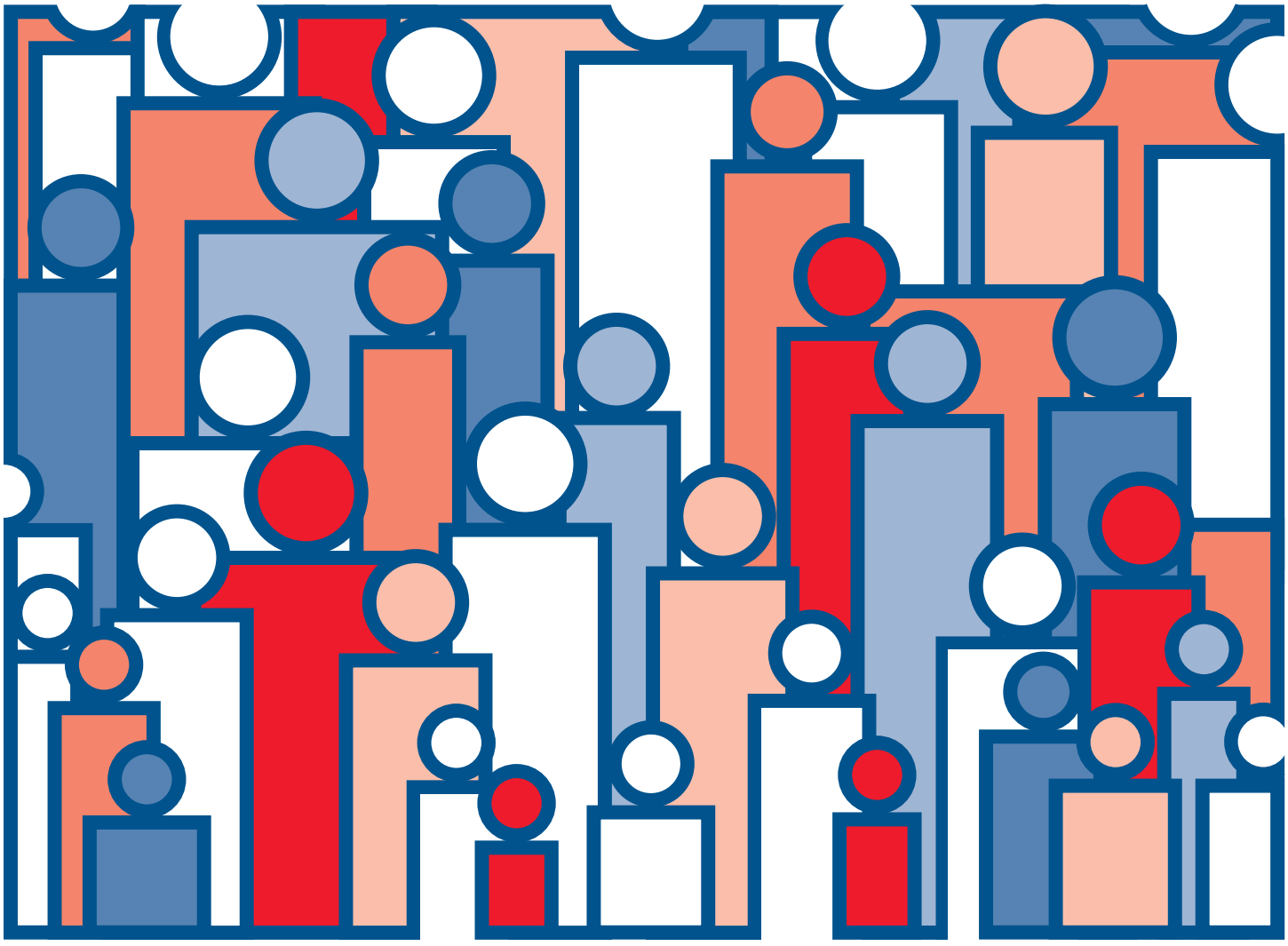
nchs

U.S. Decennial Life Tables for 1989-91

Volume 1, Number 3, Some Trends and Comparisons of United States Life Table Data: 1900-1991

From the CENTERS FOR DISEASE CONTROL AND PREVENTION/National Center for Health Statistics



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Health Statistics

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

Suggested citation

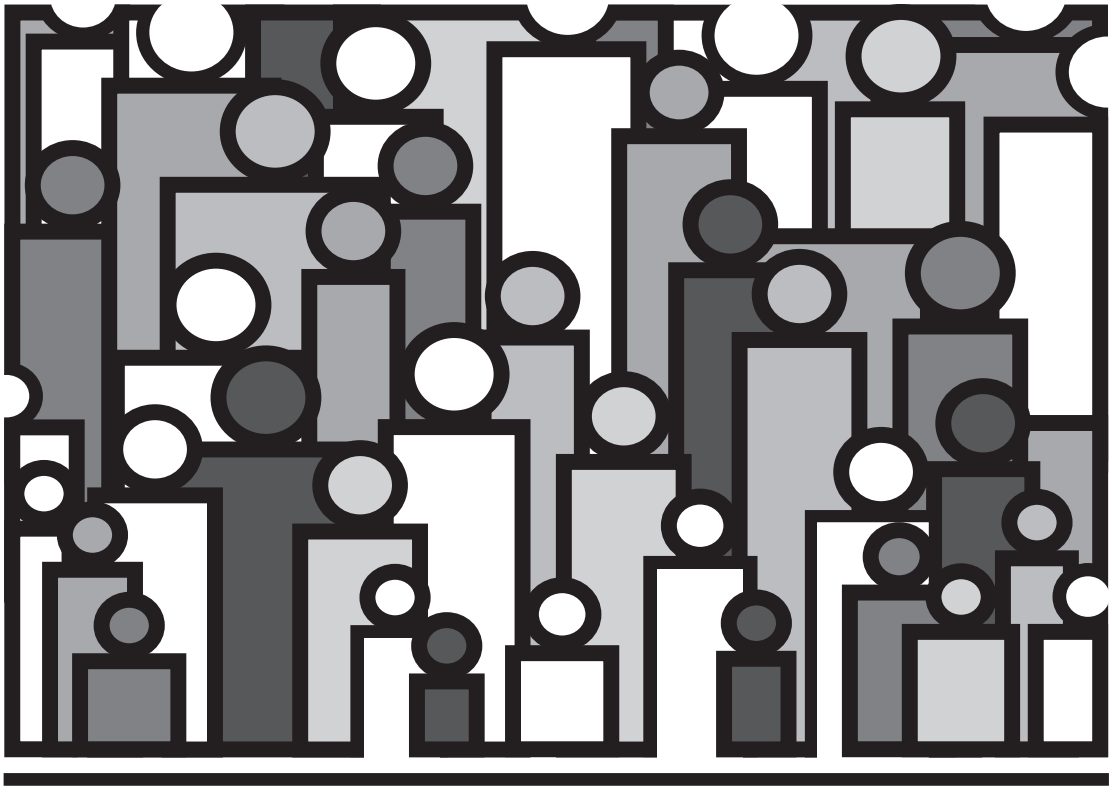
National Center for Health Statistics. U.S. decennial life tables for 1989–91, vol 1, no. 3, some trends and comparisons of United States life table data: 1900−91. Hyattsville, Maryland. 1999.

Library of Congress Catalog Card Number 85-600190

For sale by the U.S. Government Printing Office
Superintendent of Documents
Mail Stop: SSOP
Washington, DC 20402-9328

U.S. Decennial Life Tables for 1989-91

Volume 1, Number 3, Some Trends and Comparisons of United States Life Table Data: 1900-1991



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Health Statistics

Hyattsville, Maryland
March 1999

DHHS Publication No. PHS-99-1150-3

National Center for Health Statistics

Edward J. Sondik, Ph.D., *Director*

Jack R. Anderson, *Deputy Director*

Jack R. Anderson, *Acting Associate Director for International Statistics*

Lester R. Curtin, Ph.D., *Acting Associate Director for Research and Methodology*

Jennifer H. Madans, Ph.D., *Acting Associate Director for Analysis, Epidemiology, and Health Promotion*

P. Douglas Williams, *Acting Associate Director for Data Standards, Program Development, and Extramural Programs*

Edward L. Hunter, *Associate Director for Planning, Budget, and Legislation*

Jennifer H. Madans, Ph.D., *Acting Associate Director for Vital and Health Statistics Systems*

Stephen E. Nieberding, *Associate Director for Management*

Charles J. Rothwell, *Associate Director for Data Processing and Services*

Division of Vital Statistics

Mary Anne Freedman, *Director*

James A. Weed, Ph.D., *Deputy Director*

Robert J. Armstrong, *Actuarial Adviser*

Harry M. Rosenberg, Ph.D., *Chief, Mortality Statistics Branch*

Nicholas F. Pace, *Chief, Systems, Programming, and Statistical Resources Branch*

Contents

Text tables

Figures

Acknowledgments

This report was prepared in the Division of Vital Statistics (DVS) under the guidance of an ad hoc committee chaired by Robert J. Armstrong and included Stephen C. Goss and Alice H. Wade of the Office of the Actuary, Social Security Administration; Gregory K. Spencer and Frederick W. Hollmann of the U.S. Bureau of the Census; and David P. Johnson, Lester R. Curtin, Nonie Atkinson, Kenneth D. Kochanek, Harry M. Rosenberg, Jeffrey D. Maurer, and Joseph D. Farrell from the National Center for Health Statistics.

Nonie Atkinson, formerly of the Office of Research and Methodology (ORM), was responsible for the overall computer systems analysis and design, and played a major role in writing the programs to produce the life tables and their variances. Lester R. Curtin, also of ORM, consulted on methodological issues including the preparation of standard errors for the life tables.

Joseph D. Farrell, Charles E. Royer, and David P. Johnson of the Systems, Programming, and Statistical Resources Branch, DVS, coordinated data processing and developed computer processes that eased the workload of the actuarial statistician and the Publications Branch. They also provided major programming support in summarizing data basic to the calculation of the life tables. Gregory K. Spencer and Frederick W. Hollmann of the U.S. Bureau of the Census furnished the modified race populations that were used in the production of these tables. Stephen C. Goss, Felicitie C. Bell, and Bertram M. Kestenbaum of the Office of the Actuary, Social Security Administration, provided mortality data from the Medicare program that were used at age 85 years and over. This report was edited by Demarius V. Miller and typeset by Zung T. N. Le of the Publications Branch, Division of Data Services.

Some Trends and Comparisons of United States Life Table Data: 1900–91

by Robert N. Anderson, Ph.D.,
Division of Vital Statistics

Abstract

This report, the third in a set of reports containing life table data for the United States and each State for the period 1989–91 (1990), shows selected trends and comparisons for the United States from 1900 to 1990 and among the States from 1980 to 1990. Specifically shown are trends in U.S. life expectancy and survival over time, comparisons between sex and race groups, differences among States, and some international comparisons. Life expectancy at birth in the U.S. increased by about 26 years from 1900 to 1990. Survival rates increased at all ages, but the increases were particularly noteworthy at the younger ages. Life expectancy in the United States was greater for females than for males in all of the decennial periods. The gender gap increased substantially from 1900 to 1970 after which it narrowed slightly. Life expectancy for the white population was greater than for the black population in all decades. While the black/white gap in life expectancy narrowed overall, in the most recent decennial period (1980 to 1990) the gap widened. Hawaii had the highest life expectancy of all States in 1989–91. Louisiana and Mississippi shared the lowest life expectancy. The District of Columbia had a life expectancy of 67.99 years, lower than any of the States. Among selected countries, the United States ranked 17th in male life expectancy and 15th in female life expectancy.

Introduction

This report shows selected trends and comparisons for the United States from the periods 1900–1902 to 1989–91 and among the States for the periods 1979–81 to 1989–91. It is the third in a set of reports presenting life table data for the United States and each State for the period 1989–91. The U.S. decennial life table program dates from the beginning of the twentieth century when the Bureau of the Census produced life tables for the period 1900–1902. The 1989–91 life tables are the 10th in the decennial series. Each set of life tables is based on population data from a decennial census and reported deaths of the 3-year period surrounding the census year (the census year is the middle year in all but the first in the series where deaths for 1900–1902 were used because death reports for 1899 were not collected (1)). For convenience in discussing trends, the 3-year periods for which life table values are presented are hereafter denoted by the corresponding census year. Beginning with 1930, the decennial life tables were produced using data for all of the United States and the District of Columbia (DC) (Alaska and Hawaii were included beginning in 1960). Prior to 1930, data used to construct the life tables were restricted to death-registration States (i.e., those States providing copies of death records to the Federal Government). In 1900 these consisted of 10 States and DC. The list expanded to 24 States and DC by 1910, and to 36 States and DC by 1920 (2). It is generally believed that life table patterns for the death-registration States in years prior to 1930 are roughly comparable to those for the entire United States during the same periods (1).

This report is composed of analyses of life table trends and comparisons. First, the analysis includes an examination of trends in U.S. life expectancy and survival over time. Second, comparisons of life expectancy and survival between sex and race groups are examined. Third, the report discusses differences in life expectancy and survival among States from 1980 to 1990. Finally, some international comparisons are shown.

Methodology

Mortality patterns for a specific period of time may be summarized by the life table method to obtain measures of comparative longevity. Two types of life tables—the generation or cohort life table and the current or period life table—are commonly used to measure life expectancy. The generation life table provides a longitudinal perspective in that it follows the mortality experience of an actual cohort—for example, all persons born in the year 1900—from the moment of birth through consecutive ages in successive calendar years. Based on age-specific death rates observed through consecutive calendar years, the generation life table reflects the mortality experience of an actual cohort from birth until no lives remain in the group (3).

The better known current life table may, by contrast, be characterized as ''cross-sectional.'' Unlike the generation life table, the current life table considers a hypothetical cohort and assumes that it is subject throughout its existence to the age-specific mortality rates observed for an actual population during a particular period of relatively short duration (usually 1 to 3 years). The life table data presented in this report are based on current life tables. The methodology used to construct the decennial life tables is detailed in volume 1, number 2 of the 1989–91 decennial life table series (4).

In some cases it was necessary to estimate rather than directly calculate life table values for some groups in particular years. Two estimation techniques were used. In 1920 and 1930, life tables were calculated only for four race-sex groups (white male, white female, black male, and black female). Tables were not calculated for total, total male, total female, total white, or total black. Life tables for total white and total black were also omitted in 1900, 1910, and 1920. Missing life expectancy values for these groups were calculated using data from table 6-5 in *Vital Statistics of the United States*, volume II (5) by taking the average annual life expectancy for the 3 years in question. In 1950 and 1960, life tables were not constructed for the black population and thus were available only for the white and nonwhite populations. Nonwhite life expectancies were used as estimates of black life expectancies for these years.

Expectation of life—The most frequently used life table function is life expectancy ($\mathring{e}_x$), which is the average number of years of life remaining for persons in the life table cohort who have attained a given age (x). Life expectancy at birth ($\mathring{e}_0$) is most commonly reported. This is interpreted as the total average lifetime of the life table cohort.

Survivorship and survival rates—The survival function (l_x) is also a frequently used life table function, l_x denotes the number of persons in the life table cohort surviving to exact age x. Survival rates from age x to age $x + t$ can be easily calculated by dividing l_{x+t} by l_x and multiplying by 100. This is interpreted as the percent of persons in the life table cohort who, having attained exact age x, will survive to age $x + t$. Most often, survival rates are calculated from birth to exact age x. For example, to calculate the survival rate to exact age 20, one would divide l_{20} by $l_0 = 100{,}000$. If $l_{20} = 98{,}000$, then the survival rate is 98 percent, i.e., 98 percent of the life table cohort survives from birth to exact age 20.

Results

Trends in U.S. life expectancy

Table A shows life expectancy at birth by race and sex for each of the decennial periods from 1900 to 1990. The changes in life expectancy that occurred during each decade are also shown. During the 90 years since the decennial life table program was instituted, life expectancy for the total population has increased by 26.13 years, from 49.24 years in 1900 to 75.37 years in 1990. In general, increases were larger in the earlier decades of the century corresponding with rapidly declining mortality in infancy and childhood (see figure 1). Life expectancy increased by nearly 19 years from 1900 to 1950. In contrast, the increase between 1950 and 1990 was only 7.3 years. The largest increase in life expectancy in one decade was 5.0 years during the period from 1910 to 1920. The increase during this period resulted from the fact that the years from 1919–21 were characterized by abnormally low mortality. This has been attributed in part to the 1918 influenza epidemic which eliminated a large number of weak persons leaving an unusually hardy remainder (1). Relatively large

Table A. Life expectancy at birth in years and change from previous period, by race and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 1989–91

Period	Total			White			Black		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
	Life expectancy at birth								
1989–91	75.37	71.83	78.81	76.13	72.72	79.45	69.16	64.47	73.73
1979–81	73.88	70.11	77.62	74.53	70.82	78.22	68.52	64.10	72.88
1969–71	70.75	67.04	74.64	71.62	67.94	75.49	64.11	60.00	68.32
1959–61	69.89	66.80	73.24	70.73	67.55	74.19	[1]63.91	[1]61.48	[1]66.47
1949–51	68.07	65.47	70.96	69.02	66.31	72.03	[1]60.73	[1]58.91	[1]62.70
1939–41	63.62	61.60	65.89	64.92	62.81	67.29	53.85	52.26	55.56
1929–31	[2]59.3	[2]57.8	[2]61.1	[2]60.9	59.12	62.67	[1,2]48.4	47.55	49.51
1919–21	[2]56.5	[2]55.7	[2]57.5	[2]57.5	56.34	58.53	[1,2]47.1	47.14	46.92
1909–11	51.49	49.86	53.24	[2]51.9	50.23	53.62	[1,2]35.9	34.05	37.67
1900–1902	49.24	47.88	50.70	[2]49.6	48.23	51.08	[1,2]33.8	32.54	35.04
	Change in life expectancy								
1900–1902 to 1989–91	26.13	23.95	28.11	26.53	24.49	28.37	35.36	31.93	38.69
1979–81 to 1989–91	1.49	1.72	1.19	1.60	1.90	1.23	0.64	0.37	0.85
1969–71 to 1979–81	3.13	3.07	2.98	2.91	2.88	2.73	4.41	4.10	4.56
1959–61 to 1969–71	0.86	0.24	1.40	0.89	0.39	1.30	[3]0.20	–[3]1.48	[3]1.85
1949–51 to 1959–61	1.82	1.33	2.28	1.71	1.24	2.16	[3]3.18	[3]2.57	[3]3.77
1939–41 to 1949–51	4.45	3.87	5.07	4.10	3.50	4.74	[3]6.88	[3]6.65	[3]7.14
1929–31 to 1939–41	[3]4.3	[3]3.8	[3]4.8	[3]4.0	3.69	4.62	[3]5.5	4.71	6.05
1919–21 to 1929–31	[3]2.8	[3]2.1	[3]3.6	[3]3.4	2.78	4.14	[3]1.3	0.41	2.59
1909–11 to 1919–21	5.0	[3]5.8	[3]4.3	[3]5.6	6.11	4.91	[3]11.2	13.09	9.25
1900–1902 to 1909–11	2.25	1.98	2.54	[3]2.3	2.00	2.54	[3]2.1	1.51	2.63

[1]For all races other than white; values for the black population are not available.
[2]Approximated by taking the average of the values for the 3 years as given in table 6–5 of volume II of *Vital Statistics of the United States,* 1992.
[3]Approximated (see footnote 2).

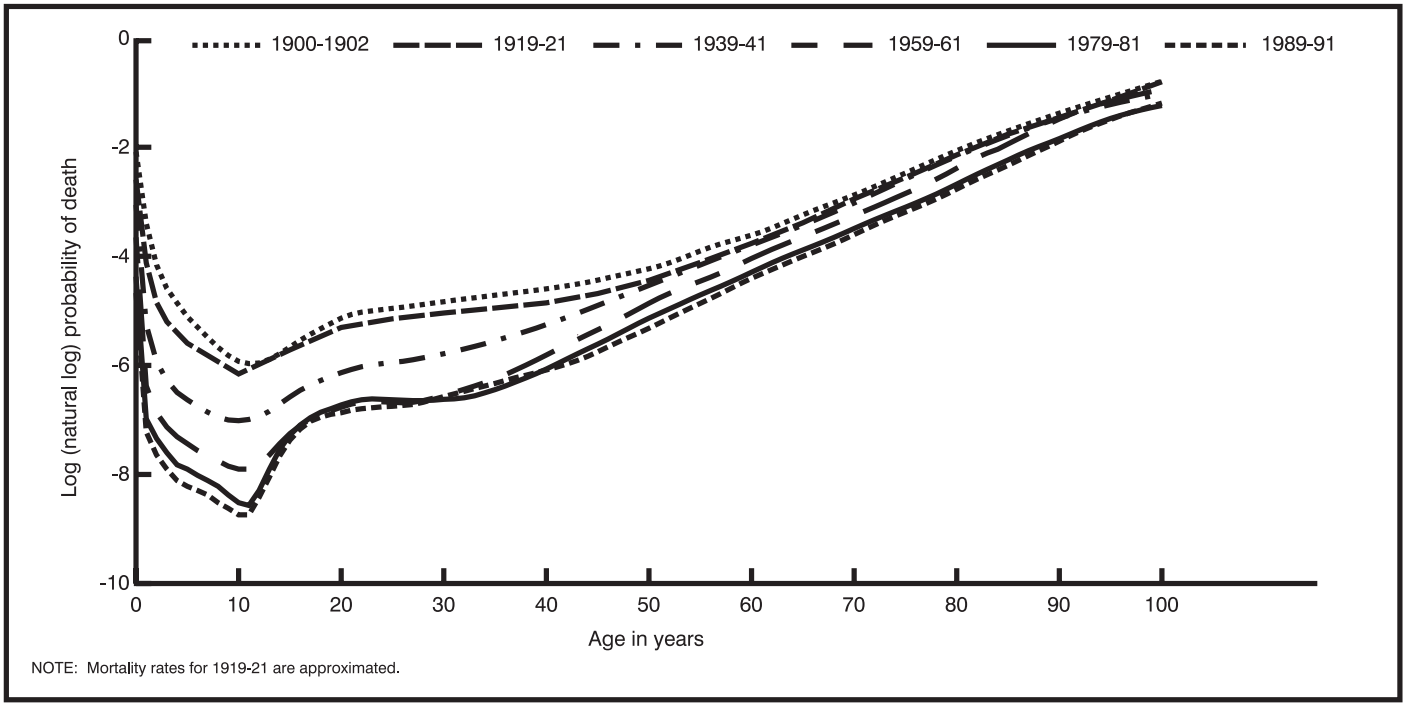


Figure 1. Log of the probability of dying (*q*) by age: Death-registration States, 1900–1902 to 1919–21, and United States, 1939–41 to 1989–91

increases were also noted for the periods 1930 to 1940 and 1940 to 1950 when life expectancy at birth increased by 4.30 and 4.45 years, respectively. The increases during these periods were due to the large reductions in mortality from infectious and parasitic diseases resulting from the widespread use of vaccines and antibiotics (6). Figure 1 shows the age pattern of the natural log of the probability of dying from 1900 to 1990. The natural log transformation is used to better show the large decreases in mortality at younger ages from 1900 to 1960. More recently, life expectancy increased by 3.13 years from 1970 to 1980 and by 1.49 years from 1980 to 1990. These increases were largely the result of general decreases in mortality due to heart disease, stroke, and accidents among the older population (7,8). Thus, the historic pattern in mortality improvements since the beginning of the century is consistent with the ''epidemiologic transition'' in which disease patterns shift over time from a high prevalence of infectious and parasitic diseases and high infant and childhood mortality to a predominance of chronic and degenerative diseases affecting primarily the older population (8).

Trends in U.S. survivorship

The top panel of table B shows 10-year survival rates by age for the United States for each of the decennial periods from 1900 to 1990. The trend is one of survival to progressively older ages over time. The median age at death increased by more than 20 years over this period. At the turn of the century, one-half of the population died by age 58. In contrast, in 1990, one-half of the population survived to age 79. Of particular interest is the trend in survival at the younger ages. In 1900 only 80 percent of the population survived to age 10. By 1990 survival to age 10 had increased to nearly 99 percent, and 80 percent survival occurred at about age 65. The increase in the percent surviving to ages 90 and 100 is also interesting. In 1900, 1.9 percent of the population survived to age 90 and 0.03 percent survived to age 100. In 1990, 17 percent survived to age 90 and 1.4 percent survived to age 100.

The bottom panel of table B shows the change in survival during each of five periods. The pattern is one of improvements in survival at increasingly older ages. Prior to 1960 improvements in survival were largest at ages 70 years and under. After 1960, improvements overwhelmingly favor the population aged 70 years and over.

Plotting the percent surviving by age shows an increasingly ''rectangular'' survival curve over time (figure 2). That is, the survival curve has become increasingly flat in response to progressively lower mortality, particularly at the younger ages, and increasingly vertical at the older ages. This pattern is consistent with the mortality experiences of other countries that have made the transition from high to low mortality (9). The survival curve for 1900 shows a rapid decline in survival in the first few years of life and a relatively steady decline thereafter. In contrast, the survival curve for 1990 is nearly flat until about age 50 after which the decline in survival becomes more rapid.

Sex differences in life expectancy and survivorship

Life expectancy and changes in life expectancy by sex for the 10 decennial periods are shown in table A. Life expectancy for males increased by 23.95 years during the nine decades from 47.88 in 1900 to 71.83 in 1990. This increase is somewhat smaller than the increase of 28.11 years for females

Table B. Percent survivorship by age and change from the previous period: Death-registration States,1900–1902 to 1919–21 and United States, 1939–41 to 1989–91

Age	Percent survivorship					
	1900–1902	1919–21[1]	1939–41	1959–61	1979–81	1989–91
0	100.0	100.0	100.0	100.0	100.0	100.0
10	80.1	88.1	93.7	96.8	98.3	98.8
20	77.2	85.4	92.4	96.1	97.7	98.2
30	72.0	80.6	90.1	94.9	96.5	97.1
40	65.9	75.1	86.7	93.1	94.9	95.4
50	58.5	68.4	80.5	88.8	91.5	92.4
60	47.9	58.1	68.9	79.1	83.7	85.5
70	32.4	41.1	49.7	60.9	68.2	71.4
80	13.5	18.3	22.9	33.6	43.2	47.1
90	1.9	2.8	3.8	7.1	14.2	17.0
100	0.03	0.04	0.1	0.2	1.2	1.4
Median age at death	58	66	70	74	78	79

Age	Change in survival				
	1900–1902 to 1919–21[1]	1919–21[1] to 1939–41	1939–41 to 1959–61	1959–61 to 1979–81	1979–81 to 1989–91
0	0.0	0.0	0.0	0.0	0.0
10	8.0	5.6	3.1	1.5	0.5
20	8.2	7.0	3.7	1.6	0.5
30	8.6	9.5	4.8	1.6	0.6
40	9.2	11.6	6.4	1.8	0.5
50	9.9	12.1	8.3	2.7	0.9
60	10.2	10.8	10.2	4.6	1.8
70	8.7	8.6	11.2	7.3	3.2
80	4.8	4.6	10.7	9.6	3.9
90	0.9	1.0	3.3	7.1	2.8
100	0.0	0.1	0.1	1.0	0.2
Change in median age at death	8	4	4	4	1

[1]Percent survivorship and median age estimated.
0.0 Quantity more than zero but less than 0.05.

from 50.70 to 78.81 during the same period. Life expectancy at birth for females increased by larger amounts than for males in seven of the nine decades. However, during the last two decades, male increases in life expectancy have been slightly larger than female increases.

In all of the decennial periods life expectancy for females was greater than that for males. Table C shows the difference in years of female life expectancy compared with male life expectancy for the 10 decennial periods. From 1900 to 1970, the difference in life expectancy between females and males increased from 2.82 years to 7.60 years. The increasing gender gap in life expectancy is generally attributed to increases in male mortality due to ischemic heart disease and lung cancer, both of which increased largely as the result of men's early and widespread adoption of cigarette smoking (10). More recently, the gender gap in life expectancy has narrowed somewhat from 7.60 years in 1970 to 6.98 years in 1990. The reversal in the trend reflects proportionately greater increases in lung cancer mortality for women than for men and proportionately larger decreases in heart disease mortality among men (10).

Table D shows the survival rates by sex for 1900 and 1990. Female survival is higher at all ages in both time periods. In 1900, the sex differences in survivorship are fairly constant for all ages. Figure 3 shows survival curves for 1900 that are roughly parallel. However, in 1990, the gap in survival between the sexes, which is initially very small at the younger ages, becomes much more pronounced at the older ages. At age 70, 64.1 percent of males remain alive, but survival is 78.5 percent among females. At age 80 survivorship for males and females is 36.7 and 57.0 percent, respectively. By age 90 nearly one-quarter of all females remain alive compared with only 9.9 percent of males. While the overall gap in life expectancy between males and females has increased since the turn of the century, the gap in survival at the younger ages has actually decreased as male survival improved more than female survival during this period. This decrease, however, has been more than offset by increasing sex differentials in survival at the older ages.

Race differences in life expectancy and survivorship

Both the white and black populations in the United States experienced large increases in life expectancy over the nine decades (table A). Life expectancy for the white population increased by 26.53 years from 1900 to 1990. The black population experienced an even greater increase of 35.36 years

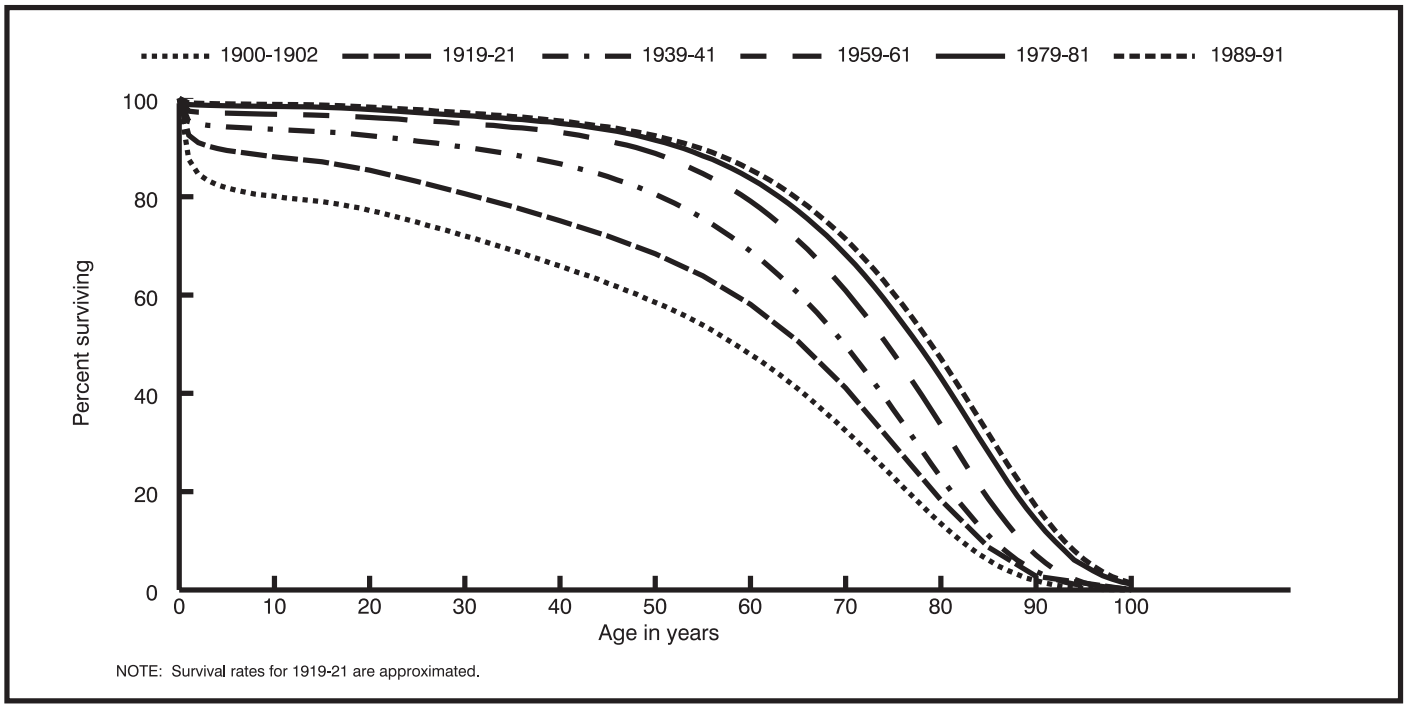


Figure 2. Percent survival by age: Death-registration States, 1900–1902 to 1919–21, and United States, 1939–41 to 1989–91

from 33.80 in 1900 to 69.16 years in 1990. The patterns of change over time for the white population roughly parallel those for the total population, but differ from those of the black population. For the black population during the period 1910 to 1920, the increase in life expectancy of 11.2 years was more than double that for the white population. The black population, particularly the black male population, was disproportionately negatively affected by the influenza epidemic of 1918 (1). Their abnormally low mortality in the 3 subsequent years resulted in the higher than normal increase in life expectancy for the black population. The increase was particularly pronounced among the black male population (13.09 years) to the extent that in 1920, black male life expectancy (47.14 years) actually exceeded black female life expectancy (46.92 years) (tables A and C). It is very unusual, in any population group, for male life expectancy to exceed female life expectancy (1,10). During the decade 1960 to 1970, increases in life expectancy for the black population were relatively small. The black male population, however, experienced an unusual decrease in life expectancy of nearly 1.5 years, the only decrease among the four race-sex groups during the nine decades. This decrease was likely the result of rising heart disease and cancer mortality among the nonwhite male population during this period (11,12).

Life expectancy for the white population has exceeded that of the black population in all decades since 1900. Table C shows the difference between white life expectancy and black life expectancy. Overall, the black/white gap in life expectancy declined from a 15.8-year difference in 1900 to a 6.97-year difference in 1990. Although the pattern has been one of general decline since the turn of the century, the black/white gap did increase during some of the nine decades, such as during 1980 to 1990. The increase was most pronounced for the black male population for whom the gap increased by 1.53 years from 6.72 years to 8.25 years. This recent increase in the race gap was largely a result of increases in mortality among the black male population due to HIV infection and homicide (7).

Table E shows survivorship by age, race, and sex for 1900 and 1990. In 1900 race differentials in survival are clearly delineated. That is, black male and female survival at all ages is substantially lower than white male and female survival (figure 4). The median age at death for the white population is about 60 years compared with a little more than 30 years for the black population. Thus, while one-half of the white population could expect to reach their 60th birthday, 50 percent of the black population died by about age 30. The differences in survival are particularly conspicuous at age 10. For the white population, survival was about 80 percent at age 10. In contrast, nearly 40 percent of the black population died by their 10th birthday. A more detailed look at survival between ages 0 and 10 years for 1900 shows that nearly 25 percent of the black population died in their first year of life compared with about 12 percent for the white population (13).

In 1990 black survival was still lower overall than white survival. However, the clear separation between the sex-specific survival curves for the white and black populations shown in figure 4 is no longer apparent. Figure 5 shows that while black male survival still lags behind the other race-sex groups, black female survival exceeds white male survival at the older ages. Black female survival increased at all ages, but particularly at the older ages. By 1990 black female survival at age 60 improved to 81.9 percent from 27.5 percent in 1900. At age 80 survival for black females improved from 6.7 percent in 1900 to 43.6 percent in 1990. A major reason for improved

Table C. Difference between female and male life expectancy at birth in years by race, and difference between white and black by sex: Death-registration States, 1900–1902 to 1919–21 and United States, 1929–31 to 1989–91

Years	Difference between female and male life expectancy			Difference between white and black life expectancy		
	All races	White	Black	Both sexes	Male	Female
1989–91	6.98	6.73	9.26	6.97	8.25	5.72
1979–81	7.51	7.40	8.78	6.01	6.72	5.34
1969–71	7.60	7.55	8.32	7.51	7.94	7.17
1959–61	6.44	6.64	[1]4.99	[1]6.82	[1]6.07	[1]7.72
1949–51	5.49	5.72	[1]3.79	[1]8.29	[1]7.40	[1]9.33
1939–41	4.29	4.48	3.30	11.07	10.55	11.73
1929–31	[2]3.3	3.55	1.96	[2]12.5	11.57	13.16
1919–21	[2]1.8	2.19	–0.22	[2]10.4	9.20	11.61
1909–11	3.38	3.39	3.62	[2]16.0	16.18	15.95
1900–1902	2.82	2.85	2.50	[2]15.8	15.69	16.04

[1]For all races other than white; values for the black population are not available.
[2]Approximated.

Table D. Percent survivorship and change in survivorship by age and sex: Death-registration States, 1900–1902 and United States, 1989–91

Age	1900–1902			1989–91			Change 1900–1902 to 1989–91		
	Male	Female	Difference female minus male	Male	Female	Difference female minus male	Male	Female	Difference female minus male
0	100.0	100.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0
10	78.8	81.4	2.6	98.6	98.9	0.3	19.8	17.5	–2.3
20	76.0	78.6	2.6	97.9	98.6	0.7	21.9	20.0	–1.9
30	70.7	73.4	2.7	96.2	98.0	1.8	25.5	24.6	–0.9
40	64.4	67.4	3.0	93.8	97.0	3.2	29.4	29.6	0.2
50	56.7	60.4	3.7	89.9	94.9	5.0	33.2	34.5	1.3
60	45.9	50.2	4.3	81.4	89.7	8.3	35.5	39.5	4.0
70	30.2	34.7	4.5	64.1	78.5	14.4	33.9	43.8	9.9
80	12.1	15.1	3.0	36.7	57.0	20.3	24.6	41.9	17.3
90	1.5	2.3	0.8	9.9	23.7	13.8	8.4	21.4	13.0
100	0.02	0.04	0.0	0.5	2.3	1.8	0.5	2.3	1.8
Median age at death	57	60	3.0	75	82	7.0	18.0	22.0	4.0

0.0 Quantity more than zero but less than 0.05.

black survival over the past 9 decades is substantially decreased mortality at the younger ages. By 1990 black survival at age 10 years improved from 60 percent in 1900 to nearly 98 percent, which was only about 1 percentage point lower than survival for the white population at age 10 years.

Differentials in life expectancy by State

Differentials and trends in expectation of life at birth for each of the 50 States and the District of Columbia (DC) are shown for 1980 and 1990 in tables F and G. Life expectancy for States is denoted as higher or lower than that for other States only if differences were statistically significant. While DC is shown in the tables along with the 50 States, caution should be used when making comparisons between DC and States. DC is unique in that it consists entirely of a single city. As a result, State comparisons are made excluding DC, which is discussed in a separate section. Complete life tables for each State and DC are contained in volume II, numbers 1 through 51 of the 1979–81 and 1989–91 decennial life table series (14,15).

Table F shows life expectancy at birth for each State and DC by race and sex. Hawaii (78.21 years) had the highest life expectancy at birth of any State in 1990. Minnesota (77.76), Utah (77.70), North Dakota (77.62), and Iowa (77.29) were also among the top five. Ten years earlier, these States were also among the top five in terms of life expectancy at birth (table G). Louisiana (73.05 years) and Mississippi (73.03 years) had the lowest life expectancy among the States. Alabama (73.64), Georgia (73.61), and South Carolina (73.51) were also among the five States with the lowest life expectancy at birth in 1990. DC had a life expectancy at birth of 67.99 years, lower than that for all of the States.

Table G shows life expectancy at birth for 1980 and 1990 and the change in life expectancy during the decade. The gain in life expectancy at birth from 1980 to 1990 for the United States was 1.49 years. During this decade increases occurred for all States (table G). Increases of more than 2 years occurred for Alaska (2.59 years), Wyoming (2.36 years), and Montana (2.30 years). Increases of less than 1 year were

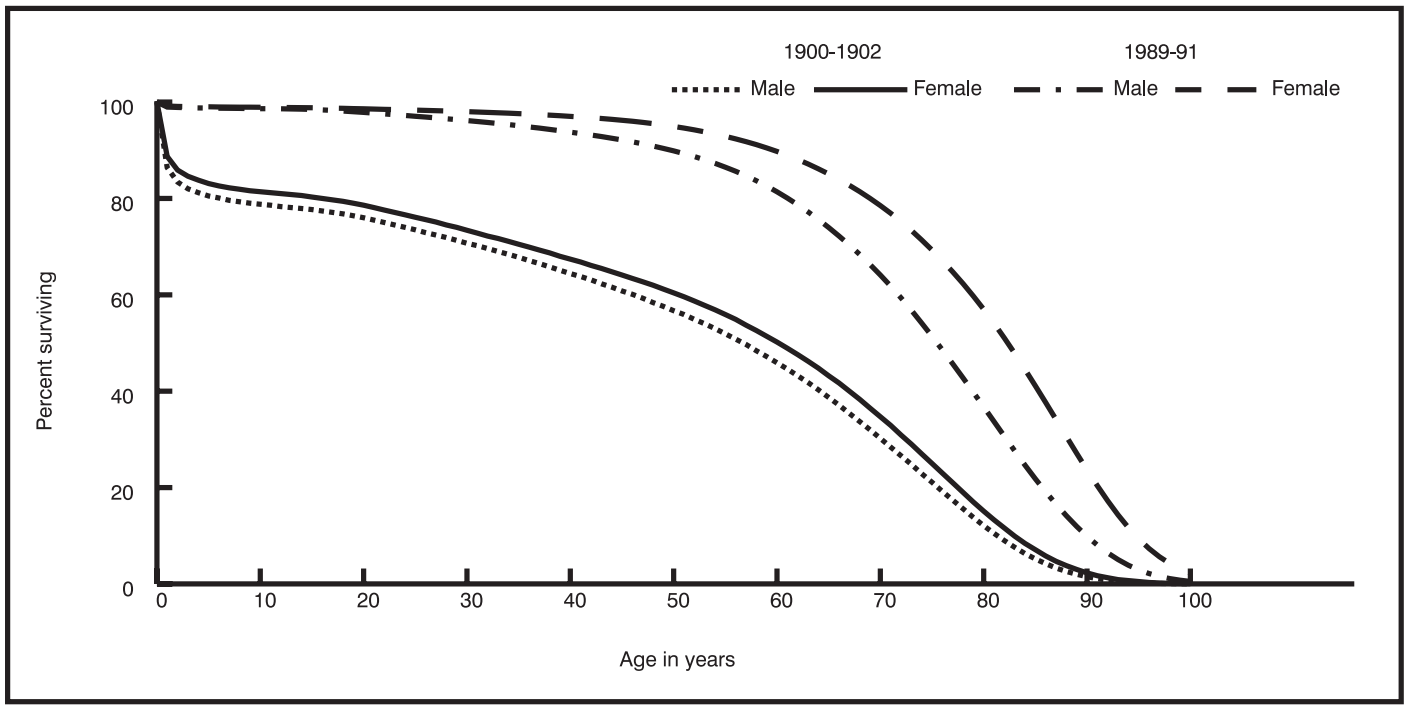


Figure 3. Percent surviving by age and sex: Death-registration States, 1900−1902, and United States, 1989−91

experienced by New York (0.98 years) and Arkansas (0.61 years). Increases in life expectancy were much smaller overall than those that occurred in the previous decade (1970 to 1980). During the previous decade, all States had increased life expectancy that ranged from 2.25 to 3.89 years (6).

Table H shows considerable variation in the gender gap in life expectancy among the States in 1990, ranging from 5.45 years for Utah to 8.20 years for Mississippi. The gender gap narrowed overall in the United States from 7.51 years in 1980 to 6.98 in 1990. Nearly all of the States showed a similar narrowing of the gender gap during this decade. The exception was New York, where the gender gap increased slightly from 7.16 years to 7.46 years.

State variation in life expectancy by race is difficult to assess given that, for many States, life tables were not calculated for the nonwhite and black populations. For nearly all States for which 1990 nonwhite life tables were constructed, white life expectancy was higher than nonwhite life expectancy, the sole exception being Hawaii. Hawaii had a nonwhite life expectancy of 78.40 compared with 77.92 for the white population. The nonwhite female population of Hawaii had a life expectancy at birth of 81.48, the highest for females of any State. The nonwhite population in Hawaii is predominantly Asian and Pacific Islander whereas in the other States, the nonwhite population tends to be overwhelmingly dominated by the black population. Of those States in 1990 for which black life tables were constructed, Massachusetts and Colorado had the highest black life expectancy at 72.45 years and 72.41 years, respectively. Illinois had the lowest black life expectancy at 67.46 years.

Table E. Percent survivorship by age, race, and sex: Death-registration States, 1900–1902 and United States, 1989–91

	1900–1902				*1989–91*			
	White		*Black*		*White*		*Black*	
Age	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
10	79.1	81.7	61.7	65.1	98.8	99.1	97.5	97.9
20	76.4	79.0	56.7	59.1	98.1	98.8	96.3	97.6
30	71.2	73.9	49.9	52.8	96.7	98.3	93.1	96.5
40	65.0	67.9	43.0	46.1	94.6	97.5	87.9	94.4
50	57.3	61.0	34.8	37.7	91.1	95.6	80.0	90.3
60	46.5	50.8	24.2	27.5	83.2	90.8	66.3	81.9
70	30.6	35.2	13.8	16.1	66.2	80.0	45.7	66.3
80	12.3	15.3	4.8	6.7	38.2	58.5	22.5	43.6
90	1.5	2.3	0.6	1.5	10.2	24.3	6.0	17.5
100	0.02	0.04	0.02	0.1	0.1	2.2	0.1	2.4
Median age at death	57	61	30	34	76	83	68	77

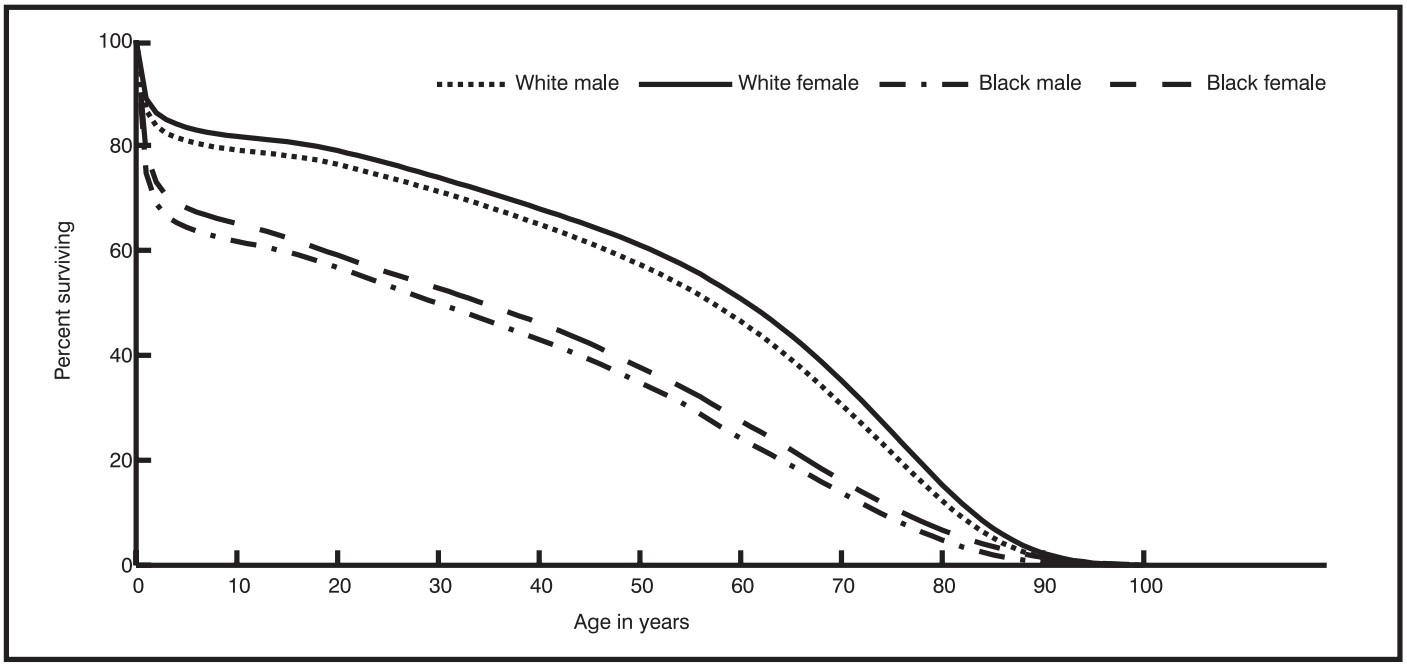


Figure 4. Percent surviving by age, race, and sex: Death-registration States, 1900–1902

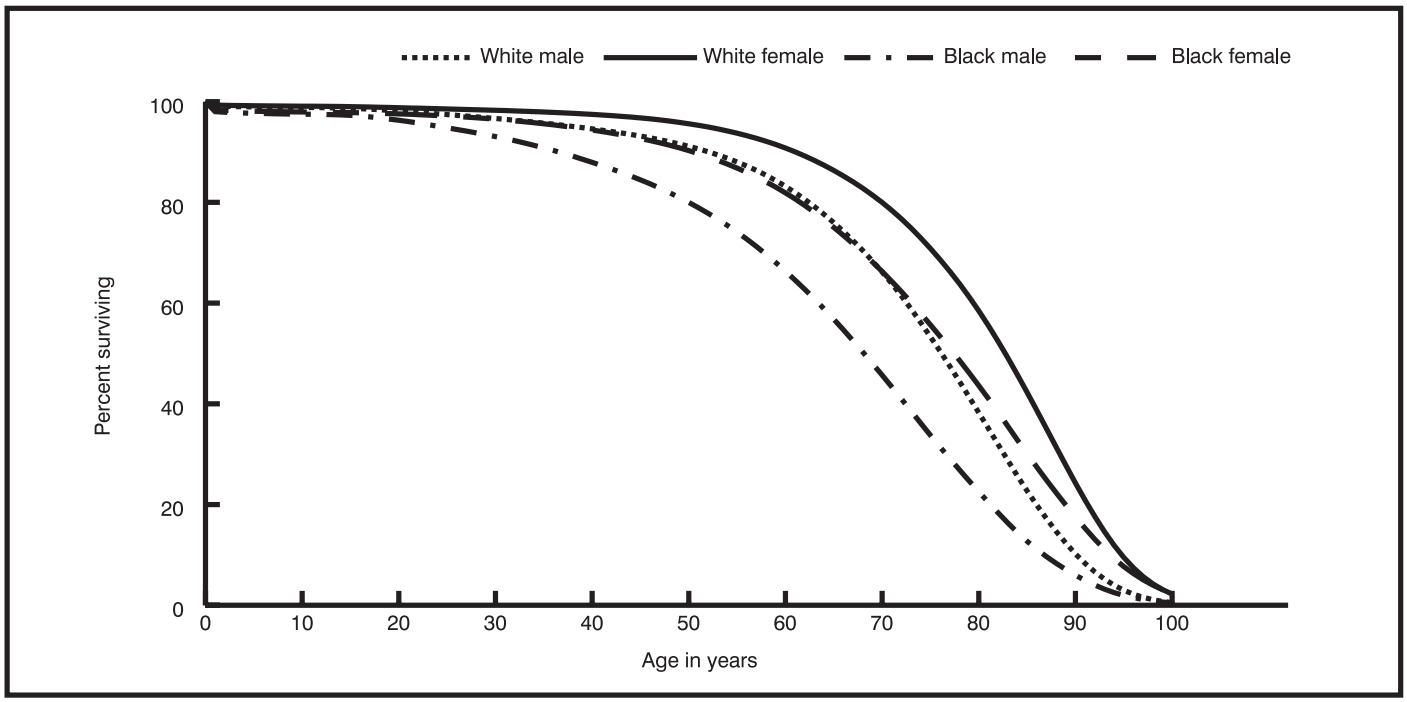


Figure 5. Percent surviving by age, race, and sex: United States, 1989–91

Life expectancy in the District of Columbia (DC)

Life expectancy in DC in 1990 was 67.99 years, a decrease of 1.21 years from 1980, and at least 5 years lower than any of the State life expectancies. Male life expectancy (61.97 years) was nearly 10 years lower than the U.S. average. Black male life expectancy in DC was particularly low at only 57.53 years. This figure is comparable to U.S. life expectancy in 1920 and to many developing countries (see table K). Female life expectancy in DC was 74.23 years, much closer to the U.S. average.

The reason for the exceptionally low male life expectancy in DC was that death rates for males aged 15–44 years were relatively large on average. Table J shows age-specific death rates for males and females in DC and in the United States in 1990. Male death rates were higher in DC for nearly all age

Table F. Life expectancy at birth in years by race and sex: United States and each State, 1989–91

Area	All races			White			All other			Black		
	Both sexes	male	Female	Both sexes	male	Female	Both sexes	Total Male	Female	Both sexes	Male	Female
United States	75.37	71.83	78.81	76.13	72.72	79.45	71.25	66.97	75.39	69.16	64.47	73.73
Alabama	73.64	69.59	77.61	75.01	71.12	78.85	69.59	64.79	74.05	69.23	64.37	73.76
Alaska	74.83	71.60	78.60	75.83	72.82	79.40	71.67	67.65	76.17	*	*	*
Arizona	76.10	72.66	79.58	76.42	73.04	79.84	72.76	68.89	76.81	70.84	67.20	74.90
Arkansas	74.33	70.54	78.13	75.20	71.54	78.89	69.63	67.87	74.13	68.93	64.03	73.58
California	75.86	72.53	79.19	75.92	72.61	79.26	75.79	72.34	79.18	69.65	65.43	74.07
Colorado	76.96	73.79	80.01	77.06	73.88	80.13	75.71	72.63	78.61	72.41	68.96	75.89
Connecticut	76.91	73.62	79.97	77.44	74.25	80.37	72.31	67.82	76.61	70.84	66.04	75.44
Delaware	74.76	71.63	77.74	75.76	72.75	78.62	70.06	66.39	73.63	69.26	65.51	72.91
District of Columbia	67.99	61.97	74.23	76.09	71.36	81.06	64.97	58.14	72.03	64.44	57.53	71.61
Florida	75.84	72.10	79.60	76.82	73.19	80.46	69.82	65.40	74.19	68.77	64.26	73.28
Georgia	73.61	69.65	77.46	75.24	71.46	78.94	69.21	64.49	73.65	68.79	63.98	73.34
Hawaii	78.21	75.37	81.26	77.92	75.12	81.09	78.40	75.49	81.48	*	*	*
Idaho	76.88	73.88	79.93	76.89	73.90	79.93	*	*	*	*	*	*
Illinois	74.90	71.34	78.31	76.16	72.83	79.33	69.25	64.58	73.79	67.46	62.41	72.39
Indiana	75.39	71.99	78.62	75.82	72.44	79.03	70.76	66.99	74.35	69.80	65.87	73.56
Iowa	77.29	73.89	80.54	77.38	73.98	80.62	*	*	*	*	*	*
Kansas	76.76	73.40	79.99	77.06	73.72	80.25	72.77	69.25	76.26	71.22	67.48	75.04
Kentucky	74.37	70.72	77.97	74.65	71.01	78.24	70.79	66.78	74.63	70.16	66.06	74.13
Louisiana	73.05	69.10	76.93	74.87	71.15	78.54	68.99	64.33	73.43	68.62	63.84	73.16
Maine	76.35	72.98	79.61	76.35	72.98	79.61	*	*	*	*	*	*
Maryland	74.79	71.31	78.13	76.30	73.20	79.23	70.76	66.27	75.15	69.69	64.99	74.31
Massachusetts	76.72	73.32	79.80	76.90	73.54	79.95	75.08	71.29	78.60	72.45	68.17	76.50
Michigan	75.04	71.71	78.24	76.18	73.06	79.14	69.22	64.68	73.65	68.49	63.68	73.18
Minnesota	77.76	74.53	80.85	77.97	74.78	81.02	73.05	69.46	76.80	*	*	*
Mississippi	73.03	68.90	77.10	74.78	70.74	78.82	69.54	64.84	73.91	69.41	64.66	73.82
Missouri	75.25	71.54	78.82	76.02	72.43	79.48	69.65	65.00	74.07	68.81	63.87	73.52
Montana	76.23	73.05	79.49	76.72	73.59	79.92	*	*	*	*	*	*
Nebraska	76.92	73.57	80.17	77.21	73.87	80.44	71.14	67.64	74.52	*	*	*
Nevada	74.18	70.96	77.76	74.44	71.26	77.99	72.74	69.15	76.42	*	*	*
New Hampshire	76.72	73.52	79.77	76.68	73.48	79.74	*	*	*	*	*	*
New Jersey	75.42	72.16	78.49	76.46	73.37	79.34	70.73	66.59	74.66	68.47	63.87	72.88
New Mexico	75.74	72.20	79.33	76.08	72.66	79.53	73.41	68.97	77.93	*	*	*
New York	74.68	70.86	78.32	75.61	72.01	79.03	71.53	66.70	75.97	69.33	63.86	74.35
North Carolina	74.48	70.58	78.27	75.89	72.21	79.44	69.83	64.96	74.55	69.38	64.38	74.24
North Dakota	77.62	74.35	80.99	77.99	74.74	81.32	*	*	*	*	*	*
Ohio	75.32	71.99	78.45	75.93	72.70	78.95	70.86	66.70	74.82	70.15	65.80	74.29
Oklahoma	75.10	71.63	78.49	75.21	71.76	78.59	74.81	71.17	78.21	70.85	67.10	74.48
Oregon	76.44	73.21	79.67	76.51	73.28	79.73	75.24	72.02	78.45	*	*	*
Pennsylvania	75.38	71.91	78.66	76.15	72.81	79.28	69.34	64.69	73.78	68.27	63.33	73.02
Rhode Island	76.54	73.00	79.77	76.80	73.31	79.97	*	*	*	*	*	*
South Carolina	73.51	69.59	77.34	75.33	71.62	78.97	69.09	64.37	73.57	68.82	64.07	73.35
South Dakota	76.91	73.17	80.77	77.91	74.30	81.59	*	*	*	*	*	*
Tennessee	74.32	70.38	78.18	75.27	71.38	79.10	69.43	64.99	73.59	68.97	64.41	73.24
Texas	75.14	71.41	78.87	75.75	72.08	79.42	71.25	67.08	75.38	69.79	65.36	74.23
Utah	77.70	74.93	80.38	77.77	75.00	80.44	*	*	*	*	*	*
Vermont	76.54	73.29	79.68	76.50	73.25	79.65	*	*	*	*	*	*
Virginia	75.22	71.77	78.56	76.34	73.04	79.48	71.17	67.03	75.27	70.05	65.75	74.37
Washington	76.82	73.84	79.74	76.92	73.97	79.81	76.09	72.72	79.59	71.34	67.91	75.58
West Virginia	74.26	70.53	77.93	74.37	70.66	78.02	71.20	66.77	75.46	69.75	65.00	74.36
Wisconsin	76.87	73.61	80.03	77.18	73.99	80.27	72.37	68.27	76.25	70.96	66.42	75.27
Wyoming	76.21	73.16	79.29	76.34	73.27	79.46	*	*	*	*	*	*

* Figure does not meet standards of reliability or precision (based on fewer than 20 events).

Table G. Life expectancy at birth in years for the total population by State in 1979–81 and 1989–91, and change in years from 1979–81 to 1989–91: United States

Area	Life expectancy		
	1989–91	1979–81	Change
Alabama	73.64	72.53	1.11
Alaska	74.83	72.24	2.59
Arizona	76.10	74.30	1.80
Arkansas	74.33	73.72	0.61
California	75.86	74.57	1.29
Colorado	76.96	75.30	1.66
Connecticut	76.91	75.12	1.79
Delaware	74.76	73.21	1.55
District of Columbia	67.99	69.20	–1.21
Florida	75.84	74.00	1.84
Georgia	73.61	72.22	1.39
Hawaii	78.21	77.02	1.19
Idaho	76.88	75.19	1.69
Illinois	74.90	73.37	1.53
Indiana	75.39	73.84	1.55
Iowa	77.29	75.81	1.48
Kansas	76.76	75.31	1.45
Kentucky	74.37	73.06	1.31
Louisiana	73.05	71.74	1.31
Maine	76.35	74.59	1.76
Maryland	74.79	73.32	1.47
Massachusetts	76.72	75.01	1.71
Michigan	75.04	73.67	1.37
Minnesota	77.76	76.15	1.61
Mississippi	73.03	71.98	1.05
Missouri	75.25	73.84	1.41
Montana	76.23	73.93	2.30
Nebraska	76.92	75.49	1.43
Nevada	74.18	72.64	1.54
New Hampshire	76.72	74.98	1.74
New Jersey	75.42	74.00	1.42
New Mexico	75.74	74.01	1.73
New York	74.68	73.70	0.98
North Carolina	74.48	72.96	1.52
North Dakota	77.62	75.71	1.91
Ohio	75.32	73.49	1.83
Oklahoma	75.10	73.67	1.43
Oregon	76.44	74.99	1.45
Pennsylvania	75.38	73.58	1.80
Rhode Island	76.54	74.76	1.78
South Carolina	73.51	71.85	1.66
South Dakota	76.91	74.97	1.94
Tennessee	74.32	73.30	1.02
Texas	75.14	73.64	1.50
Utah	77.70	75.76	1.94
Vermont	76.54	74.79	1.75
Virginia	75.22	73.43	1.79
Washington	76.82	75.13	1.69
West Virginia	74.26	72.84	1.42
Wisconsin	76.87	75.35	1.52
Wyoming	76.21	73.85	2.36

SOURCE: (for 1979–81 values) National Center for Health Statistics. State life tables: 1979–81, vol 2, nos 1–51. Washington: U.S. Government Printing Office. 1990.

Table H. Life expectancy by sex and the gender gap in life expectancy: United States and each State, 1989–91

Area	Male	Female	Difference female minus male
United States	71.83	78.81	6.98
Alabama	69.59	77.61	8.02
Alaska	71.60	78.60	7.00
Arizona	72.66	79.58	6.92
Arkansas	70.54	78.13	7.59
California	72.53	79.19	6.66
Colorado	73.79	80.01	6.22
Connecticut	73.62	79.97	6.35
Delaware	71.63	77.74	6.11
District of Columbia	61.97	74.23	12.26
Florida	72.10	79.60	7.50
Georgia	69.65	77.46	7.81
Hawaii	75.37	81.26	5.89
Idaho	73.88	79.93	6.05
Illinois	71.34	78.31	6.97
Indiana	71.99	78.62	6.63
Iowa	73.89	80.54	6.65
Kansas	73.40	79.99	6.59
Kentucky	70.72	77.97	7.25
Louisiana	69.10	76.93	7.83
Maine	72.98	79.61	6.63
Maryland	71.31	78.13	6.82
Massachusetts	73.32	79.80	6.48
Michigan	71.71	78.24	6.53
Minnesota	74.53	80.85	6.32
Mississippi	68.90	77.10	8.20
Missouri	71.54	78.82	7.28
Montana	73.05	79.49	6.44
Nebraska	73.57	80.17	6.60
Nevada	70.96	77.76	6.80
New Hampshire	73.52	79.77	6.25
New Jersey	72.16	78.49	6.33
New Mexico	72.20	79.33	7.13
New York	70.86	78.32	7.46
North Carolina	70.58	78.27	7.69
North Dakota	74.35	80.99	6.64
Ohio	71.99	78.45	6.46
Oklahoma	71.63	78.49	6.86
Oregon	73.21	79.67	6.46
Pennsylvania	71.91	78.66	6.75
Rhode Island	73.00	79.77	6.77
South Carolina	69.59	77.34	7.75
South Dakota	73.17	80.77	7.60
Tennessee	70.38	78.18	7.80
Texas	71.41	78.87	7.46
Utah	74.93	80.38	5.45
Vermont	73.29	79.68	6.39
Virginia	71.77	78.56	6.79
Washington	73.84	79.74	5.90
West Virginia	70.53	77.93	7.40
Wisconsin	73.61	80.03	6.42
Wyoming	73.16	79.29	6.13

Table J. Age-specific death rates by sex, and the ratio of male to female mortality: United States and the District of Columbia, 1989–91

[Rates per 100,000 population in specified group. Rates for those less than 1 year are infant mortality rates per 100,000 live births in specified group.]

Age	District of Columbia			United States		
	Male	Female	Ratio male to female	Male	Female	Ratio male to female
Less than 1 year	2,379.8	1,914.0	1.2	1,035.2	824.5	1.3
1–4 years	90.4	90.1	1.0	53.0	42.7	1.2
5–14 years	42.4	21.8	1.9	29.2	19.4	1.5
15–24 years	433.3	65.5	6.6	145.9	50.0	2.9
25–34 years	579.0	169.7	3.4	204.1	74.7	2.7
35–44 years	1,018.2	314.2	3.2	309.9	138.6	2.2
45–54 years	1,475.0	675.3	2.2	612.5	342.0	1.8
55–64 years	2,463.5	1,301.6	1.9	1,558.0	881.8	1.8
65–74 years	4,540.3	2,468.2	1.8	3,495.7	1,995.9	1.8
75–84 years	8,324.5	5,008.6	1.7	7,842.3	4,882.6	1.6
85 years and over	16,681.1	13,402.6	1.2	17,955.9	14,241.7	1.3

SOURCE: National Center for Health Statistics. Multiple causes of death for ICD–9, 1989–91 data. Machine-readable data files.

Table K. Life expectancy at birth in years by sex for selected countries

Country and period	Life expectancy at birth	
	Male	Female
Argentina 1990–91	68.17	73.09
Australia 1994	75.04	80.94
Austria 1994	73.34	79.73
Brazil 1995	63.81	70.38
Cameroon 1990–95[1]	54.5	57.5
Canada 1985–87	73.02	79.79
Chile 1995	71.83	77.77
China 1990–1995[1]	66.7	70.45
Czech Republic 1994	69.53	76.55
Denmark 1992–93	72.49	77.76
France 1992	72.94	81.15
Germany 1992–94	72.77	79.3
Ghana 1990–95[1]	54.22	57.84
Hungary 1994	64.84	74.23
Iceland 1992–93	76.85	80.75
India 1986–90	57.7	58.1
Israel 1993	75.33	79.1
Italy 1992	73.79	80.36
Japan 1994	76.57	82.98
Kenya 1990–95[1]	54.18	57.29
Netherlands 1992–93	74.21	80.2
Nigeria 1990–95[1]	48.81	52.01
Norway 1993	74.24	80.25
Poland 1993	67.37	76
Portugal 1993–94	71.18	78.23
Romania 1992–94	65.88	73.32
Russian Federation 1994	57.59	71.18
Singapore 1994	74.2	78.5
South Africa 1990–95[1]	60.01	66
Sweden 1994	76.08	81.38
Switzerland 1993–94	75.1	81.6
United Kingdom 1994	74.17	79.44
United States 1989-91[2]	71.83	78.81
United States 1995[3]	72.5	78.9

[1]Estimate prepared by the United Nations.

[2]U.S. Decennial Life Tables for 1989–91.

[3]National Center for Health Statistics. Vital Statistics of the United States, 1995.

SOURCE: (except where otherwise noted) Department of Economic and Social Information and Policy Analysis, Statistics Division. Demographic Yearbook, 1995. New York: United Nations. 1997.

groups compared with the U.S. average, but for males aged 15–24, 25–34, and 35–44 years, death rates were about 3 times higher in DC. In addition, infant mortality rates in the District of Columbia were more than double that for the United States. Death rates in younger age groups have a greater impact on life expectancy than rates in older age groups, since life expectancy is a function of the number of person-years lived in subsequent age groups (T_x). In DC, high male death rates due to homicide and HIV infection are largely responsible for the high male death rates shown in table J and thus, for the low male life expectancy observed during 1990.

A consequence of the lower than average male life expectancy observed for DC was a much larger than average gender gap in life expectancy (see table H). The gap increased from 9.15 years to 12.26 years between 1980 and 1990 and was nearly twice that observed for the United States. An examination of gender-specific death rates shows particularly large differentials at ages 15 to 24 where the death rate for males was more than 6 times greater than that for females. Age categories 25–34 and 35–44 years also had relatively large ratios. Increasing male death rates due to homicide and HIV infection, particularly among men aged 15–44 years, were largely responsible for the increasing gender gap in life expectancy in DC. By 1990 males aged 15–44 years had a homicide rate 8 times that for females in the same age group. The death rate due to HIV infection among males aged 15–44 years was nearly 11 times that for similar aged females (16).

International comparisons

Table K shows male and female life expectancy at birth for selected countries. The highest male life expectancy among the selected countries was 76.85 years for Iceland in 1992–93. The highest female life expectancy (82.98 years) was recorded for Japan in 1994. The United States is not among the countries having the highest expectation of life. Of the 33 countries listed, U.S. male life expectancy for 1989–91 (71.83 years) ranks 17th, while U.S. female life expectancy for the same period (78.81 years) ranks 15th. By 1995 U.S. male life

expectancy increased to 72.5 years and rose one place in the international ranking (17). U.S. female life expectancy increased slightly to 78.9 years, but remained ranked 15th overall. Among the selected countries, Nigeria had the lowest life expectancy for both males (48.81 years) and females (52.01 years).

References

1. Greville TNE. Some trends and comparisons of United States life-table data: 1900–1971. U.S. decennial life tables for 1969–71; vol 1 no 4. Rockville, Maryland: Public Health Service. 1975.
2. Hetzel AM. U.S. vital statistics system, major activities and development: 1950–95. History and organization of the vital statistics system. Hyattsville, Maryland: National Center for Health Statistics. 1997.
3. Shryock HS, Siegel JS, et al. The methods and materials of demography, vol 2. U.S. Bureau of the Census. Washington: U.S. Government Printing Office. 1971.
4. Armstrong, RJ. Methodology of the national and State life tables. U.S. decennial life tables for 1989–91, vol 1 no 2. Hyattsville, Maryland: National Center for Health Statistics. 1998.
5. National Center for Health Statistics. Vital statistics of the United States, 1992, volume II, mortality, part A, section 6. Washington: Public Health Service. 1996.
6. Olshansky SJ, Carnes B, Rogers RG, Smith L. Infectious diseases—new and ancient threats to world health. Population Bulletin 52(2). Washington: Population Reference Bureau. 1997.
7. Kochanek KD, Maurer JD, Rosenberg HM. Causes of death contributing to changes in life expectancy: United States, 1984–89. Vital Health Stat 20(23). Hyattsville, Maryland: National Center for Health Statistics. 1994.
8. Rockett IRH. Population and health: An introduction to epidemiology. Population Bulletin 49(3). Washington: Population Reference Bureau. 1994.
9. Coale AJ. Age patterns and time sequence of mortality in national populations with the highest expectation of life at birth. Population and Development Review 22:127–35. 1996.
10. Waldron I. Recent trends in sex mortality ratios for adults in developed countries. Social Science and Medicine 36:451–62. 1993.
11. National Center for Health Statistics. Vital statistics of the United States, 1960, volume II, mortality, part A. Washington: Public Health Service. 1963.
12. National Center for Health Statistics. Vital statistics of the United States, 1970, volume II, mortality, part A. Washington: Public Health Service. 1974.
13. U.S. Bureau of the Census. United States life tables, 1890, 1901, 1910, and 1901–1910. Washington: Government Printing Office. 1921.
14. National Center for Health Statistics. U.S. decennial life tables for 1979–81, volume II, numbers 1–51, State life tables. Hyattsville, Maryland: National Center for Health Statistics. 1990.
15. National Center for Health Statistics. U.S. decennial life tables for 1989–91, volume II, numbers 1–51, State life tables. Hyattsville, Maryland: National Center for Health Statistics. 1998.
16. National Center for Health Statistics. Multiple cause of death for ICD-9 1989, 1990, and 1991 (machine-readable data files).
17. National Center for Health Statistics. Vital statistics of the United States, 1995, preprint of vol II, mortality, part A sec 6 life tables. Hyattsville, Maryland. 1998.

For a list of reports published by the National Center for Health Statistics contact:

Data Dissemination Branch
National Center for Health Statistics
Centers for Disease Control and Prevention
6525 Belcrest Road, Room 1064
Hyattsville, MD 20782-2003
(301) 436-8500
Internet: www.cdc.gov/nchswww/

U.S. Decennial Life Tables, 1989–91

These 55 reports are published once each 10-year period by the National Center for Health Statistics.

VOLUME I

Number 1 *United States Life Tables.* This first report contains life tables by single years of age from birth to age 110 for the United States. Tables are included for the total population, the white population, the population other than white, and the black population. Within these large populations are tables showing the race-sex categories of male, female, and both sexes combined. Standard error tables for the probability of dying and of the average remaining lifetime are included.

Number 2 *Methodology of the National and State Life Tables.* This report describes in detail the methods of construction of the national and State life tables.

Number 3 *Some Trends and Comparisons of United States Life Table Data: 1900–1991.* This report deals with trends and interpretations related to life expectancy and survivorship.

Number 4 *United States Life Tables Eliminating Certain Causes of Death.* This report provides life tables analyzed by major groups of causes of death.

VOLUME II

Numbers 1 through 51 *Alabama through Wyoming, State Life Tables.* Each of these 51 reports contains life tables for a particular State and a table that ranks each State in the order of life expectancy. All States have tables for the total population and the white population by sex. In addition, 40 States have tables for the other than white population and 33 have tables for the black population. Standard error tables for the probability of dying and of the average remaining lifetime are included.

DEPARTMENT OF
HEALTH & HUMAN SERVICES

Centers for Disease Control and Prevention
National Center for Health Statistics
6525 Belcrest Road
Hyattsville, Maryland 20782-2003

DHHS Publication No. (PHS) 99-1150-3
9-0201 (3/99)