

## United States Life Tables, 2019

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### Abstract

**Objectives**—This report presents complete period life tables for the United States by Hispanic origin, race, and sex, based on age-specific death rates in 2019. Starting with the 2019 data year, this report adds life tables for the non-Hispanic American Indian or Alaska Native (AIAN) and non-Hispanic Asian populations.

**Methods**—Data used to prepare the 2019 life tables are 2019 final mortality statistics; July 1, 2019, population estimates based on the 2010 decennial census; and 2019 Medicare data for people aged 66–99. 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. The same methodology is used to estimate the life tables for the non-Hispanic AIAN and non-Hispanic Asian populations. The methodology used to estimate the 2019 life tables for all other groups was first implemented with data year 2008.

**Results**—In 2019, the overall expectation of life at birth was 78.8 years, increasing from 78.7 in 2018. Between 2018 and 2019, life expectancy at birth increased by 0.1 year for males (76.2 to 76.3) and by 0.2 year for females (81.2 to 81.4). In 2019, life expectancy at birth was 85.6 years for the non-Hispanic Asian population, 81.9 years for the Hispanic population, 78.8 years for the non-Hispanic White population, 74.8 years for the non-Hispanic Black population, and 71.8 years for the non-Hispanic AIAN population. Between 2018 and 2019, life expectancy increased 0.2 year for the non-Hispanic White population and by 0.1 year for the Hispanic and non-Hispanic Black populations.

**Keywords:** life expectancy • survival • death rates • Hispanic origin • race • National Vital Statistics System

### 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 people 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 based on 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 people born in 1970 would require the use of data projection techniques to estimate deaths into the future (2,3).

The period life table 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 2019 assumes a hypothetical cohort that is subject throughout its lifetime to the age-specific death rates prevailing for the actual population in 2019. Consequently, the period life table may be characterized as rendering a “snapshot” of current mortality experience and showing 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. An abridged life table typically contains data by 5- or 10-year age intervals. A complete life table can easily be combined into 5- or 10-year age groups (see Technical Notes 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 the first official U.S. life tables for the non-Hispanic American Indian or Alaska Native (AIAN) and non-Hispanic Asian populations, and the second set of U.S. life tables by race and Hispanic origin based on the 1997 Office of Management and Budget (OMB) revised standards for the



reporting of race and ethnicity (5,6). Beginning with the 2018 data year, all 50 states and the District of Columbia (D.C.) reported deaths based on the 2003 revision of the U.S. Standard Certificate of Death for the entire year (6). The revision is based on the 1997 OMB standards (5). The 1997 standards allow people to report more than one race and increased the race choices from four to five by separating the Asian and Pacific Islander groups (5). The separation of these populations, which have distinct health and mortality profiles, and improvements in race reporting on death certificates, made it possible to estimate reliable life tables for the non-Hispanic Asian population. The results of a new study about the effects on AIAN mortality statistics from racial and ethnic misclassification on death certificates were used to produce the first set of annual complete life tables for the non-Hispanic AIAN population (7).

Complete period life tables by sex for the Hispanic, non-Hispanic AIAN, non-Hispanic Asian, non-Hispanic Black, and non-Hispanic White populations based on the 1997 OMB revised standards for the reporting of race and ethnicity are presented in this report (5). These categories differ from the bridged-race categories shown in previous reports for years 2000–2017. Comparisons between data years 2000–2017 and 2018–2019 should be interpreted considering these differences. Life expectancy estimates for bridged-race categories are included in this report for years 2006–2019 to document the effect of the change in race standards and to show trends. Estimates for bridged-race categories will continue to be calculated through data year 2020. The Hispanic category is consistent with previous reports because the classification of Hispanic origin did not change between standards (5,8). In the remainder of this report, “race” refers to “single race” based on the 1997 standard (see Technical Notes and “Comparability of Race-specific Mortality Data Based on 1977 Versus 1997 Reporting Standards” for more information on differences between single- and bridged-race groups (9).

## Data and Methods

The data used to prepare the U.S. life tables for 2019 are final numbers of deaths for the year 2019; July 1, 2019, population estimates based on the 2010 decennial census; and age-specific death and population counts for Medicare beneficiaries aged 66–99 for the year 2019 from the Centers for Medicare & Medicaid Services. Data from the Medicare program were used to supplement vital statistics and census data for ages 66 and over for the total, non-Hispanic Black, and non-Hispanic White populations. Because reliable Medicare data were not available for the Hispanic, non-Hispanic AIAN, and non-Hispanic Asian populations, statistical modeling was used to produce reliable old-age mortality estimates. The U.S. life tables by Hispanic origin and race are based on death rates that have been adjusted for race and ethnicity misclassification on death certificates using classification ratios (or correction factors) generated from studies that evaluate Hispanic origin and race misclassification on death certificates in the United States (10–12). (See Technical Notes for a detailed description of the data sets and methodology used to estimate the life tables.)

## 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 people who have reached a given age ( $x$ ). Life expectancy and other life table values for each age in 2019 are shown for the total population and by Hispanic origin, race, and sex in [Tables 1–18](#). Life expectancy is summarized by age, Hispanic origin, race, and sex in [Table A](#).

Life expectancy at birth ( $e_0$ ) for 2019 for the total population was 78.8 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 to assess the longevity of the period life table cohort is to determine 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, Hispanic origin, race, and sex. To illustrate, 58,513 people out of the original 2019 hypothetical life table cohort of 100,000 (or 58.5%) were alive at exact age 80. In other words, the probability that a person will survive from birth to age 80, given 2019 age-specific mortality, is 58.5%. Probabilities of survival can be calculated at any age by 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 (43,295) by the number of survivors at age 20 (98,975), which results in a 43.7% 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 years, the probability of dying is 0.001077 ([Table 2](#)). This column forms the basis of the life table; all subsequent columns are calculated from it.

*Column 3. Number surviving ( $l_x$ )*—Shows the number of people 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 people still alive at the beginning of each age interval. Consequently, out of 100,000 female babies born alive, 99,496 will complete the first year of life and enter the second; 99,358 will reach age 10; 99,157 will reach age 20; and 50,324 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, 608 will die in the first year of life; 106 between ages 20 and 21; and 1,092 after reaching age 100 ([Table 2](#)). Each figure in column 4 is the difference between the two successive figures in column 3.

**Table A. Expectation of life, by age, Hispanic origin and race, and sex: United States, 2019**

Age (years)	All origins and races			Hispanic <sup>1</sup>			Non-Hispanic American Indian or Alaska Native <sup>1</sup>			Non-Hispanic Asian <sup>1</sup>			Non-Hispanic Black <sup>1</sup>			Non-Hispanic White <sup>1</sup>		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
0.....	78.8	76.3	81.4	81.9	79.1	84.4	71.8	68.6	75.0	85.6	83.5	87.4	74.8	71.3	78.1	78.8	76.3	81.3
1.....	78.3	75.8	80.8	81.3	78.5	83.8	71.3	68.2	74.5	84.9	82.8	86.7	74.6	71.1	77.9	78.1	75.7	80.6
5.....	74.4	71.9	76.9	77.3	74.6	79.9	67.5	64.4	70.7	80.9	78.8	82.8	70.7	67.3	74.0	74.2	71.8	76.6
10.....	69.4	66.9	71.9	72.4	69.6	74.9	62.6	59.5	65.8	75.9	73.8	77.8	65.8	62.3	69.1	69.2	66.8	71.7
15.....	64.5	62.0	66.9	67.4	64.6	69.9	57.7	54.6	60.8	71.0	68.9	72.8	60.9	57.4	64.1	64.3	61.9	66.7
20.....	59.6	57.2	62.0	62.5	59.8	65.0	53.0	50.0	56.1	66.1	64.0	67.9	56.1	52.8	59.2	59.4	57.1	61.8
25.....	54.9	52.5	57.2	57.8	55.1	60.2	48.5	45.6	51.5	61.2	59.2	62.9	51.5	48.4	54.5	54.7	52.4	56.9
30.....	50.2	47.9	52.4	53.0	50.5	55.3	44.1	41.4	46.9	56.3	54.3	58.0	47.0	43.9	49.7	50.0	47.8	52.1
35.....	45.5	43.4	47.6	48.3	45.9	50.4	40.0	37.4	42.6	51.5	49.5	53.1	42.4	39.6	45.0	45.3	43.2	47.4
40.....	40.9	38.8	42.9	43.6	41.3	45.6	36.0	33.5	38.4	46.6	44.7	48.2	38.0	35.2	40.4	40.7	38.7	42.7
45.....	36.3	34.4	38.2	38.9	36.7	40.9	32.0	29.7	34.3	41.8	39.9	43.3	33.6	31.0	35.9	36.2	34.3	38.0
50.....	31.8	30.0	33.6	34.4	32.2	36.2	28.3	26.1	30.4	37.0	35.2	38.5	29.4	26.9	31.5	31.7	29.9	33.5
55.....	27.5	25.8	29.2	29.9	27.9	31.6	24.8	22.8	26.7	32.4	30.7	33.7	25.3	23.0	27.3	27.4	25.7	29.0
60.....	23.5	21.9	24.9	25.6	23.8	27.1	21.4	19.7	23.0	27.8	26.3	29.0	21.6	19.5	23.4	23.4	21.8	24.8
65.....	19.6	18.2	20.8	21.6	19.9	22.9	18.2	16.7	19.5	23.4	22.1	24.5	18.2	16.3	19.7	19.5	18.1	20.7
70.....	15.9	14.7	16.9	17.7	16.2	18.7	15.2	14.0	16.1	19.2	18.0	20.1	15.0	13.4	16.2	15.8	14.6	16.7
75.....	12.4	11.4	13.2	14.0	12.8	14.8	12.2	11.3	13.0	15.2	14.2	15.9	12.0	10.7	12.9	12.3	11.3	13.1
80.....	9.3	8.5	9.9	10.7	9.6	11.2	9.6	8.8	10.2	11.5	10.7	12.0	9.3	8.2	9.9	9.2	8.4	9.8
85.....	6.7	6.0	7.1	7.8	6.9	8.1	7.4	6.7	7.8	8.3	7.6	8.6	6.9	6.2	7.3	6.6	6.0	7.0
90.....	4.6	4.1	4.9	5.5	4.8	5.6	5.6	5.1	5.8	5.6	5.2	5.8	5.1	4.6	5.3	4.5	4.0	4.8
95.....	3.2	2.8	3.3	3.8	3.3	3.8	4.2	3.8	4.3	3.8	3.5	3.8	3.7	3.4	3.8	3.1	2.7	3.2
100.....	2.2	2.0	2.3	2.7	2.3	2.7	3.3	3.0	3.3	2.6	2.4	2.5	2.8	2.6	2.8	2.2	2.0	2.2

<sup>1</sup>Life tables by Hispanic origin and race are based on death rates that have been adjusted for race and ethnicity misclassification on death certificates; see Technical Notes in this report.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**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 figure in column 5 represents the total time (in years) lived between two indicated birthdays by all those reaching the earlier birthday. Consequently, the figure 98,748 for males in the age interval 20–21 is the total number of years lived between the 20th and 21st birthdays by the 98,802 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 figure 5,647,091 is the total number of years lived after reaching age 20 by the 98,802 males who reached 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 calculated by dividing the total person-years that would be lived beyond age  $x$  by the number of people who survived to that age interval ( $T_x/l_x$ ). Consequently, the average remaining lifetime for males who reach age 20 is 57.2 years (5,647,091 divided by 98,802) (Table 2).

## Results

### Life expectancy in the United States

Tables 1–18 show complete life tables for 2019 by Hispanic origin, race, and sex. Table A summarizes life expectancy by age, Hispanic origin, race, and sex. Life expectancy at birth for 2019 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 2019. In 2019, life expectancy at birth was 78.8 years, increasing by 0.1 year from 78.7 in 2018 (Table 19).

The difference in life expectancy between the sexes was 5.1 years in 2019, increasing 0.1 year from 2018. From 1900 to 1975, the difference in life expectancy between the sexes increased from 2.0 years to 7.8 years (Figure 1 and 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 (13,14). Between 1979 and 2010, the difference in life expectancy between the sexes narrowed from 7.8 years to 4.8 years and then increased to 5.1 in 2019 (Figure 1 and Table 19).

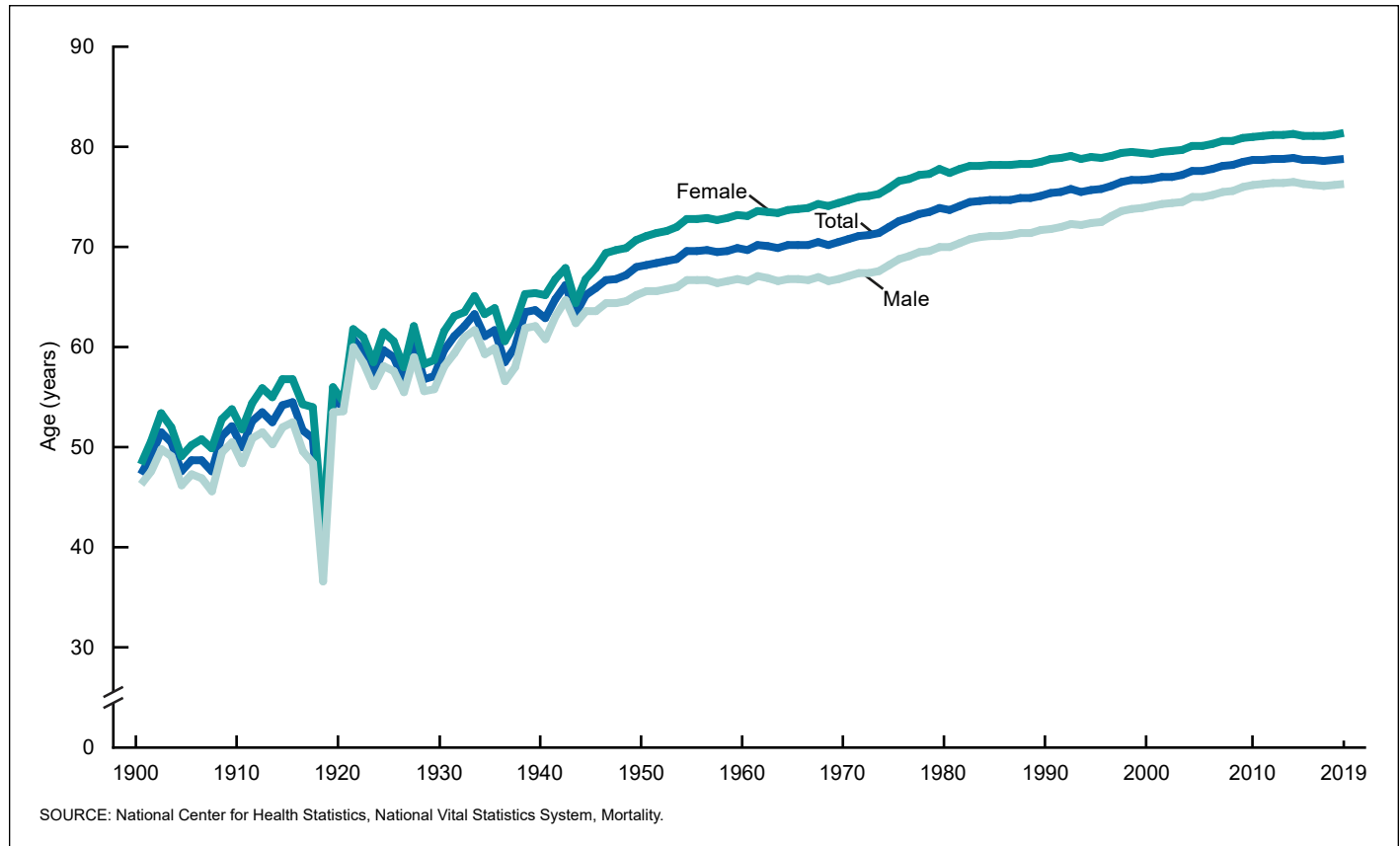
The 2019 life table may be used to compare life expectancy at any age from birth onward. Based on mortality experienced in 2019, a person aged 65 could expect to live an average of 19.6 more years for a total of 84.6 years; a person aged 85 could expect to live an additional 6.7 years for a total of 91.7 years; and a person aged 100 could expect to live an additional 2.2 years, on average (Table A).

**Table B. Number of survivors out of 100,000 born alive, by age, Hispanic origin and race, and sex: United States, 2019**

Age (years)	All origins and races			Hispanic <sup>1</sup>			Non-Hispanic American Indian or Alaska Native <sup>1</sup>			Non-Hispanic Asian <sup>1</sup>			Non-Hispanic Black <sup>1</sup>			Non-Hispanic White <sup>1</sup>		
	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	99,443	99,392	99,496	99,497	99,452	99,543	99,213	99,135	99,294	99,663	99,637	99,690	98,939	98,859	99,021	99,552	99,506	99,600
5	99,349	99,291	99,411	99,422	99,373	99,475	98,956	98,887	99,031	99,599	99,576	99,625	98,769	98,694	98,866	99,469	99,406	99,536
10	99,292	99,229	99,358	99,374	99,324	99,429	98,843	98,777	98,916	99,559	99,530	99,590	98,659	98,583	98,770	99,418	99,345	99,496
15	99,217	99,140	99,296	99,312	99,253	99,378	98,680	98,535	98,830	99,514	99,482	99,548	98,543	98,455	98,683	99,343	99,252	99,440
20	98,975	98,802	99,157	99,103	98,961	99,255	98,066	97,786	98,347	99,368	99,311	99,481	98,105	97,780	98,489	99,128	98,967	99,300
25	98,531	98,163	98,917	98,721	98,414	99,052	97,118	96,573	97,661	99,149	99,053	99,384	97,351	96,660	98,115	98,711	98,379	99,062
30	97,967	97,371	98,594	98,258	97,728	98,831	95,797	94,840	96,776	98,934	98,770	99,269	96,530	95,477	97,673	98,131	97,584	98,710
35	97,266	96,435	98,137	97,729	96,991	98,535	93,809	92,396	95,273	98,684	98,442	99,129	95,506	94,085	97,012	97,388	96,607	98,209
40	96,404	95,323	97,532	97,105	96,142	98,155	91,458	89,580	93,395	98,407	98,060	98,946	94,186	92,348	96,085	96,469	95,430	97,557
45	95,336	93,974	96,748	96,325	95,106	97,644	88,735	86,402	91,141	98,029	97,558	98,676	92,511	90,215	94,834	95,350	94,027	96,731
50	93,859	92,159	95,612	95,215	93,710	96,835	85,036	82,046	88,106	97,397	96,718	98,227	90,307	87,494	93,107	93,818	92,168	95,539
55	91,674	89,485	93,921	93,588	91,651	95,668	80,268	76,411	84,223	96,392	95,361	97,525	87,162	83,682	90,585	91,583	89,458	93,794
60	88,415	85,496	91,391	91,111	88,496	93,886	74,824	69,938	79,820	94,943	93,346	96,547	82,582	78,124	86,925	88,290	85,465	91,215
65	83,868	79,984	87,802	87,548	84,055	91,184	68,366	62,542	74,313	92,746	90,353	94,997	76,244	70,506	81,780	83,757	80,005	87,624
70	77,924	72,889	82,990	82,713	78,014	87,458	60,841	53,979	67,857	89,427	86,149	92,404	68,294	60,985	75,243	77,861	73,011	82,837
75	69,854	63,844	75,903	75,928	69,969	81,806	52,163	44,834	59,789	84,419	80,107	88,265	58,917	50,459	66,928	69,732	63,948	75,669
80	58,513	51,653	65,404	66,357	59,191	73,225	41,984	35,056	49,264	76,484	70,921	81,423	47,454	38,469	55,927	58,226	51,608	65,000
85	43,295	36,252	50,324	52,633	44,599	59,976	30,049	23,727	36,724	63,729	57,035	69,597	33,856	25,360	41,774	42,815	35,993	49,736
90	25,317	19,371	31,124	34,751	26,951	41,313	18,248	13,395	23,330	44,700	37,717	50,601	19,832	13,278	25,844	24,768	19,032	30,472
95	9,873	6,480	13,035	16,562	10,938	20,618	8,572	5,647	11,503	22,488	17,082	26,519	8,575	4,988	11,784	9,409	6,145	12,484
100	2,090	1,092	2,976	4,768	2,436	6,113	2,852	1,623	3,991	6,512	4,216	7,862	2,414	1,196	3,433	1,893	959	2,727

<sup>1</sup>Life tables by Hispanic origin and race are based on death rates that have been adjusted for race and ethnicity misclassification on death certificates; see Technical Notes in this report.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Figure 1. Life expectancy, by sex: United States, 1900–2019**

Changes in mortality by age and cause of death can have a major effect on life expectancy. Life expectancy at birth for the total population increased by 0.1 year in 2019 from 2018 primarily because of decreases in mortality from cancer, Chronic lower respiratory diseases, Influenza and pneumonia, suicide, and stroke. The increase in life expectancy for the total population would have been greater if not for increases in mortality from HIV disease, Nutritional deficiencies, Complications of medical and surgical care, and Parkinson disease. Life expectancy at birth for females increased 0.2 year due to decreases in mortality from cancer, Influenza and pneumonia, heart disease, Chronic lower respiratory diseases, and Septicemia. The increase in life expectancy would have been greater if not for increases in mortality from Nutritional deficiencies, Chronic liver disease and cirrhosis, unintentional injuries, and Complications of medical and surgical care. For males, life expectancy at birth increased 0.1 year due to decreases in mortality from cancer, heart disease, Influenza and pneumonia, Chronic lower respiratory diseases, and suicide. The increase in life expectancy would have been greater if not for increases in mortality from unintentional injuries, homicide, diabetes, Chronic liver disease and cirrhosis, and Nutritional deficiencies (15).

### Life expectancy by Hispanic origin and race

In 2019, the non-Hispanic Asian population had the highest life expectancy at birth (85.6), with an advantage of 3.7 years over the Hispanic population (81.9), 6.8 years over the non-Hispanic

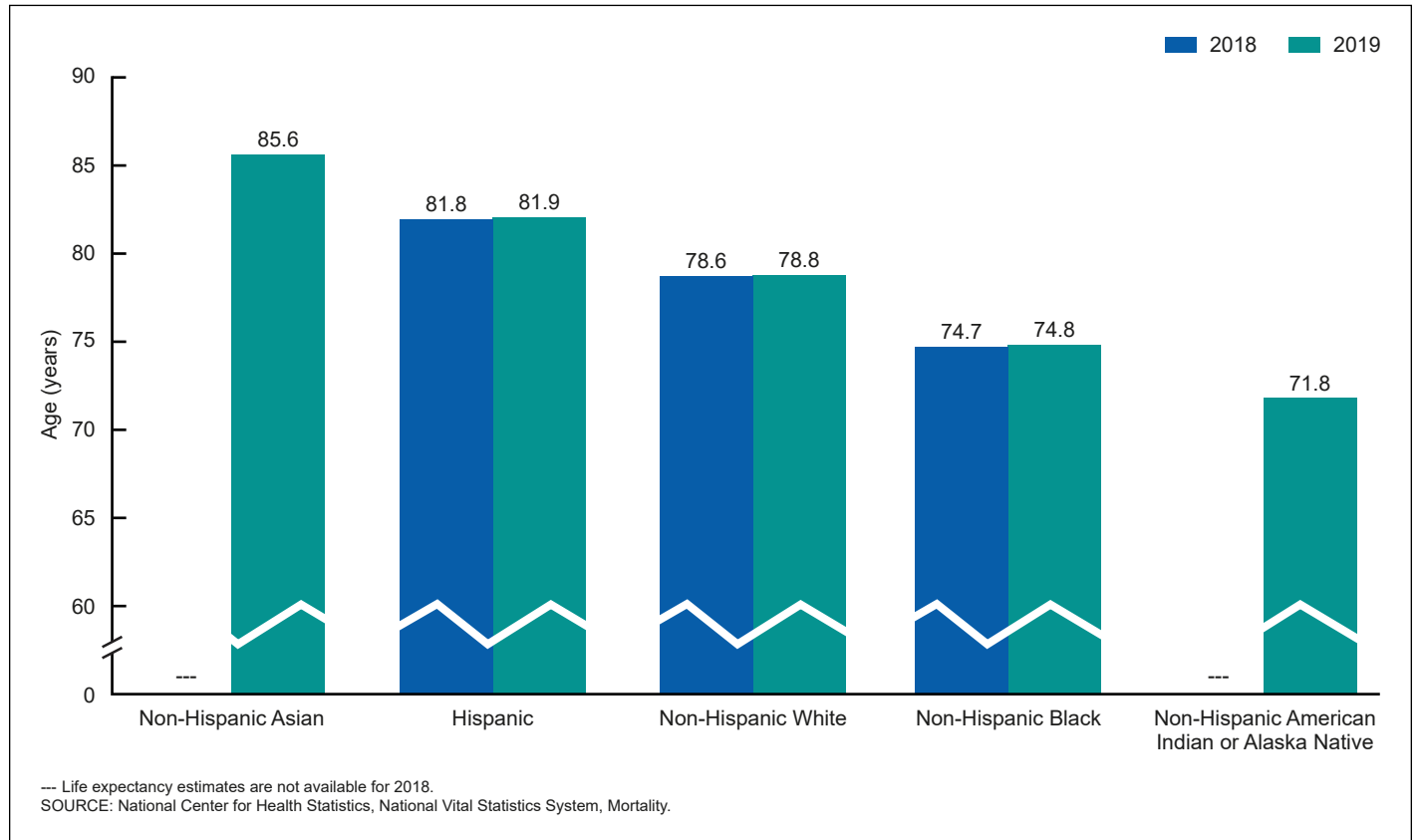
White population (78.8), 10.8 years over the non-Hispanic Black population (74.8), and 13.8 years over the non-Hispanic AIAN population (71.8). Between 2018 and 2019, life expectancy increased 0.2 year (78.6 to 78.8) for the non-Hispanic White population and by 0.1 year for the non-Hispanic Black (74.7 to 74.8) and Hispanic (81.8 to 81.9) populations (Figure 2, Table 19).

Among the 10 Hispanic-origin and race-sex groups (Figure 3), non-Hispanic Asian females had the highest life expectancy at birth (87.4 years), followed by Hispanic females (84.4), non-Hispanic Asian males (83.5), non-Hispanic White females (81.3), Hispanic males (79.1), non-Hispanic Black females (78.1), non-Hispanic White males (76.3), non-Hispanic AIAN females (75.0), non-Hispanic Black males (71.3), and non-Hispanic AIAN males (68.6). Disparities in life expectancy at birth between groups range from 0.9 year between Hispanic females and non-Hispanic Asian males to 18.8 years between non-Hispanic Asian females and non-Hispanic AIAN males.

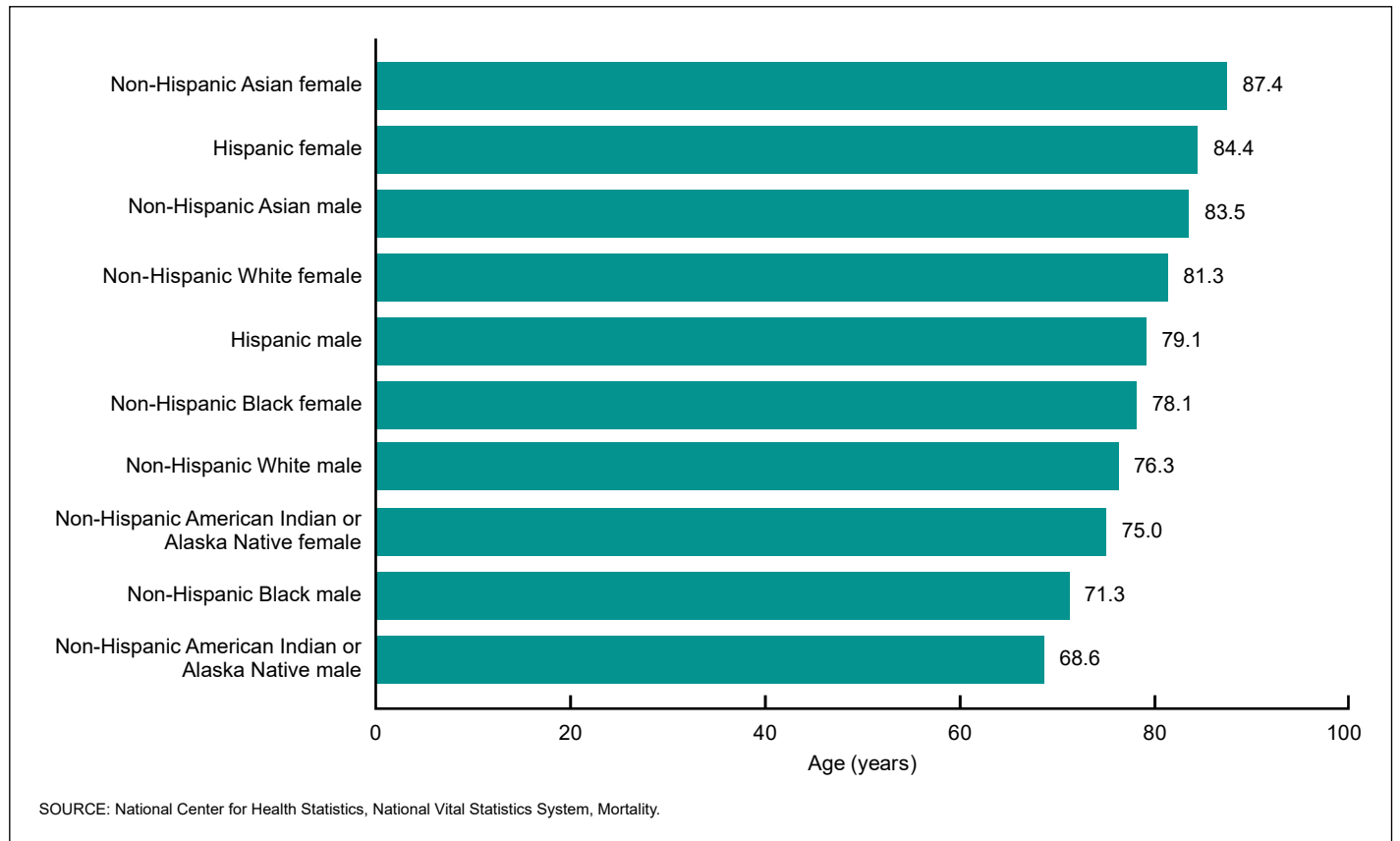
### Survivorship in the United States

Table B summarizes the number of survivors out of 100,000 people born alive ( $l_x$ ) by age, Hispanic origin, race, and sex for 2019. In 2019, 99.4% of all infants born in the United States survived the first year of life; 99.0% survived to age 20; 83.9% survived to age 65; 43.3% survived to age 85; and 2.1% survived to age 100.

**Figure 2. Life expectancy at birth, by Hispanic origin and race: United States, 2018 and 2019**



**Figure 3. Life expectancy at birth, by Hispanic origin and race and sex: United States, 2019**



## Survivorship by Hispanic origin and race

In 2019, 99.7% of non-Hispanic Asian infants survived the first year of life, followed by 99.6% of non-Hispanic White infants, 99.5% of Hispanic infants, 99.2% of non-Hispanic AIAN infants, and 98.9% of non-Hispanic Black infants (Figure 4 and Table B). The non-Hispanic Asian population had the highest survival probability at age 20 (99.4%), followed by the Hispanic and non-Hispanic White populations (99.1%), and the non-Hispanic AIAN and non-Hispanic Black populations (98.1%). By age 65, the non-Hispanic Asian population had the highest survival probability at 92.7%, followed by the Hispanic population (87.5%), and the non-Hispanic White (83.8%), non-Hispanic Black (76.2%), and non-Hispanic AIAN (68.4%) populations. The survival advantage experienced by the non-Hispanic Asian population increased with age so that by age 85, 63.7% had survived, compared with 52.6% of the Hispanic, 42.8% of the non-Hispanic White, 33.9% of the non-Hispanic Black, and 30.0% of the non-Hispanic AIAN populations.

## Summary

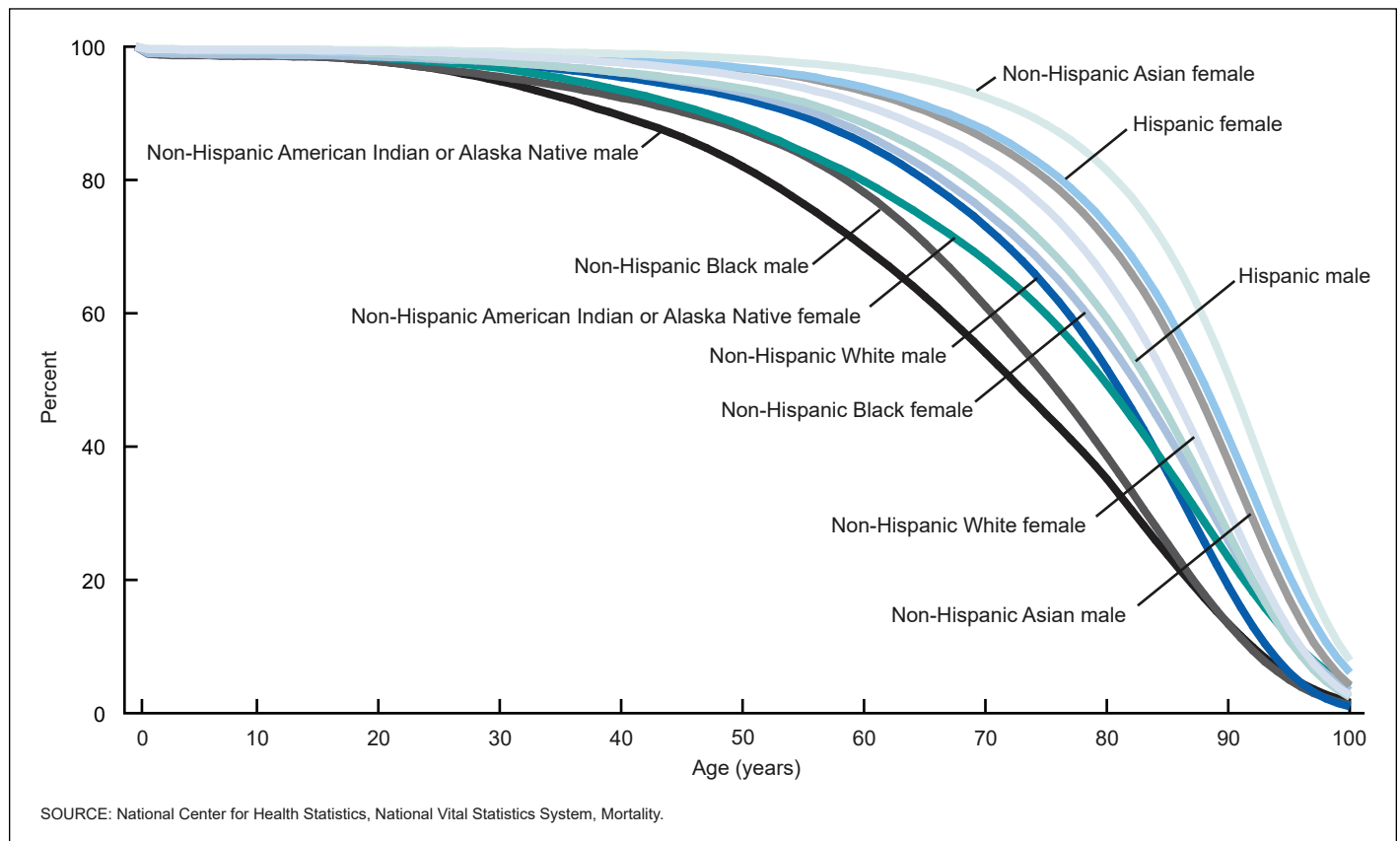
With this report, complete period U.S. life tables by Hispanic origin and race are now available for the Hispanic, non-Hispanic AIAN, non-Hispanic Asian, non-Hispanic Black, and non-Hispanic White populations. The U.S. life tables for the non-Hispanic AIAN population shown in this report were first published in the report “Mortality Profile of the Non-Hispanic American Indian or Alaska

Native Population, 2019” (7). In 2019, the non-Hispanic AIAN population experienced the lowest life expectancy at birth in the United States with life expectancies of 71.8, 68.6, and 75.0 years for the total, male, and female populations, respectively. The non-Hispanic Asian population had a life expectancy advantage of 13.8, 14.9, and 12.4 years relative to the total, male, and female non-Hispanic AIAN populations, respectively. Life tables for the Native Hawaiian and Other Pacific Islander population are not presented in this report currently due to data size and quality limitations.

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**Figure 4. Percentage surviving, by Hispanic origin and race, sex, and age: United States, 2019**



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**Table 1. Life table for the total population: United States, 2019**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table01.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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	0.005575	100,000	557	99,513	7,884,823	78.8
1-2	0.000379	99,443	38	99,424	7,785,310	78.3
2-3	0.000234	99,405	23	99,393	7,685,886	77.3
3-4	0.000180	99,382	18	99,373	7,586,493	76.3
4-5	0.000145	99,364	14	99,357	7,487,120	75.4
5-6	0.000137	99,349	14	99,343	7,387,764	74.4
6-7	0.000124	99,336	12	99,330	7,288,421	73.4
7-8	0.000114	99,323	11	99,318	7,189,091	72.4
8-9	0.000105	99,312	10	99,307	7,089,774	71.4
9-10	0.000097	99,302	10	99,297	6,990,467	70.4
10-11	0.000095	99,292	9	99,287	6,891,170	69.4
11-12	0.000104	99,282	10	99,277	6,791,883	68.4
12-13	0.000131	99,272	13	99,266	6,692,606	67.4
13-14	0.000181	99,259	18	99,250	6,593,340	66.4
14-15	0.000248	99,241	25	99,229	6,494,090	65.4
15-16	0.000324	99,217	32	99,200	6,394,861	64.5
16-17	0.000401	99,184	40	99,165	6,295,661	63.5
17-18	0.000483	99,145	48	99,121	6,196,496	62.5
18-19	0.000569	99,097	56	99,069	6,097,375	61.5
19-20	0.000657	99,040	65	99,008	5,998,307	60.6
20-21	0.000748	98,975	74	98,938	5,899,299	59.6
21-22	0.000839	98,901	83	98,860	5,800,361	58.6
22-23	0.000917	98,818	91	98,773	5,701,501	57.7
23-24	0.000976	98,728	96	98,680	5,602,728	56.7
24-25	0.001020	98,631	101	98,581	5,504,048	55.8
25-26	0.001057	98,531	104	98,479	5,405,467	54.9
26-27	0.001097	98,427	108	98,373	5,306,988	53.9
27-28	0.001139	98,319	112	98,263	5,208,616	53.0
28-29	0.001190	98,207	117	98,148	5,110,353	52.0
29-30	0.001248	98,090	122	98,029	5,012,205	51.1
30-31	0.001309	97,967	128	97,903	4,914,176	50.2
31-32	0.001371	97,839	134	97,772	4,816,273	49.2
32-33	0.001436	97,705	140	97,635	4,718,501	48.3
33-34	0.001500	97,565	146	97,492	4,620,866	47.4
34-35	0.001564	97,418	152	97,342	4,523,374	46.4
35-36	0.001636	97,266	159	97,186	4,426,032	45.5
36-37	0.001711	97,107	166	97,024	4,328,846	44.6
37-38	0.001782	96,941	173	96,854	4,231,822	43.7
38-39	0.001847	96,768	179	96,679	4,134,967	42.7
39-40	0.001912	96,589	185	96,497	4,038,289	41.8
40-41	0.001990	96,404	192	96,309	3,941,792	40.9
41-42	0.002087	96,213	201	96,112	3,845,483	40.0
42-43	0.002205	96,012	212	95,906	3,749,371	39.1
43-44	0.002344	95,800	225	95,688	3,653,465	38.1
44-45	0.002501	95,576	239	95,456	3,557,777	37.2
45-46	0.002679	95,336	255	95,209	3,462,321	36.3
46-47	0.002877	95,081	274	94,944	3,367,112	35.4
47-48	0.003094	94,808	293	94,661	3,272,168	34.5
48-49	0.003334	94,514	315	94,357	3,177,507	33.6
49-50	0.003608	94,199	340	94,029	3,083,151	32.7
50-51	0.003904	93,859	366	93,676	2,989,121	31.8
51-52	0.004238	93,493	396	93,295	2,895,445	31.0
52-53	0.004639	93,097	432	92,881	2,802,151	30.1
53-54	0.005107	92,665	473	92,428	2,709,270	29.2
54-55	0.005615	92,191	518	91,933	2,616,842	28.4
55-56	0.006123	91,674	561	91,393	2,524,910	27.5
56-57	0.006630	91,112	604	90,810	2,433,517	26.7
57-58	0.007167	90,508	649	90,184	2,342,706	25.9
58-59	0.007754	89,860	697	89,511	2,252,522	25.1
59-60	0.008394	89,163	748	88,789	2,163,011	24.3

**Table 1. Life table for the total population: United States, 2019—Con.**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table01.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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 $x$
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
60–61.....	0.009090	88,415	804	88,013	2,074,222	23.5
61–62.....	0.009808	87,611	859	87,181	1,986,209	22.7
62–63.....	0.010518	86,751	912	86,295	1,899,028	21.9
63–64.....	0.011202	85,839	962	85,358	1,812,733	21.1
64–65.....	0.011890	84,877	1,009	84,373	1,727,375	20.4
65–66.....	0.012621	83,868	1,059	83,339	1,643,002	19.6
66–67.....	0.013499	82,810	1,118	82,251	1,559,663	18.8
67–68.....	0.014468	81,692	1,182	81,101	1,477,412	18.1
68–69.....	0.015571	80,510	1,254	79,883	1,396,311	17.3
69–70.....	0.016804	79,256	1,332	78,590	1,316,428	16.6
70–71.....	0.018143	77,924	1,414	77,218	1,237,837	15.9
71–72.....	0.019683	76,511	1,506	75,758	1,160,620	15.2
72–73.....	0.021193	75,005	1,590	74,210	1,084,862	14.5
73–74.....	0.023529	73,415	1,727	72,551	1,010,652	13.8
74–75.....	0.025583	71,688	1,834	70,771	938,101	13.1
75–76.....	0.028288	69,854	1,976	68,866	867,330	12.4
76–77.....	0.030996	67,878	2,104	66,826	798,464	11.8
77–78.....	0.034485	65,774	2,268	64,640	731,638	11.1
78–79.....	0.038071	63,506	2,418	62,297	666,999	10.5
79–80.....	0.042153	61,088	2,575	59,800	604,702	9.9
80–81.....	0.046589	58,513	2,726	57,150	544,902	9.3
81–82.....	0.051588	55,787	2,878	54,348	487,752	8.7
82–83.....	0.057742	52,909	3,055	51,381	433,404	8.2
83–84.....	0.064540	49,854	3,218	48,245	382,023	7.7
84–85.....	0.071641	46,636	3,341	44,966	333,778	7.2
85–86.....	0.080529	43,295	3,487	41,552	288,812	6.7
86–87.....	0.089744	39,809	3,573	38,022	247,260	6.2
87–88.....	0.100480	36,236	3,641	34,416	209,238	5.8
88–89.....	0.112250	32,595	3,659	30,766	174,822	5.4
89–90.....	0.125094	28,936	3,620	27,126	144,057	5.0
90–91.....	0.139038	25,317	3,520	23,557	116,930	4.6
91–92.....	0.154096	21,797	3,359	20,117	93,374	4.3
92–93.....	0.170257	18,438	3,139	16,868	73,256	4.0
93–94.....	0.187494	15,299	2,868	13,864	56,388	3.7
94–95.....	0.205752	12,430	2,558	11,151	42,524	3.4
95–96.....	0.224954	9,873	2,221	8,762	31,372	3.2
96–97.....	0.244995	7,652	1,875	6,714	22,610	3.0
97–98.....	0.265747	5,777	1,535	5,010	15,896	2.8
98–99.....	0.287060	4,242	1,218	3,633	10,886	2.6
99–100.....	0.308767	3,024	934	2,557	7,253	2.4
100 and over.....	1.000000	2,090	2,090	4,696	4,696	2.2

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Table 2. Life table for males: United States, 2019**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table02.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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	0.006080	100,000	608	99,470	7,631,130	76.3
1-2	0.000415	99,392	41	99,371	7,531,660	75.8
2-3	0.000257	99,351	26	99,338	7,432,289	74.8
3-4	0.000193	99,325	19	99,316	7,332,951	73.8
4-5	0.000153	99,306	15	99,298	7,233,635	72.8
5-6	0.000149	99,291	15	99,283	7,134,337	71.9
6-7	0.000137	99,276	14	99,269	7,035,053	70.9
7-8	0.000126	99,263	12	99,256	6,935,784	69.9
8-9	0.000113	99,250	11	99,244	6,836,528	68.9
9-10	0.000101	99,239	10	99,234	6,737,283	67.9
10-11	0.000095	99,229	9	99,224	6,638,049	66.9
11-12	0.000106	99,219	11	99,214	6,538,825	65.9
12-13	0.000145	99,209	14	99,202	6,439,611	64.9
13-14	0.000221	99,194	22	99,183	6,340,410	63.9
14-15	0.000324	99,172	32	99,156	6,241,226	62.9
15-16	0.000438	99,140	43	99,119	6,142,070	62.0
16-17	0.000554	99,097	55	99,069	6,042,951	61.0
17-18	0.000679	99,042	67	99,008	5,943,882	60.0
18-19	0.000809	98,975	80	98,935	5,844,874	59.1
19-20	0.000940	98,895	93	98,848	5,745,939	58.1
20-21	0.001077	98,802	106	98,748	5,647,091	57.2
21-22	0.001211	98,695	120	98,635	5,548,342	56.2
22-23	0.001324	98,576	131	98,510	5,449,707	55.3
23-24	0.001407	98,445	138	98,376	5,351,196	54.4
24-25	0.001465	98,307	144	98,235	5,252,820	53.4
25-26	0.001514	98,163	149	98,088	5,154,586	52.5
26-27	0.001564	98,014	153	97,937	5,056,497	51.6
27-28	0.001614	97,861	158	97,782	4,958,560	50.7
28-29	0.001669	97,703	163	97,621	4,860,778	49.8
29-30	0.001730	97,540	169	97,455	4,763,156	48.8
30-31	0.001794	97,371	175	97,284	4,665,701	47.9
31-32	0.001858	97,196	181	97,106	4,568,417	47.0
32-33	0.001926	97,016	187	96,922	4,471,311	46.1
33-34	0.001998	96,829	193	96,732	4,374,389	45.2
34-35	0.002072	96,636	200	96,535	4,277,656	44.3
35-36	0.002154	96,435	208	96,332	4,181,121	43.4
36-37	0.002241	96,228	216	96,120	4,084,789	42.4
37-38	0.002323	96,012	223	95,900	3,988,669	41.5
38-39	0.002399	95,789	230	95,674	3,892,769	40.6
39-40	0.002476	95,559	237	95,441	3,797,095	39.7
40-41	0.002569	95,323	245	95,200	3,701,654	38.8
41-42	0.002685	95,078	255	94,950	3,606,454	37.9
42-43	0.002824	94,822	268	94,688	3,511,504	37.0
43-44	0.002983	94,555	282	94,414	3,416,815	36.1
44-45	0.003162	94,273	298	94,124	3,322,402	35.2
45-46	0.003365	93,974	316	93,816	3,228,278	34.4
46-47	0.003596	93,658	337	93,490	3,134,462	33.5
47-48	0.003856	93,321	360	93,142	3,040,972	32.6
48-49	0.004154	92,962	386	92,769	2,947,831	31.7
49-50	0.004497	92,575	416	92,367	2,855,062	30.8
50-51	0.004867	92,159	449	91,935	2,762,695	30.0
51-52	0.005284	91,711	485	91,468	2,670,760	29.1
52-53	0.005789	91,226	528	90,962	2,579,292	28.3
53-54	0.006385	90,698	579	90,408	2,488,330	27.4
54-55	0.007034	90,119	634	89,802	2,397,921	26.6
55-56	0.007687	89,485	688	89,141	2,308,120	25.8
56-57	0.008338	88,797	740	88,427	2,218,979	25.0
57-58	0.009024	88,057	795	87,659	2,130,552	24.2
58-59	0.009768	87,262	852	86,836	2,042,893	23.4
59-60	0.010575	86,410	914	85,953	1,956,057	22.6

**Table 2. Life table for males: United States, 2019—Con.**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table02.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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 $x$
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
60–61.....	0.011445	85,496	979	85,007	1,870,104	21.9
61–62.....	0.012342	84,517	1,043	83,996	1,785,097	21.1
62–63.....	0.013242	83,474	1,105	82,922	1,701,101	20.4
63–64.....	0.014130	82,369	1,164	81,787	1,618,180	19.6
64–65.....	0.015033	81,205	1,221	80,595	1,536,393	18.9
65–66.....	0.016003	79,984	1,280	79,344	1,455,798	18.2
66–67.....	0.017154	78,704	1,350	78,029	1,376,454	17.5
67–68.....	0.018348	77,354	1,419	76,644	1,298,425	16.8
68–69.....	0.019601	75,935	1,488	75,191	1,221,780	16.1
69–70.....	0.020915	74,446	1,557	73,668	1,146,590	15.4
70–71.....	0.022303	72,889	1,626	72,077	1,072,922	14.7
71–72.....	0.023930	71,264	1,705	70,411	1,000,845	14.0
72–73.....	0.025553	69,558	1,777	68,670	930,434	13.4
73–74.....	0.028257	67,781	1,915	66,823	861,764	12.7
74–75.....	0.030698	65,866	2,022	64,855	794,941	12.1
75–76.....	0.033891	63,844	2,164	62,762	730,086	11.4
76–77.....	0.037078	61,680	2,287	60,537	667,324	10.8
77–78.....	0.041154	59,393	2,444	58,171	606,788	10.2
78–79.....	0.045300	56,949	2,580	55,659	548,617	9.6
79–80.....	0.049951	54,369	2,716	53,011	492,958	9.1
80–81.....	0.054931	51,653	2,837	50,235	439,947	8.5
81–82.....	0.060709	48,816	2,964	47,334	389,712	8.0
82–83.....	0.067466	45,852	3,093	44,306	342,378	7.5
83–84.....	0.074945	42,759	3,205	41,157	298,073	7.0
84–85.....	0.083495	39,554	3,303	37,903	256,916	6.5
85–86.....	0.093585	36,252	3,393	34,555	219,013	6.0
86–87.....	0.103957	32,859	3,416	31,151	184,458	5.6
87–88.....	0.116315	29,443	3,425	27,731	153,307	5.2
88–89.....	0.129805	26,018	3,377	24,330	125,576	4.8
89–90.....	0.144448	22,641	3,270	21,006	101,246	4.5
90–91.....	0.160250	19,371	3,104	17,819	80,240	4.1
91–92.....	0.177194	16,267	2,882	14,825	62,422	3.8
92–93.....	0.195239	13,384	2,613	12,078	47,596	3.6
93–94.....	0.214316	10,771	2,308	9,617	35,519	3.3
94–95.....	0.234332	8,463	1,983	7,471	25,902	3.1
95–96.....	0.255162	6,480	1,653	5,653	18,431	2.8
96–97.....	0.276659	4,826	1,335	4,159	12,778	2.6
97–98.....	0.298653	3,491	1,043	2,970	8,619	2.5
98–99.....	0.320956	2,448	786	2,056	5,649	2.3
99–100.....	0.343371	1,663	571	1,377	3,594	2.2
100 and over.....	1.000000	1,092	1,092	2,217	2,217	2.0

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Table 3. Life table for females: United States, 2019**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table03.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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	0.005045	100,000	504	99,559	8,138,598	81.4
1-2	0.000341	99,496	34	99,479	8,039,039	80.8
2-3	0.000209	99,462	21	99,451	7,939,561	79.8
3-4	0.000166	99,441	16	99,432	7,840,110	78.8
4-5	0.000137	99,424	14	99,417	7,740,677	77.9
5-6	0.000125	99,411	12	99,404	7,641,260	76.9
6-7	0.000112	99,398	11	99,393	7,541,855	75.9
7-8	0.000102	99,387	10	99,382	7,442,463	74.9
8-9	0.000096	99,377	10	99,372	7,343,081	73.9
9-10	0.000093	99,367	9	99,363	7,243,708	72.9
10-11	0.000095	99,358	9	99,353	7,144,346	71.9
11-12	0.000102	99,349	10	99,344	7,044,992	70.9
12-13	0.000116	99,339	12	99,333	6,945,649	69.9
13-14	0.000139	99,327	14	99,320	6,846,316	68.9
14-15	0.000170	99,313	17	99,305	6,746,996	67.9
15-16	0.000204	99,296	20	99,286	6,647,691	66.9
16-17	0.000241	99,276	24	99,264	6,548,405	66.0
17-18	0.000280	99,252	28	99,238	6,449,141	65.0
18-19	0.000319	99,224	32	99,209	6,349,902	64.0
19-20	0.000360	99,193	36	99,175	6,250,694	63.0
20-21	0.000404	99,157	40	99,137	6,151,519	62.0
21-22	0.000449	99,117	45	99,095	6,052,382	61.1
22-23	0.000490	99,072	49	99,048	5,953,287	60.1
23-24	0.000524	99,024	52	98,998	5,854,239	59.1
24-25	0.000553	98,972	55	98,945	5,755,241	58.2
25-26	0.000579	98,917	57	98,889	5,656,297	57.2
26-27	0.000608	98,860	60	98,830	5,557,408	56.2
27-28	0.000644	98,800	64	98,768	5,458,578	55.2
28-29	0.000690	98,736	68	98,702	5,359,810	54.3
29-30	0.000746	98,668	74	98,631	5,261,108	53.3
30-31	0.000808	98,594	80	98,555	5,162,477	52.4
31-32	0.000870	98,515	86	98,472	5,063,922	51.4
32-33	0.000933	98,429	92	98,383	4,965,450	50.4
33-34	0.000992	98,337	98	98,288	4,867,067	49.5
34-35	0.001049	98,240	103	98,188	4,768,778	48.5
35-36	0.001112	98,137	109	98,082	4,670,590	47.6
36-37	0.001178	98,028	116	97,970	4,572,508	46.6
37-38	0.001240	97,912	121	97,851	4,474,538	45.7
38-39	0.001295	97,791	127	97,727	4,376,687	44.8
39-40	0.001351	97,664	132	97,598	4,278,960	43.8
40-41	0.001414	97,532	138	97,463	4,181,362	42.9
41-42	0.001493	97,394	145	97,322	4,083,898	41.9
42-43	0.001593	97,249	155	97,171	3,986,577	41.0
43-44	0.001714	97,094	166	97,011	3,889,406	40.1
44-45	0.001851	96,928	179	96,838	3,792,395	39.1
45-46	0.002005	96,748	194	96,651	3,695,557	38.2
46-47	0.002172	96,554	210	96,449	3,598,906	37.3
47-48	0.002347	96,344	226	96,231	3,502,457	36.4
48-49	0.002534	96,118	244	95,996	3,406,226	35.4
49-50	0.002741	95,875	263	95,743	3,310,229	34.5
50-51	0.002964	95,612	283	95,470	3,214,486	33.6
51-52	0.003217	95,328	307	95,175	3,119,016	32.7
52-53	0.003519	95,022	334	94,855	3,023,841	31.8
53-54	0.003869	94,687	366	94,504	2,928,986	30.9
54-55	0.004246	94,321	401	94,121	2,834,482	30.1
55-56	0.004623	93,921	434	93,703	2,740,361	29.2
56-57	0.005000	93,486	467	93,253	2,646,658	28.3
57-58	0.005405	93,019	503	92,768	2,553,405	27.5
58-59	0.005853	92,516	542	92,245	2,460,638	26.6
59-60	0.006346	91,975	584	91,683	2,368,392	25.8

**Table 3. Life table for females: United States, 2019—Con.**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table03.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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 $x$
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
60–61.....	0.006891	91,391	630	91,076	2,276,710	24.9
61–62.....	0.007455	90,761	677	90,423	2,185,633	24.1
62–63.....	0.008004	90,085	721	89,724	2,095,211	23.3
63–64.....	0.008520	89,364	761	88,983	2,005,487	22.4
64–65.....	0.009033	88,602	800	88,202	1,916,504	21.6
65–66.....	0.009573	87,802	840	87,382	1,828,302	20.8
66–67.....	0.010236	86,961	890	86,516	1,740,920	20.0
67–68.....	0.011030	86,071	949	85,597	1,654,404	19.2
68–69.....	0.012018	85,122	1,023	84,610	1,568,807	18.4
69–70.....	0.013187	84,099	1,109	83,544	1,484,197	17.6
70–71.....	0.014484	82,990	1,202	82,389	1,400,653	16.9
71–72.....	0.015956	81,788	1,305	81,135	1,318,264	16.1
72–73.....	0.017382	80,483	1,399	79,783	1,237,129	15.4
73–74.....	0.019431	79,084	1,537	78,316	1,157,345	14.6
74–75.....	0.021198	77,547	1,644	76,725	1,079,030	13.9
75–76.....	0.023549	75,903	1,787	75,010	1,002,304	13.2
76–77.....	0.025917	74,116	1,921	73,156	927,295	12.5
77–78.....	0.029002	72,195	2,094	71,148	854,139	11.8
78–79.....	0.032220	70,101	2,259	68,972	782,991	11.2
79–80.....	0.035944	67,843	2,439	66,623	714,019	10.5
80–81.....	0.040043	65,404	2,619	64,095	647,396	9.9
81–82.....	0.044578	62,785	2,799	61,386	583,301	9.3
82–83.....	0.050431	59,986	3,025	58,474	521,916	8.7
83–84.....	0.056908	56,961	3,242	55,340	463,442	8.1
84–85.....	0.063205	53,719	3,395	52,022	408,102	7.6
85–86.....	0.071076	50,324	3,577	48,536	356,080	7.1
86–87.....	0.080252	46,747	3,752	44,872	307,544	6.6
87–88.....	0.090433	42,996	3,888	41,052	262,673	6.1
88–89.....	0.101682	39,108	3,977	37,119	221,621	5.7
89–90.....	0.114054	35,131	4,007	33,128	184,502	5.3
90–91.....	0.127590	31,124	3,971	29,139	151,374	4.9
91–92.....	0.142319	27,153	3,864	25,221	122,236	4.5
92–93.....	0.158250	23,289	3,685	21,446	97,015	4.2
93–94.....	0.175367	19,603	3,438	17,884	75,569	3.9
94–95.....	0.193631	16,165	3,130	14,600	57,685	3.6
95–96.....	0.212972	13,035	2,776	11,647	43,084	3.3
96–97.....	0.233293	10,259	2,393	9,062	31,437	3.1
97–98.....	0.254465	7,866	2,002	6,865	22,375	2.8
98–99.....	0.276333	5,864	1,620	5,054	15,510	2.6
99–100.....	0.298719	4,244	1,268	3,610	10,456	2.5
100 and over.....	1.000000	2,976	2,976	6,846	6,846	2.3

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Table 4. Life table for the Hispanic population: United States, 2019**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table04.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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	0.005034	100,000	503	99,561	8,185,203	81.9
1-2	0.000305	99,497	30	99,481	8,085,642	81.3
2-3	0.000183	99,466	18	99,457	7,986,161	80.3
3-4	0.000155	99,448	15	99,440	7,886,704	79.3
4-5	0.000106	99,433	11	99,427	7,787,263	78.3
5-6	0.000111	99,422	11	99,417	7,687,836	77.3
6-7	0.000103	99,411	10	99,406	7,588,419	76.3
7-8	0.000096	99,401	10	99,396	7,489,013	75.3
8-9	0.000089	99,391	9	99,387	7,389,617	74.3
9-10	0.000082	99,382	8	99,378	7,290,230	73.4
10-11	0.000078	99,374	8	99,370	7,190,852	72.4
11-12	0.000084	99,367	8	99,362	7,091,481	71.4
12-13	0.000106	99,358	11	99,353	6,992,119	70.4
13-14	0.000149	99,348	15	99,340	6,892,766	69.4
14-15	0.000209	99,333	21	99,322	6,793,426	68.4
15-16	0.000277	99,312	27	99,298	6,694,104	67.4
16-17	0.000347	99,285	34	99,267	6,594,805	66.4
17-18	0.000420	99,250	42	99,229	6,495,538	65.4
18-19	0.000495	99,208	49	99,184	6,396,308	64.5
19-20	0.000569	99,159	56	99,131	6,297,124	63.5
20-21	0.000646	99,103	64	99,071	6,197,993	62.5
21-22	0.000723	99,039	72	99,003	6,098,922	61.6
22-23	0.000788	98,967	78	98,928	5,999,919	60.6
23-24	0.000834	98,889	82	98,848	5,900,991	59.7
24-25	0.000865	98,807	85	98,764	5,802,143	58.7
25-26	0.000890	98,721	88	98,677	5,703,378	57.8
26-27	0.000916	98,634	90	98,588	5,604,701	56.8
27-28	0.000940	98,543	93	98,497	5,506,113	55.9
28-29	0.000964	98,451	95	98,403	5,407,616	54.9
29-30	0.000991	98,356	98	98,307	5,309,213	54.0
30-31	0.001018	98,258	100	98,208	5,210,906	53.0
31-32	0.001046	98,158	103	98,107	5,112,698	52.1
32-33	0.001077	98,055	106	98,003	5,014,591	51.1
33-34	0.001111	97,950	109	97,895	4,916,588	50.2
34-35	0.001148	97,841	112	97,785	4,818,693	49.3
35-36	0.001188	97,729	116	97,671	4,720,908	48.3
36-37	0.001231	97,613	120	97,553	4,623,237	47.4
37-38	0.001276	97,492	124	97,430	4,525,685	46.4
38-39	0.001323	97,368	129	97,304	4,428,254	45.5
39-40	0.001376	97,239	134	97,172	4,330,951	44.5
40-41	0.001434	97,105	139	97,036	4,233,779	43.6
41-42	0.001503	96,966	146	96,893	4,136,743	42.7
42-43	0.001591	96,820	154	96,743	4,039,850	41.7
43-44	0.001703	96,666	165	96,584	3,943,106	40.8
44-45	0.001833	96,502	177	96,413	3,846,522	39.9
45-46	0.001980	96,325	191	96,229	3,750,109	38.9
46-47	0.002137	96,134	205	96,031	3,653,880	38.0
47-48	0.002304	95,929	221	95,818	3,557,848	37.1
48-49	0.002482	95,708	238	95,589	3,462,030	36.2
49-50	0.002675	95,470	255	95,342	3,366,441	35.3
50-51	0.002882	95,215	274	95,077	3,271,099	34.4
51-52	0.003116	94,940	296	94,792	3,176,021	33.5
52-53	0.003393	94,644	321	94,484	3,081,229	32.6
53-54	0.003722	94,323	351	94,148	2,986,745	31.7
54-55	0.004091	93,972	384	93,780	2,892,598	30.8
55-56	0.004486	93,588	420	93,378	2,798,818	29.9
56-57	0.004897	93,168	456	92,940	2,705,440	29.0
57-58	0.005326	92,712	494	92,465	2,612,500	28.2
58-59	0.005778	92,218	533	91,951	2,520,035	27.3
59-60	0.006260	91,685	574	91,398	2,428,084	26.5



**Table 4. Life table for the Hispanic population: United States, 2019—Con.**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table04.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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 $x$
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
60–61.....	0.006794	91,111	619	90,802	2,336,686	25.6
61–62.....	0.007369	90,492	667	90,159	2,245,884	24.8
62–63.....	0.007953	89,825	714	89,468	2,155,725	24.0
63–64.....	0.008523	89,111	760	88,731	2,066,257	23.2
64–65.....	0.009095	88,351	804	87,950	1,977,526	22.4
65–66.....	0.009701	87,548	849	87,123	1,889,576	21.6
66–67.....	0.010386	86,699	900	86,248	1,802,453	20.8
67–68.....	0.011174	85,798	959	85,319	1,716,205	20.0
68–69.....	0.012091	84,840	1,026	84,327	1,630,886	19.2
69–70.....	0.013130	83,814	1,101	83,263	1,546,559	18.5
70–71.....	0.014284	82,713	1,181	82,122	1,463,296	17.7
71–72.....	0.015531	81,532	1,266	80,899	1,381,173	16.9
72–73.....	0.016865	80,266	1,354	79,589	1,300,275	16.2
73–74.....	0.018298	78,912	1,444	78,190	1,220,686	15.5
74–75.....	0.019881	77,468	1,540	76,698	1,142,496	14.7
75–76.....	0.021658	75,928	1,644	75,106	1,065,798	14.0
76–77.....	0.023711	74,283	1,761	73,403	990,693	13.3
77–78.....	0.026219	72,522	1,901	71,571	917,290	12.6
78–79.....	0.029047	70,620	2,051	69,595	845,719	12.0
79–80.....	0.032260	68,569	2,212	67,463	776,124	11.3
80–81.....	0.035783	66,357	2,374	65,170	708,661	10.7
81–82.....	0.039885	63,983	2,552	62,707	643,491	10.1
82–83.....	0.044723	61,431	2,747	60,057	580,784	9.5
83–84.....	0.050101	58,683	2,940	57,213	520,727	8.9
84–85.....	0.055793	55,743	3,110	54,188	463,514	8.3
85–86.....	0.062864	52,633	3,309	50,979	409,326	7.8
86–87.....	0.069773	49,324	3,442	47,604	358,347	7.3
87–88.....	0.078488	45,883	3,601	44,082	310,743	6.8
88–89.....	0.088111	42,282	3,725	40,419	266,661	6.3
89–90.....	0.098689	38,556	3,805	36,654	226,242	5.9
90–91.....	0.110264	34,751	3,832	32,835	189,588	5.5
91–92.....	0.122863	30,919	3,799	29,020	156,753	5.1
92–93.....	0.136500	27,120	3,702	25,270	127,733	4.7
93–94.....	0.151169	23,419	3,540	21,648	102,463	4.4
94–95.....	0.166847	19,878	3,317	18,220	80,815	4.1
95–96.....	0.183484	16,562	3,039	15,042	62,595	3.8
96–97.....	0.201009	13,523	2,718	12,164	47,553	3.5
97–98.....	0.219324	10,805	2,370	9,620	35,389	3.3
98–99.....	0.238309	8,435	2,010	7,430	25,769	3.1
99–100.....	0.257821	6,425	1,656	5,597	18,339	2.9
100 and over.....	1.000000	4,768	4,768	12,742	12,742	2.7

NOTE: This life table is based on death rates that have been adjusted for race and Hispanic-origin misclassification on death certificates; see Technical Notes in this report.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Table 5. Life table for Hispanic males: United States, 2019**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table05.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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	0.005477	100,000	548	99,522	7,906,553	79.1
1-2	0.000328	99,452	33	99,436	7,807,031	78.5
2-3	0.000192	99,420	19	99,410	7,707,595	77.5
3-4	0.000163	99,401	16	99,393	7,608,185	76.5
4-5	0.000112	99,384	11	99,379	7,508,792	75.6
5-6	0.000115	99,373	11	99,368	7,409,414	74.6
6-7	0.000107	99,362	11	99,357	7,310,046	73.6
7-8	0.000100	99,351	10	99,346	7,210,690	72.6
8-9	0.000091	99,341	9	99,337	7,111,343	71.6
9-10	0.000081	99,332	8	99,328	7,012,007	70.6
10-11	0.000075	99,324	7	99,320	6,912,678	69.6
11-12	0.000083	99,317	8	99,313	6,813,358	68.6
12-13	0.000115	99,309	11	99,303	6,714,045	67.6
13-14	0.000179	99,297	18	99,288	6,614,742	66.6
14-15	0.000269	99,279	27	99,266	6,515,454	65.6
15-16	0.000372	99,253	37	99,234	6,416,188	64.6
16-17	0.000478	99,216	47	99,192	6,316,954	63.7
17-18	0.000588	99,168	58	99,139	6,217,762	62.7
18-19	0.000698	99,110	69	99,075	6,118,623	61.7
19-20	0.000806	99,041	80	99,001	6,019,548	60.8
20-21	0.000917	98,961	91	98,916	5,920,547	59.8
21-22	0.001028	98,870	102	98,819	5,821,631	58.9
22-23	0.001126	98,769	111	98,713	5,722,812	57.9
23-24	0.001205	98,657	119	98,598	5,624,099	57.0
24-25	0.001266	98,538	125	98,476	5,525,501	56.1
25-26	0.001321	98,414	130	98,349	5,427,025	55.1
26-27	0.001372	98,284	135	98,216	5,328,677	54.2
27-28	0.001409	98,149	138	98,080	5,230,460	53.3
28-29	0.001434	98,010	141	97,940	5,132,381	52.4
29-30	0.001451	97,870	142	97,799	5,034,441	51.4
30-31	0.001462	97,728	143	97,656	4,936,642	50.5
31-32	0.001476	97,585	144	97,513	4,838,985	49.6
32-33	0.001499	97,441	146	97,368	4,741,472	48.7
33-34	0.001537	97,295	149	97,220	4,644,104	47.7
34-35	0.001586	97,145	154	97,068	4,546,884	46.8
35-36	0.001641	96,991	159	96,912	4,449,816	45.9
36-37	0.001696	96,832	164	96,750	4,352,904	45.0
37-38	0.001754	96,668	170	96,583	4,256,154	44.0
38-39	0.001814	96,498	175	96,411	4,159,570	43.1
39-40	0.001880	96,323	181	96,233	4,063,159	42.2
40-41	0.001955	96,142	188	96,048	3,966,927	41.3
41-42	0.002045	95,954	196	95,856	3,870,878	40.3
42-43	0.002149	95,758	206	95,655	3,775,022	39.4
43-44	0.002269	95,552	217	95,444	3,679,367	38.5
44-45	0.002405	95,336	229	95,221	3,583,923	37.6
45-46	0.002557	95,106	243	94,985	3,488,702	36.7
46-47	0.002728	94,863	259	94,734	3,393,717	35.8
47-48	0.002924	94,604	277	94,466	3,298,983	34.9
48-49	0.003151	94,328	297	94,179	3,204,517	34.0
49-50	0.003410	94,031	321	93,870	3,110,338	33.1
50-51	0.003690	93,710	346	93,537	3,016,468	32.2
51-52	0.003999	93,364	373	93,177	2,922,931	31.3
52-53	0.004366	92,991	406	92,788	2,829,753	30.4
53-54	0.004805	92,585	445	92,362	2,736,965	29.6
54-55	0.005302	92,140	489	91,896	2,644,603	28.7
55-56	0.005844	91,651	536	91,384	2,552,707	27.9
56-57	0.006406	91,116	584	90,824	2,461,324	27.0
57-58	0.006976	90,532	632	90,216	2,370,500	26.2
58-59	0.007547	89,901	678	89,561	2,280,284	25.4
59-60	0.008133	89,222	726	88,859	2,190,722	24.6

**Table 5. Life table for Hispanic males: United States, 2019—Con.**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table05.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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 $x$
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
60–61.....	0.008770	88,496	776	88,108	2,101,863	23.8
61–62.....	0.009469	87,720	831	87,305	2,013,755	23.0
62–63.....	0.010209	86,890	887	86,446	1,926,450	22.2
63–64.....	0.010981	86,003	944	85,530	1,840,004	21.4
64–65.....	0.011796	85,058	1,003	84,557	1,754,473	20.6
65–66.....	0.012679	84,055	1,066	83,522	1,669,916	19.9
66–67.....	0.013654	82,989	1,133	82,423	1,586,394	19.1
67–68.....	0.014720	81,856	1,205	81,254	1,503,972	18.4
68–69.....	0.015869	80,651	1,280	80,011	1,422,718	17.6
69–70.....	0.017096	79,371	1,357	78,693	1,342,707	16.9
70–71.....	0.018418	78,014	1,437	77,296	1,264,014	16.2
71–72.....	0.019844	76,577	1,520	75,818	1,186,718	15.5
72–73.....	0.021377	75,058	1,604	74,256	1,110,901	14.8
73–74.....	0.023060	73,453	1,694	72,606	1,036,645	14.1
74–75.....	0.024955	71,760	1,791	70,864	964,039	13.4
75–76.....	0.027109	69,969	1,897	69,020	893,174	12.8
76–77.....	0.029549	68,072	2,011	67,066	824,154	12.1
77–78.....	0.032509	66,061	2,148	64,987	757,088	11.5
78–79.....	0.035797	63,913	2,288	62,769	692,101	10.8
79–80.....	0.039505	61,625	2,434	60,408	629,332	10.2
80–81.....	0.043724	59,191	2,588	57,897	568,924	9.6
81–82.....	0.048805	56,603	2,762	55,221	511,027	9.0
82–83.....	0.054305	53,840	2,924	52,378	455,806	8.5
83–84.....	0.060452	50,916	3,078	49,377	403,428	7.9
84–85.....	0.067707	47,838	3,239	46,219	354,050	7.4
85–86.....	0.076027	44,599	3,391	42,904	307,831	6.9
86–87.....	0.083686	41,209	3,449	39,484	264,927	6.4
87–88.....	0.094257	37,760	3,559	35,981	225,443	6.0
88–89.....	0.105894	34,201	3,622	32,390	189,462	5.5
89–90.....	0.118637	30,579	3,628	28,765	157,072	5.1
90–91.....	0.132509	26,951	3,571	25,166	128,307	4.8
91–92.....	0.147515	23,380	3,449	21,656	103,141	4.4
92–93.....	0.163637	19,931	3,261	18,300	81,485	4.1
93–94.....	0.180829	16,670	3,014	15,163	63,185	3.8
94–95.....	0.199020	13,655	2,718	12,297	48,022	3.5
95–96.....	0.218107	10,938	2,386	9,745	35,726	3.3
96–97.....	0.237962	8,552	2,035	7,535	25,981	3.0
97–98.....	0.258427	6,517	1,684	5,675	18,446	2.8
98–99.....	0.279326	4,833	1,350	4,158	12,771	2.6
99–100.....	0.300464	3,483	1,046	2,960	8,613	2.5
100 and over.....	1.000000	2,436	2,436	5,654	5,654	2.3

NOTE: This life table is based on death rates that have been adjusted for race and Hispanic-origin misclassification on death certificates; see Technical Notes in this report.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Table 6. Life table for Hispanic females: United States, 2019**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table06.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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	0.004572	100,000	457	99,601	8,442,840	84.4
1-2	0.000275	99,543	27	99,529	8,343,239	83.8
2-3	0.000170	99,515	17	99,507	8,243,710	82.8
3-4	0.000142	99,499	14	99,491	8,144,203	81.9
4-5	0.000098	99,484	10	99,480	8,044,712	80.9
5-6	0.000106	99,475	11	99,469	7,945,232	79.9
6-7	0.000097	99,464	10	99,459	7,845,763	78.9
7-8	0.000091	99,454	9	99,450	7,746,304	77.9
8-9	0.000086	99,445	9	99,441	7,646,854	76.9
9-10	0.000081	99,437	8	99,433	7,547,413	75.9
10-11	0.000079	99,429	8	99,425	7,447,980	74.9
11-12	0.000082	99,421	8	99,417	7,348,555	73.9
12-13	0.000093	99,413	9	99,408	7,249,138	72.9
13-14	0.000114	99,403	11	99,398	7,149,730	71.9
14-15	0.000144	99,392	14	99,385	7,050,332	70.9
15-16	0.000177	99,378	18	99,369	6,950,947	69.9
16-17	0.000211	99,360	21	99,350	6,851,578	69.0
17-18	0.000247	99,339	24	99,327	6,752,229	68.0
18-19	0.000283	99,315	28	99,301	6,652,902	67.0
19-20	0.000318	99,287	32	99,271	6,553,601	66.0
20-21	0.000357	99,255	35	99,237	6,454,330	65.0
21-22	0.000396	99,220	39	99,200	6,355,093	64.1
22-23	0.000423	99,180	42	99,159	6,255,893	63.1
23-24	0.000434	99,138	43	99,117	6,156,734	62.1
24-25	0.000433	99,095	43	99,074	6,057,617	61.1
25-26	0.000428	99,052	42	99,031	5,958,543	60.2
26-27	0.000427	99,010	42	98,989	5,859,512	59.2
27-28	0.000435	98,968	43	98,946	5,760,523	58.2
28-29	0.000457	98,925	45	98,902	5,661,577	57.2
29-30	0.000490	98,879	48	98,855	5,562,675	56.3
30-31	0.000528	98,831	52	98,805	5,463,819	55.3
31-32	0.000567	98,779	56	98,751	5,365,015	54.3
32-33	0.000604	98,723	60	98,693	5,266,264	53.3
33-34	0.000637	98,663	63	98,632	5,167,571	52.4
34-35	0.000666	98,600	66	98,567	5,068,939	51.4
35-36	0.000698	98,535	69	98,500	4,970,372	50.4
36-37	0.000734	98,466	72	98,430	4,871,872	49.5
37-38	0.000771	98,393	76	98,356	4,773,442	48.5
38-39	0.000808	98,318	79	98,278	4,675,087	47.6
39-40	0.000848	98,238	83	98,197	4,576,809	46.6
40-41	0.000891	98,155	87	98,111	4,478,612	45.6
41-42	0.000942	98,067	92	98,021	4,380,501	44.7
42-43	0.001016	97,975	100	97,925	4,282,480	43.7
43-44	0.001120	97,876	110	97,821	4,184,554	42.8
44-45	0.001247	97,766	122	97,705	4,086,734	41.8
45-46	0.001389	97,644	136	97,576	3,989,029	40.9
46-47	0.001534	97,508	150	97,433	3,891,453	39.9
47-48	0.001672	97,359	163	97,277	3,794,019	39.0
48-49	0.001798	97,196	175	97,108	3,696,742	38.0
49-50	0.001920	97,021	186	96,928	3,599,633	37.1
50-51	0.002050	96,835	199	96,736	3,502,705	36.2
51-52	0.002204	96,636	213	96,530	3,405,970	35.2
52-53	0.002388	96,423	230	96,308	3,309,440	34.3
53-54	0.002609	96,193	251	96,068	3,213,132	33.4
54-55	0.002861	95,942	275	95,805	3,117,064	32.5
55-56	0.003126	95,668	299	95,518	3,021,260	31.6
56-57	0.003403	95,369	325	95,206	2,925,742	30.7
57-58	0.003712	95,044	353	94,868	2,830,535	29.8
58-59	0.004064	94,691	385	94,499	2,735,668	28.9
59-60	0.004461	94,306	421	94,096	2,641,169	28.0

**Table 6. Life table for Hispanic females: United States, 2019—Con.**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table06.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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 $x$
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
60–61.....	0.004913	93,886	461	93,655	2,547,073	27.1
61–62.....	0.005394	93,424	504	93,172	2,453,418	26.3
62–63.....	0.005859	92,921	544	92,648	2,360,245	25.4
63–64.....	0.006279	92,376	580	92,086	2,267,597	24.5
64–65.....	0.006673	91,796	613	91,490	2,175,511	23.7
65–66.....	0.007080	91,184	646	90,861	2,084,021	22.9
66–67.....	0.007563	90,538	685	90,196	1,993,160	22.0
67–68.....	0.008160	89,853	733	89,487	1,902,965	21.2
68–69.....	0.008916	89,120	795	88,723	1,813,478	20.3
69–70.....	0.009822	88,325	868	87,892	1,724,755	19.5
70–71.....	0.010854	87,458	949	86,983	1,636,864	18.7
71–72.....	0.011976	86,509	1,036	85,991	1,549,880	17.9
72–73.....	0.013181	85,473	1,127	84,909	1,463,890	17.1
73–74.....	0.014467	84,346	1,220	83,736	1,378,981	16.3
74–75.....	0.015876	83,126	1,320	82,466	1,295,245	15.6
75–76.....	0.017453	81,806	1,428	81,092	1,212,779	14.8
76–77.....	0.019297	80,378	1,551	79,603	1,131,687	14.1
77–78.....	0.021556	78,827	1,699	77,978	1,052,084	13.3
78–79.....	0.024140	77,128	1,862	76,197	974,106	12.6
79–80.....	0.027117	75,266	2,041	74,246	897,909	11.9
80–81.....	0.030297	73,225	2,218	72,116	823,663	11.2
81–82.....	0.033958	71,007	2,411	69,801	751,548	10.6
82–83.....	0.038627	68,595	2,650	67,271	681,746	9.9
83–84.....	0.043819	65,946	2,890	64,501	614,476	9.3
84–85.....	0.048846	63,056	3,080	61,516	549,975	8.7
85–86.....	0.055583	59,976	3,334	58,309	488,459	8.1
86–87.....	0.062209	56,642	3,524	54,881	430,149	7.6
87–88.....	0.070615	53,119	3,751	51,243	375,269	7.1
88–89.....	0.079990	49,368	3,949	47,393	324,025	6.6
89–90.....	0.090400	45,419	4,106	43,366	276,632	6.1
90–91.....	0.101902	41,313	4,210	39,208	233,266	5.6
91–92.....	0.114544	37,103	4,250	34,978	194,058	5.2
92–93.....	0.128356	32,853	4,217	30,745	159,080	4.8
93–94.....	0.143352	28,636	4,105	26,584	128,335	4.5
94–95.....	0.159518	24,531	3,913	22,575	101,751	4.1
95–96.....	0.176816	20,618	3,646	18,795	79,177	3.8
96–97.....	0.195179	16,972	3,313	15,316	60,381	3.6
97–98.....	0.214508	13,660	2,930	12,195	45,065	3.3
98–99.....	0.234672	10,730	2,518	9,471	32,870	3.1
99–100.....	0.255514	8,212	2,098	7,163	23,400	2.8
100 and over.....	1.000000	6,113	6,113	16,237	16,237	2.7

NOTE: This life table is based on death rates that have been adjusted for race and Hispanic-origin misclassification on death certificates; see Technical Notes in this report.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Table 7. Life table for the non-Hispanic American Indian or Alaska Native population: United States, 2019**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table07.xls](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/Table07.xls).

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	0.007871	100,000	787	99,385	7,175,096	71.8
1-2	0.000989	99,213	98	99,164	7,075,711	71.3
2-3	0.000657	99,115	65	99,082	6,976,547	70.4
3-4	0.000476	99,050	47	99,026	6,877,465	69.4
4-5	0.000469	99,003	46	98,979	6,778,439	68.5
5-6	0.000309	98,956	31	98,941	6,679,460	67.5
6-7	0.000257	98,925	25	98,913	6,580,519	66.5
7-8	0.000221	98,900	22	98,889	6,481,606	65.5
8-9	0.000190	98,878	19	98,869	6,382,717	64.6
9-10	0.000166	98,859	16	98,851	6,283,848	63.6
10-11	0.000158	98,843	16	98,835	6,184,997	62.6
11-12	0.000184	98,827	18	98,818	6,086,162	61.6
12-13	0.000268	98,809	26	98,796	5,987,343	60.6
13-14	0.000419	98,783	41	98,762	5,888,547	59.6
14-15	0.000622	98,741	61	98,711	5,789,785	58.6
15-16	0.000858	98,680	85	98,638	5,691,075	57.7
16-17	0.001090	98,595	107	98,542	5,592,437	56.7
17-18	0.001291	98,488	127	98,424	5,493,895	55.8
18-19	0.001440	98,361	142	98,290	5,395,471	54.9
19-20	0.001552	98,219	152	98,143	5,297,181	53.9
20-21	0.001664	98,066	163	97,985	5,199,039	53.0
21-22	0.001796	97,903	176	97,815	5,101,054	52.1
22-23	0.001936	97,728	189	97,633	5,003,238	51.2
23-24	0.002083	97,538	203	97,437	4,905,605	50.3
24-25	0.002233	97,335	217	97,226	4,808,169	49.4
25-26	0.002365	97,118	230	97,003	4,710,942	48.5
26-27	0.002497	96,888	242	96,767	4,613,939	47.6
27-28	0.002671	96,646	258	96,517	4,517,172	46.7
28-29	0.002916	96,388	281	96,248	4,420,655	45.9
29-30	0.003225	96,107	310	95,952	4,324,407	45.0
30-31	0.003587	95,797	344	95,625	4,228,455	44.1
31-32	0.003950	95,453	377	95,265	4,132,830	43.3
32-33	0.004268	95,076	406	94,873	4,037,565	42.5
33-34	0.004490	94,671	425	94,458	3,942,692	41.6
34-35	0.004630	94,245	436	94,027	3,848,233	40.8
35-36	0.004767	93,809	447	93,585	3,754,206	40.0
36-37	0.004933	93,362	461	93,132	3,660,621	39.2
37-38	0.005078	92,901	472	92,665	3,567,489	38.4
38-39	0.005206	92,430	481	92,189	3,474,824	37.6
39-40	0.005336	91,948	491	91,703	3,382,635	36.8
40-41	0.005463	91,458	500	91,208	3,290,932	36.0
41-42	0.005631	90,958	512	90,702	3,199,724	35.2
42-43	0.005904	90,446	534	90,179	3,109,022	34.4
43-44	0.006312	89,912	568	89,628	3,018,843	33.6
44-45	0.006819	89,344	609	89,040	2,929,215	32.8
45-46	0.007356	88,735	653	88,409	2,840,175	32.0
46-47	0.007894	88,082	695	87,735	2,751,766	31.2
47-48	0.008456	87,387	739	87,018	2,664,031	30.5
48-49	0.009044	86,648	784	86,256	2,577,013	29.7
49-50	0.009655	85,865	829	85,450	2,490,757	29.0
50-51	0.010299	85,036	876	84,598	2,405,307	28.3
51-52	0.010947	84,160	921	83,699	2,320,709	27.6
52-53	0.011548	83,238	961	82,758	2,237,010	26.9
53-54	0.012062	82,277	992	81,781	2,154,252	26.2
54-55	0.012506	81,285	1,017	80,777	2,072,471	25.5
55-56	0.012899	80,268	1,035	79,751	1,991,695	24.8
56-57	0.013313	79,233	1,055	78,705	1,911,944	24.1
57-58	0.013815	78,178	1,080	77,638	1,833,239	23.4
58-59	0.014466	77,098	1,115	76,540	1,755,601	22.8
59-60	0.015253	75,983	1,159	75,403	1,679,060	22.1

**Table 7. Life table for the non-Hispanic American Indian or Alaska Native population: United States, 2019—Con.**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table07.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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 $x$
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
60–61.....	0.016116	74,824	1,206	74,221	1,603,657	21.4
61–62.....	0.016989	73,618	1,251	72,993	1,529,436	20.8
62–63.....	0.017881	72,367	1,294	71,720	1,456,443	20.1
63–64.....	0.018772	71,073	1,334	70,406	1,384,723	19.5
64–65.....	0.019685	69,739	1,373	69,053	1,314,317	18.8
65–66.....	0.020684	68,366	1,414	67,659	1,245,264	18.2
66–67.....	0.021800	66,952	1,460	66,222	1,177,605	17.6
67–68.....	0.022992	65,493	1,506	64,740	1,111,383	17.0
68–69.....	0.024240	63,987	1,551	63,211	1,046,643	16.4
69–70.....	0.025543	62,436	1,595	61,638	983,432	15.8
70–71.....	0.026959	60,841	1,640	60,021	921,793	15.2
71–72.....	0.028511	59,201	1,688	58,357	861,773	14.6
72–73.....	0.030165	57,513	1,735	56,645	803,416	14.0
73–74.....	0.031949	55,778	1,782	54,887	746,770	13.4
74–75.....	0.033938	53,996	1,833	53,080	691,883	12.8
75–76.....	0.036136	52,163	1,885	51,221	638,804	12.2
76–77.....	0.038684	50,278	1,945	49,306	587,583	11.7
77–78.....	0.041817	48,334	2,021	47,323	538,277	11.1
78–79.....	0.045653	46,312	2,114	45,255	490,954	10.6
79–80.....	0.050091	44,198	2,214	43,091	445,698	10.1
80–81.....	0.055028	41,984	2,310	40,829	402,607	9.6
81–82.....	0.059921	39,674	2,377	38,485	361,778	9.1
82–83.....	0.064717	37,297	2,414	36,090	323,293	8.7
83–84.....	0.069436	34,883	2,422	33,672	287,203	8.2
84–85.....	0.074300	32,461	2,412	31,255	253,532	7.8
85–86.....	0.080514	30,049	2,419	28,839	222,277	7.4
86–87.....	0.086669	27,630	2,395	26,432	193,438	7.0
87–88.....	0.094191	25,235	2,377	24,046	167,005	6.6
88–89.....	0.102228	22,858	2,337	21,690	142,959	6.3
89–90.....	0.110790	20,521	2,274	19,385	121,269	5.9
90–91.....	0.119880	18,248	2,188	17,154	101,885	5.6
91–92.....	0.129495	16,060	2,080	15,020	84,731	5.3
92–93.....	0.139627	13,980	1,952	13,004	69,710	5.0
93–94.....	0.150258	12,028	1,807	11,125	56,706	4.7
94–95.....	0.161361	10,221	1,649	9,396	45,581	4.5
95–96.....	0.172901	8,572	1,482	7,831	36,185	4.2
96–97.....	0.184835	7,090	1,310	6,434	28,354	4.0
97–98.....	0.197108	5,779	1,139	5,210	21,920	3.8
98–99.....	0.209657	4,640	973	4,154	16,710	3.6
99–100.....	0.222411	3,667	816	3,259	12,556	3.4
100 and over.....	1.000000	2,852	2,852	9,297	9,297	3.3

NOTE: This life table is based on death rates that have been adjusted for race and Hispanic-origin misclassification on death certificates; see Technical Notes in this report.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Table 8. Life table for non-Hispanic American Indian or Alaska Native males: United States, 2019**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table08.xls](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/Table08.xls).

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	0.008649	100,000	865	99,331	6,864,446	68.6
1-2	0.001063	99,135	105	99,082	6,765,116	68.2
2-3	0.000626	99,030	62	98,999	6,666,033	67.3
3-4	0.000274	98,968	27	98,954	6,567,034	66.4
4-5	0.000540	98,941	53	98,914	6,468,080	65.4
5-6	0.000265	98,887	26	98,874	6,369,166	64.4
6-7	0.000224	98,861	22	98,850	6,270,292	63.4
7-8	0.000206	98,839	20	98,829	6,171,442	62.4
8-9	0.000204	98,818	20	98,808	6,072,614	61.5
9-10	0.000217	98,798	21	98,788	5,973,805	60.5
10-11	0.000252	98,777	25	98,764	5,875,018	59.5
11-12	0.000320	98,752	32	98,736	5,776,253	58.5
12-13	0.000438	98,720	43	98,699	5,677,517	57.5
13-14	0.000611	98,677	60	98,647	5,578,818	56.5
14-15	0.000828	98,617	82	98,576	5,480,171	55.6
15-16	0.001076	98,535	106	98,482	5,381,595	54.6
16-17	0.001327	98,429	131	98,364	5,283,113	53.7
17-18	0.001557	98,299	153	98,222	5,184,749	52.7
18-19	0.001748	98,146	172	98,060	5,086,527	51.8
19-20	0.001915	97,974	188	97,880	4,988,468	50.9
20-21	0.002081	97,786	203	97,685	4,890,587	50.0
21-22	0.002269	97,583	221	97,472	4,792,903	49.1
22-23	0.002477	97,362	241	97,241	4,695,431	48.2
23-24	0.002705	97,120	263	96,989	4,598,190	47.3
24-25	0.002935	96,858	284	96,716	4,501,201	46.5
25-26	0.003144	96,573	304	96,422	4,404,485	45.6
26-27	0.003342	96,270	322	96,109	4,308,063	44.7
27-28	0.003567	95,948	342	95,777	4,211,955	43.9
28-29	0.003845	95,606	368	95,422	4,116,178	43.1
29-30	0.004179	95,238	398	95,039	4,020,756	42.2
30-31	0.004564	94,840	433	94,624	3,925,716	41.4
31-32	0.004953	94,407	468	94,174	3,831,092	40.6
32-33	0.005296	93,940	497	93,691	3,736,919	39.8
33-34	0.005539	93,442	518	93,184	3,643,228	39.0
34-35	0.005695	92,925	529	92,660	3,550,044	38.2
35-36	0.005853	92,396	541	92,125	3,457,384	37.4
36-37	0.006039	91,855	555	91,577	3,365,259	36.6
37-38	0.006197	91,300	566	91,017	3,273,681	35.9
38-39	0.006323	90,734	574	90,448	3,182,664	35.1
39-40	0.006442	90,161	581	89,870	3,092,216	34.3
40-41	0.006554	89,580	587	89,286	3,002,346	33.5
41-42	0.006720	88,993	598	88,694	2,913,060	32.7
42-43	0.007029	88,395	621	88,084	2,824,366	32.0
43-44	0.007526	87,773	661	87,443	2,736,282	31.2
44-45	0.008164	87,113	711	86,757	2,648,839	30.4
45-46	0.008853	86,402	765	86,019	2,562,082	29.7
46-47	0.009544	85,637	817	85,228	2,476,063	28.9
47-48	0.010264	84,819	871	84,384	2,390,835	28.2
48-49	0.011010	83,949	924	83,487	2,306,451	27.5
49-50	0.011782	83,024	978	82,535	2,222,964	26.8
50-51	0.012582	82,046	1,032	81,530	2,140,429	26.1
51-52	0.013396	81,014	1,085	80,471	2,058,898	25.4
52-53	0.014186	79,929	1,134	79,362	1,978,427	24.8
53-54	0.014912	78,795	1,175	78,207	1,899,065	24.1
54-55	0.015575	77,620	1,209	77,015	1,820,858	23.5
55-56	0.016192	76,411	1,237	75,792	1,743,843	22.8
56-57	0.016808	75,174	1,264	74,542	1,668,051	22.2
57-58	0.017463	73,910	1,291	73,265	1,593,509	21.6
58-59	0.018210	72,619	1,322	71,958	1,520,244	20.9
59-60	0.019063	71,297	1,359	70,617	1,448,286	20.3



**Table 8. Life table for non-Hispanic American Indian or Alaska Native males: United States, 2019—Con.**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table08.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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 $x$
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
60–61.....	0.019970	69,938	1,397	69,239	1,377,668	19.7
61–62.....	0.020916	68,541	1,434	67,824	1,308,429	19.1
62–63.....	0.021976	67,108	1,475	66,370	1,240,605	18.5
63–64.....	0.023171	65,633	1,521	64,872	1,174,234	17.9
64–65.....	0.024494	64,112	1,570	63,327	1,109,362	17.3
65–66.....	0.025971	62,542	1,624	61,729	1,046,035	16.7
66–67.....	0.027551	60,917	1,678	60,078	984,306	16.2
67–68.....	0.029117	59,239	1,725	58,377	924,228	15.6
68–69.....	0.030558	57,514	1,758	56,635	865,851	15.1
69–70.....	0.031888	55,757	1,778	54,868	809,216	14.5
70–71.....	0.033283	53,979	1,797	53,080	754,348	14.0
71–72.....	0.034815	52,182	1,817	51,274	701,268	13.4
72–73.....	0.036372	50,365	1,832	49,449	649,994	12.9
73–74.....	0.037984	48,534	1,844	47,612	600,545	12.4
74–75.....	0.039750	46,690	1,856	45,762	552,933	11.8
75–76.....	0.041555	44,834	1,863	43,903	507,171	11.3
76–77.....	0.043668	42,971	1,876	42,033	463,268	10.8
77–78.....	0.046720	41,095	1,920	40,135	421,235	10.3
78–79.....	0.051163	39,175	2,004	38,172	381,101	9.7
79–80.....	0.056873	37,170	2,114	36,113	342,928	9.2
80–81.....	0.063774	35,056	2,236	33,938	306,815	8.8
81–82.....	0.070268	32,821	2,306	31,667	272,877	8.3
82–83.....	0.075730	30,514	2,311	29,359	241,209	7.9
83–84.....	0.080249	28,204	2,263	27,072	211,850	7.5
84–85.....	0.085310	25,940	2,213	24,834	184,778	7.1
85–86.....	0.092185	23,727	2,187	22,634	159,945	6.7
86–87.....	0.098564	21,540	2,123	20,478	137,311	6.4
87–88.....	0.107101	19,417	2,080	18,377	116,833	6.0
88–89.....	0.116193	17,337	2,014	16,330	98,456	5.7
89–90.....	0.125842	15,323	1,928	14,359	82,125	5.4
90–91.....	0.136041	13,395	1,822	12,483	67,767	5.1
91–92.....	0.146775	11,572	1,699	10,723	55,283	4.8
92–93.....	0.158020	9,874	1,560	9,094	44,560	4.5
93–94.....	0.169741	8,314	1,411	7,608	35,466	4.3
94–95.....	0.181893	6,902	1,256	6,275	27,858	4.0
95–96.....	0.194422	5,647	1,098	5,098	21,584	3.8
96–97.....	0.207262	4,549	943	4,078	16,486	3.6
97–98.....	0.220337	3,606	795	3,209	12,408	3.4
98–99.....	0.233565	2,812	657	2,483	9,199	3.3
99–100.....	0.246856	2,155	532	1,889	6,716	3.1
100 and over.....	1.000000	1,623	1,623	4,827	4,827	3.0

NOTE: This life table is based on death rates that have been adjusted for race and Hispanic-origin misclassification on death certificates; see Technical Notes in this report.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Table 9. Life table for non-Hispanic American Indian or Alaska Native females: United States, 2019**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table09.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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	0.007062	100,000	706	99,442	7,495,074	75.0
1-2	0.000907	99,294	90	99,249	7,395,632	74.5
2-3	0.000681	99,204	68	99,170	7,296,383	73.5
3-4	0.000669	99,136	66	99,103	7,197,213	72.6
4-5	0.000396	99,070	39	99,050	7,098,110	71.6
5-6	0.000349	99,031	35	99,013	6,999,060	70.7
6-7	0.000287	98,996	28	98,982	6,900,046	69.7
7-8	0.000233	98,968	23	98,956	6,801,064	68.7
8-9	0.000174	98,945	17	98,936	6,702,108	67.7
9-10	0.000113	98,927	11	98,922	6,603,172	66.7
10-11	0.000063	98,916	6	98,913	6,504,250	65.8
11-12	0.000049	98,910	5	98,908	6,405,337	64.8
12-13	0.000100	98,905	10	98,900	6,306,429	63.8
13-14	0.000232	98,895	23	98,884	6,207,529	62.8
14-15	0.000423	98,872	42	98,851	6,108,645	61.8
15-16	0.000649	98,830	64	98,798	6,009,794	60.8
16-17	0.000864	98,766	85	98,724	5,910,996	59.8
17-18	0.001038	98,681	102	98,630	5,812,272	58.9
18-19	0.001145	98,579	113	98,522	5,713,642	58.0
19-20	0.001203	98,466	118	98,407	5,615,120	57.0
20-21	0.001261	98,347	124	98,285	5,516,713	56.1
21-22	0.001337	98,223	131	98,158	5,418,428	55.2
22-23	0.001406	98,092	138	98,023	5,320,270	54.2
23-24	0.001466	97,954	144	97,882	5,222,247	53.3
24-25	0.001524	97,811	149	97,736	5,124,365	52.4
25-26	0.001565	97,661	153	97,585	5,026,629	51.5
26-27	0.001620	97,509	158	97,430	4,929,044	50.5
27-28	0.001737	97,351	169	97,266	4,831,614	49.6
28-29	0.001944	97,181	189	97,087	4,734,348	48.7
29-30	0.002229	96,993	216	96,885	4,637,261	47.8
30-31	0.002567	96,776	248	96,652	4,540,377	46.9
31-32	0.002904	96,528	280	96,388	4,443,724	46.0
32-33	0.003203	96,248	308	96,094	4,347,337	45.2
33-34	0.003413	95,939	327	95,776	4,251,243	44.3
34-35	0.003549	95,612	339	95,442	4,155,467	43.5
35-36	0.003681	95,273	351	95,097	4,060,025	42.6
36-37	0.003838	94,922	364	94,740	3,964,927	41.8
37-38	0.003982	94,558	377	94,369	3,870,188	40.9
38-39	0.004115	94,181	388	93,987	3,775,818	40.1
39-40	0.004252	93,794	399	93,594	3,681,831	39.3
40-41	0.004391	93,395	410	93,190	3,588,237	38.4
41-42	0.004558	92,985	424	92,773	3,495,047	37.6
42-43	0.004795	92,561	444	92,339	3,402,274	36.8
43-44	0.005121	92,117	472	91,881	3,309,935	35.9
44-45	0.005507	91,645	505	91,393	3,218,054	35.1
45-46	0.005908	91,141	538	90,871	3,126,661	34.3
46-47	0.006308	90,602	571	90,316	3,035,789	33.5
47-48	0.006726	90,031	606	89,728	2,945,473	32.7
48-49	0.007169	89,425	641	89,105	2,855,745	31.9
49-50	0.007633	88,784	678	88,445	2,766,640	31.2
50-51	0.008131	88,106	716	87,748	2,678,195	30.4
51-52	0.008629	87,390	754	87,013	2,590,447	29.6
52-53	0.009063	86,636	785	86,243	2,503,434	28.9
53-54	0.009395	85,851	807	85,447	2,417,191	28.2
54-55	0.009658	85,044	821	84,634	2,331,743	27.4
55-56	0.009867	84,223	831	83,807	2,247,110	26.7
56-57	0.010116	83,392	844	82,970	2,163,302	25.9
57-58	0.010500	82,548	867	82,115	2,080,332	25.2
58-59	0.011086	81,681	905	81,229	1,998,218	24.5
59-60	0.011835	80,776	956	80,298	1,916,989	23.7

**Table 9. Life table for non-Hispanic American Indian or Alaska Native females: United States, 2019—Con.**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table09.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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 $x$
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
60–61.....	0.012681	79,820	1,012	79,314	1,836,691	23.0
61–62.....	0.013512	78,808	1,065	78,275	1,757,377	22.3
62–63.....	0.014286	77,743	1,111	77,188	1,679,102	21.6
63–64.....	0.014949	76,632	1,146	76,059	1,601,914	20.9
64–65.....	0.015550	75,487	1,174	74,900	1,525,855	20.2
65–66.....	0.016185	74,313	1,203	73,711	1,450,955	19.5
66–67.....	0.016949	73,110	1,239	72,491	1,377,243	18.8
67–68.....	0.017848	71,871	1,283	71,230	1,304,753	18.2
68–69.....	0.018920	70,588	1,336	69,920	1,233,523	17.5
69–70.....	0.020158	69,253	1,396	68,555	1,163,603	16.8
70–71.....	0.021532	67,857	1,461	67,126	1,095,048	16.1
71–72.....	0.023046	66,396	1,530	65,630	1,027,922	15.5
72–73.....	0.024752	64,865	1,606	64,063	962,292	14.8
73–74.....	0.026701	63,260	1,689	62,415	898,229	14.2
74–75.....	0.028941	61,571	1,782	60,680	835,814	13.6
75–76.....	0.031552	59,789	1,886	58,846	775,134	13.0
76–77.....	0.034542	57,902	2,000	56,902	716,288	12.4
77–78.....	0.037820	55,902	2,114	54,845	659,386	11.8
78–79.....	0.041229	53,788	2,218	52,679	604,541	11.2
79–80.....	0.044720	51,570	2,306	50,417	551,862	10.7
80–81.....	0.048233	49,264	2,376	48,076	501,444	10.2
81–82.....	0.052070	46,888	2,441	45,667	453,368	9.7
82–83.....	0.056584	44,447	2,515	43,189	407,701	9.2
83–84.....	0.061683	41,932	2,586	40,638	364,512	8.7
84–85.....	0.066631	39,345	2,622	38,034	323,873	8.2
85–86.....	0.072644	36,724	2,668	35,390	285,839	7.8
86–87.....	0.078627	34,056	2,678	32,717	250,449	7.4
87–88.....	0.085960	31,378	2,697	30,029	217,732	6.9
88–89.....	0.093848	28,681	2,692	27,335	187,703	6.5
89–90.....	0.102308	25,989	2,659	24,660	160,368	6.2
90–91.....	0.111350	23,330	2,598	22,031	135,708	5.8
91–92.....	0.120979	20,733	2,508	19,478	113,676	5.5
92–93.....	0.131191	18,224	2,391	17,029	94,198	5.2
93–94.....	0.141975	15,833	2,248	14,709	77,169	4.9
94–95.....	0.153309	13,585	2,083	12,544	62,460	4.6
95–96.....	0.165161	11,503	1,900	10,553	49,916	4.3
96–97.....	0.177487	9,603	1,704	8,751	39,363	4.1
97–98.....	0.190233	7,899	1,503	7,147	30,612	3.9
98–99.....	0.203332	6,396	1,301	5,746	23,465	3.7
99–100.....	0.216710	5,095	1,104	4,543	17,719	3.5
100 and over.....	1.000000	3,991	3,991	13,176	13,176	3.3

NOTE: This life table is based on death rates that have been adjusted for race and Hispanic-origin misclassification on death certificates; see Technical Notes in this report.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Table 10. Life table for the non-Hispanic Asian population: United States, 2019**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table10.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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	0.003373	100,000	337	99,699	8,556,211	85.6
1-2	0.000180	99,663	18	99,654	8,456,513	84.9
2-3	0.000161	99,645	16	99,637	8,356,859	83.9
3-4	0.000148	99,629	15	99,621	8,257,222	82.9
4-5	0.000146	99,614	15	99,607	8,157,601	81.9
5-6	0.000103	99,599	10	99,594	8,057,994	80.9
6-7	0.000091	99,589	9	99,585	7,958,400	79.9
7-8	0.000081	99,580	8	99,576	7,858,815	78.9
8-9	0.000071	99,572	7	99,569	7,759,239	77.9
9-10	0.000062	99,565	6	99,562	7,659,671	76.9
10-11	0.000056	99,559	6	99,556	7,560,109	75.9
11-12	0.000059	99,553	6	99,550	7,460,553	74.9
12-13	0.000075	99,547	7	99,544	7,361,002	73.9
13-14	0.000109	99,540	11	99,535	7,261,459	73.0
14-15	0.000155	99,529	15	99,521	7,161,924	72.0
15-16	0.000205	99,514	20	99,504	7,062,403	71.0
16-17	0.000253	99,493	25	99,481	6,962,899	70.0
17-18	0.000299	99,468	30	99,453	6,863,418	69.0
18-19	0.000339	99,438	34	99,422	6,763,965	68.0
19-20	0.000373	99,405	37	99,386	6,664,544	67.0
20-21	0.000407	99,368	40	99,347	6,565,157	66.1
21-22	0.000439	99,327	44	99,305	6,465,810	65.1
22-23	0.000456	99,284	45	99,261	6,366,505	64.1
23-24	0.000457	99,238	45	99,216	6,267,244	63.2
24-25	0.000447	99,193	44	99,171	6,168,028	62.2
25-26	0.000433	99,149	43	99,127	6,068,857	61.2
26-27	0.000424	99,106	42	99,085	5,969,730	60.2
27-28	0.000423	99,064	42	99,043	5,870,645	59.3
28-29	0.000434	99,022	43	99,000	5,771,603	58.3
29-30	0.000454	98,979	45	98,956	5,672,602	57.3
30-31	0.000477	98,934	47	98,910	5,573,646	56.3
31-32	0.000498	98,887	49	98,862	5,474,736	55.4
32-33	0.000513	98,837	51	98,812	5,375,874	54.4
33-34	0.000521	98,787	51	98,761	5,277,062	53.4
34-35	0.000523	98,735	52	98,709	5,178,301	52.4
35-36	0.000529	98,684	52	98,658	5,079,591	51.5
36-37	0.000540	98,631	53	98,605	4,980,934	50.5
37-38	0.000556	98,578	55	98,551	4,882,329	49.5
38-39	0.000578	98,523	57	98,495	4,783,778	48.6
39-40	0.000607	98,466	60	98,437	4,685,283	47.6
40-41	0.000641	98,407	63	98,375	4,586,847	46.6
41-42	0.000684	98,344	67	98,310	4,488,472	45.6
42-43	0.000748	98,276	74	98,240	4,390,162	44.7
43-44	0.000836	98,203	82	98,162	4,291,922	43.7
44-45	0.000939	98,121	92	98,075	4,193,760	42.7
45-46	0.001050	98,029	103	97,977	4,095,686	41.8
46-47	0.001164	97,926	114	97,869	3,997,708	40.8
47-48	0.001282	97,812	125	97,749	3,899,840	39.9
48-49	0.001408	97,686	138	97,617	3,802,091	38.9
49-50	0.001549	97,549	151	97,473	3,704,474	38.0
50-51	0.001714	97,397	167	97,314	3,607,000	37.0
51-52	0.001897	97,231	184	97,138	3,509,686	36.1
52-53	0.002083	97,046	202	96,945	3,412,548	35.2
53-54	0.002255	96,844	218	96,735	3,315,603	34.2
54-55	0.002416	96,626	233	96,509	3,218,868	33.3
55-56	0.002579	96,392	249	96,268	3,122,360	32.4
56-57	0.002763	96,144	266	96,011	3,026,092	31.5
57-58	0.002980	95,878	286	95,735	2,930,081	30.6
58-59	0.003244	95,592	310	95,437	2,834,346	29.7
59-60	0.003555	95,282	339	95,113	2,738,909	28.7

**Table 10. Life table for the non-Hispanic Asian population: United States, 2019—Con.**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table10.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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 $x$
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
60–61.....	0.003890	94,943	369	94,759	2,643,796	27.8
61–62.....	0.004243	94,574	401	94,373	2,549,037	27.0
62–63.....	0.004632	94,173	436	93,955	2,454,664	26.1
63–64.....	0.005063	93,737	475	93,499	2,360,709	25.2
64–65.....	0.005535	93,262	516	93,004	2,267,210	24.3
65–66.....	0.006049	92,746	561	92,465	2,174,206	23.4
66–67.....	0.006604	92,185	609	91,880	2,081,741	22.6
67–68.....	0.007205	91,576	660	91,246	1,989,860	21.7
68–69.....	0.007861	90,916	715	90,559	1,898,614	20.9
69–70.....	0.008584	90,202	774	89,814	1,808,055	20.0
70–71.....	0.009399	89,427	840	89,007	1,718,241	19.2
71–72.....	0.010311	88,587	913	88,130	1,629,234	18.4
72–73.....	0.011328	87,673	993	87,177	1,541,104	17.6
73–74.....	0.012472	86,680	1,081	86,140	1,453,927	16.8
74–75.....	0.013782	85,599	1,180	85,009	1,367,788	16.0
75–76.....	0.015300	84,419	1,292	83,773	1,282,779	15.2
76–77.....	0.017089	83,128	1,421	82,417	1,199,005	14.4
77–78.....	0.019255	81,707	1,573	80,920	1,116,588	13.7
78–79.....	0.021672	80,134	1,737	79,265	1,035,668	12.9
79–80.....	0.024399	78,397	1,913	77,441	956,402	12.2
80–81.....	0.027401	76,484	2,096	75,436	878,962	11.5
81–82.....	0.030898	74,389	2,298	73,239	803,525	10.8
82–83.....	0.035227	72,090	2,540	70,820	730,286	10.1
83–84.....	0.040124	69,551	2,791	68,155	659,466	9.5
84–85.....	0.045394	66,760	3,030	65,245	591,310	8.9
85–86.....	0.052053	63,729	3,317	62,071	526,066	8.3
86–87.....	0.058672	60,412	3,544	58,640	463,995	7.7
87–88.....	0.067162	56,868	3,819	54,958	405,355	7.1
88–89.....	0.076703	53,048	4,069	51,014	350,397	6.6
89–90.....	0.087373	48,979	4,279	46,840	299,383	6.1
90–91.....	0.099243	44,700	4,436	42,482	252,543	5.6
91–92.....	0.112372	40,264	4,525	38,001	210,062	5.2
92–93.....	0.126801	35,739	4,532	33,473	172,060	4.8
93–94.....	0.142546	31,207	4,449	28,983	138,587	4.4
94–95.....	0.159601	26,759	4,271	24,624	109,604	4.1
95–96.....	0.177924	22,488	4,001	20,488	84,980	3.8
96–97.....	0.197440	18,487	3,650	16,662	64,492	3.5
97–98.....	0.218039	14,837	3,235	13,219	47,830	3.2
98–99.....	0.239573	11,602	2,780	10,212	34,611	3.0
99–100.....	0.261865	8,822	2,310	7,667	24,399	2.8
100 and over.....	1.000000	6,512	6,512	16,732	16,732	2.6

NOTE: This life table is based on death rates that have been adjusted for race and Hispanic-origin misclassification on death certificates; see Technical Notes in this report.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Table 11. Life table for non-Hispanic Asian males: United States, 2019**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table11.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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	0.003626	100,000	363	99,676	8,345,527	83.5
1-2	0.000165	99,637	16	99,629	8,245,851	82.8
2-3	0.000171	99,621	17	99,612	8,146,221	81.8
3-4	0.000129	99,604	13	99,597	8,046,609	80.8
4-5	0.000156	99,591	16	99,583	7,947,012	79.8
5-6	0.000112	99,576	11	99,570	7,847,428	78.8
6-7	0.000103	99,564	10	99,559	7,747,858	77.8
7-8	0.000093	99,554	9	99,549	7,648,299	76.8
8-9	0.000082	99,545	8	99,541	7,548,750	75.8
9-10	0.000069	99,537	7	99,533	7,449,209	74.8
10-11	0.000060	99,530	6	99,527	7,349,676	73.8
11-12	0.000059	99,524	6	99,521	7,250,149	72.8
12-13	0.000077	99,518	8	99,514	7,150,628	71.9
13-14	0.000117	99,510	12	99,504	7,051,114	70.9
14-15	0.000172	99,499	17	99,490	6,951,609	69.9
15-16	0.000236	99,482	23	99,470	6,852,119	68.9
16-17	0.000296	99,458	29	99,443	6,752,649	67.9
17-18	0.000352	99,429	35	99,411	6,653,206	66.9
18-19	0.000397	99,394	40	99,374	6,553,795	65.9
19-20	0.000434	99,354	43	99,333	6,454,421	65.0
20-21	0.000469	99,311	47	99,288	6,355,088	64.0
21-22	0.000503	99,264	50	99,239	6,255,801	63.0
22-23	0.000529	99,214	52	99,188	6,156,561	62.1
23-24	0.000543	99,162	54	99,135	6,057,373	61.1
24-25	0.000551	99,108	55	99,081	5,958,238	60.1
25-26	0.000555	99,053	55	99,026	5,859,157	59.2
26-27	0.000560	98,999	55	98,971	5,760,131	58.2
27-28	0.000568	98,943	56	98,915	5,661,160	57.2
28-29	0.000583	98,887	58	98,858	5,562,245	56.2
29-30	0.000603	98,829	60	98,799	5,463,387	55.3
30-31	0.000625	98,770	62	98,739	5,364,588	54.3
31-32	0.000646	98,708	64	98,676	5,265,849	53.3
32-33	0.000666	98,644	66	98,611	5,167,173	52.4
33-34	0.000684	98,578	67	98,545	5,068,562	51.4
34-35	0.000701	98,511	69	98,476	4,970,017	50.5
35-36	0.000723	98,442	71	98,406	4,871,541	49.5
36-37	0.000751	98,371	74	98,334	4,773,135	48.5
37-38	0.000778	98,297	76	98,259	4,674,801	47.6
38-39	0.000804	98,220	79	98,181	4,576,542	46.6
39-40	0.000833	98,141	82	98,100	4,478,362	45.6
40-41	0.000866	98,060	85	98,017	4,380,261	44.7
41-42	0.000913	97,975	89	97,930	4,282,244	43.7
42-43	0.000992	97,885	97	97,837	4,184,314	42.7
43-44	0.001107	97,788	108	97,734	4,086,477	41.8
44-45	0.001248	97,680	122	97,619	3,988,743	40.8
45-46	0.001401	97,558	137	97,490	3,891,124	39.9
46-47	0.001556	97,421	152	97,345	3,793,635	38.9
47-48	0.001716	97,270	167	97,186	3,696,289	38.0
48-49	0.001889	97,103	183	97,011	3,599,103	37.1
49-50	0.002082	96,919	202	96,818	3,502,092	36.1
50-51	0.002306	96,718	223	96,606	3,405,274	35.2
51-52	0.002556	96,495	247	96,371	3,308,668	34.3
52-53	0.002821	96,248	272	96,112	3,212,296	33.4
53-54	0.003084	95,976	296	95,828	3,116,184	32.5
54-55	0.003343	95,680	320	95,520	3,020,356	31.6
55-56	0.003603	95,361	344	95,189	2,924,835	30.7
56-57	0.003886	95,017	369	94,832	2,829,647	29.8
57-58	0.004209	94,648	398	94,449	2,734,814	28.9
58-59	0.004589	94,249	433	94,033	2,640,366	28.0
59-60	0.005023	93,817	471	93,581	2,546,333	27.1

**Table 11. Life table for non-Hispanic Asian males: United States, 2019—Con.**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table11.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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 $x$
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
60–61.....	0.005494	93,346	513	93,089	2,452,751	26.3
61–62.....	0.005982	92,833	555	92,555	2,359,662	25.4
62–63.....	0.006485	92,277	598	91,978	2,267,107	24.6
63–64.....	0.006996	91,679	641	91,358	2,175,129	23.7
64–65.....	0.007525	91,038	685	90,695	2,083,770	22.9
65–66.....	0.008091	90,353	731	89,987	1,993,075	22.1
66–67.....	0.008715	89,622	781	89,231	1,903,088	21.2
67–68.....	0.009403	88,841	835	88,423	1,813,857	20.4
68–69.....	0.010173	88,005	895	87,558	1,725,434	19.6
69–70.....	0.011036	87,110	961	86,629	1,637,877	18.8
70–71.....	0.011990	86,149	1,033	85,632	1,551,248	18.0
71–72.....	0.013050	85,116	1,111	84,560	1,465,615	17.2
72–73.....	0.014250	84,005	1,197	83,406	1,381,055	16.4
73–74.....	0.015635	82,808	1,295	82,160	1,297,649	15.7
74–75.....	0.017245	81,513	1,406	80,810	1,215,489	14.9
75–76.....	0.019089	80,107	1,529	79,343	1,134,678	14.2
76–77.....	0.021207	78,578	1,666	77,745	1,055,335	13.4
77–78.....	0.023753	76,912	1,827	75,998	977,590	12.7
78–79.....	0.026565	75,085	1,995	74,088	901,592	12.0
79–80.....	0.029677	73,090	2,169	72,006	827,505	11.3
80–81.....	0.033144	70,921	2,351	69,746	755,499	10.7
81–82.....	0.037173	68,570	2,549	67,296	685,753	10.0
82–83.....	0.041891	66,022	2,766	64,639	618,457	9.4
83–84.....	0.047238	63,256	2,988	61,762	553,818	8.8
84–85.....	0.053637	60,268	3,233	58,651	492,057	8.2
85–86.....	0.061088	57,035	3,484	55,293	433,405	7.6
86–87.....	0.068043	53,551	3,644	51,729	378,112	7.1
87–88.....	0.077781	49,907	3,882	47,966	326,383	6.5
88–89.....	0.088673	46,025	4,081	43,985	278,417	6.0
89–90.....	0.100785	41,944	4,227	39,830	234,432	5.6
90–91.....	0.114173	37,717	4,306	35,564	194,602	5.2
91–92.....	0.128871	33,411	4,306	31,258	159,038	4.8
92–93.....	0.144887	29,105	4,217	26,996	127,780	4.4
93–94.....	0.162202	24,888	4,037	22,870	100,784	4.0
94–95.....	0.180760	20,851	3,769	18,967	77,914	3.7
95–96.....	0.200471	17,082	3,424	15,370	58,948	3.5
96–97.....	0.221204	13,658	3,021	12,147	43,578	3.2
97–98.....	0.242795	10,636	2,582	9,345	31,431	3.0
98–99.....	0.265047	8,054	2,135	6,987	22,086	2.7
99–100.....	0.287738	5,919	1,703	5,068	15,099	2.6
100 and over.....	1.000000	4,216	4,216	10,031	10,031	2.4

NOTE: This life table is based on death rates that have been adjusted for race and Hispanic-origin misclassification on death certificates; see Technical Notes in this report.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Table 12. Life table for non-Hispanic Asian females: United States, 2019**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table12.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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	0.003100	100,000	310	99,723	8,742,726	87.4
1-2	0.000196	99,690	20	99,680	8,643,003	86.7
2-3	0.000150	99,670	15	99,663	8,543,322	85.7
3-4	0.000168	99,655	17	99,647	8,443,660	84.7
4-5	0.000135	99,639	13	99,632	8,344,013	83.7
5-6	0.000093	99,625	9	99,621	8,244,381	82.8
6-7	0.000075	99,616	7	99,612	8,144,760	81.8
7-8	0.000064	99,609	6	99,605	8,045,148	80.8
8-9	0.000060	99,602	6	99,599	7,945,543	79.8
9-10	0.000061	99,596	6	99,593	7,845,943	78.8
10-11	0.000067	99,590	7	99,587	7,746,350	77.8
11-12	0.000076	99,583	8	99,580	7,646,764	76.8
12-13	0.000085	99,576	8	99,572	7,547,184	75.8
13-14	0.000093	99,567	9	99,563	7,447,612	74.8
14-15	0.000101	99,558	10	99,553	7,348,050	73.8
15-16	0.000111	99,548	11	99,543	7,248,497	72.8
16-17	0.000123	99,537	12	99,531	7,148,954	71.8
17-18	0.000135	99,525	13	99,518	7,049,423	70.8
18-19	0.000147	99,511	15	99,504	6,949,905	69.8
19-20	0.000160	99,497	16	99,489	6,850,401	68.9
20-21	0.000174	99,481	17	99,472	6,750,912	67.9
21-22	0.000187	99,463	19	99,454	6,651,440	66.9
22-23	0.000198	99,445	20	99,435	6,551,986	65.9
23-24	0.000206	99,425	20	99,415	6,452,551	64.9
24-25	0.000212	99,405	21	99,394	6,353,136	63.9
25-26	0.000217	99,384	22	99,373	6,253,742	62.9
26-27	0.000222	99,362	22	99,351	6,154,369	61.9
27-28	0.000229	99,340	23	99,329	6,055,017	61.0
28-29	0.000237	99,317	24	99,306	5,955,689	60.0
29-30	0.000247	99,294	25	99,282	5,856,383	59.0
30-31	0.000259	99,269	26	99,256	5,757,101	58.0
31-32	0.000270	99,244	27	99,230	5,657,845	57.0
32-33	0.000283	99,217	28	99,203	5,558,615	56.0
33-34	0.000295	99,189	29	99,174	5,459,412	55.0
34-35	0.000309	99,159	31	99,144	5,360,238	54.1
35-36	0.000325	99,129	32	99,113	5,261,094	53.1
36-37	0.000345	99,097	34	99,079	5,161,981	52.1
37-38	0.000366	99,062	36	99,044	5,062,901	51.1
38-39	0.000390	99,026	39	99,007	4,963,857	50.1
39-40	0.000417	98,987	41	98,967	4,864,850	49.1
40-41	0.000447	98,946	44	98,924	4,765,884	48.2
41-42	0.000484	98,902	48	98,878	4,666,960	47.2
42-43	0.000533	98,854	53	98,828	4,568,082	46.2
43-44	0.000597	98,801	59	98,772	4,469,254	45.2
44-45	0.000670	98,742	66	98,709	4,370,482	44.3
45-46	0.000747	98,676	74	98,639	4,271,773	43.3
46-47	0.000826	98,603	81	98,562	4,173,133	42.3
47-48	0.000907	98,521	89	98,477	4,074,571	41.4
48-49	0.000993	98,432	98	98,383	3,976,095	40.4
49-50	0.001089	98,334	107	98,281	3,877,712	39.4
50-51	0.001202	98,227	118	98,168	3,779,431	38.5
51-52	0.001327	98,109	130	98,044	3,681,263	37.5
52-53	0.001447	97,979	142	97,908	3,583,219	36.6
53-54	0.001549	97,837	152	97,761	3,485,312	35.6
54-55	0.001637	97,685	160	97,605	3,387,550	34.7
55-56	0.001727	97,525	168	97,441	3,289,945	33.7
56-57	0.001838	97,357	179	97,267	3,192,504	32.8
57-58	0.001977	97,178	192	97,082	3,095,236	31.9
58-59	0.002156	96,986	209	96,881	2,998,154	30.9
59-60	0.002374	96,777	230	96,662	2,901,273	30.0



**Table 12. Life table for non-Hispanic Asian females: United States, 2019—Con.**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table12.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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 $x$
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
60–61.....	0.002609	96,547	252	96,421	2,804,611	29.0
61–62.....	0.002864	96,295	276	96,157	2,708,190	28.1
62–63.....	0.003172	96,019	305	95,867	2,612,033	27.2
63–64.....	0.003543	95,715	339	95,545	2,516,166	26.3
64–65.....	0.003972	95,376	379	95,186	2,420,621	25.4
65–66.....	0.004446	94,997	422	94,786	2,325,434	24.5
66–67.....	0.004949	94,574	468	94,340	2,230,649	23.6
67–68.....	0.005484	94,106	516	93,848	2,136,308	22.7
68–69.....	0.006051	93,590	566	93,307	2,042,460	21.8
69–70.....	0.006667	93,024	620	92,714	1,949,153	21.0
70–71.....	0.007371	92,404	681	92,063	1,856,439	20.1
71–72.....	0.008166	91,723	749	91,348	1,764,376	19.2
72–73.....	0.009036	90,974	822	90,563	1,673,027	18.4
73–74.....	0.009985	90,152	900	89,702	1,582,465	17.6
74–75.....	0.011055	89,252	987	88,758	1,492,763	16.7
75–76.....	0.012310	88,265	1,087	87,722	1,404,005	15.9
76–77.....	0.013831	87,178	1,206	86,575	1,316,283	15.1
77–78.....	0.015705	85,973	1,350	85,297	1,229,708	14.3
78–79.....	0.017841	84,622	1,510	83,867	1,144,410	13.5
79–80.....	0.020326	83,113	1,689	82,268	1,060,543	12.8
80–81.....	0.023034	81,423	1,876	80,485	978,275	12.0
81–82.....	0.026235	79,548	2,087	78,504	897,790	11.3
82–83.....	0.030378	77,461	2,353	76,284	819,286	10.6
83–84.....	0.035068	75,108	2,634	73,791	743,001	9.9
84–85.....	0.039687	72,474	2,876	71,036	669,211	9.2
85–86.....	0.045983	69,597	3,200	67,997	598,175	8.6
86–87.....	0.052283	66,397	3,471	64,661	530,178	8.0
87–88.....	0.060416	62,926	3,802	61,025	465,516	7.4
88–89.....	0.069652	59,124	4,118	57,065	404,491	6.8
89–90.....	0.080088	55,006	4,405	52,803	347,427	6.3
90–91.....	0.091819	50,601	4,646	48,277	294,623	5.8
91–92.....	0.104927	45,954	4,822	43,544	246,346	5.4
92–93.....	0.119475	41,133	4,914	38,675	202,802	4.9
93–94.....	0.135504	36,218	4,908	33,764	164,127	4.5
94–95.....	0.153027	31,311	4,791	28,915	130,362	4.2
95–96.....	0.172018	26,519	4,562	24,238	101,448	3.8
96–97.....	0.192410	21,957	4,225	19,845	77,209	3.5
97–98.....	0.214093	17,733	3,796	15,834	57,364	3.2
98–99.....	0.236911	13,936	3,302	12,285	41,530	3.0
99–100.....	0.260667	10,635	2,772	9,249	29,244	2.7
100 and over.....	1.000000	7,862	7,862	19,996	19,996	2.5

NOTE: This life table is based on death rates that have been adjusted for race and Hispanic-origin misclassification on death certificates; see Technical Notes in this report.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Table 13. Life table for the non-Hispanic Black population: United States, 2019**

Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table13.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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	0.010611	100,000	1,061	99,077	7,478,477	74.8
1-2	0.000711	98,939	70	98,904	7,379,400	74.6
2-3	0.000442	98,869	44	98,847	7,280,496	73.6
3-4	0.000304	98,825	30	98,810	7,181,650	72.7
4-5	0.000261	98,795	26	98,782	7,082,840	71.7
5-6	0.000266	98,769	26	98,756	6,984,058	70.7
6-7	0.000249	98,743	25	98,730	6,885,302	69.7
7-8	0.000229	98,718	23	98,707	6,786,572	68.7
8-9	0.000202	98,695	20	98,685	6,687,865	67.8
9-10	0.000169	98,675	17	98,667	6,589,180	66.8
10-11	0.000143	98,659	14	98,652	6,490,513	65.8
11-12	0.000141	98,645	14	98,638	6,391,861	64.8
12-13	0.000183	98,631	18	98,622	6,293,224	63.8
13-14	0.000281	98,613	28	98,599	6,194,602	62.8
14-15	0.000424	98,585	42	98,564	6,096,003	61.8
15-16	0.000581	98,543	57	98,515	5,997,439	60.9
16-17	0.000736	98,486	73	98,450	5,898,924	59.9
17-18	0.000894	98,413	88	98,369	5,800,475	58.9
18-19	0.001047	98,325	103	98,274	5,702,105	58.0
19-20	0.001193	98,222	117	98,164	5,603,831	57.1
20-21	0.001344	98,105	132	98,039	5,505,667	56.1
21-22	0.001490	97,973	146	97,900	5,407,628	55.2
22-23	0.001592	97,827	156	97,750	5,309,728	54.3
23-24	0.001638	97,672	160	97,592	5,211,978	53.4
24-25	0.001644	97,512	160	97,432	5,114,386	52.4
25-26	0.001636	97,351	159	97,272	5,016,955	51.5
26-27	0.001640	97,192	159	97,112	4,919,683	50.6
27-28	0.001664	97,033	161	96,952	4,822,570	49.7
28-29	0.001719	96,871	167	96,788	4,725,618	48.8
29-30	0.001805	96,705	175	96,618	4,628,830	47.9
30-31	0.001905	96,530	184	96,438	4,532,213	47.0
31-32	0.002010	96,346	194	96,249	4,435,775	46.0
32-33	0.002127	96,153	204	96,050	4,339,525	45.1
33-34	0.002247	95,948	216	95,840	4,243,475	44.2
34-35	0.002368	95,733	227	95,619	4,147,634	43.3
35-36	0.002500	95,506	239	95,386	4,052,015	42.4
36-37	0.002644	95,267	252	95,141	3,956,629	41.5
37-38	0.002784	95,015	265	94,883	3,861,488	40.6
38-39	0.002917	94,751	276	94,612	3,766,605	39.8
39-40	0.003052	94,474	288	94,330	3,671,992	38.9
40-41	0.003205	94,186	302	94,035	3,577,662	38.0
41-42	0.003382	93,884	317	93,725	3,483,627	37.1
42-43	0.003572	93,567	334	93,399	3,389,902	36.2
43-44	0.003771	93,232	352	93,057	3,296,502	35.4
44-45	0.003981	92,881	370	92,696	3,203,446	34.5
45-46	0.004211	92,511	390	92,316	3,110,750	33.6
46-47	0.004471	92,121	412	91,916	3,018,434	32.8
47-48	0.004765	91,710	437	91,491	2,926,518	31.9
48-49	0.005105	91,273	466	91,040	2,835,027	31.1
49-50	0.005501	90,807	500	90,557	2,743,987	30.2
50-51	0.005927	90,307	535	90,040	2,653,430	29.4
51-52	0.006403	89,772	575	89,484	2,563,391	28.6
52-53	0.006974	89,197	622	88,886	2,473,906	27.7
53-54	0.007641	88,575	677	88,237	2,385,020	26.9
54-55	0.008372	87,898	736	87,530	2,296,784	26.1
55-56	0.009101	87,162	793	86,766	2,209,253	25.3
56-57	0.009836	86,369	849	85,944	2,122,488	24.6
57-58	0.010639	85,520	910	85,065	2,036,543	23.8
58-59	0.011549	84,610	977	84,121	1,951,479	23.1
59-60	0.012559	83,633	1,050	83,107	1,867,357	22.3

See footnotes at end of table.

**Table 13. Life table for the non-Hispanic Black population: United States, 2019—Con.**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table13.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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 $x$
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
60–61.....	0.013642	82,582	1,127	82,019	1,784,250	21.6
61–62.....	0.014742	81,456	1,201	80,855	1,702,231	20.9
62–63.....	0.015846	80,255	1,272	79,619	1,621,376	20.2
63–64.....	0.016938	78,983	1,338	78,314	1,541,757	19.5
64–65.....	0.018042	77,645	1,401	76,945	1,463,442	18.8
65–66.....	0.019251	76,244	1,468	75,511	1,386,498	18.2
66–67.....	0.020539	74,777	1,536	74,009	1,310,987	17.5
67–68.....	0.021832	73,241	1,599	72,441	1,236,978	16.9
68–69.....	0.023065	71,642	1,652	70,816	1,164,537	16.3
69–70.....	0.024227	69,989	1,696	69,142	1,093,722	15.6
70–71.....	0.025628	68,294	1,750	67,419	1,024,580	15.0
71–72.....	0.027103	66,544	1,804	65,642	957,161	14.4
72–73.....	0.028667	64,740	1,856	63,812	891,520	13.8
73–74.....	0.031000	62,884	1,949	61,909	827,707	13.2
74–75.....	0.033120	60,935	2,018	59,926	765,798	12.6
75–76.....	0.035722	58,917	2,105	57,864	705,872	12.0
76–77.....	0.038716	56,812	2,200	55,712	648,008	11.4
77–78.....	0.042004	54,612	2,294	53,465	592,296	10.8
78–79.....	0.045493	52,318	2,380	51,128	538,830	10.3
79–80.....	0.049742	49,938	2,484	48,696	487,702	9.8
80–81.....	0.054539	47,454	2,588	46,160	439,006	9.3
81–82.....	0.059293	44,866	2,660	43,536	392,845	8.8
82–83.....	0.064985	42,206	2,743	40,835	349,309	8.3
83–84.....	0.071043	39,463	2,804	38,061	308,475	7.8
84–85.....	0.076485	36,660	2,804	35,258	270,413	7.4
85–86.....	0.084197	33,856	2,851	32,430	235,156	6.9
86–87.....	0.092142	31,005	2,857	29,577	202,725	6.5
87–88.....	0.100708	28,148	2,835	26,731	173,148	6.2
88–89.....	0.109918	25,314	2,782	23,922	146,418	5.8
89–90.....	0.119792	22,531	2,699	21,182	122,495	5.4
90–91.....	0.130345	19,832	2,585	18,540	101,314	5.1
91–92.....	0.141587	17,247	2,442	16,026	82,774	4.8
92–93.....	0.153521	14,805	2,273	13,669	66,748	4.5
93–94.....	0.166143	12,532	2,082	11,491	53,079	4.2
94–95.....	0.179440	10,450	1,875	9,512	41,588	4.0
95–96.....	0.193389	8,575	1,658	7,746	32,076	3.7
96–97.....	0.207961	6,917	1,438	6,197	24,330	3.5
97–98.....	0.223112	5,478	1,222	4,867	18,133	3.3
98–99.....	0.238793	4,256	1,016	3,748	13,265	3.1
99–100.....	0.254942	3,240	826	2,827	9,518	2.9
100 and over.....	1.000000	2,414	2,414	6,691	6,691	2.8

NOTE: This life table is based on death rates that have been adjusted for race and Hispanic-origin misclassification on death certificates; see Technical Notes in this report.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Table 14. Life table for non-Hispanic Black males: United States, 2019**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table14.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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	0.011407	100,000	1,141	99,005	7,132,395	71.3
1-2	0.000699	98,859	69	98,825	7,033,390	71.1
2-3	0.000443	98,790	44	98,768	6,934,565	70.2
3-4	0.000283	98,746	28	98,732	6,835,797	69.2
4-5	0.000244	98,718	24	98,706	6,737,065	68.2
5-6	0.000265	98,694	26	98,681	6,638,358	67.3
6-7	0.000260	98,668	26	98,655	6,539,677	66.3
7-8	0.000244	98,643	24	98,631	6,441,021	65.3
8-9	0.000206	98,619	20	98,608	6,342,391	64.3
9-10	0.000153	98,598	15	98,591	6,243,783	63.3
10-11	0.000104	98,583	10	98,578	6,145,192	62.3
11-12	0.000095	98,573	9	98,568	6,046,614	61.3
12-13	0.000166	98,564	16	98,555	5,948,046	60.3
13-14	0.000341	98,547	34	98,530	5,849,490	59.4
14-15	0.000593	98,513	58	98,484	5,750,960	58.4
15-16	0.000873	98,455	86	98,412	5,652,476	57.4
16-17	0.001141	98,369	112	98,313	5,554,064	56.5
17-18	0.001399	98,257	137	98,188	5,455,751	55.5
18-19	0.001629	98,119	160	98,040	5,357,563	54.6
19-20	0.001832	97,960	179	97,870	5,259,523	53.7
20-21	0.002038	97,780	199	97,681	5,161,653	52.8
21-22	0.002236	97,581	218	97,472	5,063,972	51.9
22-23	0.002373	97,363	231	97,247	4,966,501	51.0
23-24	0.002431	97,132	236	97,014	4,869,253	50.1
24-25	0.002433	96,896	236	96,778	4,772,240	49.3
25-26	0.002415	96,660	233	96,543	4,675,462	48.4
26-27	0.002409	96,426	232	96,310	4,578,919	47.5
27-28	0.002426	96,194	233	96,078	4,482,609	46.6
28-29	0.002481	95,961	238	95,842	4,386,531	45.7
29-30	0.002572	95,723	246	95,600	4,290,689	44.8
30-31	0.002679	95,477	256	95,349	4,195,090	43.9
31-32	0.002791	95,221	266	95,088	4,099,741	43.1
32-33	0.002921	94,955	277	94,816	4,004,653	42.2
33-34	0.003063	94,678	290	94,533	3,909,837	41.3
34-35	0.003211	94,388	303	94,236	3,815,304	40.4
35-36	0.003377	94,085	318	93,926	3,721,068	39.6
36-37	0.003555	93,767	333	93,600	3,627,142	38.7
37-38	0.003727	93,434	348	93,259	3,533,542	37.8
38-39	0.003887	93,085	362	92,904	3,440,282	37.0
39-40	0.004045	92,724	375	92,536	3,347,378	36.1
40-41	0.004224	92,348	390	92,153	3,254,842	35.2
41-42	0.004433	91,958	408	91,755	3,162,689	34.4
42-43	0.004655	91,551	426	91,338	3,070,934	33.5
43-44	0.004885	91,125	445	90,902	2,979,596	32.7
44-45	0.005126	90,679	465	90,447	2,888,695	31.9
45-46	0.005392	90,215	486	89,971	2,798,248	31.0
46-47	0.005698	89,728	511	89,472	2,708,276	30.2
47-48	0.006048	89,217	540	88,947	2,618,804	29.4
48-49	0.006456	88,677	573	88,391	2,529,857	28.5
49-50	0.006933	88,105	611	87,799	2,441,466	27.7
50-51	0.007445	87,494	651	87,168	2,353,666	26.9
51-52	0.008022	86,842	697	86,494	2,266,498	26.1
52-53	0.008734	86,146	752	85,770	2,180,004	25.3
53-54	0.009594	85,393	819	84,984	2,094,234	24.5
54-55	0.010552	84,574	892	84,128	2,009,251	23.8
55-56	0.011519	83,682	964	83,200	1,925,123	23.0
56-57	0.012489	82,718	1,033	82,201	1,841,923	22.3
57-58	0.013537	81,685	1,106	81,132	1,759,722	21.5
58-59	0.014708	80,579	1,185	79,986	1,678,590	20.8
59-60	0.016000	79,394	1,270	78,759	1,598,603	20.1

**Table 14. Life table for non-Hispanic Black males: United States, 2019—Con.**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table14.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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 $x$
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
60–61.....	0.017380	78,124	1,358	77,445	1,519,844	19.5
61–62.....	0.018794	76,766	1,443	76,044	1,442,400	18.8
62–63.....	0.020255	75,323	1,526	74,560	1,366,355	18.1
63–64.....	0.021765	73,797	1,606	72,994	1,291,795	17.5
64–65.....	0.023347	72,191	1,685	71,348	1,218,801	16.9
65–66.....	0.025123	70,506	1,771	69,620	1,147,453	16.3
66–67.....	0.027006	68,734	1,856	67,806	1,077,832	15.7
67–68.....	0.028790	66,878	1,925	65,916	1,010,026	15.1
68–69.....	0.030389	64,953	1,974	63,966	944,111	14.5
69–70.....	0.031662	62,979	1,994	61,982	880,145	14.0
70–71.....	0.033268	60,985	2,029	59,970	818,163	13.4
71–72.....	0.034857	58,956	2,055	57,929	758,192	12.9
72–73.....	0.036661	56,901	2,086	55,858	700,264	12.3
73–74.....	0.039214	54,815	2,150	53,740	644,406	11.8
74–75.....	0.041890	52,665	2,206	51,562	590,666	11.2
75–76.....	0.044710	50,459	2,256	49,331	539,103	10.7
76–77.....	0.048343	48,203	2,330	47,038	489,772	10.2
77–78.....	0.052196	45,873	2,394	44,676	442,734	9.7
78–79.....	0.056531	43,479	2,458	42,250	398,058	9.2
79–80.....	0.062201	41,021	2,552	39,745	355,809	8.7
80–81.....	0.066756	38,469	2,568	37,185	316,064	8.2
81–82.....	0.072597	35,901	2,606	34,598	278,878	7.8
82–83.....	0.079880	33,295	2,660	31,965	244,281	7.3
83–84.....	0.086125	30,635	2,638	29,316	212,315	6.9
84–85.....	0.094172	27,997	2,637	26,678	183,000	6.5
85–86.....	0.102419	25,360	2,597	24,062	156,321	6.2
86–87.....	0.111248	22,763	2,532	21,497	132,259	5.8
87–88.....	0.120675	20,231	2,441	19,010	110,763	5.5
88–89.....	0.130713	17,789	2,325	16,627	91,753	5.2
89–90.....	0.141369	15,464	2,186	14,371	75,126	4.9
90–91.....	0.152647	13,278	2,027	12,264	60,755	4.6
91–92.....	0.164543	11,251	1,851	10,325	48,491	4.3
92–93.....	0.177046	9,400	1,664	8,568	38,166	4.1
93–94.....	0.190140	7,736	1,471	7,000	29,598	3.8
94–95.....	0.203799	6,265	1,277	5,626	22,598	3.6
95–96.....	0.217990	4,988	1,087	4,444	16,972	3.4
96–97.....	0.232673	3,901	908	3,447	12,527	3.2
97–98.....	0.247799	2,993	742	2,622	9,080	3.0
98–99.....	0.263311	2,251	593	1,955	6,458	2.9
99–100.....	0.279148	1,659	463	1,427	4,503	2.7
100 and over.....	1.000000	1,196	1,196	3,076	3,076	2.6

NOTE: This life table is based on death rates that have been adjusted for race and Hispanic-origin misclassification on death certificates; see Technical Notes in this report.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Table 15. Life table for non-Hispanic Black females: United States, 2019**

Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table15.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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	0.009788	100,000	979	99,151	7,809,763	78.1
1-2	0.000639	99,021	63	98,990	7,710,612	77.9
2-3	0.000388	98,958	38	98,939	7,611,622	76.9
3-4	0.000291	98,919	29	98,905	7,512,683	75.9
4-5	0.000249	98,891	25	98,878	7,413,778	75.0
5-6	0.000237	98,866	23	98,854	7,314,900	74.0
6-7	0.000211	98,843	21	98,832	7,216,046	73.0
7-8	0.000190	98,822	19	98,812	7,117,214	72.0
8-9	0.000172	98,803	17	98,794	7,018,401	71.0
9-10	0.000159	98,786	16	98,778	6,919,607	70.0
10-11	0.000151	98,770	15	98,763	6,820,829	69.1
11-12	0.000153	98,755	15	98,748	6,722,066	68.1
12-13	0.000165	98,740	16	98,732	6,623,318	67.1
13-14	0.000191	98,724	19	98,715	6,524,586	66.1
14-15	0.000229	98,705	23	98,694	6,425,871	65.1
15-16	0.000271	98,683	27	98,669	6,327,177	64.1
16-17	0.000318	98,656	31	98,640	6,228,508	63.1
17-18	0.000378	98,624	37	98,606	6,129,868	62.2
18-19	0.000454	98,587	45	98,565	6,031,262	61.2
19-20	0.000539	98,542	53	98,516	5,932,698	60.2
20-21	0.000634	98,489	62	98,458	5,834,182	59.2
21-22	0.000724	98,427	71	98,391	5,735,724	58.3
22-23	0.000791	98,355	78	98,317	5,637,333	57.3
23-24	0.000822	98,278	81	98,237	5,539,016	56.4
24-25	0.000830	98,197	82	98,156	5,440,779	55.4
25-26	0.000831	98,115	82	98,075	5,342,623	54.5
26-27	0.000844	98,034	83	97,992	5,244,548	53.5
27-28	0.000876	97,951	86	97,908	5,146,556	52.5
28-29	0.000938	97,865	92	97,819	5,048,648	51.6
29-30	0.001028	97,773	101	97,723	4,950,829	50.6
30-31	0.001134	97,673	111	97,617	4,853,106	49.7
31-32	0.001245	97,562	121	97,501	4,755,488	48.7
32-33	0.001360	97,441	133	97,374	4,657,987	47.8
33-34	0.001469	97,308	143	97,237	4,560,612	46.9
34-35	0.001572	97,165	153	97,089	4,463,376	45.9
35-36	0.001682	97,012	163	96,931	4,366,287	45.0
36-37	0.001803	96,849	175	96,762	4,269,356	44.1
37-38	0.001921	96,675	186	96,582	4,172,594	43.2
38-39	0.002037	96,489	197	96,391	4,076,013	42.2
39-40	0.002156	96,292	208	96,189	3,979,622	41.3
40-41	0.002289	96,085	220	95,975	3,883,434	40.4
41-42	0.002440	95,865	234	95,748	3,787,459	39.5
42-43	0.002606	95,631	249	95,506	3,691,711	38.6
43-44	0.002781	95,382	265	95,249	3,596,205	37.7
44-45	0.002967	95,116	282	94,975	3,500,956	36.8
45-46	0.003167	94,834	300	94,684	3,405,980	35.9
46-47	0.003389	94,534	320	94,374	3,311,296	35.0
47-48	0.003636	94,214	343	94,042	3,216,922	34.1
48-49	0.003918	93,871	368	93,687	3,122,880	33.3
49-50	0.004241	93,503	397	93,305	3,029,193	32.4
50-51	0.004592	93,107	428	92,893	2,935,888	31.5
51-52	0.004979	92,679	461	92,448	2,842,995	30.7
52-53	0.005424	92,218	500	91,968	2,750,547	29.8
53-54	0.005925	91,717	543	91,446	2,658,579	29.0
54-55	0.006460	91,174	589	90,880	2,567,134	28.2
55-56	0.006987	90,585	633	90,269	2,476,254	27.3
56-57	0.007524	89,952	677	89,614	2,385,985	26.5
57-58	0.008125	89,275	725	88,913	2,296,372	25.7
58-59	0.008824	88,550	781	88,159	2,207,459	24.9
59-60	0.009611	87,769	844	87,347	2,119,300	24.1

See footnotes at end of table.

**Table 15. Life table for non-Hispanic Black females: United States, 2019—Con.**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table15.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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 $x$
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
60–61.....	0.010462	86,925	909	86,470	2,031,953	23.4
61–62.....	0.011322	86,016	974	85,529	1,945,483	22.6
62–63.....	0.012163	85,042	1,034	84,525	1,859,954	21.9
63–64.....	0.012959	84,007	1,089	83,463	1,775,430	21.1
64–65.....	0.013738	82,919	1,139	82,349	1,691,967	20.4
65–66.....	0.014575	81,780	1,192	81,184	1,609,618	19.7
66–67.....	0.015481	80,588	1,248	79,964	1,528,434	19.0
67–68.....	0.016471	79,340	1,307	78,687	1,448,470	18.3
68–69.....	0.017483	78,033	1,364	77,351	1,369,784	17.6
69–70.....	0.018599	76,669	1,426	75,956	1,292,432	16.9
70–71.....	0.019878	75,243	1,496	74,495	1,216,476	16.2
71–72.....	0.021300	73,747	1,571	72,962	1,141,981	15.5
72–73.....	0.022739	72,176	1,641	71,356	1,069,019	14.8
73–74.....	0.024996	70,535	1,763	69,654	997,664	14.1
74–75.....	0.026821	68,772	1,845	67,850	928,010	13.5
75–76.....	0.029371	66,928	1,966	65,945	860,160	12.9
76–77.....	0.032051	64,962	2,082	63,921	794,215	12.2
77–78.....	0.035073	62,880	2,205	61,777	730,294	11.6
78–79.....	0.038198	60,674	2,318	59,516	668,517	11.0
79–80.....	0.041634	58,357	2,430	57,142	609,002	10.4
80–81.....	0.046739	55,927	2,614	54,620	551,860	9.9
81–82.....	0.051013	53,313	2,720	51,953	497,240	9.3
82–83.....	0.055918	50,593	2,829	49,179	445,286	8.8
83–84.....	0.062172	47,764	2,970	46,280	396,107	8.3
84–85.....	0.067429	44,795	3,020	43,285	349,828	7.8
85–86.....	0.074549	41,774	3,114	40,217	306,543	7.3
86–87.....	0.082316	38,660	3,182	37,069	266,326	6.9
87–88.....	0.090770	35,478	3,220	33,868	229,257	6.5
88–89.....	0.099942	32,257	3,224	30,645	195,390	6.1
89–90.....	0.109865	29,034	3,190	27,439	164,744	5.7
90–91.....	0.120564	25,844	3,116	24,286	137,306	5.3
91–92.....	0.132057	22,728	3,001	21,227	113,020	5.0
92–93.....	0.144356	19,727	2,848	18,303	91,793	4.7
93–94.....	0.157464	16,879	2,658	15,550	73,490	4.4
94–95.....	0.171371	14,221	2,437	13,003	57,940	4.1
95–96.....	0.186057	11,784	2,192	10,688	44,937	3.8
96–97.....	0.201490	9,592	1,933	8,625	34,250	3.6
97–98.....	0.217624	7,659	1,667	6,826	25,624	3.3
98–99.....	0.234398	5,992	1,405	5,290	18,799	3.1
99–100.....	0.251741	4,588	1,155	4,010	13,509	2.9
100 and over.....	1.000000	3,433	3,433	9,499	9,499	2.8

NOTE: This life table is based on death rates that have been adjusted for race and Hispanic-origin misclassification on death certificates; see Technical Notes in this report.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Table 16. Life table for the non-Hispanic White population: United States, 2019**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table16.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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	0.004479	100,000	448	99,608	7,877,626	78.8
1-2	0.000341	99,552	34	99,535	7,778,018	78.1
2-3	0.000203	99,518	20	99,508	7,678,483	77.2
3-4	0.000159	99,498	16	99,490	7,578,975	76.2
4-5	0.000134	99,482	13	99,475	7,479,485	75.2
5-6	0.000119	99,469	12	99,463	7,380,010	74.2
6-7	0.000106	99,457	11	99,452	7,280,547	73.2
7-8	0.000098	99,446	10	99,442	7,181,095	72.2
8-9	0.000093	99,437	9	99,432	7,081,653	71.2
9-10	0.000092	99,427	9	99,423	6,982,221	70.2
10-11	0.000097	99,418	10	99,414	6,882,798	69.2
11-12	0.000111	99,409	11	99,403	6,783,385	68.2
12-13	0.000137	99,398	14	99,391	6,683,982	67.2
13-14	0.000179	99,384	18	99,375	6,584,591	66.3
14-15	0.000232	99,366	23	99,355	6,485,215	65.3
15-16	0.000291	99,343	29	99,329	6,385,861	64.3
16-17	0.000354	99,314	35	99,297	6,286,532	63.3
17-18	0.000425	99,279	42	99,258	6,187,235	62.3
18-19	0.000504	99,237	50	99,212	6,087,977	61.3
19-20	0.000589	99,187	58	99,158	5,988,765	60.4
20-21	0.000680	99,128	67	99,095	5,889,608	59.4
21-22	0.000770	99,061	76	99,023	5,790,513	58.5
22-23	0.000854	98,985	85	98,943	5,691,490	57.5
23-24	0.000928	98,900	92	98,854	5,592,547	56.5
24-25	0.000992	98,809	98	98,760	5,493,693	55.6
25-26	0.001052	98,711	104	98,659	5,394,933	54.7
26-27	0.001113	98,607	110	98,552	5,296,274	53.7
27-28	0.001174	98,497	116	98,439	5,197,722	52.8
28-29	0.001238	98,381	122	98,321	5,099,283	51.8
29-30	0.001306	98,260	128	98,195	5,000,963	50.9
30-31	0.001376	98,131	135	98,064	4,902,767	50.0
31-32	0.001447	97,996	142	97,925	4,804,703	49.0
32-33	0.001520	97,854	149	97,780	4,706,778	48.1
33-34	0.001593	97,706	156	97,628	4,608,998	47.2
34-35	0.001665	97,550	162	97,469	4,511,370	46.2
35-36	0.001746	97,388	170	97,303	4,413,901	45.3
36-37	0.001829	97,218	178	97,129	4,316,599	44.4
37-38	0.001903	97,040	185	96,947	4,219,470	43.5
38-39	0.001966	96,855	190	96,760	4,122,523	42.6
39-40	0.002025	96,665	196	96,567	4,025,763	41.6
40-41	0.002097	96,469	202	96,368	3,929,196	40.7
41-42	0.002193	96,267	211	96,161	3,832,828	39.8
42-43	0.002310	96,056	222	95,945	3,736,667	38.9
43-44	0.002450	95,834	235	95,716	3,640,722	38.0
44-45	0.002608	95,599	249	95,474	3,545,006	37.1
45-46	0.002789	95,350	266	95,217	3,449,532	36.2
46-47	0.002991	95,084	284	94,941	3,354,316	35.3
47-48	0.003211	94,799	304	94,647	3,259,374	34.4
48-49	0.003451	94,495	326	94,332	3,164,727	33.5
49-50	0.003723	94,169	351	93,993	3,070,395	32.6
50-51	0.004013	93,818	377	93,630	2,976,402	31.7
51-52	0.004344	93,442	406	93,239	2,882,772	30.9
52-53	0.004746	93,036	442	92,815	2,789,534	30.0
53-54	0.005220	92,594	483	92,352	2,696,719	29.1
54-55	0.005731	92,111	528	91,847	2,604,366	28.3
55-56	0.006234	91,583	571	91,297	2,512,519	27.4
56-57	0.006729	91,012	612	90,706	2,421,222	26.6
57-58	0.007251	90,400	655	90,072	2,330,516	25.8
58-59	0.007822	89,744	702	89,393	2,240,444	25.0
59-60	0.008445	89,042	752	88,666	2,151,051	24.2



**Table 16. Life table for the non-Hispanic White population: United States, 2019—Con.**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table16.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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 $x$
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
60–61.....	0.009125	88,290	806	87,887	2,062,385	23.4
61–62.....	0.009825	87,484	860	87,055	1,974,498	22.6
62–63.....	0.010509	86,625	910	86,170	1,887,443	21.8
63–64.....	0.011161	85,715	957	85,236	1,801,273	21.0
64–65.....	0.011814	84,758	1,001	84,257	1,716,037	20.2
65–66.....	0.012506	83,757	1,047	83,233	1,631,780	19.5
66–67.....	0.013360	82,709	1,105	82,157	1,548,547	18.7
67–68.....	0.014331	81,604	1,169	81,019	1,466,390	18.0
68–69.....	0.015476	80,435	1,245	79,812	1,385,371	17.2
69–70.....	0.016782	79,190	1,329	78,525	1,305,559	16.5
70–71.....	0.018191	77,861	1,416	77,153	1,227,033	15.8
71–72.....	0.019812	76,445	1,515	75,687	1,149,881	15.0
72–73.....	0.021348	74,930	1,600	74,130	1,074,193	14.3
73–74.....	0.023793	73,330	1,745	72,458	1,000,063	13.6
74–75.....	0.025890	71,586	1,853	70,659	927,605	13.0
75–76.....	0.028694	69,732	2,001	68,732	856,946	12.3
76–77.....	0.031476	67,731	2,132	66,665	788,214	11.6
77–78.....	0.035104	65,599	2,303	64,448	721,549	11.0
78–79.....	0.038798	63,297	2,456	62,069	657,101	10.4
79–80.....	0.042979	60,841	2,615	59,534	595,032	9.8
80–81.....	0.047477	58,226	2,764	56,844	535,498	9.2
81–82.....	0.052582	55,462	2,916	54,004	478,655	8.6
82–83.....	0.058871	52,545	3,093	50,999	424,651	8.1
83–84.....	0.065838	49,452	3,256	47,824	373,652	7.6
84–85.....	0.073187	46,196	3,381	44,506	325,828	7.1
85–86.....	0.082278	42,815	3,523	41,054	281,323	6.6
86–87.....	0.091121	39,292	3,580	37,502	240,269	6.1
87–88.....	0.102219	35,712	3,650	33,887	202,767	5.7
88–89.....	0.114400	32,062	3,668	30,228	168,880	5.3
89–90.....	0.127704	28,394	3,626	26,581	138,652	4.9
90–91.....	0.142157	24,768	3,521	23,007	112,071	4.5
91–92.....	0.157768	21,247	3,352	19,571	89,064	4.2
92–93.....	0.174521	17,895	3,123	16,333	69,493	3.9
93–94.....	0.192382	14,772	2,842	13,351	53,160	3.6
94–95.....	0.211286	11,930	2,521	10,670	39,809	3.3
95–96.....	0.231141	9,409	2,175	8,322	29,139	3.1
96–97.....	0.251831	7,234	1,822	6,324	20,818	2.9
97–98.....	0.273211	5,413	1,479	4,673	14,494	2.7
98–99.....	0.295115	3,934	1,161	3,353	9,821	2.5
99–100.....	0.317359	2,773	880	2,333	6,468	2.3
100 and over.....	1.000000	1,893	1,893	4,135	4,135	2.2

NOTE: This life table is based on death rates that have been adjusted for race and Hispanic-origin misclassification on death certificates; see Technical Notes in this report.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Table 17. Life table for non-Hispanic White males: United States, 2019**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table17.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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	0.004937	100,000	494	99,571	7,633,110	76.3
1-2	0.000414	99,506	41	99,486	7,533,539	75.7
2-3	0.000247	99,465	25	99,453	7,434,053	74.7
3-4	0.000198	99,441	20	99,431	7,334,601	73.8
4-5	0.000154	99,421	15	99,413	7,235,170	72.8
5-6	0.000144	99,406	14	99,398	7,135,757	71.8
6-7	0.000128	99,391	13	99,385	7,036,358	70.8
7-8	0.000117	99,378	12	99,373	6,936,974	69.8
8-9	0.000110	99,367	11	99,361	6,837,601	68.8
9-10	0.000109	99,356	11	99,351	6,738,239	67.8
10-11	0.000115	99,345	11	99,339	6,638,889	66.8
11-12	0.000134	99,334	13	99,327	6,539,550	65.8
12-13	0.000170	99,320	17	99,312	6,440,223	64.8
13-14	0.000225	99,303	22	99,292	6,340,911	63.9
14-15	0.000296	99,281	29	99,266	6,241,618	62.9
15-16	0.000374	99,252	37	99,233	6,142,352	61.9
16-17	0.000457	99,215	45	99,192	6,043,119	60.9
17-18	0.000557	99,169	55	99,142	5,943,927	59.9
18-19	0.000677	99,114	67	99,080	5,844,785	59.0
19-20	0.000810	99,047	80	99,007	5,745,705	58.0
20-21	0.000950	98,967	94	98,920	5,646,698	57.1
21-22	0.001087	98,873	108	98,819	5,547,779	56.1
22-23	0.001211	98,765	120	98,705	5,448,960	55.2
23-24	0.001312	98,646	129	98,581	5,350,255	54.2
24-25	0.001394	98,516	137	98,447	5,251,674	53.3
25-26	0.001470	98,379	145	98,306	5,153,226	52.4
26-27	0.001546	98,234	152	98,158	5,054,920	51.5
27-28	0.001620	98,082	159	98,003	4,956,762	50.5
28-29	0.001694	97,923	166	97,840	4,858,759	49.6
29-30	0.001771	97,757	173	97,671	4,760,919	48.7
30-31	0.001849	97,584	180	97,494	4,663,248	47.8
31-32	0.001928	97,404	188	97,310	4,565,754	46.9
32-33	0.002010	97,216	195	97,118	4,468,444	46.0
33-34	0.002094	97,021	203	96,919	4,371,325	45.1
34-35	0.002180	96,818	211	96,712	4,274,406	44.1
35-36	0.002274	96,607	220	96,497	4,177,694	43.2
36-37	0.002372	96,387	229	96,273	4,081,197	42.3
37-38	0.002459	96,158	236	96,040	3,984,925	41.4
38-39	0.002532	95,922	243	95,800	3,888,885	40.5
39-40	0.002602	95,679	249	95,554	3,793,084	39.6
40-41	0.002689	95,430	257	95,302	3,697,530	38.7
41-42	0.002803	95,173	267	95,040	3,602,228	37.8
42-43	0.002938	94,907	279	94,767	3,507,188	37.0
43-44	0.003091	94,628	293	94,481	3,412,421	36.1
44-45	0.003263	94,335	308	94,181	3,317,940	35.2
45-46	0.003461	94,027	325	93,865	3,223,758	34.3
46-47	0.003690	93,702	346	93,529	3,129,894	33.4
47-48	0.003948	93,356	369	93,172	3,036,365	32.5
48-49	0.004243	92,987	395	92,790	2,943,193	31.7
49-50	0.004584	92,593	424	92,381	2,850,403	30.8
50-51	0.004950	92,168	456	91,940	2,758,022	29.9
51-52	0.005365	91,712	492	91,466	2,666,082	29.1
52-53	0.005871	91,220	536	90,952	2,574,616	28.2
53-54	0.006466	90,685	586	90,391	2,483,663	27.4
54-55	0.007110	90,098	641	89,778	2,393,272	26.6
55-56	0.007745	89,458	693	89,111	2,303,494	25.7
56-57	0.008371	88,765	743	88,393	2,214,383	24.9
57-58	0.009031	88,022	795	87,624	2,125,989	24.2
58-59	0.009754	87,227	851	86,801	2,038,365	23.4
59-60	0.010542	86,376	911	85,921	1,951,564	22.6

**Table 17. Life table for non-Hispanic White males: United States, 2019—Con.**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table17.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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 $x$
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
60–61	0.011394	85,465	974	84,979	1,865,643	21.8
61–62	0.012266	84,492	1,036	83,973	1,780,664	21.1
62–63	0.013132	83,455	1,096	82,907	1,696,691	20.3
63–64	0.013973	82,359	1,151	81,784	1,613,784	19.6
64–65	0.014824	81,209	1,204	80,607	1,532,000	18.9
65–66	0.015735	80,005	1,259	79,375	1,451,393	18.1
66–67	0.016846	78,746	1,327	78,083	1,372,018	17.4
67–68	0.018030	77,419	1,396	76,721	1,293,935	16.7
68–69	0.019311	76,023	1,468	75,289	1,217,214	16.0
69–70	0.020711	74,555	1,544	73,783	1,141,924	15.3
70–71	0.022168	73,011	1,619	72,202	1,068,141	14.6
71–72	0.023889	71,393	1,706	70,540	995,939	14.0
72–73	0.025532	69,687	1,779	68,798	925,399	13.3
73–74	0.028360	67,908	1,926	66,945	856,601	12.6
74–75	0.030835	65,982	2,035	64,965	789,656	12.0
75–76	0.034133	63,948	2,183	62,856	724,692	11.3
76–77	0.037419	61,765	2,311	60,609	661,835	10.7
77–78	0.041663	59,454	2,477	58,215	601,226	10.1
78–79	0.045916	56,977	2,616	55,669	543,011	9.5
79–80	0.050626	54,360	2,752	52,984	487,342	9.0
80–81	0.055804	51,608	2,880	50,168	434,358	8.4
81–82	0.061687	48,728	3,006	47,226	384,189	7.9
82–83	0.068546	45,723	3,134	44,156	336,964	7.4
83–84	0.076188	42,589	3,245	40,966	292,808	6.9
84–85	0.085176	39,344	3,351	37,668	251,842	6.4
85–86	0.095441	35,993	3,435	34,275	214,174	6.0
86–87	0.104849	32,557	3,414	30,851	179,899	5.5
87–88	0.117772	29,144	3,432	27,428	149,048	5.1
88–89	0.131915	25,711	3,392	24,016	121,621	4.7
89–90	0.147299	22,320	3,288	20,676	97,605	4.4
90–91	0.163928	19,032	3,120	17,472	76,929	4.0
91–92	0.181777	15,912	2,892	14,466	59,457	3.7
92–93	0.200793	13,020	2,614	11,713	44,991	3.5
93–94	0.220893	10,405	2,298	9,256	33,278	3.2
94–95	0.241959	8,107	1,962	7,126	24,022	3.0
95–96	0.263845	6,145	1,621	5,335	16,896	2.7
96–97	0.286376	4,524	1,296	3,876	11,561	2.6
97–98	0.309354	3,228	999	2,729	7,685	2.4
98–99	0.332563	2,230	742	1,859	4,956	2.2
99–100	0.355779	1,488	529	1,223	3,097	2.1
100 and over	1.000000	959	959	1,874	1,874	2.0

NOTE: This life table is based on death rates that have been adjusted for race and Hispanic-origin misclassification on death certificates; see Technical Notes in this report.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Table 18. Life table for non-Hispanic White females: United States, 2019**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table18.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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	0.003997	100,000	400	99,646	8,126,117	81.3
1-2	0.000264	99,600	26	99,587	8,026,471	80.6
2-3	0.000156	99,574	16	99,566	7,926,884	79.6
3-4	0.000119	99,558	12	99,553	7,827,318	78.6
4-5	0.000110	99,547	11	99,541	7,727,765	77.6
5-6	0.000092	99,536	9	99,531	7,628,224	76.6
6-7	0.000083	99,526	8	99,522	7,528,693	75.6
7-8	0.000077	99,518	8	99,514	7,429,171	74.7
8-9	0.000074	99,511	7	99,507	7,329,656	73.7
9-10	0.000074	99,503	7	99,500	7,230,150	72.7
10-11	0.000077	99,496	8	99,492	7,130,650	71.7
11-12	0.000086	99,488	9	99,484	7,031,158	70.7
12-13	0.000104	99,480	10	99,474	6,931,674	69.7
13-14	0.000131	99,469	13	99,463	6,832,200	68.7
14-15	0.000166	99,456	16	99,448	6,732,737	67.7
15-16	0.000205	99,440	20	99,430	6,633,289	66.7
16-17	0.000245	99,419	24	99,407	6,533,859	65.7
17-18	0.000284	99,395	28	99,381	6,434,452	64.7
18-19	0.000321	99,367	32	99,351	6,335,071	63.8
19-20	0.000356	99,335	35	99,317	6,235,720	62.8
20-21	0.000394	99,300	39	99,280	6,136,403	61.8
21-22	0.000435	99,260	43	99,239	6,037,123	60.8
22-23	0.000478	99,217	47	99,194	5,937,884	59.8
23-24	0.000523	99,170	52	99,144	5,838,691	58.9
24-25	0.000568	99,118	56	99,090	5,739,547	57.9
25-26	0.000613	99,062	61	99,031	5,640,457	56.9
26-27	0.000658	99,001	65	98,969	5,541,426	56.0
27-28	0.000706	98,936	70	98,901	5,442,457	55.0
28-29	0.000761	98,866	75	98,828	5,343,556	54.0
29-30	0.000822	98,791	81	98,750	5,244,728	53.1
30-31	0.000887	98,710	88	98,666	5,145,977	52.1
31-32	0.000952	98,622	94	98,575	5,047,312	51.2
32-33	0.001017	98,528	100	98,478	4,948,737	50.2
33-34	0.001080	98,428	106	98,375	4,850,259	49.3
34-35	0.001141	98,322	112	98,265	4,751,884	48.3
35-36	0.001208	98,209	119	98,150	4,653,619	47.4
36-37	0.001279	98,091	125	98,028	4,555,469	46.4
37-38	0.001341	97,965	131	97,900	4,457,441	45.5
38-39	0.001392	97,834	136	97,766	4,359,541	44.6
39-40	0.001440	97,698	141	97,627	4,261,775	43.6
40-41	0.001497	97,557	146	97,484	4,164,148	42.7
41-42	0.001574	97,411	153	97,334	4,066,664	41.7
42-43	0.001675	97,258	163	97,176	3,969,329	40.8
43-44	0.001801	97,095	175	97,007	3,872,153	39.9
44-45	0.001947	96,920	189	96,826	3,775,146	39.0
45-46	0.002111	96,731	204	96,629	3,678,320	38.0
46-47	0.002288	96,527	221	96,417	3,581,691	37.1
47-48	0.002470	96,306	238	96,187	3,485,274	36.2
48-49	0.002657	96,068	255	95,941	3,389,087	35.3
49-50	0.002861	95,813	274	95,676	3,293,146	34.4
50-51	0.003078	95,539	294	95,392	3,197,470	33.5
51-52	0.003327	95,245	317	95,086	3,102,078	32.6
52-53	0.003631	94,928	345	94,756	3,006,992	31.7
53-54	0.003989	94,583	377	94,395	2,912,236	30.8
54-55	0.004376	94,206	412	94,000	2,817,841	29.9
55-56	0.004756	93,794	446	93,571	2,723,841	29.0
56-57	0.005131	93,348	479	93,108	2,630,271	28.2
57-58	0.005526	92,869	513	92,612	2,537,163	27.3
58-59	0.005959	92,355	550	92,080	2,444,550	26.5
59-60	0.006431	91,805	590	91,510	2,352,470	25.6

**Table 18. Life table for non-Hispanic White females: United States, 2019—Con.**Spreadsheet version available from: [https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/70-19/Table18.xlsx](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/70-19/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 $x$
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
60–61.....	0.006958	91,215	635	90,897	2,260,960	24.8
61–62.....	0.007503	90,580	680	90,240	2,170,063	24.0
62–63.....	0.008028	89,900	722	89,540	2,079,822	23.1
63–64.....	0.008515	89,179	759	88,799	1,990,283	22.3
64–65.....	0.009000	88,419	796	88,022	1,901,484	21.5
65–66.....	0.009509	87,624	833	87,207	1,813,462	20.7
66–67.....	0.010155	86,790	881	86,350	1,726,255	19.9
67–68.....	0.010955	85,909	941	85,439	1,639,905	19.1
68–69.....	0.011998	84,968	1,019	84,458	1,554,467	18.3
69–70.....	0.013235	83,949	1,111	83,393	1,470,009	17.5
70–71.....	0.014612	82,837	1,210	82,232	1,386,616	16.7
71–72.....	0.016161	81,627	1,319	80,967	1,304,383	16.0
72–73.....	0.017615	80,308	1,415	79,600	1,223,416	15.2
73–74.....	0.019745	78,893	1,558	78,114	1,143,816	14.5
74–75.....	0.021549	77,335	1,667	76,502	1,065,701	13.8
75–76.....	0.023981	75,669	1,815	74,762	989,199	13.1
76–77.....	0.026395	73,854	1,949	72,880	914,438	12.4
77–78.....	0.029588	71,905	2,128	70,841	841,558	11.7
78–79.....	0.032907	69,777	2,296	68,629	770,717	11.0
79–80.....	0.036769	67,481	2,481	66,241	702,088	10.4
80–81.....	0.040821	65,000	2,653	63,673	635,847	9.8
81–82.....	0.045462	62,347	2,834	60,929	572,174	9.2
82–83.....	0.051481	59,512	3,064	57,980	511,244	8.6
83–84.....	0.058132	56,448	3,281	54,808	453,264	8.0
84–85.....	0.064535	53,167	3,431	51,451	398,456	7.5
85–86.....	0.073060	49,736	3,634	47,919	347,005	7.0
86–87.....	0.081385	46,102	3,752	44,226	299,086	6.5
87–88.....	0.091872	42,350	3,891	40,405	254,860	6.0
88–89.....	0.103470	38,459	3,979	36,470	214,455	5.6
89–90.....	0.116237	34,480	4,008	32,476	177,986	5.2
90–91.....	0.130215	30,472	3,968	28,488	145,510	4.8
91–92.....	0.145429	26,504	3,854	24,577	117,022	4.4
92–93.....	0.161885	22,650	3,667	20,816	92,445	4.1
93–94.....	0.179561	18,983	3,409	17,279	71,628	3.8
94–95.....	0.198409	15,574	3,090	14,029	54,350	3.5
95–96.....	0.218348	12,484	2,726	11,121	40,320	3.2
96–97.....	0.239267	9,758	2,335	8,591	29,199	3.0
97–98.....	0.261023	7,424	1,938	6,455	20,608	2.8
98–99.....	0.283446	5,486	1,555	4,708	14,153	2.6
99–100.....	0.306341	3,931	1,204	3,329	9,445	2.4
100 and over.....	1.000000	2,727	2,727	6,116	6,116	2.2

NOTE: This life table is based on death rates that have been adjusted for race and Hispanic-origin misclassification on death certificates; see Technical Notes in this report.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Table 19. Estimated life expectancy at birth, in years, by Hispanic origin and race and sex: Death-registration states, 1900–1928, and United States, 1929–2019**

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

Area and year	All races and origins			Hispanic <sup>1</sup>			Non-Hispanic American Indian or Alaska Native <sup>1</sup>			Non-Hispanic Asian <sup>1</sup>			Non-Hispanic Black <sup>1,2</sup>			Non-Hispanic White <sup>1</sup>			
	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 <sup>3</sup>							Single race <sup>4</sup>												
2019 <sup>5</sup>	78.8	76.3	81.4	81.9	79.1	84.4	71.8	68.6	75.0	85.6	83.5	87.4	74.8	71.3	78.1	78.8	76.3	81.3	
2018 <sup>5</sup>	78.7	76.2	81.2	81.8	79.1	84.3	---	---	---	---	---	---	74.7	71.3	78.0	78.6	76.2	81.1	
							Bridged race <sup>4</sup>												
2019 <sup>5</sup>	...	...	...	...	...	...	---	---	---	---	---	---	75.0	71.6	78.2	78.8	76.4	81.3	
2018 <sup>5</sup>	...	...	...	...	...	...	---	---	---	---	---	---	74.9	71.5	78.1	78.7	76.2	81.1	
2017 <sup>5</sup>	78.6	76.1	81.1	81.8	79.1	84.3	---	---	---	---	---	---	74.9	71.5	78.1	78.5	76.1	81.0	
2016 <sup>5</sup>	78.7	76.2	81.1	81.8	79.1	84.3	---	---	---	---	---	---	74.9	71.6	78.0	78.6	76.2	81.0	
2015 <sup>5</sup>	78.7	76.3	81.1	81.9	79.3	84.3	---	---	---	---	---	---	75.1	71.9	78.1	78.7	76.3	81.0	
2014 <sup>5</sup>	78.9	76.5	81.3	82.1	79.4	84.5	---	---	---	---	---	---	75.3	72.2	78.2	78.8	76.5	81.2	
2013 <sup>5</sup>	78.8	76.4	81.2	81.9	79.2	84.2	---	---	---	---	---	---	75.1	71.9	78.1	78.8	76.5	81.2	
2012 <sup>5</sup>	78.8	76.4	81.2	81.9	79.3	84.3	---	---	---	---	---	---	75.1	71.9	78.1	78.9	76.5	81.2	
2011 <sup>5</sup>	78.7	76.3	81.1	81.8	79.2	84.2	---	---	---	---	---	---	75.0	71.8	77.8	78.7	76.4	81.1	
2010 <sup>5</sup>	78.7	76.2	81.0	81.7	78.8	84.3	---	---	---	---	---	---	74.7	71.5	77.7	78.8	76.4	81.1	
2009 <sup>5,6</sup>	78.5	76.0	80.9	81.1	78.4	83.5	---	---	---	---	---	---	74.4	71.0	77.4	78.7	76.3	81.0	
2008 <sup>5,6</sup>	78.2	75.6	80.6	80.8	78.0	83.3	---	---	---	---	---	---	73.9	70.5	77.0	78.4	76.0	80.7	
2007 <sup>5,6</sup>	78.1	75.5	80.6	80.7	77.8	83.2	---	---	---	---	---	---	73.5	69.9	76.7	78.4	75.9	80.8	
2006 <sup>5,6</sup>	77.8	75.2	80.3	80.3	77.5	82.9	---	---	---	---	---	---	73.1	69.5	76.4	78.2	75.7	80.6	
2005 <sup>5,6</sup>	77.6	75.0	80.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
2004 <sup>5,6</sup>	77.6	75.0	80.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
2003 <sup>5,6</sup>	77.2	74.5	79.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
2002 <sup>5,6</sup>	77.0	74.4	79.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
2001 <sup>5,6</sup>	77.0	74.3	79.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
2000	76.8	74.1	79.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1999	76.7	73.9	79.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1998	76.7	73.8	79.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1997	76.5	73.6	79.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1996	76.1	73.1	79.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1995	75.8	72.5	78.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1994	75.7	72.4	79.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1993	75.5	72.2	78.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1992	75.8	72.3	79.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1991	75.5	72.0	78.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1990	75.4	71.8	78.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1989	75.1	71.7	78.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1988	74.9	71.4	78.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1987	74.9	71.4	78.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1986	74.7	71.2	78.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1985	74.7	71.1	78.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1984	74.7	71.1	78.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1983	74.6	71.0	78.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1982	74.5	70.8	78.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1981	74.1	70.4	77.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1980	73.7	70.0	77.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1979	73.9	70.0	77.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1978	73.5	69.6	77.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1977	73.3	69.5	77.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1976	72.9	69.1	76.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1975	72.6	68.8	76.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1974	72.0	68.2	75.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1973	71.4	67.6	75.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1972 <sup>7</sup>	71.2	67.4	75.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1971	71.1	67.4	75.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1970	70.8	67.1	74.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1969	70.5	66.8	74.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	

See footnotes at end of table.

**Table 19. Estimated life expectancy at birth, in years, by Hispanic origin and race and sex: Death-registration states, 1900–1928, and United States, 1929–2019—Con.**

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

Area and year	All races and origins			Hispanic <sup>1</sup>			Non-Hispanic American Indian or Alaska Native <sup>1</sup>			Non-Hispanic Asian <sup>1</sup>			Non-Hispanic Black <sup>1,2</sup>			Non-Hispanic White <sup>1</sup>		
	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 <sup>3</sup> —Con.	Bridged race <sup>4</sup> —Con.																	
1968.....	70.2	66.6	74.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1967.....	70.5	67.0	74.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1966.....	70.2	66.7	73.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1965.....	70.2	66.8	73.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1964.....	70.2	66.8	73.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1963 <sup>8</sup> .....	69.9	66.6	73.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1962 <sup>8</sup> .....	70.1	66.9	73.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1961.....	70.2	67.1	73.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1960.....	69.7	66.6	73.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1959.....	69.9	66.8	73.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1958.....	69.6	66.6	72.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1957.....	69.5	66.4	72.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1956.....	69.7	66.7	72.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1955.....	69.6	66.7	72.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1954.....	69.6	66.7	72.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1953.....	68.8	66.0	72.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1952.....	68.6	65.8	71.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1951.....	68.4	65.6	71.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1950.....	68.2	65.6	71.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1949.....	68.0	65.2	70.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1948.....	67.2	64.6	69.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1947.....	66.8	64.4	69.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1946.....	66.7	64.4	69.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1945.....	65.9	63.6	67.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1944.....	65.2	63.6	66.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1943.....	63.3	62.4	64.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1942.....	66.2	64.7	67.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1941.....	64.8	63.1	66.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1940.....	62.9	60.8	65.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1939.....	63.7	62.1	65.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1938.....	63.5	61.9	65.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1937.....	60.0	58.0	62.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1936.....	58.5	56.6	60.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1935.....	61.7	59.9	63.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1934.....	61.1	59.3	63.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1933.....	63.3	61.7	65.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1932.....	62.1	61.0	63.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1931.....	61.1	59.4	63.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1930.....	59.7	58.1	61.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1929.....	57.1	55.8	58.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Death-registration states																		
1928.....	56.8	55.6	58.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1927.....	60.4	59.0	62.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1926.....	56.7	55.5	58.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1925.....	59.0	57.6	60.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1924.....	59.7	58.1	61.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1923.....	57.2	56.1	58.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1922.....	59.6	58.4	61.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1921.....	60.8	60.0	61.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1920.....	54.1	53.6	54.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1919.....	54.7	53.5	56.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1918.....	39.1	36.6	42.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1917.....	50.9	48.4	54.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

See footnotes at end of table.

**Table 19. Estimated life expectancy at birth, in years, by Hispanic origin and race and sex: Death-registration states, 1900–1928, and United States, 1929–2019—Con.**

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

Area and year	All races and origins			Hispanic <sup>1</sup>			Non-Hispanic American Indian or Alaska Native <sup>1</sup>			Non-Hispanic Asian <sup>1</sup>			Non-Hispanic Black <sup>1,2</sup>			Non-Hispanic White <sup>1</sup>		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Death-registration states—Con.	Bridged race <sup>4</sup> —Con.																	
1916.....	51.7	49.6	54.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1915.....	54.5	52.5	56.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1914.....	54.2	52.0	56.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1913.....	52.5	50.3	55.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1912.....	53.5	51.5	55.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1911.....	52.6	50.9	54.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1910.....	50.0	48.4	51.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1909.....	52.1	50.5	53.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1908.....	51.1	49.5	52.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1907.....	47.6	45.6	49.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1906.....	48.7	46.9	50.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1905.....	48.7	47.3	50.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1904.....	47.6	46.2	49.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1903.....	50.5	49.1	52.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1902.....	51.5	49.8	53.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1901.....	49.1	47.6	50.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1900.....	47.3	46.3	48.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

... Category not applicable.

--- Data not available.

<sup>1</sup>Life tables are based on death rates that have been adjusted for race and Hispanic-origin misclassification on death certificates; see Technical Notes.

<sup>2</sup>Before 1970, data for the Black population are not available. Data shown for 1900–1969 are for the non-White population. See Technical Notes.

<sup>3</sup>Includes Alaska in 1959 and Hawaii in 1960.

<sup>4</sup>Life expectancies by single-race categories are not completely comparable with life expectancies by bridged-race categories and should be interpreted accounting for the change from bridged-race to single-race categories.

<sup>5</sup>Life expectancies for 2001–2019 were calculated using a revised methodology described in the Technical Notes.

<sup>6</sup>Life expectancies for 2001–2009 have been re-estimated using new intercensal population estimates and may differ from data previously published; see Technical Notes.

<sup>7</sup>Deaths based on a 50% sample.

<sup>8</sup>Figures by race exclude data for residents of New Jersey; see Technical Notes.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.



## Technical Notes

### The life table program

Two series of complete life tables for the U.S. population are prepared by the 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 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 used to estimate annual complete life tables to age 100, with combined life table values presented for ages 100 and over (16). The methodology was again revised for data years 2000–2007 using a methodology similar to that of the 1999–2001 decennial life tables (17). 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 (18).

The methodology used to estimate the 2008–2019 life tables is different from that used to estimate the 2000–2007 life tables with respect to the technique used to estimate the probabilities of death for ages over 65. The methodology used to produce the life tables for 2008–2019 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 (18). A full description of the methodology used to estimate the 2019 life tables is provided below. See “United States Life Tables, 2005” (17) for a detailed description of the methodology used for data years 2000–2007.

Beginning with 2006 mortality data, life tables by Hispanic origin and race, including Hispanic, non-Hispanic Black, and non-Hispanic White, were added to the annual life table program. Before 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 White and Black, regardless of Hispanic origin, prevented the estimation of life tables for the Hispanic-origin population. Recent research that identified and quantified these data limitations has resulted in reliable methodological strategies to address these data problems (10–12,19). Beginning with 2019 mortality data, the annual life table program was expanded to include the non-Hispanic American Indian or Alaska Native (AIAN) and non-Hispanic Asian populations.

### 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 before 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 life table values for those years published in Vital Statistics of the United States for 1989 and earlier years (<https://www.cdc.gov/nchs/products/vsus.htm>).

Life table values for 1991–1999 presented in this report are based on postcensal population estimates 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 2008–2019 life tables. Consequently, the values may differ from those previously published in annual final mortality and life table reports. The revised intercensal life tables for years 2001–2009 can be accessed by links provided under each of the annual life table reports in: [https://www.cdc.gov/nchs/products/life\\_tables.htm](https://www.cdc.gov/nchs/products/life_tables.htm).

### 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 [D.C.]), and tables for 1919–1921 used mortality data from the 1920 death-registration states (34 states and D.C.). The tables for 1929–1931 to 1958 cover the coterminous United States. Decennial life table values for the 3-year period 1959–1961 were calculated from data that include both Alaska and Hawaii for each year. Data for each year shown in [Table 19](#) include Alaska beginning in 1959 and Hawaii beginning in 1960. However, the inclusion of these two states does not materially affect life table values.

### New Jersey data, 1962–1964

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

## Nonresidents

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

## 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 2019 collected from death certificates filed in state vital statistics offices and reported to NCHS as part of NVSS. Hispanic origin and race are reported separately on the death certificate.

Beginning with the 2018 data year, all 50 states and D.C. reported deaths based on the 2003 revision of the U.S. Standard Certificate of Death for the entire year (6). The revision is based on the 1997 Office of Management and Budget (OMB) standards (5). The 1997 standards allow people to report more than one race and increased the race choices from four to five by separating the Asian and Pacific Islander groups. The Hispanic category did not change, remaining consistent with previous reports.

The Hispanic-origin and race groups in this report follow the 1997 standards and differ from the race categories used in previous reports. The new categories are Hispanic, non-Hispanic single-race AIAN, non-Hispanic single-race Asian, non-Hispanic single-race Black, and non-Hispanic single-race White. From 2003 to 2017, some deaths were reported using the 1989 certificate revision that allowed the reporting of only one race (8). During those years, multiple-race data were bridged to single-race categories. Use of the bridged-race process was discontinued in 2018 when all states collected data on race according to the 1997 OMB guidelines for the full data year. The Hispanic-origin category was not affected by the revised standards.

### Census population data

The population data used to estimate the life tables shown in this report are postcensal population estimates based on the 2010 decennial census and are available from the U.S. Census website at <https://www2.census.gov/programs-surveys/popest/tables/2010-2019/state/asrh/sc-est2019-alldata6.csv>. Reflecting the 1997 OMB guidelines on race and ethnicity reporting, the 2010 census included an option for people to report more than one race and provided for the reporting of Asian people separately from Native Hawaiian or Other Pacific Islander people (5).

To produce death rates for 2000–2017, it was necessary to bridge the reported population data for multiple-race people back to single-race categories. Additionally, the 2010 census counts were modified for consistency with the 1977 OMB race categories, that is, to report the data for Asian people and

Native Hawaiian or Other Pacific Islander people as a combined category (Asian or Pacific Islander) and to reflect age as of the census reference date (8). The procedures used to produce the bridged populations are described elsewhere (20).

### Medicare data

Medicare data have traditionally been used to estimate U.S. decennial life tables, and U.S. annual life tables since 1997 (16). Medicare data are considered more accurate than vital statistics and census data at the oldest ages because Medicare enrollees must have proof of age in order to enroll (21,22). However, the reliability of Medicare data beyond age 100 declines because of the small percentage of people who enrolled at the start of the Medicare program in 1965 and for whom it was not possible to verify exact age (21,22). Further, the Medicare race and ethnicity classification system makes it impossible to correctly identify the Hispanic, AIAN, Asian, or Native Hawaiian and Other Pacific Islander populations (22). 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 (18). 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 the non-Hispanic Black and non-Hispanic White populations presented in this report (18).

To estimate death rates for the Medicare total, non-Hispanic Black, and non-Hispanic White populations in 2019, age-specific numbers of deaths and population counts by sex and race for the population aged 66–99 from the 2019 Medicare file were used. The data file is created by CMS for the Social Security Administration, which shares the data with NCHS under a special agreement. The 2019 file contains 2019 midyear Medicare population counts (June 30, 2019) and calendar-year Medicare death counts (January 1 through December 31, 2019). Age for both deaths and midyear population counts is calculated as age at last birthday.

## 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:

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

where  $D$  is the total number of deaths, and  $D^a$  is the total number of deaths for which age is stated.  $F$  is then applied by multiplying it by the number of deaths in each age group. [Table 1](#) shows values for  $F$  by sex used to adjust mortality data for the total,

**Table I. Values for  $F$  used to adjust for not-stated age based on 2019 mortality data**

Race, Hispanic origin, and sex	Total deaths	Total deaths for which age was not stated	$F$
Total	2,854,838	147	1.00005149
Male	1,473,823	103	1.00006989
Female	1,381,015	44	1.00003186
Hispanic	212,397	10	1.00004708
Male	117,683	9	1.00007648
Female	94,714	1	1.00001056
Non-Hispanic American Indian or Alaska Native	18,057	–	1.00000000
Male	9,732	–	1.00000000
Female	8,325	–	1.00000000
Non-Hispanic Asian	70,532	2	1.00002836
Male	35,914	–	1.00000000
Female	34,618	2	1.00005778
Non-Hispanic Black	346,677	19	1.00005481
Male	181,363	11	1.00006066
Female	165,314	8	1.00004840
Non-Hispanic White	2,183,844	52	1.00002381
Male	1,115,767	40	1.00003585
Female	1,068,077	12	1.00001124

– Quantity zero.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

Hispanic, non-Hispanic AIAN, non-Hispanic Asian, non-Hispanic Black, and non-Hispanic White populations in 2019.

### Adjustment for misclassification of Hispanic origin and race on death certificates

Two data sources were used to adjust for Hispanic origin and race misclassification on death certificates. For the Hispanic, non-Hispanic Asian, non-Hispanic Black, and non-Hispanic White populations, the National Longitudinal Mortality Study (NLMS) was used to produce classification ratios (or correction factors) to adjust observed sex and age-specific death rates for misclassification on death certificates (10). The NLMS consists of a series of Current Population Surveys (CPS) (1979–2011) linked to vital statistics mortality data through the National Death Index (NDI) (10). For the non-Hispanic AIAN population, an extract of the 2010 Census Edited File (CEF)–Census Unedited File (CUF) Match File containing records for people classified as AIAN alone or in combination with another race in the 2010 decennial census was linked to NDI to identify decedents for the period April 1, 2010, to December 31, 2011. The resulting 34,366 CEF–CUF Match AIAN Extract—Mortality Linked Data decedent records were used to estimate classification ratios to correct for race and Hispanic-origin misclassification on death certificates for the AIAN population (7).

The classification ratios consist of a comparison of self-reported Hispanic origin and race on CPS or the decennial census, with Hispanic origin and race reported on the death certificates of the samples of decedents in NLMS who died during the period 1999–2011 and decedents in the CEF–CUF Match AIAN Extract who died between April 1, 2010, and December 31, 2011 (7,10).

Linked records are used to estimate sex-age-specific ratios of survey or census Hispanic-origin and race counts to death certificate counts (7,10).

The survey or census death certificate ratio, or "classification ratio," is the ratio of the count (weighted in the case of CPS) of self-reported race and ethnicity on the survey or census to the count (weighted in the case of CPS) of the same racial or ethnic category on the death certificates of the sample of NLMS (CEF–CUF Match AIAN Extract) decedents described previously. It can be interpreted as the net difference in assignment of a specific Hispanic-origin and race category between the two classification systems and can be used as a correction factor for Hispanic-origin and race misclassification (10–12). It is assumed that the race and ethnicity reported by a survey or census respondent is more reliable than proxy reporting of race and ethnicity by a funeral director who has little personal knowledge of the decedent. Also, the 1997 OMB standards mandate that self-identification should be the standard used for the collection and recording of race and ethnicity information (5).

Classification ratios discussed previously are used to adjust the age-specific number of deaths for ages 1–95 and over for the total Hispanic, non-Hispanic AIAN, non-Hispanic Asian, non-Hispanic Black, and non-Hispanic White populations, and by sex for each group, as follows:

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

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

Because classification ratios for infant deaths are unreliable due to small sample sizes or counts, corrections for racial and ethnic misclassification of infant deaths are addressed by using infant death counts and live birth counts from the 2018 and 2019 linked birth/infant death data files rather than the traditional birth and death data files (23,24). In the linked file, each infant death record is linked to its corresponding birth record so that the race and ethnicity of the mother reported on the birth record can be ascribed to the infant death record. As a result, race- and ethnicity-specific infant mortality rates estimated with the linked file do not have 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 3.3% for Hispanic, 1.8% for non-Hispanic AIAN, and 4.7% for non-Hispanic Black infants; and underestimates the infant mortality rate by 22.2% for non-Hispanic Asian and by 2.7% 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 in "Calculation of  $q_x$  at age 0"), it is preferable to use the linked birth/infant death data file.

**Table II. Classification ratios, by Hispanic origin, race for the non-Hispanic population, age, and sex**

Age (years)	Hispanic			Non-Hispanic American Indian or Alaska Native			Non-Hispanic Asian <sup>1</sup>			Non-Hispanic Black			Non-Hispanic White		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
All ages . . . . .	1.0329	1.0362	1.0294	1.3354	1.3488	1.3197	1.0331	1.0480	1.0117	1.0047	1.0041	1.0053	0.9995	0.9993	0.9997
0 <sup>2</sup> . . . . .	1.0338	1.0384	1.0263	1.0176	0.9841	1.0601	0.7782	0.7966	0.7552	1.0471	1.0517	1.0408	0.9733	0.9717	0.9726
1–14 . . . . .	0.9905	0.9659	*1.0299	1.1243	1.1546	1.0833	*0.8655	*0.8426	*1.0000	1.0266	0.9379	*1.1751	0.9918	1.0755	0.8770
15–24 . . . . .	0.9668	0.9325	1.0604	1.1462	1.1201	1.2190	1.2285	*1.4276	*0.9721	1.0248	1.0215	1.0343	0.9976	1.0019	0.9869
25–34 . . . . .	1.0354	1.0401	1.0232	1.1375	1.1557	1.1033	1.1527	1.0967	*1.2648	0.9855	0.9770	1.0008	1.0021	1.0034	0.9994
35–44 . . . . .	1.0434	1.0645	1.0066	1.1799	1.1815	1.1772	1.0338	1.0459	1.0125	1.0062	1.0073	1.0048	0.9980	0.9997	0.9951
45–54 . . . . .	1.0584	1.0372	1.0953	1.3915	1.3913	1.3916	1.0699	1.1123	1.0113	1.0002	1.0019	0.9982	0.9969	0.9965	0.9976
55–64 . . . . .	1.0571	1.0517	1.0659	1.4281	1.4547	1.3917	1.0274	1.0694	0.9784	1.0003	0.9965	1.0046	0.9994	0.9992	0.9997
65–74 . . . . .	1.0295	1.0485	1.0072	1.3654	1.4244	1.2980	1.0845	1.0841	1.0850	1.0062	1.0055	1.0070	0.9967	0.9967	0.9966
75–84 . . . . .	1.0192	1.0188	1.0196	1.3099	1.3367	1.2852	1.0305	1.0328	1.0281	1.0057	1.0057	1.0058	1.0004	1.0003	1.0004
85–94 . . . . .	1.0208	1.0313	1.0137	1.3845	1.3807	1.3870	0.9962	0.9983	0.9944	1.0110	1.0155	1.0086	1.0008	1.0007	1.0009
95 and over . . . . .	1.0732	1.0509	1.0842	1.3951	1.3043	1.4240	0.9755	1.0238	0.9405	0.9980	0.9872	0.9954	1.0005	0.9995	1.0008

\* Ratio is unreliable because either the unweighted number of Current Population Survey deaths, the unweighted number of death certificate deaths, or both are based on fewer than 20 deaths.  
<sup>1</sup>Classification ratios for the non-Hispanic Asian population were estimated based on data for the non-Hispanic Asian and Pacific Islander populations combined due to data availability. However, the ratios reflect misclassification predominantly among the non-Hispanic Asian population because it makes up over 95% of the non-Hispanic Asian and Pacific Islander populations combined.  
<sup>2</sup>Ratios 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 2019 linked birth/infant death data file. They are only shown for illustrative purposes; see report text for details.  
 SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**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 (1,3). 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 ( $D_x$ ). For  ${}_n P_x$ , 5-year age groupings from age 0 to 99 are used. For  ${}_n D_x$ , 5-year age groupings from age 5 to 99 are used following adjustment for not-reported age and Hispanic-origin and race misclassification on death certificates (see reference 13 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,  $m_x$  (3,6). 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:

$$q_x = \frac{m_x}{1 + (1 - a_x)m_x} \quad [3]$$

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,

$$q_x = \frac{m_x}{1 + \frac{1}{2}m_x} \quad [4]$$

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

$$q_x = \frac{M_x}{1 + \frac{1}{2}M_x} = \frac{D_x}{P_x + \frac{1}{2}D_x} \quad [5]$$

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. Consequently, the probability of death at birth,  $q_0$ , is

calculated using a birth cohort method that uses 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 2019,  $B^t$  is the number of live births in 2019, and  $B^{t-1}$  is the number of live births in 2018. Table III shows separation factors and numbers of births for 2018 and 2019.

## Probabilities of dying at the oldest ages for the total, non-Hispanic Black, and non-Hispanic White 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 since proof of age is required for enrollment in the Medicare program. Medicare data are used here to estimate the probability of dying for ages 66 and over for the total, non-Hispanic Black, and non-Hispanic White populations.

The method described in this section includes 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 consequently obtained as follows:

$$M_x = \frac{1}{30} [(95-x)M_x^V + (x-65)M_x^M] \quad [7]$$

when  $x = 66, \dots, 94$

$$\text{and } M_x = M_x^M$$

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

$M_x^M$  is estimated as follows:

$$M_x^M = \frac{D_x^M}{P_x^M}$$

where  $D_x^M$  is the age-specific Medicare death count, and  $P_x^M$  is the age-specific Medicare midyear population count.

A logistic model proposed by Kannisto is then used to smooth  $M_x$  in the age range 85–99 and predict  $M_x$  in the age range 100–120 (25). 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. Currently, the rate of change in the age-specific death rate rises steadily 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 over smoothing and consequently altering the underlying mortality pattern observed in the population of interest (26). Further, 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, so it is unnecessary to model (smooth) the entire age span (65–100).

The Kannisto model 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,  $x$  (25). It is expressed as:

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

where  $u_x$ , the force of mortality (or the instantaneous death rate), 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  $m_x = M_x$ , then 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 years:

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

Then, the estimated parameters are 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  $\beta$ , respectively, given by fitting model [9]. Estimated parameters and the starting age for the modeled age span by population in 2019 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:

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

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 in the following section).

## Probabilities of dying at the oldest ages for the Hispanic, non-Hispanic AIAN, and non-Hispanic Asian populations

As noted previously, Medicare data are unreliable for the Hispanic, non-Hispanic AIAN, and non-Hispanic Asian populations due to inconsistencies in the Medicare race and ethnicity classification system. As a result, it was necessary

**Table III. Births in 2018 and 2019, deaths in 2019 of infants born in 2018 and 2019, and separation factors, by Hispanic origin and race and sex: United States**

Births, deaths, and separation factors	Total			Hispanic			Non-Hispanic single-race American Indian or Alaska Native			Non-Hispanic single-race Asian			Non-Hispanic single-race Black			Non-Hispanic single-race White		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Births																		
2018.....	3,791,712	1,938,179	1,853,533	886,210	450,950	435,260	29,092	14,806	14,286	240,798	124,082	116,716	552,029	279,914	272,115	1,956,413	1,003,045	953,368
2019.....	3,747,540	1,917,446	1,830,094	886,467	452,492	433,975	28,450	14,500	13,950	238,769	123,806	114,963	548,075	278,494	269,581	1,915,912	981,620	934,292
Deaths in 2019 of infants born in:																		
2018.....	2,658	1,504	1,158	567	315	254	50	28	22	86	48	38	76	407	351	1,067	637	430
2019.....	18,269	10,158	8,107	3,895	2,162	1,731	179	96	83	720	401	319	5,745	2,772	2,291	7,536	4,223	3,313
Separation factor, <i>f</i> .....	0.127	0.129	0.125	0.127	0.127	0.128	0.218	0.226	0.210	0.107	0.106	0.107	0.130	0.128	0.133	0.124	0.131	0.115

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**Table IV. Estimated parameters  $\alpha$  and  $\beta$  used for predicting  $m_x$  and starting age of modeled age span: U.S. Life Tables, 2019**

Parameter	Total			Non-Hispanic Black			Non-Hispanic White		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Starting age.....	86	86	85	85	84	84	86	86	86
$\ln(\alpha)$ (standard error).....	-13.59886 (0.205)	-13.6648 (0.327)	-14.17245 (0.155)	-11.17234 (0.133)	-10.4807 (0.356)	-12.02537 (0.131)	-13.80708 (0.165)	-14.08133 (0.284)	-14.35606 (0.137)
$\beta$ (standard error).....	0.1317750 (0.002)	0.1345412 (0.004)	0.1369550 (0.002)	0.1039148 (0.001)	0.0984567 (0.004)	0.1123253 (0.001)	0.1344009 (0.002)	0.1395025 (0.003)	0.1392756 (0.002)

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

to use other methods to estimate mortality at the oldest ages for these populations. Beyond age 80, mortality estimates based strictly on vital statistics for the Hispanic, non-Hispanic AIAN, and non-Hispanic Asian populations 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% relative to that of the non-Hispanic White population (19,27,28). 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 (29,30). 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 extended to the older ages (19,29,30).

Although similar information is not available for the non-Hispanic AIAN and non-Hispanic Asian populations, with a slight modification, the Brass relational logit model was successfully used to produce reliable complete period life tables for the non-Hispanic AIAN population in Indian Health Service Contract Health Service Delivery Area counties (31). The choice to use the non-Hispanic White population as the standard population is based on several factors. First, it is the most widely used comparison population in the study of racial and ethnic disparities given its social and economic privilege. Second, it is the largest population in the United States and has the most reliable mortality data. Third, the relationship between the age-specific mortality patterns of the non-Hispanic AIAN and non-Hispanic Asian populations and the non-Hispanic White population remains constant throughout the age span 45–80 (45–84 for the non-Hispanic AIAN population). The assumption that this pattern continues to the oldest ages is reasonable because the final results are consistent with expected age-specific mortality patterns at the oldest ages (Figures I and II).

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,

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

$\alpha$  is the predicted parameter that measures the level of mortality of the population of interest relative to the standard population, and  $\beta$  is the predicted parameter that measures the slope of the mortality function of the population of interest relative to the standard population (6,4,30). Table V shows values of predicted  $\alpha$  and  $\beta$  and their standard errors.

A maximum-likelihood generalized linear-model estimation procedure was used to fit equation [12] in the age range 45–80 (45–84 for the non-Hispanic AIAN population). The resulting predicted parameters  $\alpha$  and  $\beta$  were then used to estimate the predicted probability of death for ages 76–120 (80–160 for the non-Hispanic AIAN 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 was then used to estimate  $L_x$  for ages 100–120, which was used to close the table with the age category 100 and over, combined (discussed in the next section).

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 (80–84 for the non-Hispanic AIAN population) with a graduating process as follows:

$$q_x = \frac{1}{6} [(81-x)q_x^V + (x-75)\bar{q}_x] \quad [14]$$

when  $x = 76, \dots, 80$ ,

$$q_x = \frac{1}{6} [(85-x)q_x^V + (x-79)\bar{q}_x]$$

when  $x = 80, \dots, 84$ .

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:

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

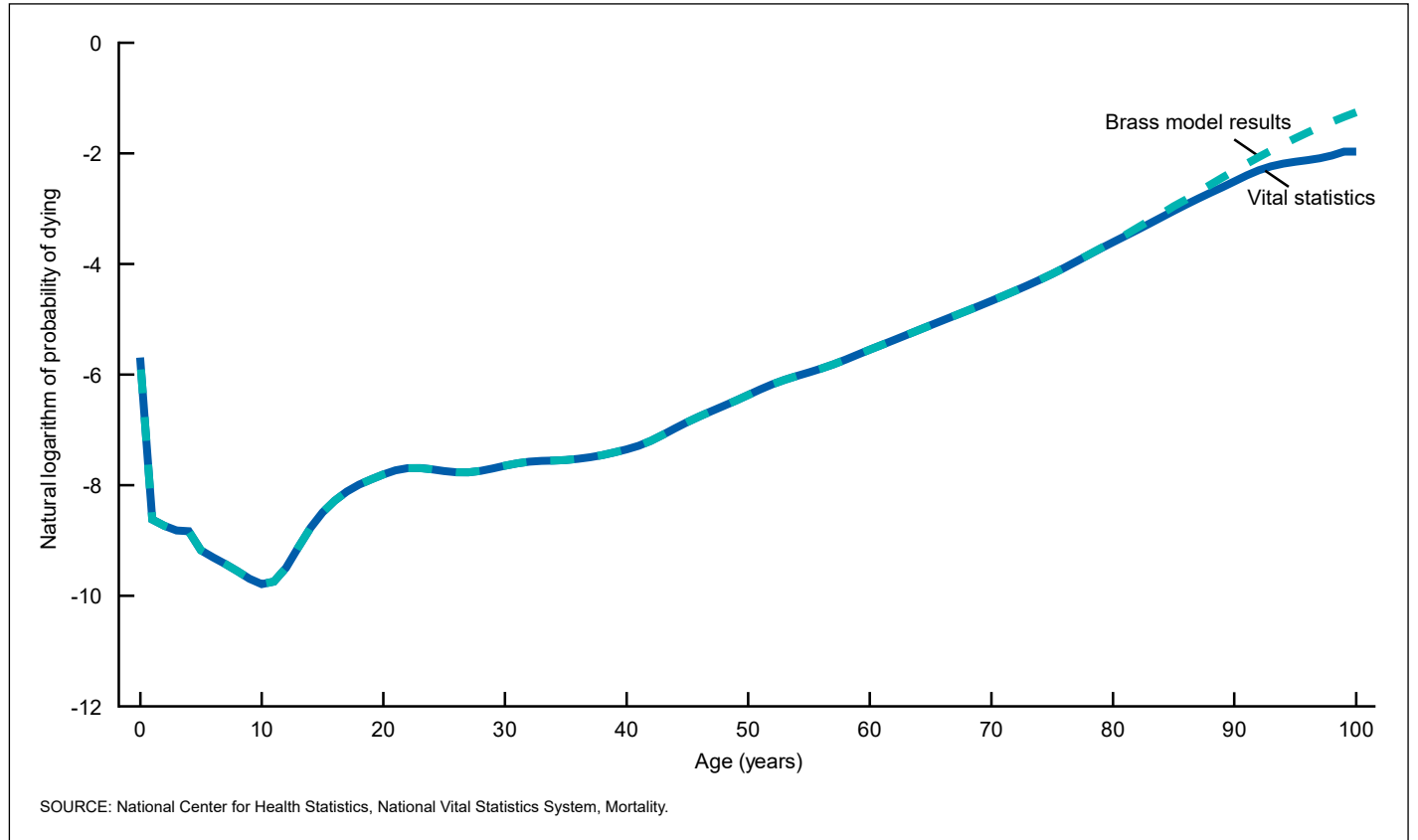
### Decrement function ( $d_x$ )

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

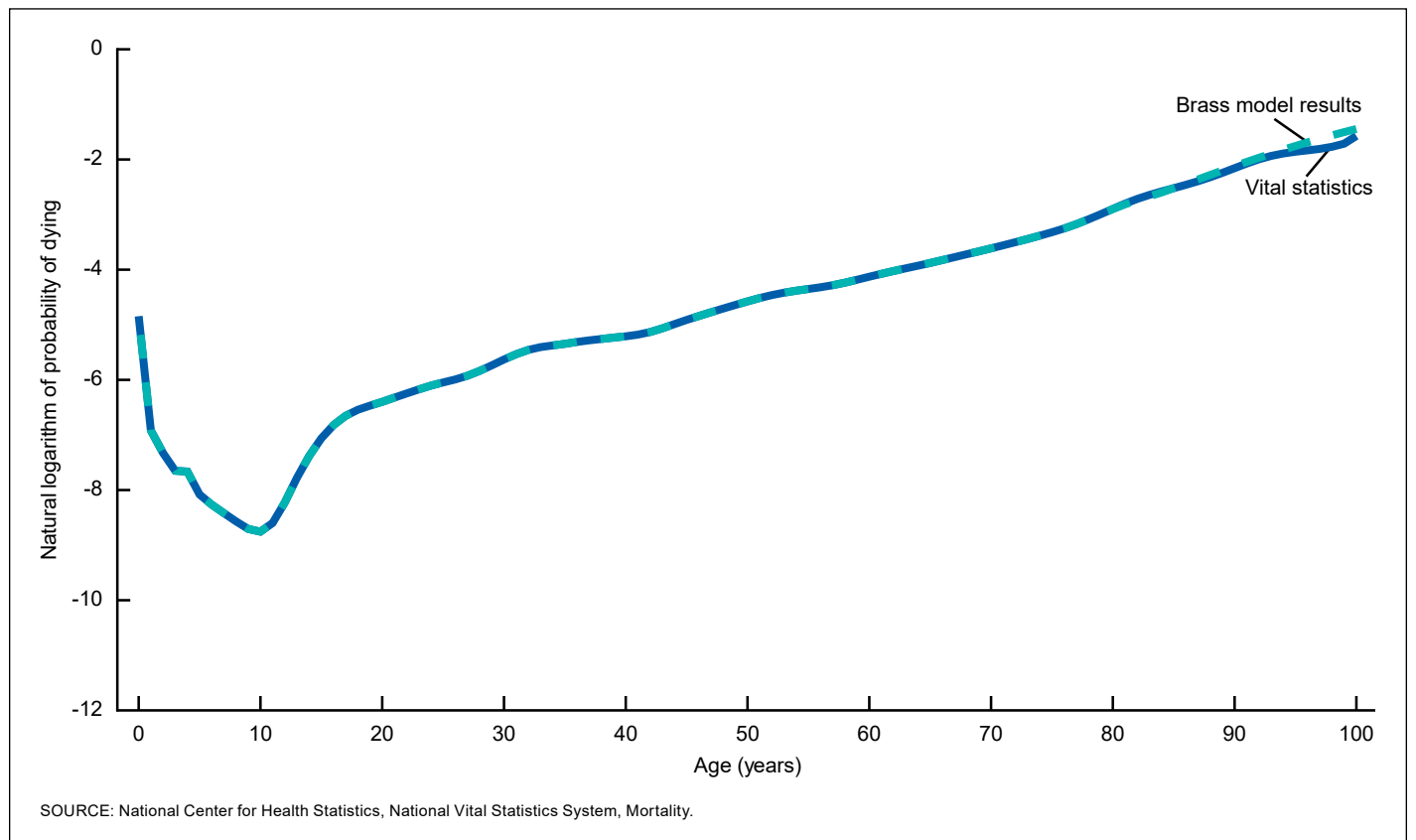
$$d_x = l_x - l_{x+1} = l_x q_x \quad [16]$$

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

**Figure I. Age pattern of mortality for the non-Hispanic Asian population: United States, 2019**



**Figure II. Age pattern of mortality for the non-Hispanic American Indian or Alaska Native population: United States, 2019**





**Table V. Estimated Brass relational logit model parameters  $\alpha$  and  $\beta$  for the Hispanic and non-Hispanic American Indian or Alaska Native and Asian populations: U.S. Life Tables, 2019**

Parameter	Hispanic			Non-Hispanic American Indian or Alaska Native			Non-Hispanic Asian		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
$\alpha$ (standard error)	-0.2920033 (0.032)	-0.2523274 (0.045)	-0.2331887 (0.024)	-0.7008024 (0.008)	-0.6951233 (0.047)	-0.6865280 (0.026)	-0.1680315 (0.021)	-0.2513989 (0.013)	-0.0987985 (0.038)
$\beta$ (standard error)	0.9991973 (0.007)	0.9983668 (0.011)	1.0231780 (0.006)	0.7192079 (0.034)	0.7079434 (0.011)	0.7322025 (0.007)	1.1335990 (0.006)	1.1031860 (0.004)	1.1546860 (0.010)

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

**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:

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

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

$$L_0 = fl_0 + (1-f)l_1 \tag{18}$$

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  $x$ :

$$T_x = \sum_{x=0}^{\infty} L_x \tag{19}$$

**Life expectancy at age  $x$  ( $e_x$ )**

Life expectancy at exact age  $x$  is calculated as:

$$e_x = \frac{T_x}{l_x} \tag{20}$$

**Abriding the complete life table**

An abridged or collapsed version of the complete life table can be calculated in which life table functions are shown for 5-year rather than single-year age intervals. It is often desirable to summarize the life table and save space when publishing life table data by single years of age. The abridgement of the complete life table is simplified by an important property of three of the six life table functions. The  $l_x$ ,  $T_x$ , and  $e_x$  functions describe exact age  $x$ , 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 be somewhat larger than  $q_{20}$ , the probability of dying between ages 20 and 21. Considering this,  ${}_nq_x$ ,  ${}_nd_x$ , 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 2019 U.S. total population abridged from Table 1.

**Table VI. Life table for the total population: United States, 2019**

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.....	0.005575	100,000	557	99,513	7,884,823	78.8
1-5.....	0.000937	99,443	93	397,546	7,785,310	78.3
5-10.....	0.000578	99,349	57	496,594	7,387,764	74.4
10-15.....	0.000759	99,292	75	496,309	6,891,170	69.4
15-20.....	0.002431	99,217	241	495,563	6,394,861	64.5
20-25.....	0.004491	98,975	444	493,832	5,899,299	59.6
25-30.....	0.005718	98,531	563	491,291	5,405,467	54.9
30-35.....	0.007160	97,967	701	488,145	4,914,176	50.2
35-40.....	0.008857	97,266	862	484,240	4,426,032	45.5
40-45.....	0.011078	96,404	1,068	479,471	3,941,792	40.9
45-50.....	0.015496	95,336	1,477	473,200	3,462,321	36.3
50-55.....	0.023284	93,859	2,185	464,212	2,989,121	31.8
55-60.....	0.035553	91,674	3,259	450,688	2,524,910	27.5
60-65.....	0.051419	88,415	4,546	431,220	2,074,222	23.5
65-70.....	0.070871	83,868	5,944	405,164	1,643,002	19.6
70-75.....	0.103571	77,924	8,071	370,507	1,237,837	15.9
75-80.....	0.162353	69,854	11,341	322,428	867,330	12.4
80-85.....	0.260074	58,513	15,218	256,090	544,902	9.3
85-90.....	0.415258	43,295	17,979	171,882	288,812	6.7
90-95.....	0.610030	25,317	15,444	85,558	116,930	4.6
95-100.....	0.788261	9,873	7,782	26,677	31,372	3.2
100 and over.....	1.000000	2,090	2,090	4,696	4,696	2.2

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

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**Acknowledgments**

The authors are grateful for the reviews and comments provided by Robert N. Anderson, Mortality Statistics Branch (MSB), Division of Vital Statistics (DVS); Isabelle Horon (DVS); and Amy Branum, Office of the Director. The authors thank Sally C. Curtin (MSB) for content review and Brady Hamilton, Danielle Ely, and Anne Driscoll of the Reproductive Statistics Branch for their assistance with birth data. NCHS Office of Information Services, Information Design and Publishing Staff edited and produced this report: editor Danielle Taylor, typesetters Simon McCann and Ebony Davis, and graphic designers Teresa Jackson and Dottie Day.

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**Suggested citation**

Arias E, Xu JQ. United States life tables, 2019. National Vital Statistics Reports; vol 70 no 19. Hyattsville, MD: National Center for Health Statistics. 2022.  
DOI: <https://dx.doi.org/10.15620/cdc:113096>.

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