



Provisional Life Expectancy Estimates for 2021

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Introduction

The National Center for Health Statistics (NCHS) collects and disseminates the nation's official vital statistics through the National Vital Statistics System. NCHS uses provisional vital statistics data for conducting public health surveillance and final data for producing annual national natality and mortality statistics. NCHS publishes annual and decennial national life tables based on final vital statistics data. To assess the effects of excess mortality related to the COVID-19 pandemic on life expectancy, NCHS published the first ever provisional life expectancy estimates for the year 2020 (1,2). Life expectancy estimates presented in this report are based on provisional mortality data for 2021 and final data for 2019 and 2020. Provisional data are early estimates based on death certificates received, processed, and coded but not finalized by NCHS. These estimates are considered provisional because death certificate information may be revised, and additional death certificates may be received until approximately 6 months after the end of the year.

This report presents life expectancy estimates calculated using complete period life tables based on provisional death counts for 2021 by sex and for the total, Hispanic, non-Hispanic American Indian or Alaska Native (AIAN), non-Hispanic Asian, non-Hispanic Black, and non-Hispanic White populations. Estimates for the Native Hawaiian or Other Pacific Islander population were not produced because data needed to evaluate race and ethnicity misclassification on death certificates for this population are

not currently available (3). There are two types of life tables: the cohort (or generation) and the period (or current) life table. The cohort life table presents the mortality experience of a particular birth cohort from the moment of birth through consecutive ages in successive calendar years. The period life table does not represent the mortality experience of an actual birth cohort but rather presents what would happen to a hypothetical cohort if it experienced throughout its entire life the mortality conditions of a particular period. This report also presents contributions of causes of death to the changes in life expectancy using a life table partitioning technique (Technical Notes).

Keywords: Hispanic origin • race • cause of death • National Vital Statistics System

Data and Methods

Provisional life expectancy estimates were calculated using complete period life tables based on provisional death counts for 2021 from death records received and processed by NCHS as of April 24, 2022; provisional numbers of births for the same period based on birth records received and processed by NCHS as of May 3, 2022; and July 1, 2021, postcensal population estimates based on the 2010 decennial census. Provisional death rates are typically computed using death data after a 3-month lag, as completeness and timeliness of provisional death data can vary by many factors, including cause of death, month of the year, and age of the decedent (4,5). Mortality data used in this report include over 99% of the deaths that occurred in 2021, but

certain jurisdictions and age groups may be underrepresented for later months (5). Deaths requiring investigation, including infant deaths and those from external injuries and drug overdose may be underestimated (6). See Technical Notes for more information about the calculation of the complete period life tables and life table partitioning by cause of death. Provisional 2021 life expectancy estimates are compared with final estimates for years 2019 and 2020 to describe changes in life expectancy in the United States since the start of the COVID-19 pandemic.

Results

Life expectancy in the United States

The [Table](#) summarizes life expectancy by age, race and Hispanic origin, and sex. Life expectancy at birth represents the average number of years a group of infants would live if they were to experience throughout life the age-specific death rates prevailing during a period. In 2021, life expectancy at birth was 76.1 years, declining by 0.9 year from 77.0 in 2020 (3). Life expectancy at birth for males in 2021 was 73.2 years, representing a decline of 1.0 year from 74.2 years in 2020. For females, life expectancy declined to 79.1 years, decreasing 0.8 year from 79.9 years in 2020 ([Figure 1](#)). Excess deaths due to COVID-19 and other causes in 2020 and 2021 led to an overall decline in life expectancy between 2019 and 2021 of 2.7 years for the total population, 3.1 years for males, and 2.3 years for females ([Figure 1](#)) (7).

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Table. Provisional life expectancy, by age, race and Hispanic origin, and sex: United States, 2021

Age (years)	All races and origins			Hispanic			Non-Hispanic American Indian or Alaska Native			Non-Hispanic Asian			Non-Hispanic Black			Non-Hispanic White		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
0.....	76.1	73.2	79.1	77.7	74.4	81.0	65.2	61.5	69.2	83.5	81.2	85.6	70.8	66.7	74.8	76.4	73.7	79.2
1.....	75.6	72.6	78.5	77.1	73.8	80.4	64.7	61.0	68.7	82.7	80.4	84.8	70.6	66.5	74.5	75.7	73.0	78.5
5.....	71.6	68.7	74.6	73.1	69.8	76.4	60.9	57.1	64.8	78.8	76.5	80.8	66.7	62.6	70.7	71.8	69.1	74.6
10.....	66.7	63.8	69.7	68.2	64.9	71.5	55.9	52.2	59.9	73.8	71.5	75.9	61.8	57.7	65.7	66.8	64.1	69.6
15.....	61.7	58.8	64.7	63.2	59.9	66.5	51.0	47.3	55.0	68.8	66.6	70.9	56.9	52.8	60.8	61.9	59.2	64.7
20.....	56.9	54.1	59.8	58.4	55.1	61.6	46.4	42.7	50.3	63.9	61.7	65.9	52.2	48.3	56.0	57.0	54.4	59.8
25.....	52.2	49.5	55.0	53.7	50.6	56.8	42.1	38.6	45.8	59.1	56.9	61.0	47.8	44.2	51.3	52.3	49.8	54.9
30.....	47.6	45.1	50.2	49.1	46.1	52.0	38.0	34.7	41.5	54.3	52.1	56.1	43.5	40.0	46.7	47.7	45.3	50.2
35.....	43.1	40.7	45.5	44.5	41.7	47.2	34.3	31.2	37.4	49.4	47.3	51.2	39.1	35.9	42.1	43.1	40.9	45.5
40.....	38.6	36.4	40.9	39.9	37.3	42.5	30.8	28.0	33.8	44.6	42.5	46.3	35.0	32.0	37.7	38.7	36.5	40.8
45.....	34.2	32.1	36.4	35.5	33.0	37.8	27.4	24.8	30.0	39.9	37.9	41.5	30.9	28.1	33.4	34.3	32.3	36.3
50.....	30.0	28.0	31.9	31.1	28.8	33.3	24.4	22.1	26.7	35.2	33.3	36.7	26.9	24.4	29.2	30.0	28.1	31.9
55.....	25.9	24.0	27.6	26.9	24.8	28.8	21.5	19.5	23.5	30.6	28.9	32.0	23.2	20.9	25.2	25.9	24.1	27.6
60.....	22.0	20.4	23.5	23.0	21.1	24.6	18.9	17.2	20.4	26.1	24.6	27.4	19.7	17.6	21.5	21.9	20.4	23.4
65.....	18.3	16.9	19.6	19.3	17.6	20.6	16.3	15.1	17.4	21.9	20.5	22.9	16.5	14.8	18.0	18.3	16.9	19.5
70.....	14.8	13.7	15.8	15.7	14.4	16.7	13.7	12.7	14.5	17.8	16.7	18.6	13.6	12.2	14.7	14.7	13.6	15.7
75.....	11.5	10.6	12.3	12.4	11.3	13.1	11.2	10.5	11.8	14.0	13.1	14.5	10.9	9.7	11.7	11.4	10.5	12.1
80.....	8.6	7.9	9.1	9.3	8.5	9.7	9.1	8.6	9.3	10.4	9.8	10.7	8.4	7.5	8.9	8.4	7.8	8.9
85.....	6.1	5.6	6.4	6.7	6.1	6.9	7.2	6.9	7.2	7.3	6.9	7.4	6.2	5.6	6.5	5.9	5.5	6.2
90.....	4.1	3.9	4.3	4.6	4.3	4.6	5.6	5.5	5.4	4.8	4.7	4.8	4.5	4.1	4.6	4.0	3.7	4.1
95.....	2.8	2.7	2.9	3.2	3.0	3.1	4.4	4.4	4.1	3.1	3.1	3.0	3.2	3.0	3.3	2.7	2.6	2.7
100.....	2.0	2.0	2.0	2.3	2.2	2.1	3.5	3.6	3.3	2.1	2.2	2.0	2.4	2.3	2.3	1.9	1.8	1.9

NOTES: Life tables by race and Hispanic origin have been adjusted for race and ethnicity misclassification on death certificates; see Technical Notes in this report. Estimates are based on provisional data for 2021. Provisional data are subject to change as additional data are received.

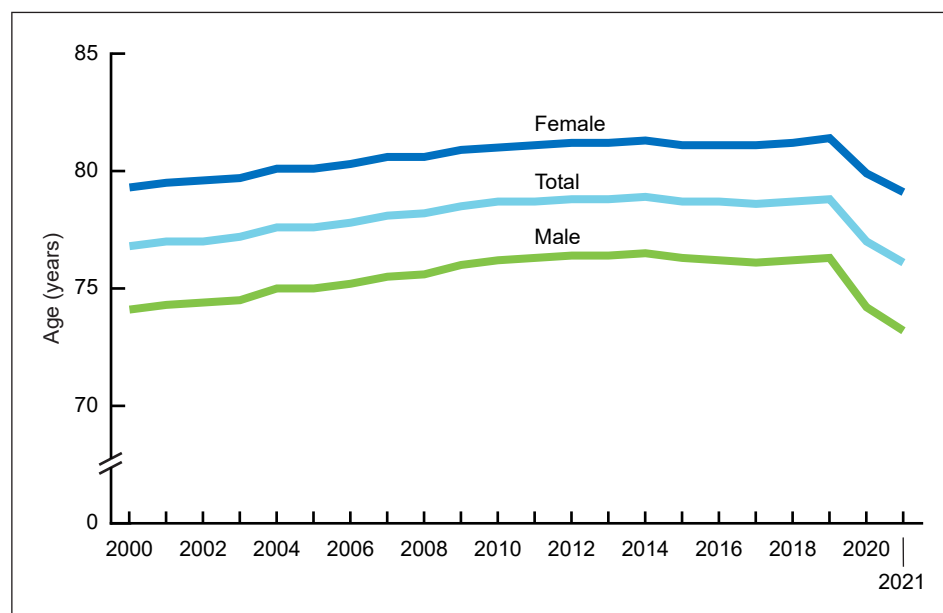
SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

The difference in life expectancy between the sexes was 5.9 years in 2021, increasing from 5.7 in 2020. Between 2000 and 2010, the difference in life expectancy between the sexes narrowed from 5.2 years to its lowest level of 4.8 years, but then increased in 2020 and 2021 to levels not seen since 1996 (when the difference was 6 years) (Figure 1).

Life expectancy by Hispanic origin and race

Between 2020 and 2021, life expectancy decreased by 1.9 years for the non-Hispanic AIAN population (67.1 to 65.2) (Figure 2). It decreased by 1.0 year for the non-Hispanic White population (77.4 to 76.4), by 0.7 year for the non-Hispanic Black population (71.5 to 70.8), by 0.2 year for the Hispanic population (77.9 to 77.7), and by 0.1 year for the non-Hispanic Asian population (83.6 to 83.5). Increases in excess deaths led to a decline in life expectancy between 2019 and 2021 of 6.6 years for the non-Hispanic AIAN population, 4.2 years for the Hispanic population, 4.0 years for the non-Hispanic Black population, 2.4 years for the non-Hispanic White population, and 2.1 years for the non-Hispanic Asian population.

Figure 1. Life expectancy at birth, by sex: United States, 2000–2021

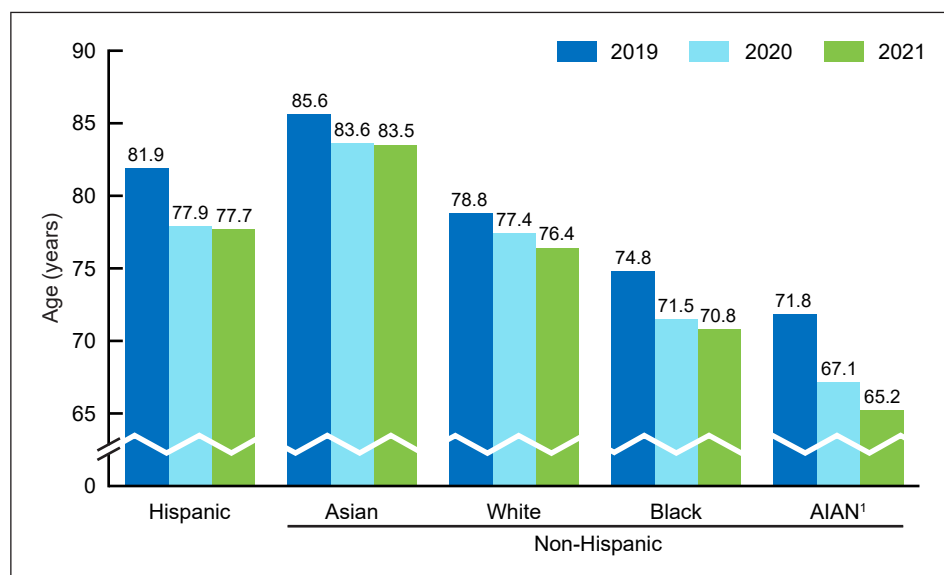


NOTES: Estimates are based on provisional data for 2021. Provisional data are subject to change as additional data are received. Estimates for 2000–2020 are based on final data.
SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

Among the 10 Hispanic-origin and race-sex groups (Figure 3), the decrease in life expectancy between 2020 and 2021 was greatest for non-Hispanic AIAN males, whose life expectancy declined by 2.3 years (63.8 to 61.5), followed by non-Hispanic AIAN females with a decline of 1.5 years (70.7 to 69.2),

non-Hispanic Black and non-Hispanic White males with a decline of 1.1 years each (67.8 to 66.7) and (74.8 to 73.7), respectively, non-Hispanic White females with a decline of 0.9 year (80.1 to 79.2), non-Hispanic Black females with a decline of 0.6 year (75.4 to 74.8), Hispanic and non-Hispanic Asian females with a decline of 0.3 year each (81.3 to 81.0) and (85.9 to 85.6), respectively, and Hispanic males with a decline of 0.2 year (74.6 to 74.4). Non-Hispanic Asian males experienced an increase in life expectancy of 0.1 year (81.1 to 81.2) between 2020 and 2021.

Figure 2. Life expectancy at birth, by Hispanic origin and race: United States, 2019–2021



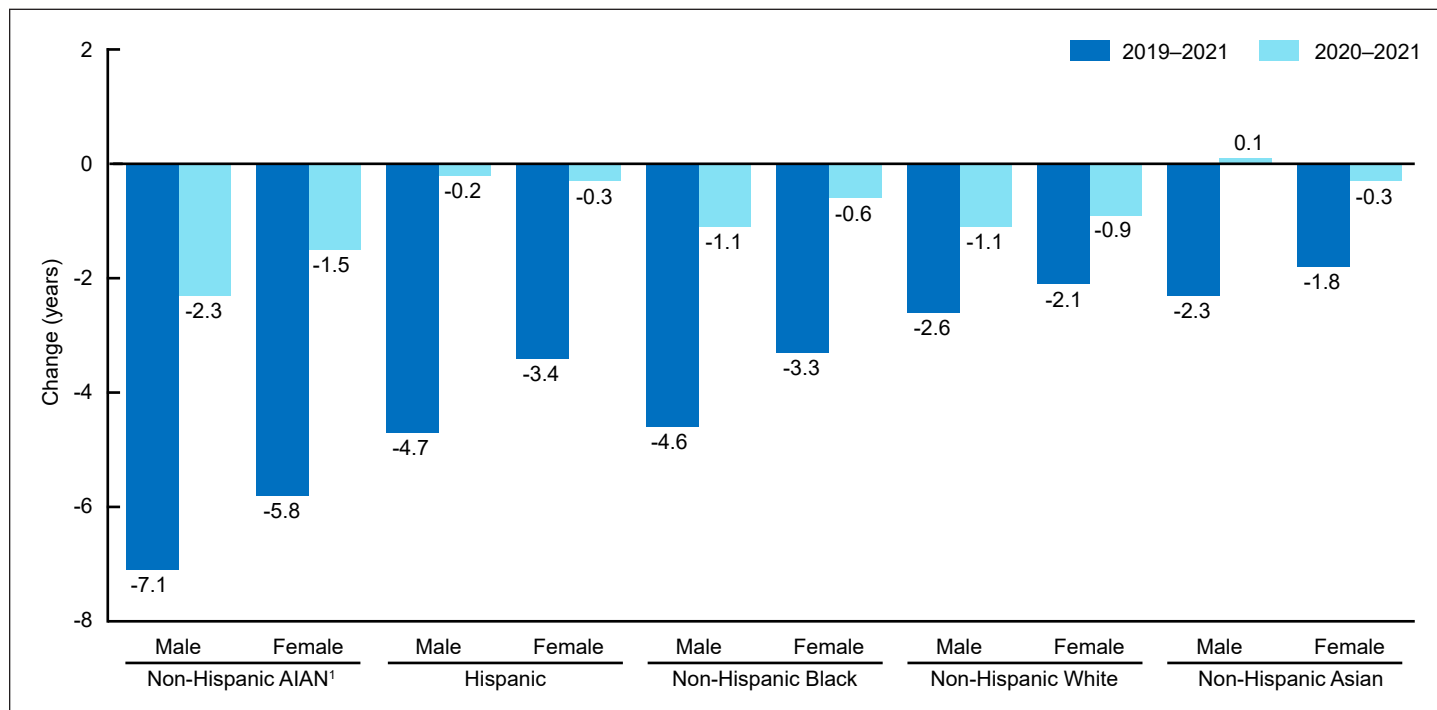
¹American Indian or Alaska Native.

NOTES: Estimates are based on provisional data for 2021. Provisional data are subject to change as additional data are received. Estimates for 2019 and 2020 are based on final data. Life tables by race and Hispanic origin are 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.

Overall, increases in excess deaths during 2020 and 2021 led to decreases in life expectancy at birth of 7.1 years for non-Hispanic AIAN males, 5.8 years for non-Hispanic AIAN females, 4.7 years for Hispanic males, 4.6 years for non-Hispanic Black males, 3.4 years for Hispanic females, 3.3 years for non-Hispanic Black females, 2.6 years for non-Hispanic White males, 2.3 years for non-Hispanic Asian males, 2.1 years for non-Hispanic White females, and 1.8 years for non-Hispanic Asian females.

Figure 3. Change in life expectancy at birth, by Hispanic origin and race: United States, 2019–2021 and 2020–2021



¹American Indian or Alaska Native.

NOTES: Estimates are based on provisional data for 2021. Provisional data are subject to change as additional data are received. Estimates for 2019 and 2020 are based on final data. Life tables by race and Hispanic origin are 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.

Effect on life expectancy of changes in cause-specific mortality

Increases or decreases in life expectancy represent the sum of positive and negative contributions of cause-specific death rates. Declines in cause-specific mortality contribute to increases in life expectancy, while increases contribute to decreases in life expectancy. If the negative contributions (increases in cause-specific death rates) are greater than the positive contributions (decreases in cause-specific death rates), then the result is a decline in life expectancy. If negative and positive contributions offset each other, then there would be no change in life expectancy (see Technical Notes for a description of the partitioning method).

The decline of 0.9 year in life expectancy between 2020 and 2021 was primarily due to increases in mortality due to COVID-19 (50.0% of the negative contribution), unintentional injuries (15.9%), heart disease (4.1%), chronic

liver disease and cirrhosis (3.0%), and suicide (2.1%) (Figure 4). The decline in life expectancy would have been even greater were it not for the offsetting effects of decreases in mortality due to influenza and pneumonia (38.5%), chronic lower respiratory diseases (28.8%), Alzheimer disease (18.3%), perinatal conditions (6.3%), and Parkinson disease (2.3%).

For the male population, the 1.0-year decline in life expectancy was mostly due to increases in mortality due to COVID-19 (49.5%), unintentional injuries (19.1%), suicide (3.6%), chronic liver disease and cirrhosis (3.4%), and homicide (2.5%). The decline in life expectancy was offset by decreases in mortality due to influenza and pneumonia (29.5%), chronic lower respiratory diseases (26.2%), cancer (12.0%), Alzheimer disease (11.4%), and perinatal conditions (8.3%).

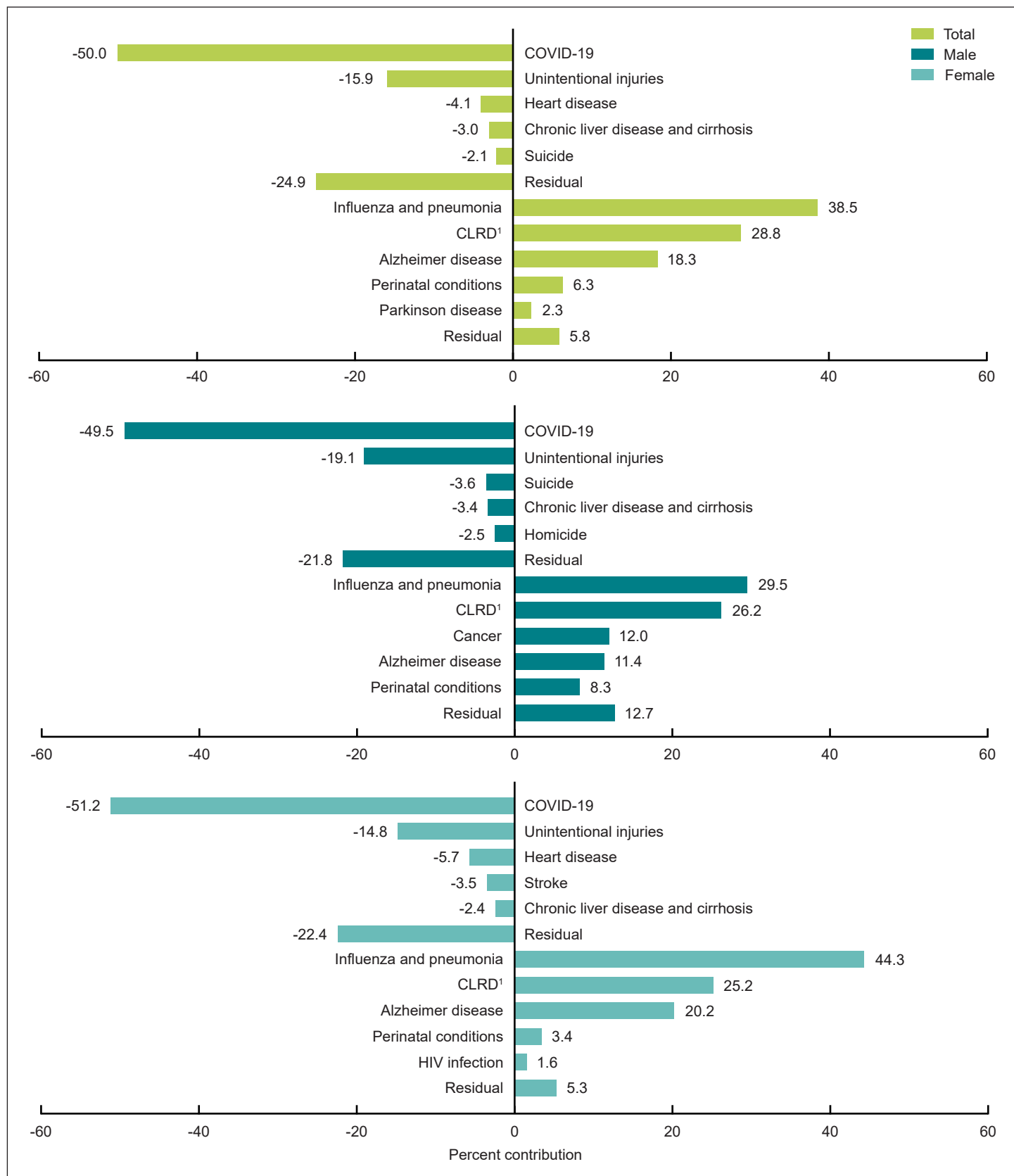
For females, the decline in life expectancy of 0.8 year was primarily due to increases in mortality due to COVID-19 (51.2%), unintentional injuries (14.8%), heart disease (5.7%), stroke (3.5%), and

chronic liver disease and cirrhosis (2.4%). The decline in life expectancy was offset by decreases in mortality due to influenza and pneumonia (44.3%), chronic lower respiratory diseases (25.2%), Alzheimer disease (20.2%), perinatal conditions (3.4%), and HIV infection (1.6%).

The non-Hispanic AIAN population experienced the greatest decline in life expectancy (1.9 years) between 2020 and 2021. The decline was due primarily to increases in mortality due to COVID-19 (21.4%), unintentional injuries (21.3%), chronic liver disease and cirrhosis (18.6%), suicide (5.4%), and heart disease (3.4%). The decline in life expectancy would have been greater if not for the offsetting declines in mortality due to homicide (23.0%), influenza and pneumonia (21.2%), congenital malformations (12.4%), perinatal conditions (9.4%), and benign neoplasms (5.6%) (Figure 5).

The second greatest decline in life expectancy between 2020 and 2021 was in the non-Hispanic White population (1.0 year). The decline was primarily due to increases in mortality due to

Figure 4. Contribution of leading causes of death to the change in life expectancy, by sex and total population: United States, 2020–2021

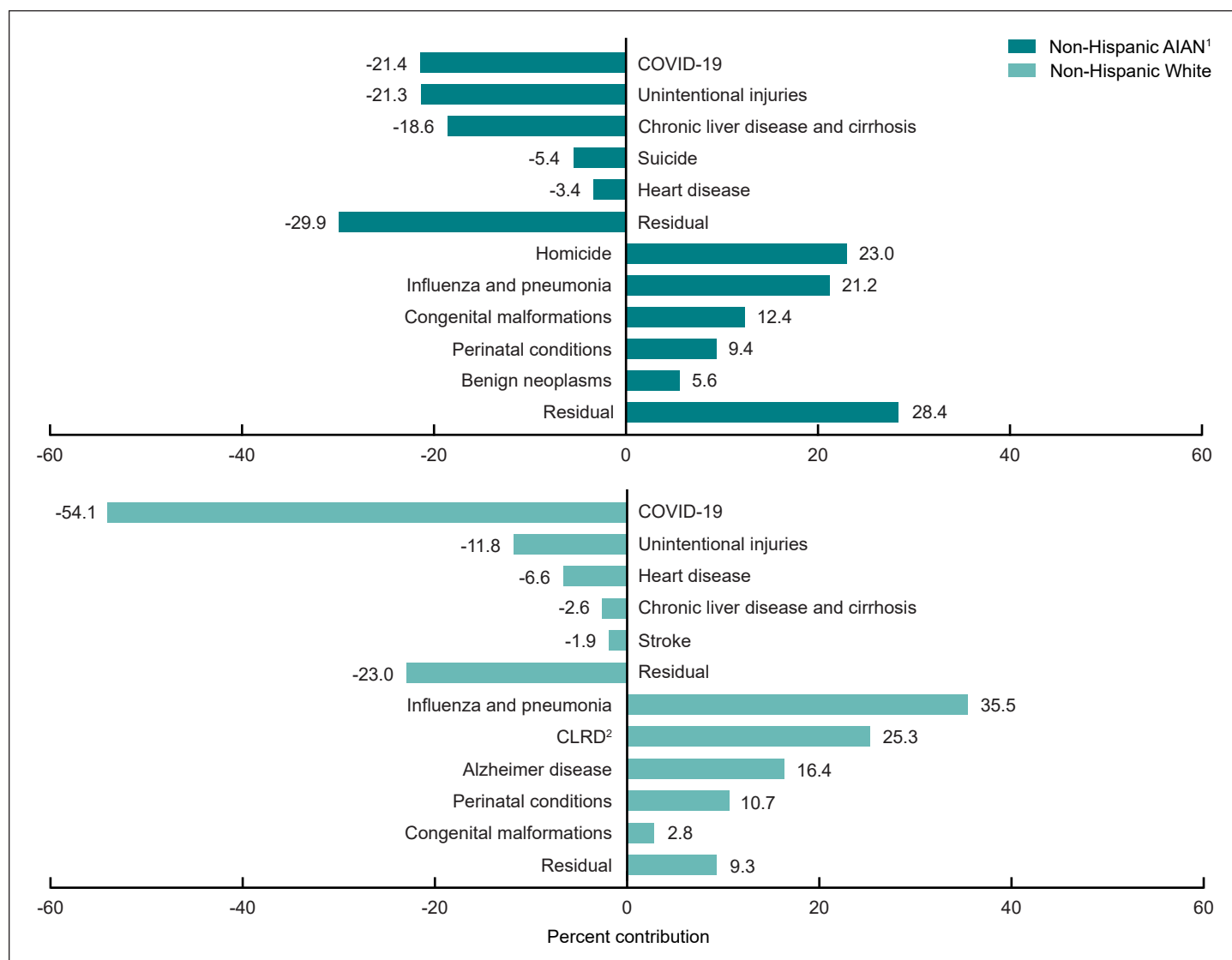


¹Chronic lower respiratory diseases.

NOTES: Estimates are based on provisional data for 2021. Provisional data are subject to change as additional data are received. Estimates for 2020 are based on final data. Life tables by race and Hispanic origin are 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.

Figure 5. Contribution of leading causes of death to change in life expectancy, by Hispanic origin and race: Non-Hispanic American Indian or Alaska Native and non-Hispanic White populations, 2020–2021



¹American Indian or Alaska Native.

²Chronic lower respiratory diseases.

NOTES: Estimates are based on provisional data for 2021. Provisional data are subject to change as additional data are received. Estimates for 2020 are based on final data. Life tables by race and Hispanic origin are 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.

COVID-19 (54.1%), unintentional injuries (11.8%), heart disease (6.6%), chronic liver disease and cirrhosis (2.6%), and stroke (1.9%). The negative effects of these causes were offset by decreases in mortality due to influenza and pneumonia (35.5%), chronic lower respiratory diseases (25.3%), Alzheimer disease (16.4%), perinatal conditions (10.7%), and congenital malformations (2.8%) (Figure 5).

The non-Hispanic Black population had the third greatest decline in life expectancy (0.7 year). The decline was

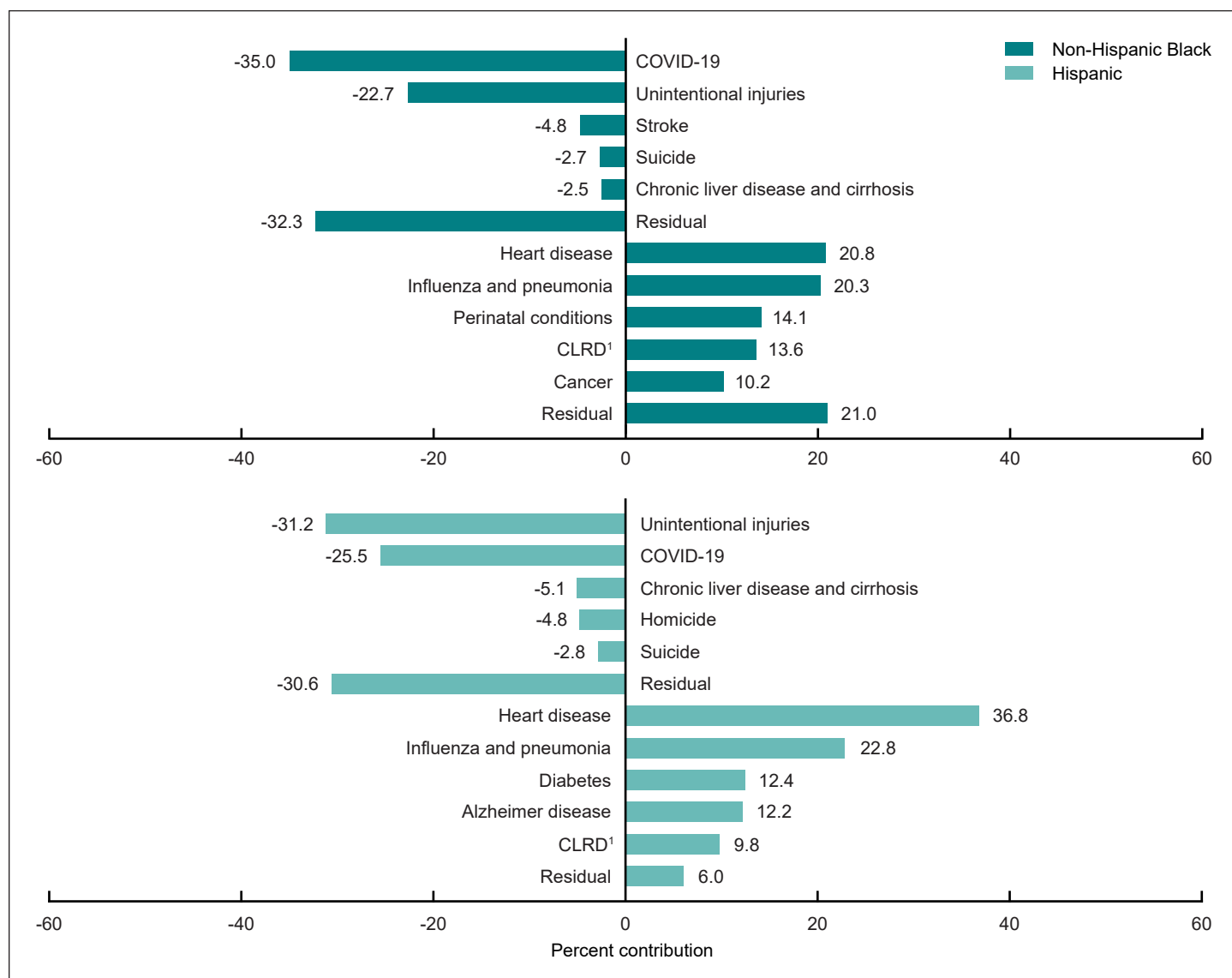
due primarily to increases in mortality due to COVID-19 (35.0%), unintentional injuries (22.7%), stroke (4.8%), suicide (2.7%), and chronic liver disease and cirrhosis (2.5%). The decrease in life expectancy was offset by decreases in mortality due to heart disease (20.8%), influenza and pneumonia (20.3%), perinatal conditions (14.1%), chronic lower respiratory diseases (13.6%), and cancer (10.2%) (Figure 6).

The Hispanic population had the fourth largest decline in life expectancy between 2020 and 2021 (0.2 year). This

decrease was primarily due to increases in mortality due to unintentional injuries (31.2%), COVID-19 (25.5%), chronic liver disease and cirrhosis (5.1%), homicide (4.8%), and suicide (2.8%). The decline in life expectancy would have been greater were it not for the offsetting effects of decreases in mortality due to heart disease (36.8%), influenza and pneumonia (22.8%), diabetes (12.4%), Alzheimer disease (12.2%), and chronic lower respiratory diseases (9.8%) (Figure 6).

The non-Hispanic Asian population experienced the smallest decline in life

Figure 6. Contribution of leading causes of death to change in life expectancy, by Hispanic origin and race: Non-Hispanic Black and Hispanic populations, 2020–2021



¹Chronic lower respiratory diseases.

NOTES: Estimates are based on provisional data for 2021. Provisional data are subject to change as additional data are received. Estimates for 2020 are based on final data. Life tables by race and Hispanic origin are 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.

expectancy (0.1 year), primarily due to increases in mortality due to cancer (21.4%), COVID-19 (16.6%), unintentional injuries (15.0%), stroke (7.9%), and suicide (6.6%). The decline in life expectancy was offset by decreases in mortality due to influenza and pneumonia (35.7%), congenital malformations (19.4%), chronic lower respiratory diseases (16.6%), diabetes (10.6%), and heart disease (9.3%) (Figure 7).

Discussion and Conclusions

U.S. life expectancy at birth for 2021, based on nearly final data, was 76.1 years, the lowest it has been since 1996. Male life expectancy (73.2) and female life expectancy (79.1) also declined to levels not seen since 1996. The non-Hispanic AIAN population experienced the largest decline in life expectancy, from 67.1 in 2020 to 65.2 years in 2021, the same life expectancy of the total U.S. population in 1944 (8). The non-Hispanic White

population had the second greatest decline in life expectancy (77.4 to 76.4) and was the lowest seen since 1995 for the White population (regardless of Hispanic origin). Life expectancy for the non-Hispanic Black population declined from 71.5 to 70.8 years, a level last seen in 1996 for the Black population (regardless of Hispanic origin). Life expectancy for the Hispanic population declined to 77.7 years, a level lower than in 2006 (80.3), the first year for which life expectancy estimates by Hispanic origin were produced (9). The