5-6	0.000243	98,570	24	98,558	6,725,743	68.2
6-7	0.000211	98,546	21	98,536	6,627,185	67.2
7-8	0.000182	98,526	18	98,517	6,528,649	66.3
8-9	0.000152	98,508	15	98,500	6,430,132	65.3
9-10	0.000121	98,493	12	98,487	6,331,632	64.3
10-11	0.000101	98,481	10	98,476	6,233,145	63.3
11-12	0.000111	98,471	11	98,465	6,134,669	62.3
12-13	0.000171	98,460	17	98,452	6,036,203	61.3
13-14	0.000292	98,443	29	98,429	5,937,752	60.3
14-15	0.000454	98,414	45	98,392	5,839,323	59.3
15-16	0.000620	98,370	61	98,339	5,740,931	58.4
16-17	0.000779	98,309	77	98,270	5,642,592	57.4
17-18	0.000953	98,232	94	98,185	5,544,321	56.4
18-19	0.001144	98,139	112	98,082	5,446,136	55.5
19-20	0.001346	98,026	132	97,960	5,348,054	54.6
20-21	0.001565	97,894	153	97,818	5,250,093	53.6
21-22	0.001770	97,741	173	97,655	5,152,275	52.7
22-23	0.001925	97,568	188	97,474	5,054,621	51.8
23-24	0.002008	97,380	196	97,283	4,957,147	50.9
24-25	0.002034	97,185	198	97,086	4,859,864	50.0
25-26	0.002043	96,987	198	96,888	4,762,778	49.1
26-27	0.002060	96,789	199	96,689	4,665,890	48.2
27-28	0.002072	96,590	200	96,489	4,569,201	47.3
28-29	0.002086	96,389	201	96,289	4,472,711	46.4
29-30	0.002103	96,188	202	96,087	4,376,423	45.5
30-31	0.002115	95,986	203	95,885	4,280,335	44.6
31-32	0.002127	95,783	204	95,681	4,184,451	43.7
32-33	0.002152	95,579	206	95,476	4,088,770	42.8
33-34	0.002199	95,374	210	95,269	3,993,293	41.9
34-35	0.002267	95,164	216	95,056	3,898,024	41.0
35-36	0.002359	94,948	224	94,836	3,802,969	40.1
36-37	0.002469	94,724	234	94,607	3,708,132	39.1
37-38	0.002589	94,490	245	94,368	3,613,525	38.2
38-39	0.002713	94,246	256	94,118	3,519,157	37.3
39-40	0.002846	93,990	267	93,856	3,425,039	36.4
40-41	0.003000	93,723	281	93,582	3,331,183	35.5
41-42	0.003190	93,441	298	93,292	3,237,601	34.6
42-43	0.003421	93,143	319	92,984	3,144,309	33.8
43-44	0.003703	92,825	344	92,653	3,051,325	32.9
44-45	0.004034	92,481	373	92,294	2,958,672	32.0
45-46	0.004378	92,108	403	91,906	2,866,378	31.1
46-47	0.004757	91,705	436	91,487	2,774,472	30.3
47-48	0.005233	91,268	478	91,030	2,682,985	29.4
48-49	0.005830	90,791	529	90,526	2,591,955	28.5
49-50	0.006521	90,261	589	89,967	2,501,429	27.7
50-51	0.007253	89,673	650	89,348	2,411,462	26.9
51-52	0.007994	89,022	712	88,667	2,322,114	26.1
52-53	0.008770	88,311	775	87,924	2,233,448	25.3
53-54	0.009598	87,536	840	87,116	2,145,524	24.5
54-55	0.010496	86,696	910	86,241	2,058,408	23.7
55-56	0.011477	85,786	985	85,294	1,972,167	23.0
56-57	0.012533	84,802	1,063	84,270	1,886,873	22.3
57-58	0.013644	83,739	1,143	83,168	1,802,603	21.5
58-59	0.014770	82,596	1,220	81,986	1,719,435	20.8
59-60	0.015894	81,376	1,293	80,730	1,637,449	20.1
60-61	0.017095	80,083	1,369	79,398	1,556,719	19.4

See footnote at end of table.

Table 8. Life table for black males: United States, 2011—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table08.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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
61–62	0.018359	78,714	1,445	77,991	1,477,320	18.8
62–63	0.019580	77,269	1,513	76,512	1,399,329	18.1
63–64	0.020746	75,756	1,572	74,970	1,322,817	17.5
64–65	0.021933	74,184	1,627	73,371	1,247,846	16.8
65–66	0.023245	72,557	1,687	71,714	1,174,476	16.2
66–67	0.024800	70,871	1,758	69,992	1,102,762	15.6
67–68	0.026622	69,113	1,840	68,193	1,032,770	14.9
68–69	0.028632	67,273	1,926	66,310	964,577	14.3
69–70	0.030702	65,347	2,006	64,344	898,266	13.7
70–71	0.032896	63,341	2,084	62,299	833,923	13.2
71–72	0.035212	61,257	2,157	60,179	771,624	12.6
72–73	0.037788	59,100	2,233	57,983	711,445	12.0
73–74	0.040605	56,867	2,309	55,712	653,462	11.5
74–75	0.043482	54,558	2,372	53,372	597,749	11.0
75–76	0.046961	52,185	2,451	50,960	544,378	10.4
76–77	0.050250	49,735	2,499	48,485	493,417	9.9
77–78	0.053784	47,236	2,540	45,965	444,932	9.4
78–79	0.058762	44,695	2,626	43,382	398,967	8.9
79–80	0.064095	42,069	2,696	40,721	355,585	8.5
80–81	0.069788	39,372	2,748	37,999	314,864	8.0
81–82	0.075751	36,625	2,774	35,237	276,866	7.6
82–83	0.084482	33,850	2,860	32,420	241,628	7.1
83–84	0.091636	30,991	2,840	29,571	209,208	6.8
84–85	0.099292	28,151	2,795	26,753	179,637	6.4
85–86	0.107468	25,356	2,725	23,993	152,884	6.0
86–87	0.116179	22,631	2,629	21,316	128,891	5.7
87–88	0.125438	20,001	2,509	18,747	107,575	5.4
88–89	0.135254	17,493	2,366	16,310	88,828	5.1
89–90	0.145632	15,127	2,203	14,025	72,518	4.8
90–91	0.156570	12,924	2,023	11,912	58,493	4.5
91–92	0.168066	10,900	1,832	9,984	46,581	4.3
92–93	0.180107	9,068	1,633	8,252	36,597	4.0
93–94	0.192678	7,435	1,433	6,719	28,346	3.8
94–95	0.205755	6,002	1,235	5,385	21,627	3.6
95–96	0.219310	4,767	1,046	4,245	16,242	3.4
96–97	0.233305	3,722	868	3,288	11,997	3.2
97–98	0.247698	2,854	707	2,500	8,710	3.1
98–99	0.262442	2,147	563	1,865	6,209	2.9
99–100	0.277482	1,583	439	1,364	4,344	2.7
100 and over	1.000000	1,144	1,144	2,981	2,981	2.6

SOURCE: CDC/NCHS, National Vital Statistics System.

Table 9. Life table for black females: United States, 2011Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table09.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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	0.010364	100,000	1,036	99,085	7,816,761	78.2
1-2	0.000584	98,964	58	98,935	7,717,676	78.0
2-3	0.000356	98,906	35	98,888	7,618,741	77.0
3-4	0.000225	98,871	22	98,859	7,519,853	76.1
4-5	0.000193	98,848	19	98,839	7,420,994	75.1
5-6	0.000186	98,829	18	98,820	7,322,155	74.1
6-7	0.000162	98,811	16	98,803	7,223,335	73.1
7-8	0.000143	98,795	14	98,788	7,124,532	72.1
8-9	0.000128	98,781	13	98,774	7,025,744	71.1
9-10	0.000118	98,768	12	98,762	6,926,970	70.1
10-11	0.000115	98,756	11	98,751	6,828,208	69.1
11-12	0.000119	98,745	12	98,739	6,729,457	68.1
12-13	0.000133	98,733	13	98,727	6,630,718	67.2
13-14	0.000158	98,720	16	98,712	6,531,991	66.2
14-15	0.000192	98,705	19	98,695	6,433,279	65.2
15-16	0.000229	98,686	23	98,674	6,334,583	64.2
16-17	0.000268	98,663	26	98,650	6,235,909	63.2
17-18	0.000310	98,637	31	98,621	6,137,259	62.2
18-19	0.000357	98,606	35	98,588	6,038,638	61.2
19-20	0.000407	98,571	40	98,551	5,940,050	60.3
20-21	0.000463	98,531	46	98,508	5,841,499	59.3
21-22	0.000517	98,485	51	98,460	5,742,991	58.3
22-23	0.000565	98,434	56	98,406	5,644,532	57.3
23-24	0.000602	98,378	59	98,349	5,546,125	56.4
24-25	0.000634	98,319	62	98,288	5,447,777	55.4
25-26	0.000667	98,257	66	98,224	5,349,489	54.4
26-27	0.000709	98,191	70	98,156	5,251,265	53.5
27-28	0.000761	98,122	75	98,084	5,153,108	52.5
28-29	0.000826	98,047	81	98,007	5,055,024	51.6
29-30	0.000899	97,966	88	97,922	4,957,017	50.6
30-31	0.000979	97,878	96	97,830	4,859,095	49.6
31-32	0.001061	97,782	104	97,730	4,761,265	48.7
32-33	0.001138	97,678	111	97,623	4,663,535	47.7
33-34	0.001210	97,567	118	97,508	4,565,912	46.8
34-35	0.001284	97,449	125	97,387	4,468,404	45.9
35-36	0.001369	97,324	133	97,257	4,371,017	44.9
36-37	0.001470	97,191	143	97,119	4,273,760	44.0
37-38	0.001583	97,048	154	96,971	4,176,640	43.0
38-39	0.001704	96,894	165	96,812	4,079,669	42.1
39-40	0.001835	96,729	178	96,641	3,982,857	41.2
40-41	0.001973	96,552	191	96,457	3,886,217	40.3
41-42	0.002130	96,361	205	96,259	3,789,760	39.3
42-43	0.002319	96,156	223	96,045	3,693,502	38.4
43-44	0.002550	95,933	245	95,811	3,597,457	37.5
44-45	0.002814	95,688	269	95,554	3,501,646	36.6
45-46	0.003088	95,419	295	95,272	3,406,092	35.7
46-47	0.003371	95,124	321	94,964	3,310,821	34.8
47-48	0.003686	94,804	349	94,629	3,215,856	33.9
48-49	0.004036	94,454	381	94,264	3,121,227	33.0
49-50	0.004415	94,073	415	93,866	3,026,964	32.2
50-51	0.004809	93,658	450	93,433	2,933,098	31.3
51-52	0.005209	93,207	486	92,965	2,839,665	30.5
52-53	0.005622	92,722	521	92,461	2,746,701	29.6
53-54	0.006056	92,201	558	91,921	2,654,239	28.8
54-55	0.006519	91,642	597	91,344	2,562,318	28.0
55-56	0.007024	91,045	639	90,725	2,470,974	27.1
56-57	0.007565	90,405	684	90,063	2,380,249	26.3
57-58	0.008126	89,722	729	89,357	2,290,186	25.5
58-59	0.008691	88,992	773	88,606	2,200,829	24.7
59-60	0.009258	88,219	817	87,811	2,112,223	23.9
60-61	0.009856	87,402	861	86,971	2,024,412	23.2

See footnote at end of table.

Table 9. Life table for black females: United States, 2011—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table09.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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
61–62	0.010503	86,541	909	86,086	1,937,441	22.4
62–63	0.011198	85,632	959	85,152	1,851,355	21.6
63–64	0.011978	84,673	1,014	84,166	1,766,202	20.9
64–65	0.012882	83,659	1,078	83,120	1,682,036	20.1
65–66	0.013962	82,581	1,153	82,005	1,598,916	19.4
66–67	0.015236	81,428	1,241	80,808	1,516,912	18.6
67–68	0.016574	80,187	1,329	79,523	1,436,104	17.9
68–69	0.017876	78,858	1,410	78,154	1,356,581	17.2
69–70	0.019270	77,449	1,492	76,703	1,278,427	16.5
70–71	0.020679	75,956	1,571	75,171	1,201,725	15.8
71–72	0.022133	74,386	1,646	73,562	1,126,554	15.1
72–73	0.023825	72,739	1,733	71,873	1,052,992	14.5
73–74	0.025837	71,006	1,835	70,089	981,119	13.8
74–75	0.028413	69,172	1,965	68,189	911,030	13.2
75–76	0.030984	67,206	2,082	66,165	842,841	12.5
76–77	0.033528	65,124	2,183	64,032	776,676	11.9
77–78	0.036927	62,940	2,324	61,778	712,644	11.3
78–79	0.040687	60,616	2,466	59,383	650,866	10.7
79–80	0.044720	58,150	2,600	56,850	591,482	10.2
80–81	0.049240	55,549	2,735	54,182	534,633	9.6
81–82	0.053959	52,814	2,850	51,389	480,451	9.1
82–83	0.059484	49,964	2,972	48,478	429,062	8.6
83–84	0.066000	46,992	3,102	45,442	380,583	8.1
84–85	0.072495	43,891	3,182	42,300	335,142	7.6
85–86	0.079543	40,709	3,238	39,090	292,842	7.2
86–87	0.087177	37,471	3,267	35,838	253,752	6.8
87–88	0.095424	34,204	3,264	32,572	217,914	6.4
88–89	0.104311	30,940	3,227	29,327	185,342	6.0
89–90	0.113860	27,713	3,155	26,135	156,015	5.6
90–91	0.124091	24,558	3,047	23,034	129,880	5.3
91–92	0.135016	21,510	2,904	20,058	106,846	5.0
92–93	0.146643	18,606	2,728	17,242	86,788	4.7
93–94	0.158973	15,878	2,524	14,615	69,546	4.4
94–95	0.171996	13,353	2,297	12,205	54,931	4.1
95–96	0.185695	11,057	2,053	10,030	42,726	3.9
96–97	0.200045	9,004	1,801	8,103	32,696	3.6
97–98	0.215008	7,202	1,549	6,428	24,593	3.4
98–99	0.230537	5,654	1,303	5,002	18,164	3.2
99–100	0.246575	4,350	1,073	3,814	13,162	3.0
100 and over	1.000000	3,278	3,278	9,348	9,348	2.9

SOURCE: CDC/NCHS, National Vital Statistics System.

Table 10. Life table for the Hispanic population: United States, 2011Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table10.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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	0.005100	100,000	510	99,551	8,156,196	81.6
1-2	0.000369	99,490	37	99,472	8,056,645	81.0
2-3	0.000229	99,453	23	99,442	7,957,173	80.0
3-4	0.000182	99,430	18	99,421	7,857,731	79.0
4-5	0.000159	99,412	16	99,405	7,758,310	78.0
5-6	0.000127	99,397	13	99,390	7,658,905	77.1
6-7	0.000110	99,384	11	99,379	7,559,515	76.1
7-8	0.000097	99,373	10	99,368	7,460,136	75.1
8-9	0.000086	99,363	9	99,359	7,360,768	74.1
9-10	0.000078	99,355	8	99,351	7,261,409	73.1
10-11	0.000074	99,347	7	99,344	7,162,058	72.1
11-12	0.000081	99,340	8	99,336	7,062,714	71.1
12-13	0.000104	99,332	10	99,327	6,963,378	70.1
13-14	0.000146	99,321	15	99,314	6,864,052	69.1
14-15	0.000203	99,307	20	99,297	6,764,738	68.1
15-16	0.000265	99,287	26	99,274	6,665,441	67.1
16-17	0.000326	99,260	32	99,244	6,566,167	66.2
17-18	0.000388	99,228	38	99,209	6,466,923	65.2
18-19	0.000449	99,190	44	99,167	6,367,714	64.2
19-20	0.000507	99,145	50	99,120	6,268,547	63.2
20-21	0.000569	99,095	56	99,067	6,169,427	62.3
21-22	0.000628	99,038	62	99,007	6,070,361	61.3
22-23	0.000667	98,976	66	98,943	5,971,353	60.3
23-24	0.000681	98,910	67	98,876	5,872,410	59.4
24-25	0.000677	98,843	67	98,809	5,773,534	58.4
25-26	0.000665	98,776	66	98,743	5,674,724	57.5
26-27	0.000657	98,710	65	98,678	5,575,981	56.5
27-28	0.000657	98,645	65	98,613	5,477,303	55.5
28-29	0.000668	98,581	66	98,548	5,378,690	54.6
29-30	0.000690	98,515	68	98,481	5,280,143	53.6
30-31	0.000715	98,447	70	98,411	5,181,662	52.6
31-32	0.000740	98,376	73	98,340	5,083,251	51.7
32-33	0.000767	98,303	75	98,266	4,984,911	50.7
33-34	0.000796	98,228	78	98,189	4,886,645	49.7
34-35	0.000830	98,150	81	98,109	4,788,456	48.8
35-36	0.000870	98,068	85	98,026	4,690,347	47.8
36-37	0.000917	97,983	90	97,938	4,592,321	46.9
37-38	0.000971	97,893	95	97,846	4,494,383	45.9
38-39	0.001032	97,798	101	97,748	4,396,537	45.0
39-40	0.001103	97,697	108	97,643	4,298,789	44.0
40-41	0.001180	97,590	115	97,532	4,201,146	43.0
41-42	0.001269	97,474	124	97,413	4,103,614	42.1
42-43	0.001380	97,351	134	97,284	4,006,201	41.2
43-44	0.001518	97,216	148	97,143	3,908,918	40.2
44-45	0.001680	97,069	163	96,987	3,811,775	39.3
45-46	0.001856	96,906	180	96,816	3,714,788	38.3
46-47	0.002044	96,726	198	96,627	3,617,972	37.4
47-48	0.002252	96,528	217	96,419	3,521,345	36.5
48-49	0.002482	96,311	239	96,191	3,424,926	35.6
49-50	0.002735	96,072	263	95,940	3,328,735	34.6
50-51	0.003014	95,809	289	95,665	3,232,794	33.7
51-52	0.003309	95,520	316	95,362	3,137,130	32.8
52-53	0.003605	95,204	343	95,033	3,041,767	31.9
53-54	0.003893	94,861	369	94,676	2,946,735	31.1
54-55	0.004180	94,492	395	94,294	2,852,059	30.2
55-56	0.004489	94,097	422	93,885	2,757,765	29.3
56-57	0.004833	93,674	453	93,448	2,663,879	28.4
57-58	0.005204	93,221	485	92,979	2,570,431	27.6
58-59	0.005601	92,736	519	92,477	2,477,452	26.7
59-60	0.006025	92,217	556	91,939	2,384,976	25.9
60-61	0.006476	91,661	594	91,365	2,293,037	25.0

See footnotes at end of table.

Table 10. Life table for the Hispanic population: United States, 2011—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table10.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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
61–62	0.006970	91,068	635	90,750	2,201,672	24.2
62–63	0.007533	90,433	681	90,092	2,110,922	23.3
63–64	0.008194	89,752	735	89,384	2,020,829	22.5
64–65	0.008970	89,016	798	88,617	1,931,445	21.7
65–66	0.009877	88,218	871	87,782	1,842,828	20.9
66–67	0.010895	87,347	952	86,871	1,755,046	20.1
67–68	0.011987	86,395	1,036	85,877	1,668,175	19.3
68–69	0.013091	85,359	1,117	84,801	1,582,298	18.5
69–70	0.014203	84,242	1,196	83,644	1,497,497	17.8
70–71	0.015382	83,045	1,277	82,407	1,413,854	17.0
71–72	0.016706	81,768	1,366	81,085	1,331,447	16.3
72–73	0.018181	80,402	1,462	79,671	1,250,362	15.6
73–74	0.019863	78,940	1,568	78,156	1,170,691	14.8
74–75	0.021774	77,372	1,685	76,530	1,092,534	14.1
75–76	0.023783	75,688	1,800	74,788	1,016,004	13.4
76–77	0.026018	73,888	1,922	72,926	941,217	12.7
77–78	0.028775	71,965	2,071	70,930	868,290	12.1
78–79	0.032106	69,894	2,244	68,772	797,361	11.4
79–80	0.035915	67,650	2,430	66,435	728,588	10.8
80–81	0.040050	65,221	2,612	63,915	662,153	10.2
81–82	0.044427	62,608	2,782	61,218	598,238	9.6
82–83	0.049353	59,827	2,953	58,351	537,021	9.0
83–84	0.054974	56,874	3,127	55,311	478,670	8.4
84–85	0.061537	53,748	3,307	52,094	423,359	7.9
85–86	0.068820	50,440	3,471	48,705	371,265	7.4
86–87	0.077267	46,969	3,629	45,154	322,560	6.9
87–88	0.086588	43,340	3,753	41,463	277,406	6.4
88–89	0.096833	39,587	3,833	37,670	235,943	6.0
89–90	0.108043	35,754	3,863	33,822	198,272	5.5
90–91	0.120253	31,891	3,835	29,973	164,450	5.2
91–92	0.133484	28,056	3,745	26,183	134,477	4.8
92–93	0.147741	24,311	3,592	22,515	108,293	4.5
93–94	0.163012	20,719	3,377	19,030	85,778	4.1
94–95	0.179264	17,342	3,109	15,787	66,748	3.8
95–96	0.196444	14,233	2,796	12,835	50,961	3.6
96–97	0.214475	11,437	2,453	10,210	38,126	3.3
97–98	0.233255	8,984	2,096	7,936	27,915	3.1
98–99	0.252664	6,888	1,740	6,018	19,979	2.9
99–100	0.272561	5,148	1,403	4,446	13,961	2.7
100 and over	1.000000	3,745	3,745	9,515	9,515	2.5

NOTE: This life table is based on death rates that have been adjusted for race and ethnicity misclassification on death certificates.
SOURCE: CDC/NCHS, National Vital Statistics System.

Table 11. Life table for Hispanic males: United States, 2011Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table11.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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	0.005489	100,000	549	99,518	7,902,526	79.0
1-2	0.000386	99,451	38	99,432	7,803,008	78.5
2-3	0.000253	99,413	25	99,400	7,703,577	77.5
3-4	0.000207	99,388	21	99,377	7,604,176	76.5
4-5	0.000174	99,367	17	99,358	7,504,799	75.5
5-6	0.000140	99,350	14	99,343	7,405,441	74.5
6-7	0.000122	99,336	12	99,330	7,306,098	73.5
7-8	0.000107	99,324	11	99,318	7,206,768	72.6
8-9	0.000092	99,313	9	99,309	7,107,450	71.6
9-10	0.000078	99,304	8	99,300	7,008,141	70.6
10-11	0.000070	99,296	7	99,293	6,908,841	69.6
11-12	0.000077	99,289	8	99,285	6,809,548	68.6
12-13	0.000112	99,282	11	99,276	6,710,263	67.6
13-14	0.000181	99,271	18	99,262	6,610,987	66.6
14-15	0.000275	99,253	27	99,239	6,511,725	65.6
15-16	0.000377	99,225	37	99,207	6,412,486	64.6
16-17	0.000475	99,188	47	99,164	6,313,280	63.6
17-18	0.000574	99,141	57	99,112	6,214,115	62.7
18-19	0.000669	99,084	66	99,051	6,115,003	61.7
19-20	0.000759	99,018	75	98,980	6,015,953	60.8
20-21	0.000852	98,942	84	98,900	5,916,973	59.8
21-22	0.000939	98,858	93	98,812	5,818,072	58.9
22-23	0.000996	98,765	98	98,716	5,719,261	57.9
23-24	0.001014	98,667	100	98,617	5,620,545	57.0
24-25	0.001003	98,567	99	98,517	5,521,928	56.0
25-26	0.000979	98,468	96	98,420	5,423,411	55.1
26-27	0.000962	98,371	95	98,324	5,324,991	54.1
27-28	0.000956	98,277	94	98,230	5,226,667	53.2
28-29	0.000972	98,183	95	98,135	5,128,437	52.2
29-30	0.001004	98,087	99	98,038	5,030,302	51.3
30-31	0.001042	97,989	102	97,938	4,932,264	50.3
31-32	0.001076	97,887	105	97,834	4,834,326	49.4
32-33	0.001108	97,782	108	97,727	4,736,492	48.4
33-34	0.001136	97,673	111	97,618	4,638,764	47.5
34-35	0.001163	97,562	114	97,505	4,541,147	46.5
35-36	0.001196	97,449	117	97,390	4,443,641	45.6
36-37	0.001239	97,332	121	97,272	4,346,251	44.7
37-38	0.001295	97,212	126	97,149	4,248,979	43.7
38-39	0.001365	97,086	133	97,019	4,151,830	42.8
39-40	0.001451	96,953	141	96,883	4,054,811	41.8
40-41	0.001546	96,812	150	96,738	3,957,928	40.9
41-42	0.001655	96,663	160	96,583	3,861,190	39.9
42-43	0.001788	96,503	173	96,417	3,764,607	39.0
43-44	0.001952	96,330	188	96,236	3,668,191	38.1
44-45	0.002144	96,142	206	96,039	3,571,955	37.2
45-46	0.002354	95,936	226	95,823	3,475,916	36.2
46-47	0.002580	95,710	247	95,587	3,380,092	35.3
47-48	0.002836	95,463	271	95,328	3,284,506	34.4
48-49	0.003129	95,193	298	95,044	3,189,178	33.5
49-50	0.003456	94,895	328	94,731	3,094,134	32.6
50-51	0.003819	94,567	361	94,386	2,999,403	31.7
51-52	0.004206	94,206	396	94,007	2,905,017	30.8
52-53	0.004607	93,809	432	93,593	2,811,010	30.0
53-54	0.005014	93,377	468	93,143	2,717,416	29.1
54-55	0.005433	92,909	505	92,657	2,624,273	28.2
55-56	0.005893	92,404	545	92,132	2,531,617	27.4
56-57	0.006400	91,860	588	91,566	2,439,485	26.6
57-58	0.006924	91,272	632	90,956	2,347,919	25.7
58-59	0.007447	90,640	675	90,302	2,256,964	24.9
59-60	0.007971	89,965	717	89,606	2,166,662	24.1
60-61	0.008514	89,248	760	88,868	2,077,055	23.3

See footnotes at end of table.

Table 11. Life table for Hispanic males: United States, 2011—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table11.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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
61–62	0.009109	88,488	806	88,085	1,988,188	22.5
62–63	0.009788	87,682	858	87,253	1,900,103	21.7
63–64	0.010597	86,824	920	86,363	1,812,850	20.9
64–65	0.011557	85,903	993	85,407	1,726,487	20.1
65–66	0.012678	84,911	1,077	84,372	1,641,080	19.3
66–67	0.013931	83,834	1,168	83,250	1,556,707	18.6
67–68	0.015271	82,666	1,262	82,035	1,473,457	17.8
68–69	0.016610	81,404	1,352	80,728	1,391,422	17.1
69–70	0.017936	80,052	1,436	79,334	1,310,694	16.4
70–71	0.019310	78,616	1,518	77,857	1,231,360	15.7
71–72	0.020843	77,098	1,607	76,294	1,153,504	15.0
72–73	0.022572	75,491	1,704	74,639	1,077,209	14.3
73–74	0.024592	73,787	1,815	72,880	1,002,570	13.6
74–75	0.026920	71,972	1,937	71,004	929,690	12.9
75–76	0.029393	70,035	2,059	69,006	858,687	12.3
76–77	0.032032	67,976	2,177	66,888	789,681	11.6
77–78	0.035175	65,799	2,314	64,642	722,793	11.0
78–79	0.038935	63,485	2,472	62,249	658,151	10.4
79–80	0.043354	61,013	2,645	59,690	595,903	9.8
80–81	0.048431	58,368	2,827	56,954	536,212	9.2
81–82	0.053967	55,541	2,997	54,042	479,258	8.6
82–83	0.059937	52,543	3,149	50,969	425,216	8.1
83–84	0.066581	49,394	3,289	47,750	374,247	7.6
84–85	0.074074	46,105	3,415	44,398	326,497	7.1
85–86	0.082924	42,690	3,540	40,920	282,100	6.6
86–87	0.092651	39,150	3,627	37,337	241,180	6.2
87–88	0.103300	35,523	3,670	33,688	203,843	5.7
88–89	0.114906	31,853	3,660	30,023	170,155	5.3
89–90	0.127493	28,193	3,594	26,396	140,132	5.0
90–91	0.141073	24,599	3,470	22,864	113,736	4.6
91–92	0.155643	21,129	3,289	19,484	90,872	4.3
92–93	0.171179	17,840	3,054	16,313	71,388	4.0
93–94	0.187638	14,786	2,774	13,399	55,075	3.7
94–95	0.204958	12,012	2,462	10,781	41,676	3.5
95–96	0.223051	9,550	2,130	8,485	30,895	3.2
96–97	0.241812	7,420	1,794	6,523	22,410	3.0
97–98	0.261113	5,626	1,469	4,891	15,887	2.8
98–99	0.280813	4,157	1,167	3,573	10,996	2.6
99–100	0.300754	2,989	899	2,540	7,423	2.5
100 and over	1.000000	2,090	2,090	4,883	4,883	2.3

NOTE: This life table is based on death rates that have been adjusted for race and ethnicity misclassification on death certificates.
SOURCE: CDC/NCHS, National Vital Statistics System.

Table 12. Life table for Hispanic females: United States, 2011Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table12.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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	0.004770	100,000	477	99,580	8,378,620	83.8
1-2	0.000352	99,523	35	99,506	8,279,039	83.2
2-3	0.000203	99,488	20	99,478	8,179,534	82.2
3-4	0.000156	99,468	15	99,460	8,080,056	81.2
4-5	0.000143	99,452	14	99,445	7,980,596	80.2
5-6	0.000114	99,438	11	99,432	7,881,151	79.3
6-7	0.000097	99,427	10	99,422	7,781,718	78.3
7-8	0.000086	99,417	9	99,413	7,682,297	77.3
8-9	0.000079	99,408	8	99,405	7,582,884	76.3
9-10	0.000077	99,401	8	99,397	7,483,479	75.3
10-11	0.000079	99,393	8	99,389	7,384,082	74.3
11-12	0.000085	99,385	8	99,381	7,284,693	73.3
12-13	0.000096	99,377	10	99,372	7,185,313	72.3
13-14	0.000110	99,367	11	99,362	7,085,941	71.3
14-15	0.000128	99,356	13	99,350	6,986,579	70.3
15-16	0.000147	99,343	15	99,336	6,887,229	69.3
16-17	0.000168	99,329	17	99,320	6,787,893	68.3
17-18	0.000190	99,312	19	99,303	6,688,573	67.3
18-19	0.000211	99,293	21	99,283	6,589,270	66.4
19-20	0.000232	99,272	23	99,261	6,489,987	65.4
20-21	0.000255	99,249	25	99,237	6,390,726	64.4
21-22	0.000278	99,224	28	99,210	6,291,490	63.4
22-23	0.000295	99,196	29	99,182	6,192,279	62.4
23-24	0.000305	99,167	30	99,152	6,093,098	61.4
24-25	0.000308	99,137	31	99,122	5,993,946	60.5
25-26	0.000311	99,106	31	99,091	5,894,824	59.5
26-27	0.000316	99,075	31	99,060	5,795,733	58.5
27-28	0.000322	99,044	32	99,028	5,696,673	57.5
28-29	0.000331	99,012	33	98,996	5,597,645	56.5
29-30	0.000343	98,980	34	98,963	5,498,649	55.6
30-31	0.000355	98,946	35	98,928	5,399,687	54.6
31-32	0.000370	98,910	37	98,892	5,300,759	53.6
32-33	0.000394	98,874	39	98,854	5,201,867	52.6
33-34	0.000428	98,835	42	98,814	5,103,012	51.6
34-35	0.000471	98,793	47	98,769	5,004,199	50.7
35-36	0.000522	98,746	52	98,720	4,905,429	49.7
36-37	0.000577	98,694	57	98,666	4,806,709	48.7
37-38	0.000631	98,638	62	98,606	4,708,043	47.7
38-39	0.000684	98,575	67	98,542	4,609,437	46.8
39-40	0.000738	98,508	73	98,472	4,510,895	45.8
40-41	0.000795	98,435	78	98,396	4,412,424	44.8
41-42	0.000863	98,357	85	98,315	4,314,028	43.9
42-43	0.000950	98,272	93	98,225	4,215,713	42.9
43-44	0.001062	98,179	104	98,127	4,117,488	41.9
44-45	0.001196	98,074	117	98,016	4,019,361	41.0
45-46	0.001341	97,957	131	97,891	3,921,345	40.0
46-47	0.001491	97,826	146	97,753	3,823,454	39.1
47-48	0.001653	97,680	161	97,599	3,725,701	38.1
48-49	0.001825	97,518	178	97,429	3,628,102	37.2
49-50	0.002007	97,340	195	97,243	3,530,672	36.3
50-51	0.002208	97,145	215	97,038	3,433,430	35.3
51-52	0.002420	96,931	235	96,813	3,336,392	34.4
52-53	0.002621	96,696	253	96,569	3,239,578	33.5
53-54	0.002801	96,443	270	96,308	3,143,009	32.6
54-55	0.002969	96,173	286	96,030	3,046,701	31.7
55-56	0.003144	95,887	301	95,736	2,950,671	30.8
56-57	0.003347	95,586	320	95,426	2,854,935	29.9
57-58	0.003590	95,266	342	95,095	2,759,509	29.0
58-59	0.003885	94,924	369	94,739	2,664,415	28.1
59-60	0.004231	94,555	400	94,355	2,569,675	27.2
60-61	0.004614	94,155	434	93,938	2,475,321	26.3

See footnotes at end of table.

Table 12. Life table for Hispanic females: United States, 2011—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table12.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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
61-62	0.005033	93,720	472	93,485	2,381,383	25.4
62-63	0.005511	93,249	514	92,992	2,287,898	24.5
63-64	0.006064	92,735	562	92,454	2,194,907	23.7
64-65	0.006708	92,172	618	91,863	2,102,453	22.8
65-66	0.007463	91,554	683	91,213	2,010,590	22.0
66-67	0.008320	90,871	756	90,493	1,919,377	21.1
67-68	0.009246	90,115	833	89,698	1,828,884	20.3
68-69	0.010196	89,282	910	88,827	1,739,186	19.5
69-70	0.011172	88,371	987	87,878	1,650,359	18.7
70-71	0.012234	87,384	1,069	86,850	1,562,481	17.9
71-72	0.013434	86,315	1,160	85,735	1,475,632	17.1
72-73	0.014755	85,156	1,256	84,527	1,389,896	16.3
73-74	0.016224	83,899	1,361	83,218	1,305,369	15.6
74-75	0.017874	82,538	1,475	81,800	1,222,151	14.8
75-76	0.019591	81,063	1,588	80,269	1,140,350	14.1
76-77	0.021582	79,474	1,715	78,617	1,060,082	13.3
77-78	0.024147	77,759	1,878	76,820	981,465	12.6
78-79	0.027307	75,882	2,072	74,845	904,645	11.9
79-80	0.030865	73,809	2,278	72,670	829,799	11.2
80-81	0.034573	71,531	2,473	70,295	757,129	10.6
81-82	0.038471	69,058	2,657	67,730	686,834	9.9
82-83	0.043060	66,402	2,859	64,972	619,104	9.3
83-84	0.048453	63,542	3,079	62,003	554,132	8.7
84-85	0.055068	60,463	3,330	58,799	492,129	8.1
85-86	0.062244	57,134	3,556	55,356	433,331	7.6
86-87	0.070635	53,578	3,784	51,685	377,975	7.1
87-88	0.079999	49,793	3,983	47,801	326,290	6.6
88-89	0.090403	45,810	4,141	43,739	278,488	6.1
89-90	0.101912	41,668	4,246	39,545	234,749	5.6
90-91	0.114576	37,422	4,288	35,278	195,204	5.2
91-92	0.128435	33,134	4,256	31,006	159,926	4.8
92-93	0.143510	28,879	4,144	26,806	128,919	4.5
93-94	0.159798	24,734	3,952	22,758	102,113	4.1
94-95	0.177273	20,782	3,684	18,940	79,355	3.8
95-96	0.195880	17,098	3,349	15,423	60,415	3.5
96-97	0.215531	13,749	2,963	12,267	44,992	3.3
97-98	0.236109	10,785	2,547	9,512	32,725	3.0
98-99	0.257469	8,239	2,121	7,178	23,213	2.8
99-100	0.279436	6,118	1,709	5,263	16,034	2.6
100 and over	1.000000	4,408	4,408	10,771	10,771	2.4

NOTE: This life table is based on death rates that have been adjusted for race and ethnicity misclassification on death certificates.
SOURCE: CDC/NCHS, National Vital Statistics System.

Table 13. Life table for the non-Hispanic white population: United States, 2011Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table13.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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	0.005067	100,000	507	99,555	7,877,379	78.8
1-2	0.000376	99,493	37	99,475	7,777,824	78.2
2-3	0.000235	99,456	23	99,444	7,678,350	77.2
3-4	0.000199	99,433	20	99,423	7,578,906	76.2
4-5	0.000152	99,413	15	99,405	7,479,483	75.2
5-6	0.000143	99,398	14	99,391	7,380,078	74.2
6-7	0.000129	99,383	13	99,377	7,280,687	73.3
7-8	0.000117	99,371	12	99,365	7,181,310	72.3
8-9	0.000103	99,359	10	99,354	7,081,945	71.3
9-10	0.000089	99,349	9	99,344	6,982,592	70.3
10-11	0.000080	99,340	8	99,336	6,883,247	69.3
11-12	0.000084	99,332	8	99,328	6,783,911	68.3
12-13	0.000111	99,324	11	99,318	6,684,584	67.3
13-14	0.000165	99,313	16	99,304	6,585,266	66.3
14-15	0.000240	99,296	24	99,284	6,485,961	65.3
15-16	0.000319	99,272	32	99,257	6,386,677	64.3
16-17	0.000397	99,241	39	99,221	6,287,420	63.4
17-18	0.000479	99,201	48	99,178	6,188,199	62.4
18-19	0.000564	99,154	56	99,126	6,089,022	61.4
19-20	0.000648	99,098	64	99,066	5,989,896	60.4
20-21	0.000735	99,034	73	98,997	5,890,830	59.5
21-22	0.000816	98,961	81	98,921	5,791,833	58.5
22-23	0.000879	98,880	87	98,837	5,692,913	57.6
23-24	0.000917	98,793	91	98,748	5,594,076	56.6
24-25	0.000938	98,703	93	98,656	5,495,328	55.7
25-26	0.000953	98,610	94	98,563	5,396,672	54.7
26-27	0.000972	98,516	96	98,468	5,298,109	53.8
27-28	0.000995	98,420	98	98,371	5,199,641	52.8
28-29	0.001024	98,322	101	98,272	5,101,269	51.9
29-30	0.001059	98,222	104	98,170	5,002,997	50.9
30-31	0.001101	98,118	108	98,064	4,904,828	50.0
31-32	0.001144	98,010	112	97,954	4,806,764	49.0
32-33	0.001184	97,897	116	97,840	4,708,811	48.1
33-34	0.001218	97,782	119	97,722	4,610,971	47.2
34-35	0.001253	97,662	122	97,601	4,513,249	46.2
35-36	0.001302	97,540	127	97,477	4,415,648	45.3
36-37	0.001368	97,413	133	97,346	4,318,171	44.3
37-38	0.001447	97,280	141	97,209	4,220,825	43.4
38-39	0.001534	97,139	149	97,065	4,123,615	42.5
39-40	0.001632	96,990	158	96,911	4,026,550	41.5
40-41	0.001737	96,832	168	96,748	3,929,640	40.6
41-42	0.001861	96,664	180	96,574	3,832,892	39.7
42-43	0.002019	96,484	195	96,386	3,736,318	38.7
43-44	0.002219	96,289	214	96,182	3,639,932	37.8
44-45	0.002454	96,075	236	95,957	3,543,750	36.9
45-46	0.002701	95,839	259	95,710	3,447,793	36.0
46-47	0.002956	95,581	283	95,439	3,352,083	35.1
47-48	0.003236	95,298	308	95,144	3,256,643	34.2
48-49	0.003543	94,990	337	94,821	3,161,500	33.3
49-50	0.003866	94,653	366	94,470	3,066,678	32.4
50-51	0.004200	94,287	396	94,089	2,972,208	31.5
51-52	0.004537	93,891	426	93,678	2,878,119	30.7
52-53	0.004877	93,465	456	93,237	2,784,441	29.8
53-54	0.005226	93,009	486	92,766	2,691,203	28.9
54-55	0.005599	92,523	518	92,264	2,598,437	28.1
55-56	0.006001	92,005	552	91,729	2,506,173	27.2
56-57	0.006439	91,453	589	91,159	2,414,443	26.4
57-58	0.006916	90,864	628	90,550	2,323,284	25.6
58-59	0.007423	90,236	670	89,901	2,232,734	24.7
59-60	0.007951	89,566	712	89,210	2,142,833	23.9
60-61	0.008501	88,854	755	88,476	2,053,623	23.1

See footnotes at end of table.

Table 13. Life table for the non-Hispanic white population: United States, 2011—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table13.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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
61–62	0.009084	88,099	800	87,698	1,965,147	22.3
62–63	0.009724	87,298	849	86,874	1,877,448	21.5
63–64	0.010466	86,449	905	85,997	1,790,575	20.7
64–65	0.011347	85,545	971	85,059	1,704,578	19.9
65–66	0.012407	84,574	1,049	84,049	1,619,518	19.1
66–67	0.013623	83,525	1,138	82,956	1,535,469	18.4
67–68	0.014946	82,387	1,231	81,771	1,452,513	17.6
68–69	0.016281	81,155	1,321	80,495	1,370,742	16.9
69–70	0.017658	79,834	1,410	79,129	1,290,247	16.2
70–71	0.019221	78,425	1,507	77,671	1,211,118	15.4
71–72	0.021009	76,917	1,616	76,109	1,133,447	14.7
72–73	0.023010	75,301	1,733	74,435	1,057,338	14.0
73–74	0.025233	73,569	1,856	72,640	982,903	13.4
74–75	0.027711	71,712	1,987	70,719	910,263	12.7
75–76	0.030400	69,725	2,120	68,665	839,544	12.0
76–77	0.033433	67,605	2,260	66,475	770,879	11.4
77–78	0.036935	65,345	2,414	64,138	704,404	10.8
78–79	0.040913	62,932	2,575	61,644	640,266	10.2
79–80	0.045423	60,357	2,742	58,986	578,621	9.6
80–81	0.050377	57,615	2,902	56,164	519,635	9.0
81–82	0.055641	54,713	3,044	53,191	463,471	8.5
82–83	0.061616	51,669	3,184	50,077	410,281	7.9
83–84	0.068404	48,485	3,317	46,827	360,204	7.4
84–85	0.076291	45,168	3,446	43,445	313,377	6.9
85–86	0.084996	41,722	3,546	39,949	269,932	6.5
86–87	0.095034	38,176	3,628	36,362	229,983	6.0
87–88	0.106042	34,548	3,664	32,716	193,621	5.6
88–89	0.118062	30,885	3,646	29,061	160,904	5.2
89–90	0.131126	27,238	3,572	25,452	131,843	4.8
90–91	0.145252	23,667	3,438	21,948	106,390	4.5
91–92	0.160444	20,229	3,246	18,606	84,443	4.2
92–93	0.176687	16,983	3,001	15,483	65,836	3.9
93–94	0.193944	13,983	2,712	12,627	50,353	3.6
94–95	0.212157	11,271	2,391	10,075	37,727	3.3
95–96	0.231244	8,880	2,053	7,853	27,651	3.1
96–97	0.251099	6,826	1,714	5,969	19,798	2.9
97–98	0.271595	5,112	1,388	4,418	13,829	2.7
98–99	0.292586	3,724	1,090	3,179	9,411	2.5
99–100	0.313911	2,634	827	2,221	6,232	2.4
100 and over	1.000000	1,807	1,807	4,012	4,012	2.2

NOTE: This life table is based on death rates that have been adjusted for race and ethnicity misclassification on death certificates.
SOURCE: CDC/NCHS, National Vital Statistics System.

Table 14. Life table for non-Hispanic white males: United States, 2011Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table14.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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	0.005524	100,000	552	99,517	7,643,091	76.4
1-2	0.000413	99,448	41	99,427	7,543,575	75.9
2-3	0.000273	99,407	27	99,393	7,444,148	74.9
3-4	0.000229	99,379	23	99,368	7,344,755	73.9
4-5	0.000156	99,357	15	99,349	7,245,387	72.9
5-6	0.000160	99,341	16	99,333	7,146,038	71.9
6-7	0.000146	99,325	14	99,318	7,046,705	70.9
7-8	0.000132	99,311	13	99,304	6,947,387	70.0
8-9	0.000114	99,298	11	99,292	6,848,082	69.0
9-10	0.000095	99,286	9	99,282	6,748,790	68.0
10-11	0.000082	99,277	8	99,273	6,649,509	67.0
11-12	0.000088	99,269	9	99,264	6,550,236	66.0
12-13	0.000125	99,260	12	99,254	6,450,972	65.0
13-14	0.000201	99,248	20	99,238	6,351,718	64.0
14-15	0.000305	99,228	30	99,213	6,252,480	63.0
15-16	0.000414	99,197	41	99,177	6,153,268	62.0
16-17	0.000522	99,156	52	99,130	6,054,091	61.1
17-18	0.000641	99,105	64	99,073	5,954,960	60.1
18-19	0.000773	99,041	77	99,003	5,855,888	59.1
19-20	0.000909	98,964	90	98,920	5,756,885	58.2
20-21	0.001053	98,875	104	98,822	5,657,965	57.2
21-22	0.001185	98,770	117	98,712	5,559,143	56.3
22-23	0.001283	98,653	127	98,590	5,460,431	55.3
23-24	0.001333	98,527	131	98,461	5,361,841	54.4
24-25	0.001349	98,395	133	98,329	5,263,380	53.5
25-26	0.001354	98,263	133	98,196	5,165,051	52.6
26-27	0.001365	98,130	134	98,063	5,066,855	51.6
27-28	0.001379	97,996	135	97,928	4,968,792	50.7
28-29	0.001401	97,860	137	97,792	4,870,864	49.8
29-30	0.001432	97,723	140	97,653	4,773,072	48.8
30-31	0.001467	97,583	143	97,512	4,675,419	47.9
31-32	0.001502	97,440	146	97,367	4,577,907	47.0
32-33	0.001536	97,294	149	97,219	4,480,540	46.1
33-34	0.001570	97,145	153	97,068	4,383,321	45.1
34-35	0.001609	96,992	156	96,914	4,286,252	44.2
35-36	0.001665	96,836	161	96,755	4,189,338	43.3
36-37	0.001742	96,675	168	96,591	4,092,583	42.3
37-38	0.001829	96,506	177	96,418	3,995,992	41.4
38-39	0.001921	96,330	185	96,237	3,899,574	40.5
39-40	0.002023	96,145	195	96,047	3,803,337	39.6
40-41	0.002135	95,950	205	95,848	3,707,290	38.6
41-42	0.002273	95,745	218	95,637	3,611,442	37.7
42-43	0.002459	95,528	235	95,410	3,515,805	36.8
43-44	0.002703	95,293	258	95,164	3,420,395	35.9
44-45	0.002997	95,035	285	94,893	3,325,231	35.0
45-46	0.003309	94,750	313	94,594	3,230,338	34.1
46-47	0.003631	94,437	343	94,266	3,135,744	33.2
47-48	0.003984	94,094	375	93,907	3,041,479	32.3
48-49	0.004366	93,719	409	93,515	2,947,572	31.5
49-50	0.004768	93,310	445	93,088	2,854,058	30.6
50-51	0.005179	92,865	481	92,625	2,760,970	29.7
51-52	0.005596	92,384	517	92,126	2,668,345	28.9
52-53	0.006034	91,867	554	91,590	2,576,220	28.0
53-54	0.006508	91,313	594	91,016	2,484,630	27.2
54-55	0.007026	90,719	637	90,400	2,393,614	26.4
55-56	0.007591	90,081	684	89,739	2,303,214	25.6
56-57	0.008191	89,397	732	89,031	2,213,475	24.8
57-58	0.008812	88,665	781	88,274	2,124,444	24.0
58-59	0.009425	87,884	828	87,470	2,036,169	23.2
59-60	0.010028	87,056	873	86,619	1,948,700	22.4
60-61	0.010645	86,183	917	85,724	1,862,081	21.6

See footnotes at end of table.

Table 14. Life table for non-Hispanic white males: United States, 2011—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table14.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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
61–62	0.011305	85,265	964	84,783	1,776,357	20.8
62–63	0.012031	84,301	1,014	83,794	1,691,574	20.1
63–64	0.012880	83,287	1,073	82,751	1,607,780	19.3
64–65	0.013896	82,214	1,142	81,643	1,525,029	18.5
65–66	0.015110	81,072	1,225	80,459	1,443,386	17.8
66–67	0.016503	79,847	1,318	79,188	1,362,927	17.1
67–68	0.018045	78,529	1,417	77,821	1,283,739	16.3
68–69	0.019623	77,112	1,513	76,355	1,205,919	15.6
69–70	0.021262	75,599	1,607	74,795	1,129,563	14.9
70–71	0.023146	73,991	1,713	73,135	1,054,768	14.3
71–72	0.025278	72,279	1,827	71,365	981,633	13.6
72–73	0.027630	70,452	1,947	69,478	910,268	12.9
73–74	0.030219	68,505	2,070	67,470	840,789	12.3
74–75	0.033126	66,435	2,201	65,335	773,319	11.6
75–76	0.036255	64,234	2,329	63,070	707,985	11.0
76–77	0.039716	61,905	2,459	60,676	644,915	10.4
77–78	0.043757	59,447	2,601	58,146	584,239	9.8
78–79	0.048405	56,845	2,752	55,470	526,093	9.3
79–80	0.053785	54,094	2,909	52,639	470,623	8.7
80–81	0.059839	51,184	3,063	49,653	417,984	8.2
81–82	0.066176	48,122	3,184	46,529	368,331	7.7
82–83	0.073348	44,937	3,296	43,289	321,802	7.2
83–84	0.081302	41,641	3,385	39,948	278,513	6.7
84–85	0.090236	38,256	3,452	36,530	238,565	6.2
85–86	0.100743	34,804	3,506	33,050	202,035	5.8
86–87	0.112235	31,297	3,513	29,541	168,985	5.4
87–88	0.124750	27,785	3,466	26,052	139,444	5.0
88–89	0.138311	24,319	3,364	22,637	113,392	4.7
89–90	0.152931	20,955	3,205	19,353	90,755	4.3
90–91	0.168603	17,750	2,993	16,254	71,402	4.0
91–92	0.185302	14,758	2,735	13,390	55,149	3.7
92–93	0.202980	12,023	2,440	10,803	41,758	3.5
93–94	0.221569	9,583	2,123	8,521	30,955	3.2
94–95	0.240976	7,459	1,798	6,561	22,435	3.0
95–96	0.261085	5,662	1,478	4,923	15,874	2.8
96–97	0.281762	4,184	1,179	3,594	10,951	2.6
97–98	0.302853	3,005	910	2,550	7,357	2.4
98–99	0.324194	2,095	679	1,755	4,807	2.3
99–100	0.345609	1,416	489	1,171	3,052	2.2
100 and over	1.000000	926	926	1,881	1,881	2.0

NOTE: This life table is based on death rates that have been adjusted for race and ethnicity misclassification on death certificates.
SOURCE: CDC/NCHS, National Vital Statistics System.

Table 15. Life table for non-Hispanic white females: United States, 2011Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table15.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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	0.004585	100,000	458	99,596	8,107,151	81.1
1-2	0.000338	99,542	34	99,525	8,007,555	80.4
2-3	0.000195	99,508	19	99,498	7,908,030	79.5
3-4	0.000168	99,489	17	99,480	7,808,532	78.5
4-5	0.000148	99,472	15	99,464	7,709,052	77.5
5-6	0.000124	99,457	12	99,451	7,609,587	76.5
6-7	0.000112	99,445	11	99,439	7,510,136	75.5
7-8	0.000102	99,434	10	99,429	7,410,697	74.5
8-9	0.000092	99,424	9	99,419	7,311,269	73.5
9-10	0.000083	99,414	8	99,410	7,211,850	72.5
10-11	0.000077	99,406	8	99,402	7,112,439	71.5
11-12	0.000080	99,398	8	99,394	7,013,037	70.6
12-13	0.000095	99,391	9	99,386	6,913,643	69.6
13-14	0.000127	99,381	13	99,375	6,814,257	68.6
14-15	0.000170	99,368	17	99,360	6,714,882	67.6
15-16	0.000218	99,352	22	99,341	6,615,522	66.6
16-17	0.000265	99,330	26	99,317	6,516,181	65.6
17-18	0.000307	99,304	31	99,288	6,416,865	64.6
18-19	0.000343	99,273	34	99,256	6,317,576	63.6
19-20	0.000373	99,239	37	99,220	6,218,320	62.7
20-21	0.000403	99,202	40	99,182	6,119,100	61.7
21-22	0.000435	99,162	43	99,140	6,019,918	60.7
22-23	0.000464	99,119	46	99,096	5,920,777	59.7
23-24	0.000490	99,073	49	99,049	5,821,682	58.8
24-25	0.000516	99,024	51	98,999	5,722,633	57.8
25-26	0.000542	98,973	54	98,946	5,623,634	56.8
26-27	0.000570	98,920	56	98,891	5,524,688	55.9
27-28	0.000602	98,863	60	98,833	5,425,796	54.9
28-29	0.000640	98,804	63	98,772	5,326,963	53.9
29-30	0.000681	98,740	67	98,707	5,228,191	52.9
30-31	0.000731	98,673	72	98,637	5,129,484	52.0
31-32	0.000783	98,601	77	98,562	5,030,847	51.0
32-33	0.000828	98,524	82	98,483	4,932,284	50.1
33-34	0.000864	98,442	85	98,400	4,833,801	49.1
34-35	0.000895	98,357	88	98,313	4,735,402	48.1
35-36	0.000935	98,269	92	98,223	4,637,088	47.2
36-37	0.000991	98,177	97	98,129	4,538,865	46.2
37-38	0.001060	98,080	104	98,028	4,440,736	45.3
38-39	0.001143	97,976	112	97,920	4,342,708	44.3
39-40	0.001237	97,864	121	97,804	4,244,788	43.4
40-41	0.001337	97,743	131	97,678	4,146,985	42.4
41-42	0.001446	97,612	141	97,542	4,049,307	41.5
42-43	0.001577	97,471	154	97,394	3,951,765	40.5
43-44	0.001733	97,317	169	97,233	3,854,371	39.6
44-45	0.001912	97,149	186	97,056	3,757,138	38.7
45-46	0.002095	96,963	203	96,861	3,660,082	37.7
46-47	0.002284	96,760	221	96,649	3,563,221	36.8
47-48	0.002495	96,539	241	96,418	3,466,571	35.9
48-49	0.002727	96,298	263	96,167	3,370,153	35.0
49-50	0.002974	96,035	286	95,893	3,273,986	34.1
50-51	0.003234	95,750	310	95,595	3,178,094	33.2
51-52	0.003494	95,440	333	95,273	3,082,499	32.3
52-53	0.003739	95,107	356	94,929	2,987,226	31.4
53-54	0.003971	94,751	376	94,563	2,892,297	30.5
54-55	0.004205	94,375	397	94,176	2,797,734	29.6
55-56	0.004455	93,978	419	93,769	2,703,558	28.8
56-57	0.004742	93,559	444	93,337	2,609,789	27.9
57-58	0.005088	93,116	474	92,879	2,516,452	27.0
58-59	0.005499	92,642	509	92,387	2,423,573	26.2
59-60	0.005960	92,132	549	91,858	2,331,186	25.3
60-61	0.006450	91,583	591	91,288	2,239,328	24.5

See footnotes at end of table.

Table 15. Life table for non-Hispanic white females: United States, 2011—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table15.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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
61–62	0.006967	90,993	634	90,676	2,148,040	23.6
62–63	0.007533	90,359	681	90,018	2,057,365	22.8
63–64	0.008183	89,678	734	89,311	1,967,346	21.9
64–65	0.008949	88,944	796	88,546	1,878,036	21.1
65–66	0.009881	88,148	871	87,713	1,789,489	20.3
66–67	0.010952	87,277	956	86,799	1,701,777	19.5
67–68	0.012094	86,321	1,044	85,799	1,614,978	18.7
68–69	0.013230	85,277	1,128	84,713	1,529,178	17.9
69–70	0.014396	84,149	1,211	83,543	1,444,465	17.2
70–71	0.015704	82,938	1,302	82,286	1,360,922	16.4
71–72	0.017228	81,635	1,406	80,932	1,278,635	15.7
72–73	0.018967	80,229	1,522	79,468	1,197,703	14.9
73–74	0.020926	78,707	1,647	77,884	1,118,235	14.2
74–75	0.023102	77,060	1,780	76,170	1,040,352	13.5
75–76	0.025499	75,280	1,920	74,320	964,182	12.8
76–77	0.028263	73,360	2,073	72,324	889,862	12.1
77–78	0.031432	71,287	2,241	70,166	817,538	11.5
78–79	0.035011	69,046	2,417	67,837	747,372	10.8
79–80	0.039005	66,629	2,599	65,329	679,534	10.2
80–81	0.043303	64,030	2,773	62,644	614,205	9.6
81–82	0.047997	61,257	2,940	59,787	551,561	9.0
82–83	0.053399	58,317	3,114	56,760	491,774	8.4
83–84	0.059703	55,203	3,296	53,555	435,014	7.9
84–85	0.067376	51,907	3,497	50,159	381,459	7.3
85–86	0.075630	48,410	3,661	46,579	331,300	6.8
86–87	0.085201	44,749	3,813	42,842	284,721	6.4
87–88	0.095787	40,936	3,921	38,976	241,879	5.9
88–89	0.107445	37,015	3,977	35,026	202,903	5.5
89–90	0.120224	33,038	3,972	31,052	167,877	5.1
90–91	0.134158	29,066	3,899	27,116	136,825	4.7
91–92	0.149265	25,166	3,756	23,288	109,709	4.4
92–93	0.165545	21,410	3,544	19,638	86,421	4.0
93–94	0.182973	17,866	3,269	16,231	66,783	3.7
94–95	0.201498	14,597	2,941	13,126	50,552	3.5
95–96	0.221041	11,656	2,576	10,367	37,425	3.2
96–97	0.241495	9,079	2,193	7,983	27,058	3.0
97–98	0.262727	6,887	1,809	5,982	19,075	2.8
98–99	0.284575	5,077	1,445	4,355	13,093	2.6
99–100	0.306860	3,632	1,115	3,075	8,738	2.4
100 and over	1.000000	2,518	2,518	5,663	5,663	2.2

NOTE: This life table is based on death rates that have been adjusted for race and ethnicity misclassification on death certificates.
 SOURCE: CDC/NCHS, National Vital Statistics System.

Table 16. Life table for the non-Hispanic black population: United States, 2011Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table16.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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	0.011435	100,000	1,143	99,007	7,494,065	74.9
1-2	0.000659	98,857	65	98,824	7,395,058	74.8
2-3	0.000448	98,791	44	98,769	7,296,234	73.9
3-4	0.000308	98,747	30	98,732	7,197,465	72.9
4-5	0.000262	98,717	26	98,704	7,098,733	71.9
5-6	0.000233	98,691	23	98,679	7,000,029	70.9
6-7	0.000202	98,668	20	98,658	6,901,349	69.9
7-8	0.000176	98,648	17	98,639	6,802,692	69.0
8-9	0.000152	98,630	15	98,623	6,704,052	68.0
9-10	0.000131	98,615	13	98,609	6,605,429	67.0
10-11	0.000118	98,603	12	98,597	6,506,820	66.0
11-12	0.000126	98,591	12	98,585	6,408,224	65.0
12-13	0.000166	98,579	16	98,570	6,309,639	64.0
13-14	0.000243	98,562	24	98,550	6,211,068	63.0
14-15	0.000347	98,538	34	98,521	6,112,518	62.0
15-16	0.000453	98,504	45	98,482	6,013,997	61.1
16-17	0.000557	98,459	55	98,432	5,915,515	60.1
17-18	0.000672	98,405	66	98,372	5,817,083	59.1
18-19	0.000797	98,338	78	98,299	5,718,712	58.2
19-20	0.000930	98,260	91	98,214	5,620,412	57.2
20-21	0.001074	98,169	105	98,116	5,522,198	56.3
21-22	0.001210	98,063	119	98,004	5,424,082	55.3
22-23	0.001315	97,945	129	97,880	5,326,078	54.4
23-24	0.001378	97,816	135	97,748	5,228,198	53.4
24-25	0.001410	97,681	138	97,612	5,130,450	52.5
25-26	0.001433	97,543	140	97,473	5,032,838	51.6
26-27	0.001465	97,403	143	97,332	4,935,364	50.7
27-28	0.001500	97,261	146	97,188	4,838,032	49.7
28-29	0.001541	97,115	150	97,040	4,740,845	48.8
29-30	0.001587	96,965	154	96,888	4,643,805	47.9
30-31	0.001635	96,811	158	96,732	4,546,917	47.0
31-32	0.001684	96,653	163	96,571	4,450,185	46.0
32-33	0.001737	96,490	168	96,406	4,353,613	45.1
33-34	0.001799	96,322	173	96,236	4,257,207	44.2
34-35	0.001871	96,149	180	96,059	4,160,971	43.3
35-36	0.001962	95,969	188	95,875	4,064,912	42.4
36-37	0.002070	95,781	198	95,682	3,969,036	41.4
37-38	0.002189	95,583	209	95,478	3,873,355	40.5
38-39	0.002315	95,373	221	95,263	3,777,877	39.6
39-40	0.002450	95,153	233	95,036	3,682,614	38.7
40-41	0.002600	94,919	247	94,796	3,587,578	37.8
41-42	0.002776	94,673	263	94,541	3,492,781	36.9
42-43	0.002990	94,410	282	94,269	3,398,240	36.0
43-44	0.003250	94,128	306	93,975	3,303,971	35.1
44-45	0.003552	93,822	333	93,655	3,209,997	34.2
45-46	0.003867	93,488	361	93,308	3,116,342	33.3
46-47	0.004203	93,127	391	92,931	3,023,034	32.5
47-48	0.004601	92,735	427	92,522	2,930,103	31.6
48-49	0.005074	92,309	468	92,075	2,837,581	30.7
49-50	0.005604	91,840	515	91,583	2,745,506	29.9
50-51	0.006160	91,326	563	91,044	2,653,923	29.1
51-52	0.006724	90,763	610	90,458	2,562,879	28.2
52-53	0.007322	90,153	660	89,823	2,472,421	27.4
53-54	0.007969	89,493	713	89,136	2,382,598	26.6
54-55	0.008676	88,780	770	88,394	2,293,462	25.8
55-56	0.009449	88,009	832	87,593	2,205,068	25.1
56-57	0.010272	87,178	895	86,730	2,117,474	24.3
57-58	0.011125	86,282	960	85,802	2,030,744	23.5
58-59	0.011973	85,322	1,022	84,812	1,944,942	22.8
59-60	0.012811	84,301	1,080	83,761	1,860,130	22.1
60-61	0.013698	83,221	1,140	82,651	1,776,369	21.3

See footnotes at end of table.

Table 16. Life table for the non-Hispanic black population: United States, 2011—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table16.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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
61–62	0.014638	82,081	1,202	81,480	1,693,719	20.6
62–63	0.015572	80,879	1,259	80,250	1,612,238	19.9
63–64	0.016511	79,620	1,315	78,963	1,531,989	19.2
64–65	0.017512	78,305	1,371	77,620	1,453,026	18.6
65–66	0.018653	76,934	1,435	76,216	1,375,407	17.9
66–67	0.019990	75,499	1,509	74,744	1,299,190	17.2
67–68	0.021490	73,990	1,590	73,195	1,224,446	16.5
68–69	0.023075	72,400	1,671	71,564	1,151,251	15.9
69–70	0.024748	70,729	1,750	69,854	1,079,687	15.3
70–71	0.026481	68,979	1,827	68,065	1,009,833	14.6
71–72	0.028282	67,152	1,899	66,203	941,767	14.0
72–73	0.030320	65,253	1,978	64,264	875,565	13.4
73–74	0.032625	63,274	2,064	62,242	811,301	12.8
74–75	0.035255	61,210	2,158	60,131	749,059	12.2
75–76	0.038116	59,052	2,251	57,927	688,928	11.7
76–77	0.040885	56,801	2,322	55,640	631,001	11.1
77–78	0.044231	54,479	2,410	53,274	575,361	10.6
78–79	0.048353	52,069	2,518	50,810	522,087	10.0
79–80	0.052742	49,552	2,613	48,245	471,276	9.5
80–81	0.057523	46,938	2,700	45,588	423,031	9.0
81–82	0.062523	44,238	2,766	42,855	377,443	8.5
82–83	0.068590	41,472	2,845	40,050	334,588	8.1
83–84	0.075916	38,628	2,932	37,161	294,538	7.6
84–85	0.082576	35,695	2,948	34,221	257,377	7.2
85–86	0.089733	32,748	2,939	31,278	223,155	6.8
86–87	0.097406	29,809	2,904	28,357	191,877	6.4
87–88	0.105615	26,906	2,842	25,485	163,520	6.1
88–89	0.114377	24,064	2,752	22,688	138,035	5.7
89–90	0.123706	21,312	2,636	19,993	115,347	5.4
90–91	0.133611	18,675	2,495	17,428	95,354	5.1
91–92	0.144099	16,180	2,332	15,014	77,926	4.8
92–93	0.155171	13,848	2,149	12,774	62,912	4.5
93–94	0.166822	11,700	1,952	10,724	50,138	4.3
94–95	0.179041	9,748	1,745	8,875	39,414	4.0
95–96	0.191812	8,003	1,535	7,235	30,539	3.8
96–97	0.205111	6,468	1,327	5,804	23,304	3.6
97–98	0.218907	5,141	1,125	4,578	17,500	3.4
98–99	0.233162	4,016	936	3,547	12,921	3.2
99–100	0.247831	3,079	763	2,698	9,374	3.0
100 and over	1.000000	2,316	2,316	6,676	6,676	2.9

NOTE: This life table is based on death rates that have been adjusted for race and ethnicity misclassification on death certificates.
SOURCE: CDC/NCHS, National Vital Statistics System.

Table 17. Life table for non-Hispanic black males: United States, 2011Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table17.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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	0.012502	100,000	1,250	98,927	7,173,820	71.7
1-2	0.000674	98,750	67	98,716	7,074,893	71.6
2-3	0.000494	98,683	49	98,659	6,976,177	70.7
3-4	0.000356	98,634	35	98,617	6,877,518	69.7
4-5	0.000316	98,599	31	98,584	6,778,901	68.8
5-6	0.000258	98,568	25	98,555	6,680,317	67.8
6-7	0.000224	98,543	22	98,532	6,581,762	66.8
7-8	0.000193	98,521	19	98,511	6,483,230	65.8
8-9	0.000161	98,502	16	98,494	6,384,719	64.8
9-10	0.000128	98,486	13	98,480	6,286,225	63.8
10-11	0.000107	98,473	11	98,468	6,187,746	62.8
11-12	0.000118	98,463	12	98,457	6,089,278	61.8
12-13	0.000183	98,451	18	98,442	5,990,821	60.9
13-14	0.000310	98,433	31	98,418	5,892,379	59.9
14-15	0.000481	98,402	47	98,379	5,793,961	58.9
15-16	0.000655	98,355	64	98,323	5,695,583	57.9
16-17	0.000822	98,291	81	98,250	5,597,260	56.9
17-18	0.001004	98,210	99	98,160	5,499,010	56.0
18-19	0.001206	98,111	118	98,052	5,400,849	55.0
19-20	0.001421	97,993	139	97,923	5,302,797	54.1
20-21	0.001654	97,854	162	97,773	5,204,874	53.2
21-22	0.001874	97,692	183	97,600	5,107,101	52.3
22-23	0.002041	97,509	199	97,409	5,009,501	51.4
23-24	0.002134	97,310	208	97,206	4,912,092	50.5
24-25	0.002168	97,102	211	96,997	4,814,886	49.6
25-26	0.002186	96,891	212	96,786	4,717,890	48.7
26-27	0.002212	96,680	214	96,573	4,621,104	47.8
27-28	0.002230	96,466	215	96,358	4,524,531	46.9
28-29	0.002245	96,251	216	96,143	4,428,173	46.0
29-30	0.002259	96,035	217	95,926	4,332,030	45.1
30-31	0.002267	95,818	217	95,709	4,236,104	44.2
31-32	0.002276	95,600	218	95,492	4,140,395	43.3
32-33	0.002300	95,383	219	95,273	4,044,904	42.4
33-34	0.002350	95,163	224	95,052	3,949,631	41.5
34-35	0.002426	94,940	230	94,825	3,854,579	40.6
35-36	0.002527	94,709	239	94,590	3,759,755	39.7
36-37	0.002646	94,470	250	94,345	3,665,165	38.8
37-38	0.002772	94,220	261	94,089	3,570,820	37.9
38-39	0.002896	93,959	272	93,823	3,476,730	37.0
39-40	0.003027	93,687	284	93,545	3,382,908	36.1
40-41	0.003179	93,403	297	93,255	3,289,363	35.2
41-42	0.003369	93,106	314	92,949	3,196,108	34.3
42-43	0.003607	92,793	335	92,625	3,103,159	33.4
43-44	0.003902	92,458	361	92,277	3,010,533	32.6
44-45	0.004251	92,097	392	91,901	2,918,256	31.7
45-46	0.004616	91,706	423	91,494	2,826,355	30.8
46-47	0.005016	91,282	458	91,053	2,734,861	30.0
47-48	0.005513	90,824	501	90,574	2,643,807	29.1
48-49	0.006129	90,324	554	90,047	2,553,233	28.3
49-50	0.006838	89,770	614	89,463	2,463,186	27.4
50-51	0.007586	89,156	676	88,818	2,373,723	26.6
51-52	0.008344	88,480	738	88,111	2,284,905	25.8
52-53	0.009145	87,742	802	87,340	2,196,794	25.0
53-54	0.010011	86,939	870	86,504	2,109,454	24.3
54-55	0.010959	86,069	943	85,597	2,022,950	23.5
55-56	0.011995	85,126	1,021	84,615	1,937,352	22.8
56-57	0.013107	84,105	1,102	83,553	1,852,737	22.0
57-58	0.014274	83,002	1,185	82,410	1,769,184	21.3
58-59	0.015455	81,817	1,264	81,185	1,686,774	20.6
59-60	0.016630	80,553	1,340	79,883	1,605,589	19.9
60-61	0.017888	79,213	1,417	78,505	1,525,705	19.3

See footnotes at end of table.

Table 17. Life table for non-Hispanic black males: United States, 2011—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table17.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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
61–62	0.019207	77,796	1,494	77,049	1,447,201	18.6
62–63	0.020451	76,302	1,560	75,522	1,370,151	18.0
63–64	0.021595	74,742	1,614	73,935	1,294,629	17.3
64–65	0.022717	73,128	1,661	72,297	1,220,695	16.7
65–66	0.023933	71,466	1,710	70,611	1,148,398	16.1
66–67	0.025369	69,756	1,770	68,871	1,077,787	15.5
67–68	0.027104	67,986	1,843	67,065	1,008,915	14.8
68–69	0.029089	66,144	1,924	65,182	941,851	14.2
69–70	0.031191	64,220	2,003	63,218	876,669	13.7
70–71	0.033429	62,216	2,080	61,177	813,451	13.1
71–72	0.035780	60,137	2,152	59,061	752,274	12.5
72–73	0.038397	57,985	2,226	56,872	693,214	12.0
73–74	0.041254	55,759	2,300	54,608	636,342	11.4
74–75	0.044174	53,458	2,361	52,278	581,733	10.9
75–76	0.047704	51,097	2,438	49,878	529,456	10.4
76–77	0.051047	48,659	2,484	47,417	479,578	9.9
77–78	0.054624	46,175	2,522	44,914	432,161	9.4
78–79	0.059628	43,653	2,603	42,352	387,246	8.9
79–80	0.064976	41,050	2,667	39,716	344,895	8.4
80–81	0.070676	38,383	2,713	37,026	305,178	8.0
81–82	0.076651	35,670	2,734	34,303	268,152	7.5
82–83	0.085516	32,936	2,817	31,528	233,849	7.1
83–84	0.092664	30,119	2,791	28,724	202,321	6.7
84–85	0.100307	27,328	2,741	25,958	173,597	6.4
85–86	0.108460	24,587	2,667	23,254	147,639	6.0
86–87	0.117140	21,920	2,568	20,637	124,386	5.7
87–88	0.126357	19,353	2,445	18,130	103,749	5.4
88–89	0.136120	16,907	2,301	15,757	85,619	5.1
89–90	0.146432	14,606	2,139	13,537	69,862	4.8
90–91	0.157294	12,467	1,961	11,487	56,326	4.5
91–92	0.168701	10,506	1,772	9,620	44,839	4.3
92–93	0.180641	8,734	1,578	7,945	35,219	4.0
93–94	0.193099	7,156	1,382	6,465	27,274	3.8
94–95	0.206052	5,774	1,190	5,179	20,809	3.6
95–96	0.219470	4,584	1,006	4,081	15,630	3.4
96–97	0.233321	3,578	835	3,161	11,548	3.2
97–98	0.247561	2,743	679	2,404	8,388	3.1
98–99	0.262144	2,064	541	1,794	5,984	2.9
99–100	0.277019	1,523	422	1,312	4,190	2.8
100 and over	1.000000	1,101	1,101	2,878	2,878	2.6

NOTE: This life table is based on death rates that have been adjusted for race and ethnicity misclassification on death certificates.
SOURCE: CDC/NCHS, National Vital Statistics System.

Table 18. Life table for non-Hispanic black females: United States, 2011Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table18.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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	0.010333	100,000	1,033	99,090	7,785,713	77.9
1-2	0.000616	98,967	61	98,936	7,686,623	77.7
2-3	0.000382	98,906	38	98,887	7,587,687	76.7
3-4	0.000246	98,868	24	98,856	7,488,800	75.7
4-5	0.000197	98,844	19	98,834	7,389,944	74.8
5-6	0.000199	98,824	20	98,814	7,291,110	73.8
6-7	0.000173	98,804	17	98,796	7,192,296	72.8
7-8	0.000153	98,787	15	98,780	7,093,500	71.8
8-9	0.000137	98,772	14	98,766	6,994,720	70.8
9-10	0.000126	98,759	12	98,753	6,895,955	69.8
10-11	0.000121	98,746	12	98,740	6,797,202	68.8
11-12	0.000124	98,734	12	98,728	6,698,462	67.8
12-13	0.000139	98,722	14	98,715	6,599,734	66.9
13-14	0.000165	98,708	16	98,700	6,501,018	65.9
14-15	0.000201	98,692	20	98,682	6,402,318	64.9
15-16	0.000240	98,672	24	98,660	6,303,636	63.9
16-17	0.000280	98,649	28	98,635	6,204,976	62.9
17-18	0.000325	98,621	32	98,605	6,106,341	61.9
18-19	0.000375	98,589	37	98,570	6,007,736	60.9
19-20	0.000428	98,552	42	98,531	5,909,166	60.0
20-21	0.000487	98,510	48	98,486	5,810,635	59.0
21-22	0.000546	98,462	54	98,435	5,712,149	58.0
22-23	0.000597	98,408	59	98,379	5,613,714	57.0
23-24	0.000639	98,349	63	98,318	5,515,336	56.1
24-25	0.000676	98,286	66	98,253	5,417,018	55.1
25-26	0.000714	98,220	70	98,185	5,318,765	54.2
26-27	0.000761	98,150	75	98,112	5,220,580	53.2
27-28	0.000819	98,075	80	98,035	5,122,468	52.2
28-29	0.000891	97,995	87	97,951	5,024,433	51.3
29-30	0.000971	97,908	95	97,860	4,926,481	50.3
30-31	0.001059	97,812	104	97,761	4,828,622	49.4
31-32	0.001147	97,709	112	97,653	4,730,861	48.4
32-33	0.001229	97,597	120	97,537	4,633,208	47.5
33-34	0.001303	97,477	127	97,413	4,535,671	46.5
34-35	0.001376	97,350	134	97,283	4,438,258	45.6
35-36	0.001459	97,216	142	97,145	4,340,975	44.7
36-37	0.001559	97,074	151	96,998	4,243,830	43.7
37-38	0.001673	96,923	162	96,842	4,146,832	42.8
38-39	0.001800	96,760	174	96,673	4,049,990	41.9
39-40	0.001938	96,586	187	96,493	3,953,317	40.9
40-41	0.002084	96,399	201	96,299	3,856,824	40.0
41-42	0.002247	96,198	216	96,090	3,760,526	39.1
42-43	0.002440	95,982	234	95,865	3,664,435	38.2
43-44	0.002669	95,748	256	95,620	3,568,570	37.3
44-45	0.002929	95,492	280	95,353	3,472,950	36.4
45-46	0.003199	95,213	305	95,060	3,377,598	35.5
46-47	0.003480	94,908	330	94,743	3,282,537	34.6
47-48	0.003792	94,578	359	94,399	3,187,794	33.7
48-49	0.004139	94,219	390	94,024	3,093,396	32.8
49-50	0.004515	93,829	424	93,617	2,999,371	32.0
50-51	0.004905	93,406	458	93,176	2,905,754	31.1
51-52	0.005303	92,947	493	92,701	2,812,578	30.3
52-53	0.005726	92,455	529	92,190	2,719,877	29.4
53-54	0.006189	91,925	569	91,641	2,627,687	28.6
54-55	0.006697	91,356	612	91,050	2,536,046	27.8
55-56	0.007255	90,744	658	90,415	2,444,996	26.9
56-57	0.007847	90,086	707	89,733	2,354,581	26.1
57-58	0.008451	89,379	755	89,001	2,264,848	25.3
58-59	0.009041	88,624	801	88,223	2,175,847	24.6
59-60	0.009619	87,823	845	87,400	2,087,623	23.8
60-61	0.010223	86,978	889	86,533	2,000,223	23.0

See footnotes at end of table.

Table 18. Life table for non-Hispanic black females: United States, 2011—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/64_11/Table18.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	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
61–62	0.010881	86,089	937	85,620	1,913,690	22.2
62–63	0.011592	85,152	987	84,658	1,828,070	21.5
63–64	0.012396	84,165	1,043	83,643	1,743,411	20.7
64–65	0.013333	83,122	1,108	82,567	1,659,768	20.0
65–66	0.014454	82,013	1,185	81,421	1,577,201	19.2
66–67	0.015755	80,828	1,273	80,191	1,495,780	18.5
67–68	0.017120	79,554	1,362	78,873	1,415,589	17.8
68–69	0.018445	78,192	1,442	77,471	1,336,716	17.1
69–70	0.019852	76,750	1,524	75,988	1,259,245	16.4
70–71	0.021273	75,226	1,600	74,426	1,183,257	15.7
71–72	0.022737	73,626	1,674	72,789	1,108,830	15.1
72–73	0.024430	71,952	1,758	71,073	1,036,041	14.4
73–74	0.026433	70,194	1,855	69,267	964,968	13.7
74–75	0.028992	68,339	1,981	67,348	895,701	13.1
75–76	0.031542	66,358	2,093	65,311	828,353	12.5
76–77	0.034066	64,264	2,189	63,170	763,042	11.9
77–78	0.037452	62,075	2,325	60,913	699,872	11.3
78–79	0.041213	59,750	2,462	58,519	638,960	10.7
79–80	0.045256	57,288	2,593	55,992	580,440	10.1
80–81	0.049784	54,695	2,723	53,334	524,449	9.6
81–82	0.054510	51,972	2,833	50,556	471,115	9.1
82–83	0.060046	49,139	2,951	47,664	420,559	8.6
83–84	0.066566	46,189	3,075	44,651	372,895	8.1
84–85	0.073065	43,114	3,150	41,539	328,244	7.6
85–86	0.080114	39,964	3,202	38,363	286,705	7.2
86–87	0.087742	36,762	3,226	35,149	248,342	6.8
87–88	0.095977	33,537	3,219	31,927	213,192	6.4
88–89	0.104846	30,318	3,179	28,729	181,265	6.0
89–90	0.114369	27,139	3,104	25,587	152,537	5.6
90–91	0.124566	24,035	2,994	22,538	126,949	5.3
91–92	0.135450	21,041	2,850	19,616	104,411	5.0
92–93	0.147026	18,191	2,675	16,854	84,795	4.7
93–94	0.159295	15,517	2,472	14,281	67,941	4.4
94–95	0.172248	13,045	2,247	11,921	53,660	4.1
95–96	0.185869	10,798	2,007	9,794	41,738	3.9
96–97	0.200131	8,791	1,759	7,911	31,944	3.6
97–98	0.214998	7,032	1,512	6,276	24,032	3.4
98–99	0.230423	5,520	1,272	4,884	17,757	3.2
99–100	0.246352	4,248	1,046	3,725	12,873	3.0
100 and over	1.000000	3,201	3,201	9,148	9,148	2.9

NOTE: This life table is based on death rates that have been adjusted for race and ethnicity misclassification on death certificates.

SOURCE: CDC/NCHS, National Vital Statistics System.

Table 19. Estimated life expectancy at birth, in years, by race, Hispanic origin, and sex: Death-registration states, 1900–1928, and United States, 1929–2011*[For selected years, life table values shown are estimates; see Technical Notes. Beginning in 1970, excludes deaths of nonresidents of the United States; see Technical Notes]*

Area and year	All races and origins			White			Black ¹			Hispanic ²			Non-Hispanic white ²			Non-Hispanic black ²		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
United States ³																		
2011 ⁴	78.7	76.3	81.1	79.0	76.6	81.3	75.3	72.2	78.2	81.6	79.0	83.8	78.8	76.4	81.1	74.9	71.7	77.9
2010 ⁴	78.7	76.2	81.0	78.9	76.5	81.3	75.1	71.8	78.0	81.4	78.7	83.8	78.8	76.4	81.1	74.7	71.4	77.7
2009 ^{4,5}	78.5	76.0	80.9	78.8	76.4	81.2	74.7	71.4	77.7	81.1	78.4	83.5	78.7	76.3	81.1	74.3	70.9	77.4
2008 ^{4,5}	78.2	75.6	80.6	78.5	76.1	80.9	74.3	70.9	77.3	80.8	78.0	83.3	78.4	76.0	80.7	73.9	70.5	77.0
2007 ^{4,5}	78.1	75.5	80.6	78.5	76.0	80.9	73.8	70.3	77.0	80.7	77.8	83.2	78.4	75.9	80.8	73.5	69.9	76.7
2006 ^{4,5}	77.8	75.2	80.3	78.3	75.8	80.7	73.4	69.9	76.7	80.3	77.5	82.9	78.2	75.7	80.6	73.1	69.5	76.4
2005 ^{4,5}	77.6	75.0	80.1	78.0	75.5	80.5	73.0	69.5	76.2	---	---	---	---	---	---	---	---	---
2004 ^{4,5}	77.6	75.0	80.1	78.1	75.5	80.5	72.9	69.4	76.1	---	---	---	---	---	---	---	---	---
2003 ^{4,5}	77.2	74.5	79.7	77.7	75.1	80.2	72.4	68.9	75.7	---	---	---	---	---	---	---	---	---
2002 ^{4,5}	77.0	74.4	79.6	77.5	74.9	80.1	72.2	68.7	75.4	---	---	---	---	---	---	---	---	---
2001 ^{4,5}	77.0	74.3	79.5	77.5	74.9	80.0	72.0	68.5	75.3	---	---	---	---	---	---	---	---	---
2000.....	76.8	74.1	79.3	77.3	74.7	79.9	71.8	68.2	75.1	---	---	---	---	---	---	---	---	---
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 ⁶	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 ⁷	69.9	66.6	73.4	70.8	67.4	74.4	63.7	61.0	66.6	---	---	---	---	---	---	---	---	---
1962 ⁷	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	---	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 19. Estimated life expectancy at birth, in years, by race, Hispanic origin, and sex: Death-registration states, 1900–1928, and United States, 1929–2011—Con.

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

Area and year	All races and origins			White			Black ¹			Hispanic ²			Non-Hispanic white ²			Non-Hispanic black ²		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
United States ³ —Con.																		
1951.....	68.4	65.6	71.4	69.3	66.5	72.4	61.2	59.2	63.4	---	---	---	---	---	---	---	---	---
1950.....	68.2	65.6	71.1	69.1	66.5	72.2	60.8	59.1	62.9	---	---	---	---	---	---	---	---	---
1949.....	68.0	65.2	70.7	68.8	66.2	71.9	60.6	58.9	62.7	---	---	---	---	---	---	---	---	---
1948.....	67.2	64.6	69.9	68.0	65.5	71.0	60.0	58.1	62.5	---	---	---	---	---	---	---	---	---
1947.....	66.8	64.4	69.7	67.6	65.2	70.5	59.7	57.9	61.9	---	---	---	---	---	---	---	---	---
1946.....	66.7	64.4	69.4	67.5	65.1	70.3	59.1	57.5	61.0	---	---	---	---	---	---	---	---	---
1945.....	65.9	63.6	67.9	66.8	64.4	69.5	57.7	56.1	59.6	---	---	---	---	---	---	---	---	---
1944.....	65.2	63.6	66.8	66.2	64.5	68.4	56.6	55.8	57.7	---	---	---	---	---	---	---	---	---
1943.....	63.3	62.4	64.4	64.2	63.2	65.7	55.6	55.4	56.1	---	---	---	---	---	---	---	---	---
1942.....	66.2	64.7	67.9	67.3	65.9	69.4	56.6	55.4	58.2	---	---	---	---	---	---	---	---	---
1941.....	64.8	63.1	66.8	66.2	64.4	68.5	53.8	52.5	55.3	---	---	---	---	---	---	---	---	---
1940.....	62.9	60.8	65.2	64.2	62.1	66.6	53.1	51.5	54.9	---	---	---	---	---	---	---	---	---
1939.....	63.7	62.1	65.4	64.9	63.3	66.6	54.5	53.2	56.0	---	---	---	---	---	---	---	---	---
1938.....	63.5	61.9	65.3	65.0	63.2	66.8	52.9	51.7	54.3	---	---	---	---	---	---	---	---	---
1937.....	60.0	58.0	62.4	61.4	59.3	63.8	50.3	48.3	52.5	---	---	---	---	---	---	---	---	---
1936.....	58.5	56.6	60.6	59.8	58.0	61.9	49.0	47.0	51.4	---	---	---	---	---	---	---	---	---
1935.....	61.7	59.9	63.9	62.9	61.0	65.0	53.1	51.3	55.2	---	---	---	---	---	---	---	---	---
1934.....	61.1	59.3	63.3	62.4	60.5	64.6	51.8	50.2	53.7	---	---	---	---	---	---	---	---	---
1933.....	63.3	61.7	65.1	64.3	62.7	66.3	54.7	53.5	56.0	---	---	---	---	---	---	---	---	---
1932.....	62.1	61.0	63.5	63.2	62.0	64.5	53.7	52.8	54.6	---	---	---	---	---	---	---	---	---
1931.....	61.1	59.4	63.1	62.6	60.8	64.7	50.4	49.5	51.5	---	---	---	---	---	---	---	---	---
1930.....	59.7	58.1	61.6	61.4	59.7	63.5	48.1	47.3	49.2	---	---	---	---	---	---	---	---	---
1929.....	57.1	55.8	58.7	58.6	57.2	60.3	46.7	45.7	47.8	---	---	---	---	---	---	---	---	---
Death-registration states																		
1928.....	56.8	55.6	58.3	58.4	57.0	60.0	46.3	45.6	47.0	---	---	---	---	---	---	---	---	---
1927.....	60.4	59.0	62.1	62.0	60.5	63.9	48.2	47.6	48.9	---	---	---	---	---	---	---	---	---
1926.....	56.7	55.5	58.0	58.2	57.0	59.6	44.6	43.7	45.6	---	---	---	---	---	---	---	---	---
1925.....	59.0	57.6	60.6	60.7	59.3	62.4	45.7	44.9	46.7	---	---	---	---	---	---	---	---	---
1924.....	59.7	58.1	61.5	61.4	59.8	63.4	46.6	45.5	47.8	---	---	---	---	---	---	---	---	---
1923.....	57.2	56.1	58.5	58.3	57.1	59.6	48.3	47.7	48.9	---	---	---	---	---	---	---	---	---
1922.....	59.6	58.4	61.0	60.4	59.1	61.9	52.4	51.8	53.0	---	---	---	---	---	---	---	---	---
1921.....	60.8	60.0	61.8	61.8	60.8	62.9	51.5	51.6	51.3	---	---	---	---	---	---	---	---	---
1920.....	54.1	53.6	54.6	54.9	54.4	55.6	45.3	45.5	45.2	---	---	---	---	---	---	---	---	---
1919.....	54.7	53.5	56.0	55.8	54.5	57.4	44.5	44.5	44.4	---	---	---	---	---	---	---	---	---
1918.....	39.1	36.6	42.2	39.8	37.1	43.2	31.1	29.9	32.5	---	---	---	---	---	---	---	---	---
1917.....	50.9	48.4	54.0	52.0	49.3	55.3	38.8	37.0	40.8	---	---	---	---	---	---	---	---	---
1916.....	51.7	49.6	54.3	52.5	50.2	55.2	41.3	39.6	43.1	---	---	---	---	---	---	---	---	---
1915.....	54.5	52.5	56.8	55.1	53.1	57.5	38.9	37.5	40.5	---	---	---	---	---	---	---	---	---
1914.....	54.2	52.0	56.8	54.9	52.7	57.5	38.9	37.1	40.8	---	---	---	---	---	---	---	---	---
1913.....	52.5	50.3	55.0	53.0	50.8	55.7	38.4	36.7	40.3	---	---	---	---	---	---	---	---	---
1912.....	53.5	51.5	55.9	53.9	51.9	56.2	37.9	35.9	40.0	---	---	---	---	---	---	---	---	---
1911.....	52.6	50.9	54.4	53.0	51.3	54.9	36.4	34.6	38.2	---	---	---	---	---	---	---	---	---
1910.....	50.0	48.4	51.8	50.3	48.6	52.0	35.6	33.8	37.5	---	---	---	---	---	---	---	---	---
1909.....	52.1	50.5	53.8	52.5	50.9	54.2	35.7	34.2	37.3	---	---	---	---	---	---	---	---	---
1908.....	51.1	49.5	52.8	51.5	49.9	53.3	34.9	33.8	36.0	---	---	---	---	---	---	---	---	---
1907.....	47.6	45.6	49.9	48.1	46.0	50.4	32.5	31.1	34.0	---	---	---	---	---	---	---	---	---
1906.....	48.7	46.9	50.8	49.3	47.3	51.4	32.9	31.8	33.9	---	---	---	---	---	---	---	---	---
1905.....	48.7	47.3	50.2	49.1	47.6	50.6	31.3	29.6	33.1	---	---	---	---	---	---	---	---	---
1904.....	47.6	46.2	49.1	48.0	46.6	49.5	30.8	29.1	32.7	---	---	---	---	---	---	---	---	---
1903.....	50.5	49.1	52.0	50.9	49.5	52.5	33.1	31.7	34.6	---	---	---	---	---	---	---	---	---
1902.....	51.5	49.8	53.4	51.9	50.2	53.8	34.6	32.9	36.4	---	---	---	---	---	---	---	---	---
1901.....	49.1	47.6	50.6	49.4	48.0	51.0	33.7	32.2	35.3	---	---	---	---	---	---	---	---	---
1900.....	47.3	46.3	48.3	47.6	46.6	48.7	33.0	32.5	33.5	---	---	---	---	---	---	---	---	---

--- Data not available.

¹Prior to 1970, data for the black population are not available. Data shown for 1900–1969 are for the nonwhite population. See Technical Notes.

²Life tables by Hispanic origin are based on death rates that have been adjusted for race and ethnicity misclassification on death certificates.

³Alaska included in 1959 and Hawaii included in 1960.

⁴Life expectancies for 2001–2011 were calculated using a revised methodology described in the Technical Notes.

⁵Life expectancies for 2001–2009 have been re-estimated using new intercensal population estimates and may differ from data previously published; see Technical Notes.

⁶Deaths based on a 50% sample.

⁷Figures by race exclude data for residents of New Jersey; see Technical Notes.

SOURCE: CDC/NCHS, National Vital Statistics System.

Table 20. Survivorship, by age, race, and sex: Death registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2011

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and the District of Columbia; 1919–1921, 34 states and the District of Columbia. Beginning in 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											
	2011	1999–2001	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
All races												
0.....	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1.....	99,394	99,305	99,064	98,740	97,998	97,407	97,024	95,290	94,028	92,515	88,538	87,552
5.....	99,289	99,176	98,877	98,495	97,668	96,998	96,482	94,220	91,978	83,389	83,887	81,804
10.....	99,230	99,097	98,766	98,347	97,460	96,765	96,177	93,710	91,106	88,129	82,458	80,052
15.....	99,159	98,998	98,635	98,196	97,261	96,551	95,885	93,235	90,385	87,144	81,506	78,963
20.....	98,917	98,664	98,215	97,741	96,716	96,111	95,366	92,435	89,089	85,441	80,074	77,239
25.....	98,493	98,203	97,671	97,110	96,000	95,517	94,676	91,335	87,269	83,146	78,046	74,768
30.....	98,017	97,751	97,070	96,477	95,307	94,905	93,919	90,078	85,302	80,642	75,779	72,043
35.....	97,465	97,201	96,322	95,808	94,482	94,144	92,976	88,573	83,118	77,961	73,127	69,078
40.....	96,784	96,422	95,373	94,926	93,322	93,064	91,648	86,650	80,557	75,114	70,042	65,890
45.....	95,816	95,274	94,154	93,599	91,587	91,378	89,634	84,069	77,343	72,036	66,561	62,436
50.....	94,281	93,601	92,370	91,526	88,972	88,756	86,591	80,487	73,321	68,429	62,460	58,514
55.....	91,975	91,232	89,658	88,348	85,110	84,711	82,176	75,557	68,182	63,947	57,555	53,852
60.....	88,746	87,642	85,537	83,726	79,529	79,067	75,921	68,924	61,563	58,079	51,138	47,946
65.....	84,368	82,330	79,519	77,107	71,933	71,147	67,555	60,366	53,195	50,560	43,194	40,911
70.....	78,184	74,891	71,357	68,248	61,984	60,857	56,987	49,655	42,768	41,090	33,816	32,390
75.....	69,513	64,644	60,449	56,799	49,705	48,170	43,903	36,735	30,789	29,729	23,552	22,960
80.....	57,493	50,885	47,084	43,180	35,285	33,576	29,313	22,883	18,580	18,298	13,712	13,529
85.....	41,733	34,515	31,770	27,960	20,908	18,542	15,785	11,073	8,542	8,683	6,001	6,053
90.....	23,798	18,496	17,046	14,154	9,297	7,080	6,144	3,796	2,998	2,941	1,868	1,867
95.....	9,097	6,879	6,282	5,043	2,786	1,524	1,511	857	636	646	361	344
100.....	1,928	1,479	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	100,000
1.....	99,342	99,239	98,961	98,607	97,755	97,087	96,661	94,762	93,440	91,745	87,505	86,426
5.....	99,226	99,095	98,754	98,333	97,395	96,643	96,077	93,624	91,294	88,505	82,718	80,548
10.....	99,160	99,008	98,627	98,160	97,151	96,375	95,726	93,054	90,346	87,184	81,249	78,775
15.....	99,077	98,890	98,464	97,972	96,904	96,107	95,366	92,508	89,561	86,156	80,261	77,681
20.....	98,739	98,426	97,854	97,316	96,126	95,491	94,695	91,617	88,220	84,440	78,792	75,984
25.....	98,116	97,747	97,049	96,361	95,040	94,631	93,791	90,385	86,359	82,252	76,675	73,472
30.....	97,449	97,114	96,166	95,430	94,072	93,826	92,861	89,009	84,346	79,890	74,378	70,747
35.....	96,722	96,385	95,091	94,501	92,997	92,889	91,760	87,371	82,075	77,514	71,614	67,752
40.....	95,866	95,389	93,761	93,345	91,541	91,572	90,207	85,246	79,357	74,432	68,297	64,447
45.....	94,691	93,940	92,139	91,649	89,369	89,492	87,819	82,336	75,882	71,244	64,518	60,849
50.....	92,831	91,818	89,865	89,007	86,070	86,199	84,158	78,254	71,518	67,553	60,118	56,736
55.....	90,009	88,897	86,492	84,936	81,139	81,039	78,781	72,627	65,981	62,965	54,970	51,939
60.....	85,999	84,551	81,378	79,012	73,958	73,887	71,246	65,142	58,909	56,917	48,343	45,895
65.....	80,723	78,241	73,971	70,646	64,318	64,177	61,566	55,776	50,154	49,218	40,264	38,736
70.....	73,558	69,491	64,107	59,681	52,296	52,244	49,950	44,588	39,516	39,668	31,023	30,217
75.....	63,804	57,688	51,385	46,272	38,797	38,950	36,756	31,864	27,718	28,316	21,213	21,076
80.....	50,846	42,769	36,749	31,810	24,921	25,300	25,237	18,995	16,172	17,128	11,942	12,084
85.....	34,665	26,527	21,815	18,020	13,168	12,845	11,750	8,693	7,107	7,920	5,059	5,179
90.....	17,846	12,473	9,878	7,732	5,107	4,609	4,197	2,787	2,283	2,527	1,502	1,508
95.....	5,812	3,855	2,927	2,279	1,326	970	955	586	451	556	289	262
100.....	987	645	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	100,000
1.....	99,448	99,375	99,172	98,880	98,254	97,744	97,406	95,848	94,728	93,383	89,623	88,733
5.....	99,356	99,261	99,006	98,666	97,955	97,371	96,908	94,848	92,789	90,380	85,117	83,119
10.....	99,302	99,190	98,911	98,544	97,784	97,173	96,652	94,402	92,008	89,186	83,728	81,390
15.....	99,246	99,111	98,814	98,432	97,636	97,016	96,431	94,000	91,364	88,247	82,813	80,307
20.....	99,106	98,915	98,597	98,184	97,331	96,756	96,066	93,293	90,116	86,556	81,418	78,555
25.....	98,888	98,682	98,325	97,883	96,966	96,418	95,583	92,322	88,328	84,135	79,481	76,119
30.....	98,612	98,418	98,013	97,551	96,544	95,996	94,933	91,182	86,398	81,463	77,247	73,394
35.....	98,237	98,052	97,596	97,140	95,966	95,409	94,206	89,810	84,304	78,713	74,719	70,463
40.....	97,733	97,493	97,033	96,531	95,097	94,560	93,101	88,092	81,927	75,907	71,894	67,407
45.....	96,973	96,648	96,222	95,570	93,793	93,265	91,469	85,856	79,041	72,954	68,755	64,121

See footnotes at end of table.

Table 20. Survivorship, by age, race, and sex: Death registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2011—Con.

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and the District of Columbia; 1919–1921, 34 states and the District of Columbia. Beginning in 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_x											
	2011	1999–2001	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
Female—Con.												
50.	95,764	95,425	94,932	94,060	91,852	91,327	89,075	82,828	75,456	69,452	65,001	60,415
55.	93,972	93,609	92,881	91,760	89,066	88,451	85,694	78,708	70,832	65,099	60,392	55,908
60.	91,515	90,767	89,742	88,414	85,139	84,430	80,890	73,093	64,795	59,438	54,226	50,155
65.	88,027	86,433	85,075	83,520	79,698	78,462	74,119	65,523	56,924	52,126	46,438	43,246
70.	82,807	80,219	78,522	76,720	71,955	70,100	64,873	55,449	46,774	42,741	36,916	34,721
75.	75,184	71,311	69,287	67,186	61,107	58,394	52,111	42,425	34,600	31,344	26,155	24,994
80.	64,010	58,455	56,986	54,372	46,445	43,063	36,486	27,524	21,578	19,613	15,682	15,129
85.	48,470	41,830	41,115	37,772	29,538	25,269	20,668	13,972	10,322	9,515	7,051	7,063
90.	29,226	23,936	23,666	20,578	14,160	10,056	8,548	5,044	3,656	3,314	2,269	2,306
95.	11,914	9,560	9,346	7,862	4,565	2,193	2,207	1,195	807	728	441	452
100.	2,672	2,183	2,251	1,927	954	264	298	179	82	72	49	43
White												
0.	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1.	99,489	99,429	99,233	98,898	98,224	97,714	97,278	95,685	94,392	92,780	88,709	87,762
5.	99,391	99,313	99,068	98,675	97,930	97,353	96,790	94,713	92,466	89,771	84,147	82,071
10.	99,334	99,239	98,966	98,536	97,733	97,131	96,502	94,228	91,627	88,536	82,734	80,371
15.	99,267	99,146	98,843	98,391	97,546	96,928	96,228	93,792	90,982	87,633	81,816	79,344
20.	99,034	98,826	98,455	97,939	97,036	96,508	95,763	93,117	89,933	86,159	80,407	77,998
25.	98,626	98,406	97,972	97,340	96,406	95,965	95,169	92,213	88,454	84,106	78,392	75,202
30.	98,165	98,000	97,451	96,774	95,824	95,440	94,536	91,185	86,836	81,787	76,167	72,317
35.	97,627	97,506	96,810	96,192	95,152	94,798	93,750	89,941	85,004	79,277	73,568	69,522
40.	96,967	96,799	96,000	95,427	94,190	93,870	92,616	88,318	82,803	76,642	70,525	66,082
45.	96,024	95,759	94,932	94,257	92,681	92,374	90,847	86,069	79,989	73,705	67,090	62,920
50.	94,528	94,242	93,326	92,384	90,306	89,958	88,110	82,833	76,340	70,250	62,994	58,647
55.	92,292	92,050	90,833	89,427	86,688	86,173	84,027	78,218	71,551	65,875	58,163	54,450
60.	89,174	88,655	86,943	85,031	81,323	80,811	78,066	71,785	65,100	60,013	51,822	48,288
65.	84,915	83,518	81,123	78,585	73,889	73,102	69,850	63,201	56,655	52,411	43,904	41,505
70.	78,803	76,219	73,106	69,801	63,991	62,834	59,189	52,165	45,841	42,736	34,484	32,902
75.	70,134	66,022	62,175	58,299	51,586	49,895	45,688	38,610	33,406	31,086	24,151	23,356
80.	58,030	52,160	48,583	44,409	36,659	34,697	30,438	23,976	20,260	19,149	14,100	13,794
85.	42,075	35,461	32,850	28,768	21,578	19,017	16,239	11,483	9,325	9,078	6,178	6,192
90.	23,895	18,964	17,571	14,471	9,433	7,149	6,201	3,819	3,066	2,991	1,918	1,919
95.	8,973	6,971	6,416	5,067	2,743	1,521	1,500	801	636	643	364	355
100.	1,826	1,454	1,423	1,105	487	183	196	98	58	62	38	31
White male												
0.	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1.	99,447	99,373	99,138	98,769	97,994	97,408	96,931	95,188	93,768	91,975	87,674	86,655
5.	99,338	99,243	98,956	98,519	97,671	97,015	96,403	94,150	91,738	88,842	82,972	80,864
10.	99,275	99,163	98,839	98,357	97,441	96,758	96,069	93,601	90,810	87,530	81,519	79,109
15.	99,195	99,052	98,686	98,176	97,208	96,503	95,728	93,089	90,074	86,546	80,549	78,037
20.	98,875	98,616	98,134	97,525	96,480	95,908	95,104	92,293	88,904	84,997	79,116	76,376
25.	98,285	98,003	97,430	96,616	95,524	95,106	94,294	91,241	87,371	83,061	77,047	73,907
30.	97,644	97,436	96,662	95,783	94,716	94,401	93,489	90,092	85,707	80,888	74,810	71,219
35.	96,936	96,774	95,731	94,980	93,843	93,589	92,543	88,713	83,812	78,441	72,108	68,245
40.	96,100	95,859	94,588	93,984	92,631	92,427	91,173	86,880	81,457	75,733	68,848	64,954
45.	94,950	94,530	93,167	92,494	90,725	90,533	89,002	84,285	78,345	72,696	65,115	61,369
50.	93,120	92,588	91,124	90,105	87,690	87,424	85,601	80,521	74,288	69,107	60,741	57,274
55.	90,375	89,883	88,022	86,303	83,001	82,463	80,496	75,156	68,981	64,574	55,622	52,491
60.	86,495	85,773	83,182	80,625	75,969	75,485	73,172	67,787	61,933	58,498	48,987	46,452
65.	81,380	79,657	75,962	72,393	66,343	65,834	63,541	58,305	52,964	50,663	40,862	39,245
70.	74,318	71,039	66,181	61,384	54,138	53,825	51,735	46,739	41,880	40,873	31,527	30,640
75.	64,578	59,245	53,308	47,712	40,324	40,207	38,104	33,404	29,471	29,205	21,585	21,387
80.	51,513	44,121	38,245	32,788	25,885	25,993	24,005	19,860	17,221	17,655	12,160	12,266
85.	35,102	27,425	22,720	18,538	13,527	13,065	12,015	9,013	7,572	8,154	5,145	5,252
90.	17,970	12,840	10,214	7,891	5,125	4,600	4,209	2,812	2,356	2,568	1,523	1,523
95.	5,723	3,899	2,988	2,279	1,274	956	942	552	461	556	289	263
100.	925	625	523	404	189	115	118	65	40	61	31	22

See footnotes at end of table.

Table 20. Survivorship, by age, race, and sex: Death registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2011—Con.

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and the District of Columbia; 1919–1921, 34 states and the District of Columbia. Beginning in 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											
	2011	1999–2001	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
White female												
0.....	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1.....	99,534	99,488	99,333	99,035	98,468	98,036	97,645	96,211	95,037	93,608	89,774	88,939
5.....	99,447	99,385	99,187	98,841	98,203	97,709	97,199	95,309	93,216	90,721	85,349	83,426
10.....	99,397	99,319	99,099	98,725	98,042	97,525	96,960	94,890	92,466	89,564	83,979	81,723
15.....	99,343	99,245	99,007	98,618	97,902	97,375	96,756	94,534	91,894	88,712	83,093	80,680
20.....	99,203	99,049	98,795	98,374	97,618	97,135	96,454	93,984	90,939	87,281	81,750	78,978
25.....	98,987	98,835	98,547	98,093	97,299	96,844	96,072	93,228	89,524	85,163	79,865	76,588
30.....	98,717	98,602	98,283	97,802	96,945	96,499	95,605	92,320	87,972	82,740	77,676	73,887
35.....	98,358	98,282	97,939	97,445	96,474	96,026	94,977	91,211	86,248	80,206	75,200	70,971
40.....	97,879	97,790	97,472	96,913	95,762	95,326	94,080	89,805	84,256	77,624	72,425	67,935
45.....	97,152	97,049	96,768	96,065	94,649	94,228	92,725	87,920	81,780	74,871	69,341	64,677
50.....	95,996	95,962	95,608	94,710	92,924	92,522	90,685	85,267	78,572	71,547	65,629	61,005
55.....	94,278	94,293	93,730	92,594	90,383	89,967	87,699	81,520	74,321	67,323	61,053	56,509
60.....	91,929	91,615	90,789	89,451	86,726	86,339	83,279	76,200	68,462	61,704	54,900	50,752
65.....	88,535	87,449	86,339	84,764	81,579	80,739	76,773	68,701	60,499	54,299	47,086	43,806
70.....	83,371	81,400	79,984	78,139	74,101	72,507	67,545	58,363	49,932	44,638	37,482	35,206
75.....	75,747	72,595	70,834	68,712	63,290	60,461	54,397	44,685	37,024	32,777	26,569	25,362
80.....	64,517	59,721	58,454	55,770	48,182	44,676	38,026	28,882	23,053	20,492	15,929	15,349
85.....	48,829	42,848	42,274	38,774	30,490	26,046	21,348	14,487	10,937	9,909	7,152	7,149
90.....	29,346	24,491	24,270	20,996	14,406	10,219	8,662	5,061	3,719	3,372	2,291	2,322
95.....	11,777	9,680	9,495	7,900	4,526	2,203	2,200	1,109	797	721	434	448
100.....	2,544	2,147	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	100,000
1.....	98,850	98,578	98,187	97,885	96,731	95,732	95,407	92,584	92,035	90,379	79,784	76,609
5.....	98,698	98,382	97,884	97,522	96,207	95,051	94,482	90,983	89,303	86,174	70,691	66,222
10.....	98,616	98,271	97,720	97,322	95,928	94,745	94,060	90,339	88,258	84,690	68,437	63,410
15.....	98,525	98,139	97,539	97,134	95,661	94,460	93,646	89,591	87,156	83,180	66,410	61,060
20.....	98,206	97,701	96,925	96,652	94,887	93,880	92,738	87,839	84,386	79,641	63,165	57,931
25.....	97,616	96,946	95,972	95,804	93,513	92,925	91,321	85,210	80,320	74,973	59,608	54,512
30.....	96,934	96,143	94,809	94,680	91,934	91,699	89,584	82,194	75,962	70,492	56,112	51,287
35.....	96,148	95,164	93,260	93,288	89,977	90,046	87,402	78,683	71,141	65,865	52,125	48,007
40.....	95,159	93,809	91,239	91,439	87,304	87,766	84,478	74,466	65,974	61,244	47,866	44,518
45.....	93,796	91,770	88,689	88,834	83,700	84,501	80,507	69,284	59,827	56,442	43,054	40,628
50.....	91,712	88,761	85,285	85,044	78,938	80,172	74,976	62,702	53,141	51,422	37,800	36,103
55.....	88,487	84,657	80,635	79,816	72,826	73,893	67,660	54,846	45,558	45,803	32,233	31,404
60.....	83,864	79,007	74,335	72,913	65,250	65,795	58,593	46,318	37,654	39,418	26,046	25,698
65.....	77,760	71,704	66,154	64,391	56,102	56,038	48,649	37,838	30,015	32,738	19,806	20,474
70.....	69,915	62,349	56,192	54,617	45,785	45,434	38,616	29,654	22,505	25,585	14,021	14,960
75.....	60,041	50,987	44,872	43,274	34,262	34,531	28,968	21,798	15,546	18,011	9,139	9,956
80.....	47,885	37,964	33,149	31,711	23,710	24,815	20,003	14,408	9,589	11,376	5,158	5,750
85.....	33,579	24,677	21,352	19,939	15,044	15,337	12,433	8,326	4,900	5,794	2,414	2,782
90.....	19,251	13,204	11,646	10,713	8,087	7,195	6,394	4,077	2,044	2,317	913	1,054
95.....	8,241	5,368	4,729	4,463	3,252	1,777	2,010	1,557	638	689	324	296
100.....	2,355	1,491	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	100,000
1.....	98,740	98,437	98,023	97,703	96,394	95,301	94,911	91,772	91,268	89,499	78,065	74,674
5.....	98,570	98,219	97,688	97,300	95,826	94,570	93,921	90,082	88,412	85,195	68,589	64,385
10.....	98,481	98,093	97,501	97,061	95,497	94,234	93,453	89,393	87,311	83,768	66,377	61,730
15.....	98,370	97,930	97,268	96,826	95,161	93,874	92,965	88,610	86,152	82,332	64,478	59,667
20.....	97,894	97,275	96,301	96,132	94,053	93,108	91,941	86,968	83,621	79,057	61,426	56,733
25.....	96,987	96,103	94,809	94,827	91,904	91,825	90,285	84,227	79,516	74,540	57,736	53,285
30.....	95,986	94,940	93,070	93,125	89,584	90,270	88,327	80,979	75,083	70,344	54,073	49,867
35.....	94,948	93,641	90,827	91,080	86,885	88,331	85,940	77,221	70,049	65,873	49,865	46,541
40.....	93,723	91,945	87,948	88,490	83,441	85,744	82,832	72,780	64,710	61,353	45,414	42,989
45.....	92,108	89,439	84,467	84,997	78,976	82,075	78,686	67,346	58,432	56,589	40,563	39,230

See footnotes at end of table.

Table 20. Survivorship, by age, race, and sex: Death registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2011—Con.

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and the District of Columbia; 1919–1921, 34 states and the District of Columbia. Beginning in 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											
	2011	1999–2001	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
Black male¹—Con.												
50.	89,673	85,653	79,984	80,065	73,282	77,239	72,891	60,495	51,748	51,880	35,427	34,766
55.	85,786	80,529	74,095	73,413	66,101	70,351	65,122	52,426	44,436	46,581	29,754	29,987
60.	80,083	73,588	66,334	64,980	57,457	61,669	55,535	43,833	36,790	40,506	23,750	24,194
65.	72,557	64,980	56,795	55,061	47,485	51,392	45,198	35,371	29,314	34,042	17,806	19,015
70.	63,341	54,253	45,690	44,213	36,925	39,914	35,018	27,236	21,741	26,923	12,295	13,829
75.	52,185	41,693	33,755	32,717	25,921	29,064	25,472	19,456	14,419	18,854	7,494	8,892
80.	39,372	28,497	22,549	22,017	16,560	19,994	16,904	12,186	8,239	11,615	3,894	4,831
85.	25,356	16,532	12,709	12,383	9,648	11,620	9,898	6,444	3,660	5,605	1,747	2,030
90.	12,924	7,625	5,972	5,708	4,696	5,174	4,642	2,836	1,246	2,040	595	634
95.	4,767	2,565	1,971	2,009	1,721	1,240	1,342	961	307	552	189	137
100.	1,144	563	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	100,000
1.	98,964	98,723	98,356	98,073	97,076	96,172	95,913	93,416	92,796	91,251	81,493	78,525
5.	98,829	98,550	98,087	97,751	96,598	95,543	95,055	91,906	90,185	87,149	72,768	68,056
10.	98,756	98,456	97,946	97,590	96,369	95,265	94,679	91,308	89,201	85,607	70,508	65,111
15.	98,686	98,354	97,818	97,450	96,172	95,057	94,343	90,594	88,088	83,954	68,218	62,384
20.	98,531	98,141	97,566	97,180	95,729	94,660	93,544	88,736	85,078	80,154	64,764	59,053
25.	98,257	97,785	97,140	96,754	95,035	94,005	92,336	86,198	81,067	75,359	61,430	55,795
30.	97,878	97,314	96,514	96,150	94,114	93,070	90,799	83,384	76,816	70,633	58,281	52,773
35.	97,324	96,632	95,599	95,338	92,807	91,670	88,805	80,092	72,192	65,857	54,595	49,567
40.	96,552	95,588	94,364	94,137	90,817	89,676	86,052	76,084	67,271	61,130	50,568	46,146
45.	95,419	93,979	92,676	92,322	88,001	86,793	82,257	71,157	61,365	56,230	45,947	42,279
50.	93,658	91,680	90,277	89,563	84,168	82,979	77,007	64,885	54,920	50,780	40,886	37,681
55.	91,045	88,517	86,793	85,653	79,177	77,362	70,196	57,314	47,074	44,742	35,415	33,124
60.	87,402	84,044	81,886	80,293	72,820	69,941	61,758	48,928	38,761	37,954	28,908	27,524
65.	82,581	77,941	75,031	73,266	64,716	60,825	52,358	40,504	30,852	31,044	22,302	21,995
70.	75,956	69,778	66,278	64,729	54,873	51,274	42,612	32,354	23,341	24,107	15,871	16,140
75.	67,206	59,361	55,684	53,831	43,193	40,540	32,981	24,502	16,576	17,216	10,657	11,066
80.	55,549	46,453	43,622	41,686	31,756	30,315	23,712	17,039	10,822	11,151	6,324	6,708
85.	40,709	32,053	30,089	28,004	21,358	19,744	15,550	10,622	6,033	5,972	3,029	3,567
90.	24,558	18,347	17,536	16,260	12,210	9,675	8,590	5,652	2,774	2,579	1,206	1,492
95.	11,057	7,989	7,687	7,312	5,217	2,438	2,875	2,345	941	818	448	462
100.	3,278	2,351	2,364	2,398	1,803	293	445	659	193	179	112	97

¹For 1939–1941 and 1949–1951, data shown are for the entire nonwhite population. During these periods, life tables were not constructed separately for the black population. See Technical Notes.
SOURCE: CDC/NCHS, National Vital Statistics System.

Table 21. Life expectancy, by age, race, and sex: Death-registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2011

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and the District of Columbia; 1919–1921, 34 states and the District of Columbia. Beginning in 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											
	2011	1999–2001	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
All races												
0.....	78.71	76.86	75.37	73.88	70.75	69.89	68.07	63.62	59.20	56.40	51.49	49.24
1.....	78.19	76.40	75.08	73.82	71.19	70.75	69.16	65.76	61.94	59.94	57.11	55.20
5.....	74.27	72.49	71.22	70.00	67.43	67.04	65.54	62.49	59.29	57.99	56.21	54.98
10.....	69.31	67.55	66.29	65.10	62.57	62.19	60.74	57.82	54.84	53.79	52.15	51.14
15.....	64.36	62.61	61.38	60.19	57.69	57.33	55.91	53.10	50.25	49.37	47.73	46.81
20.....	59.51	57.82	56.63	55.46	53.00	52.58	51.20	48.54	45.94	45.30	43.53	42.79
25.....	54.76	53.08	51.93	50.81	48.37	47.89	46.56	44.09	41.85	41.47	39.60	39.12
30.....	50.01	48.31	47.23	46.12	43.71	43.18	41.91	39.67	37.75	37.68	35.70	35.51
35.....	45.28	43.57	42.58	41.43	39.07	38.51	37.31	35.30	33.68	33.89	31.90	31.92
40.....	40.58	38.90	37.98	36.79	34.52	33.92	32.81	31.03	29.67	30.08	28.20	28.34
45.....	35.96	34.34	33.44	32.27	30.12	29.50	28.49	26.90	25.79	26.25	24.54	24.77
50.....	31.50	29.90	29.03	27.94	25.93	25.29	24.40	22.98	22.06	22.50	20.98	21.26
55.....	27.23	25.61	24.83	23.85	21.99	21.37	20.57	19.31	18.53	18.90	17.55	17.88
60.....	23.12	21.55	20.90	20.02	18.34	17.71	17.04	15.91	15.24	15.54	14.42	14.76
65.....	19.18	17.77	17.28	16.51	15.00	14.39	13.83	12.80	12.23	12.47	11.60	11.86
70.....	15.49	14.27	13.96	13.32	12.00	11.38	10.92	10.00	9.58	9.74	9.11	9.30
75.....	12.10	11.12	11.00	10.48	9.32	8.71	8.40	7.62	7.32	7.49	6.99	7.08
80.....	9.08	8.42	8.40	7.98	7.10	6.39	6.34	5.73	5.50	5.63	5.25	5.30
85.....	6.53	6.22	6.23	5.96	5.28	4.58	4.69	4.31	4.19	4.21	4.00	3.96
90.....	4.56	4.49	4.50	4.43	3.94	3.22	3.44	3.30	3.15	3.22	3.03	2.95
95.....	3.18	3.19	3.29	3.34	3.06	2.43	2.54	2.61	2.26	2.32	2.35	2.18
100.....	2.27	2.27	2.46	2.73	2.62	1.91	1.92	2.13	1.51	1.53	1.85	1.58
Male												
0.....	76.29	74.13	71.83	70.11	67.04	66.80	65.47	61.60	57.71	55.50	49.86	47.88
1.....	75.80	73.70	71.58	70.10	67.58	67.80	66.73	64.00	60.75	59.47	55.95	54.35
5.....	71.88	69.80	67.73	66.29	63.82	64.10	63.12	60.76	58.14	57.60	55.11	54.22
10.....	66.93	64.86	62.81	61.41	58.98	59.27	58.35	56.12	53.75	53.44	51.07	50.39
15.....	61.98	59.94	57.91	56.52	54.12	54.43	53.56	51.43	49.18	49.05	46.66	46.06
20.....	57.19	55.21	53.25	51.88	49.54	49.77	48.92	46.91	44.88	44.99	42.48	42.03
25.....	52.53	50.57	48.67	47.37	45.07	45.19	44.36	42.51	40.79	41.11	38.59	38.38
30.....	47.88	45.89	44.10	42.81	40.51	40.56	39.78	38.13	36.71	37.26	34.70	34.76
35.....	43.22	41.21	39.57	38.20	35.95	35.94	35.23	33.79	32.65	33.43	30.94	31.19
40.....	38.58	36.62	35.09	33.64	31.48	31.42	30.79	29.57	28.68	29.63	27.32	27.65
45.....	34.03	32.14	30.66	29.22	27.18	27.09	26.55	25.52	24.87	25.84	23.77	24.14
50.....	29.65	27.82	26.37	25.00	23.12	23.02	22.59	21.72	21.25	22.11	20.32	20.70
55.....	25.50	23.65	22.30	21.08	19.36	19.32	18.96	18.20	17.79	18.53	16.98	17.38
60.....	21.57	19.73	18.53	17.46	15.99	15.94	15.68	14.99	14.62	15.22	13.95	14.33
65.....	17.81	16.11	15.12	14.21	12.99	12.95	12.74	12.07	11.72	12.20	11.24	11.50
70.....	14.28	12.80	12.05	11.35	10.39	10.33	10.11	9.46	9.18	9.52	8.83	9.02
75.....	11.07	9.89	9.39	8.90	8.13	7.99	7.83	7.22	7.02	7.31	6.75	6.84
80.....	8.22	7.44	7.12	6.80	6.27	5.95	5.94	5.44	5.27	5.49	5.10	5.11
85.....	5.87	5.47	5.31	5.13	4.73	4.39	4.41	4.11	4.02	4.10	3.90	3.82
90.....	4.08	3.95	3.89	3.89	3.60	3.18	3.30	3.17	3.06	3.21	3.01	2.86
95.....	2.85	2.82	2.92	2.98	2.82	2.43	2.49	2.52	2.21	2.38	2.36	2.13
100.....	2.07	2.03	2.25	2.49	2.43	1.91	1.92	2.05	1.50	1.58	1.81	1.55
Female												
0.....	81.05	79.47	78.81	77.62	74.64	73.24	70.96	65.89	60.90	57.40	53.24	50.70
1.....	80.50	78.97	78.47	77.50	74.97	73.93	71.84	67.73	65.37	60.45	58.37	56.10
5.....	76.57	75.06	74.60	73.67	71.19	70.21	68.21	64.43	60.66	58.41	57.39	55.80
10.....	71.61	70.11	69.67	68.75	66.31	65.35	63.38	59.73	56.16	54.16	53.31	51.94
15.....	66.65	65.16	64.73	63.83	61.41	60.45	58.52	54.97	51.54	49.71	48.87	47.60
20.....	61.74	60.29	59.87	58.98	56.59	55.60	53.73	50.37	47.21	45.63	44.66	43.60
25.....	56.87	55.42	55.03	54.16	51.80	50.79	48.99	45.87	43.11	41.86	40.69	39.92
30.....	52.03	50.57	50.19	49.33	47.01	46.00	44.28	41.41	39.02	38.15	36.79	36.30
35.....	47.21	45.75	45.40	44.53	42.28	41.27	39.63	37.01	34.92	34.40	32.95	32.71
40.....	42.44	40.99	40.65	39.80	37.64	36.61	35.06	32.68	30.86	30.58	29.15	29.08
45.....	37.76	36.33	35.97	35.17	33.13	32.09	30.64	28.46	26.89	26.71	25.36	25.44

See footnotes at end of table.

Table 21. Life expectancy, by age, race, and sex: Death-registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2011—Con.

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and the District of Columbia; 1919–1921, 34 states and the District of Columbia. Beginning in 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											
	2011	1999–2001	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
Female—Con.												
50.	33.20	31.76	31.42	30.69	28.77	27.71	26.40	24.40	23.05	22.92	21.67	21.84
55.	28.78	27.32	27.05	26.39	24.59	23.53	22.33	20.54	19.38	19.28	18.13	18.39
60.	24.48	23.10	22.90	22.29	20.60	19.52	18.50	16.92	15.94	15.87	14.90	15.21
65.	20.35	19.12	19.02	18.44	16.83	15.80	14.95	13.57	12.78	12.73	11.96	12.22
70.	16.46	15.40	15.38	14.84	13.35	12.37	11.71	10.56	9.99	9.96	9.38	9.59
75.	12.86	11.99	12.08	11.58	10.26	9.33	8.94	8.01	7.61	7.65	7.20	7.34
80.	9.65	9.05	9.13	8.69	7.68	6.72	6.67	5.99	5.70	5.75	5.37	5.51
85.	6.90	6.62	6.66	6.38	5.63	4.71	4.90	4.47	4.32	4.30	4.08	4.12
90.	4.77	4.71	4.73	4.66	4.14	3.25	3.54	3.39	3.24	3.23	3.05	3.04
95.	3.27	3.29	3.40	3.48	3.18	2.43	2.57	2.67	2.30	2.27	2.34	2.24
100.	2.30	2.29	2.52	2.81	2.69	1.91	1.93	2.17	1.52	1.48	1.91	1.61
White												
0.	78.95	77.43	76.13	74.53	71.62	70.73	69.02	64.92	60.86	57.42	51.90	49.64
1.	78.36	76.87	75.72	74.35	71.91	71.38	69.95	66.84	63.46	60.87	57.46	55.47
5.	74.43	72.96	71.84	70.52	68.12	67.64	66.29	63.52	60.75	58.86	56.51	55.18
10.	69.47	68.01	66.92	65.62	63.26	62.79	61.48	58.83	56.29	54.65	52.43	51.34
15.	64.52	63.07	61.99	60.71	58.37	57.92	56.65	54.09	51.69	50.21	48.01	47.01
20.	59.66	58.27	57.23	55.98	53.66	53.16	51.91	49.47	47.28	46.04	43.77	43.17
25.	54.90	53.51	52.50	51.30	49.00	48.44	47.22	44.92	43.02	42.07	39.79	39.26
30.	50.14	48.72	47.76	46.59	44.28	43.69	42.52	40.40	38.76	38.17	35.86	35.51
35.	45.41	43.95	43.06	41.86	39.58	38.97	37.86	35.93	34.50	34.27	32.03	32.01
40.	40.70	39.25	38.41	37.17	34.95	34.33	33.29	31.54	30.33	30.38	28.29	28.28
45.	36.07	34.65	33.81	32.60	30.48	29.84	28.88	27.29	26.29	26.45	24.60	24.82
50.	31.60	30.17	29.34	28.21	26.21	25.57	24.70	23.26	22.42	22.64	21.01	21.18
55.	27.30	25.82	25.08	24.05	22.19	21.58	20.77	19.47	18.75	18.97	17.57	17.91
60.	23.16	21.71	21.08	20.16	18.48	17.84	17.15	15.98	15.37	15.57	14.43	14.73
65.	19.19	17.88	17.40	16.59	15.08	14.44	13.86	12.80	12.28	12.47	11.60	11.87
70.	15.48	14.34	14.02	13.35	12.01	11.37	10.89	9.96	9.58	9.72	9.10	9.31
75.	12.06	11.15	11.03	10.47	9.27	8.65	8.34	7.55	7.30	7.47	6.98	7.08
80.	9.03	8.42	8.39	7.95	7.01	6.33	6.27	5.64	5.45	5.59	5.22	5.30
85.	6.48	6.19	6.20	5.90	5.19	4.53	4.62	4.20	4.12	4.15	3.97	3.95
90.	4.50	4.44	4.46	4.36	3.84	3.20	3.41	3.16	3.10	3.17	3.00	2.93
95.	3.11	3.14	3.25	3.25	2.92	2.43	2.53	2.45	2.22	2.28	2.29	2.16
100.	2.22	2.22	2.43	2.62	2.41	1.91	1.92	1.95	1.48	1.50	1.71	1.56
White male												
0.	76.59	74.78	72.72	70.82	67.94	67.55	66.31	62.81	59.12	56.34	50.23	48.23
1.	76.02	74.25	72.35	70.70	68.33	68.34	67.41	64.98	62.04	60.24	56.26	54.61
5.	72.10	70.34	68.48	66.87	64.55	64.61	63.77	61.68	59.38	58.31	55.37	54.43
10.	67.15	65.40	63.55	61.98	59.69	59.78	58.98	57.03	54.96	54.15	51.32	50.59
15.	62.20	60.47	58.65	57.09	54.83	54.93	54.18	52.33	50.39	49.74	46.91	46.25
20.	57.39	55.72	53.96	52.45	50.22	50.25	49.52	47.76	46.02	45.60	42.71	42.19
25.	52.72	51.05	49.33	47.92	45.70	45.65	44.93	43.28	41.78	41.60	38.79	38.52
30.	48.05	46.34	44.71	43.31	41.07	40.97	40.29	38.80	37.54	37.65	34.87	34.88
35.	43.38	41.64	40.12	38.66	36.43	36.31	35.68	34.36	33.33	33.74	31.08	31.29
40.	38.73	37.01	35.57	34.04	31.87	31.73	31.17	30.03	29.22	29.86	27.43	27.74
45.	34.17	32.49	31.07	29.55	27.48	27.34	26.87	25.87	25.28	26.00	23.86	24.21
50.	29.79	28.12	26.71	25.26	23.34	23.22	22.83	21.96	21.51	22.22	20.39	20.76
55.	25.61	23.88	22.56	21.25	19.51	19.45	19.11	18.34	17.97	18.59	17.03	17.42
60.	21.65	19.90	18.71	17.56	16.07	16.01	15.76	15.05	14.72	15.25	13.98	14.35
65.	17.84	16.22	15.24	14.26	13.02	12.97	12.75	12.07	11.77	12.21	11.25	11.51
70.	14.29	12.87	12.11	11.35	10.38	10.29	10.07	9.42	9.20	9.51	8.83	9.03
75.	11.05	9.92	9.40	8.87	8.06	7.92	7.77	7.17	7.02	7.30	6.75	6.84
80.	8.19	7.43	7.11	6.76	6.18	5.89	5.88	5.38	5.26	5.47	5.09	5.10
85.	5.82	5.43	5.28	5.09	4.63	4.34	4.35	4.02	3.99	4.06	3.88	3.81
90.	4.02	3.90	3.85	3.83	3.49	3.16	3.27	3.06	3.03	3.18	2.99	2.85
95.	2.79	2.77	2.88	2.91	2.67	2.43	2.48	2.40	2.19	2.36	2.31	2.12
100.	2.01	1.98	2.21	2.41	2.20	1.91	1.92	1.96	1.49	1.58	1.68	1.55

See footnotes at end of table.

Table 21. Life expectancy, by age, race, and sex: Death-registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2011—Con.

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and the District of Columbia; 1919–1921, 34 states and the District of Columbia. Beginning in 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											
	2011	1999–2001	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
White female												
0.....	81.27	79.99	79.45	78.22	75.49	74.19	72.03	67.29	62.67	58.53	53.62	51.08
1.....	80.65	79.40	78.99	77.98	75.66	74.68	72.77	68.93	64.93	61.51	58.69	56.39
5.....	76.72	75.48	75.10	74.13	71.86	70.92	69.09	65.57	62.17	59.43	57.67	56.03
10.....	71.76	70.53	70.16	69.21	66.97	66.05	64.26	60.85	57.65	55.17	53.57	52.15
15.....	66.79	65.58	65.23	64.29	62.07	61.15	59.39	56.07	53.00	50.67	49.12	47.79
20.....	61.88	60.70	60.36	59.44	57.24	56.29	54.56	51.38	48.52	46.46	44.88	43.77
25.....	57.01	55.83	55.51	54.60	52.42	51.45	49.77	46.78	44.25	42.55	40.88	40.05
30.....	52.16	50.95	50.65	49.76	47.60	46.63	45.00	42.21	39.99	38.72	36.96	36.42
35.....	47.34	46.11	45.82	44.93	42.82	41.84	40.28	37.70	35.73	34.86	33.09	32.82
40.....	42.56	41.33	41.03	40.16	38.12	37.13	35.64	33.25	31.52	30.94	29.26	29.17
45.....	37.86	36.62	36.30	35.49	33.54	32.53	31.12	28.90	27.39	26.98	25.45	25.51
50.....	33.28	32.01	31.71	30.96	29.11	28.08	26.76	24.72	23.41	23.12	21.74	21.89
55.....	28.84	27.53	27.29	26.61	24.85	23.81	22.58	20.73	19.60	19.40	18.18	18.43
60.....	24.51	23.25	23.09	22.45	20.79	19.69	18.64	17.00	16.05	15.93	14.92	15.23
65.....	20.35	19.23	19.14	18.55	16.93	15.88	15.00	13.56	12.81	12.75	11.97	12.23
70.....	16.44	15.47	15.46	14.89	13.37	12.38	11.68	10.50	9.98	9.94	9.38	9.59
75.....	12.83	12.02	12.11	11.58	10.21	9.28	8.87	7.92	7.56	7.62	7.20	7.33
80.....	9.60	9.04	9.12	8.65	7.59	6.67	6.59	5.88	5.63	5.70	5.35	5.50
85.....	6.85	6.59	6.62	6.32	5.54	4.66	4.83	4.34	4.24	4.24	4.06	4.10
90.....	4.71	4.67	4.69	4.59	4.05	3.23	3.51	3.24	3.17	3.16	3.00	3.02
95.....	3.21	3.24	3.36	3.39	3.04	2.43	2.56	2.47	2.24	2.20	2.27	2.21
100.....	2.25	2.24	2.49	2.70	2.49	1.91	1.92	1.95	1.48	1.42	1.74	1.58
Black¹												
0.....	75.33	71.81	69.16	68.52	64.11	63.91	60.73	53.85	48.53	47.03	35.87	33.80
1.....	75.21	71.84	69.43	68.99	65.27	65.75	62.65	57.15	51.71	51.01	43.84	43.00
5.....	71.32	67.98	65.64	65.25	61.62	62.21	59.25	54.13	49.25	49.44	45.34	45.55
10.....	66.38	63.05	60.75	60.38	56.79	57.41	54.50	49.50	44.80	45.26	41.74	42.46
15.....	61.44	58.13	55.86	55.49	51.94	52.57	49.73	44.89	40.37	41.02	38.02	39.04
20.....	56.63	53.38	51.19	50.75	47.34	47.88	45.19	40.73	36.62	37.72	34.86	36.03
25.....	51.96	48.78	46.67	46.18	43.00	43.35	40.85	36.91	33.32	34.91	31.72	33.04
30.....	47.30	44.16	42.22	41.69	38.70	38.89	36.59	33.17	30.07	31.98	28.43	29.96
35.....	42.67	39.59	37.87	37.28	34.48	34.56	32.44	29.53	26.94	29.07	25.39	26.82
40.....	38.08	35.12	33.65	32.98	30.46	30.39	28.48	26.06	23.82	26.07	22.41	23.73
45.....	33.60	30.84	29.55	28.87	26.65	26.46	24.75	22.82	20.97	23.17	19.58	20.67
50.....	29.30	26.80	25.62	25.03	23.11	22.74	21.38	19.94	18.22	20.17	16.84	17.95
55.....	25.27	22.97	21.95	21.50	19.83	19.45	18.41	17.43	15.80	17.33	14.33	15.23
60.....	21.52	19.43	18.59	18.29	16.83	16.53	15.87	15.18	13.62	14.72	12.16	13.06
65.....	18.01	16.14	15.56	15.37	14.16	13.96	13.59	13.02	11.49	12.22	10.22	10.87
70.....	14.74	13.18	12.87	12.67	11.77	11.63	11.48	10.93	9.54	9.90	8.59	8.96
75.....	11.73	10.54	10.48	10.32	9.89	9.52	9.48	8.97	7.84	8.00	7.08	7.24
80.....	9.06	8.29	8.30	8.17	8.20	7.28	7.62	7.31	6.19	6.22	5.80	5.79
85.....	6.83	6.41	6.51	6.54	6.54	5.27	5.79	5.91	4.92	4.88	4.80	4.56
90.....	5.09	4.90	4.94	5.13	5.09	3.48	3.97	4.64	3.83	3.84	4.26	3.60
95.....	3.78	3.71	3.82	4.08	4.28	2.43	2.70	3.51	2.83	2.90	3.31	2.82
100.....	2.84	2.81	2.91	3.58	3.93	1.91	1.94	2.57	1.87	1.94	2.27	2.18
Black male¹												
0.....	72.19	68.17	64.47	64.10	60.00	61.48	58.91	52.26	47.55	47.14	34.05	32.54
1.....	72.11	68.25	64.76	64.60	61.24	63.50	61.06	55.93	51.08	51.63	42.53	42.46
5.....	68.23	64.40	60.98	60.86	57.60	59.98	57.69	52.95	48.69	50.18	44.25	45.06
10.....	63.29	59.48	56.09	56.01	52.79	55.19	52.96	48.34	44.27	45.99	40.65	41.90
15.....	58.36	54.57	51.22	51.14	47.96	50.39	48.23	43.74	39.83	41.75	36.77	38.26
20.....	53.63	49.92	46.71	46.48	43.49	45.78	43.73	39.52	35.95	38.36	33.46	35.11
25.....	49.11	45.50	42.40	42.09	39.45	41.38	39.49	35.72	32.67	35.54	30.44	32.21
30.....	44.59	41.02	38.14	37.81	35.40	37.05	35.31	32.05	29.45	32.51	27.33	29.25
35.....	40.05	36.56	34.02	33.60	31.42	32.81	31.21	28.48	26.39	29.54	24.42	26.16
40.....	35.54	32.18	30.05	29.51	27.61	28.72	27.29	25.06	23.36	26.53	21.57	23.12
45.....	31.12	28.01	26.18	25.61	24.03	24.89	23.59	21.88	20.59	23.55	18.85	20.09

See footnotes at end of table.

Table 21. Life expectancy, by age, race, and sex: Death-registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2011—Con.

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and the District of Columbia; 1919–1921, 34 states and the District of Columbia. Beginning in 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											
	2011	1999–2001	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
Black male¹—Con.												
50.	26.89	24.13	22.50	22.03	20.69	21.28	20.25	19.06	17.92	20.47	16.21	17.34
55.	22.99	20.50	19.08	18.79	17.66	18.11	17.36	16.60	15.46	17.50	13.82	14.69
60.	19.44	17.19	16.01	15.89	14.93	15.29	14.91	14.37	13.15	14.74	11.67	12.62
65.	16.19	14.12	13.27	13.29	12.53	12.84	12.75	12.21	10.87	12.07	9.74	10.38
70.	13.17	11.40	10.88	10.94	10.40	10.81	10.74	10.11	8.78	9.58	8.00	8.33
75.	10.43	9.07	8.84	8.90	8.76	8.93	8.83	8.17	6.99	7.61	6.58	6.60
80.	8.00	7.12	7.01	7.03	7.35	6.87	7.07	6.58	5.42	5.83	5.53	5.12
85.	6.03	5.52	5.58	5.61	5.92	5.08	5.38	5.34	4.30	4.53	4.48	4.04
90.	4.53	4.23	4.24	4.47	4.68	3.42	3.78	4.23	3.42	3.60	4.01	3.21
95.	3.41	3.24	3.37	3.62	3.92	2.43	2.64	3.20	2.54	2.61	3.15	2.50
100.	2.61	2.48	2.63	3.24	3.61	1.91	1.93	2.29	1.68	1.64	2.14	1.89
Black female¹												
0.	78.17	75.16	73.73	72.88	68.32	66.47	62.70	55.56	49.51	46.92	37.67	35.04
1.	77.99	75.13	73.96	73.31	69.37	68.10	64.37	58.46	52.33	50.39	45.15	43.54
5.	74.09	71.26	70.16	69.54	65.70	64.54	60.93	55.40	49.81	48.70	46.42	46.04
10.	69.14	66.32	65.26	64.65	60.85	59.72	56.17	50.75	45.33	44.54	42.84	43.02
15.	64.19	61.39	60.34	59.74	55.97	54.85	51.36	46.13	40.87	40.36	39.18	39.79
20.	59.29	56.52	55.49	54.90	51.22	50.07	46.77	42.04	37.22	37.15	36.14	36.89
25.	54.44	51.71	50.72	50.13	46.57	45.40	42.35	38.20	33.93	34.35	32.97	33.90
30.	49.64	46.95	46.03	45.43	42.00	40.83	38.02	34.40	30.67	31.48	29.61	30.70
35.	44.91	42.26	41.45	40.79	37.56	36.41	33.82	30.83	27.47	28.58	26.44	27.52
40.	40.25	37.69	36.96	36.28	33.32	32.16	29.82	27.19	24.30	25.60	23.34	24.37
45.	35.70	33.29	32.58	31.94	29.31	28.14	26.07	23.89	21.39	22.61	20.43	21.36
50.	31.32	29.06	28.38	27.84	25.52	24.31	22.67	20.95	18.60	19.76	17.65	18.67
55.	27.14	25.01	24.41	24.00	21.97	20.89	19.62	18.38	16.27	17.09	14.98	15.88
60.	23.16	21.20	20.71	20.42	18.66	17.83	16.95	16.10	14.22	14.69	12.78	13.60
65.	19.36	17.65	17.37	17.13	15.67	15.12	14.54	13.95	12.24	12.41	10.82	11.38
70.	15.82	14.41	14.32	14.05	13.02	12.46	12.29	11.82	10.38	10.25	9.22	9.62
75.	12.54	11.49	11.56	11.37	10.85	10.10	10.15	9.81	8.62	8.37	7.55	7.90
80.	9.62	8.96	9.05	8.95	8.87	7.66	8.15	8.02	6.90	6.58	6.05	6.48
85.	7.19	6.86	6.99	7.09	7.00	5.44	6.15	6.41	5.48	5.22	5.09	5.10
90.	5.29	5.16	5.24	5.47	5.41	3.52	4.13	4.96	4.20	4.07	4.50	4.01
95.	3.86	3.84	3.97	4.30	4.58	2.43	2.74	3.71	3.09	3.18	3.45	3.15
100.	2.85	2.84	2.97	3.69	4.20	1.91	1.94	2.70	2.04	2.23	2.39	2.49

¹For 1939–1941 and 1949–1951, data shown are for the entire nonwhite population. During these periods, life tables were not constructed separately for the black population. See Technical Notes.

SOURCE: CDC/NCHS, National Vital Statistics System.

Technical Notes

The life table program

Three series of complete life tables for the U.S. population are prepared by the Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics (NCHS). *Decennial life tables* are based on decennial U.S. census data and final deaths for a 3-year period around the census year. *Annual preliminary life tables* are based on a sample of approximately 90% of death records. *Annual final life tables* (referred to here 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, closed at age 85 and over, and were constructed by reference to a standard table (4). Beginning with 1997 mortality data, a new methodology similar to that of the 1989–1991 decennial life tables was employed to estimate annual complete life tables to age 100, with combined life table values presented for ages 100 and over (8). The methodology was again revised for data years 2000–2007 using a methodology similar to that of the 1999–2001 decennial life tables (9).

Beginning with data year 2008, the life table methodology was refined by changing the smoothing technique used to estimate the life table functions at the oldest ages (10). The methodology used to estimate the 2008–2011 life tables is different from that used to produce the 2000–2007 life tables with respect to the technique used to estimate the probabilities of death for ages over 65. The methodology used for 2008–2011 does not model the probabilities of death beginning at age 66, as was done for data years 2000–2007, but rather at ages above 85 or so. (The exact ages at which smoothing techniques are used depends on the specific racial and ethnic population.) Research into the methodology developed and used for the 1999–2001 decennial life tables and applied to the annual life tables has revealed that it is not necessary to model (or "smooth") the probabilities of death beginning at age 66. The observed blended vital statistics and Medicare data for ages 66–85 are robust enough and do not require additional smoothing (10).

A full description of the methodology used to estimate the 2011 life tables is provided below. See "United States Life Tables, 2005" (9) for a detailed description of the methodology used for data years 2000–2007.

Beginning with 2006 mortality data, life tables by Hispanic origin were added to the annual life table program. Prior to this time, concerns over data limitations such as racial and ethnic misclassification on U.S. death certificates and lack of Medicare data for older populations other than the white and black populations prevented the estimation of life tables for the Hispanic origin population. Recent research that identified and quantified these data limitations has led to the development of reliable methodological strategies to address these data problems (11–13). The methodology developed to estimate life tables for the Hispanic, non-Hispanic white, and non-Hispanic black populations is described in detail below and in "United States Life Tables by Hispanic Origin" (11).

Geographic coverage

The geographic areas covered in life tables before 1929–1931 were limited to death-registration areas. Life tables for 1900–1902 and 1909–1911 were constructed using mortality data from the 1900 death-registration states (10 states and the District of Columbia), and tables for 1919–1921 used mortality data from the 1920 death-registration states (34 states and the District of Columbia). The tables for 1929–1931 through 1958 cover the coterminous United States. Decennial life table values for the 3-year period 1959–1961 were derived from data that included both Alaska and Hawaii for each year (Tables 20 and 21). Data for each year shown in Table 19 include Alaska beginning in 1959 and Hawaii beginning in 1960. However, it is believed that the inclusion of these two states does not materially affect life table values.

Revised intercensal life table values

Life table values for 1960–1969, 1970–1979, and 1980–1989 were constructed using the U.S. decennial life tables for 1959–1961, 1969–1971, and 1979–1981, respectively, as the standard tables. The life table values for years prior to 1989 appearing in this report 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 values for those years published in Vital Statistics of the United States for 1989 and earlier (<http://www.cdc.gov/nchs/products/vsus.htm>). Life table values for 1991–1999 presented in this report are based on postcensal population estimates of the population enumerated in the 1990 decennial census. Life table values for 2001–2009 presented in this report are based on revised intercensal population estimates based on the 2010 decennial census and the revised methodology used to estimate the 2008–2011 life tables. As a result, the values may differ from those previously published in annual final mortality and life table reports (14).

New Jersey data, 1962–1964

The life tables for 1962 and 1963 for the six population groups involving race do not include data from New Jersey, which omitted the item on race from its certificates of live birth, death, and fetal death in use at the beginning of 1962. The item was restored during the latter part of 1962. However, the certificate revision without this item was used for most of 1962, as well as for 1963. For computing vital rates, populations by age, race, and sex (excluding New Jersey) were estimated in order to obtain comparable denominators. Approximately 7% 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 allocated proportionally 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 20 and 21, values for the black

population during the periods 1939–1941 and 1949–1951 were estimated using values for the nonwhite population. Life table functions were also missing in [Tables 20](#) and [21](#) for some race-sex groups for the periods from 1900–1902 to 1939–1941. Values were missing for the following groups:

<i>Years</i>	<i>Race and sex</i>
1900–1902	Total white, total black
1909–1911	Total white, total black
1919–1921	Total, male, female, total white, total black
1929–1931	Total, male, female, total white, total black

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

Annual life tables were initiated in 1945 for white males, white females, all other males, and all other females. The values in [Table 19](#), by race and sex for the following years, were estimated using a procedure other than the abridged life table methodology (15):

<i>Years</i>	<i>Race and sex</i>
1900–1945	Total
1900–1947	Male
1900–1947	Female
1900–1950	White
1900–1944	White male
1900–1944	White female

Annual life table functions were not calculated for the black population prior to 1970. In [Table 19](#), life expectancy for the black population for years prior to 1970 is estimated using values for the total nonwhite population.

Data for calculating life table functions

The data used to prepare the U.S. life tables include final death counts from the National Vital Statistics System (NVSS), population estimates from the U.S. Census Bureau, and death and population counts for Medicare beneficiaries aged 66–99 from the Centers for Medicare & Medicaid Services (CMS).

Vital statistics data

Death counts used for computing the life tables presented in this report are final numbers of deaths for 2011 collected from death certificates filed in state vital statistics offices and reported to NCHS as part of NVSS. Race and Hispanic origin are reported separately on the death certificate.

The U.S. Standard Certificate of Death was revised in 2003, and its race and Hispanic origin items reflect the mandate of the 1997 Office of Management and Budget (OMB) standards (16). This revision allowed individuals to report more than one race and increased the race choices from four to five by separating the Asian and Pacific Islander groups. In 2011, 38 states and the District of Columbia had

adopted the 1997 OMB standards, while 12 others continued to collect race and ethnicity data according to the 1977 OMB standards (17). To attain uniformity and comparability during the transition period until all states implement the 1997 standards, multiple-race responses are “bridged” back to the 1977 single-race standard, and Asian and Pacific Islander groups are combined according to the 1977 standards. The bridging procedure is the same as that used to bridge multiple-race population estimates, as discussed below (18).

Census population data

The population data used to estimate the life tables shown in this report were produced under a collaborative agreement with the U.S. Census Bureau and are consistent with the postcensal estimates of the 2010 census. Reflecting the 1997 OMB guidelines on race and ethnicity reporting (16), the 2010 census included an option for individuals to report more than one race and provided for the reporting of Asian persons separately from Native Hawaiian or other Pacific Islander persons. Death certificate data by race for states that have not yet implemented the 1997 OMB standards are thus currently incompatible with the population data collected in the 2010 census (the denominators for the rates). To produce death rates for 2011, it was necessary to bridge the reported population data for multiple-race persons back to single-race categories. In addition, the 2010 census counts were modified to be consistent with the 1977 OMB race categories, that is, to report the data for Asian persons and Native Hawaiian or other Pacific Islander persons as a combined category (Asian or Pacific Islander) and to reflect age as of the census reference date (19). The procedures used to produce the bridged populations are described elsewhere (18).

Medicare data

Medicare data have traditionally been employed in the estimation of U.S. decennial life tables, and in the estimation of U.S. annual life tables since 1997 (8). Medicare data are considered to be more accurate than vital statistics and census data at the oldest ages because Medicare enrollees must have proof of age in order to enroll (20). However, the reliability of Medicare data beyond age 100 declines because of the small percentage of persons who enrolled at the start of the Medicare program in 1965 and for whom it was not possible to verify exact age (20). Further, the Medicare race and ethnicity classification system makes it impossible to correctly identify the Hispanic, American Indian or Alaska Native, or Asian or Pacific Islander populations (11,21). It is, however, possible to use Medicare data to estimate old-age mortality for both the white and black race groups, irrespective of Hispanic origin, as has been done traditionally, and to estimate old-age mortality for the non-Hispanic segments of these populations (11). As a result, data from the Medicare program are used to supplement vital statistics and census data for ages 66–99 for the total population and for the white, black, non-Hispanic white, and non-Hispanic black populations (11).

To estimate death rates for the Medicare white, black, non-Hispanic white, and non-Hispanic black populations in 2011, age-specific numbers of deaths and population counts by sex and race for the population aged 66–99 from the 2013 and 2014 Medicare files were used. The data files are created by CMS for the Social Security Administration, which under a special agreement shares the files

with NCHS. The 2013 file contains final Medicare population counts as of January 1, 2011, and the 2014 file contains final Medicare population counts as of January 1, 2012, and final Medicare death counts as of January 1, 2011. Medicare death data are reported on a calendar year age basis, by subtracting the year of birth from the year of death. As a result, for a given reporting year, deaths reported as age x are on average exact age $x - 1/2$ as of January 1 of the reporting year. Medicare enrollment (population) data are reported on an age-at-last-birthday basis. As a result, persons with reported age x as of January 1 of the reporting year are on average exact age $x + 1/2$.

Preliminary adjustment of the data

Adjustments for unknown age

An adjustment is made to account for the small proportion of deaths each year for which age is not reported on the death certificate. The number of deaths in each age category is adjusted proportionally to account for those with not-stated ages. The following factor, F , is used to make the adjustment. F is calculated for the total and for each sex group within a racial and ethnic population for which life tables are constructed:

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

where D is the total number of deaths and D_s is the total number of deaths for which age is stated. F is then applied by multiplying it by the number of deaths in each age group. Table I shows values for F , by sex, used to adjust mortality data for the total, white, black, Hispanic, non-Hispanic white, and non-Hispanic black populations in 2011.

Adjustment for misclassification of race and Hispanic origin on death certificates

The latest research to evaluate race and Hispanic origin reporting on U.S. death certificates found that the misclassification of race and Hispanic origin on death certificates in the United States accounts for a net underestimate of 5% for total Hispanic deaths, a net underestimate of 1% for total non-Hispanic black deaths, and a net overestimate of less than one-half percent for non-Hispanic white deaths, but no underestimate for the population racially classified as white or black, irrespective of Hispanic origin (12,13). These results are based on a comparison of self-reported race and Hispanic origin from the U.S. Census Bureau's Current Population Surveys (CPS) with race and Hispanic origin reported on the death certificates of a sample of decedents in the National Longitudinal Mortality Study (NLMS) who died during the period 1990–1998 (12,13).

NLMS-linked records are used to estimate sex- and age-specific ratios of CPS race and Hispanic origin counts to death certificate counts (12,13). The CPS/death certificate ratio, or "classification ratio," is specifically the ratio of the weighted count of self-reported race and ethnicity on the CPS to the weighted count of the same racial or ethnic category on the death certificates of the sample of NLMS decedents described above. It can be interpreted as the net difference in assignment of a specific race and Hispanic origin category between the two classification systems and can be used

Table I. Values for F used to adjust for not-stated age based on 2011 mortality data

Race, Hispanic origin, and sex	Total deaths	Total deaths for which age was not stated	F
Total	2,515,458	134	1.00005327
Male	1,254,978	99	1.00007889
Female	1,260,480	35	1.00002777
White	2,156,077	99	1.00004592
Male	1,071,966	75	1.00006997
Female	1,084,111	24	1.00002214
Black	290,100	27	1.00009308
Male	146,884	20	1.00013618
Female	143,216	7	1.00004888
Hispanic	149,635	9	1.00006015
Male	81,887	8	1.00009771
Female	67,748	1	1.00001476
Non-Hispanic white	2,006,319	58	1.00002891
Male	989,835	44	1.00004445
Female	1,016,484	14	1.00001377
Non-Hispanic black	286,797	22	1.00007672
Male	145,052	16	1.00011032
Female	141,745	6	1.00004233

SOURCE: CDC/NCHS, National Vital Statistics System.

as a correction factor for race and Hispanic origin misclassification (12,13). The assumption is made that the race and ethnicity reported by a CPS respondent is more reliable than proxy reporting of race and ethnicity by a funeral director who has little personal knowledge of the decedent. Further, public policy embodied in the 1997 OMB standards mandate that self-identification should be the standard used for the collection and recording of race and ethnicity information (16).

The NLMS-based classification ratios discussed above are used to adjust the age-specific number of deaths for ages 1–95 and over for the total Hispanic, non-Hispanic white, and non-Hispanic black populations, and by sex for each group, as follows:

$${}_nD_x^F = {}_nD_x^F \cdot {}_nCR_x \quad [2]$$

where ${}_nD_x^F$ is the age-specific number of deaths adjusted for unknown age as described above, ${}_nCR_x$ are the sex-age-specific classification ratios used to correct for the misclassification of race and Hispanic origin on death certificates, and ${}_nD_x$ are the final age-specific counts of death adjusted for age and race and Hispanic origin misclassification. Table II shows values of the sex-age-specific classification ratios, ${}_nCR_x$, by Hispanic origin and race for the non-Hispanic population (black and white).

Because NLMS classification ratios for infant deaths are unreliable due to small sample sizes, corrections for racial and ethnic misclassification of infant deaths are addressed by using infant death counts and live birth counts from the 2010 and 2011 linked birth/infant death data files rather than the traditional birth and death data files (22,23). In the linked file, each infant death record is linked to its corresponding birth record so that the race and ethnicity reported on the birth record can be ascribed to the infant death record. As a result, race- and ethnicity-specific infant mortality rates estimated

Table II. Classification ratios, by Hispanic origin, race, age, and sex

Age (years)	Hispanic			Non-Hispanic white			Non-Hispanic black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
All ages	1.0501	1.0415	1.0614	0.9960	0.9954	0.9966	1.0055	1.0066	1.0043
0 ¹	1.0200	1.0149	1.0561	0.9962	0.9979	0.9929	1.0467	1.0477	1.0438
1–14	*0.9198	*1.0000	*0.7994	0.9930	0.9869	1.0011	1.0200	1.0000	*1.0689
15–24	0.9650	0.9770	0.9290	1.0032	1.0040	1.0010	0.9997	0.9996	1.0000
25–34	1.0189	1.0542	0.9288	0.9975	0.9872	1.0212	1.0043	1.0034	1.0060
35–44	1.0803	1.0863	1.0657	0.9902	0.9864	0.9971	1.0066	1.0081	1.0045
45–54	1.0501	1.0152	1.1208	0.9938	0.9943	0.9930	1.0023	1.0144	0.9880
55–64	1.0260	1.0291	1.0216	0.9932	0.9915	0.9958	1.0135	1.0174	1.0087
65–74	1.0700	1.0640	1.0779	0.9950	0.9961	0.9935	1.0036	0.9979	1.0095
75–84	1.0473	1.0316	1.0651	0.9967	0.9964	0.9971	1.0040	1.0058	1.0023
85–94	1.0468	1.0261	1.0614	0.9978	0.9975	0.9979	1.0083	1.0101	1.0072
95 and over	1.1277	1.1700	1.1000	0.9981	0.9927	0.9998	0.9979	1.0300	0.9881

* Ratio is unreliable because either the unweighted number of Current Population Survey deaths, or the unweighted number of death certificate deaths, or both, are based on fewer than 20 deaths.
¹Ratios for age 0 are estimated as the ratio of infant mortality rates based on the traditional death and birth files to the infant mortality rates based on the 2011 linked birth/infant death data file. Ratios are shown for illustration purposes only; see text for details.
 SOURCE: CDC/NCHS, National Vital Statistics System.

with the linked file do not suffer from the problem of racial and ethnic discrepancies between the numerator and denominator of the rate. A ratio of infant mortality rates based on the traditional birth and death data files to infant mortality rates based on the linked birth/infant death data file shows that using the traditional files overestimates the infant mortality rate by 2% for Hispanic infants and by 5% for non-Hispanic black infants. There is no significant difference in the rates for non-Hispanic white infants (see ratios for age 0 in Table II). Because the probability of death at age 0 used to calculate the life table uses live births in the denominator (procedure described below), it is preferable to use the linked birth/infant death data file.

Note that although there is no conclusive evidence supporting return migration as a factor in the lower mortality of the Hispanic population, the possibility remains that Hispanic deaths are missed in NVSS due to return migration, and therefore the resulting death rates may be biased irrespective of correction for ethnic misclassification (11,24).

Interpolation of P_x and D_x

Anomalies—both random and those associated with reporting age at death—can be problematic when using vital statistics and census data by single years of age to estimate the probability of death (1,8). Graduation techniques are often used to eliminate these anomalies and to derive a smooth curve by age. Beers ordinary minimized fifth difference formula is used to obtain smoothed values of population counts, P_x , and death counts, D_x , from 5-year age groupings of ${}_n P_x$ from age 0 to 99 and ${}_n D_x$ from age 5 to 99, and where ${}_n D_x$ has first been adjusted for not-reported age and race and Hispanic origin misclassification on the death certificate (see reference 8 for details on the application of Beers method).

Calculation of the probability of dying (q_x)

The first step in the calculation of a complete period life table is the estimation of the age-specific probability of dying, q_x , which is derived from the age-specific death rate, m_x (3,25). In the life table cohort,

$$m_x = \frac{d_x}{L_x}$$

where d_x is the number of deaths occurring between ages x and $x + 1$, and L_x is the number of person-years lived by the life table cohort between ages x and $x + 1$. The conversion of the age-specific death rate, m_x , to the age-specific probability of death, q_x , is as follows:

$$q_x = \frac{m_x}{1 + (1 - a_x)m_x} \tag{3}$$

where a_x is the number of person-years lived in the age interval by members of the life table cohort who died in the interval. When the age interval is 1 year, except at infancy, $a_x = 1/2$; in other words, deaths occur on average midway through the age interval. As a result,

$$q_x = \frac{m_x}{1 + \frac{1}{2}m_x} \tag{4}$$

Because the complete period life table is based on the age-specific death rates of a current population observed for a specific calendar year, the life table death rate is equivalent to the observed death rates of the current population:

$$m_x = \frac{d_x}{L_x} = M_x = \frac{D_x}{P_x}$$

where D_x is the Beers smoothed number of deaths adjusted for not-stated age and race and Hispanic origin misclassification on the death certificate (for the Hispanic, non-Hispanic white, and non-Hispanic black populations) and P_x is the Beers smoothed population at risk of dying between ages x and $x + 1$. Then,

$$q_x = \frac{M_x}{1 + \frac{1}{2}M_x} = \frac{D_x}{P_x + \frac{1}{2}D_x} \tag{5}$$

This procedure is used to estimate vital statistics age-specific probabilities of death for ages 1–99.

Calculation of q_x at age 0

The higher mortality observed in infancy is associated with a high concentration of deaths occurring at the beginning of the age interval rather than in the middle. As a result, whenever possible it is best to assign deaths to the appropriate birth cohorts. Therefore, the probability of death at birth, q_0 , is calculated using a birth cohort method that employs a separation factor, f , defined as the proportion of infant deaths in year t occurring to infants born in the previous year ($t - 1$). The value f is estimated by categorizing infant deaths by date of birth. The probability of death is then calculated as

$$q_0 = \frac{D_0(1-f)}{B^t} = \frac{D_0(f)}{B^{t-1}} \quad [6]$$

where D_0 is the number of infant deaths adjusted for not-stated age in 2011, B^t is the number of live births in 2011, and B^{t-1} is the number of live births in 2010. Table III shows separation factors and numbers of births for 2010–2011.

Probabilities of dying at the oldest ages for the total, white, black, non-Hispanic white, and non-Hispanic black populations

Medicare data are used to supplement vital statistics data for the estimation of q_x at the oldest ages because these data are more accurate given that proof of age is required for enrollment in the Medicare program. Medicare data are used here to estimate the probability of dying at ages 66 and over for the total, white, black, non-Hispanic white, and non-Hispanic black populations.

The method used consists of the following steps. First, vital statistics and Medicare death rates are blended in the age range 66–99. Second, a logistic model is used to smooth the blended death rates in the age range 85–99 and predict death rates for ages 100–120. Third, final resulting death rates, M_x , are converted to q_x .

For ages 66–94, vital statistics death rates, M_x^V , and Medicare death rates, M_x^M , are blended with a weighting process that gives gradually declining weight to vital statistics data and gradually increasing weight to Medicare data. For ages 95–99, M_x^M is used exclusively. Blended M_x is thus obtained as follows:

$$M_x = \frac{1}{30} [(95-x)M_x^V + (x-65)M_x^M]$$

when $x = 66, \dots, 94$

and $M_x = M_x^M$

when $x = 95, \dots, 99$.

[7]

Because of the manner in which age is reported in Medicare death and enrollment data as of January 1 of the reporting year, Medicare death rates are in one-half years of age. As a result, M_x^M is estimated as follows:

$$M_x^M = \left[M_{x-\frac{1}{2}}^M + M_{x+\frac{1}{2}}^M \right] / 2$$

where

$$M_{x-\frac{1}{2}}^M = \frac{D_{y,x}}{[P_{y,x-1} + P_{y+1,x}] / 2}$$

$$M_{x+\frac{1}{2}}^M = \frac{D_{y,x+1}}{[P_{y,x} + P_{y+1,x+1}] / 2}$$

and $D_{y,x}$ is reported age x at death in the Medicare data as of January 1, year y ; $P_{y,x-1}$ is the Medicare population count with reported age $x - 1$ on January 1, year y ; and $P_{y+1,x}$ is the Medicare population count with reported age x on January 1, year $y + 1$.

A logistic model proposed by Kannisto is then used to smooth M_x in the age range 85–99 and to predict M_x in the age range 100–120 (26). The start of the modeled age range varies by race- and ethnicity-specific population because it is a function of the age at which the rate of change in the age-specific death rates peaks. In current times, the rate of change in the age-specific death rate rises steadily up to approximately ages 80–85 or so and then begins to decline. As a result, it is difficult to model a large age span, such as 65–100, with one simple model without oversmoothing and thus altering the underlying mortality pattern observed in the population of interest (27). Further, because the observed data for the age range 65–85 or so is reliable and robust—as indicated by the very close similarity between vital statistics and Medicare death rates—it is unnecessary to model (smooth) the entire age span (65–100 years).

The Kannisto model (26) is a simple form of a logistic model in which the logit of u_x (or the natural log of the odds of u_x) is a linear function of age, x . It is expressed as:

$$\ln \left[\frac{u_x}{1-u_x} \right] = \ln(\alpha) + \beta x \quad [8]$$

where the force of mortality (or the instantaneous death rate), u_x , is defined as:

$$u_x = \frac{\alpha e^{\beta x}}{1 + \alpha e^{\beta x}}$$

Because u_x is not directly observed but is closely approximated by m_x and $m_x = M_x$, the logit of M_x is modeled instead. A maximum-likelihood generalized linear model estimation procedure is used to fit the following model in the age range 85–99:

$$\ln \left[\frac{M_x}{1-M_x} \right] = \ln(\alpha) + \beta x \quad [9]$$

The estimated parameters are then used to predict \bar{M}_x , as follows:

$$\bar{M}_x = \frac{e^a e^{bx}}{1 + e^a e^{bx}}, \text{ or equivalently, } \bar{M}_x = \frac{e^{a+bx}}{1 + e^{a+bx}} \quad [10]$$

where a and b are the predicted values of parameters $\ln(\alpha)$ and β , respectively, given by fitting model [9]. Estimated parameters, and the starting age for the modeled age span, by population in 2011, are presented in Table IV.

Finally, the predicted probability of death, \bar{q}_x , for ages 85–120 is estimated by converting \bar{M}_x as follows:

$$\bar{q}_x = \frac{\bar{M}_x}{1 + \frac{1}{2} \bar{M}_x} \quad [11]$$

The probability of death is extrapolated to age 120 in order to estimate the life table population, until no survivors remain. This information is then used to estimate L_x for ages 100–120, which is used to close the table with the age category 100 and over, combined (discussed below).

Table III. Births in 2010 and 2011, deaths in 2011 of infants born in 2010 and 2011, and separation factors, by race, Hispanic origin, and sex: United States

Births	Total			White			Black			Hispanic			Non-Hispanic white			Non-Hispanic black		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
2010.....	3,999,386	2,046,935	1,952,451	3,069,315	1,571,470	1,497,845	636,425	323,956	312,469	945,180	481,328	463,852	2,162,406	1,109,384	1,053,022	589,808	300,487	289,321
2011.....	3,953,590	2,024,052	1,929,538	3,020,355	1,547,927	1,472,428	632,901	321,666	311,235	918,129	468,150	449,979	2,146,566	1,102,161	1,044,405	582,345	295,948	286,397
Deaths in 2011 of infants born in:																		
2010.....	2,987	1,724	1,263	1,870	1,055	815	954	575	379	568	312	258	1,328	762	566	880	527	353
2011.....	20,998	11,603	9,395	13,590	7,528	6,062	6,330	3,482	2,848	4,164	2,266	1,896	9,558	5,331	4,227	5,790	3,181	2,610
Separation factor, <i>f</i>	0.125	0.129	0.119	0.121	0.123	0.119	0.131	0.142	0.117	0.120	0.121	0.120	0.122	0.125	0.118	0.132	0.142	0.119

SOURCE: CDC/NCHS, National Vital Statistics System.

Table IV. Estimated parameters α and β used for predicting m_x and starting age of modeled age span: U.S. Life Tables, 2011

Parameter	Total			White			Black			Non-Hispanic White			Non-Hispanic Black		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Starting age	85	84	85	85	84	85	83	82	83	85	84	85	83	82	83
$\ln(\alpha)$	-13.07565	-12.94048	-13.76136	-13.32123	-13.20902	-13.99938	-10.60132	-10.01453	-11.30589	-13.29764	-13.05735	-13.97814	-10.37878	-9.919592	-11.23979
(SE)	(0.098)	(0.192)	(0.083)	(0.075)	(0.149)	(0.066)	(0.092)	(0.107)	(0.098)	(0.074)	(0.132)	(0.064)	(0.129)	(0.108)	(0.093)
β	0.1263788	0.1270152	0.1328977	0.129289	0.1302069	0.1357093	0.0978717	0.0936442	0.1047234	0.1290456	0.1285412	0.1354899	0.0954403	0.0926563	0.1040413
(SE)	(0.001)	(0.002)	(0.001)	(0.008)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)

NOTE: SE is standard error.

SOURCE: CDC/NCHS, National Vital Statistics System.

Probabilities of dying at the oldest ages for the Hispanic population

As noted above, Medicare data are unreliable for the Hispanic population due to inconsistencies in the Medicare race and ethnicity classification system. As a result, it was necessary to use other methods to estimate mortality at the oldest ages for this population. Beyond age 80, mortality estimates based strictly on vital statistics for the Hispanic population are too low, despite correction for ethnic misclassification on the death certificate.

A consistent finding across diverse studies has been that Hispanic mortality in the adult and advanced ages varies between approximately 80% and 89% of that of the non-Hispanic white population (12,13,24,28). The Brass relational logit model takes advantage of the relationship between Hispanic and non-Hispanic white mortality previously identified and has been widely and successfully used to predict the mortality of one population relative to another at the older ages (3,29–31). Using the age-specific mortality pattern of the non-Hispanic white population as the standard, the Brass relational logit model is used to predict Hispanic mortality in the older ages. The standard is fit to Hispanic data in the age interval 45–80, and the predicted parameters are used to estimate the probabilities of death for ages 76–100. This method allows the relationship between the two populations in the younger ages to be carried over to the older ages (3,29–31).

The Brass relational logit model expresses the age-specific mortality pattern of a population of interest as a function of the age-specific mortality pattern of a standard population and is expressed as:

$$\bar{Y}_x = \alpha + \beta Y_x^s \quad [12]$$

where \bar{Y}_x is the predicted logit of the probability of death, q_x , in the population of interest, that is,

$$\text{logit} [q_x] = \ln \left[\frac{q_x}{1 - q_x} \right]$$

Y_x^s is the logit of the probability of death in the standard population, q_x^s , that is,

$$\text{logit} [q_x^s] = \ln \left[\frac{q_x^s}{1 - q_x^s} \right]$$

α is the predicted parameter that measures the level of mortality of the population of interest relative to the standard population, and β is the predicted parameter that measures the slope of the mortality function of the population of interest relative to the standard population (3,29–31). Table V shows values of predicted α and β and their standard errors.

A maximum-likelihood generalized linear model estimation procedure is used to fit equation [12] in the age range 45–80. The resulting predicted parameters α and β were then used to estimate the predicted probability of death for ages 76–120 in the Hispanic population. The value q_x was predicted to age 120 in order to estimate the life table population until no survivors remain, as was done for the other population groups. This information is then used to estimate L_x for ages 100–120, which is used to close the table with

Table V. Estimated Brass relational logit model parameters α and β for the Hispanic origin population, 2011

Parameter	Total (SE)	Male (SE)	Female (SE)
α	-0.1856232 (0.019)	-0.201624 (0.033)	-0.0953808 (0.019)
β	1.018098 (0.005)	1.005779 (0.009)	1.045456 (0.004)

NOTE: SE is standard error.
SOURCE: CDC/NCHS, National Vital Statistics System.

the age category 100 and over, combined (discussed below).

Predicted \bar{q}_x is estimated by transforming its logit, \bar{Y}_x , back as follows:

$$\bar{q}_x = \frac{\exp[\bar{Y}_x]}{1 + \exp[\bar{Y}_x]} = \frac{\exp[\alpha + \beta Y_x^s]}{1 + \exp[\alpha + \beta Y_x^s]} \quad [13]$$

To ensure a smooth transition from vital q_x^v and predicted \bar{q}_x , the two were blended from ages 76 to 80 with a graduating process as follows:

$$q_x = \frac{1}{6} [(81 - x) q_x^v + (x - 75) \bar{q}_x]$$

when $x = 76, \dots, 80$. [14]

Finally, to close the table at age 100 and over (combined), ${}_{\infty}q_{100}$ is set equal to 1.0 because all survivors to this age will die at some point in the open-ended age interval. Once q_x is obtained for each single year of age, the other life table functions are easily calculated.

Calculation of remaining life table functions for all groups

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

$$l_x = l_{x-1} (1 - q_{x-1}) \quad [15]$$

Decrement function (d_x)

The number of deaths occurring between ages x and $x + 1$ is calculated from the survivor function:

$$d_x = l_x - l_{x+1} = l_x q_x \quad [16]$$

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

Person-years lived (L_x)

Person-years lived for ages 1–99 is calculated assuming that the survivor function declines linearly between ages x and $x + 1$. This gives the formula

$$L_x = \frac{1}{2} (l_x + l_{x+1}) = l_x - \frac{1}{2} d_x \quad [17]$$

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

$$L_0 = fl_0 + (1 - f)l_1 \quad [18]$$

Finally, ${}_{\infty}L_{100}$ is estimated as the sum of the extrapolated L_x values for ages 100–120.

Person-years lived at and above age x (T_x)

T_x is calculated by summing L_x values at and above age x :

$$T_x = \sum_{x=0}^{\infty} L_x \quad [19]$$

Life expectancy at age x (e_x)

Life expectancy at exact age x is calculated as

$$e_x = \frac{T_x}{l_x} \quad [20]$$

Abridging the complete life table

An abridged or collapsed version of the complete life table, in which life table functions are shown for 5-year rather than single-year age intervals, can easily be calculated. It is often desirable to summarize the life table and save space, compared with the space required when data are published by single years of age. 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 , that is, the beginning of the age interval x to $x + n$ (where 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 or 20–25. 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 VI 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 1–18. 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 ${}_nL_x$, respectively). Thus, ${}_5q_{20}$ is the probability of dying between ages 20 and 25 and will obviously be somewhat larger than q_{20} , the probability of dying between ages 20 and 21. 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 VI shows each of the life table functions for the 2011 U.S. total population abridged from Table 1.

Table VI. Life table for the total population: United States, 2011

Age (years)	Probability of dying between ages x and $x + n$	Number surviving to age x	Number dying between ages x and $x + n$	Person-years lived between ages x and $x + n$	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	0.006058	100,000	606	99,470	7,870,915	78.7
1–5	0.001054	99,394	105	397,328	7,771,445	78.2
5–10	0.000603	99,289	60	496,283	7,374,117	74.3
10–15	0.000709	99,230	70	496,013	6,877,834	69.3
15–20	0.002438	99,159	242	495,273	6,381,822	64.4
20–25	0.004296	98,917	425	493,571	5,886,549	59.5
25–30	0.004824	98,493	475	491,294	5,392,978	54.8
30–35	0.005638	98,017	553	488,740	4,901,685	50.0
35–40	0.006985	97,465	681	485,700	4,412,945	45.3
40–45	0.010006	96,784	968	481,668	3,927,245	40.6
45–50	0.016018	95,816	1,535	475,517	3,445,577	36.0
50–55	0.024459	94,281	2,306	465,966	2,970,060	31.5
55–60	0.035105	91,975	3,229	452,219	2,504,094	27.2
60–65	0.049332	88,746	4,378	433,313	2,051,875	23.1
65–70	0.073302	84,368	6,184	407,261	1,618,562	19.2
70–75	0.110899	78,184	8,670	370,409	1,211,301	15.5
75–80	0.172927	69,513	12,021	319,047	840,892	12.1
80–85	0.274121	57,493	15,760	249,399	521,844	9.1
85–90	0.429759	41,733	17,935	163,851	272,446	6.5
90–95	0.617742	23,798	14,701	79,680	108,595	4.6
95–100	0.788076	9,097	7,169	24,533	28,915	3.2
100 and over	1.000000	1,928	1,928	4,382	4,382	2.3

SOURCE: CDC/NCHS, National Vital Statistics System.

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