Living Longer: Historical and Projected Life Expectancy in the United States, 1960 to 2060

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INTRODUCTION

Over the last four decades, life expectancy in the United States has largely risen, although certain groups have experienced slight decreases in their life expectancy, gaining the attention of mortality experts and the media. Recent headlines draw attention to the role of the opioid epidemic in this unusual downturn in life expectancy among non-Hispanic White adults. In considering what the future of the U.S. population may look like, we must address historical and recent shifts in life expectancy and understand that these shifts are the result of complex social, cultural, biological, and economic forces. Looking forward, we seek to uncover how life expectancy might change in coming decades and assess how these changes might look across the various race, ethnic, and nativity groups that make up the U.S. population.

Throughout this report, we use the U.S. Census Bureau's 2017 National Population Projections to examine potential mortality and life expectancy changes in the coming decades. To provide historical context, we draw extensively on life expectancy data from the National Center for Health Statistics (NCHS). The report includes projections of life expectancy from 2017 to 2060 and explores projected differences in mortality for men and women and for different race and Hispanic origin groups in the United States. The report also focuses on projected life expectancy differences between the native-born and foreign-born populations. The mortality projections covered in this report are based on the first nativity-specific life tables and life expectancies to be published by the Census Bureau.[1]

Projections of life expectancy can provide essential information on population aging, guide the future of U.S. public health, and gauge potential impacts on health care systems. As a result, they can help improve our understanding of social welfare and better inform policy planning. In addition to presenting mortality patterns for the total population, depicting life expectancy patterns by characteristics, such as sex, race, Hispanic origin, and nativity, provides a more accurate story of current and future population health within the United States.

REPORT HIGHLIGHTS

- Americans are projected to have longer life expectancies in coming decades. By 2060, life expectancy for the total population is projected to increase by about six years, from 79.7 in 2017 to 85.6 in 2060.[2]
- Increases in life expectancy are projected to be larger for men than women, although women are still projected to live longer than men do, on average, in 2060.
- All racial and ethnic groups are projected to have longer life expectancies in coming decades, but the greatest gains will be to native-born men who are non-Hispanic Black alone and non-Hispanic

[1] The Census Bureau reviewed this data product for unauthorized disclosure of confidential information and approved the disclosure avoidance practices applied to this release. CBDRB-FY19-245.

[2] Official life expectancy measures from the NCHS were lower than the projected life expectancy values for 2017. Despite recently observed decreases in life expectancy, these projections assume continued increases in life expectancy.

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American Indian or Alaska Native alone.

- Among the native-born population, Hispanic women had the longest life expectancy, 83.3 years, of any race or Hispanic origin group in the United States in 2017. They are projected to continue to have the longest life expectancy, 87.8 years, in 2060.
- In 2060, foreign-born men and women are projected to continue having longer life expectancies than their native-born peers, regardless of race or Hispanic origin.

PROJECTING MORTALITY BY NATIVITY, RACE, AND HISPANIC ORIGIN

Nativity is a demographic characteristic that identifies if an individual is native-born or foreign-born. The U.S. Census Bureau uses the following definitions for nativity status:

Native-born, or native-born population: anyone who is a U.S. citizen at birth, including people born in the United States, Puerto Rico, a U.S. Island Area (Guam, the Commonwealth of the Northern Mariana Islands, and the U.S. Virgin Islands), or born abroad to a U.S. citizen parent or parents.

Foreign-born, or foreign-born population: anyone who is not a U.S. citizen at birth, which includes noncitizen U.S. nationals, naturalized U.S. citizens, lawful permanent residents (immigrants), temporary migrants (such as foreign students), humanitarian migrants (such as refugees and asylees), and unauthorized migrants.

For the purposes of the 2017 National Population Projections, those born in the United States or in U.S. territories are considered native-born while those born elsewhere are considered foreign-born.

One of the innovations in the 2017 National Population Projections series was the inclusion of nativity as a characteristic in the mortality measures. Similar to projecting mortality by sex, race, and Hispanic origin, projecting mortality rates by nativity requires additional information from administrative records, specifically, about the place of birth of the deceased. This addition improves the population projections by accounting for the different mortality patterns of the native-born and foreign-born.

The 2017 National Population Projections use historical vital statistics data to inform projected mortality rates by sex, nativity, race, and Hispanic origin. The denominators of the mortality rates contain bridged population estimates to maintain continuity with race and Hispanic origin classifications of vital records over time. Because current population estimates adhere to revised 1997 Office of Management and Budget (OMB) standards for race and ethnicity, which allow for the reporting of more than one race, estimates for multiple-race people must be bridged back to single-race categories in accordance with 1977 OMB standards to ensure historical continuity. Furthermore, due to concerns about the quality of race reporting in death data over the time series, non-Hispanic race groups with similar mortality patterns were collapsed into two categories.[1] As a result, mortality rates were produced for three race and Hispanic origin groups for the projected data:

Group 1: Non-Hispanic White alone, non-Hispanic Asian alone, and non-Hispanic Native Hawaiian or Other Pacific Islander alone.

Group 2: Non-Hispanic Black or African American[2] alone and non-Hispanic American Indian or Alaska Native alone.

Group 3: Hispanic or Latino[3] (of any race).

Throughout this report, projected mortality trends by race and ethnicity will be based on these groupings. When observed or historical National Center for Health Statistics data and other citations are used, these groupings do not apply.

Note: For more information on how mortality projections were calculated in the 2017 National Population Projections, please see the full projections methodology statement at <https://www2.census.gov/programs-surveys/popproj/technical-documentation/methodology/methodstatement17.pdf>.

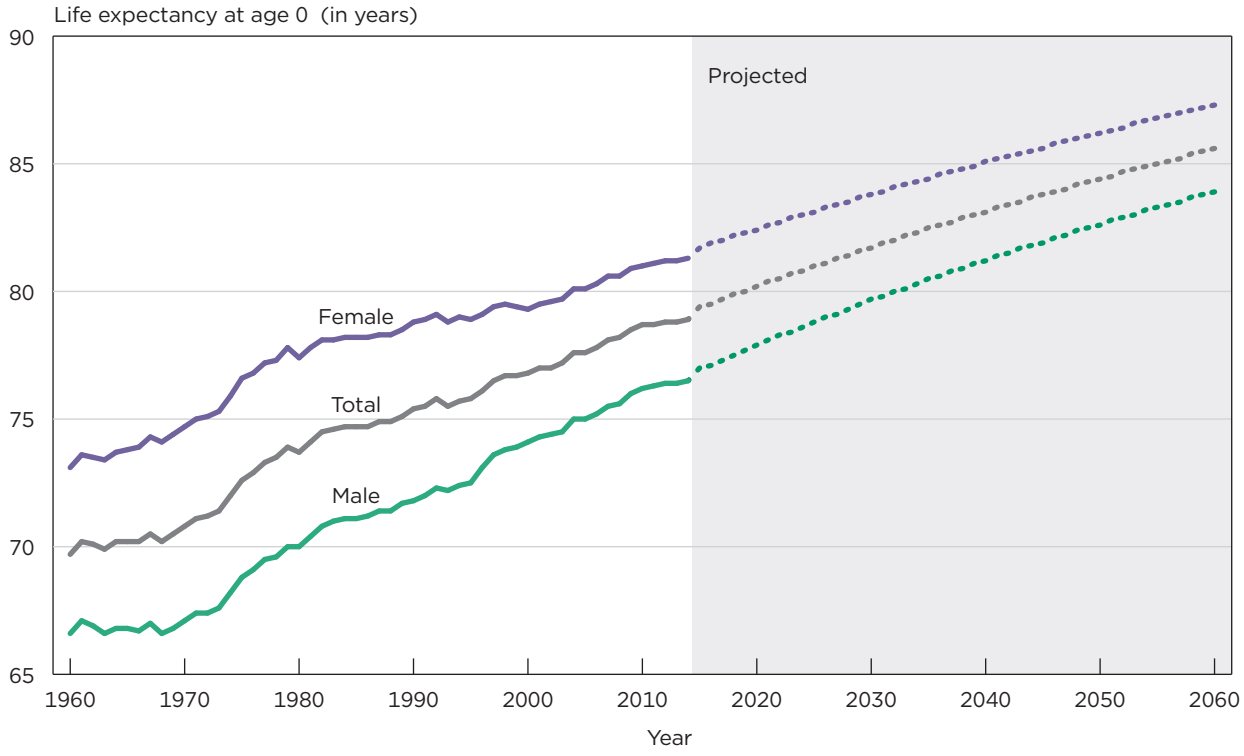
[1] Although non-Hispanic American Indian or Alaska Native alone deaths tend to be misclassified more often than any other race and ethnic group (Arias, Heron, and Hakes, 2016), no adjustments are made to the death data to specifically account for this.

[2] Throughout this report, "Black" and "Black or African American" may be used interchangeably.

[3] Throughout this report, "Hispanic" and "Hispanic or Latino" may be used interchangeably.

Figure 1.

Historical and Projected Life Expectancy for the Total U.S. Population at Birth: 1960–2060



Sources: U.S. Census Bureau, 2017 National Population Projections, 2015–2060, and National Center for Health Statistics Life Tables, 1960–2014, <www.cdc.gov/nchs/data/nvsr/nvsr68/nvsr68_07-508.pdf>.

HISTORICAL AND PROJECTED GAINS TO LIFE EXPECTANCY

Although life expectancy continues to rise, increases have slowed in recent years.

This report provides a unique opportunity to analyze changes in life expectancy over the 100-year period from 1960 to 2060. The trends from 1960 to 2014 reflect changes that have actually happened (observed) and are drawn from NCHS reports. The trends from 2015 to 2060 are projected, given current patterns in mortality illustrated in the Census Bureau's 2017 National Population Projections. While we report the overall changes in life expectancy from 1960 to 2060 as one period, it is important to distinguish between what has already happened and what is projected to happen in the future. In the graphs, we denote the observed and projected portions of the trends.

Between 1960 and 2015, life expectancy for the total population in the United States increased by almost 10 years from 69.7 years in 1960 to 79.4 years in 2015. Looking ahead, gains to total life expectancy are projected to increase only 6.1 years from 2016 to 2060 (Figure 1). By 2060, total life expectancy in the United States is projected to reach an all-time high of 85.6 years. Since 1960, the largest gains in life expectancy occurred between 1970 and 1980—an increase of about three years from 70.8 to 73.7 years. Such a large increase in a relatively short period is attributed to increases in vaccinations, continued decreases in infectious diseases and cardiovascular mortality, and the effectiveness of prevention programs related to smoking, alcohol consumption, and promotion of physical activity (Hinman et al., 2011; Klenk et al., 2016).

The rise in life expectancy has not been continuous or universal. Data from NCHS (Arias and Xu, 2019) show that in 2015, the U.S. total population saw its first decrease in life expectancy (by 0.2 years) since 1993. These data also show slight declines occurring among the non-Hispanic White alone,

CAUSES OF MORTALITY

Although U.S. life expectancy rose steadily in the latter part of the twentieth century, we project slower increases in coming decades, reflective of the stagnation in gains after 2010. Slower gains to life expectancy may have resulted from stalled progress in treating the leading causes of death and other degenerative diseases. Moreover, the prevalence of preventable health risks—such as smoking, obesity, and, more recently, opioid-related overdoses—hinders overall population health and contributes to slowed gains in life expectancy.

Despite substantial progress in reducing cigarette use, smoking remains the leading cause of preventable disease and death in the United States. As of 2014, the Office of the Surgeon General proclaimed that more than 16 million Americans suffered from a disease caused by smoking, and almost half a million Americans die prematurely from smoking each year.

Obesity prevalence is another health risk that influences mortality in the United States. According to the Centers for Disease Control and Prevention (CDC), approximately 93 million U.S. adults were obese in 2016. Obesity-related conditions, such as heart disease, stroke, and Type 2 diabetes, are among the leading causes of preventable and premature death (CDC, 2018a). Upward trends in obesity prevalence have impacted U.S. mortality substantially and will likely continue to dampen improvements in life expectancy over time.

Drug overdoses, specifically from opioids, have drastically increased since the early 2000s and have reduced life expectancy, notably for non-Hispanic Whites. (Kochanek, Arias, and Bastian, 2017). In 2017, the number of opioid overdose deaths was six times higher than in 1999 (CDC, 2018b). With no signs of slowing, the opioid epidemic may continue to impact life expectancy if public health and safety approaches are not implemented.

Note: The U.S. Census Bureau does not produce cause-specific mortality projections. This text box is intended to inform the reader of leading contributors to mortality in the United States based on current research, as they have great implications for changes in life expectancy.

non-Hispanic Black alone, and Hispanic populations through 2017. Despite these continued and slight declines, the life expectancy of non-Hispanic Black alone females has remained relatively stable. For more information on recent drivers of mortality, see the "Causes of Mortality" text box.

Despite large gains to life expectancy in the latter part of the twentieth century, increases in recent years have stagnated and are projected to continue rising more slowly through 2060. Between 1970 and 2015, life expectancy rose by 7.9 years (Arias and Xu, 2019). It is projected to increase by nearly 6 years between 2017 and 2060. Despite the recent decline for non-Hispanic Whites between 2015 and 2017 reflected in NCHS data, we project that life expectancy will rise in coming decades, although more slowly than it has in the past. The last two decades show broad increases in life expectancy, a pattern that we expect outweighs the recent and small declines for certain race groups. Historically, this has been the case when a particular cause of death—like influenza epidemics in 1968 and 1980—is associated with a short-term decline in life expectancy (NCHS, 1981).

Nonetheless, the Census Bureau produces projections periodically so that it can reassess and update projection models as new trends emerge. Should the decline continue or expand to other groups in coming years, expected gains to life expectancy may be lower than the current models project. Since the decreases in life expectancy shown by NCHS data are occurring consistently among the non-Hispanic White alone population, who comprise a large share of the native-born population, the disparity between native-born and foreign-born life expectancies could increase in coming decades.

Women live longer than men do, but the gender gap in life expectancy is projected to narrow by 2060.

Women consistently have higher life expectancies; however, their gains have happened more slowly than have men's. In 1960, men could expect to live to age 66.6, on average, while women lived to age 73.1 (Figure 1). Between 1960 and 2015, male life expectancy increased to 77.0 years—a gain of about 10 years. Female life expectancy grew to 81.7 years—an increase of almost 9 years. By 2060, males are projected to live to be 83.9 years old—a gain of 6.6 years since 2017. By 2060, women are projected to live to age 87.3, an increase of 5.3 years since 2017 (Table 1).

Projected increases in longevity for both men and women would narrow the gap in life expectancy by sex to 3.4 years in 2060, nearly half of its historic high in the 1970s of 7.8 years (Figure 1). Despite projected improvements to life expectancy among men and women, men are still projected to have shorter life expectancy than women. Mortality differences between men and women are often attributed to differences in health and social behaviors such as smoking, drinking patterns, and exercise (Crimmins, Kim, and Solé-Auró, 2010; Rogers et al., 2010). In addition, the leading causes of death for men and women differ. While heart disease and cancer are the top two killers for both men and women, men are more likely to die from unintentional injuries, suicide, and chronic liver disease, whereas women have higher mortality burdens from stroke and kidney disease (Heron, 2019).

In 1960, the United States had the 20th highest life expectancy in the world. By 2060, it is projected to drop to 43rd.

The United States lags behind other countries in population health. In 1960, the United States ranked 20th in the world in life expectancy (Table 2). A difference in life expectancy of approximately three years separated the United States from the highest ranked country. By 2015, the U.S. rank dropped to 40. With a life expectancy of 78.9 years, this is more than four years lower than Japan, a country that rose from the 31st rank to the highest-ranking country during the same period (Table 2). The United States also ranks lower than countries such as Sweden, Israel, Canada, the United Kingdom, and Costa Rica. Additionally, U.S. life

Table 1.
Total Life Expectancy at Birth by Sex

Sex	2017	2030	2060	Change in life expectancy, 2017 to 2060
Total	**79.7**	**81.7**	**85.6**	**5.9**
Males	77.3	79.7	83.9	6.6
Females	82.0	83.8	87.3	5.3

Source: U.S. Census Bureau, 2017 National Population Projections.

Table 2.

Ranking of Countries or Areas With the Highest Life Expectancy at Birth for the Total Population in 1960, 2015, and 2060

1960[1]			2015[2]			2060[3]		
Rank	Country or area	Life expectancy	Rank	Country or area	Life expectancy	Rank	Country or area	Life expectancy
1	Iceland	73.5	1	Japan	83.3	1	Japan	89.2
2	Sweden	73.5	2	Switzerland	82.7	2	Singapore	88.8
3	Norway	73.5	3	Spain	82.5	3	Switzerland	88.6
4	Netherlands	73.5	4	Singapore	82.3	4	Spain	88.5
5	Denmark	72.4	5	Italy	82.3	5	Martinique	88.5
6	Switzerland	71.6	6	Australia	82.3	6	Republic of Korea	88.5
7	Canada	71.3	7	Iceland	82.2	7	Italy	88.4
8	New Zealand	71.2	8	Israel	81.9	8	Australia	88.3
9	United Kingdom	71.0	9	Sweden	81.9	9	Israel	88.1
10	Israel	71.0	10	France	81.9	10	Iceland	88.0
11	Channel Islands	70.9	11	Canada	81.8	11	France	87.9
12	Australia	70.9	12	Norway	81.6	12	Canada	87.9
13	France	70.7	13	New Zealand	81.3	13	Guadeloupe	87.9
14	Slovakia	70.6	14	Netherlands	81.3	14	Sweden	87.9
15	Cyprus	70.4	15	Republic of Korea	81.3	15	Norway	87.6
16	Czechia	70.4	16	Martinique	81.2	16	New Zealand	87.5
17	Belgium	70.3	17	Luxembourg	81.1	17	Luxembourg	87.5
18	Bulgaria	70.3	18	Austria	81.0	18	Austria	87.4
19	Ireland	70.1	19	United Kingdom	81.0	19	Ireland	87.4
20	**United States**	**70.1**	20	Ireland	80.9	20	Portugal	87.3
21	Latvia	70.1	21	Finland	80.7	21	United Kingdom	87.3
22	Germany	70.0	22	Greece	80.6	22	Netherlands	87.3
23	Spain	69.9	23	Channel Islands	80.6	23	Greece	87.1
24	Lithuania	69.9	24	Guadeloupe	80.5	24	Finland	87.1
25	Ukraine	69.7	25	Belgium	80.5	25	Mayotte	87.0
26	Italy	69.7	26	Portugal	80.5	26	Belgium	87.0
27	Austria	69.7	27	Germany	80.4	27	Réunion	87.0
28	Estonia	69.4	28	Slovenia	80.3	28	Germany	86.9
29	Malta	69.3	29	Malta	80.3	29	Channel Islands	86.8
30	Greece	69.2	30	Denmark	80.1	30	Slovenia	86.8
31	Japan	69.2	31	Cyprus	79.9	31	French Guiana	86.8
32	Slovenia	69.2	32	Réunion	79.5	32	Malta	86.8
33	Luxembourg	69.1	33	Mayotte	79.3	33	Cyprus	86.5
34	Puerto Rico	69.1	34	Puerto Rico	79.2	34	Denmark	86.5
35	Belarus	69.1	35	French Guiana	79.2	35	Costa Rica	86.4
36	Finland	69.1	36	Cuba	79.2	36	Guam	86.4
37	Hungary	68.8	37	Costa Rica	79.2	37	Chile	86.3
38	Uruguay	68.3	38	U.S. Virgin Islands	79.1	38	Lebanon	86.2
39	Poland	68.3	39	Lebanon	78.9	39	U.S. Virgin Islands	86.2
40	Russian Federation	67.9	**40**	**United States**	**78.9**	40	Cuba	86.1
41	Romania	67.8	41	Guam	78.8	41	Puerto Rico	86.0
42	Armenia	67.0	42	Chile	78.8	42	Maldives	85.5
43	U.S. Virgin Islands	66.8	43	Czechia	78.2	**43**	**United States**	**85.3**
44	Aruba	66.6	44	Curaçao	77.8	44	Panama	85.0
45	Curacao	66.5	45	Qatar	77.7	45	Albania	85.0

[1] Data for 1960 come from abridged life expectancies for 1960–1965.
[2] Data for 2015 come from abridged life expectancies for 2010–2015.
[3] Data for 2060 come from abridged life expectancies for 2055–2060.

Notes:

In general, countries or areas designated in this list include those for which statistical data are compiled by the Statistics Division of the United Nations Secretariat. This table excludes Special Administrative Regions and provinces within countries.

Life expectancy values in this table come from the United Nations, and thus values for the United States differ from the National Center for Health Statistics life expectancy values for 1960 (69.7) and 2015 (79.4) referenced elsewhere in the report.

Source: United Nations, Department of Economic and Social Affairs, Population Division (2017), World Population Prospects: The 2017 Revision, custom data acquired via Web site.

expectancy is two years lower than the average for other high-income countries. Although the life expectancy for the U.S. total population falls behind that of other high-income nations, it is important to note the variability in life expectancy among different race and Hispanic origin groups. Hispanics have life expectancies that are higher and closer to high-income countries (82.2 years), whereas the non-Hispanic Black alone and non-Hispanic American Indian or Alaska Native alone populations have life expectancies much lower (76.2 years).

By 2060, the U.S. rank is projected to drop slightly to the 43rd highest (a life expectancy of 85.3 years). Less-developed countries are expected to have larger life expectancy increases due to improvements in communicable and infectious disease prevalence. In contrast, the United States is projected to see slower gains driven by population aging and a rising toll from several noncommunicable diseases such as heart disease, diabetes, and Alzheimer's (Foreman et al., 2018). In 2060, countries such as the Maldives and Spain are projected to have higher life expectancies than the United States.

PROJECTED NATIVITY-SPECIFIC LIFE EXPECTANCY

The United States has long been an immigrant destination. In 1960, the foreign-born accounted for only 5.4 percent of the population. By 2010, they represented 12.9 percent (Grieco et al., 2012), a figure that is projected to grow to 17.1 percent by 2060. The foreign-born typically have lower mortality rates and live longer, on average, than people who were born in the United States. This mortality trend is widespread and extends to foreign-born groups from different countries and socioeconomic backgrounds (Mehta et al., 2016).

The rising number of the foreign-born living in the United States, coupled with their relative mortality advantage, make examining differences in life expectancy by nativity a valuable exercise in understanding population dynamics for the United States. Many studies documenting the foreign-born mortality advantage have focused on certain populations; specifically, Hispanics. Hispanics have lower mortality and similar or better health than their non-Hispanic White counterparts, despite having generally lower socioeconomic status than non-Hispanic Whites. This phenomenon is known as the "Hispanic paradox" or the "Hispanic health paradox," because past research has otherwise indicated that low

Table 3.
Projections of Life Expectancy at Birth by Sex, Race, and Hispanic Origin: 2017 and 2060

Year	Group 1: Non-Hispanic White alone, non-Hispanic Asian alone, and Non-Hispanic Native Hawaiian or Other Pacific Islander alone			Group 2: Non-Hispanic Black or African American alone and non-Hispanic American Indian or Alaska Native alone			Group 3: Hispanic or Latino (of any race)		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
2017	80.0	77.7	82.2	76.2	73.2	79.0	82.2	79.8	84.5
2060	85.6	84.0	87.4	84.6	82.7	86.5	86.5	84.8	88.2

Source: U.S. Census Bureau, 2017 National Population Projections.

WHY DO HISPANICS IN THE UNITED STATES LIVE LONGER?

Alberto Palloni and Elizabeth Arias (2004) offer three standard explanations as to why Hispanics tend to have similar or better health and lower mortality than their non-Hispanic White counterparts, despite generally lower socioeconomic status.

Data artifacts: The Hispanic health paradox may be the result of data artifacts, which refer to racial or ethnic misclassification on vital registration data. Misclassification can result in incorrect death registration data and misleading mortality trends.

Migration effects: Conditions associated with migration favor the health profile of Hispanics, specifically self-selection and the "salmon bias." Self-selection refers to the propensity for healthier Hispanics to migrate to the United States, leaving their less healthy counterparts in their home country. The salmon bias suggests that foreign-born immigrants in poor health are more likely to return to their country of birth when they become ill or before dying, and thus are not collected in the U.S. vital registration system.

Social or cultural effects: Hispanics' mortality advantage may be a result of social and cultural ties that influence health behaviors—such as smoking prevalence, alcohol consumption, exercise, and the use of preventative medical care—positively if one has strong social and cultural ties, or negatively for those lacking social ties.

Whereas these explanations cannot fully explain the Hispanic paradox because their magnitude is too small (data artifacts and migration effects) or they are not generalizable enough to all Hispanic subgroups (salmon bias), they can be used as a starting point for understanding the mortality advantage of other foreign-born groups.

socioeconomic status is significantly associated with poor health and mortality outcomes among non-Hispanic White and Black populations in the United States (Sorlie, Backlund, and Keller, 1995). For more information on this topic, see the "Why Do Hispanics in the United States Live Longer?" text box.

Table 4 shows projected life expectancy by nativity, and is further broken down by sex, race, and Hispanic origin. This report analyzes and contains the first set of projected life tables and life expectancies by nativity to be published by the Census Bureau (see the appendix for the full list of life tables).

The foreign-born are projected to continue living longer than the native-born population.

From 2017 to 2060, those born outside of the United States are projected to outlive those born in the United States for all race and Hispanic origin groups. In 2017, the foreign-born lived about 4.4 years longer than the native-born population. By 2060, that gap is projected to narrow, and the foreign-born are projected to live about 1.5 years longer.

Table 4.
Projections of Life Expectancy at Birth by Sex, Race, Hispanic Origin, and Nativity: 2017 and 2060

Year	Group 1: Non-Hispanic White alone, non-Hispanic Asian alone, and Non-Hispanic Native Hawaiian or Other Pacific Islander alone			Group 2: Non-Hispanic Black or African American alone and non-Hispanic American Indian or Alaska Native alone			Group 3: Hispanic or Latino (of any race)		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
Native-Born									
2017	79.6	77.3	81.9	75.1	72.1	78.0	80.8	78.2	83.3
2060	85.5	83.9	87.2	84.3	82.4	86.2	86.0	84.3	87.8
Foreign-Born									
2017	83.7	81.6	85.5	83.0	80.6	84.8	83.5	81.2	85.5
2060	86.9	85.4	88.5	86.8	85.1	88.4	86.9	85.2	88.5

Source: U.S. Census Bureau, 2017 National Population Projections.

The narrowing of this gap can be attributed to different projected increases in life expectancy for the native-born and foreign-born. From 2017 to 2060, those born in the United States are projected to gain about 6.3 years in life expectancy at birth, while the foreign-born are only projected to gain about 3.4 years. The foreign-born living in the United States tend to live longer for a variety of reasons that are generally not explained by socioeconomic characteristics, but instead by selective in- and out-migration, duration in the United States, and better health behaviors such as lower levels of smoking (Mehta et al., 2016). The explanations for the Hispanic paradox (see the "Why do Hispanics in the United States Live Longer?" text box) may also apply to the foreign-born population as a whole, but the research is sparse. Most research on the foreign-born mortality advantage has concentrated on Hispanics, but as the immigrant population diversifies in the United States, it becomes increasingly important to consider mortality differences for all race and Hispanic origin groups among the foreign-born population.

Foreign-born life expectancy is projected to look similar, regardless of race.

Differences in life expectancy between race and Hispanic origin groups are greater for those born in the United States than those born outside of the United States. For the native-born population, the average absolute difference in life expectancy across race and Hispanic origin groups was 3.7 years, while the average difference for the foreign-born across the same groups was less than half of one year in 2017.[3] By 2060, the average difference in life expectancy for native-born groups is expected to drop to about 1.1 years. In other words, race and Hispanic origin currently play a significant role in longevity for the native-born population, but not as much for the foreign-born population. A variety of factors affects racial differences in health in the United States, including socioeconomic characteristics, health care access, and health-related behaviors such as smoking (Brondolo, Gallo, and Myers, 2009). While these differences in life expectancy exist by race and ethnicity for both the native-born and foreign-born populations, they are more distinct among those born in the United States.

Native-born non-Hispanic Black alone and non-Hispanic American Indian or Alaska Native alone males are projected to have the largest gains in life expectancy.

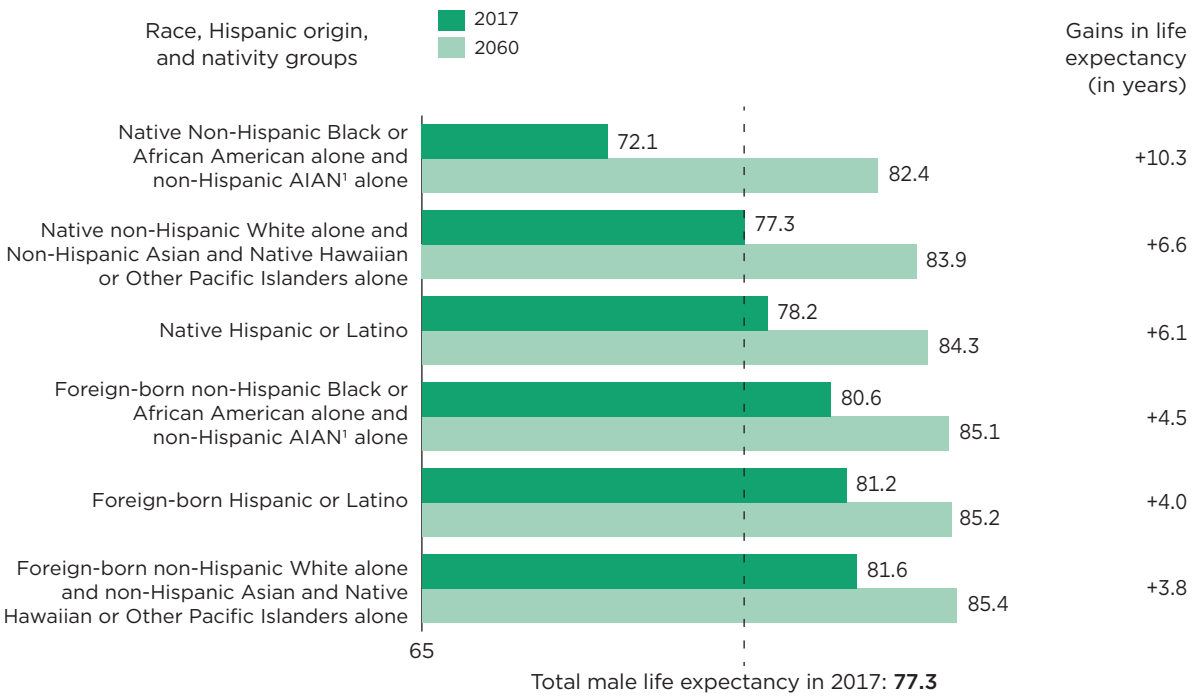
The United States is projected to become increasingly pluralistic in the coming years, both racially and ethnically. As the country becomes more diverse, differences in life expectancy by race and Hispanic origin become increasingly important to study. Despite having the lowest life expectancy among all race and Hispanic origin groups, native-born men who are non-Hispanic Black alone and non-Hispanic American Indian or Alaska Native alone are projected to experience a life expectancy gain of 10.3 years by 2060 (Figure 2). This gain is 4.0 years greater on average than gains for the other native-born groups and 6.2 years greater on average than that of foreign-born race and Hispanic origin groups. Although native-born men who are non-Hispanic Black alone and non-Hispanic American Indian or Alaska Native alone are projected to experience the largest increases to life expectancy, they are still projected to have the lowest life expectancy in 2060 at 82.4 years. Health inequalities by race and ethnicity are widespread in the United States and can vary by geographic location within the country (Murray et al., 2006). While these projected life expectancy values are at the national level, they reflect broader health disparities by race, Hispanic origin, and nativity that may differ across the United States.

Foreign-born women are projected to have the highest life expectancy.

This report has addressed the fact that women tend to outlive men, and while this trend holds true for the foreign-born, it is less distinct. Foreign-born females have the highest life expectancy in both 2017 and 2060 at 85.4 years and 88.5 years, respectively (Table 4). Among foreign-born females, non-Hispanic White alone, non-Hispanic Asian alone, non-Hispanic Native Hawaiian or Other Pacific Islander alone, and Hispanics share the highest life expectancy at 85.5 years in 2017 (Table 4). By 2060, foreign-born non-Hispanic Black alone and non-Hispanic American Indian or Alaska Native alone women are projected to have a life

[3] Average absolute difference represents the average life expectancy difference between the three race and Hispanic origin groups. It was calculated by the authors using the following formula where LE = Life Expectancy: (|LE Group 1 – LE Group 2| + |LE Group 1 – LE Group 3| + |LE Group 2 – LE Group 3|) /3.

Figure 2.
Male Life Expectancy at Birth: 2017 and 2060
(In years)



[1] American Indian and Alaska Native (AIAN).
Note: Native-born, non-Hispanic Black alone males and native-born, non-Hispanic American Indian or Alaska Native males have the lowest life expectancies at birth but are projected to have the largest gains in life expectancy between 2017 and 2060.
Source: U.S. Census Bureau, 2017 National Population Projections.

expectancy of 88.4 years compared to 88.5 years for women who are foreign-born non-Hispanic White alone, non-Hispanic Asian alone, and non-Hispanic Native Hawaiian or Other Pacific Islander alone as well as foreign-born Hispanic women (Table 4).

While foreign-born females outrank all other groups in terms of life expectancy, native-born males continue to fall behind. Males born in the United States were projected to have the lowest life expectancy in 2017; this trend is projected to continue through 2060. Native-born non-Hispanic Black alone and non-Hispanic American Indian or Alaska Native alone males had the lowest life expectancy among all groups in 2017 and are projected to remain the lowest in 2060 (Table 4). Although the gap in life expectancy is projected to shrink over time between males and females, males are still projected to have shorter life expectancy.

The differences in life expectancy between males and females are slightly more distinct for those born in the United States. In 2017, the life expectancy of native-born females was about 4.7 years greater than native-born males, while the life expectancy for foreign-born females was 4.0 years greater than foreign-born males. The sex differences show more divergence by nativity, race, and Hispanic origin group. The life expectancy for foreign-born non-Hispanic White alone, non-Hispanic Asian alone, and non-Hispanic Native Hawaiian or Other Pacific Islander alone females was about 3.9 years greater than their male counterparts in 2017, while the life expectancy for native-born non-Hispanic Black alone and non-Hispanic American Indian or Alaska Native alone females is nearly 5.9 years greater than males for the same year.

Although socioeconomic factors such as educational attainment and income have been shown to have little effect on the nativity differences in life expectancy, they

do play a role in differences in health by race and ethnicity in the United States (Mehta et al., 2016). Racial differences in U.S. mortality have decreased over time, but persist. Factoring in nativity magnifies the differences. A combination of the factors that contribute to higher life expectancies of the foreign-born (i.e., selective in- and out-migration, duration in the United States, and better health behaviors) and socioeconomic factors, which may impact race and ethnicity differences in health, could explain the large differences in life expectancy between nativity-specific race and ethnicity groups.

Overall, those born outside the United States tend to live longer than the native-born population, with greater differences in life expectancy by race and ethnicity for those born in the United States. Furthermore, women continue to outlive men in all nativity and race and Hispanic origin groups. This pattern is amplified for foreign-born women who are projected to continue having the highest life expectancy for all years out to 2060. The foreign-born mortality advantage is a pattern that has previously been analyzed with a focus on foreign-born Hispanics. This report highlights the differences in life expectancy not only by nativity, but also by race, Hispanic origin, and sex. With all of these characteristics together, differences in life expectancy become more apparent and help shape the story of how origin, race, ethnicity, and sex impact mortality and the future demographic composition of the United States.

LIFE EXPECTANCY AT OLDER AGES

By 2034, adults aged 65 and older are projected to outnumber the population under age 18 for the first time in U.S. history. This change to the age composition of the U.S. population has far-reaching implications for society as a whole, making it increasingly important to consider the driving forces behind it. The overall aging of the U.S. population is the result of increasing life expectancy and decreasing fertility. Many developed countries around the world have experienced declines in fertility along with improvements to longevity. These trends characterize the demographic transition theory[4] and lead to the overall aging of the population, as younger cohorts become smaller and older cohorts become larger (United Nations, 2017).

Projected gains in life expectancy at older ages.

Life expectancy at age 65 is the number of additional years that a person who reaches that age can expect to live. Life expectancy at age 65 has been increasing over time because of medical advances, public health initiatives, and better health behaviors earlier in life (World Health Organization, 2015). In 1960, the average 65-year-old could only expect to live 14.3 more years. Men aged 65 could expect to live 12.8 more years, whereas 65-year-old women could expect to live 15.8 more years (NCHS, 2018). By 2060, we project that the average 65-year-old man will expect to live 21.7 more years, while 65-year-old women are projected to live 24.4 more years (Table 5).

[4] The demographic transition theory describes the changing pattern of mortality, fertility, and growth rates as societies evolve and industrialize. The American demographer, Frank W. Notestein, was the first to formally develop the theory in the mid-twentieth century, but it has since been elaborated upon and is widely accepted in social sciences.

Table 5.
Projections of Life Expectancy at Ages 65 and 85 by Sex, Race, and Hispanic Origin: 2017 and 2060

Year	Total			Group 1: Non-Hispanic White alone, non-Hispanic Asian alone, and Non-Hispanic Native Hawaiian or Other Pacific Islander alone			Group 2: Non-Hispanic Black or African American alone and non-Hispanic American Indian or Alaska Native alone			Group 3: Hispanic or Latino (of any race)		
	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females
Age 65												
2017	19.9	18.6	21.2	20.0	18.7	21.2	18.4	16.7	19.8	21.5	20.0	22.7
2060	23.1	21.7	24.4	23.1	21.8	24.4	22.5	21.1	23.9	23.7	22.4	25.0
Age 85												
2017	7.1	6.5	7.4	7.0	6.4	7.4	7.0	6.4	7.4	7.5	7.0	7.9
2060	8.4	7.7	9.0	8.4	7.7	9.0	8.4	7.7	9.0	8.6	8.0	9.2

Source: U.S. Census Bureau, 2017 National Population Projections.

From 2017 to 2060, we project an increase of 3.2 years in life expectancy at age 65 and an increase of 1.3 years in life expectancy at age 85 for the total population. In both 2017 and 2060, Hispanic females are projected to have the longest life expectancy at age 65 (22.7 years and 25.0 years, respectively). Women who are non-Hispanic White alone, non-Hispanic Asian alone, and non-Hispanic Native Hawaiian or Other Pacific Islander alone follow them at 21.2 years in 2017 and a projected 24.4 years in 2060. Despite the tendency for females to have higher life expectancies than males, Hispanic males (life expectancy at age 65 of 20.0 years) had a slightly higher life expectancy than Non-Hispanic Black alone and non-Hispanic American Indian or Alaska Native alone females (life expectancy at age 65 of 19.8 years) in 2017. By 2060, this pattern is projected to reverse as life expectancy for Non-Hispanic Black alone and non-Hispanic American Indian or Alaska Native alone females increases to 23.9 years, while Hispanic males see a projected increase to 22.4 years (Table 5).

Population aging is likely to have substantial impacts on U.S. public health, social services, and health care systems.

The size of the older population is increasing and is projected to grow by almost 50 percent from 2016 to 2030. This increase is the result of more people surviving to age 65, and because those who reach age 65 are expected to live longer than ever before (Vespa, Medina, and Armstrong, 2020). Living longer does not necessarily mean living heathier, however. Research suggests older age is associated with an increased risk of disability, disease, and multimorbidity—having two or more chronic health conditions such as heart disease and diabetes (Boyd et al., 2008; He and Larsen, 2014). As life expectancy continues increasing, consideration must be given to the quality of life at older ages.

Population aging will have substantial implications for public health, social services, and health care systems within the United States. Since older adults are more likely to suffer from chronic conditions, health care costs will likely increase as aging continues. These mortality projections provide insight into future population aging patterns, and serve as a tool for gauging future demand on the nation's social services and health care systems.

SUMMARY

Since the 1960s, the United States has witnessed gains in life expectancy across race and Hispanic origin groups and for men and women alike. Life expectancy for the U.S. population rose ten years between 1960 and 2017, from 69.7 to 79.7. Life expectancy in the United States is projected to continue rising regardless of sex, race, Hispanic origin, or nativity. Although those born in the United States have lifespans that are about five years shorter than their foreign-born counterparts, on average, that gap is projected to shrink in coming decades. By 2060, life expectancy for the native-born population is projected to be about two years shorter than the foreign-born. Women, regardless of race, Hispanic origin or nativity, are projected to continue living longer than men do, although that gap will also narrow. By far, the largest improvement in life expectancy is expected among native-born men who are non-Hispanic Black alone and non-Hispanic American Indian or Alaska Native alone, who are projected to see their life expectancy rise by about ten years between 2017 and 2060. This improvement will substantially narrow—but not close—the gap in life expectancy between non-Hispanic Black alone and non-Hispanic American Indian or Alaska Native alone men and non-Hispanic White, non-Hispanic Asian, and non-Hispanic Native Hawaiian or Other Pacific Islander alone men.

As life expectancy rises in coming decades, the U.S. population is projected to rapidly age. By 2034, people aged 65 and older are projected to outnumber children under the age of 18, and by 2060, nearly 1 in 4 Americans will be at least 65 years old. The combination of rising life expectancy and an aging population will likely change demands for health care, social services, and caregiving in the United States.

DATA SOURCES AND METHODOLOGY

The data used for this report were inputs for the 2017 National Population Projections, which were the third series of national population projections based on the 2010 Census. They project the total U.S. population as of July 1 for the years 2017 to 2060, using official population estimates for 2016 as the base population. When both population estimates and projections are available, estimates are the preferred data. The universe is the resident population of the United States (50 states and the District of Columbia).

The 2017 National Population Projections include projections of the resident population by age, sex, race, Hispanic origin, and nativity.

The population projections were produced using a cohort-component method beginning with an estimated base population for July 1, 2016. In this method, the components of population change are projected separately for each birth cohort (persons born in a given year) based on past trends. For each year from 2017 to 2060, the population is advanced 1 year of age using the projected age-specific survival rates and levels of net international migration for that year. A new birth cohort is added to the population by applying the projected age-specific fertility rates to the female population. Births, adjusted for infant mortality and net international migration, form the new population under 1 year of age. In its simplest form, the cohort-component method is expressed as:

$$P_t = P_{t-1} + B_{t-1,t} - D_{t-1,t} + M_{t-1,t}$$

Where:

P_t = population at time t;
P_{t-1} = population at time t-1;
$B_{t-1,t}$ = births in the interval from time t-1 to time t;
$D_{t-1,t}$ = deaths in the interval from time t-1 to time t; and
$M_{t-1,t}$ = net migration in the interval from time t-1 to time t.

Projections produced through the cohort-component method are driven by assumptions regarding each of the components of change. In order to project a population forward in this manner, separate projections of fertility, mortality, and net international migration are required to serve as inputs into the cohort-component model, as well as an original base population to project forward.

Historical mortality trends were calculated using the NCHS' data on deaths and the Census Bureau's population estimates for 1989 to 2014. Fertility trends were calculated using the NCHS' birth data and the Census Bureau's estimates of the female population. The time series included data from 1990 to 2014. Trends in net international migration were primarily based on decennial census and American Community Survey estimates on foreign-born immigration for the period from 1980 to 2015.

For more information on the data and methodology, see the report on 2017 National Population Projections: Methodology and Assumptions <www.census.gov/programs-surveys/popproj/technical-documentation/methodology.html>.

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Appendix Table 1.

Life Table for the Total Population in the United States: 2017

Age	Male			Female		
	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)
0	0.00614	100,000	77.34	0.00523	100,000	82.01
1	0.00032	99,386	76.81	0.00026	99,477	81.44
2	0.00027	99,354	75.84	0.00022	99,452	80.46
3	0.00023	99,327	74.86	0.00019	99,430	79.48
4	0.00019	99,305	73.88	0.00016	99,411	78.49
5	0.00016	99,286	72.89	0.00013	99,395	77.50
6	0.00013	99,270	71.90	0.00011	99,382	76.51
7	0.00011	99,257	70.91	0.00010	99,371	75.52
8	0.00010	99,246	69.92	0.00009	99,362	74.53
9	0.00010	99,236	68.93	0.00009	99,353	73.54
10	0.00011	99,226	67.93	0.00009	99,344	72.54
11	0.00014	99,214	66.94	0.00010	99,335	71.55
12	0.00018	99,200	65.95	0.00011	99,326	70.56
13	0.00023	99,183	64.96	0.00013	99,315	69.56
14	0.00030	99,160	63.98	0.00015	99,302	68.57
15	0.00038	99,131	63.00	0.00018	99,287	67.58
16	0.00048	99,093	62.02	0.00021	99,269	66.59
17	0.00058	99,046	61.05	0.00024	99,249	65.61
18	0.00069	98,988	60.08	0.00027	99,225	64.62
19	0.00080	98,920	59.12	0.00031	99,197	63.64
20	0.00089	98,841	58.17	0.00034	99,167	62.66
21	0.00098	98,753	57.22	0.00037	99,133	61.68
22	0.00106	98,656	56.28	0.00040	99,097	60.71
23	0.00112	98,551	55.34	0.00042	99,058	59.73
24	0.00117	98,441	54.40	0.00045	99,016	58.75
25	0.00121	98,325	53.46	0.00047	98,972	57.78
26	0.00125	98,206	52.53	0.00050	98,925	56.81
27	0.00127	98,084	51.59	0.00053	98,875	55.84
28	0.00130	97,959	50.66	0.00056	98,823	54.86
29	0.00133	97,831	49.72	0.00059	98,767	53.90
30	0.00135	97,701	48.79	0.00063	98,709	52.93
31	0.00138	97,569	47.85	0.00067	98,647	51.96
32	0.00141	97,434	46.92	0.00071	98,582	50.99
33	0.00145	97,297	45.98	0.00075	98,512	50.03
34	0.00149	97,156	45.05	0.00081	98,438	49.07
35	0.00153	97,012	44.12	0.00086	98,358	48.11
36	0.00159	96,863	43.18	0.00092	98,274	47.15
37	0.00165	96,709	42.25	0.00099	98,183	46.19
38	0.00173	96,549	41.32	0.00106	98,086	45.24
39	0.00183	96,382	40.39	0.00114	97,982	44.28
40	0.00195	96,205	39.46	0.00124	97,870	43.33
41	0.00209	96,018	38.54	0.00134	97,749	42.39
42	0.00225	95,818	37.62	0.00146	97,618	41.44
43	0.00244	95,602	36.70	0.00159	97,475	40.50
44	0.00266	95,369	35.79	0.00174	97,320	39.57
45	0.00292	95,115	34.89	0.00191	97,150	38.63
46	0.00321	94,838	33.99	0.00209	96,965	37.71
47	0.00353	94,534	33.10	0.00229	96,762	36.79
48	0.00389	94,200	32.21	0.00251	96,541	35.87
49	0.00428	93,833	31.33	0.00274	96,299	34.96
50	0.00471	93,431	30.47	0.00298	96,035	34.05
51	0.00517	92,991	29.61	0.00324	95,748	33.15
52	0.00566	92,511	28.76	0.00351	95,438	32.26
53	0.00619	91,987	27.92	0.00379	95,103	31.37
54	0.00675	91,418	27.09	0.00409	94,743	30.49
55	0.00734	90,801	26.27	0.00439	94,356	29.61
56	0.00795	90,134	25.46	0.00472	93,941	28.74
57	0.00859	89,418	24.66	0.00506	93,498	27.87
58	0.00924	88,650	23.87	0.00542	93,025	27.01
59	0.00991	87,831	23.09	0.00582	92,520	26.16
60	0.01061	86,960	22.32	0.00624	91,982	25.31

See footnotes at end of table.

Appendix Table 1.
Life Table for the Total Population in the United States: 2017—Con.

Age	Male			Female		
	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)
61	0.01133	86,038	21.55	0.00671	91,408	24.46
62	0.01210	85,063	20.79	0.00724	90,794	23.62
63	0.01293	84,033	20.04	0.00783	90,137	22.79
64	0.01383	82,946	19.30	0.00850	89,431	21.97
65	0.01482	81,800	18.56	0.00924	88,671	21.15
66	0.01592	80,587	17.83	0.01007	87,852	20.35
67	0.01714	79,305	17.11	0.01098	86,967	19.55
68	0.01851	77,945	16.40	0.01200	86,012	18.76
69	0.02004	76,502	15.70	0.01313	84,980	17.98
70	0.02173	74,969	15.01	0.01438	83,865	17.21
71	0.02360	73,340	14.33	0.01576	82,659	16.46
72	0.02568	71,609	13.67	0.01730	81,356	15.71
73	0.02798	69,771	13.02	0.01901	79,949	14.98
74	0.03054	67,819	12.38	0.02092	78,430	14.26
75	0.03341	65,747	11.75	0.02307	76,789	13.56
76	0.03662	63,551	11.14	0.02548	75,018	12.86
77	0.04022	61,223	10.54	0.02822	73,106	12.19
78	0.04427	58,761	9.96	0.03131	71,043	11.53
79	0.04883	56,160	9.40	0.03481	68,819	10.88
80	0.05402	53,417	8.86	0.03885	66,424	10.26
81	0.06000	50,532	8.34	0.04331	63,843	9.65
82	0.06668	47,500	7.84	0.04849	61,078	9.07
83	0.07403	44,333	7.36	0.05444	58,116	8.50
84	0.08200	41,050	6.91	0.06116	54,952	7.96
85	0.09050	37,684	6.48	0.06863	51,592	7.45
86	0.09961	34,274	6.08	0.07674	48,051	6.96
87	0.10947	30,860	5.70	0.08568	44,363	6.50
88	0.12010	27,481	5.33	0.09548	40,562	6.06
89	0.13151	24,181	4.99	0.10620	36,690	5.65
90	0.14373	21,001	4.68	0.11787	32,793	5.26
91	0.15674	17,982	4.38	0.13053	28,928	4.89
92	0.17055	15,164	4.10	0.14419	25,152	4.55
93	0.18514	12,578	3.84	0.15885	21,525	4.24
94	0.20047	10,249	3.59	0.17450	18,106	3.94
95	0.21650	8,194	3.37	0.19111	14,947	3.67
96	0.23316	6,420	3.16	0.20863	12,090	3.42
97	0.25040	4,923	2.97	0.22699	9,568	3.19
98	0.26813	3,691	2.80	0.24610	7,396	2.98
99	0.28625	2,701	2.64	0.26583	5,576	2.79
100 and over	1.00000	1,928	2.50	1.00000	4,094	2.62

[1] Probability of dying within 1 year.
[2] Number of survivors out of 100,000 born alive.
Note: The period life expectancy at a given age represents the average number of years of life remaining if a group of people at that age were to experience the mortality rates of that time over the course of their remaining life.
Source: U.S. Census Bureau, 2017 National Population Projections.

Appendix Table 2.

Life Table for the Native-Born Population in the United States: 2017

Age	Male			Female		
	Death probability (qx)[1]	Number of Lives (lx)[2]	Life expectancy (ex)	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)
0	0.00614	100,000	76.71	0.00522	100,000	81.43
1	0.00032	99,386	76.18	0.00026	99,478	80.86
2	0.00027	99,354	75.20	0.00022	99,452	79.88
3	0.00023	99,328	74.22	0.00019	99,430	78.90
4	0.00019	99,305	73.24	0.00016	99,411	77.91
5	0.00016	99,286	72.25	0.00013	99,396	76.93
6	0.00013	99,271	71.26	0.00011	99,383	75.94
7	0.00011	99,258	70.27	0.00010	99,372	74.94
8	0.00010	99,247	69.28	0.00009	99,362	73.95
9	0.00010	99,237	68.29	0.00009	99,353	72.96
10	0.00011	99,227	67.30	0.00009	99,345	71.96
11	0.00014	99,216	66.30	0.00010	99,336	70.97
12	0.00018	99,202	65.31	0.00011	99,327	69.98
13	0.00023	99,185	64.32	0.00013	99,316	68.98
14	0.00030	99,162	63.34	0.00015	99,303	67.99
15	0.00039	99,132	62.36	0.00018	99,288	67.00
16	0.00049	99,094	61.38	0.00021	99,270	66.02
17	0.00059	99,046	60.41	0.00025	99,249	65.03
18	0.00071	98,987	59.45	0.00028	99,224	64.04
19	0.00082	98,917	58.49	0.00032	99,197	63.06
20	0.00093	98,836	57.53	0.00035	99,165	62.08
21	0.00102	98,744	56.59	0.00038	99,130	61.10
22	0.00111	98,643	55.65	0.00041	99,092	60.13
23	0.00118	98,534	54.71	0.00045	99,051	59.15
24	0.00124	98,417	53.77	0.00048	99,007	58.18
25	0.00129	98,295	52.84	0.00051	98,960	57.21
26	0.00134	98,168	51.90	0.00054	98,910	56.23
27	0.00138	98,037	50.97	0.00058	98,856	55.26
28	0.00142	97,902	50.04	0.00062	98,799	54.30
29	0.00145	97,764	49.11	0.00066	98,738	53.33
30	0.00149	97,621	48.18	0.00070	98,673	52.36
31	0.00154	97,476	47.26	0.00075	98,603	51.40
32	0.00158	97,326	46.33	0.00080	98,529	50.44
33	0.00163	97,172	45.40	0.00086	98,450	49.48
34	0.00168	97,014	44.47	0.00092	98,365	48.52
35	0.00174	96,852	43.55	0.00099	98,275	47.57
36	0.00180	96,683	42.62	0.00106	98,177	46.61
37	0.00188	96,509	41.70	0.00114	98,073	45.66
38	0.00197	96,328	40.78	0.00122	97,962	44.71
39	0.00208	96,138	39.85	0.00131	97,842	43.77
40	0.00220	95,938	38.94	0.00142	97,714	42.82
41	0.00235	95,727	38.02	0.00154	97,575	41.88
42	0.00253	95,501	37.11	0.00167	97,425	40.95
43	0.00273	95,260	36.20	0.00181	97,263	40.02
44	0.00297	94,999	35.30	0.00197	97,087	39.09
45	0.00324	94,717	34.40	0.00215	96,895	38.16
46	0.00355	94,410	33.51	0.00235	96,687	37.24
47	0.00390	94,074	32.63	0.00256	96,460	36.33
48	0.00427	93,708	31.76	0.00279	96,213	35.42
49	0.00468	93,307	30.89	0.00303	95,945	34.52
50	0.00512	92,871	30.04	0.00328	95,655	33.62
51	0.00560	92,395	29.19	0.00355	95,341	32.73
52	0.00611	91,877	28.35	0.00383	95,003	31.85
53	0.00666	91,315	27.52	0.00412	94,639	30.97
54	0.00724	90,707	26.70	0.00442	94,250	30.09
55	0.00785	90,050	25.89	0.00474	93,833	29.23
56	0.00848	89,344	25.09	0.00507	93,388	28.36
57	0.00914	88,586	24.30	0.00543	92,915	27.50
58	0.00981	87,776	23.52	0.00580	92,410	26.65
59	0.01050	86,914	22.75	0.00621	91,874	25.80
60	0.01122	86,001	21.99	0.00665	91,304	24.96

See footnotes at end of table.

Appendix Table 2.

Life Table for the Native-Born Population in the United States: 2017—Con.

Age	Male			Female		
	Death probability (qx)[1]	Number of Lives (lx)[2]	Life expectancy (ex)	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)
61	0.01196	85,037	21.23	0.00714	90,697	24.13
62	0.01275	84,019	20.48	0.00770	90,049	23.30
63	0.01360	82,948	19.74	0.00832	89,356	22.47
64	0.01451	81,820	19.01	0.00902	88,612	21.66
65	0.01553	80,632	18.28	0.00980	87,813	20.85
66	0.01666	79,380	17.56	0.01068	86,953	20.05
67	0.01793	78,058	16.85	0.01165	86,024	19.26
68	0.01934	76,659	16.15	0.01273	85,022	18.48
69	0.02093	75,176	15.46	0.01393	83,940	17.71
70	0.02269	73,602	14.77	0.01526	82,771	16.96
71	0.02463	71,933	14.11	0.01672	81,508	16.21
72	0.02679	70,161	13.45	0.01834	80,145	15.48
73	0.02918	68,281	12.81	0.02014	78,675	14.76
74	0.03184	66,289	12.18	0.02215	77,090	14.05
75	0.03481	64,178	11.56	0.02439	75,383	13.36
76	0.03813	61,944	10.96	0.02690	73,545	12.68
77	0.04187	59,582	10.37	0.02972	71,567	12.02
78	0.04605	57,088	9.81	0.03289	69,440	11.37
79	0.05076	54,458	9.25	0.03646	67,156	10.74
80	0.05611	51,694	8.72	0.04055	64,708	10.13
81	0.06224	48,794	8.21	0.04501	62,083	9.54
82	0.06905	45,757	7.72	0.05019	59,289	8.96
83	0.07649	42,597	7.26	0.05615	56,313	8.41
84	0.08450	39,339	6.82	0.06289	53,151	7.88
85	0.09299	36,015	6.40	0.07042	49,809	7.37
86	0.10213	32,666	6.01	0.07858	46,301	6.89
87	0.11199	29,330	5.63	0.08754	42,663	6.44
88	0.12259	26,045	5.28	0.09736	38,928	6.01
89	0.13395	22,852	4.95	0.10807	35,138	5.60
90	0.14608	19,791	4.64	0.11971	31,341	5.22
91	0.15899	16,900	4.34	0.13231	27,589	4.86
92	0.17266	14,213	4.07	0.14588	23,938	4.53
93	0.18707	11,759	3.82	0.16042	20,446	4.22
94	0.20218	9,559	3.58	0.17592	17,166	3.93
95	0.21797	7,627	3.36	0.19234	14,146	3.66
96	0.23437	5,964	3.16	0.20965	11,425	3.41
97	0.25131	4,566	2.97	0.22775	9,030	3.19
98	0.26872	3,419	2.80	0.24658	6,974	2.98
99	0.28650	2,500	2.64	0.26602	5,254	2.79
100 and over	1.00000	1,784	2.50	1.00000	3,856	2.62

[1] Probability of dying within 1 year.
[2] Number of survivors out of 100,000 born alive.

Note: The period life expectancy at a given age represents the average number of years of life remaining if a group of people at that age were to experience the mortality rates of that time over the course of their remaining life.

Source: U.S. Census Bureau, 2017 National Population Projections.

Appendix Table 3.

Life Table for the Foreign-Born Population in the United States: 2017

Age	Male			Female		
	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)
0	0.00616	100,000	81.37	0.00523	100,000	85.45
1	0.00034	99,384	80.87	0.00032	99,477	84.90
2	0.00030	99,351	79.90	0.00027	99,445	83.92
3	0.00025	99,321	78.92	0.00023	99,418	82.95
4	0.00022	99,296	77.94	0.00019	99,395	81.96
5	0.00019	99,274	76.96	0.00016	99,376	80.98
6	0.00016	99,256	75.97	0.00014	99,360	79.99
7	0.00015	99,240	74.98	0.00012	99,347	79.00
8	0.00014	99,225	73.99	0.00011	99,335	78.01
9	0.00013	99,212	73.00	0.00010	99,325	77.02
10	0.00014	99,198	72.01	0.00010	99,315	76.03
11	0.00015	99,185	71.02	0.00010	99,306	75.04
12	0.00018	99,170	70.03	0.00011	99,296	74.04
13	0.00021	99,152	69.05	0.00012	99,285	73.05
14	0.00026	99,131	68.06	0.00013	99,274	72.06
15	0.00031	99,105	67.08	0.00015	99,261	71.07
16	0.00037	99,074	66.10	0.00016	99,246	70.08
17	0.00044	99,037	65.12	0.00018	99,230	69.09
18	0.00050	98,994	64.15	0.00020	99,212	68.10
19	0.00056	98,945	63.18	0.00021	99,192	67.12
20	0.00062	98,890	62.22	0.00023	99,171	66.13
21	0.00066	98,829	61.26	0.00024	99,149	65.15
22	0.00070	98,763	60.30	0.00024	99,125	64.16
23	0.00073	98,694	59.34	0.00025	99,101	63.18
24	0.00074	98,623	58.38	0.00025	99,076	62.19
25	0.00075	98,549	57.42	0.00026	99,051	61.21
26	0.00076	98,475	56.47	0.00026	99,026	60.22
27	0.00076	98,400	55.51	0.00027	99,000	59.24
28	0.00076	98,325	54.55	0.00027	98,973	58.25
29	0.00075	98,251	53.59	0.00028	98,946	57.27
30	0.00075	98,177	52.63	0.00029	98,919	56.29
31	0.00075	98,103	51.67	0.00030	98,890	55.30
32	0.00075	98,030	50.71	0.00032	98,860	54.32
33	0.00076	97,956	49.75	0.00035	98,828	53.34
34	0.00078	97,881	48.79	0.00038	98,794	52.36
35	0.00081	97,804	47.82	0.00041	98,757	51.37
36	0.00084	97,725	46.86	0.00044	98,716	50.40
37	0.00088	97,643	45.90	0.00048	98,673	49.42
38	0.00093	97,557	44.94	0.00052	98,625	48.44
39	0.00099	97,467	43.98	0.00057	98,574	47.47
40	0.00106	97,370	43.02	0.00061	98,518	46.49
41	0.00115	97,266	42.07	0.00067	98,458	45.52
42	0.00125	97,154	41.12	0.00073	98,392	44.55
43	0.00136	97,033	40.17	0.00080	98,320	43.58
44	0.00150	96,901	39.22	0.00088	98,241	42.62
45	0.00165	96,756	38.28	0.00097	98,154	41.65
46	0.00182	96,596	37.34	0.00106	98,060	40.69
47	0.00202	96,420	36.41	0.00117	97,955	39.74
48	0.00224	96,225	35.48	0.00129	97,841	38.78
49	0.00248	96,010	34.56	0.00143	97,714	37.83
50	0.00275	95,772	33.65	0.00157	97,575	36.89
51	0.00304	95,508	32.74	0.00173	97,421	35.94
52	0.00336	95,218	31.84	0.00190	97,253	35.01
53	0.00370	94,898	30.94	0.00209	97,067	34.07
54	0.00407	94,547	30.05	0.00228	96,865	33.14
55	0.00446	94,162	29.18	0.00249	96,643	32.22
56	0.00487	93,741	28.30	0.00271	96,403	31.30
57	0.00530	93,285	27.44	0.00294	96,141	30.38
58	0.00574	92,790	26.58	0.00319	95,858	29.47
59	0.00621	92,258	25.73	0.00346	95,552	28.56
60	0.00670	91,685	24.89	0.00374	95,222	27.66

See footnotes at end of table.

Appendix Table 3.

Life Table for the Foreign-Born Population in the United States: 2017—Con.

Age	Male			Female		
	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)
61	0.00724	91,071	24.06	0.00405	94,866	26.76
62	0.00781	90,412	23.23	0.00440	94,482	25.87
63	0.00845	89,705	22.41	0.00479	94,066	24.98
64	0.00914	88,948	21.59	0.00523	93,615	24.10
65	0.00991	88,135	20.79	0.00571	93,126	23.22
66	0.01075	87,261	19.99	0.00625	92,594	22.35
67	0.01167	86,323	19.20	0.00683	92,015	21.49
68	0.01269	85,315	18.42	0.00748	91,386	20.63
69	0.01381	84,233	17.65	0.00820	90,702	19.78
70	0.01505	83,070	16.90	0.00902	89,958	18.94
71	0.01644	81,819	16.15	0.00994	89,147	18.11
72	0.01799	80,475	15.41	0.01100	88,261	17.29
73	0.01972	79,027	14.68	0.01220	87,290	16.47
74	0.02164	77,468	13.97	0.01357	86,225	15.67
75	0.02375	75,792	13.26	0.01512	85,055	14.88
76	0.02607	73,992	12.57	0.01690	83,769	14.10
77	0.02864	72,063	11.90	0.01896	82,353	13.34
78	0.03153	69,998	11.23	0.02136	80,792	12.58
79	0.03481	67,792	10.58	0.02419	79,066	11.85
80	0.03863	65,432	9.95	0.02759	77,154	11.13
81	0.04319	62,904	9.33	0.03176	75,025	10.43
82	0.04879	60,187	8.72	0.03672	72,643	9.76
83	0.05546	57,251	8.15	0.04249	69,975	9.11
84	0.06319	54,075	7.59	0.04905	67,002	8.49
85	0.07182	50,659	7.07	0.05632	63,716	7.90
86	0.08093	47,020	6.58	0.06429	60,127	7.34
87	0.09101	43,215	6.12	0.07324	56,262	6.81
88	0.10212	39,282	5.68	0.08327	52,141	6.31
89	0.11433	35,270	5.27	0.09446	47,799	5.84
90	0.12766	31,238	4.88	0.10687	43,284	5.40
91	0.14214	27,250	4.53	0.12056	38,659	4.99
92	0.15779	23,377	4.19	0.13558	33,998	4.60
93	0.17458	19,688	3.89	0.15195	29,389	4.24
94	0.19249	16,251	3.60	0.16966	24,923	3.91
95	0.21143	13,123	3.34	0.18867	20,695	3.61
96	0.23133	10,348	3.10	0.20891	16,790	3.33
97	0.25207	7,954	2.89	0.23027	13,282	3.08
98	0.27349	5,949	2.69	0.25260	10,224	2.86
99	0.29543	4,322	2.52	0.27572	7,641	2.65
100 and over	1.00000	3,045	2.36	1.00000	5,535	2.47

[1] Probability of dying within 1 year.
[2] Number of survivors out of 100,000 born alive.

Note: The period life expectancy at a given age represents the average number of years of life remaining if a group of people at that age were to experience the mortality rates of that time over the course of their remaining life.

Source: U.S. Census Bureau, 2017 National Population Projections.

Appendix Table 4.

Life Table for the Projected Total Population in the United States: 2060

Age	Male			Female		
	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)
0	0.00395	100,000	83.91	0.00366	100,000	87.30
1	0.00019	99,605	83.24	0.00024	99,634	86.62
2	0.00015	99,587	82.26	0.00017	99,610	85.64
3	0.00012	99,572	81.27	0.00013	99,593	84.66
4	0.00011	99,560	80.28	0.00011	99,580	83.67
5	0.00009	99,549	79.29	0.00009	99,570	82.68
6	0.00008	99,540	78.30	0.00007	99,561	81.68
7	0.00007	99,532	77.30	0.00007	99,553	80.69
8	0.00007	99,525	76.31	0.00006	99,547	79.70
9	0.00007	99,518	75.31	0.00006	99,541	78.70
10	0.00007	99,511	74.32	0.00006	99,535	77.71
11	0.00007	99,505	73.32	0.00006	99,530	76.71
12	0.00008	99,498	72.33	0.00006	99,524	75.71
13	0.00009	99,490	71.33	0.00007	99,518	74.72
14	0.00012	99,481	70.34	0.00008	99,511	73.72
15	0.00015	99,469	69.35	0.00009	99,504	72.73
16	0.00018	99,454	68.36	0.00010	99,495	71.73
17	0.00021	99,437	67.37	0.00011	99,485	70.74
18	0.00024	99,416	66.39	0.00013	99,474	69.75
19	0.00027	99,392	65.40	0.00014	99,461	68.76
20	0.00030	99,365	64.42	0.00015	99,447	67.77
21	0.00032	99,336	63.44	0.00016	99,432	66.78
22	0.00033	99,304	62.46	0.00017	99,416	65.79
23	0.00034	99,271	61.48	0.00018	99,399	64.80
24	0.00035	99,237	60.50	0.00019	99,380	63.81
25	0.00035	99,203	59.52	0.00020	99,361	62.82
26	0.00035	99,168	58.54	0.00021	99,341	61.84
27	0.00035	99,134	57.56	0.00022	99,320	60.85
28	0.00035	99,100	56.58	0.00023	99,298	59.86
29	0.00036	99,064	55.60	0.00024	99,275	58.88
30	0.00037	99,029	54.62	0.00025	99,251	57.89
31	0.00038	98,992	53.64	0.00027	99,226	56.91
32	0.00039	98,955	52.66	0.00028	99,199	55.92
33	0.00040	98,917	51.68	0.00030	99,171	54.94
34	0.00042	98,877	50.70	0.00032	99,141	53.95
35	0.00044	98,836	49.72	0.00034	99,110	52.97
36	0.00046	98,793	48.74	0.00036	99,076	51.99
37	0.00049	98,747	47.77	0.00039	99,040	51.01
38	0.00052	98,699	46.79	0.00041	99,002	50.03
39	0.00056	98,647	45.81	0.00045	98,961	49.05
40	0.00060	98,592	44.84	0.00048	98,917	48.07
41	0.00066	98,532	43.87	0.00052	98,869	47.09
42	0.00072	98,468	42.89	0.00056	98,818	46.12
43	0.00080	98,396	41.92	0.00062	98,762	45.14
44	0.00089	98,318	40.96	0.00068	98,701	44.17
45	0.00100	98,230	39.99	0.00074	98,634	43.20
46	0.00112	98,131	39.03	0.00082	98,561	42.23
47	0.00125	98,021	38.08	0.00090	98,480	41.26
48	0.00139	97,899	37.12	0.00098	98,392	40.30
49	0.00154	97,762	36.17	0.00107	98,296	39.34
50	0.00171	97,611	35.23	0.00116	98,191	38.38
51	0.00189	97,445	34.29	0.00126	98,077	37.43
52	0.00211	97,260	33.35	0.00137	97,953	36.47
53	0.00235	97,055	32.42	0.00149	97,819	35.52
54	0.00263	96,827	31.50	0.00162	97,673	34.57
55	0.00294	96,572	30.58	0.00176	97,515	33.63
56	0.00326	96,289	29.67	0.00191	97,343	32.69
57	0.00359	95,975	28.76	0.00208	97,157	31.75
58	0.00392	95,630	27.87	0.00224	96,955	30.81
59	0.00426	95,255	26.97	0.00241	96,738	29.88
60	0.00461	94,849	26.09	0.00260	96,504	28.95

See footnotes at end of table.

Appendix Table 4.

Life Table for the Projected Total Population in the United States: 2060—Con.

Age	Male			Female		
	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)
61	0.00501	94,412	25.21	0.00283	96,253	28.03
62	0.00548	93,939	24.33	0.00311	95,981	27.11
63	0.00604	93,424	23.46	0.00345	95,683	26.19
64	0.00667	92,860	22.60	0.00387	95,353	25.28
65	0.00740	92,241	21.75	0.00436	94,983	24.37
66	0.00821	91,558	20.91	0.00490	94,570	23.48
67	0.00911	90,807	20.08	0.00552	94,106	22.59
68	0.01011	89,980	19.26	0.00620	93,587	21.71
69	0.01124	89,070	18.45	0.00696	93,006	20.85
70	0.01250	88,069	17.65	0.00783	92,359	19.99
71	0.01391	86,968	16.87	0.00881	91,636	19.14
72	0.01547	85,758	16.10	0.00992	90,829	18.31
73	0.01719	84,432	15.34	0.01117	89,928	17.49
74	0.01909	82,980	14.60	0.01258	88,924	16.68
75	0.02121	81,396	13.88	0.01416	87,805	15.89
76	0.02362	79,669	13.17	0.01598	86,562	15.11
77	0.02640	77,787	12.48	0.01808	85,178	14.34
78	0.02957	75,734	11.80	0.02049	83,638	13.60
79	0.03317	73,494	11.14	0.02323	81,924	12.87
80	0.03785	71,056	10.51	0.02726	80,021	12.17
81	0.04242	68,367	9.90	0.03061	77,840	11.49
82	0.04754	65,467	9.32	0.03444	75,457	10.84
83	0.05324	62,354	8.76	0.03878	72,859	10.21
84	0.05951	59,035	8.22	0.04367	70,033	9.60
85	0.06638	55,521	7.71	0.04913	66,975	9.02
86	0.07390	51,836	7.23	0.05516	63,684	8.46
87	0.08215	48,005	6.76	0.06185	60,172	7.92
88	0.09118	44,062	6.32	0.06925	56,450	7.41
89	0.10104	40,044	5.91	0.07743	52,541	6.92
90	0.11175	35,998	5.52	0.08643	48,473	6.46
91	0.12335	31,975	5.15	0.09629	44,283	6.03
92	0.13585	28,031	4.80	0.10707	40,019	5.62
93	0.14928	24,223	4.48	0.11879	35,735	5.23
94	0.16362	20,607	4.17	0.13149	31,490	4.87
95	0.17887	17,235	3.89	0.14517	27,349	4.53
96	0.19499	14,152	3.63	0.15984	23,379	4.21
97	0.21193	11,393	3.39	0.17548	19,642	3.92
98	0.22964	8,978	3.17	0.19206	16,195	3.65
99	0.24801	6,917	2.96	0.20953	13,085	3.40
100 and over	1.00000	5,201	2.78	1.00000	10,343	3.17

[1] Probability of dying within 1 year.

[2] Number of survivors out of 100,000 born alive.

Note: The period life expectancy at a given age represents the average number of years of life remaining if a group of people at that age were to experience the mortality rates of that time over the course of their remaining life.

Source: U.S. Census Bureau, 2017 National Population Projections.

Appendix Table 5.

Life Table for the Projected Native-Born Population in the United States: 2060

Age	Male			Female		
	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)
0	0.00395	100,000	83.72	0.00366	100,000	87.12
1	0.00019	99,606	83.05	0.00024	99,634	86.44
2	0.00015	99,587	82.07	0.00017	99,610	85.46
3	0.00012	99,572	81.08	0.00013	99,593	84.48
4	0.00011	99,560	80.09	0.00011	99,580	83.49
5	0.00009	99,549	79.10	0.00009	99,570	82.49
6	0.00008	99,540	78.10	0.00007	99,561	81.50
7	0.00007	99,532	77.11	0.00007	99,553	80.51
8	0.00007	99,525	76.12	0.00006	99,547	79.51
9	0.00007	99,518	75.12	0.00006	99,541	78.52
10	0.00007	99,512	74.13	0.00006	99,535	77.52
11	0.00007	99,505	73.13	0.00006	99,530	76.53
12	0.00008	99,498	72.14	0.00006	99,524	75.53
13	0.00009	99,490	71.14	0.00007	99,518	74.54
14	0.00012	99,481	70.15	0.00008	99,512	73.54
15	0.00015	99,469	69.16	0.00009	99,504	72.55
16	0.00018	99,455	68.17	0.00010	99,495	71.55
17	0.00021	99,437	67.18	0.00011	99,485	70.56
18	0.00024	99,416	66.19	0.00013	99,474	69.57
19	0.00027	99,392	65.21	0.00014	99,461	68.58
20	0.00030	99,364	64.23	0.00015	99,447	67.59
21	0.00032	99,335	63.25	0.00017	99,432	66.60
22	0.00034	99,302	62.27	0.00018	99,415	65.61
23	0.00035	99,268	61.29	0.00019	99,397	64.62
24	0.00036	99,234	60.31	0.00020	99,379	63.63
25	0.00036	99,198	59.33	0.00021	99,359	62.64
26	0.00036	99,163	58.35	0.00022	99,338	61.66
27	0.00036	99,128	57.37	0.00023	99,316	60.67
28	0.00037	99,092	56.39	0.00024	99,293	59.68
29	0.00038	99,055	55.41	0.00026	99,269	58.70
30	0.00039	99,018	54.43	0.00027	99,244	57.71
31	0.00040	98,980	53.45	0.00028	99,217	56.73
32	0.00041	98,940	52.47	0.00030	99,189	55.74
33	0.00042	98,900	51.50	0.00032	99,159	54.76
34	0.00044	98,858	50.52	0.00034	99,127	53.78
35	0.00046	98,814	49.54	0.00036	99,094	52.80
36	0.00049	98,768	48.56	0.00039	99,058	51.82
37	0.00052	98,720	47.59	0.00041	99,019	50.84
38	0.00055	98,669	46.61	0.00044	98,978	49.86
39	0.00060	98,614	45.64	0.00048	98,934	48.88
40	0.00064	98,555	44.66	0.00051	98,887	47.90
41	0.00070	98,492	43.69	0.00055	98,837	46.93
42	0.00077	98,423	42.72	0.00060	98,782	45.95
43	0.00085	98,348	41.75	0.00066	98,722	44.98
44	0.00094	98,265	40.79	0.00072	98,658	44.01
45	0.00105	98,172	39.83	0.00079	98,587	43.04
46	0.00118	98,069	38.87	0.00086	98,509	42.07
47	0.00131	97,953	37.91	0.00095	98,424	41.11
48	0.00146	97,825	36.96	0.00103	98,331	40.15
49	0.00161	97,682	36.02	0.00112	98,229	39.19
50	0.00178	97,525	35.07	0.00122	98,119	38.23
51	0.00197	97,351	34.13	0.00132	98,000	37.28
52	0.00219	97,159	33.20	0.00143	97,871	36.33
53	0.00244	96,947	32.27	0.00155	97,731	35.38
54	0.00272	96,711	31.35	0.00168	97,580	34.43
55	0.00303	96,448	30.43	0.00183	97,415	33.49
56	0.00336	96,155	29.53	0.00198	97,238	32.55
57	0.00370	95,831	28.62	0.00215	97,045	31.61
58	0.00404	95,477	27.73	0.00232	96,837	30.68
59	0.00438	95,091	26.84	0.00249	96,612	29.75
60	0.00473	94,675	25.95	0.00268	96,371	28.82

See footnotes at end of table.

Appendix Table 5.

Life Table for the Projected Native-Born Population in the United States: 2060—Con.

Age	Male			Female		
	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)
61	0.00514	94,226	25.08	0.00291	96,113	27.90
62	0.00562	93,742	24.20	0.00320	95,833	26.98
63	0.00618	93,215	23.34	0.00356	95,526	26.06
64	0.00683	92,638	22.48	0.00398	95,187	25.16
65	0.00757	92,005	21.63	0.00448	94,807	24.25
66	0.00839	91,309	20.79	0.00505	94,382	23.36
67	0.00930	90,543	19.96	0.00568	93,906	22.48
68	0.01033	89,701	19.15	0.00638	93,373	21.60
69	0.01148	88,774	18.34	0.00717	92,778	20.74
70	0.01277	87,755	17.55	0.00806	92,113	19.88
71	0.01420	86,635	16.77	0.00906	91,371	19.04
72	0.01579	85,405	16.00	0.01020	90,542	18.21
73	0.01755	84,056	15.25	0.01149	89,619	17.39
74	0.01948	82,581	14.51	0.01293	88,589	16.59
75	0.02163	80,972	13.79	0.01455	87,444	15.80
76	0.02409	79,221	13.09	0.01641	86,171	15.03
77	0.02692	77,312	12.40	0.01854	84,758	14.27
78	0.03014	75,231	11.73	0.02098	83,186	13.53
79	0.03380	72,963	11.08	0.02376	81,441	12.81
80	0.03855	70,497	10.45	0.02783	79,506	12.11
81	0.04319	67,779	9.84	0.03119	77,293	11.44
82	0.04836	64,852	9.27	0.03502	74,882	10.79
83	0.05409	61,716	8.71	0.03936	72,260	10.17
84	0.06039	58,378	8.18	0.04427	69,416	9.56
85	0.06727	54,852	7.67	0.04975	66,343	8.98
86	0.07480	51,162	7.19	0.05580	63,042	8.43
87	0.08307	47,335	6.73	0.06250	59,525	7.89
88	0.09210	43,403	6.30	0.06992	55,804	7.39
89	0.10195	39,406	5.89	0.07810	51,902	6.90
90	0.11264	35,388	5.50	0.08708	47,849	6.45
91	0.12421	31,402	5.13	0.09693	43,682	6.01
92	0.13667	27,501	4.79	0.10768	39,448	5.61
93	0.15004	23,743	4.47	0.11937	35,200	5.22
94	0.16431	20,180	4.17	0.13201	30,998	4.86
95	0.17947	16,864	3.89	0.14563	26,906	4.53
96	0.19549	13,838	3.63	0.16022	22,988	4.21
97	0.21231	11,133	3.39	0.17578	19,305	3.92
98	0.22988	8,769	3.17	0.19225	15,911	3.65
99	0.24812	6,753	2.97	0.20960	12,852	3.40
100 and over	1.00000	5,078	2.78	1.00000	10,158	3.17

[1] Probability of dying within 1 year.
[2] Number of survivors out of 100,000 born alive.

Note: The period life expectancy at a given age represents the average number of years of life remaining if a group of people at that age were to experience the mortality rates of that time over the course of their remaining life.

Source: U.S. Census Bureau, 2017 National Population Projections.

Appendix Table 6.

Life Table for the Projected Foreign-Born Population in the United States: 2060

Age	Male			Female		
	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)
0	0.00395	100,000	85.29	0.00366	100,000	88.50
1	0.00019	99,605	84.63	0.00027	99,634	87.82
2	0.00015	99,586	83.64	0.00019	99,607	86.84
3	0.00013	99,570	82.66	0.00015	99,589	85.86
4	0.00011	99,557	81.67	0.00012	99,574	84.87
5	0.00010	99,546	80.68	0.00010	99,563	83.88
6	0.00009	99,536	79.69	0.00008	99,553	82.89
7	0.00008	99,527	78.69	0.00007	99,545	81.90
8	0.00008	99,519	77.70	0.00007	99,538	80.90
9	0.00007	99,511	76.71	0.00006	99,531	79.91
10	0.00007	99,504	75.71	0.00006	99,525	78.91
11	0.00007	99,496	74.72	0.00006	99,519	77.92
12	0.00008	99,489	73.72	0.00006	99,514	76.92
13	0.00009	99,481	72.73	0.00006	99,508	75.93
14	0.00011	99,472	71.73	0.00007	99,501	74.93
15	0.00013	99,461	70.74	0.00008	99,494	73.94
16	0.00016	99,448	69.75	0.00009	99,486	72.94
17	0.00018	99,432	68.76	0.00010	99,478	71.95
18	0.00021	99,414	67.77	0.00011	99,468	70.95
19	0.00023	99,394	66.79	0.00012	99,457	69.96
20	0.00025	99,371	65.80	0.00012	99,445	68.97
21	0.00026	99,347	64.82	0.00013	99,433	67.98
22	0.00027	99,321	63.84	0.00014	99,420	66.99
23	0.00028	99,293	62.85	0.00014	99,406	66.00
24	0.00028	99,266	61.87	0.00015	99,392	65.01
25	0.00028	99,238	60.89	0.00015	99,377	64.02
26	0.00027	99,211	59.90	0.00015	99,362	63.03
27	0.00027	99,184	58.92	0.00016	99,347	62.04
28	0.00027	99,157	57.94	0.00016	99,331	61.05
29	0.00027	99,130	56.95	0.00017	99,315	60.05
30	0.00028	99,103	55.97	0.00018	99,298	59.07
31	0.00028	99,075	54.98	0.00018	99,281	58.08
32	0.00029	99,048	54.00	0.00019	99,262	57.09
33	0.00029	99,019	53.01	0.00021	99,243	56.10
34	0.00031	98,990	52.03	0.00022	99,223	55.11
35	0.00032	98,960	51.05	0.00024	99,201	54.12
36	0.00034	98,928	50.06	0.00025	99,177	53.13
37	0.00036	98,894	49.08	0.00027	99,152	52.15
38	0.00039	98,859	48.10	0.00029	99,125	51.16
39	0.00042	98,820	47.11	0.00032	99,096	50.18
40	0.00045	98,779	46.13	0.00034	99,064	49.19
41	0.00049	98,735	45.15	0.00037	99,031	48.21
42	0.00054	98,686	44.18	0.00040	98,994	47.23
43	0.00060	98,632	43.20	0.00044	98,954	46.24
44	0.00068	98,573	42.23	0.00049	98,910	45.26
45	0.00076	98,506	41.25	0.00054	98,862	44.29
46	0.00085	98,431	40.29	0.00059	98,809	43.31
47	0.00096	98,347	39.32	0.00065	98,750	42.34
48	0.00107	98,253	38.36	0.00071	98,686	41.36
49	0.00119	98,148	37.40	0.00078	98,616	40.39
50	0.00132	98,032	36.44	0.00085	98,539	39.42
51	0.00147	97,902	35.49	0.00093	98,455	38.46
52	0.00164	97,759	34.54	0.00102	98,363	37.49
53	0.00184	97,599	33.60	0.00112	98,263	36.53
54	0.00206	97,420	32.66	0.00122	98,153	35.57
55	0.00231	97,219	31.72	0.00134	98,033	34.61
56	0.00257	96,994	30.79	0.00146	97,902	33.66
57	0.00284	96,745	29.87	0.00160	97,758	32.71
58	0.00312	96,469	28.96	0.00174	97,602	31.76
59	0.00340	96,169	28.05	0.00188	97,433	30.81
60	0.00369	95,842	27.14	0.00203	97,250	29.87

See footnotes at end of table.

Appendix Table 6.

Life Table for the Projected Foreign-Born Population in the United States: 2060—Con.

Age	Male			Female		
	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)	Death probability (qx)[1]	Number of lives (lx)[2]	Life expectancy (ex)
61	0.00403	95,488	26.24	0.00222	97,052	28.93
62	0.00444	95,103	25.34	0.00244	96,837	27.99
63	0.00491	94,681	24.45	0.00273	96,600	27.06
64	0.00546	94,216	23.57	0.00306	96,337	26.13
65	0.00609	93,701	22.70	0.00345	96,042	25.21
66	0.00679	93,130	21.83	0.00390	95,710	24.30
67	0.00756	92,498	20.98	0.00439	95,338	23.39
68	0.00843	91,799	20.14	0.00494	94,919	22.49
69	0.00939	91,025	19.30	0.00555	94,451	21.60
70	0.01047	90,171	18.48	0.00625	93,927	20.72
71	0.01168	89,227	17.67	0.00705	93,340	19.85
72	0.01303	88,185	16.87	0.00797	92,682	18.98
73	0.01452	87,036	16.09	0.00902	91,943	18.13
74	0.01616	85,773	15.32	0.01020	91,114	17.29
75	0.01798	84,387	14.56	0.01155	90,185	16.46
76	0.02004	82,870	13.82	0.01310	89,143	15.65
77	0.02240	81,209	13.09	0.01492	87,975	14.85
78	0.02509	79,390	12.38	0.01703	86,663	14.07
79	0.02815	77,398	11.69	0.01948	85,187	13.30
80	0.03217	75,219	11.01	0.02310	83,527	12.56
81	0.03617	72,799	10.36	0.02634	81,598	11.84
82	0.04086	70,166	9.73	0.03010	79,449	11.15
83	0.04627	67,299	9.12	0.03439	77,057	10.48
84	0.05243	64,186	8.54	0.03923	74,408	9.84
85	0.05932	60,820	7.99	0.04463	71,488	9.22
86	0.06679	57,212	7.46	0.05061	68,298	8.63
87	0.07508	53,391	6.96	0.05730	64,841	8.06
88	0.08425	49,383	6.48	0.06479	61,126	7.52
89	0.09436	45,222	6.03	0.07312	57,166	7.00
90	0.10546	40,955	5.61	0.08238	52,985	6.52
91	0.11758	36,636	5.21	0.09261	48,620	6.06
92	0.13077	32,328	4.84	0.10388	44,118	5.62
93	0.14504	28,101	4.49	0.11622	39,535	5.22
94	0.16039	24,025	4.17	0.12968	34,940	4.84
95	0.17680	20,171	3.87	0.14425	30,409	4.49
96	0.19424	16,605	3.60	0.15995	26,022	4.16
97	0.21263	13,380	3.34	0.17674	21,860	3.85
98	0.23189	10,535	3.11	0.19457	17,997	3.57
99	0.25191	8,092	2.90	0.21338	14,495	3.32
100 and over	1.00000	6,053	2.70	1.00000	11,402	3.08

[1] Probability of dying within 1 year.

[2] Number of survivors out of 100,000 born alive.

Note: The period life expectancy at a given age represents the average number of years of life remaining if a group of people at that age were to experience the mortality rates of that time over the course of their remaining life.

Source: U.S. Census Bureau, 2017 National Population Projections.