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The Effect of Revised Populations on Mortality Statistics for the United States, 2000

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Abstract

Objectives—This report presents revised mortality statistics for the year 2000 based on April 1, 2000, population figures from the 2000 census. Death rates are presented by race, Hispanic origin, sex, age, and cause of death. Life expectancies are presented by race (white and black), sex, and age. The revised statistics are compared with previously published statistics that used July 1, 2000, postcensal population estimates based on the 1990 census.

Methods—Data in this report are based on information from all death certificates filed in the 50 States and the District of Columbia. The statistics presented in this report are computed on the basis of two sets of population figures provided by the U.S. Census Bureau. The first set includes July 1, 2000, postcensal population estimates based on the 1990 decennial census. The second set includes April 1, 2000, populations from the 2000 decennial census bridged to single race categories.

Results—Crude death rates were lower for all groups using the April 1, 2000, populations. Age-specific death rates were generally lower for most age groups, except for infants and the very old for which death rates were higher. Age-specific death rates for males were lower for most age groups, except infants and those 75 years and over. For females, with the exception of infants, age-specific death rates were lower. Race-specific patterns by age for the white and black populations were similar to all races combined. For the American Indian population, age-specific death rates were substantially lower for ages under 75 years. For ages 75 years and over, American Indian death rates were dramatically higher. Age-specific death rates for the Asian or Pacific Islander (API) population were higher for ages under 15 years; lower for ages 15–84 years, especially for the 15–34 year age group; and higher for those 85 years and over. For the Hispanic population, age-specific death rates were substantially lower for those age 15–34 years and higher for those age 55 years and over, especially for those age 85 years and over. For the total white and total black populations, the age-adjusted death rate was somewhat higher for males and lower for females. For API the pattern was reversed. For the American Indian and Hispanic populations, age-adjusted death rates were higher for both males and females.

For the 15 leading causes of death, age-adjusted death rates based on the April 1, 2000, population figures were lower for heart disease, cancer, chronic liver disease, septicemia, diabetes, chronic lower respiratory diseases, unintentional injuries, homicide, suicide, and hypertension. Age-adjusted death rates were higher for pneumonitis, Alzheimer's disease, and stroke. Rates were unchanged for influenza and pneumonia and nephritis, nephrotic syndrome and nephrosis.

Life expectancy at birth was higher for the entire population and both the white and black populations using the April 1, 2000, population figures. It was 0.1 year higher for the whole population as well as for the total white and total black populations. For the total male population, life expectancy at birth was 0.1 year higher while it was 0.2 years higher for the female population. The increase in life expectancy at birth was 0.1 year for both sexes within the white and black populations. This observed gain in life expectancy at birth based on the revised population figures is reversed for life expectancy at the oldest age groups for the whole population and for males. A similar pattern is observed for both white and black males; however, the magnitude of the decline in life expectancy at older ages is much greater among black males. Among females of both race groups and the total population, there is either no change or an increase in life expectancy in the oldest age groups.

Conclusions—Revised death rates and life expectancies are, in many cases, significantly different from previously published mortality statistics calculated using 1990-based postcensal estimates for 2000. Thus, previously published mortality statistics for 2000 using the 1990-based populations will not be comparable to the corresponding statistics that will be published for 2001. The data in this report will provide comparable 2000 data. Efforts are also underway to revise previously published mortality tables for 2000 as well as previously published data for 1991–99.

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Introduction

The calculation of many of the most commonly used mortality statistics (e.g., death rates, age-adjusted death rates, and life expectancy) requires estimates of the population at risk of dying. These population figures are produced for the Centers for Disease Control and Prevention's National Center for Health Statistics (NCHS) under a collaborative agreement with the U.S. Census Bureau. Recently published U.S. mortality statistics for the year 2000 used postcensal population estimates based on the 1990 decennial census because detailed populations by race from the 2000 census were unavailable at the time of this publication (1,2).

As a result of standards issued in 1997 by the Office of Management and Budget (OMB), the 2000 census included an option for individuals to report more than one race (3). In contrast, death certificates currently collect information on a single race, creating a serious lack of comparability between race categories used in the numerators and denominators of death rates. In order to produce revised mortality statistics by race using population figures for 2000, it was necessary to "bridge" the enumerated 2000 population data for multiple race categories back to single race categories comparable with those reported on the death certificate.

This report presents revised crude death rates, age-adjusted death rates, and life expectancies for the year 2000 based on populations from the 2000 census. Death rates are presented by age, sex, race, and Hispanic origin. Rates are also shown by cause of death for the total population. Life expectancies are presented by race (white and black), sex, and age. The revised statistics are compared with previously published rates and life expectancies and the effect of the revised estimates on previously published mortality trends are described.

Methods

Data

Data in this report are based on information from all death certificates filed in the 50 States and the District of Columbia. It is believed that more than 99 percent of all deaths occurring in the United States are registered (4). Demographic information on death certificates is provided by funeral directors. Attending physicians, medical examiners, or coroners provide cause-of-death information. Original records are filed in State registration offices. Statistical information is compiled into a national database through the Vital Statistics Cooperative Program of NCHS. Cause-of-death statistics presented in this report are classified in accordance with the *International Classification of Diseases, Tenth Revision* (ICD-10) (5).

Populations

The death rates presented in this report are computed on the basis of populations provided by the U.S. Census Bureau. Two sets of populations are used to produce two sets of mortality statistics for 2000. The first set of statistics matches those previously published (1,2) and are calculated using July 1, 2000, postcensal population estimates based on the 1990 decennial census (6). The second revised set of statistics is calculated using April 1, 2000, populations from the 2000 decennial census bridged to single race categories (7).

The new OMB standards for the classification of race and ethnicity were implemented with the 2000 census. Consequently, the census, as specified by the new standards, included an option for individuals to report more than one race, as appropriate, for themselves and household members (3). In addition, the standards specified five minimum race categories to be used for tabulation (American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, and White). This is a modification of the previous OMB standards used in the 1990 census in which only four race categories were specified (Asian or Pacific Islander persons were treated as a single group) and respondents reported only one of the four (8). In order to produce 2000 populations with race categories comparable to those used on the death certificate, the enumerated population data with multiple race categories was "bridged" back to single race categories. In addition the 2000 census counts were modified to be consistent with the old OMB race categories, i.e., data for Asian persons and Native Hawaiians or other Pacific Islanders were combined into a single category, Asian or Pacific Islanders. The procedures used to produce the "bridged" populations are described in separate publications (9,10). It is anticipated that "bridged" population data will be used over the next few years for computing population-based rates. Beginning with deaths occurring in 2003, a few States will collect multiple race data on the death certificate. Once all States begin collecting data on race according to the new OMB standards, the use of "bridged" populations can begin to be discontinued.

It is important to emphasize that the population data used to calculate the race-specific mortality statistics presented in this report are based on special estimation procedures and are not true counts. The estimation procedures used to develop these populations are subject to error. Smaller populations, e.g., American Indians, are likely to be affected much more than larger populations (9). While the nature and magnitude of these errors is unknown, the potential for error should be kept in mind when evaluating trends and differentials. Over the next several years, additional information will be incorporated in the estimation procedures, resulting in more robust race-specific population estimates.

Results

Death rates

Table 1 compares revised death rates by age, sex, race, and Hispanic origin calculated using April 1, 2000, population figures with previously published rates calculated using 1990-based postcensal population estimates. The crude death rate for the United States in 2000 using the revised population figures was 854.0 deaths per 100,000 population, 2.2 percent lower than that previously published (873.1) for 2000. The 1990-based postcensal estimate of the U.S. population underestimated the April 1, 2000, census enumeration by more than 6 million persons (see tables II and III). The revised age-adjusted death rate for 2000 (869.0 deaths per 100,000 U.S. standard population) was also lower than that previously published (872.0), although by only 0.3 percent.

Revised age-specific death rates for 2000 were also generally lower than those previously published for 2000. The 1990-based postcensal estimates were underestimates of the enumeration for all age categories except infants (under 1 year) and the very elderly (85 years

and over). The infant death rate was 1.1 percent higher and the death rate for those 85 years and over was 1.3 percent higher using the enumerated population for 2000. It should be noted that *infant death rates*, which use a population-based denominator, differ from *infant mortality rates*, which use the annual number of births in the denominator. Infant mortality rates, a key indicator of infant health, are unaffected by the revised populations. Changes in infant death rates are important because they may affect changes in age-adjusted death rates.

The pattern for males was similar to that for the total population, except that a higher death rate (1.7 percent) was also noted for those 75–84 years of age. The death rate for those 85 years and over was 5.4 percent higher than that previously published, much larger than that noted for the same age category in the total population. The higher death rates at the oldest ages resulted in a 1.1 percent larger age-adjusted male death rate using the enumerated male population, despite a 2.5 percent drop in the crude death rate. For females, crude and age-adjusted death rates were lower (by 1.9 percent and 1.0 percent, respectively) using the enumerated populations. Age-specific death rates (except for infants) were also lower.

The pattern of crude and age-specific death rates for the white and non-Hispanic white populations are similar to that for all races combined. However, for the non-Hispanic white population, the increase in the infant death rate using revised populations is substantially larger (3.9 percent) than that for all races (1.1 percent) and for the white population as a whole (2 percent). The 1990-based postcensal population for 2000 of non-Hispanic white infants was significantly overestimated (see tables II and III). The white and non-Hispanic white populations also show similar patterns with respect to age-adjusted death rates. Overall, the age-adjusted death rate is slightly lower for these groups using the revised populations, but is somewhat higher for males and lower for females.

For the black and non-Hispanic black populations, the pattern is also generally similar to that for all races combined with three major exceptions. First, the infant death rate was lower by 5.3 percent for the black population and 6 percent for the non-Hispanic black population using revised populations. This denotes a significant underestimate in the 1990-based postcensal population estimate of black infants (see tables II and III). Second, for black males, the death rate at ages 65–74 years was higher using the revised populations but lower for all races combined. In addition, black males at the older ages (65 years and over) showed larger increases in death rates (as much as 8.4 percent) than that observed for all races. Third, the decreases for black females in the age-adjusted rate using the revised populations were larger overall (2.1 percent for the black population and 3.3 percent for the non-Hispanic black population).

Crude death rates for the American Indian population were substantially lower (about 18 percent) using the revised population figures. Large decreases were also observed for age-specific death rates for those under 75 years, ranging from 6.6 percent for those aged 65–74 years to 24 percent for those aged 1–4 years. In contrast, for ages 75 years and over, death rates were considerably larger using the revised populations. For those 85 years and over, the increase was 51.2 percent, denoting a dramatic overestimate in the 1990-based postcensal population for this group (see tables II and III). Very similar patterns were noted for both American Indian males and females. Because of the substantially larger rates at the older ages, both American Indian males (1.6 percent) and females (3.1 percent) showed larger age-adjusted death rates using the revised population figures.

For Asian or Pacific Islanders (API), the crude death rate was also lower using the revised populations. Substantial decreases were noted for the age categories 15–34 years. In contrast, API infant death rates were considerably larger, by as much as 15 percent for API females using the revised populations. Also larger were death rates for APIs aged 1–4 years, 5–14 years, and 85 years and over. The age-adjusted death rate for APIs dropped slightly overall and for males, but increased slightly for females.

For the Hispanic population, the crude death rate was about 8 percent lower using the revised population figures, denoting a substantial underestimate in the 1990-based postcensal population estimates for Hispanics (see tables II and III). Substantial decreases in the death rate were also noted for those aged 15–34 years. Infant death rates also declined. Death rates using the revised populations were larger for those aged 55 years and over, particularly for ages 75 years and over (17.1 percent for those 75–84 years and 35.7 percent for those 85 years and over). The larger death rates at the older ages resulted in much larger age-adjusted death rates for both Hispanic males (13.8 percent) and females (14.8 percent).

Cause of death

Table 2 shows crude and age-adjusted death rates for the total population for 113 selected causes of death. For the total population, revised death rates by cause of death using the April 1, 2000, census populations are generally, but not substantially lower and are generally consistent with the pattern observed for all causes. The effect of changing population figures on crude rates by cause of death will depend on which population subgroup is being examined since the denominator for the crude rate is the same for each cause of death. That is, crude American Indian male death rates by cause will be affected more (by around 18 percent overall) than crude death rates by cause for the white female population (by about 1.4 percent). Age-adjusted death rates by cause, however, will be differentially affected depending on the age composition of the cause being examined and the changes in the population distribution by age.

The two leading causes of death in 2000 were Diseases of heart (heart disease) and Malignant neoplasms (cancer). Together, these two causes accounted for more than one-half of all deaths. The age-adjusted rate for these two causes was slightly lower using the revised population figures (0.1 percent lower for heart disease and 0.7 percent lower for cancer). Among the 15 leading causes of death, reductions in the age-adjusted death rate of 1 percent or less were also noted for Chronic liver disease and cirrhosis (1 percent), Septicemia (0.9 percent), Diabetes mellitus (0.8 percent), and Chronic lower respiratory diseases (0.2 percent). Larger reductions were noted for Assault (homicide) (3.3 percent), Intentional self-harm (suicide) (1.9 percent), Accidents (unintentional injuries) (1.7 percent), and Essential (primary) hypertension and hypertensive renal disease (hypertension) (1.5 percent). Also, although not among the 15 leading causes of death, the age-adjusted death rate for Human immunodeficiency virus (HIV) disease was 1.9 percent lower. Most of these larger reductions occurred because deaths for these causes tend to be concentrated in the middle and younger age groups for which death rates were significantly lower using the revised population figures.

Age-adjusted death rates were higher using the revised populations for Pneumonitis due to solids and liquids (pneumonitis) (1.7 percent), Alzheimer's disease (0.6 percent), and Cerebrovascular diseases (stroke) (0.2 percent). Higher age-adjusted death rates for these causes were the result of a much higher concentration of deaths in the oldest ages (85 years and over) for which the death rate was higher using the revised populations. No change in the age-adjusted death rate was noted for the remaining 2 of the 15 leading causes, Influenza and pneumonia and Nephritis, nephrotic syndrome and nephrosis.

Life expectancy

Table 3 presents life expectancies by age, sex, and race (white and black) calculated using April 1, 2000, population figures and 1990-based postcensal population estimates. Based on April 1, 2000, population figures, life expectancy at birth for the United States in 2000 was 77.0 years, representing a 0.1 year increase from life expectancy at birth of 76.9 years estimated using 1990-based postcensal estimates of the population. The same pattern is observed for both males and females. Life expectancy at birth estimated using April 1, 2000, population figures is 0.1 year and 0.2 years higher for males and females, respectively, in comparison to life expectancy estimated using 1990-based postcensal population estimates. These findings are consistent with the overall lower crude death rates and generally lower age-specific death rates based on the April 1, 2000, population figures for the total population and males and females of all races (see table 1).

A similar pattern is observed for both the white and black populations. Life expectancy at birth based on April 1, 2000, population figures is higher than that estimated using 1990-based postcensal population estimates. For the total white population, life expectancy at birth (77.6 years) is 0.1 year higher, and for the total black population, life expectancy at birth (71.9 years) is 0.1 year higher. For both race groups, the same pattern is observed by sex. Life expectancy at birth is higher for white males and females as well as for black males and females. They evidence very similar differences between life expectancy based on April 1, 2000, population figures and 1990-based postcensal population estimates. Again, these findings are consistent with the lower crude death rates and generally lower age-specific death rates based on April 1, 2000, population figures observed for both the white and black populations (see table 1).

Beyond age 0, life expectancy differentials between those based on April 1, 2000, population figures and 1990-based postcensal population estimates show distinct patterns by race and sex. For the total population, differences between the life expectancy estimates based on the two population sources change from positive or no difference to negative differences at ages 85–89 and 90–94 years. In other words, life expectancy at these ages, unlike that observed at age 0 (or at birth), is lower when based on the April 1, 2000, population than when calculated using the 1990-based postcensal estimates. This pattern is observed for men beginning at ages 65–69 years, with a decline in life expectancy of 0.1 year. On the other hand, among females for all ages the differentials are either positive or zero. These findings are also consistent with observed increases in age-specific death rates based on April 1, 2000, population figures in the oldest age groups for the total and male populations (see table 1).

Among the total white population, life expectancy differences by age based on the two distinct population sources remain positive from age 0 to ages 55–59 years, and beginning at ages 60–64 years, the differentials remain zero. Like what was observed for the total population, the differentials become negative for males beginning at ages 65–69 years and, through ages 95–99 years, with a loss of 0.1 year for each age group and similarly the differentials by age for white females are either positive or zero.

The same pattern as that observed for the total population is observed for the black population, although it is much more pronounced for the black population. For the total black population, negative differentials begin with ages 60–64 through ages 65–69 years and then again at ages 85–99 years. The greatest loss in years is experienced by those ages 90–94 years who lose 0.2 years. Similar to the total and white male populations, the negative differentials for black males begin at a relatively young age (younger in this case than in the other two) and become increasingly larger with age. In this case, the differentials range from -0.1 year at ages 50–54 to -0.4 years for ages 65–69, 70–74, 85–89, and 90–94 years. Like the case for the white population, these findings are consistent with age-specific death rates based on April 1, 2000, population figures. However, in these magnitudes we do observe substantial differences between the black male and white male populations. White males lose no more than 0.1 year in the oldest age categories, while black males lose as much as 0.4 years. Black females exhibit similar patterns as white females; differentials are either positive or zero. However, the magnitudes of the differences tend to be larger for black females except at the oldest age group (100 years and over).

Discussion

The results presented in this report show the impact of revised mortality statistics by age, race, sex, and cause of death for 2000, calculated using newly released April 1, 2000, population figures. Compared with previously published mortality statistics calculated using 1990-based postcensal estimates for 2000, revised death rates and life expectancies are, in many cases, significantly different.

Overall, revised crude death rates were lower when using the new population figures. This was true for males and females and for all race and ethnic groups. As a result, the burden of mortality as measured by the crude death rate was generally overestimated, in some cases, substantially in previously released estimates using the 1990-based population estimates. The American Indian crude death rate, in particular, was nearly 20 percent lower using the new population figures. This would be consistent with a substantial postcensal population underestimate for the American Indian population. However, error introduced with the race bridging procedure in the estimation of April 1, 2000, population figures cannot be ruled out as a contributing factor.

Age-specific death rates were also generally lower using the new population figures, except for infants and the elderly for whom death rates tended to be higher. For some groups, the increase in death rates for the elderly was large enough that the age-adjusted rate was actually higher when calculated using the new population figures. This was particularly true for the Hispanic population, which had an age-adjusted death rate based on the new population figures that was nearly 14 percent higher than the rate based on the 1990-based population estimates. This has important implications for the analysis of mortality differentials between the Hispanic and non-Hispanic white populations. Using the new population figures, the difference in relative mortality risk between the two groups is substantially smaller than that observed using the 1990-based postcensal estimates.

The differences noted above indicate that previously published mortality statistics for 2000 using the 1990-based populations will not be comparable to the corresponding statistics published for 2001. Mortality statistics for 2001 will be calculated using 2000-based population figures for 2001. Preliminary mortality statistics for 2001 (11) can be compared with the revised 2000 figures presented in this report. Selected tables from the previously published "Deaths: Final Data for 2000" (1) and selected Internet tables will be revised using the April 1, 2000, populations to be comparable with final mortality statistics for 2001. Revised tables for 2000 will be posted on the Internet at: http://www.cdc.gov/nchs.

Another important implication of the revision of mortality statistics for 2000 is their lack of comparability with previously published mortality trends for the 1990s. Death rates and life expectancies for 1991–99 were calculated using 1990-based postcensal estimates for these years. To be comparable to the revised mortality statistics for 2000, mortality statistics for 1991–99 also need to be revised using intercensal population estimates that take into account both 1990 and 2000 census populations figures. Efforts are currently underway to revise mortality statistics for the 1990s using "bridged" intercensal populations recently produced by the U.S. Census Bureau.

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List of Detailed Tables

Table 1. Comparison of deaths and death rates by age, sex, race, and Hispanic origin and age-adjusted death rates, by sex, race, and Hispanic origin: United States, 2000

[Age-specific rates per 100,000 population in specified group; age-adjusted rates per 100,000 U.S. standard population. The number of deaths and death rates for Hispanic origin and specified races other than white and black should be interpreted with caution because of inconsistencies between reporting Hispanic origin and race on death certificates and on censuses and surveys]

	Deaths	Deaths rates		
		Using April 1, 2000 enumerated populations	Using 1990-based July 1, 2000 postcensal population estimates	Percent difference
All races, both sexes				
All ages	2,403,351	854.0	873.1	–2.2
Under 1 year[1]	28,035	736.7	728.7	1.1
1–4 years	4,979	32.4	32.9	–1.5
5–14 years	7,413	18.0	18.7	–3.7
15–24 years	31,307	79.9	81.6	–2.1
25–34 years	40,451	101.4	108.1	–6.2
35–44 years	89,798	198.9	200.0	–0.5
45–54 years	160,341	425.6	431.6	–1.4
55–64 years	240,846	992.2	1,004.6	–1.2
65–74 years	441,209	2,399.1	2,428.6	–1.2
75–84 years	700,445	5,666.5	5,688.4	–0.4
85 years and over	658,171	15,524.4	15,321.5	1.3
Not stated	356	. . .	. . .	. . .
Age-adjusted rate	. . .	869.0	872.0	–0.3
All races, male				
All ages	1,177,578	853.0	874.7	–2.5
Under 1 year[1]	15,718	806.5	799.9	0.8
1–4 years	2,824	35.9	36.5	–1.6
5–14 years	4,401	20.9	21.7	–3.7
15–24 years	23,071	114.9	117.5	–2.2
25–34 years	27,890	138.6	149.9	–7.5
35–44 years	57,297	255.2	256.9	–0.7
45–54 years	100,398	542.8	552.5	–1.8
55–64 years	143,321	1,230.7	1,253.5	–1.8
65–74 years	247,408	2,979.6	3,015.7	–1.2
75–84 years	340,219	6,972.6	6,854.7	1.7
85 years and over	214,742	17,501.4	16,605.4	5.4
Not stated	289	. . .	. . .	. . .
Age-adjusted rate	. . .	1,053.8	1,042.5	1.1
All races, female				
All ages	1,225,773	855.0	871.6	–1.9
Under 1 year[1]	12,317	663.4	654.3	1.4
1–4 years	2,155	28.7	29.1	–1.4
5–14 years	3,012	15.0	15.6	–3.8
15–24 years	8,236	43.1	44.0	–2.0
25–34 years	12,561	63.5	66.7	–4.8
35–44 years	32,501	143.2	143.9	–0.5
45–54 years	59,943	312.5	315.8	–1.0
55–64 years	97,525	772.2	777.7	–0.7
65–74 years	193,801	1,921.2	1,945.1	–1.2
75–84 years	360,226	4,814.7	4,900.9	–1.8
85 years and over	443,429	14,719.2	14,768.6	–0.3
Not stated	67	. . .	. . .	. . .
Age-adjusted rate	. . .	731.4	739.1	–1.0

See footnotes at end of table.

Table 1. Comparison of deaths and death rates by age, sex, race, and Hispanic origin and age-adjusted death rates, by sex, race, and Hispanic origin: United States, 2000—Con.

[Age-specific rates per 100,000 population in specified group; age-adjusted rates per 100,000 U.S. standard population. The number of deaths and death rates for Hispanic origin and specified races other than white and black should be interpreted with caution because of inconsistencies between reporting Hispanic origin and race on death certificates and on censuses and surveys]

	Deaths	Deaths rates		
		Using April 1, 2000 enumerated populations	Using 1990-based July 1, 2000 postcensal population estimates	Percent difference
White, total[2], both sexes				
All ages	2,071,287	900.2	915.5	–1.7
Under 1 year[1]	18,144	610.6	598.4	2.0
1–4 years	3,494	29.2	29.1	0.3
5–14 years	5,450	17.0	17.5	–2.9
15–24 years	23,018	74.5	75.6	–1.5
25–34 years	28,719	90.3	96.2	–6.1
35–44 years	66,496	179.9	180.3	–0.2
45–54 years	122,674	388.3	391.8	–0.9
55–64 years	195,541	940.2	948.9	–0.9
65–74 years	376,986	2,341.5	2,375.1	–1.4
75–84 years	627,729	5,637.7	5,652.4	–0.3
85 years and over	602,761	15,707.0	15,532.5	1.1
Not stated	275	. . .	. . .	. . .
Age-adjusted rate	. . .	849.8	852.0	–0.3
White, male				
All ages	1,007,191	887.8	905.8	–2.0
Under 1 year[1]	10,177	667.6	656.2	1.7
1–4 years	2,004	32.6	32.5	0.3
5–14 years	3,255	19.8	20.4	–2.9
15–24 years	16,868	105.8	107.6	–1.7
25–34 years	20,140	124.1	134.4	–7.7
35–44 years	43,378	233.6	234.3	–0.3
45–54 years	77,866	496.9	502.7	–1.2
55–64 years	117,114	1,163.3	1,177.7	–1.2
65–74 years	213,379	2,905.7	2,949.8	–1.5
75–84 years	306,370	6,933.1	6,817.7	1.7
85 years and over	196,409	17,716.4	16,897.7	4.8
Not stated	231	. . .	. . .	. . .
Age-adjusted rate	. . .	1,029.4	1,018.2	1.1
White, female				
All ages	1,064,096	912.3	924.9	–1.4
Under 1 year[1]	7,967	550.5	537.9	2.3
1–4 years	1,490	25.5	25.4	0.4
5–14 years	2,195	14.1	14.4	–2.1
15–24 years	6,150	41.1	41.6	–1.2
25–34 years	8,579	55.1	57.7	–4.5
35–44 years	23,118	125.7	125.8	–0.1
45–54 years	44,808	281.4	283.2	–0.6
55–64 years	78,427	730.9	735.5	–0.6
65–74 years	163,607	1,868.3	1,893.9	–1.4
75–84 years	321,359	4,785.3	4,860.4	–1.5
85 years and over	406,352	14,890.7	14,948.7	–0.4
Not stated	44	. . .	. . .	. . .
Age-adjusted rate	. . .	715.3	722.2	–1.0

See footnotes at end of table.

Table 1. Comparison of deaths and death rates by age, sex, race, and Hispanic origin and age-adjusted death rates, by sex, race, and Hispanic origin: United States, 2000—Con.

[Age-specific rates per 100,000 population in specified group; age-adjusted rates per 100,000 U.S. standard population. The number of deaths and death rates for Hispanic origin and specified races other than white and black should be interpreted with caution because of inconsistencies between reporting Hispanic origin and race on death certificates and on censuses and surveys]

	Deaths	Deaths rates		
		Using April 1, 2000 enumerated populations	Using 1990-based July 1, 2000 postcensal population estimates	Percent difference
White, non-Hispanic, both sexes				
All ages	1,959,919	993.2	996.6	–0.3
Under 1 year[1]	13,513	596.5	573.9	3.9
1–4 years	2,641	28.5	27.9	2.2
5–14 years	4,397	17.1	17.2	–0.6
15–24 years	18,261	73.6	72.1	2.1
25–34 years	23,191	90.1	92.6	–2.7
35–44 years	58,231	181.0	179.7	0.7
45–54 years	111,964	390.5	393.1	–0.7
55–64 years	182,348	950.2	960.0	–1.0
65–74 years	356,869	2,366.2	2,409.4	–1.8
75–84 years	604,658	5,675.4	5,728.7	–0.9
85 years and over	583,757	15,799.7	15,826.4	–0.2
Not stated	89	. . .	. . .	. . .
Age-adjusted rate	. . .	855.5	861.9	–0.7
White, non-Hispanic, male				
All ages	944,781	978.5	980.9	–0.2
Under 1 year[1]	7,660	658.7	635.4	3.7
1–4 years	1,541	32.4	31.8	1.9
5–14 years	2,652	20.0	20.2	–1.0
15–24 years	13,066	103.5	100.5	3.0
25–34 years	15,934	123.0	127.4	–3.5
35–44 years	37,622	233.9	231.9	0.9
45–54 years	70,788	497.7	501.8	–0.8
55–64 years	109,031	1,170.9	1,185.7	–1.2
65–74 years	202,038	2,930.5	2,986.8	–1.9
75–84 years	294,842	6,977.8	6,913.2	0.9
85 years and over	189,537	17,853.2	17,269.0	3.4
Not stated	70	. . .	. . .	. . .
Age-adjusted rate	. . .	1,035.4	1,028.6	0.7
White, non-Hispanic, female				
All ages	1,015,138	1,007.3	1,011.7	–0.4
Under 1 year[1]	5,853	530.9	509.3	4.2
1–4 years	1,100	24.4	23.9	2.1
5–14 years	1,745	13.9	14.0	–0.7
15–24 years	5,195	42.6	42.2	0.9
25–34 years	7,257	56.8	57.9	–1.9
35–44 years	20,609	128.1	127.4	0.5
45–54 years	41,176	285.0	286.4	–0.5
55–64 years	73,317	742.1	748.2	–0.8
65–74 years	154,831	1,891.0	1,924.0	–1.7
75–84 years	309,816	4,819.3	4,925.6	–2.2
85 years and over	394,220	14,971.7	15,215.3	–1.6
Not stated	19	. . .	. . .	. . .
Age-adjusted rate	. . .	721.5	732.6	–1.5

See footnotes at end of table.

Table 1. Comparison of deaths and death rates by age, sex, race, and Hispanic origin and age-adjusted death rates, by sex, race, and Hispanic origin: United States, 2000—Con.

[Age-specific rates per 100,000 population in specified group; age-adjusted rates per 100,000 U.S. standard population. The number of deaths and death rates for Hispanic origin and specified races other than white and black should be interpreted with caution because of inconsistencies between reporting Hispanic origin and race on death certificates and on censuses and surveys]

	Deaths	Deaths rates		
		Using April 1, 2000 enumerated populations	Using 1990-based July 1, 2000 postcensal population estimates	Percent difference
Black, total[2], both sexes				
All ages	285,826	781.1	809.6	–3.5
Under 1 year[1]	8,771	1,426.1	1,505.6	–5.3
1–4 years	1,248	49.9	56.1	–11.1
5–14 years	1,643	24.2	26.2	–7.6
15–24 years	7,049	119.4	120.8	–1.2
25–34 years	10,239	187.8	195.5	–3.9
35–44 years	20,557	356.9	360.2	–0.9
45–54 years	33,289	786.9	806.1	–2.4
55–64 years	39,281	1,607.8	1,628.6	–1.3
65–74 years	55,195	3,335.6	3,251.5	2.6
75–84 years	61,444	6,701.3	6,826.4	–1.8
85 years and over	47,038	14,714.3	14,752.1	–0.3
Not stated	72	. . .	. . .	. . .
Age-adjusted rate	. . .	1,121.4	1,129.9	–0.8
Black, male				
All ages	145,184	834.1	865.4	–3.6
Under 1 year[1]	4,901	1,567.6	1,653.2	–5.2
1–4 years	692	54.5	61.2	–10.9
5–14 years	974	28.2	30.6	–7.8
15–24 years	5,318	181.4	181.4	0.0
25–34 years	6,750	261.0	271.8	–4.0
35–44 years	12,251	453.0	456.7	–0.8
45–54 years	19,913	1,017.7	1,060.3	–4.0
55–64 years	22,678	2,080.1	2,172.9	–4.3
65–74 years	29,071	4,253.5	4,065.5	4.6
75–84 years	28,026	8,486.0	8,240.2	3.0
85 years and over	14,560	16,791.0	15,494.6	8.4
Not stated	50	. . .	. . .	. . .
Age-adjusted rate	. . .	1,403.5	1,377.8	1.9
Black, female				
All ages	140,642	733.0	759.1	–3.4
Under 1 year[1]	3,870	1,279.8	1,352.7	–5.4
1–4 years	556	45.3	50.8	–10.8
5–14 years	669	20.0	21.7	–7.8
15–24 years	1,731	58.3	59.6	–2.2
25–34 years	3,489	121.8	126.7	–3.9
35–44 years	8,306	271.9	274.7	–1.0
45–54 years	13,376	588.3	594.1	–1.0
55–64 years	16,603	1,227.2	1,213.4	1.1
65–74 years	26,124	2,689.6	2,659.0	1.2
75–84 years	33,418	5,696.5	5,967.8	–4.5
85 years and over	32,478	13,941.3	14,441.9	–3.5
Not stated	22	. . .	. . .	. . .
Age-adjusted rate	. . .	927.6	947.9	–2.1

See footnotes at end of table.

Table 1. Comparison of deaths and death rates by age, sex, race, and Hispanic origin and age-adjusted death rates, by sex, race, and Hispanic origin: United States, 2000—Con.

[Age-specific rates per 100,000 population in specified group; age-adjusted rates per 100,000 U.S. standard population. The number of deaths and death rates for Hispanic origin and specified races other than white and black should be interpreted with caution because of inconsistencies between reporting Hispanic origin and race on death certificates and on censuses and surveys]

	Deaths	Deaths rates		
		Using April 1, 2000 enumerated populations	Using 1990-based July 1, 2000 postcensal population estimates	Percent difference
Black, non-Hispanic, both sexes				
All ages	282,676	805.5	844.4	–4.6
Under 1 year[1]	8,525	1,477.8	1,572.8	–6.0
1–4 years	1,217	51.7	58.8	–12.1
5–14 years	1,620	25.0	27.5	–9.1
15–24 years	6,926	123.2	125.2	–1.6
25–34 years	10,103	194.6	204.2	–4.7
35–44 years	20,279	365.1	374.8	–2.6
45–54 years	32,911	802.2	834.2	–3.8
55–64 years	38,867	1,633.9	1,681.8	–2.8
65–74 years	54,645	3,378.8	3,345.3	1.0
75–84 years	60,874	6,764.3	6,983.8	–3.1
85 years and over	46,660	14,837.5	15,010.7	–1.2
Not stated	49	. . .	. . .	. . .
Age-adjusted rate	. . .	1,137.0	1,161.0	–2.1
Black, non-Hispanic, male				
All ages	143,297	859.5	903.3	–4.8
Under 1 year[1]	4,757	1,623.2	1,725.5	–5.9
1–4 years	672	56.1	63.9	–12.2
5–14 years	959	29.1	32.0	–9.1
15–24 years	5,224	187.2	188.2	–0.5
25–34 years	6,649	270.2	284.0	–4.9
35–44 years	12,061	462.7	476.4	–2.9
45–54 years	19,647	1,036.2	1,099.1	–5.7
55–64 years	22,402	2,111.4	2,245.3	–6.0
65–74 years	28,745	4,303.9	4,182.2	2.9
75–84 years	27,715	8,551.0	8,426.8	1.5
85 years and over	14,431	16,944.8	15,798.2	7.3
Not stated	35	. . .	. . .	. . .
Age-adjusted rate	. . .	1,422.0	1,417.2	0.3
Black, non-Hispanic, female				
All ages	139,379	756.7	791.4	–4.4
Under 1 year[1]	3,768	1,327.7	1,414.7	–6.1
1–4 years	545	47.1	53.5	–12.0
5–14 years	661	20.7	22.8	–9.2
15–24 years	1,702	60.1	61.8	–2.8
25–34 years	3,454	126.5	132.5	–4.5
35–44 years	8,218	278.8	285.5	–2.3
45–54 years	13,264	601.2	614.7	–2.2
55–64 years	16,465	1,249.4	1,253.7	–0.3
65–74 years	25,900	2,728.0	2,737.4	–0.3
75–84 years	33,159	5,758.6	6,109.4	–5.7
85 years and over	32,229	14,054.9	14,683.0	–4.3
Not stated	14	. . .	. . .	. . .
Age-adjusted rate	. . .	941.2	973.5	–3.3

See footnotes at end of table.

Table 1. Comparison of deaths and death rates by age, sex, race, and Hispanic origin and age-adjusted death rates, by sex, race, and Hispanic origin: United States, 2000—Con.

[Age-specific rates per 100,000 population in specified group; age-adjusted rates per 100,000 U.S. standard population. The number of deaths and death rates for Hispanic origin and specified races other than white and black should be interpreted with caution because of inconsistencies between reporting Hispanic origin and race on death certificates and on censuses and surveys]

	Deaths	Deaths rates		
		Using April 1, 2000 enumerated populations	Using 1990-based July 1, 2000 postcensal population estimates	Percent difference
American Indian [2,3] total, both sexes				
All ages	11,363	380.8	466.4	–18.4
Under 1 year[1]	323	598.4	730.8	–18.1
1–4 years	91	42.4	55.8	–24.0
5–14 years	113	19.0	24.3	–21.8
15–24 years	519	98.8	117.9	–16.2
25–34 years	596	132.9	158.4	–16.1
35–44 years	1,081	232.5	299.3	–22.3
45–54 years	1,354	399.3	508.9	–21.5
55–64 years	1,698	925.5	1,113.5	–16.9
65–74 years	2,141	2,162.2	2,314.7	–6.6
75–84 years	2,062	4,448.6	3,925.7	13.3
85 years and over	1,382	9,642.1	6,376.9	51.2
Not stated	3	. . .	. . .	. . .
Age-adjusted rate	. . .	709.3	696.8	1.8
American Indian, male				
All ages	6,185	415.6	512.8	–19.0
Under 1 year[1]	193	700.2	867.2	–19.3
1–4 years	49	44.9	59.4	–24.4
5–14 years	61	20.2	25.8	–21.7
15–24 years	369	136.2	167.0	–18.4
25–34 years	410	179.1	212.5	–15.7
35–44 years	675	295.2	375.1	–21.3
45–54 years	858	520.0	667.0	–22.0
55–64 years	964	1,090.4	1,347.3	–19.1
65–74 years	1,113	2,478.3	2,676.6	–7.4
75–84 years	989	5,351.2	4,442.1	20.5
85 years and over	501	10,725.8	7,299.0	46.9
Not stated	3	. . .	. . .	. . .
Age-adjusted rate	. . .	841.5	828.6	1.6
American Indian, female				
All ages	5,178	346.1	421.0	–17.8
Under 1 year[1]	130	492.2	592.4	–16.9
1–4 years	42	39.8	52.1	–23.6
5–14 years	52	17.7	22.7	–22.0
15–24 years	150	58.9	68.4	–13.9
25–34 years	186	84.8	101.5	–16.5
35–44 years	406	171.9	224.0	–23.3
45–54 years	496	284.9	360.9	–21.1
55–64 years	734	772.1	906.8	–14.9
65–74 years	1,028	1,899.8	2,019.2	–5.9
75–84 years	1,073	3,850.0	3,545.7	8.6
85 years and over	881	9,118.2	5,949.5	53.3
Not stated	0	. . .	. . .	. . .
Age-adjusted rate	. . .	604.5	586.4	3.1

See footnotes at end of table.

Table 1. Comparison of deaths and death rates by age, sex, race, and Hispanic origin and age-adjusted death rates, by sex, race, and Hispanic origin: United States, 2000—Con.

[Age-specific rates per 100,000 population in specified group; age-adjusted rates per 100,000 U.S. standard population. The number of deaths and death rates for Hispanic origin and specified races other than white and black should be interpreted with caution because of inconsistencies between reporting Hispanic origin and race on death certificates and on censuses and surveys]

	Deaths	Deaths rates		
		Using April 1, 2000 enumerated populations	Using 1990-based July 1, 2000 postcensal population estimates	Percent difference
Asian or Pacific Islander[2], total, both sexes				
All ages	34,875	296.6	309.4	–4.1
Under 1 year[1]	797	483.0	422.5	14.3
1–4 years	146	21.6	19.8	9.1
5–14 years	207	12.3	11.8	4.2
15–24 years	721	39.0	44.3	–12.0
25–34 years	897	41.0	46.0	–10.9
35–44 years	1,664	84.5	86.0	–1.7
45–54 years	3,024	199.3	208.9	–4.6
55–64 years	4,326	509.0	539.7	–5.7
65–74 years	6,887	1,283.0	1,362.9	–5.9
75–84 years	9,210	3,495.2	3,607.0	–3.1
85 years and over	6,990	10,270.7	9,376.8	9.5
Not stated	6	. . .	. . .	. . .
Age-adjusted rate	. . .	506.4	507.4	–0.2
Asian or Pacific Islander, male				
All ages	19,018	332.9	349.2	–4.7
Under 1 year[1]	447	529.4	468.8	12.9
1–4 years	79	23.3	21.2	9.9
5–14 years	111	12.9	12.3	4.9
15–24 years	516	55.2	63.6	–13.2
25–34 years	590	55.0	62.9	–12.6
35–44 years	993	104.9	106.8	–1.8
45–54 years	1,761	249.7	260.6	–4.2
55–64 years	2,565	642.4	684.4	–6.1
65–74 years	3,845	1,661.0	1,800.3	–7.7
75–84 years	4,834	4,328.2	4,510.5	–4.0
85 years and over	3,272	12,125.3	10,894.0	11.3
Not stated	5	. . .	. . .	. . .
Age-adjusted rate	. . .	624.2	629.1	–0.8
Asian or Pacific Islander, female				
All ages	15,857	262.3	272.2	–3.6
Under 1 year[1]	350	434.3	375.3	15.7
1–4 years	67	20.0	18.4	8.7
5–14 years	96	11.7	11.3	3.5
15–24 years	205	22.4	25.1	–10.8
25–34 years	307	27.6	30.3	–8.9
35–44 years	671	65.6	66.7	–1.6
45–54 years	1,263	155.5	163.6	–5.0
55–64 years	1,761	390.9	412.7	–5.3
65–74 years	3,042	996.4	1,042.8	–4.4
75–84 years	4,376	2,882.4	2,953.5	–2.4
85 years and over	3,718	9,052.2	8,353.0	8.4
Not stated	1	. . .	. . .	. . .
Age-adjusted rate	. . .	416.8	415.2	0.4

See footnotes at end of table.

Table 1. Comparison of deaths and death rates by age, sex, race, and Hispanic origin and age-adjusted death rates, by sex, race, and Hispanic origin: United States, 2000—Con.

[Age-specific rates per 100,000 population in specified group; age-adjusted rates per 100,000 U.S. standard population. The number of deaths and death rates for Hispanic origin and specified races other than white and black should be interpreted with caution because of inconsistencies between reporting Hispanic origin and race on death certificates and on censuses and surveys]

	Deaths	Deaths rates		
		Using April 1, 2000 enumerated populations	Using 1990-based July 1, 2000 postcensal population estimates	Percent difference
Hispanic[4], both sexes				
All ages	107,254	303.8	330.4	–8.1
Under 1 year[1]	4,598	596.3	621.7	–4.1
1–4 years	872	29.6	31.0	–4.5
5–14 years	1,065	15.7	17.1	–8.2
15–24 years	4,793	72.8	85.0	–14.4
25–34 years	5,509	84.6	104.3	–18.9
35–44 years	8,085	157.6	163.7	–3.7
45–54 years	10,356	330.2	333.1	–0.9
55–64 years	12,733	744.4	721.3	3.2
65–74 years	19,420	1,803.8	1,683.4	7.2
75–84 years	21,951	4,335.9	3,704.1	17.1
85 years and over	17,818	11,822.9	8,715.0	35.7
Not stated	54	. . .	. . .	. . .
Age-adjusted rate	. . .	665.7	585.6	13.7
Hispanic[4], male				
All ages	60,172	331.3	368.9	–10.2
Under 1 year[1]	2,514	637.1	666.6	–4.4
1–4 years	475	31.5	33.1	–4.8
5–14 years	622	17.9	19.6	–8.7
15–24 years	3,837	107.7	131.2	–17.9
25–34 years	4,200	120.2	155.1	–22.5
35–44 years	5,597	211.0	221.9	–4.9
45–54 years	6,808	439.0	447.3	–1.9
55–64 years	7,760	965.7	948.7	1.8
65–74 years	10,842	2,287.9	2,127.7	7.5
75–84 years	10,973	5,395.3	4,470.2	20.7
85 years and over	6,493	13,086.2	9,385.3	39.4
Not stated	51	. . .	. . .	. . .
Age-adjusted rate	. . .	818.1	718.8	13.8
Hispanic[4], female				
All ages	47,082	274.6	291.5	–5.8
Under 1 year[1]	2,084	553.6	575.0	–3.7
1–4 years	397	27.5	28.8	–4.5
5–14 years	443	13.4	14.5	–7.6
15–24 years	956	31.7	35.2	–9.9
25–34 years	1,309	43.4	50.8	–14.6
35–44 years	2,488	100.5	103.0	–2.4
45–54 years	3,548	223.8	223.5	0.1
55–64 years	4,973	548.4	525.0	4.5
65–74 years	8,578	1,423.2	1,331.9	6.9
75–84 years	10,978	3,624.5	3,162.3	14.6
85 years and over	11,325	11,202.8	8,372.1	33.8
Not stated	3	. . .	. . .	. . .
Age-adjusted rate	. . .	546.0	475.7	14.8

. . . Category not applicable.

0.0 Quantity more than zero but less than 0.05.

[1]Death rates for Under 1 year (based on population estimates) differ from infant mortality rates (based on live births).

[2]Race and Hispanic origin are reported separately on the death certificate. Data for persons of Hispanic origin are included in the data for each race group according to the decedent's reported race.

[3]Includes deaths among Aleuts and Eskimos.

[4]Includes all persons of Hispanic origin of any race.

Table 2. Comparison of deaths, crude death rates, and age-adjusted death rates for 113 selected causes of death: United States, 2000

[Rates per 100,000 population; age-adjusted rates per 100,000 U.S. standard population]

Cause of death (Based on the *International Classification of Diseases, Tenth Revision*, 1992)	Deaths	Crude death rates			Age-adjusted death rates		
		Using April 1, 2000 enumerated populations	Using 1990-based July 1, 2000 postcensal population estimates	Percent difference	Using April 1, 2000 enumerated populations	Using 1990-based July 1, 2000 postcensal population estimates	Percent difference
All causes	2,403,351	854.0	873.1	–2.2	869.0	872.0	–0.3
Salmonella infections (A01–A02)	28	0.0	0.0	0.0	0.0	0.0	0.0
Shigellosis and amebiasis (A03,A06)	12	*	*	*	*	*	*
Certain other intestinal infections (A04,A07–A09)	1,328	0.5	0.5	0.0	0.5	0.5	0.0
Tuberculosis (A16–A19)	776	0.3	0.3	0.0	0.3	0.3	0.0
Respiratory tuberculosis (A16)	615	0.2	0.2	0.0	0.2	0.2	0.0
Other tuberculosis (A17–A19)	161	0.1	0.1	0.0	0.1	0.1	0.0
Whooping cough (A37)	12	*	*	*	*	*	*
Scarlet fever and erysipelas (A38,A46)	2	*	*	*	*	*	*
Meningococcal infection (A39)	211	0.1	0.1	0.0	0.0	0.0	0.0
Septicemia (A40–A41)	31,224	11.1	11.3	–1.8	11.3	11.4	–0.9
Syphilis (A50–A53)	41	0.0	0.0	0.0	0.0	0.0	0.0
Acute poliomyelitis (A80)	–	*	*	*	*	*	*
Arthropod–borne viral encephalitis (A83–A84,A85.2)	2	*	*	*	*	*	*
Measles (B05)	1	*	*	*	*	*	*
Viral hepatitis (B15–B19)	5,357	1.9	1.9	0.0	1.9	1.9	0.0
Human immunodeficiency virus (HIV) disease (B20–B24)	14,478	5.1	5.3	–3.8	5.2	5.3	–1.9
Malaria (B50–B54)	3	*	*	*	*	*	*
Other and unspecified infectious and parasitic diseases and their sequelae (A00,A05,A20–A36, A42–A44,A48–A49,A54–A79,A81–A82,A85.0–A85.1,A85.8,A86–B04,B06–B09,B25–B49,B55–B99)	5,532	2.0	2.0	0.0	2.0	2.0	0.0
Malignant neoplasms (C00–C97)	553,091	196.5	200.9	–2.2	199.6	201.0	–0.7
Malignant neoplasms of lip, oral cavity and pharynx (C00–C14)	7,492	2.7	2.7	0.0	2.7	2.7	0.0
Malignant neoplasm of esophagus (C15)	12,232	4.3	4.4	–2.3	4.4	4.4	0.0
Malignant neoplasm of stomach (C16)	12,645	4.5	4.6	–2.2	4.6	4.6	0.0
Malignant neoplasms of colon, rectum and anus (C18–C21)	57,477	20.4	20.9	–2.4	20.8	20.9	–0.5
Malignant neoplasms of liver and intrahepatic bile ducts (C22)	12,916	4.6	4.7	–2.1	4.7	4.7	0.0
Malignant neoplasm of pancreas (C25)	29,332	10.4	10.7	–2.8	10.6	10.6	0.0
Malignant neoplasm of larynx (C32)	3,861	1.4	1.4	0.0	1.4	1.4	0.0
Malignant neoplasms of trachea, bronchus and lung (C33–C34)	155,521	55.3	56.5	–2.1	56.1	56.5	–0.7
Malignant melanoma of skin (C43)	7,420	2.6	2.7	–3.7	2.7	2.7	0.0
Malignant neoplasm of breast (C50)	42,300	15.0	15.4	–2.6	15.3	15.4	–0.6
Malignant neoplasm of cervix uteri (C53)	4,200	1.5	1.5	0.0	1.5	1.5	0.0
Malignant neoplasms of corpus uteri and uterus, part unspecified (C54–C55)	6,586	2.3	2.4	–4.2	2.4	2.4	0.0
Malignant neoplasm of ovary (C56)	14,060	5.0	5.1	–2.0	5.1	5.1	0.0
Malignant neoplasm of prostate (C61)	31,078	11.0	11.3	–2.7	11.3	11.3	0.0
Malignant neoplasms of kidney and renal pelvis (C64–C65)	11,736	4.2	4.3	–2.3	4.2	4.3	–2.3
Malignant neoplasm of bladder (C67)	12,002	4.3	4.4	–2.3	4.3	4.3	0.0
Malignant neoplasms of meninges, brain and other parts of central nervous system (C70–C72)	12,655	4.5	4.6	–2.2	4.5	4.6	–2.2
Malignant neoplasms of lymphoid, hematopoietic and related tissue (C81–C96)	56,518	20.1	20.5	–2.0	20.4	20.5	–0.5
Hodgkin's disease (C81)	1,287	0.5	0.5	0.0	0.5	0.5	0.0
Non–Hodgkin's lymphoma (C82–C85)	22,729	8.1	8.3	–2.4	8.2	8.3	–1.2
Leukemia (C91–C95)	21,339	7.6	7.8	–2.6	7.7	7.8	–1.3
Multiple myeloma and immunoproliferative neoplasms (C88,C90)	11,063	3.9	4.0	–2.5	4.0	4.0	0.0

See footnotes at end of table.

Table 2. Comparison of deaths, crude death rates, and age-adjusted death rates for 113 selected causes of death: United States, 2000—Con.

[Rates per 100,000 population; age-adjusted rates per 100,000 U.S. standard population]

Cause of death (Based on the *International Classification of Diseases, Tenth Revision*, 1992)	Deaths	Crude death rates			Age-adjusted death rates		
		Using April 1, 2000 enumerated populations	Using 1990-based July 1, 2000 postcensal population estimates	Percent difference	Using April 1, 2000 enumerated populations	Using 1990-based July 1, 2000 postcensal population estimates	Percent difference
Other and unspecified malignant neoplasms of lymphoid, hematopoietic and related tissue (C96)	100	0.0	0.0	0.0	0.0	0.0	0.0
All other and unspecified malignant neoplasms (C17,C23–C24,C26–C31,C37–C41,C44–C49,C51–C52,C57–C60,C62–C63,C66,C68–C69,C73–C80,C97)	63,060	22.4	22.9	–2.2	22.8	22.9	–0.4
In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior (D00–D48)	13,546	4.8	4.9	–2.0	4.9	4.9	0.0
Anemias (D50–D64)	4,494	1.6	1.6	0.0	1.6	1.6	0.0
Diabetes mellitus (E10–E14)	69,301	24.6	25.2	–2.4	25.0	25.2	–0.8
Nutritional deficiencies (E40–E64)	4,242	1.5	1.5	0.0	1.5	1.5	0.0
Malnutrition (E40–E46)	3,926	1.4	1.4	0.0	1.4	1.4	0.0
Other nutritional deficiencies (E50–E64)	316	0.1	0.1	0.0	0.1	0.1	0.0
Meningitis (G00,G03)	758	0.3	0.3	0.0	0.3	0.3	0.0
Parkinson's disease (G20–G21)	15,682	5.6	5.7	–1.8	5.7	5.7	0.0
Alzheimer's disease (G30)	49,558	17.6	18.0	–2.2	18.1	18.0	0.6
Major cardiovascular diseases (I00–I78)	936,923	332.9	340.4	–2.2	339.7	339.9	–0.1
Diseases of heart (I00–I09,I11,I13,I20–I51)	710,760	252.6	258.2	–2.2	257.6	257.9	–0.1
Acute rheumatic fever and chronic rheumatic heart diseases (I00–I09)	3,582	1.3	1.3	0.0	1.3	1.3	0.0
Hypertensive heart disease (I11)	23,761	8.4	8.6	–2.3	8.6	8.6	0.0
Hypertensive heart and renal disease (I13)	2,785	1.0	1.0	0.0	1.0	1.0	0.0
Ischemic heart diseases (I20–I25)	515,204	183.1	187.2	–2.2	186.8	186.9	–0.1
Acute myocardial infarction (I21–I22)	192,898	68.5	70.1	–2.3	69.9	70.0	–0.1
Other acute ischemic heart diseases (I24)	3,363	1.2	1.2	0.0	1.2	1.2	0.0
Other forms of chronic ischemic heart disease (I20,I25)	318,943	113.3	115.9	–2.2	115.7	115.7	0.0
Atherosclerotic cardiovascular disease, so described (I25.0)	69,554	24.7	25.3	–2.4	25.2	25.2	0.0
All other forms of chronic ischemic heart disease (I20,I25.1–I25.9)	249,389	88.6	90.6	–2.2	90.5	90.5	0.0
Other heart diseases (I26–I51)	165,428	58.8	60.1	–2.2	60.0	60.0	0.0
Acute and subacute endocarditis (I33)	1,172	0.4	0.4	0.0	0.4	0.4	0.0
Diseases of pericardium and acute myocarditis (I30–I31,I40)	767	0.3	0.3	0.0	0.3	0.3	0.0
Heart failure (I50)	55,704	19.8	20.2	–2.0	20.3	20.2	0.5
All other forms of heart disease (I26–I28,I34–I38,I42–I49,I51)	107,785	38.3	39.2	–2.3	39.0	39.1	–0.3
Essential (primary) hypertension and hypertensive renal disease (I10,I12)	18,073	6.4	6.6	–3.0	6.5	6.6	–1.5
Cerebrovascular diseases (I60–I69)	167,661	59.6	60.9	–2.1	60.9	60.8	0.2
Atherosclerosis (I70)	14,393	5.1	5.2	–1.9	5.2	5.2	0.0
Other diseases of circulatory system (I71–I78)	26,036	9.3	9.5	–2.1	9.4	9.4	0.0
Aortic aneurysm and dissection (I71)	15,810	5.6	5.7	–1.8	5.7	5.7	0.0
Other diseases of arteries, arterioles and capillaries (I72–I78)	10,226	3.6	3.7	–2.7	3.7	3.7	0.0
Other disorders of circulatory system (I80–I99)	4,603	1.6	1.7	–5.9	1.7	1.7	0.0
Influenza and pneumonia (J10–J18)	65,313	23.2	23.7	–2.1	23.7	23.7	0.0
Influenza (J10–J11)	1,765	0.6	0.6	0.0	0.6	0.6	0.0
Pneumonia (J12–J18)	63,548	22.6	23.1	–2.2	23.1	23.0	0.4
Other acute lower respiratory infections (J20–J22)	425	0.2	0.2	0.0	0.1	0.1	0.0
Acute bronchitis and bronchiolitis (J20–J21)	290	0.1	0.1	0.0	0.1	0.1	0.0
Unspecified acute lower respiratory infection (J22)	135	0.0	0.0	0.0	0.0	0.0	0.0

See footnotes at end of table.

Table 2. Comparison of deaths, crude death rates, and age-adjusted death rates for 113 selected causes of death: United States, 2000—Con.

[Rates per 100,000 population; age-adjusted rates per 100,000 U.S. standard population]

Cause of death (Based on the *International Classification of Diseases, Tenth Revision*, 1992)	Deaths	Crude death rates			Age-adjusted death rates		
		Using April 1, 2000 enumerated populations	Using 1990-based July 1, 2000 postcensal population estimates	Percent difference	Using April 1, 2000 enumerated populations	Using 1990-based July 1, 2000 postcensal population estimates	Percent difference
Chronic lower respiratory diseases (J40–J47)	122,009	43.4	44.3	–2.0	44.2	44.3	–0.2
Bronchitis, chronic and unspecified (J40–J42)	1,167	0.4	0.4	0.0	0.4	0.4	0.0
Emphysema (J43)	16,700	5.9	6.1	–3.3	6.0	6.1	–1.6
Asthma (J45–J46)	4,487	1.6	1.6	0.0	1.6	1.6	0.0
Other chronic lower respiratory diseases (J44,J47)	99,655	35.4	36.2	–2.2	36.1	36.2	–0.3
Pneumoconioses and chemical effects (J60–J66,J68)	1,161	0.4	0.4	0.0	0.4	0.4	0.0
Pneumonitis due to solids and liquids (J69)	16,636	5.9	6.0	–1.7	6.1	6.0	1.7
Other diseases of respiratory system (J00–J06,J30–J39,J67,J70–J98)	25,535	9.1	9.3	–2.2	9.2	9.3	–1.1
Peptic ulcer (K25–K28)	4,558	1.6	1.7	–5.9	1.6	1.6	0.0
Diseases of appendix (K35–K38)	435	0.2	0.2	0.0	0.1	0.2	–50.0
Hernia (K40–K46)	1,522	0.5	0.6	–16.7	0.5	0.6	–16.7
Chronic liver disease and cirrhosis (K70,K73–K74)	26,552	9.4	9.6	–2.1	9.5	9.6	–1.0
Alcoholic liver disease (K70)	12,109	4.3	4.4	–2.3	4.3	4.4	–2.3
Other chronic liver disease and cirrhosis (K73–K74)	14,443	5.1	5.2	–1.9	5.2	5.3	–1.9
Cholelithiasis and other disorders of gallbladder (K80–K82)	2,810	1.0	1.0	0.0	1.0	1.0	0.0
Nephritis, nephrotic syndrome and nephrosis (N00–N07,N17–N19,N25–N27)	37,251	13.2	13.5	–2.2	13.5	13.5	0.0
Acute and rapidly progressive nephritic and nephrotic syndrome (N00–N01,N04)	177	0.1	0.1	0.0	0.1	0.1	0.0
Chronic glomerulonephritis, nephrosis and nephropathy not specified as acute or chronic, and renal sclerosis unspecified (N02–N03,N05–N07,N26)	556	0.2	0.2	0.0	0.2	0.2	0.0
Renal failure (N17–N19)	36,471	13.0	13.2	–1.5	13.2	13.2	0.0
Other disorders of kidney (N25,N27)	47	0.0	0.0	0.0	0.0	0.0	0.0
Infections of kidney (N10–N12,N13.6,N15.1)	813	0.3	0.3	0.0	0.3	0.3	0.0
Hyperplasia of prostate (N40)	433	0.2	0.2	0.0	0.2	0.2	0.0
Inflammatory diseases of female pelvic organs (N70–N76)	120	0.0	0.0	0.0	0.0	0.0	0.0
Pregnancy, childbirth and the puerperium (O00–O99)	404	0.1	0.1	0.0	0.1	0.1	0.0
Pregnancy with abortive outcome (O00–O07)	37	0.0	0.0	0.0	0.0	0.0	0.0
Other complications of pregnancy, childbirth and the puerperium (O10–O99)	367	0.1	0.1	0.0	0.1	0.1	0.0
Certain conditions originating in the perinatal period (P00–P96)	14,069	5.0	5.1	–2.0	5.1	5.0	2.0
Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	10,578	3.8	3.8	0.0	3.8	3.8	0.0
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00–R99)	31,876	11.3	11.6	–2.6	11.4	11.5	–0.9
All other diseases (Residual)	178,378	63.4	64.8	–2.2	64.6	64.7	–0.2
Accidents (unintentional injuries) (V01–X59,Y85–Y86)	97,900	34.8	35.6	–2.2	34.9	35.5	–1.7
Transport accidents (V01–V99,Y85)	46,749	16.6	17.0	–2.4	16.6	16.9	–1.8
Motor vehicle accidents (V02–V04,V09.0,V09.2,V12–V14,V19.0–V19.2,V19.4–V19.6,V20–V79,V80.3–V80.5,V81.0–V81.1,V82.0–V82.1,V83–V86,V87.0–V87.8,V88.0–V88.8,V89.0,V89.2)	43,354	15.4	15.7	–1.9	15.4	15.7	–1.9
Other land transport accidents (V01,V05–V06,V09.1,V09.3–V09.9,V10–V11,V15–V18, V19.3, V19.8–V19.9,V80.0–V80.2,V80.6–V80.9,V81.2–V81.9,V82.2–V82.9,V87.9,V88.9,V89.1,V89.3, V89.9)	1,492	0.5	0.5	0.0	0.5	0.5	0.0
Water, air and space, and other and unspecified transport accidents and their sequelae (V90–V99,Y85)	1,903	0.7	0.7	0.0	0.7	0.7	0.0
Nontransport accidents (W00–X59,Y86)	51,151	18.2	18.6	–2.2	18.4	18.5	–0.5
Falls (W00–W19)	13,322	4.7	4.8	–2.1	4.8	4.8	0.0
Accidental discharge of firearms (W32–W34)	776	0.3	0.3	0.0	0.3	0.3	0.0

See footnotes at end of table.

Table 2. Comparison of deaths, crude death rates, and age-adjusted death rates for 113 selected causes of death: United States, 2000—Con.

[Rates per 100,000 population; age-adjusted rates per 100,000 U.S. standard population]

Cause of death (Based on the *International Classification of Diseases, Tenth Revision*, 1992)	Deaths	Crude death rates			Age-adjusted death rates		
		Using April 1, 2000 enumerated populations	Using 1990-based July 1, 2000 postcensal population estimates	Percent difference	Using April 1, 2000 enumerated populations	Using 1990-based July 1, 2000 postcensal population estimates	Percent difference
Accidental drowning and submersion (W65–W74)	3,482	1.2	1.3	–7.7	1.2	1.3	–7.7
Accidental exposure to smoke, fire and flames (X00–X09)	3,377	1.2	1.2	0.0	1.2	1.2	0.0
Accidental poisoning and exposure to noxious substances (X40–X49)	12,757	4.5	4.6	–2.2	4.5	4.6	–2.2
Other and unspecified nontransport accidents and their sequelae (W20–W31,W35–W64,W75–W99,X10–X39,X50–X59,Y86)	17,437	6.2	6.3	–1.6	6.3	6.3	0.0
Intentional self-harm (suicide) (X60–X84,Y87.0)	29,350	10.4	10.7	–2.8	10.4	10.6	–1.9
Intentional self-harm (suicide) by discharge of firearms (X72–X74)	16,586	5.9	6.0	–1.7	5.9	6.0	–1.7
Intentional self–harm (suicide) by other and unspecified means and their sequelae (X60–X71,X75–X84,Y87.0)	12,764	4.5	4.6	–2.2	4.5	4.6	–2.2
Assault (homicide) (X85–Y09,Y87.1)	16,765	6.0	6.1	–1.6	5.9	6.1	–3.3
Assault (homicide) by discharge of firearms (X93–X95)	10,801	3.8	3.9	–2.6	3.8	3.9	–2.6
Assault (homicide) by other and unspecified means and their sequelae (X85–X92,X96–Y09,Y87.1)	5,964	2.1	2.2	–4.5	2.1	2.1	0.0
Legal intervention (Y35,Y89.0)	359	0.1	0.1	0.0	0.1	0.1	0.0
Events of undetermined intent (Y10–Y34,Y87.2,Y89.9)	3,819	1.4	1.4	0.0	1.3	1.4	–7.1
Discharge of firearms, undetermined intent (Y22–Y24)	230	0.1	0.1	0.0	0.1	0.1	0.0
Other and unspecified events of undetermined intent and their sequelae (Y10–Y21,Y25–Y34,Y87.2,Y89.9)	3,589	1.3	1.3	0.0	1.3	1.3	0.0
Operations of war and their sequelae (Y36,Y89.1)	16	*	*	*	*	*	*
Complications of medical and surgical care (Y40–Y84,Y88)	3,059	1.1	1.1	0.0	1.1	1.1	0.0

0.0 Quantity more than zero but less than 0.05.

* Figure does not meet standards of reliability or precision.

– Quantity zero.

Table 3. Comparison of life expectancies by age, race, and sex: United States, 2000

Age (years) and race	Both sexes			Male			Female		
	Using April 1, 2000 enumerated populations	Using 1990-based July 1, 2000 postcensal population estimates	Difference in Years	Using April 1, 2000 enumerated populations	Using 1990-based July 1, 2000 postcensal population estimates	Difference in years	Using April 1, 2000 enumerated populations	Using 1990-based July 1, 2000 postcensal population estimates	Difference in years
All races									
0	77.0	76.9	0.1	74.3	74.2	0.1	79.7	79.5	0.2
1	76.6	76.4	0.2	73.8	73.7	0.1	79.2	79.0	0.2
5	72.7	72.5	0.2	69.9	69.8	0.1	75.3	75.1	0.2
10	67.7	67.6	0.1	65.0	64.9	0.1	70.3	70.2	0.1
15	62.8	62.7	0.1	60.1	60.0	0.1	65.4	65.2	0.2
20	58.0	57.9	0.1	55.3	55.2	0.1	60.5	60.4	0.1
25	53.2	53.1	0.1	50.7	50.6	0.1	55.6	55.5	0.1
30	48.5	48.4	0.1	46.0	46.0	0.0	50.8	50.6	0.2
35	43.7	43.7	0.0	41.3	41.3	0.0	46.0	45.8	0.2
40	39.1	39.0	0.1	36.7	36.7	0.0	41.2	41.1	0.1
45	34.5	34.4	0.1	32.3	32.2	0.1	36.5	36.4	0.1
50	30.1	30.0	0.1	27.9	27.9	0.0	32.0	31.8	0.2
55	25.8	25.7	0.1	23.8	23.8	0.0	27.5	27.4	0.1
60	21.7	21.7	0.0	19.9	19.9	0.0	23.3	23.2	0.1
65	18.0	17.9	0.1	16.2	16.3	-0.1	19.3	19.2	0.1
70	14.5	14.5	0.0	13.0	13.1	-0.1	15.7	15.6	0.1
75	11.4	11.4	0.0	10.1	10.2	-0.1	12.3	12.2	0.1
80	8.7	8.7	0.0	7.6	7.7	-0.1	9.3	9.2	0.1
85	6.4	6.5	-0.1	5.6	5.7	-0.1	6.8	6.8	0.0
90	4.7	4.8	-0.1	4.1	4.2	-0.1	5.0	5.0	0.0
95	3.5	3.5	0.0	3.1	3.2	-0.1	3.7	3.6	0.1
100	2.7	2.7	0.0	2.4	2.5	-0.1	2.8	2.8	0.0
White									
0	77.6	77.5	0.1	74.9	74.8	0.1	80.1	80.0	0.1
1	77.0	76.9	0.1	74.3	74.3	0.0	79.6	79.4	0.2
5	73.1	73.0	0.1	70.4	70.4	0.0	75.6	75.5	0.1
10	68.1	68.0	0.1	65.5	65.4	0.1	70.7	70.6	0.1
15	63.2	63.1	0.1	60.6	60.5	0.1	65.7	65.6	0.1
20	58.4	58.3	0.1	55.8	55.8	0.0	60.9	60.7	0.2
25	53.6	53.5	0.1	51.2	51.1	0.1	56.0	55.9	0.1
30	48.9	48.8	0.1	46.4	46.4	0.0	51.1	51.0	0.1
35	44.1	44.0	0.1	41.7	41.7	0.0	46.3	46.2	0.1
40	39.4	39.3	0.1	37.1	37.1	0.0	41.5	41.4	0.1
45	34.8	34.7	0.1	32.6	32.6	0.0	36.8	36.7	0.1
50	30.3	30.2	0.1	28.2	28.2	0.0	32.2	32.0	0.2
55	26.0	25.9	0.1	24.0	24.0	0.0	27.7	27.6	0.1
60	21.8	21.8	0.0	20.0	20.0	0.0	23.4	23.3	0.1
65	18.0	18.0	0.0	16.3	16.4	-0.1	19.4	19.3	0.1
70	14.5	14.5	0.0	13.0	13.1	-0.1	15.7	15.6	0.1
75	11.4	11.4	0.0	10.1	10.2	-0.1	12.3	12.2	0.1
80	8.6	8.6	0.0	7.5	7.6	-0.1	9.2	9.2	0.0
85	6.3	6.3	0.0	5.5	5.6	-0.1	6.7	6.7	0.0
90	4.6	4.6	0.0	4.0	4.1	-0.1	4.8	4.8	0.0
95	3.3	3.3	0.0	2.9	3.0	-0.1	3.4	3.4	0.0
100	2.4	2.4	0.0	2.2	2.2	0.0	2.5	2.4	0.1
Black									
0	71.9	71.8	0.1	68.3	68.2	0.1	75.2	75.1	0.1
1	71.9	71.8	0.1	68.4	68.3	0.1	75.2	75.0	0.2
5	68.1	68.0	0.1	64.5	64.5	0.0	71.3	71.2	0.1
10	63.1	63.1	0.0	59.6	59.6	0.0	66.4	66.2	0.2
15	58.2	58.1	0.1	54.7	54.7	0.0	61.4	61.3	0.1
20	53.5	53.4	0.1	50.0	50.0	0.0	56.6	56.4	0.2
25	48.9	48.8	0.1	45.6	45.6	0.0	51.8	51.6	0.2
30	44.2	44.2	0.0	41.1	41.1	0.0	47.0	46.9	0.1
35	39.7	39.6	0.1	36.7	36.7	0.0	42.3	42.2	0.1
40	35.2	35.2	0.0	32.3	32.3	0.0	37.8	37.7	0.1
45	30.9	30.9	0.0	28.1	28.1	0.0	33.4	33.3	0.1
50	26.9	26.9	0.0	24.2	24.3	-0.1	29.1	29.0	0.1
55	23.1	23.1	0.0	20.6	20.8	-0.2	25.1	25.0	0.1
60	19.5	19.6	-0.1	17.3	17.6	-0.3	21.2	21.1	0.1
65	16.2	16.3	-0.1	14.2	14.6	-0.4	17.7	17.6	0.1
70	13.3	13.3	0.0	11.5	11.9	-0.4	14.5	14.3	0.2
75	10.7	10.7	0.0	9.2	9.5	-0.3	11.6	11.4	0.2
80	8.5	8.5	0.0	7.3	7.6	-0.3	9.1	8.9	0.2
85	6.6	6.7	-0.1	5.7	6.1	-0.4	6.9	6.9	0.0
90	5.0	5.2	-0.2	4.4	4.8	-0.4	5.2	5.2	0.0
95	3.9	4.0	-0.1	3.5	3.8	-0.3	3.9	3.9	0.0
100	3.0	3.0	0.0	2.8	3.1	-0.3	3.0	2.9	0.1

Technical Notes

Nature and sources of data

Data in this report are based on information from all death certificates filed in the 50 States and the District of Columbia in 2000. The U.S. Standard Certificate of Death—which is used as a model by the States—was last revised in 1989; for additional details, see the 1989 revision of the U.S. standard certificates and reports (12) and *Vital Statistics of the United States*, 1989 Volume II Mortality, Part A, Technical Appendix (13). Information from death certificates are coded by the States and provided to the National Center for Health Statistics (NCHS) through the Vital Statistics Cooperative Program (VSCP) and from copies of the original certificates received by NCHS from the State registration offices. In 2000 all the States and the District of Columbia participated in this program and submitted part or all of the mortality data for 2000 in electronic data files to NCHS.

Cause-of-death classification

The mortality statistics presented here were compiled in accordance with the World Health Organization (WHO) regulations, which specify that member nations classify and code causes of death in accordance with the current revision of the *International Statistical Classification of Diseases and Related Health Problems* (ICD). The ICD provides the basic guidance used in virtually all countries to code and classify causes of death. Effective with deaths occurring in 1999, the United States began using the Tenth Revision of this classification, (ICD-10) (5).

The ICD not only details disease classification but also provides definitions, tabulation lists, the format of the death certificate, and the rules for coding cause of death. Cause-of-death data presented in this publication were coded by procedures outlined in annual issues of the *NCHS Instruction Manuals* (14,15,16). The manuals include rules for selecting the underlying cause of death for tabulation purposes, definitions, tabulation lists, and regulations on the use of the *Classification.*

Before 1968, mortality medical data were based on manual coding of an underlying cause of death for each certificate in accordance with WHO rules. Effective with data year 1968, NCHS converted to computerized coding of the underlying cause and manual coding of all causes (multiple causes) on the death certificate. In this system, called "Automated Classification of Medical Entities" (ACME) (17), multiple cause codes serve as inputs to the computer software that employs WHO rules to select the underlying cause. Many States have implemented ACME and provide multiple cause and underlying cause data to NCHS in electronic form; for those States that do not, NCHS codes the mortality medical data using ACME.

The ACME system is used to select the underlying cause of death for all death certificates in the United States. In addition, NCHS has developed two computer systems as inputs to ACME. Beginning with 1990 data, the Mortality Medical Indexing, Classification, and Retrieval system (MICAR) (18,19), was introduced to automate coding multiple causes of death. In addition, MICAR provides more detailed information on the conditions reported on death certificates than is available through the *International Classification of Diseases* (ICD) code structure. Then, beginning with data year 1993, SuperMICAR, an enhancement of the MICAR system, was introduced. SuperMICAR allows for literal entry of the multiple cause-of-death text as reported by the certifier. This information is then automatically processed by the MICAR and ACME computer systems. Records that cannot be automatically processed by MICAR or SuperMICAR are manually multiple-cause coded and then further processed through ACME.

In this report, tabulations of cause-of-death statistics are based solely on the underlying cause of death. The underlying cause is defined by WHO as the disease or injury which initiated the train of events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury (5). It is selected from the conditions entered by the physician in the cause-of-death section of the death certificate. When more than one cause or condition is entered by the physician, the underlying cause is determined by the sequence of conditions on the certificate, provisions of the ICD, and associated selection rules and modifications. Generally, more medical information is reported on death certificates than is directly reflected in the underlying cause of death. This is captured in NCHS multiple cause-of-death statistics (20–22).

Race and Hispanic origin

Race and Hispanic origin are reported separately on the death certificate. Therefore, data shown by race include persons of Hispanic or non-Hispanic origin, and data for Hispanic origin include persons of any race. In this report, unless otherwise specified, deaths of Hispanic origin are included in the totals for each race group—white, black, American Indian, and Asian or Pacific Islander (API)—according to the decedent's race as reported on the death certificate. Data shown for Hispanic persons include all persons of Hispanic origin of any race.

Mortality data for the Hispanic-origin population are based on deaths to residents of all 50 States and the District of Columbia. Data year 1997 was the first year that mortality data for the Hispanic population were available for the entire United States.

Quality of race and Hispanic origin data—Death rates for Hispanic, American Indian, and API persons should be interpreted with caution because of inconsistencies in reporting race and ethnicity on the death certificate as compared with race and ethnicity on censuses, surveys, and birth certificates. Studies have shown underreporting on death certificates of American Indians, API, and Hispanic decedents; and undercounts of these groups in the censuses (23,24).

A number of studies have been conducted on the reliability of race and ethnicity reported on the death certificate by comparing race on the death certificate with that reported on another data collection instrument, such as the census or a survey. Differences may arise because of differences in who provides race and ethnicity information on the compared records. Race and ethnicity information on the death certificate is reported by the funeral director as provided by an informant or, in the absence of an informant, on the basis of observation. In contrast, race and ethnicity on the census or on the Current Population Survey (CPS) is obtained while the individual is alive and is self-reported or reported by another member of the household familiar with the individual and, therefore, may be considered more valid. A high level of agreement between the death certificate and the census or survey report is essential to assure unbiased death rates by race and ethnicity.

Studies (24,25) show that a person self-reported as American Indian or Asian on census or survey records was sometimes reported as white on the death certificate. The net effect of misclassification is an underestimation of deaths and death rates for races other than white

and black. In addition, undercoverage of minority groups in the census and resultant population estimates, introduces biases into death rates by race and ethnicity (23,26).

The National Longitudinal Mortality Study examined the reliability of Hispanic origin reported on 43,520 death certificates with that reported on a total of 12 Current Population Surveys (CPS) conducted by the U.S. Census Bureau for the years 1979–85 (23). In this study, agreement—on a record-by-record basis—was 89.7 percent for any report of Hispanic origin. The ratio of deaths for CPS divided by deaths for death certificate was 1.07 indicating net underreporting of Hispanic origin on death certificates by 7 percent as compared with self-reports on the surveys. Death rates for the Hispanic-origin population are also affected by undercoverage of this population group in the census and resultant population estimates; the estimated net correction, taking into account both sources of bias, is 1.6 percent (23,26).

Other races and race not stated—Beginning in 1992 all records coded as "Other races" (0.03 percent of the total deaths in 2000) were assigned to the specified race of the previous record. Records for which race was unknown, not stated, or not classifiable (0.08 percent) were assigned the racial designation of the previous record.

Computation of rates and population bases

Crude and age-specific death rates for 2000 are per 100,000 population in a specified group. Age-adjusted death rates are per 100,000 U.S. standard population in a specified group and are used to compare relative mortality risks among groups and over time (27). They should be viewed as relative indexes rather than as actual measures of mortality risk. They were computed by the direct method of standardization by applying age-specific death rates to the age-specific U.S. standard population weights (shown in table I).

Population estimates represent the population at risk of dying in a specified group. Two sets of populations by age, sex, race, and Hispanic origin were used for computing death rates in this report. One set includes estimates for July 1, 2000, based on 1990 census populations (6) (table II). Census populations for 1990 by race were modified to be consistent with 1977 OMB categories and historical categories for death data (8,28). The second set includes April 1, 2000, populations from the 2000 decennial census (7) (table III). Census 2000, as specified by 1997 OMB standards, included an option for individuals to report more than one race (3). In order to produce 2000 populations with race categories comparable to those used on the death certificate (which followed the older 1977 OMB categories), NCHS, in collaboration with the U.S. Census Bureau, "bridged" the enumerated population data with multiple race categories back to single race categories. The procedures used to produce the "bridged" populations are described in detail in separate publications (9,10).

Table I. United States standard population

Age	Number	Weight
All ages	1,000,000	1.000000
Under 1 year	13,818	0.013818
1–4 years	55,317	0.055317
5–14 years	145,565	0.145565
15–24 years	138,646	0.138646
25–34 years	135,573	0.135573
35–44 years	162,613	0.162613
45–54 years	134,834	0.134834
55–64 years	87,247	0.087247
65–74 years	66,037	0.066037
75–84 years	44,842	0.044842
85 years and over	15,508	0.015508

Life tables

The life table provides a comprehensive measure of the effect of mortality on life expectancy. It is composed of sets of values showing the mortality experience of a hypothetical group of infants born at the same time and subject throughout their lifetime to the age-specific death rates of a particular time period, usually a given year. Beginning with final data reported for 1997, the life table methodology was changed from previous annual reports. Previously, U.S. life tables were abridged and constructed by reference to a standard table (29). In addition, the age range for these life tables was limited to 5-year age groups ending with the age group 85 years and over.

Beginning with 1997 mortality data, a revised life table methodology was used to construct complete life tables by single years of age that extend to age 100 years (30) using methodology similar to that of the decennial life tables (31). The advantages of the new methodology over the previous methodology are its comparability with decennial life table methodology, greater accuracy, and greater age detail. A comparison of the two methods shows small differences in resulting values of life expectancy (30). Although the new method produces complete life tables, that is, life tables by single years of age, life table data shown in this report are summarized in 5-year age groupings. To calculate the probability of dying at each age, the revised methodology uses vital statistics death rates for ages under 85 years and mortality data from the Medicare program for ages over 85 years. Medicare data were used to model the probability of dying at ages 85 years and over because the data are shown to be significantly more reliable than vital statistics data at the oldest ages (32).

The life tables presented in this report use a slight modification of the new life table method introduced in 1997 as a result of a change in the age detail of populations received from the U.S. Census Bureau. Populations for 2000 based on the April 1, 2000, Census were provided by single year of age up to age 84, followed by "85 years and over," and as a result it was not possible to apply the same smoothing technique that has been used when population figures in single years of age up to ages "100 years and over" were available (30). Accordingly, Medicare data were used to estimate the probability of dying by single year of age for ages up to "100 years and over." For comparability, the same procedure was used to estimate life tables using the 1990-based postcensal estimates of the 2000 U.S. population.

Random variation

The mortality data presented in this report are not subject to sampling error. However, mortality data, even based on complete counts, may be affected by random variation. When the number of events is small (perhaps less than 100) and the probability of such an event is small, caution must be observed when interpreting mortality data (see references 1 and 27 for a more detailed discussion of random variation and formulas for calculating standard errors for crude and age-adjusted death rates).

Table II. July 1, 2000, estimated United States population by 10-year age group, sex, race, and Hispanic origin, based on the 1990 census

[Populations are postcensal estimates based on the 1990 census, estimated as of July 1, 2000; see Technical Notes]

Race and Hispanic origin	Total	Age										
		Under 1 year	1–4 years	5–14 years	15–24 years	25–34 years	35–44 years	45–54 years	55–64 years	65–74 years	75–84 years	85 years and over
All races, all origins	275,264,999	3,847,481	15,149,281	39,674,197	38,367,211	37,430,950	44,892,363	37,153,085	23,973,674	18,167,533	12,313,503	4,295,721
Male	134,625,763	1,965,047	7,742,402	20,309,543	19,635,939	18,600,126	22,307,460	18,170,795	11,434,023	8,203,957	4,963,264	1,293,207
Female	140,639,326	1,882,434	7,406,879	19,364,744	18,731,272	18,830,824	22,584,903	18,982,290	12,539,651	9,963,576	7,350,239	3,002,514
White, total	226,251,833	3,032,117	12,024,272	31,199,571	30,464,911	29,865,789	36,889,613	31,309,493	20,607,678	15,872,188	11,105,554	3,880,647
Male	111,196,305	1,550,984	6,157,583	15,992,582	15,671,789	14,986,261	18,514,881	15,488,417	9,944,021	7,233,733	4,493,714	1,162,340
Female	115,055,528	1,481,133	5,866,689	15,206,989	14,793,122	14,879,528	18,374,732	15,821,076	10,663,657	8,638,455	6,611,840	2,718,307
White, non-Hispanic	196,654,437	2,354,791	9,449,719	25,540,911	25,319,085	25,048,030	32,407,297	28,485,192	18,994,289	14,811,733	10,554,882	3,688,508
Male	96,316,320	1,205,571	4,844,420	13,104,216	12,997,482	12,511,578	16,224,471	14,105,998	9,195,650	6,764,447	4,264,928	1,097,559
Female	100,338,117	1,149,220	4,605,299	12,436,695	12,321,603	12,536,452	16,182,826	14,379,194	9,798,639	8,047,286	6,289,954	2,590,949
Black, total	35,303,751	582,544	2,225,263	6,259,593	5,834,972	5,236,905	5,706,323	4,129,660	2,411,998	1,697,548	900,089	318,856
Male	16,776,358	296,448	1,130,514	3,180,853	2,931,385	2,483,464	2,682,784	1,878,101	1,043,664	715,063	340,114	93,968
Female	18,527,393	286,096	1,094,749	3,078,740	2,903,587	2,753,441	3,023,539	2,251,559	1,368,334	982,485	559,975	224,888
Black, non-Hispanic	33,474,968	542,033	2,070,138	5,900,328	5,531,509	4,948,429	5,410,093	3,945,405	2,311,081	1,633,468	871,640	310,844
Male	15,864,171	275,688	1,050,975	2,995,639	2,776,415	2,340,965	2,531,648	1,787,545	997,738	687,322	328,890	91,346
Female	17,610,797	266,345	1,019,163	2,904,689	2,755,094	2,607,464	2,878,445	2,157,860	1,313,343	946,146	542,750	219,498
American Indian	2,436,153	44,200	163,129	465,929	440,234	376,205	361,212	266,056	152,495	92,495	52,526	21,672
Male	1,206,143	22,256	82,529	236,655	220,933	192,948	179,931	128,629	71,551	41,583	22,264	6,864
Female	1,230,010	21,944	80,600	229,274	219,301	183,257	181,281	137,427	80,944	50,912	30,262	14,808
Asian or Pacific Islander	11,273,262	188,620	736,617	1,749,104	1,627,094	1,952,051	1,935,215	1,447,876	801,503	505,302	255,334	74,546
Male	5,446,867	95,359	371,776	899,363	811,832	937,453	929,864	675,648	374,787	213,578	107,172	30,035
Female	5,826,395	93,261	364,841	849,741	815,262	1,014,598	1,005,351	772,228	426,716	291,724	148,162	44,511
Hispanic	32,463,770	739,604	2,812,565	6,227,705	5,636,903	5,283,770	4,937,962	3,109,319	1,765,285	1,153,588	592,616	204,453
Male	16,311,713	377,149	1,434,784	3,180,846	2,924,776	2,708,110	2,521,844	1,521,981	818,003	509,569	245,468	69,183
Female	16,152,057	362,455	1,377,781	3,046,859	2,712,127	2,575,660	2,416,118	1,587,338	947,282	644,019	347,148	135,270

Table III. April 1, 2000, United States population by 10-year age group, sex, race, and Hispanic origin, based on the 2000 census

[Populations are based on the 2000 census. They are April 1, 2000, populations for all races and Hispanic origin and estimated (using a bridging algorithm) by specified race; see Methods and Technical Notes]

Race and Hispanic origin	Total	Age										
		Under 1 year	1–4 years	5–14 years	15–24 years	25–34 years	35–44 years	45–54 years	55–64 years	65–74 years	75–84 years	85 years and over
All races, all origins	281,421,906	3,805,648	15,370,150	41,077,577	39,183,891	39,891,724	45,148,527	37,677,952	24,274,684	18,390,986	12,361,180	4,239,587
Male	138,053,563	1,949,017	7,861,716	21,043,474	20,078,818	20,120,529	22,447,798	18,497,230	11,645,356	8,303,274	4,879,353	1,226,998
Female	143,368,343	1,856,631	7,508,434	20,034,103	19,105,073	19,771,195	22,700,729	19,180,722	12,629,328	10,087,712	7,481,827	3,012,589
White, total	230,085,762	2,971,604	11,981,394	32,003,038	30,907,674	31,806,318	36,954,172	31,590,952	20,798,241	16,100,428	11,134,420	3,837,521
Male	113,445,038	1,524,372	6,142,584	16,427,531	15,941,679	16,232,482	18,567,892	15,670,128	10,067,398	7,343,420	4,418,923	1,108,629
Female	116,640,724	1,447,232	5,838,810	15,575,507	14,965,995	15,573,836	18,386,280	15,920,824	10,730,843	8,757,008	6,715,497	2,728,892
White, non-Hispanic	197,324,684	2,265,371	9,278,164	25,766,723	24,811,455	25,735,244	32,176,646	28,669,184	19,190,934	15,082,131	10,654,093	3,694,739
Male	96,550,749	1,162,900	4,760,951	13,237,678	12,628,081	12,957,710	16,087,608	14,222,875	9,311,676	6,894,226	4,225,401	1,061,643
Female	100,773,935	1,102,471	4,517,213	12,529,045	12,183,374	12,777,534	16,089,038	14,446,309	9,879,258	8,187,905	6,428,692	2,633,096
Black, total	36,594,309	615,051	2,498,825	6,801,793	5,902,937	5,451,499	5,759,316	4,230,425	2,443,137	1,654,748	916,903	319,675
Male	17,407,029	312,650	1,270,615	3,453,587	2,932,161	2,585,890	2,704,687	1,956,747	1,090,261	683,457	330,261	86,713
Female	19,187,280	302,401	1,228,210	3,348,206	2,970,776	2,865,609	3,054,629	2,273,678	1,352,876	971,291	586,642	232,962
Black, non-Hispanic	35,091,809	576,855	2,354,541	6,479,803	5,622,337	5,191,098	5,554,251	4,102,365	2,378,851	1,617,304	899,931	314,473
Male	16,672,735	293,061	1,197,035	3,290,079	2,790,462	2,461,099	2,606,831	1,896,006	1,060,995	667,889	324,113	85,165
Female	18,419,074	283,794	1,157,506	3,189,724	2,831,875	2,729,999	2,947,420	2,206,359	1,317,856	949,415	575,818	229,308
American Indian	2,984,150	53,974	214,860	594,357	525,484	448,331	464,880	339,081	183,477	99,021	46,352	14,333
Male	1,488,106	27,564	109,226	301,275	271,006	228,931	228,645	164,986	88,410	44,910	18,482	4,671
Female	1,496,044	26,410	105,634	293,082	254,478	219,400	236,235	174,095	95,067	54,111	27,870	9,662
Asian or Pacific Islander	11,757,685	165,019	675,071	1,678,389	1,847,796	2,185,576	1,970,159	1,517,494	849,829	536,789	263,505	68,058
Male	5,713,390	84,431	339,291	861,081	933,972	1,073,226	946,574	705,369	399,287	231,487	111,687	26,985
Female	6,044,295	80,588	335,780	817,308	913,824	1,112,350	1,023,585	812,125	450,542	305,302	151,818	41,073
Hispanic	35,305,818	771,053	2,946,921	6,787,092	6,581,073	6,510,235	5,129,310	3,136,103	1,710,440	1,076,619	506,264	150,708
Male	18,161,795	394,611	1,505,820	3,469,070	3,563,695	3,494,210	2,653,010	1,550,931	803,574	473,875	203,382	49,617
Female	17,144,023	376,442	1,441,101	3,318,022	3,017,378	3,016,025	2,476,300	1,585,172	906,866	602,744	302,882	101,091

Contents

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