
Advance Data

DEATHS 1998

Argeo Paul Cellucci, Governor
Jane Swift, Lieutenant Governor
William D. O'Leary, Secretary of Health and Human Services
Howard K. Koh, MD, MPH, Commissioner of Public Health

Daniel J. Friedman, Assistant Commissioner, Bureau of Health Statistics, Research and Evaluation
Bruce B. Cohen, Director, Research and Epidemiology
Elaine B. Trudeau, Registrar, Registry of Vital Records and Statistics

Massachusetts Department of Public Health
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**Massachusetts Department of Public Health
Bureau of Health Statistics, Research and Evaluation
250 Washington Street
Boston, MA 02108**

(617) 624-5699

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EXECUTIVE SUMMARY

Executive Summary

Overview

In 1998, 55,204 Massachusetts residents died: 29,568 females, 25,635 males, and one of unknown gender. The number of resident deaths in 1998 increased slightly more than 1% from 1997 (569 deaths), and constitutes a 4% increase since 1990.

The age-adjusted death rate in 1998 for Massachusetts was 433.1 deaths per 100,000 persons, an 8% decline since 1990. The age-adjusted mortality rate for women was substantially lower than for men: 344.8 per 100,000 persons compared to 547.1 deaths per 100,000 persons, respectively. The 1998 Massachusetts age-adjusted death rate was 8% lower than the preliminary 1998 United States rate, and has been consistently lower than the US rate throughout the 1980's and 1990's.

The largest number of deaths occurred among people ages 85 years and older. In 1998, life expectancy at birth in Massachusetts was 78.1 years. For men, the life expectancy was 75.3 years and for women, 80.6 years. This varied by race as well. At birth, white women could expect to live 80.6 years, black women 77.2 years, white men 75.4 years, and black men 70.8 years.

There were 414 deaths to persons less than one year of age in 1998, 11 fewer deaths than in 1997, and 36% less than in 1990. (Please note: infant mortality rates will be available when Advance Data: Births, 1998 is released.)

Leading Causes of Death

Heart disease and cancer continue to be the leading causes of death among Massachusetts residents. In 1998, 15,998 Massachusetts residents died of heart disease, yielding an age-adjusted death rate of 110.2 per 100,000 persons. Cancer was the second leading cause of death, with 13,796 deaths yielding an age-adjusted rate of 130.2 per 100,000 persons.

Heart disease was the leading cause of death for Massachusetts residents ages 75 years and above, while cancer was the leading cause of death for persons ages 25-74 years. For the second consecutive year since 1988, AIDS/HIV-related diseases were not among the four leading causes of death among persons ages 25-44 years. AIDS/HIV-related diseases were the fifth leading cause of death in this age group.

Injury-related deaths were the top five leading causes of death for persons ages 15-24 years, accounting for 74% of the deaths in this age group. Motor vehicle-related deaths accounted for the highest percentage of these deaths (40%), followed by suicides (22%) and homicides (15%).

Patterns by Race and Ethnicity

Age-adjusted mortality rates varied enormously by race and Hispanic ethnicity in Massachusetts in 1998. Overall, Asians and persons of other races combined had the lowest death rate, 267.3 deaths per 100,000 persons; blacks had the highest rate, 605.1.

The rate for whites was 428.4 per 100,000. The rate for Hispanic persons was 342.4 per 100,000.

The leading causes of death varied by race and ethnicity in Massachusetts in 1998 as in previous years. Cancer was the leading cause among Asians and blacks in 1998, followed by heart disease and stroke. Heart disease was the leading cause for whites, followed by cancer and stroke. In 1998, cancer surpassed heart disease as the leading cause of death for Hispanics. AIDS/HIV-related diseases remained the third leading cause of death among Hispanics. In 1998, AIDS/HIV-related deaths among blacks was the sixth leading cause of death. For the first time in Massachusetts, more Hispanics died of AIDS/HIV than blacks. This was due to a decline in the number of AIDS/HIV-related deaths among blacks and an increase in the number of Hispanic deaths. Hispanics are the only group that experienced an increase in AIDS/HIV related deaths in 1998.

Cancer

The leading cause of cancer death for both genders was lung cancer. The lung cancer mortality rate for women was 54% higher than the breast cancer mortality rate. The second leading cause of cancer death was breast cancer for females and colorectal cancer for males. Leukemia was the leading cause of cancer death for persons under the age of 25 years, while lung cancer was the leading cause of cancer death for persons ages 45-84 years, and colorectal cancer was the leading cause of death for persons ages 85 and above. Among the 25-44 year age group, female breast cancer was the leading cause of cancer death. However, the age-specific female breast cancer mortality rate for women ages 25-44 years decreased 11% from 1997 (13 fewer deaths).

AIDS and HIV-Related Deaths

There were 213 Massachusetts residents who died from AIDS/HIV-related illnesses in 1998. This represents a continuing downward trend in the number of AIDS/HIV-related deaths since 1994, although the rate of decline over the past year was not as great as had been observed in previous years. From 1997 to 1998 there was a 12% decline in AIDS/HIV-related deaths as compared to a 60% decline between 1996 and 1997. There were 609 deaths in 1996 and 242 deaths in 1997. The decline is due in large part to improved treatment that has resulted in increased longevity of persons living with AIDS/HIV-related diseases.

Injuries

In 1998, 4.4% of all deaths to Massachusetts residents were the result of injuries (2,413 deaths). About 54% of injury-related deaths were due to fires, falls, drownings and other injuries, while 21% were due to suicide, 20% to motor vehicle-related injuries, and 5% to homicide.

The motor vehicle-related death rate, the suicide death rate, and the homicide death rate varied greatly by gender. The male motor vehicle death rate was more than twice the female rate (10.2 vs. 4.4), while the male suicide rate was four times the suicide rate for females: 11.9 deaths per 100,000 males compared with 3.0 per 100,000 females. The homicide rate for males was also six times greater than the homicide rate for females, 3.6 per 100,000 males vs. 0.6 deaths per 100,000 females.

Approximately 13% of all injury-related deaths occurred among persons ages 15-24 years. However, injuries accounted for 74% of the deaths in this age group. The age-specific injury-related death rates were dramatically higher for persons ages 75 to 84 years and especially for the oldest old, ages 85 years and above.

Causes of Infant Death

In 1998, 414 infant deaths occurred among Massachusetts residents, a decrease of 11 infant deaths from 1997. The overall leading causes of infant death were conditions arising in the perinatal period (234 deaths) and congenital anomalies (78 deaths). Other causes of infant death were sudden infant death syndrome (SIDS, 22 deaths), accidents and adverse effects (13 deaths) and homicide (2 deaths). SIDS was the leading cause of death in the post neonatal period (28 days - 1 year), while disorders relating to short gestation and low birthweight was the leading cause in the neonatal period. Infant mortality rates will be available when Advance Data: Births, 1998 is released.

New Feature of Advance Data: Deaths

For the first time, Advance Data: Deaths, 1998 contains detailed age breakdowns for people ages 65 years and over. In this report, you will find the number of deaths and age-specific death rates for people ages 65-74 years, 75-84 years and 85+ years. This change was made to provide more information about this growing population group. We will also continue to provide data for the aggregated age group of 65+ years to enable comparisons with past years and with national data sources.

TRENDS

Trends

In 1998, 55,204 Massachusetts residents died: 29,568 females, 25,635 males, and one of unknown gender (Table 1). The number of resident deaths in 1998 increased slightly more than 1% from 1997 (569 deaths) and represented a 4% increase since 1990. The age-adjusted death rate in 1998 for Massachusetts was 433.1 deaths per 100,000 persons, an 8% decline since 1990. There were 414 deaths to infants less than one year of age in 1998, 11 fewer deaths than in 1997, and 36% lower than in 1990.

Age-adjusted total mortality rates varied greatly by gender and race in Massachusetts in 1998. Overall, Asians and persons of other races had the lowest rate, 267.3 deaths per 100,000 persons; blacks had the highest rate, 605.1. The rate for whites was 428.4 and for Hispanic persons, 342.4. (The rates for Asians/others and Hispanics do not appear in Table 1.) The age-adjusted mortality rate for women was substantially lower than for men: 344.8 vs. 547.1. Among Hispanics, the female rate was 240.4 and the male rate was 463.7; for whites, the female rate was 340.2, and the male rate was 542.2; and among blacks, the female rate was 484.4, and the male rate was 768.1 deaths per 100,000 persons¹.

The 1998 Massachusetts age-adjusted death rate was 8% lower than the preliminary 1998 United States rate, and has been consistently lower than the US rate throughout the 1980's and 1990's (Table 2). Massachusetts age-adjusted death rates have been consistently lower than the US rates for heart disease, stroke, and unintentional injuries, and higher than the US rates for cancer and pneumonia/influenza. Since 1980, age-adjusted heart disease and unintentional injury death rates have declined much more rapidly in Massachusetts than in the nation as a whole.

In 1998, life expectancy at birth in Massachusetts was 78.1 years. For men, life expectancy was 75.3 years and for women, 80.6 years. Life expectancy varied by race as well (Figure 1). At birth, white women could expect to live 80.6 years, black women 77.2 years, white men 75.4 years, and black men 70.8 years. At age 65, men could expect to live an average of 16 more years while women could expect to live another 19 years.

Massachusetts has a rich history of collecting and reporting vital statistics, as demonstrated by Figure 2, which presents historical mortality trend data for the Commonwealth from 1842 to the present. In 1842, infectious diseases were the leading causes of death in Massachusetts, accounting for 47% of all deaths; 4% of all deaths were due to intentional and unintentional injuries, 2% of all deaths were attributed to heart disease, and 1% of all deaths were due to cancer. By 1998, 29% of the deaths in Massachusetts were due to heart disease, 25% were due to cancer, 7.5% were due to infectious diseases, and 4% were due to intentional and unintentional injuries. The proportion of deaths due to infectious diseases decreased by 83% between 1842 and 1998. The most marked period of decline was from the mid-1800s until the early 1950s,

¹ Please note that the age-adjusted death rates may differ substantially from previously published data for 1991 to 1997. This is due to the use of revised population estimates published by the Massachusetts Institute for Social and Economic Research (MISER). In addition, the race classifications presented in this book represent a modification in the aggregation of race categories. All trend data reported by race for the years 1989-1998 have been re-tabulated to reflect this change.

with one notable exception occurring in 1918 when 13,783 residents died from the influenza epidemic, compared to only 494 influenza deaths in 1917. From the 1950s until 1985, the proportion of deaths from infectious diseases remained fairly constant at around 5%. However, since the mid-1980s, the proportion of deaths from infectious diseases has risen, reflecting the increased number of deaths from AIDS and HIV-related causes. From 1995 to 1998, the number of infectious disease deaths in Massachusetts declined from 4,622 to 4,155 due to the dramatic decrease in AIDS and HIV-related mortality.

Table 1. Trends in Mortality Characteristics Massachusetts: 1980, 1990 - 1998

| Year | | 1980 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
|----------------------------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Resident deaths ¹ | Number | 54,934 | 53,008 | 53,010 | 53,804 | 55,557 | 54,914 | 55,296 | 55,187 | 54,635 | 55,204 |
| | Crude rate ^{2,3,4} | 957.5 | 881.0 | 880.7 | 891.2 | 916.1 | 899.1 | 900.1 | 892.3 | 877.3 | 886.4 |
| | Age-adjusted rate ⁵ | 550.7 | 471.7 | 469.4 | 472.9 | 474.0 | 465.9 | 457.1 | 444.9 | 430.9 | 433.1 |
| Race of decedent ^{6, 7} | | | | | | | | | | | |
| White | Number | 53,251 | 50,719 | 50,756 | 51,477 | 53,123 | 52,414 | 52,661 | 52,674 | 52,097 | 52,704 |
| | Percent | 96.9 | 95.7 | 95.7 | 95.7 | 95.6 | 95.4 | 95.2 | 95.4 | 95.4 | 95.5 |
| | Age-adjusted rate | 549.1 | 463.6 | 463.6 | 467.1 | 467.7 | 459.6 | 449.1 | 439.3 | 425.0 | 428.4 |
| Black | Number | 1,508 | 1,939 | 1,945 | 2,007 | 2,027 | 2,126 | 2,194 | 2,070 | 2,081 | 2,014 |
| | Percent | 2.8 | 3.7 | 3.7 | 3.7 | 3.6 | 3.9 | 4.0 | 3.8 | 3.8 | 3.6 |
| | Age-adjusted rate | 932.6 | 645.3 | 624.1 | 650.2 | 645.3 | 660.0 | 677.4 | 623.3 | 622.5 | 605.1 |
| Asian/Other | Number | 141 | 342 | 308 | 320 | 397 | 372 | 440 | 434 | 447 | 476 |
| | Percent | 0.3 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 | 0.9 |
| Gender of decedent ⁷ | | | | | | | | | | | |
| Female | Number | 27,563 | 27,490 | 27,550 | 27,770 | 29,109 | 28,733 | 29,262 | 29,152 | 29,261 | 29,568 |
| | Age-adjusted rate | 377.9 | 360.0 | 360.5 | 362.3 | 366.2 | 361.7 | 357.5 | 346.0 | 343.5 | 344.8 |
| Male | Number | 27,369 | 25,518 | 25,460 | 26,034 | 26,448 | 26,181 | 26,034 | 26,035 | 25,373 | 25,635 |
| | Age-adjusted rate | 663.6 | 618.5 | 612.2 | 616.9 | 612.7 | 598.7 | 583.2 | 571.2 | 543.5 | 547.1 |
| Age of decedent ⁷ | | | | | | | | | | | |
| <1 year | Number | 748 | 649 | 576 | 569 | 523 | 499 | 419 | 403 | 425 | 414 |
| 1-14 years | Number | 297 | 205 | 207 | 225 | 239 | 192 | 204 | 197 | 174 | 128 |
| 15-24 years | Number | 940 | 586 | 538 | 470 | 464 | 473 | 452 | 434 | 422 | 413 |
| 25-44 years | Number | 2,117 | 2,682 | 2,912 | 3,062 | 3,055 | 3,210 | 3,196 | 2,720 | 2,348 | 2,373 |
| 45-64 years | Number | 10,504 | 8,138 | 7,877 | 7,973 | 7,920 | 7,766 | 7,611 | 7,477 | 7,416 | 7,501 |
| 65-74 years | Number | 12,411 | 11,707 | 11,415 | 11,515 | 11,509 | 11,394 | 10,858 | 10,711 | 10,286 | 10,216 |
| 75-84 years | Number | 15,505 | 15,553 | 15,506 | 15,912 | 16,346 | 16,092 | 16,497 | 16,839 | 16,884 | 16,946 |
| 85+ years | Number | 12,409 | 13,482 | 13,973 | 14,076 | 15,494 | 15,283 | 16,054 | 16,400 | 16,677 | 17,213 |

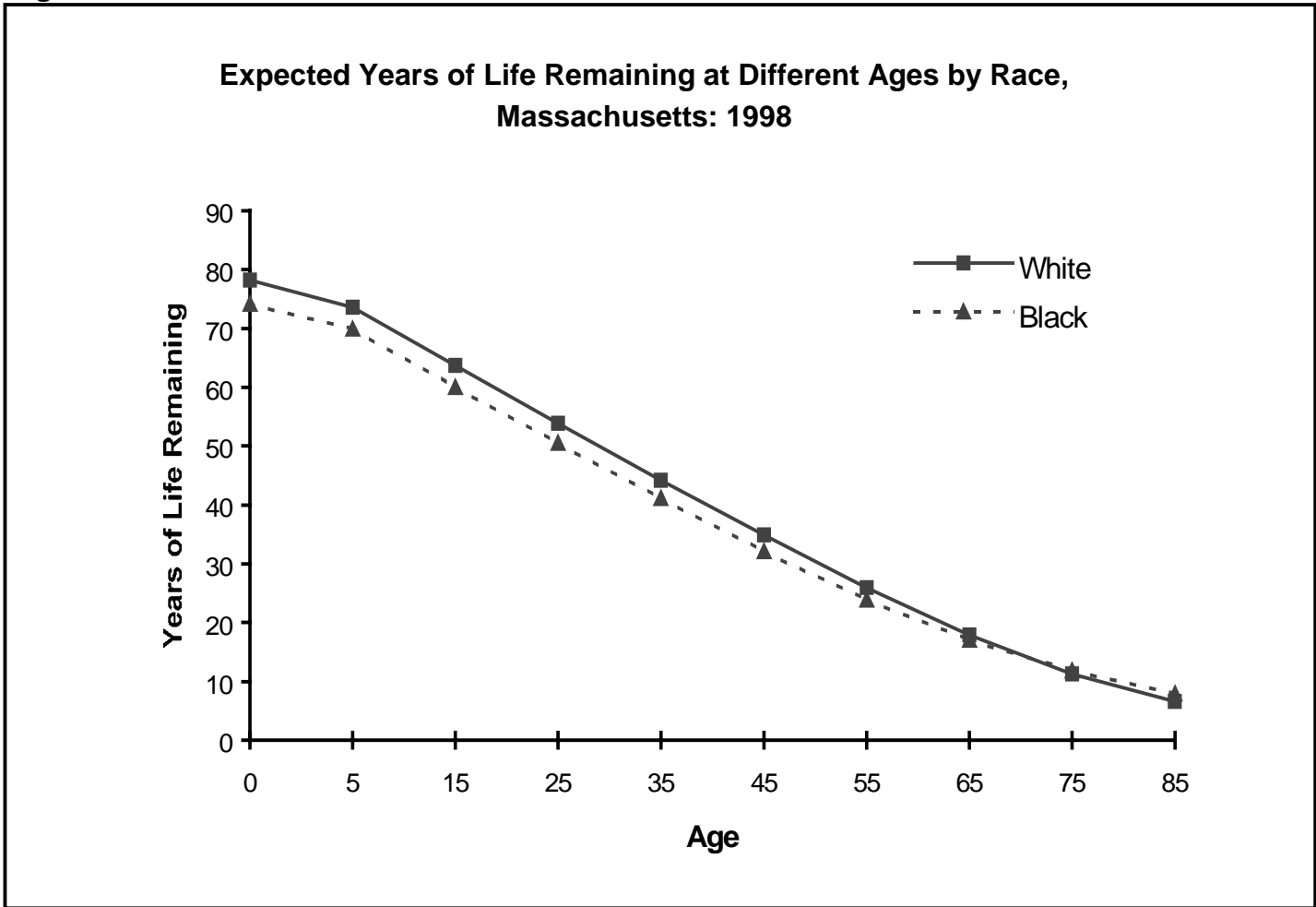
1. Deaths presented in all tables and figures are resident deaths unless otherwise specified. 2. Deaths per 100,000 residents. 3. See Glossary for further definition of terms and rates. 4. Rate calculations are based on resident population estimates from MISER for 1991-1995 (released in September 1999) and for 1996-1997 (released in November 1999). Residents death rates for 1998 are calculated using the 1997 MISER population estimates. **PLEASE NOTE: DIFFERENCES BETWEEN THESE RATES AND PREVIOUSLY PUBLISHED DATA REFLECT UPDATES IN POPULATION ESTIMATES.** 5. Rates are age-adjusted per 100,000 residents using the 1940 US Census standard population. 6. See other tables for Hispanic data. Coding of race on the death certificate changed in 1989. Therefore, caution should be using when comparing current race categories with pre-1989 data. Race categories presented in this report for the years 1989-1998 have been updated and may differ slightly from previously published data. Please refer to the Technical Notes in the Appendix for a more detailed explanation. 7. Column sum may not equal total because the race, gender or age of some decedents was unknown.

**Table 2. Five Leading Causes of Death¹ Age-Adjusted Rates
Massachusetts and United States: 1980, 1985, 1990-1998**

| Year | | Heart Disease ² | | Cancer | | Stroke | | Pneumonia/ Influenza | | Unintentional Injuries | | All Causes | |
|------|-------------------|----------------------------|-------|--------|-------|--------|------|-------------------------|------|---------------------------|------|------------|--------------------|
| | | MA | US | MA | US | MA | US | MA | US | MA | US | MA | US |
| 1980 | Rate ³ | 197.7 | 202.0 | 136.6 | 132.8 | 34.2 | 40.8 | 16.7 | 12.9 | 30.4 | 42.3 | 550.7 | 585.8 |
| | % of Total | 39.9 | 38.2 | 22.2 | 20.9 | 7.9 | 8.6 | 4.0 | 2.7 | 3.9 | 5.3 | | |
| 1985 | Rate | 178.7 | 180.5 | 140.2 | 133.6 | 27.3 | 32.3 | 14.7 | 13.4 | 25.2 | 34.7 | 523.7 | 546.1 |
| | % of Total | 37.9 | 37.2 | 23.5 | 22.0 | 6.8 | 7.3 | 4.0 | 3.2 | 3.4 | 4.5 | | |
| 1990 | Rate | 138.2 | 150.3 | 136.7 | 133.0 | 22.5 | 27.6 | 14.2 | 13.5 | 19.4 | 32.7 | 471.7 | 515.1 |
| | % of Total | 33.4 | 33.5 | 25.3 | 23.4 | 6.2 | 6.7 | 4.3 | 3.6 | 2.9 | 4.3 | | |
| 1991 | Rate | 133.9 | 146.1 | 140.1 | 132.6 | 21.6 | 26.5 | 14.4 | 12.6 | 17.7 | 31.7 | 469.4 | 507.9 |
| | % of Total | 32.2 | 33.2 | 26.0 | 23.8 | 6.2 | 6.6 | 4.5 | 3.5 | 2.7 | 4.2 | | |
| 1992 | Rate | 131.9 | 144.5 | 143.7 | 133.2 | 21.5 | 26.1 | 13.8 | 12.7 | 15.5 | 29.2 | 472.9 | 504.9 |
| | % of Total | 31.7 | 33.1 | 26.3 | 23.9 | 6.2 | 6.6 | 4.5 | 3.5 | 2.4 | 4.0 | | |
| 1993 | Rate | 132.0 | 145.3 | 140.1 | 132.6 | 21.3 | 26.5 | 15.9 | 13.5 | 15.9 | 30.3 | 474.0 | 513.3 |
| | % of Total | 31.7 | 32.6 | 25.2 | 23.4 | 6.1 | 6.6 | 5.0 | 3.6 | 2.4 | 3.9 | | |
| 1994 | Rate | 125.1 | 140.4 | 138.0 | 131.5 | 21.0 | 26.5 | 15.0 | 13.0 | 14.9 | 30.3 | 465.9 | 507.4 |
| | % of Total | 30.8 | 32.1 | 25.3 | 23.4 | 6.1 | 6.7 | 4.8 | 3.6 | 2.4 | 4.0 | | |
| 1995 | Rate | 119.2 | 138.3 | 137.3 | 129.9 | 21.0 | 26.7 | 15.0 | 12.9 | 13.6 | 30.5 | 457.1 | 503.9 |
| | % of Total | 30.2 | 31.8 | 25.4 | 23.3 | 6.3 | 6.8 | 4.9 | 3.6 | 2.2 | 4.0 | | |
| 1996 | Rate | 118.5 | 134.6 | 133.3 | 129.9 | 20.2 | 26.5 | 14.8 | 12.6 | 13.6 | 30.1 | 444.9 | 492.5 |
| | % of Total | 30.4 | 31.6 | 25.2 | 23.4 | 6.1 | 6.9 | 5.1 | 3.6 | 2.3 | 4.0 | | |
| 1997 | Rate | 114.5 | 130.5 | 129.0 | 125.6 | 20.2 | 25.9 | 14.1 | 12.9 | 14.0 | 30.1 | 430.9 | 479.1 |
| | % of Total | 30.2 | 31.3 | 25.0 | 23.2 | 6.2 | 6.9 | 4.9 | 3.8 | 2.3 | 4.0 | | |
| 1998 | Rate | 110.2 | 126.0 | 130.2 | 122.9 | 19.3 | 25.0 | 14.6 | 13.5 | 14.9 | 28.5 | 433.1 | 470.7 ⁴ |
| | % of Total | 29.0 | 31.0 | 25.0 | 23.0 | 6.0 | 6.8 | 5.2 | 4.1 | 2.4 | 4.0 | | |

1. Cause of death: the disease or injury that initiated the events leading to death; or the circumstances of the unintentional or intentional injury that resulted in the death. 2. International Classification of Diseases, Ninth Revision (ICD-9) codes used in this publication are listed in the Appendix. 3. All rates are age-adjusted per 100,000 residents using the 1940 US Census standard population. **PLEASE NOTE: DIFFERENCES BETWEEN THESE RATES AND PREVIOUSLY PUBLISHED DATA REFLECT UPDATES IN POPULATION ESTIMATES FOR 1991-1995 (released by MISER SEPTEMBER 1999) and 1996-1997 (released by MISER in NOVEMBER 1999).** 4. The 1998 US data are derived from "Births and Deaths: Preliminary Data for 1998, National Vital Statistical Report," Vol. 47, No. 5, October 5, 1999, National Center for Health Statistics, Centers for Disease Control and Prevention, US Department of Health and Human Services.

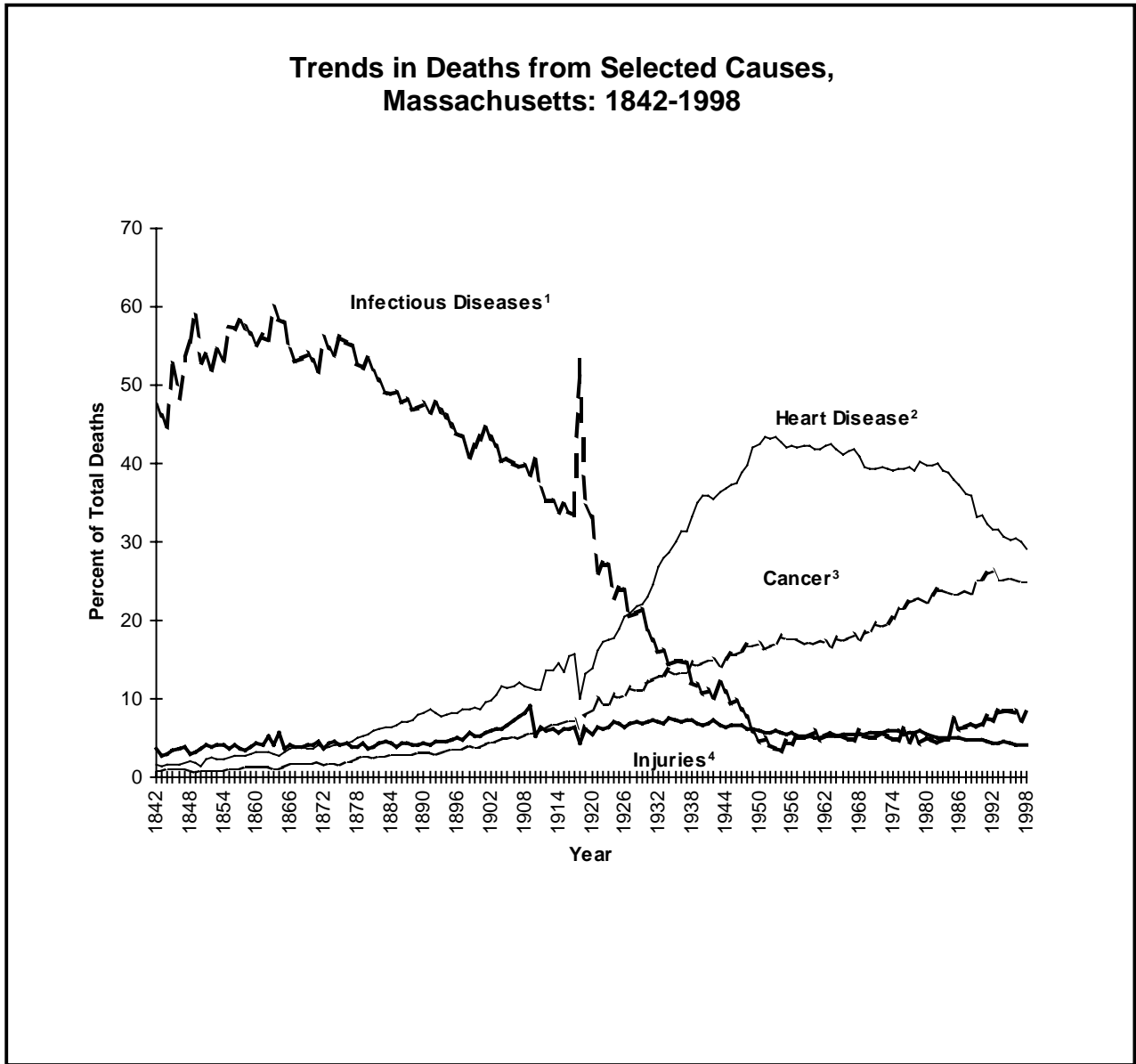
Figure 1



Years of Life Remaining, Massachusetts: 1998

| At Age: | All | Females | White Females | Black Females | Males | White Males | Black Males |
|----------------|------------|----------------|----------------------|----------------------|--------------|--------------------|--------------------|
| Birth | 78.1 | 80.6 | 80.6 | 77.2 | 75.3 | 75.4 | 70.8 |
| 1 year old | 77.5 | 79.9 | 80.0 | 76.8 | 74.7 | 74.8 | 70.5 |
| 5 years old | 73.5 | 76.0 | 76.0 | 72.9 | 70.8 | 70.9 | 66.6 |
| 15 years old | 63.6 | 66.0 | 66.1 | 63.0 | 60.8 | 60.9 | 56.6 |
| 25 years old | 53.8 | 56.1 | 56.2 | 53.2 | 51.2 | 51.3 | 47.4 |
| 35 years old | 44.2 | 46.3 | 46.4 | 43.5 | 41.7 | 41.7 | 38.2 |
| 45 years old | 34.8 | 36.8 | 36.9 | 34.5 | 32.4 | 32.5 | 29.3 |
| 55 years old | 25.9 | 27.7 | 27.7 | 26.3 | 23.7 | 23.7 | 21.1 |
| 65 years old | 18.0 | 19.4 | 19.4 | 18.9 | 16.0 | 16.0 | 14.6 |
| 75 years old | 11.3 | 12.3 | 12.3 | 13.1 | 9.8 | 9.8 | 9.8 |
| 85 years old | 6.6 | 7.0 | 7.0 | 8.3 | 5.7 | 5.7 | 7.1 |

Figure 2



LEADING CAUSES

Leading Causes

Heart disease and cancer continued to be the leading causes of death among Massachusetts residents (Figure 3). In 1998, 15,998 Massachusetts residents died of heart disease yielding an age-adjusted death rate of 110.2 per 100,000 persons. Cancer was the second leading cause of death, representing 13,796 deaths, with an age-adjusted rate of 130.2 (Table 2).¹

On average, 151 Massachusetts residents died every day in 1998 (Figure 4). Approximately 44 of these deaths were due to heart disease, 38 were due to cancer, 18 were due to respiratory deaths, 9 were due stroke, 7 were due to injuries, 4 were due to diabetes, 1 was due to AIDS, 1 was an infant death, and 29 were due to other causes.

Heart disease was the leading cause of death for Massachusetts residents ages 75 years and above, while cancer was the leading cause of death for persons ages 25-74 years (Tables 3a and 3b).

In 1998, cancer remained the number one leading cause of death for Massachusetts residents ages 25-44 years. Injuries of undetermined intent, heart disease and suicide were other leading causes. For only the second consecutive year since 1988, AIDS/HIV-related diseases was not among the four leading causes of death in this age group. In 1998, AIDS/HIV-related deaths was the fifth leading cause of death in this age group.

For persons ages 15-24 years, injuries accounted for 74% of the deaths. Injuries accounted for the top five leading causes of death in this age group (The fifth leading cause of death was due to injuries of undetermined intent, and is not shown in Table 3). Motor vehicle-related deaths accounted for the highest percentage of deaths in this age group, followed by suicides and homicides.

Among 1-14 year-olds, the leading causes of death were unintentional injuries (27 deaths), cancer (19 deaths), congenital anomalies (11 deaths), and motor vehicle-related injuries (11 deaths).

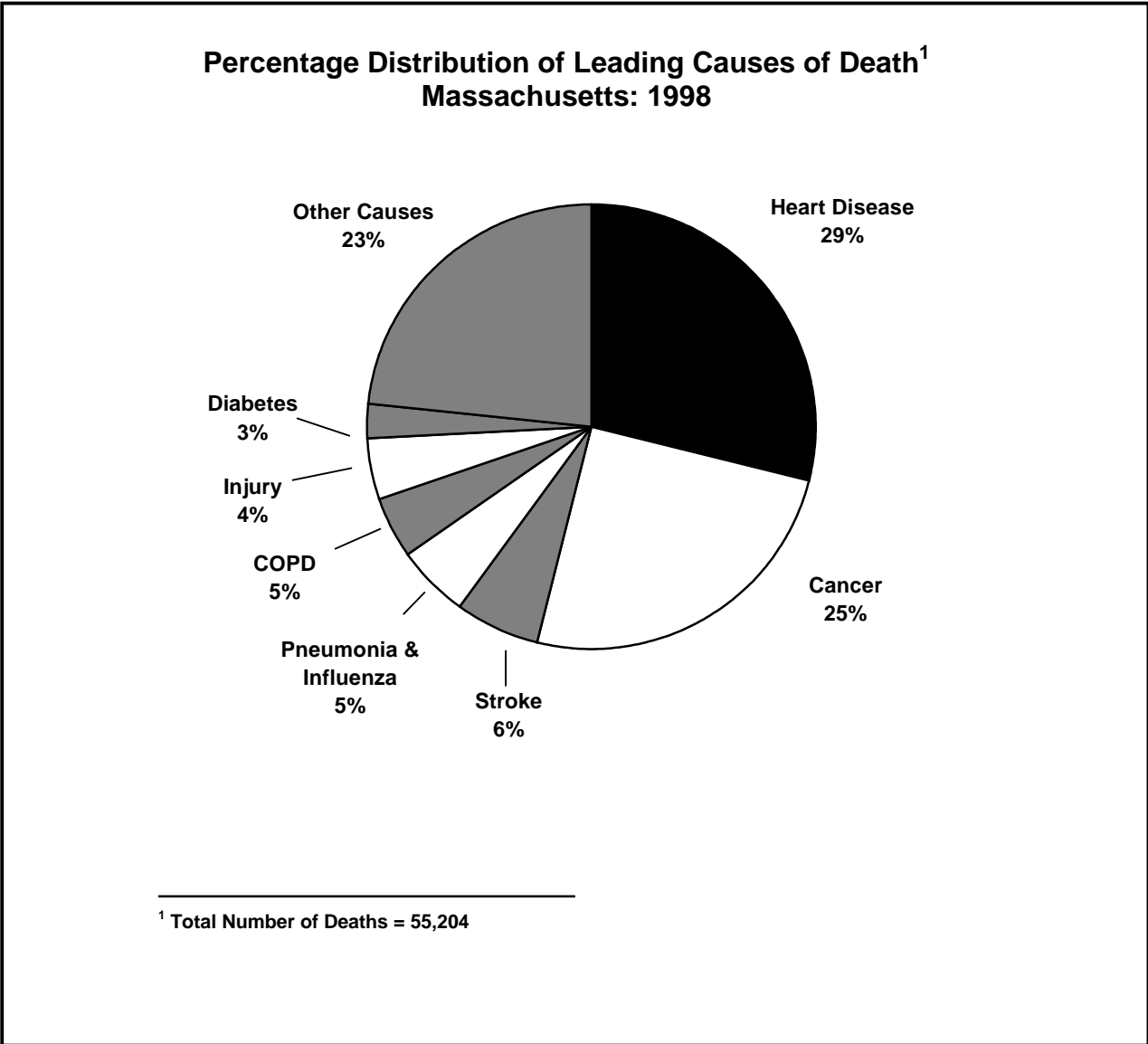
The leading causes of death varied markedly by race and Hispanic ethnicity in Massachusetts in 1998 as in previous years (Table 4). Cancer was the number one cause among Asians and blacks in 1998, followed by heart disease and stroke. Heart disease was the leading cause for whites followed by cancer and stroke. Cancer was also the leading cause of death for Hispanics, followed by heart disease and AIDS/HIV-related diseases. Seven of the ten leading causes of death for whites were chronic conditions (such as heart disease, cancer, stroke, COPD, and diabetes), which especially afflict older people. The leading causes of death for blacks included AIDS/HIV-related diseases and homicide. The leading causes of death for Hispanics included AIDS/HIV-related disease, perinatal conditions, and homicide, all of which occur more frequently among younger people. Chronic liver disease was also among

¹ Note that the number of deaths due to heart disease is greater than the number of deaths due to cancer, yet the age-adjusted death rate for heart disease is lower than the age-adjusted cancer rate. Rates are weighted by the age distribution of a standard population, enabling direct comparisons to age-adjusted rates from other populations. A large proportion of heart disease deaths occurred among the oldest age group which had the lowest weighting factor, thus yielding an overall lower age-adjusted rate than cancer. Please refer to the Glossary in the Appendix for more information.

the leading causes of death for Hispanics. For Asians, pneumonia and influenza and suicide were among the top ten leading causes.

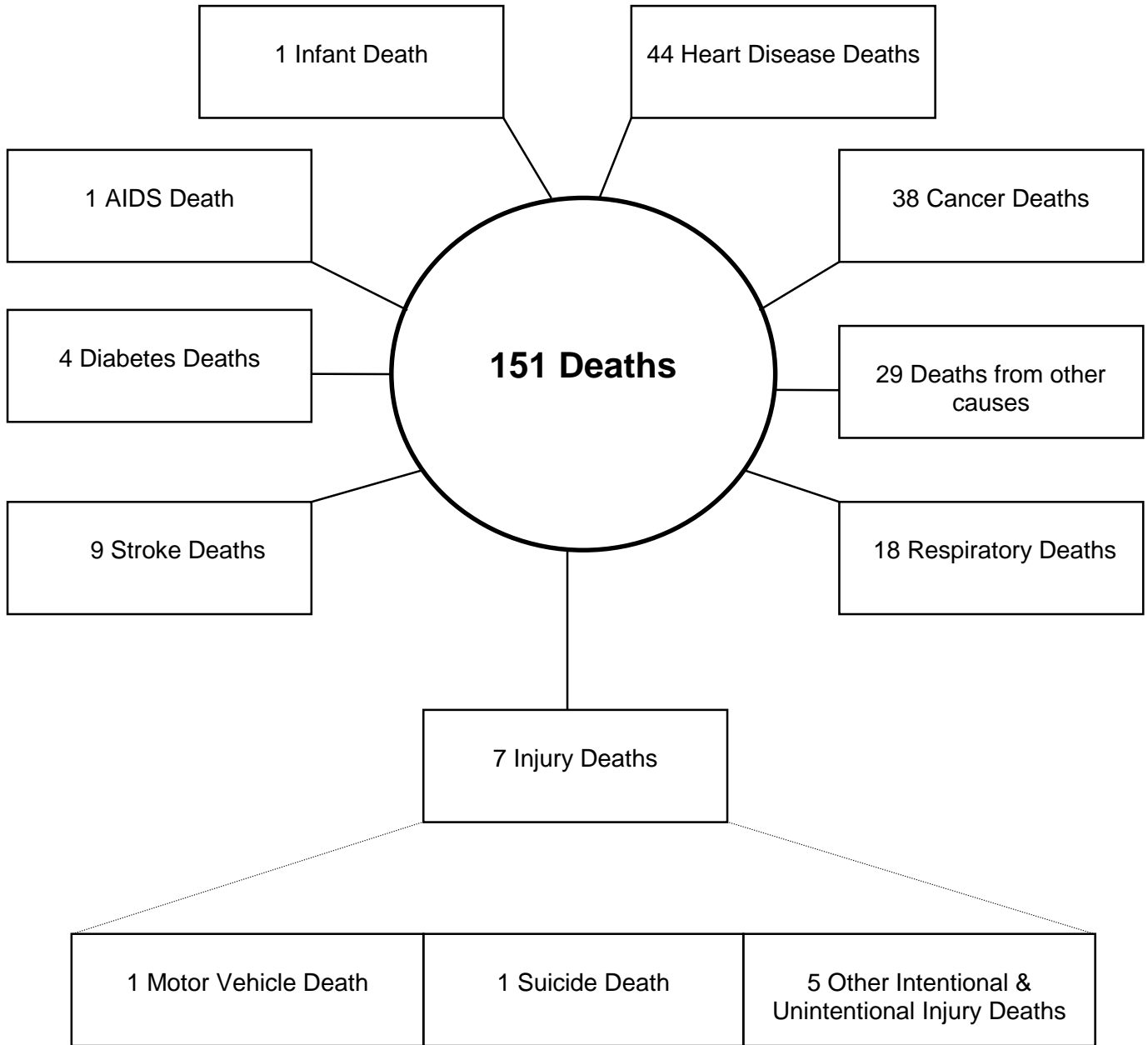
The differences in the leading causes of death among whites, blacks, Asians, and among Hispanics result from a combination of factors. Younger age distributions within the Massachusetts black and Hispanic populations yield higher proportions of deaths from causes typically affecting the young. Also, among the younger age groups, blacks and Hispanics have higher age-specific death rates for such causes as AIDS and homicide as compared to whites. Among persons over the age of 44 years, Hispanics have lower age-specific rates of death from heart disease and cancer as compared to whites and blacks (Tables 5a and 5b).

Figure 3



**Figure 4. Daily Death Statistics
Massachusetts: 1998**

Every day in 1998, residents of Massachusetts experienced an average of the following:



**Table 3a. Leading Causes of Death, Numbers and Age-Specific Rates,
Massachusetts: 1998**

| Age | Cause of Death ¹ | Deaths | |
|-------------------------------|---|---------------|-------------------|
| | | Number | Rate ² |
| 1-14 years | TOTAL | 128 | 11.4 |
| | Unintentional injuries, excluding motor vehicle injuries ³ | 27 | 2.4 |
| | Cancer | 19 | 1.7 |
| | Congenital anomalies | 11 | 1.0 |
| | Motor vehicle-related injuries | 11 | 1.0 |
| 15-24 years | TOTAL | 413 | 47.2 |
| | Motor vehicle-related injuries | 123 | 14.1 |
| | Suicide | 66 | 7.5 |
| | Homicide ⁴ | 46 | 5.3 |
| | Unintentional injuries, excluding motor vehicle injuries ³ | 41 | 4.7 |
| 25-44 years | TOTAL | 2,373 | 116.3 |
| | Cancer | 444 | 21.8 |
| | Injuries of undetermined intent ⁵ | 324 | 15.9 |
| | Heart disease | 299 | 14.7 |
| | Suicide | 218 | 10.7 |
| 45-64 years | TOTAL | 7,501 | 587.2 |
| | Cancer | 3,023 | 236.6 |
| | Heart disease | 1,806 | 141.4 |
| | Diabetes | 244 | 19.1 |
| | Chronic liver disease | 240 | 18.8 |
| 65 + years⁶ | TOTAL | 44,375 | 5,357.9 |
| | Heart disease | 13,855 | 1,672.9 |
| | Cancer | 10,281 | 1,241.3 |
| | Stroke | 3,075 | 371.3 |
| | Pneumonia and Influenza | 2,750 | 332.0 |

1. See Appendix for ICD-9 codes. 2. Number of deaths per 100,000 persons in each age group. 3. Unintentional injuries include injuries such as falls, fires, and drownings that were not intended to occur. Motor vehicle-related injuries are not included in these numbers. 4. The NCHS categories for 72 selected causes of death combines Homicide (ICD-9 E960-969) and Legal Intervention (ICD-9 E970-978). There were no deaths due to legal intervention in 1998. 5. Injuries of undetermined intent include deaths from drug overdoses, falls and fires where the investigation has not determined whether the injuries were accidental or purposely inflicted. 6. See Table 3b for the leading causes of death for the 65+ year age group.

**Table 3b. Leading Causes of Death Among the Oldest Age Groups,
Numbers and Age-Specific Rates, Massachusetts: 1998**

| Age | Cause of Death ¹ | Deaths | |
|-------------|-----------------------------|---------------|-------------------|
| | | Number | Rate ² |
| 65-74 years | TOTAL | 10,216 | 2,376.6 |
| | Cancer | 3,782 | 879.8 |
| | Heart disease | 2,711 | 630.7 |
| | COPD ³ | 637 | 148.2 |
| | Stroke | 419 | 97.5 |
| 75-84 years | TOTAL | 16,946 | 5,964.6 |
| | Heart disease | 5,084 | 1,789.4 |
| | Cancer | 4,355 | 1,532.9 |
| | Stroke | 1,164 | 409.7 |
| | COPD ³ | 985 | 346.7 |
| 85+ years | TOTAL | 17,213 | 15,065.0 |
| | Heart disease | 6,060 | 5,303.8 |
| | Cancer | 2,144 | 1,876.5 |
| | Pneumonia and Influenza | 1,613 | 1,411.7 |
| | Stroke | 1,492 | 1,305.8 |

1. See Appendix for ICD-9 codes. 2. Number of deaths per 100,000 persons in each age group. 3. COPD: Chronic Obstructive Pulmonary Disease

Table 4. Leading Causes of Death¹ and Age-Adjusted Death Rates by Race and Hispanic Ethnicity, Massachusetts: 1998

| White² | | | Black² | | | Asian² | | |
|---|---------------|-----------------------------|--------------------------|--------------|--------------|--|------------|--------------|
| Cause | # | Rate ₃ | Cause | # | Rate | Cause | # | Rate |
| Total | 52,704 | 428.4 | Total | 2,014 | 605.1 | Total | 413 | 258.7 |
| Heart disease | 15,390 | 109.4 | Cancer | 503 | 168.0 | Cancer | 113 | 75.9 |
| Cancer | 13,164 | 129.5 | Heart disease | 500 | 147.8 | Heart disease | 92 | 58.3 |
| Stroke | 3,187 | 19.0 | Stroke | 101 | 28.8 | Stroke | 31 | 19.2 |
| Pneumonia/ influenza | 2,820 | 14.7 | Diabetes | 82 | 25.6 | Pneumonia/ influenza | 17 | 7.2 |
| COPD ⁴ | 2,473 | 19.4 | Pneumonia/ influenza | 56 | 14.4 | COPD ⁴ | 16 | 11.0 |
| Diabetes | 1,305 | 11.7 | AIDS/HIV-related | 54 | 16.0 | Suicide | 16 | 9.0 |
| Nephritis | 866 | 6.0 | COPD ⁴ | 49 | 14.6 | Diabetes | 14 | 9.8 |
| Unintentional injury, excl. motor vehicle | 802 | 7.6 | Perinatal conditions | 44 | 9.5 | Nephritis | 10 | 6.2 |
| Septicemia | 739 | 5.4 | Homicide ⁵ | 41 | 12.1 | Unintentional injury excl. motor vehicle | 9 | 5.8 |
| Other arterial disease | 664 | 4.7 | Nephritis | 40 | 11.7 | Hypertension | 8 | 5.3 |

| Hispanic⁶ | | | Total | | |
|---|------------|--------------|--|---------------|--------------|
| Cause | # | Rate | Cause | # | Rate |
| Total | 924 | 342.4 | Total | 55,204 | 433.1 |
| Cancer | 193 | 84.9 | Heart disease | 15,998 | 110.2 |
| Heart disease | 151 | 61.3 | Cancer | 13,796 | 130.2 |
| AIDS/HIV-related | 58 | 17.4 | Stroke | 3,321 | 19.3 |
| Diabetes | 42 | 17.6 | Pneumonia/ Influenza | 2,897 | 14.6 |
| Perinatal conditions | 38 | 6.9 | COPD ⁴ | 2,542 | 19.1 |
| Stroke | 37 | 13.8 | Diabetes | 1,403 | 12.1 |
| Chronic liver disease | 30 | 14.1 | Nephritis | 919 | 6.2 |
| Homicide ⁵ | 29 | 8.5 | Unintentional injury excl. motor vehicle | 844 | 7.7 |
| COPD ⁴ | 28 | 10.6 | Septicemia | 780 | 5.6 |
| Unintentional injury, excl. motor vehicle | 27 | 8.4 | Other artery disease | 692 | 4.7 |

1. Ranking based on number of deaths. 2. Race categories presented in this report have been updated. Please refer to the Technical Notes in the Appendix for a detailed explanation. 3. All rates are age-adjusted per 100,000 residents using the 1940 US Census standard population. 4. Chronic Obstructive Pulmonary Disease. 5. The NCHS categories for 72 selected causes of death combines Homicide (ICD-9 E960-969) and Legal Intervention (ICD-9 E970-978). There were no deaths due to legal intervention in 1998. 6. Persons of Hispanic ethnicity are also included in the race categories, consistent with the NCHS and US Census population classification.

Table 5a. Number and Age-Specific Rates for Selected Causes of Death by Race and Hispanic Ethnicity, Massachusetts: 1998

| Selected Causes | Total | | White ¹ | | Black ¹ | | Asian ¹ | | Hispanic ² | |
|---|---------------|-------------------|--------------------|----------------|--------------------|-----------------|--------------------|-----------------|-----------------------|-----------------|
| | # | Rate ³ | # | Rate | # | Rate | # | Rate | # | Rate |
| Age: 1-14, TOTAL | 128 | 11.4 | 103 | 10.3 | 19 | 22.0 | 6 | 14.8 | 16 | 15.8 |
| Unintentional injuries, excluding motor vehicle injuries ⁴ | 27 | 2.4 | 22 | 2.2 | 5 | 5.8 | 0 | 0.0 | 5 | 4.9 |
| Cancer | 19 | 1.7 | 16 | 1.6 | 1 | -- ⁵ | 2 | -- ⁵ | 3 | -- ⁵ |
| Congenital Anomalies | 11 | 1.0 | 9 | 0.9 | 1 | -- ⁵ | 1 | -- ⁵ | 2 | -- ⁵ |
| Motor vehicle-related injuries | 11 | 1.0 | 10 | 1.0 | 1 | -- ⁵ | 0 | 0.0 | 2 | -- ⁵ |
| Age: 15-24, TOTAL | 413 | 47.2 | 354 | 45.1 | 51 | 91.3 | 6 | 19.4 | 47 | 78.4 |
| Motor vehicle-related injuries | 123 | 14.1 | 112 | 14.3 | 10 | 17.9 | 0 | 0.0 | 7 | 11.7 |
| Suicide | 66 | 7.5 | 61 | 7.8 | 2 | -- ⁵ | 3 | -- ⁵ | 4 | -- ⁵ |
| Homicide ⁶ | 46 | 5.3 | 28 | 3.6 | 18 | 32.2 | 0 | 0.0 | 17 | 28.3 |
| Unintentional injuries, excluding motor vehicle injuries ⁴ | 41 | 4.7 | 36 | 4.6 | 5 | 9.0 | 0 | 0.0 | 5 | 8.3 |
| Age: 25-44, TOTAL | 2,373 | 116.3 | 2,108 | 113.6 | 226 | 200.1 | 33 | 49.4 | 214 | 184.9 |
| Cancer | 444 | 21.8 | 403 | 21.7 | 27 | 23.9 | 13 | 19.5 | 26 | 22.5 |
| Injuries of undetermined intent ⁷ | 324 | 15.9 | 307 | 16.6 | 15 | 13.3 | 1 | -- ⁵ | 34 | 29.4 |
| Heart Disease | 299 | 14.7 | 261 | 14.1 | 32 | 28.3 | 5 | ^{7.5} | 17 | 14.7 |
| Suicide | 218 | 10.7 | 201 | 10.8 | 9 | 8.0 | 7 | 10.5 | 8 | 6.9 |
| Age: 45-64, TOTAL | 7,501 | 587.2 | 6,885 | 575.5 | 502 | 989.2 | 91 | 332.1 | 259 | 623.0 |
| Cancer | 3,023 | 236.6 | 2,793 | 233.4 | 183 | 360.6 | 40 | 146.0 | 68 | 163.6 |
| Heart Disease | 1,806 | 141.4 | 1,652 | 138.1 | 132 | 260.1 | 16 | 58.4 | 51 | 122.7 |
| Diabetes | 244 | 19.1 | 214 | 17.9 | 27 | 53.2 | 2 | -- ⁵ | 19 | 45.7 |
| Chronic Liver Disease | 240 | 18.8 | 228 | 19.1 | 9 | 17.7 | 2 | -- ⁵ | 22 | 52.9 |
| Age: 65+, TOTAL | 44,375 | 5,357.9 | 42,915 | 5,390.1 | 1,151 | 5,262.2 | 267 | 2,990.9 | 330 | 2,145.1 |
| Heart Disease | 13,855 | 1,672.9 | 13,444 | 1,688.6 | 331 | 1,513.3 | 71 | 795.3 | 80 | 520.0 |
| Cancer | 10,281 | 1,241.3 | 9,928 | 1,247.0 | 289 | 1,321.3 | 56 | 627.3 | 95 | 617.5 |
| Stroke | 3,075 | 371.3 | 2,974 | 373.5 | 77 | 352.0 | 22 | 246.4 | 23 | 149.5 |
| Pneumonia/Influenza | 2,750 | 332.0 | 2,683 | 337.0 | 47 | 214.9 | 16 | 179.2 | 19 | 123.5 |

1. Race categories presented in this book have been updated. Please refer to the Technical Notes in the Appendix for a detailed explanation. 2. Persons of Hispanic ethnicity are also included in the race categories, consistent with the NCHS and US Census population classification. 3. Number of deaths per 100,000 persons in each age group. 4. Unintentional injuries include injuries such as falls, fires, and drownings that were not intended to occur. Motor vehicle-related injuries are not included in this category. 5. Calculations based on fewer than five events are excluded. 6. The NCHS categories for 72 selected causes of death combines Homicide (ICD-9 E960-969) and Legal Intervention (ICD-9 E970-978). There were no deaths due to legal intervention in 1998. 7. Injuries of undetermined intent include deaths from falls, fires, drownings, and drug overdoses, where the investigation has not determined whether the injuries were accidental or purposely inflicted.

**Table 5b. Number and Age-Specific Rates for Selected Causes of Death Among the Oldest Age Groups
by Race and Hispanic Ethnicity, Massachusetts: 1998**

| Selected Causes | Total | | White ¹ | | Black ¹ | | Asian ¹ | | Hispanic ² | |
|--------------------------|---------------|-------------------|--------------------|-----------------|--------------------|-----------------|--------------------|-----------------|-----------------------|-----------------|
| | # | Rate ³ | # | Rate | # | Rate | # | Rate | # | Rate |
| Age: 65-74, TOTAL | 10,216 | 2,376.6 | 9,696 | 2,361.1 | 430 | 3,342.7 | 75 | 1,343.6 | 127 | 1,491.1 |
| Cancer | 3,782 | 879.8 | 3,617 | 880.8 | 137 | 1,065.0 | 23 | 412.0 | 47 | 551.8 |
| Heart Disease | 2,711 | 630.7 | 2,575 | 627.0 | 112 | 870.6 | 21 | 376.2 | 31 | 364.0 |
| COPD | 637 | 148.2 | 609 | 148.3 | 20 | 155.5 | 6 | 107.5 | 5 | 58.7 |
| Stroke | 419 | 97.5 | 395 | 96.2 | 21 | 163.2 | 3 | -- ⁴ | 5 | 58.7 |
| Age: 75-84, TOTAL | 16,946 | 5,964.6 | 16,417 | 5,977.1 | 414 | 6,287.0 | 102 | 4,067.0 | 120 | 2,548.3 |
| Heart Disease | 5,084 | 1,789.4 | 4,942 | 1,799.3 | 112 | 1,700.8 | 28 | 1,116.4 | 27 | 573.4 |
| Cancer | 4,355 | 1,532.9 | 4,223 | 1,537.5 | 108 | 1,640.1 | 22 | 877.2 | 38 | 807.0 |
| Stroke | 1,164 | 409.7 | 1,118 | 407.0 | 35 | 531.5 | 10 | 398.7 | 10 | 212.4 |
| COPD | 985 | 346.7 | 969 | 352.8 | 12 | 182.2 | 4 | -- ⁴ | 4 | -- ⁴ |
| Age: 85+, TOTAL | 17,213 | 15,065.0 | 16,802 | 15,156.7 | 307 | 12,665.0 | 90 | 10,752.7 | 83 | 3,846.2 |
| Heart Disease | 6,060 | 5,303.8 | 5,927 | 5,346.6 | 107 | 4,414.2 | 22 | 2,628.4 | 22 | 1,019.5 |
| Cancer | 2,144 | 1,876.5 | 2,088 | 1,883.5 | 44 | 1,815.2 | 11 | 1,314.2 | 10 | 463.4 |
| Pneumonia & Influenza | 1,613 | 1,411.7 | 1,582 | 1,427.1 | 17 | 701.3 | 12 | 1,433.7 | 10 | 463.4 |
| Stroke | 1,492 | 1,305.8 | 1,461 | 1,317.9 | 21 | 866.3 | 9 | 1,075.3 | 8 | 370.7 |

1. Race categories presented in this report have been updated. Please refer to the Technical Notes in the Appendix for a detailed explanation. 2. Persons of Hispanic ethnicity are also included in the race categories, consistent with the NCHS and US Census population classification. 3. Number of deaths per 100,000 persons in each age group. 4. Calculations based on fewer than five events are excluded.

HEART DISEASE AND CANCER

Heart Disease and Cancer

Heart disease and cancer continued to be the first and second leading causes of death among Massachusetts residents in 1998: 15,998 heart disease deaths and 13,796 cancer deaths, yielding age-adjusted rates of 110.2 and 130.2 per 100,000 persons respectively, (Table 2).²

The age-adjusted heart disease death rate declined 44% in Massachusetts from 1980 to 1998. However, the age-adjusted cancer death rate has declined by only 5% during this time period.

Age-adjusted heart disease rates have declined markedly in Massachusetts since 1980 among whites and blacks for both genders (Table 6). The greatest decline has been among white males. In 1980, the rates for white and black males hovered close to 300 deaths per 100,000 residents. Currently, the rates are 149.8 deaths per 100,000 white males (representing a 47% decline since 1980) and 183.6 deaths per 100,000 black males (representing a 34% decline). For white females, there was a 42% decline in heart disease death rates since 1980; for black females there was an overall decline of 20% between 1980 and 1998, but these rates have fluctuated in the past few years, with a 15% increase between 1997 and 1998.

Age-adjusted cancer death rates have decreased slightly for white males and females since 1980, with declines of 12% and 6%, respectively. For black males, there was virtually no change in the cancer death rate since 1980 and for black females the cancer death rate has increased 11% over this time period. The highest rates of death from cancer for the past 18 years were consistently among black males; in 1998 there were 218.8 cancer deaths per 100,000 black males compared to 155.6 per 100,000 white males.

Cancer was the leading cause of death for persons ages 25-74 years while heart disease was the leading cause of death for Massachusetts residents ages 75 years and above (Table 3).

The overall leading cause of cancer death was lung cancer (Table 7). It was also the leading cause of cancer death for each gender. Among women, the lung cancer mortality rate was 54% higher than the breast cancer mortality rate. The second leading cause of cancer death was breast cancer for females and colorectal cancer for males.

² The number of deaths due to heart disease is greater than the number of deaths due to cancer, yet the age-adjusted death rate for heart disease is lower than the age-adjusted cancer rate. Age-adjustment is a statistical technique where rates are weighted by the age distribution of a standard population, enabling direct comparisons to age-adjusted rates (which use the same standard population) to other populations. A larger proportion of heart disease deaths occurred among the oldest age group, compared to cancer deaths. Since this age group had the lowest weighting factor, age-adjustment yielded a lower age-adjusted heart disease death rate than for cancer. Refer to the Glossary in the Appendix for a definition of age-adjusted rates.

Leukemia was the leading cause of cancer death for persons under the age of 25 years. Lung cancer was the leading cause of cancer death for persons ages 45 to 84 years. Colorectal cancer was the leading cause of cancer death to persons 85+ years (Table 8). Among the 25-44 year age group, female breast cancer was the leading cause of cancer death followed by lung cancer. Since 1997 (data not shown), there was an 11% decrease in the female breast cancer death rate in this age group (13 fewer deaths) and a 46% increase in the lung cancer death rate (21 more deaths) among both genders combined.

The overall age-adjusted cancer mortality rate for blacks was 30% higher than for whites (168.0 per 100,000 persons vs. 129.5), and the age-adjusted death rate for blacks for prostate cancer was approximately 2.5 times higher than the rate for whites. The overall cancer death rates for Asians and Hispanic, (75.9 and 84.9, respectively, per 100,000 persons) were substantially lower than the rate for whites. The number and rate of cancer deaths among Hispanics increased from the prior year (data not shown), from 129 deaths (55.1 per 100,000 persons) in 1997 to 193 deaths (84.9 per 100,000 persons) in 1998. Lung cancer was the leading cause of cancer death for each race group, followed by colorectal cancer (Table 9). Female breast cancer was the third leading cause of cancer deaths for whites, blacks and Asians; prostate cancer was the fourth leading cause of cancer deaths for whites, blacks and Hispanics.

**Table 6. Heart Disease and Cancer Deaths by Race and Gender,
Age-Adjusted Rates,¹ Massachusetts: 1980, 1985, 1990, 1995-1998**

Heart Disease

| Year | <u>White</u> | | | <u>Black</u> | | |
|---------------------|---------------------|---------------|--------------|---------------------|---------------|--------------|
| | Male | Female | Total | Male | Female | Total |
| 1980 ² | 282.3 | 135.5 | 197.6 | 279.2 | 157.0 | 209.7 |
| 1985 ² | 252.7 | 119.6 | 176.5 | 250.1 | 150.4 | 193.0 |
| 1990 ³ | 192.5 | 96.2 | 137.8 | 226.2 | 120.8 | 164.0 |
| 1995 ^{3,4} | 164.5 | 84.3 | 119.5 | 176.8 | 117.0 | 142.9 |
| 1996 ^{3,4} | 163.4 | 84.0 | 118.8 | 185.3 | 104.4 | 139.6 |
| 1997 ^{3,4} | 155.2 | 82.2 | 114.2 | 194.2 | 106.9 | 145.4 |
| 1998 | 149.8 | 78.1 | 109.4 | 183.6 | 123.4 | 147.8 |

Cancer

| Year | <u>White</u> | | | <u>Black</u> | | |
|---------------------|---------------------|---------------|--------------|---------------------|---------------|--------------|
| | Male | Female | Total | Male | Female | Total |
| 1980 ² | 169.0 | 117.4 | 137.2 | 223.3 | 120.0 | 162.3 |
| 1985 ² | 169.8 | 120.6 | 139.6 | 198.3 | 115.0 | 150.0 |
| 1990 ³ | 166.5 | 117.1 | 136.8 | 197.0 | 124.5 | 153.1 |
| 1995 ^{3,4} | 163.8 | 118.0 | 136.6 | 222.4 | 137.5 | 172.3 |
| 1996 ^{3,4} | 160.9 | 113.9 | 133.0 | 206.1 | 132.7 | 163.7 |
| 1997 ^{3,4} | 151.9 | 113.4 | 128.9 | 214.2 | 132.0 | 165.0 |
| 1998 | 155.6 | 111.7 | 129.5 | 218.8 | 133.7 | 168.0 |

1. All rates are age-adjusted per 100,000 residents using the 1940 US Census standard population. Rates for 1980 and 1985 were obtained through CDC WONDER using the Compressed Mortality File (CMF). 2. Coding of race on the death certificate changed in 1989. Therefore caution should be used when comparing current race categories with pre-1989 data. 3. Race categories presented in this report for 1989-1998 have been updated and may differ slightly from previously published data. Please refer to the Technical Notes in the Appendix for a more detailed explanation. 4. Differences between these rates and previously published data reflect updates in population estimates for 1991-1995 (released by MISER in September 1999) and 1996-1997 (released by MISER in November 1999).

Table 7. Number and Age-Adjusted Rates of Cancer Deaths by Selected Causes and Gender, Massachusetts: 1998

| Cause of Death ¹ | ICD-9 Code | Total | | Female | | Male | |
|---------------------------------|------------------------|---------------|---------------------|--------------|--------------|--------------|--------------|
| | | # | Rate ^{2,3} | # | Rate | # | Rate |
| Total Cancer Deaths | 140-208 | 13,796 | 130.2 | 6,894 | 112.1 | 6,902 | 156.6 |
| Bladder | 188 | 320 | 2.3 | 107 | 1.1 | 213 | 4.1 |
| Brain and nervous system | 191,192 | 310 | 3.6 | 140 | 2.8 | 170 | 4.5 |
| Cervix | 180 | 91 | 2.0 | 91 | 2.0 | - | - |
| Colorectal | 153,154, 159.0 | 1,618 | 13.4 | 832 | 11.0 | 786 | 16.8 |
| Esophagus | 150 | 356 | 3.7 | 100 | 1.4 | 256 | 6.4 |
| Female breast | 174 | 1,096 | 19.7 | 1,096 | 19.7 | - | - |
| Hodgkin's disease | 201 | 36 | 0.4 | 16 | 0.3 | 20 | 0.5 |
| Kidney and other urinary organs | 189 | 278 | 2.7 | 107 | 1.8 | 171 | 4.0 |
| Leukemia | 202.4, 204-208 | 454 | 4.1 | 207 | 3.1 | 247 | 5.5 |
| Lung | 162 | 3,699 | 37.9 | 1,664 | 30.3 | 2,035 | 48.4 |
| Melanoma of the skin | 172 | 204 | 2.2 | 76 | 1.4 | 128 | 3.2 |
| Multiple myeloma | 203 | 227 | 2.1 | 124 | 2.0 | 103 | 2.3 |
| Non-Hodgkin's lymphoma | 200,202 (except 202.4) | 598 | 5.4 | 288 | 4.1 | 310 | 7.1 |
| Ovary | 183 | 301 | 5.3 | 301 | 5.3 | - | - |
| Pancreas | 157 | 749 | 6.9 | 414 | 6.1 | 335 | 7.8 |
| Prostate | 185 | 763 | 13.5 | - | - | 763 | 13.5 |
| Stomach | 151 | 369 | 3.2 | 161 | 2.1 | 208 | 4.7 |
| Uterus | 179,182 | 155 | 2.4 | 155 | 2.4 | - | - |
| All other cancers | Residual | 2,172 | 20.8 | 1,015 | 15.3 | 1,157 | 27.7 |

1. Common terms are used to describe the causes of cancer deaths. For detailed terminology of cancer sites, please refer to ICD-9 code list in the Appendix. 2. All rates are age-adjusted by the direct method using the 1940 US Census population. Rates are per 100,000 population. PLEASE NOTE: These rates cannot be compared to cancer mortality rates published by the Massachusetts Cancer Registry (MCR) because MCR uses the 1970 US Census population as the standard for age-adjustment, consistent with SEER (Surveillance, Epidemiology, End Results) 3. The total resident population is used to calculate all "Total Rates" except for ICD-9 174 to 183, which are based on the total female population, and ICD-9 185, which is based on the total male population.

Table 8. Selected Causes of Cancer Deaths by Age, Massachusetts: 1998

| Age | Cause of death ¹ | ICD-9 Code | Number | Age-specific rate ² |
|----------------|---------------------------------|------------------------|---------------|--------------------------------|
| 1 - 14 | TOTAL | | 19 | 1.7 |
| | Leukemia | 202.4, 204-208 | 6 | 0.5 |
| | Brain and nervous system | 191,192 | 5 | 0.4 |
| | Non-Hodgkin's lymphoma | 200,202 (except 202.4) | 1 | -- ³ |
| | Kidney and other urinary organs | 189 | 0 | 0.0 |
| 15 - 24 | TOTAL | | 26 | 3.0 |
| | Leukemia | 202.4, 204-208 | 6 | 0.7 |
| | Melanoma of the skin | 172 | 2 | -- ³ |
| | Brain and nervous system | 191, 192 | 2 | -- ³ |
| | Non-Hodgkin's lymphoma | 200,202 (except 202.4) | 1 | -- ³ |
| | Lung | 162 | 1 | -- ³ |
| 25 - 44 | TOTAL | | 444 | 21.8 |
| | Female breast | 174 | 74 | 7.2 ⁴ |
| | Lung | 162 | 71 | 3.5 |
| | Colorectal | 153-154, 159.0 | 37 | 1.8 |
| | Brain and nervous system | 191,192 | 32 | 1.6 |
| 45 - 64 | TOTAL | | 3,023 | 236.6 |
| | Lung | 162 | 945 | 74.0 |
| | Female breast | 174 | 309 | 46.8 ⁴ |
| | Colorectal | 153-154, 159.0 | 266 | 20.8 |
| | Pancreas | 157 | 159 | 12.4 |
| 65 + | TOTAL | | 10,281 | 1,241.3 |
| | Lung | 162 | 2,682 | 323.8 |
| | Colorectal | 153-154, 159.0 | 1,315 | 158.8 |
| | Female breast | 174 | 713 | 141.3 ⁴ |
| | Prostate | 185 | 713 | 220.3 ⁵ |
| 65-74 | TOTAL | | 3,782 | 879.8 |
| | Lung | 162 | 1,241 | 288.7 |
| | Colorectal | 153-154, 159.0 | 383 | 89.1 |
| | Female Breast | 174 | 245 | 101.6 ⁴ |
| | Pancreas | 185 | 223 | 51.9 |
| 75-84 | TOTAL | | 4,355 | 1,532.9 |
| | Lung | 162 | 1,123 | 395.3 |
| | Colorectal | 153-154,159.0 | 552 | 194.3 |
| | Prostate | 185 | 338 | 321.0 ⁵ |
| | Female Breast | 174 | 281 | 157.2 ⁴ |
| 85+ | TOTAL | | 2,144 | 1,876.5 |
| | Colorectal | 153-154,159.0 | 380 | 332.6 |
| | Lung | 162 | 318 | 278.3 |
| | Prostate | 185 | 208 | 703.7 ⁵ |
| | Female Breast | 174 | 187 | 220.8 ⁴ |

1. Common terms are used to describe causes of cancer death. For detailed terminology, please refer to the ICD-9 codes listed in the Appendix.

2. Number of deaths per 100,000 residents in each age group. 3. Calculations based on fewer than five events are excluded. 4. Calculation based on female population in specified age group. 5. Calculation based on male population in specified age group.

Table 9. Leading Causes of Cancer Deaths and Age-Adjusted Rates by Race & Hispanic Ethnicity, Massachusetts: 1998

| Cause ³ | <u>White</u> ¹ | | <u>Black</u> ¹ | | | <u>Asian</u> ¹ | | | <u>Hispanic</u> ² | | |
|---------------------|---------------------------|-------------------|---------------------------|------------|--------------|---------------------------|------------|-------------|------------------------------|------------|-------------|
| | # | Rate ⁴ | Cause | # | Rate | Cause | # | Rate | Cause | # | Rate |
| Lung | 3,555 | 38.1 | Lung | 116 | 41.1 | Lung | 22 | 16.0 | Lung | 36 | 17.7 |
| Colorectal | 1,538 | 13.2 | Colorectal | 63 | 20.6 | Colorectal | 14 | 9.0 | Colorectal | 20 | 9.2 |
| Female breast | 1,038 | 19.5 | Female breast | 43 | 25.6 | Female breast | 14 | 18.2 | Leukemia | 13 | 5.4 |
| Prostate | 718 | 13.1 | Prostate | 41 | 31.3 | Stomach | 7 | 4.3 | Prostate | 12 | 12.4 |
| Total Cancer | 13,164 | 129.5 | Total Cancer | 503 | 168.0 | Total cancer | 113 | 75.9 | Total Cancer | 193 | 84.9 |

1. Race categories presented in this report have been updated. Please refer to the Technical Notes in the Appendix for a detailed explanation. 2. Persons of Hispanic ethnicity are also included in the race categories, consistent with the NCHS and US Census population classification. 3. Common names are given for cancer causes of death. The following is a list of ICD-9 codes for cancer sites that appear in this table: Lung (162), Colorectal (153,154, 159.0), Female Breast (174), Prostate (185), Stomach (151), Leukemia (202.4, 204-208). Please refer to the ICD-9 codes listing in the Appendix for detailed terminology. 4. All rates are age-adjusted by the direct method using the 1940 US Census population. Rates are per 100,000 population. PLEASE NOTE: These data are not directly comparable with cancer mortality rates published by the Massachusetts Cancer Registry (MCR). MCR uses the 1970 US population as the standard for age-adjustment, consistent with SEER (Surveillance, Epidemiology, End Results).

INJURIES

Injuries

In 1998, 4.4% of all deaths to Massachusetts residents were the result of injuries (2,413 deaths). About 54% of injury deaths were due to fires, falls, drownings and other injuries, while 21% were due to suicide, 20% to motor vehicle-related injuries and 5% to homicide (Table 10).

The number of motor vehicle-related deaths declined from 501 in 1997 to 484 in 1998. The motor vehicle-related death rate varied by gender, with the male rate more than twice the female rate (10.2 vs. 4.4). Males age 85+ years had the highest rates for motor vehicle-related deaths: 40.6 deaths/100,000 men, followed by males ages 15-24 years (20.1).

The suicide rate for males was approximately four times the suicide rate for females: 11.9 deaths per 100,000 males compared with 3.0 for females. Asian and white males had the highest suicide rates among race-gender groups. Persons ages 85+ years and 25-44 years had the highest suicide rate among age groups.

The number of homicides continued to decline in Massachusetts: there were less than half as many homicides in 1998 (123 deaths) as there were in 1990 (270 deaths). The largest decline from 1997 to 1998 was among women (from 40 deaths to 20 deaths). The homicide rate for males was about six times greater than the homicide rate for females, 3.6 per 100,000 males vs. 0.6 per 100,000 females. In addition, there were large differences in homicide rates by race: the rates for blacks (12.1 per 100,000) and Hispanics (8.5 per 100,000) were substantially higher than for whites (1.5 per 100,000).

The rate for other injuries was almost three times greater for males than females (21.3 deaths per 100,000 compared to 8.1). For other injuries such as falls and fires, the age-specific death rates were dramatically higher for persons ages 75 years and above, and especially for the oldest old, ages 85 years and above. For females, the other injury death rate among women 85+ years of age was 224.3, about 28 times higher than the rate for all females. For males, the other injury death rate was fourteen times higher among men over the age of 85 years compared to the rate for all males.

The number of deaths and the age-adjusted death rates for homicides, motor vehicle-related deaths and suicides have dropped substantially since 1990. The age-adjusted death rate for homicides declined 54% (4.6 to 2.1); the age-adjusted motor vehicle-related death rate declined 30% (10.4 to 7.3); and the suicide rate declined 12% (8.3 to 7.3). (Data not shown.)

Table 10. Injury Deaths by Gender, Age, Race and Hispanic Ethnicity: Numbers, Age-Adjusted, and Age-Specific Rates, Massachusetts: 1998

| Cause of Death (ICD-9 Code) | All Injuries (E800-E999) | | Motor Vehicle ¹ (E810-E825) | | Suicide (E950-E959) | | Homicide ² (E960-E969) | | Other Injuries ³ (E800-E809, E826-E949, E970-E999) | |
|--------------------------------|-----------------------------|-------------------|---|-----------------|------------------------|-----------------|--------------------------------------|-----------------|--|-----------------|
| | # ⁴ | Rate ⁵ | # | Rate | # | Rate | # | Rate | # | Rate |
| All Persons | 2,413 | 31.1 | 484 | 7.3 | 503 | 7.3 | 123 | 2.1 | 1,303 | 14.4 |
| <1 ⁶ | 18 | -- ⁶ | 3 | -- ⁶ | 0 | 0.0 | 2 | -- ⁶ | 13 | -- ⁶ |
| 1-14 | 51 | 4.5 | 11 | 1.0 | 7 | 0.6 | 4 | -- ⁷ | 29 | 2.6 |
| 15-24 | 304 | 34.8 | 123 | 14.1 | 66 | 7.5 | 46 | 5.3 | 69 | 7.9 |
| 25-44 | 832 | 40.8 | 145 | 7.1 | 218 | 10.7 | 51 | 2.5 | 418 | 20.5 |
| 45-64 | 439 | 34.4 | 97 | 7.6 | 129 | 10.1 | 14 | 1.1 | 199 | 15.6 |
| 65+ | 769 | 92.8 | 105 | 12.7 | 83 | 10.0 | 6 | 0.7 | 575 | 69.4 |
| 65-74 | 183 | 42.6 | 35 | 8.1 | 35 | 8.1 | 3 | -- ⁷ | 110 | 25.6 |
| 75-84 | 271 | 95.4 | 48 | 16.9 | 32 | 11.3 | 2 | -- ⁷ | 189 | 66.5 |
| 85+ | 315 | 275.7 | 22 | 19.3 | 16 | 14.0 | 1 | -- ⁷ | 276 | 241.6 |
| All Females | 809 | 16.1 | 166 | 4.4 | 112 | 3.0 | 20 | 0.6 | 511 | 8.1 |
| <1 | 8 | -- ⁶ | 2 | -- ⁶ | 0 | 0.0 | 1 | -- ⁶ | 5 | -- ⁶ |
| 1-14 | 15 | 2.7 | 3 | -- ⁷ | 1 | -- ⁷ | 1 | -- ⁷ | 10 | 1.8 |
| 15-24 | 62 | 14.2 | 35 | 8.0 | 9 | 2.1 | 3 | -- ⁷ | 15 | 3.4 |
| 25-44 | 200 | 19.5 | 40 | 3.9 | 47 | 4.6 | 11 | 1.1 | 102 | 9.9 |
| 45-64 | 113 | 17.1 | 31 | 4.7 | 32 | 4.8 | 1 | -- ⁷ | 49 | 7.4 |
| 65+ | 411 | 81.5 | 55 | 10.9 | 23 | 4.6 | 3 | -- ⁷ | 330 | 65.4 |
| 65-74 | 78 | 32.4 | 17 | 7.1 | 11 | 4.6 | 1 | -- ⁷ | 49 | 20.3 |
| 75-84 | 129 | 72.1 | 28 | 15.7 | 8 | 4.5 | 2 | -- ⁷ | 91 | 50.9 |
| 85+ | 204 | 240.9 | 10 | 11.8 | 4 | -- ⁷ | 0 | 0.0 | 190 | 224.3 |
| All Males | 1,604 | 47.0 | 318 | 10.2 | 391 | 11.9 | 103 | 3.6 | 792 | 21.3 |
| <1 | 10 | -- ⁶ | 1 | -- ⁶ | 0 | 0.0 | 1 | -- ⁶ | 8 | -- ⁶ |
| 1-14 | 36 | 6.2 | 8 | 1.4 | 6 | 1.0 | 3 | -- ⁷ | 19 | 3.3 |
| 15-24 | 242 | 55.3 | 88 | 20.1 | 57 | 13.0 | 43 | 9.8 | 54 | 12.3 |
| 25-44 | 632 | 62.4 | 105 | 10.4 | 171 | 16.9 | 40 | 4.0 | 316 | 31.2 |
| 45-64 | 326 | 52.8 | 66 | 10.7 | 97 | 15.7 | 13 | 2.1 | 150 | 24.3 |
| 65+ | 358 | 110.6 | 50 | 15.4 | 60 | 18.5 | 3 | -- ⁷ | 245 | 75.7 |
| 65-74 | 105 | 55.6 | 18 | 9.5 | 24 | 12.7 | 2 | -- ⁷ | 61 | 32.3 |
| 75-84 | 142 | 134.9 | 20 | 19.0 | 24 | 22.8 | 0 | 0.0 | 98 | 93.1 |
| 85+ | 111 | 375.5 | 12 | 40.6 | 12 | 40.6 | 1 | -- ⁷ | 86 | 291.0 |

1. Motor vehicle deaths to occupants, pedestrians, motorcyclists and bicyclists. 2. The NCHS categories for 72 selected causes of death combines Homicide (ICD-9 960-969) and Legal Intervention (ICD-9 970-978). There were no deaths caused by legal intervention in 1998. 3. Other Injuries include deaths such as drownings, fires, falls and drug overdoses. This category includes deaths from unintentional injuries and injuries of undetermined intent (deaths where investigation has not determined whether the injuries were accidental or purposely inflicted). 4. Column sum may not equal total because age or race of some decedents was not known. 5. Number of deaths per 100,000 persons in each age group; rates for all rows except the age group rows are age-adjusted. 6. The denominator usually used in this age group is the number of 1998 resident births; since these data are not yet available, no rates for this age group are presented. 7. Calculations based on fewer than five events are excluded. 8. Persons of Hispanic ethnicity are also included in the race categories, consistent with the US Census population classification.

Table 10. (continued) Injury Deaths by Gender, Age, Race and Hispanic Ethnicity: Numbers, Age-Adjusted, and Age-Specific Rates, Massachusetts: 1998

| Cause of Death (ICD-9 Code) | All Injuries (E800-E999) | | Motor Vehicle ¹ (E810-E825) | | Suicide (E950-E959) | | Homicide ² (E960-E969) | | Other Injuries ³ (E800-E809, E826-E949, E970-E999) | |
|----------------------------------|-----------------------------|-------------------|---|-----------------------|------------------------|-----------------|--------------------------------------|-----------------------|--|-----------------|
| | # ⁴ | Rate ⁵ | # | Rate | # | Rate | # | Rate | # | Rate |
| All Whites | 2,240 | 30.9 | 451 | 7.4 | 470 | 7.4 | 81 | 1.5 | 1238 | 14.6 |
| Females | 766 | 16.2 | 154 | 4.4 | 105 | 3.1 | 16 | 0.5 | 491 | 8.2 |
| Males | 1,474 | 46.5 | 297 | 10.4 | 365 | 12.0 | 65 | 2.5 | 747 | 21.6 |
| All Blacks | 137 | 40.1 | 28 | 8.7 | 16 | 4.8 | 41 | 12.1 | 52 | 14.6 |
| Females | 32 | 16.9 | 11 | 6.6 | 3 | -- ⁷ | 4 | -- ⁷ | 14 | 6.2 |
| Males | 105 | 65.2 | 17 | 10.7 | 13 | 8.2 | 37 | 22.3 | 38 | 24.0 |
| All Asians | 30 | 17.6 | 3 | --⁷ | 16 | 9.0 | 1 | --⁷ | 10 | 6.2 |
| Females | 11 | 11.7 | 1 | -- ⁷ | 4 | -- ⁷ | 0 | 0.0 | 6 | 6.3 |
| Males | 19 | 23.6 | 2 | -- ⁷ | 12 | 14.7 | 1 | -- ⁷ | 4 | -- ⁷ |
| All Hispanics⁸ | 140 | 41.8 | 23 | 7.0 | 14 | 4.2 | 29 | 8.5 | 74 | 22.0 |
| Females | 24 | 13.0 | 5 | 2.3 | 0 | 0.0 | 4 | -- ⁷ | 15 | 8.5 |
| Males | 116 | 72.0 | 18 | 11.8 | 14 | 8.5 | 25 | 15.0 | 59 | 36.6 |

1. Motor vehicle deaths to occupants, pedestrians, motorcyclists and bicyclists. 2. The NCHS categories for 72 selected causes of death combines Homicide (ICD-9 960-969) and Legal Intervention (ICD-9 970-978). There were no deaths caused by legal intervention in 1998. 3. Other Injuries include deaths such as drownings, fires, falls and drug overdoses. This category includes deaths from unintentional injuries and injuries of undetermined intent (deaths where investigation has not determined whether the injuries were accidental or purposely inflicted). 4. Column sum may not equal total because age or race of some decedents was not known 5. Number of deaths per 100,000 persons age-adjusted. 7. Calculations based on fewer than five events are excluded. 8. Persons of Hispanic ethnicity are also included in the race categories, consistent with the US Census population classification.

AIDS

AIDS

There were 213 Massachusetts residents who died from AIDS/HIV-related illnesses in 1998. This represents a continuing downward trend in the number of AIDS/HIV-related deaths since 1994, although the rate of decline over the past year was not as great as had been observed in previous years. From 1997 to 1998 there was a 12% decline in AIDS/HIV-related deaths as compared to a 60% decline between 1996 and 1997. There were 609 deaths in 1996 and 242 deaths in 1997. There has been an overall decline of 77% in AIDS and HIV-related deaths since 1995, due in large part to improved treatment that has resulted in increased longevity of persons living with AIDS/HIV-related illnesses.

In 1998, AIDS and HIV-related diseases were the third leading cause of death for Hispanics and sixth leading cause for blacks. It was the 22nd leading cause of deaths for whites. AIDS and HIV-related diseases were the fifth leading cause of death for Massachusetts residents ages 25-44 years; just three years ago, AIDS and HIV-related diseases were the leading cause of death in this age group. AIDS and HIV-related diseases remained the leading cause of death for persons ages 25-44 years among blacks and Hispanics.

About half of all AIDS/HIV-related deaths occurred among people ages 35-44 years. In 1998, the proportion of AIDS/HIV-related deaths among persons ages 45 years and older remained approximately the same as in 1997. In 1998, females accounted for 21% of all AIDS deaths. The male/female ratio has changed little in the past two years.

For the first time in Massachusetts, more Hispanics died of AIDS/HIV-related diseases than blacks. This was due to the 25% decline in the number of AIDS/HIV-related deaths among all blacks--from 76 to 54 from 1997 to 1998 and a 23% increase in the number of AIDS/HIV-related deaths among Hispanics--from 47 to 58.

The 1998 age-specific AIDS death rate among 25-44 year-olds varied considerably by race, Hispanic ethnicity, and gender, with the highest rates occurring among Hispanic and black males (58.9 and 51.8 deaths per 100,000 residents, respectively) and the lowest rate among white females (2.6 deaths per 100,000 residents. See Table 12.) The age-specific death rates among black and Hispanic men ages 25-44 years were 5 times higher than the age-specific rate for whites.

The largest decline in death rates for persons 25-44 years from 1997 to 1998 was among black women (31.6 to 19.3 deaths/100,000). The largest increases were among Hispanic women (13.1 to 22.4) and Hispanic men (45.6 to 58.9). The AIDS/HIV-related disease death rate for white men ages 25-44 years was under 10 per 100,000 for the first time since 1989. Since 1995, the age-specific death rate for persons 25-44 years has declined 79%.

Table 11. AIDS/HIV-Related Deaths¹ by Gender and Race/Ethnicity, Massachusetts: 1987-1998

| Year ² | Total | Place of Occurrence | | | | Gender | | |
|-------------------|-------|---------------------|----------|--------------|--------------------------------|--------|------|------|
| | | At Home | Hospital | Out of State | Hospice/ Nursing Home/Other | Female | Male | |
| 1987 | # | 241 | 26 | 207 | 5 | 3 | 32 | 209 |
| | % | 100.0 | 10.8 | 85.9 | 2.1 | - | 13.3 | 86.7 |
| 1988 | # | 315 | 67 | 234 | 7 | 7 | 34 | 281 |
| | % | 100.0 | 21.3 | 74.3 | 2.2 | 2.2 | 10.8 | 89.2 |
| 1989 | # | 404 | 79 | 313 | 7 | 5 | 45 | 359 |
| | % | 100.0 | 19.6 | 77.5 | 1.7 | 1.2 | 11.1 | 88.9 |
| 1990 | # | 447 | 90 | 284 | 9 | 64 | 57 | 390 |
| | % | 100.0 | 20.1 | 63.5 | 2.1 | 14.3 | 12.8 | 87.2 |
| 1991 | # | 632 | 159 | 338 | 4 | 131 | 97 | 535 |
| | % | 100.0 | 25.2 | 53.5 | - | 20.7 | 15.4 | 84.6 |
| 1992 | # | 701 | 171 | 394 | 14 | 122 | 96 | 605 |
| | % | 100.0 | 24.4 | 56.2 | 2.0 | 17.4 | 13.7 | 86.3 |
| 1993 | # | 777 | 218 | 413 | 14 | 127 | 114 | 663 |
| | % | 100% | 28.1 | 53.2 | 1.8 | 16.3 | 14.7 | 85.3 |
| 1994 | # | 938 | 265 | 514 | 13 | 142 | 175 | 763 |
| | % | 100% | 28.3 | 54.8 | 1.4 | 15.1 | 18.7 | 81.3 |
| 1995 | # | 937 | 303 | 500 | 7 | 127 | 184 | 753 |
| | % | 100% | 32.3 | 53.4 | 0.7 | 13.6 | 19.6 | 80.4 |
| 1996 | # | 609 | 154 | 336 | 9 | 110 | 115 | 494 |
| | % | 100% | 25.3 | 55.2 | 1.5 | 18.1 | 18.9 | 81.1 |
| 1997 | # | 242 | 59 | 158 | 4 | 21 | 52 | 190 |
| | % | 100% | 24.4 | 65.3 | - | 8.6 | 21.5 | 78.5 |
| 1998 | # | 213 | 46 | 130 | 2 | 35 | 44 | 169 |
| | % | 100% | 21.6 | 61.0 | - | 16.4 | 20.7 | 79.3 |

1. AIDS: Acquired Immune Deficiency Syndrome, HIV: Human Immunodeficiency Virus. The deaths reported are cases for which AIDS or HIV-related disease was the underlying cause of death. ICD Codes: AIDS-042, AIDS-like syndrome-043 and Other HIV infection-044. 2. The deaths presented were coded by using the most current ICD-9 classification schedule, which began with 1987 death data. 3. Race categories presented in this report for 1989-1998 have been updated and may differ slightly from previously published data. Please see the Technical Note in the Appendix for a more detailed explanation. 4. The "Other" category represents Asians and American Indians. 5. Persons of Hispanic ethnicity are also included in the race categories, consistent with the US Census population classification.

Table 11. (continued) AIDS/HIV-Related Deaths¹ by Gender and Race/Ethnicity, Massachusetts: 1987-1998

| Year ² | | Age | | | | | Race/Ethnicity | | | |
|-------------------|---|-----|-------|-------|-------|------|--------------------|--------------------|--------------------|-----------------------|
| | | <15 | 15-24 | 25-34 | 35-44 | 45 + | White ³ | Black ³ | Other ⁴ | Hispanic ⁵ |
| 1987 | # | 5 | 8 | 105 | 78 | 45 | 190 | 50 | 1 | NA |
| | % | 2.1 | 3.3 | 43.6 | 32.3 | 18.7 | 78.8 | 20.8 | - | |
| 1988 | # | 5 | 12 | 111 | 127 | 60 | 251 | 64 | 0 | NA |
| | % | 1.6 | 3.8 | 35.2 | 40.3 | 19.1 | 79.7 | 20.3 | 0.0 | |
| 1989 | # | 3 | 16 | 146 | 167 | 72 | 326 | 77 | 1 | 37 |
| | % | - | 4.0 | 36.1 | 41.3 | 17.8 | 80.7 | 19.1 | - | 9.2 |
| 1990 | # | 3 | 4 | 147 | 197 | 96 | 347 | 98 | 0 | 50 |
| | % | - | - | 32.8 | 44.1 | 21.5 | 77.6 | 21.9 | 0.0 | 11.2 |
| 1991 | # | 9 | 19 | 214 | 298 | 92 | 509 | 122 | 1 | 74 |
| | % | 1.4 | 3.0 | 33.8 | 47.2 | 14.6 | 80.5 | 19.3 | - | 11.7 |
| 1992 | # | 6 | 5 | 243 | 304 | 143 | 552 | 147 | 2 | 95 |
| | % | 0.8 | 0.7 | 34.7 | 43.4 | 20.4 | 78.7 | 21.0 | - | 13.6 |
| 1993 | # | 10 | 5 | 234 | 359 | 169 | 605 | 167 | 5 | 94 |
| | % | 1.3 | 0.6 | 30.1 | 46.2 | 21.8 | 77.9 | 21.5 | 0.6 | 12.1 |
| 1994 | # | 7 | 8 | 272 | 464 | 187 | 732 | 198 | 8 | 157 |
| | % | 0.7 | 0.9 | 29.0 | 49.5 | 19.9 | 78.0 | 21.1 | 0.9 | 16.7 |
| 1995 | # | 11 | 5 | 272 | 443 | 206 | 701 | 232 | 5 | 155 |
| | % | 1.2 | 0.5 | 29.0 | 47.3 | 22.0 | 74.8 | 24.8 | 0.5 | 16.5 |
| 1996 | # | 4 | 8 | 154 | 300 | 143 | 435 | 168 | 5 | 101 |
| | % | 0.7 | 1.3 | 25.3 | 49.3 | 23.5 | 71.4 | 27.6 | 0.8 | 16.6 |
| 1997 | # | 5 | 1 | 35 | 135 | 66 | 166 | 76 | 0 | 47 |
| | % | 2.1 | - | 14.5 | 55.8 | 27.3 | 68.6 | 31.4 | 0.0 | 19.4 |
| 1998 | # | 0 | 0 | 47 | 106 | 60 | 159 | 54 | 0 | 58 |
| | % | 0.0 | 0.0 | 22.1 | 49.8 | 28.2 | 74.6 | 25.4 | 0.0 | 27.2 |

1. AIDS: Acquired Immune Deficiency Syndrome, HIV: Human Immunodeficiency Virus. The deaths reported are cases for which AIDS or HIV-related disease was the underlying cause of death. ICD Codes: AIDS-042, AIDS-like syndrome-043 and Other HIV infection-044. 2. The deaths presented were coded by using the most current ICD-9 classification schedule, which began with 1987 death data. 3. Race categories presented in this report for 1989-1998 have been updated and may differ slightly from previously published data. Please see the Technical Note in the Appendix for a more detailed explanation. 4. The "Other" category represents Asians and American Indians. 5. Persons of Hispanic ethnicity are also included in the race categories, consistent with the US Census population classification.

**Table 12. AIDS and HIV-Related Deaths by Race, Hispanic Ethnicity, and Gender
Persons Ages 25-44, Massachusetts: 1989 – 1998**

| Year | <i>White</i> ¹ | | | | | | <i>Black</i> ¹ | | | | | | <u>Hispanic</u> ² | | | | | |
|------|---------------------------|---------------------|---------------|------|-------------|------|---------------------------|-------|---------------|------|-------------|-------|------------------------------|-------|---------------|----------------|-------------|-------|
| | <u>Total</u> | | <u>Female</u> | | <u>Male</u> | | <u>Total</u> | | <u>Female</u> | | <u>Male</u> | | <u>Total</u> | | <u>Female</u> | | <u>Male</u> | |
| | # | Rate ^{3,4} | # | Rate | # | Rate | # | Rate | # | Rate | # | Rate | # | Rate | # | Rate | # | Rate |
| 1989 | 252 | 14.0 | 21 | 2.3 | 231 | 25.9 | 61 | 57.2 | 17 | 31.1 | 44 | 84.8 | 32 | 36.0 | 6 | 13.3 | 26 | 59.4 |
| 1990 | 266 | 14.4 | 22 | 2.4 | 244 | 26.8 | 77 | 69.2 | 23 | 40.4 | 54 | 99.4 | 40 | 42.4 | 4 | - ³ | 36 | 77.1 |
| 1991 | 409 | 22.0 | 51 | 5.4 | 358 | 39.0 | 102 | 90.4 | 28 | 48.6 | 74 | 134.0 | 55 | 55.3 | 16 | 31.9 | 39 | 79.1 |
| 1992 | 435 | 23.6 | 49 | 5.3 | 386 | 42.2 | 111 | 99.6 | 26 | 45.8 | 85 | 155.3 | 79 | 77.0 | 15 | 29.0 | 64 | 125.8 |
| 1993 | 463 | 25.2 | 58 | 6.2 | 405 | 44.4 | 126 | 113.6 | 33 | 58.5 | 93 | 170.5 | 76 | 71.3 | 19 | 35.4 | 57 | 107.6 |
| 1994 | 573 | 31.0 | 96 | 10.3 | 477 | 52.2 | 156 | 139.6 | 40 | 70.5 | 116 | 210.8 | 127 | 114.4 | 34 | 61.0 | 93 | 168.2 |
| 1995 | 545 | 29.5 | 94 | 10.1 | 451 | 49.2 | 166 | 148.2 | 48 | 84.5 | 118 | 213.7 | 124 | 108.2 | 34 | 59.3 | 90 | 157.1 |
| 1996 | 331 | 17.8 | 52 | 5.6 | 279 | 30.3 | 118 | 105.2 | 42 | 74.1 | 76 | 137.1 | 85 | 71.7 | 24 | 40.5 | 61 | 102.7 |
| 1997 | 121 | 6.5 | 23 | 2.5 | 98 | 10.6 | 49 | 43.4 | 18 | 31.6 | 31 | 55.4 | 36 | 29.4 | 8 | 13.1 | 28 | 45.6 |
| 1998 | 113 | 6.1 | 24 | 2.6 | 89 | 9.7 | 40 | 35.4 | 11 | 19.3 | 29 | 51.8 | 47 | 40.6 | 13 | 22.4 | 34 | 58.9 |

1. Race categories presented in this report for 1989-1998 have been updated and may differ slightly from previously published data. Please see the Technical Note in the Appendix for a more detailed explanation.

2. Persons of Hispanic ethnicity are also included in the race categories, consistent with the US Census population classification. 3. Number of deaths per 100,000 residents in the specified population group.

PLEASE NOTE: DIFFERENCES BETWEEN THESE RATES AND PREVIOUSLY PUBLISHED DATA REFLECT UPDATES IN POPULATION ESTIMATES FOR 1991-1995 (released by MISER in September 1999) AND 1996-1997 (released by MISER in November 1999). 4. Calculations based on fewer than five events are excluded.

CAUSES OF INFANT DEATH

Causes of Infant Death

In 1998, there were 414 deaths to infants under one year of age, representing 11 fewer infant deaths from the previous year. Infant mortality rates for 1998 are not yet available; they will be published in *Advance Data: Births, 1998* which will be released in early 2000.

The overall leading causes of infant death were conditions arising in the perinatal period (234 deaths) and congenital anomalies (78 deaths) (Table 13). Other causes of infant death were sudden infant death syndrome (SIDS, 22 deaths), accidents and adverse effects (13 deaths) and homicide (2 deaths).

SIDS was the leading cause of death in the post neonatal period (28-365 days), while disorders relating to short gestation and low birthweight was the leading cause in the neonatal period (<28 days).

Certain conditions originating in the perinatal period and congenital anomalies represented the two leading causes of death for white, Asian and Hispanic infants (Table 14). Among black infants, certain conditions originating in the perinatal period and SIDS were the leading causes of death (Table 14).

Table 13. Infant, Neonatal, and Post Neonatal Deaths by Cause, Massachusetts: 1998

| Cause of Death ¹ | ICD-9 Code | Infant (<1 year) | | Neonatal (<28 days) | | Post Neonatal (28-365 days) | |
|---|------------------|---------------------|------------------|------------------------|-------------|--------------------------------|-------------|
| | | # | % ^{2,3} | # | % | # | % |
| TOTAL⁴ | | 414 | 100% | 315 | 100% | 99 | 100% |
| Infectious and parasitic diseases | 001-139 | 5 | 1.2 | 2 | -- | 3 | -- |
| Cancer | 140-208 | 3 | -- | 1 | -- | 2 | -- |
| Diseases of the blood and blood forming organs (anemia) | 280-289 | 1 | -- | 0 | 0.0 | 1 | -- |
| Other diseases of nervous system and sense organs | 323-389 | 6 | 1.4 | 2 | -- | 4 | -- |
| Diseases of the respiratory system | 460-519 | 11 | 2.7 | 0 | 0.0 | 11 | 11.1 |
| Diseases of digestive system | 520-579 | 4 | -- | 1 | -- | 3 | -- |
| Congenital anomalies | 740-759 | 78 | 18.8 | 61 | 19.4 | 17 | 17.2 |
| Anencephalus and similar anomalies | 740 | 3 | -- | 3 | -- | 0 | -- |
| Spina Bifida | 741 | 1 | -- | 1 | -- | 0 | -- |
| Congenital anomalies of central nervous system and eye | 742-743 | 8 | -- | 7 | -- | 1 | -- |
| Congenital anomalies of heart | 745-746 | 16 | -- | 8 | -- | 8 | -- |
| Other congenital anomalies of circulatory system | 747 | 5 | -- | 5 | -- | 0 | -- |
| Congenital anomalies of respiratory system | 748 | 18 | -- | 17 | -- | 1 | -- |
| Cleft palate and other digestive tract anomalies | 749-751 | 1 | -- | 0 | -- | 1 | -- |
| Congenital anomalies of genitourinary system | 752-753 | 6 | -- | 6 | -- | 0 | -- |
| Congenital anomalies of musculoskeletal system | 754-756 | 5 | -- | 4 | -- | 1 | -- |
| Chromosomal anomalies | 758 | 10 | -- | 5 | -- | 5 | -- |
| Certain conditions originating in the perinatal period | 760-779 | 234 | 56.5 | 227 | 72.1 | 7 | 7.1 |
| Newborn affected by maternal conditions which may be unrelated to present pregnancy | 760 | 6 | -- | 6 | -- | 0 | -- |
| Newborn affected by maternal complications of pregnancy | 761 | 35 | -- | 35 | -- | 0 | -- |
| Newborn affected by complications of placenta, cord and membrane | 762 | 28 | -- | 28 | -- | 0 | -- |
| Newborn affected by other complications of labor and delivery | 763 | 4 | -- | 4 | -- | 0 | -- |
| Disorders relating to short gestation and unspecified low birthweight | 765 | 53 | -- | 53 | -- | 0 | -- |
| Birth trauma | 767 | 3 | -- | 3 | -- | 0 | -- |
| Intrauterine hypoxia and birth asphyxia | 768 | 10 | -- | 10 | -- | 0 | -- |
| Respiratory distress syndrome | 769 | 16 | -- | 16 | -- | 0 | -- |
| Other respiratory conditions of newborn | 770 | 29 | -- | 25 | -- | 4 | -- |
| Infections specific to the perinatal period | 771 | 16 | -- | 15 | -- | 1 | -- |
| Neonatal hemorrhage | 772 | 8 | -- | 8 | -- | 0 | -- |
| Other and ill-defined conditions originating in the perinatal period | 775-779 | 26 | -- | 24 | -- | 2 | -- |
| Symptoms, signs, and ill-defined conditions | 780-799 | 28 | 6.8 | 1 | -- | 27 | 27.3 |
| Sudden Infant Death Syndrome (SIDS) | 798.0 | 22 | -- | 0 | -- | 22 | -- |
| Accidents and adverse effects | E800-E949 | 13 | 3.1 | 3 | -- | 10 | 10.1 |
| Homicide | E960-E969 | 2 | -- | 1 | -- | 1 | -- |
| All other causes | Residual | 29 | 7.0 | 16 | 5.1 | 13 | 13.1 |

1. Please refer to the Technical Notes in the Appendix for an explanation of ICD-9 codes. 2. Percents not calculated for subcategories. 3. Calculations based on fewer than five events are excluded. 4. After the official year-end closing of the 1998 death certificate registration process, four additional infant deaths were identified for whom death certificates had not been filed. These infant deaths are not included in either the infant death count or the total death count. All of these infants were born to mothers who were residents of Boston at the time of their births. Additional information will become available once the death certificates for these infants have been completed and officially filed with the Registry of Vital Records and Statistics.

Table 14. Infant Deaths by Major Causes, Race and Hispanic Ethnicity, Massachusetts: 1998

| Cause of Death | ICD-9 Code | White ¹ | | Black ¹ | | Asian ¹ | | Hispanic ² | |
|--|------------|--------------------|-----------------|--------------------|-----------------|--------------------|-----------------|-----------------------|-----------------|
| | | # | % | # | % | # | % | # | % |
| TOTAL ³ | | 339 | 100% | 65 | 100% | 10 | 100% | 58 | 100% |
| Congenital anomalies | 740-759 | 71 | 20.9 | 5 | 7.7 | 2 | -- ⁴ | 8 | 13.8 |
| Certain conditions originating in the perinatal period | 760-779 | 184 | 54.3 | 44 | 67.7 | 6 | 60 | 38 | 65.5 |
| Symptoms, signs, and ill-defined conditions | 780-799 | 21 | 6.2 | 7 | 10.8 | 0 | 0.0 | 2 | -- ⁴ |
| Accidents and adverse effects | E800-E949 | 12 | 3.5 | 1 | -- ⁴ | 0 | 0.0 | 2 | -- ⁴ |
| Homicide | E960-E969 | 2 | -- ⁴ | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| All other causes | Residual | 49 | 14.5 | 8 | 12.3 | 2 | -- ⁴ | 8 | 13.8 |

1. Race categories presented in this report have been updated. Please refer to the Technical Note in the Appendix for a detailed explanation. 2. Persons of Hispanic ethnicity are also included in the race categories, consistent with the NCHS and US Census population classification. 3. After the official year-end closing of the 1998 death certificate registration process, four additional infant deaths were identified for whom death certificates had not been filed. These infant deaths are not included in either the infant death count or the total death count. All of these infants were born to mothers who were residents of Boston at the time of their births. Additional information will become available once the death certificates for these infants have been completed and officially filed with the Registry of Vital Records and Statistics. 4. Calculations based on fewer than five events are excluded.

**CAUSE OF DEATH
BY COMMUNITY,
BY CHNA
(COMMUNITY HEALTH
NETWORK AREA),
AND BY COUNTY**

Table 15. Selected Causes of Death by Community, 1998

| COMMUNITY | Total Deaths | Age-adjusted Death Rate¹ | Heart Disease | Total Cancer | Lung Cancer | Breast Cancer² | Stroke | Motor Vehicle | Homicide | Pneumonia & Influenza | COPD³ | Diabetes | Suicide |
|----------------------|---------------------|--|----------------------|---------------------|--------------------|----------------------------------|---------------|----------------------|-----------------|----------------------------------|-------------------------|-----------------|----------------|
| Massachusetts | 55,204 | 433.1 | 15,998 | 13,796 | 3,699 | 1,096 | 3,321 | 484 | 123 | 2,897 | 2,542 | 1,403 | 503 |
| Abington | 120 | 427.0 | 33 | 27 | 11 | 0 | 8 | 0 | 1 | 8 | 6 | 1 | 0 |
| Acton | 92 | 324.6 | 23 | 23 | 4 | 4 | 5 | 2 | 0 | 6 | 6 | 2 | 1 |
| Acushnet | 73 | 352.9 | 17 | 19 | 4 | 0 | 6 | 0 | 0 | 0 | 2 | 5 | 0 |
| Adams | 129 | 451.8 | 35 | 24 | 3 | 0 | 11 | 1 | 0 | 14 | 6 | 3 | 0 |
| Agawam | 291 | 418.7 | 79 | 64 | 21 | 3 | 23 | 2 | 0 | 22 | 13 | 3 | 0 |
| Alford | 0 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Amesbury | 145 | 501.2 | 50 | 31 | 10 | 3 | 11 | 4 | 0 | 6 | 6 | 7 | 0 |
| Amherst | 108 | 284.4 | 33 | 36 | 9 | 3 | 3 | 2 | 0 | 10 | 2 | 2 | 0 |
| Andover | 219 | 341.5 | 68 | 52 | 17 | 3 | 17 | 0 | 0 | 8 | 9 | 7 | 1 |
| Arlington | 476 | 394.7 | 145 | 116 | 31 | 11 | 34 | 3 | 1 | 24 | 18 | 5 | 2 |
| Ashburnham | 26 | 307.0 | 7 | 7 | 2 | 1 | 0 | 1 | 0 | 2 | 1 | 2 | 0 |
| Ashby | 21 | 491.4 | 4 | 11 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| Ashfield | 15 | 362.3 | 3 | 5 | 1 | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 0 |
| Ashland | 71 | 322.3 | 22 | 19 | 6 | 0 | 6 | 0 | 0 | 3 | 7 | 3 | 1 |
| Athol | 125 | 471.4 | 36 | 35 | 6 | 2 | 10 | 1 | 0 | 7 | 6 | 2 | 4 |
| Attleboro | 358 | 519.5 | 107 | 86 | 18 | 6 | 28 | 5 | 1 | 18 | 18 | 7 | 2 |
| Auburn | 161 | 417.0 | 48 | 53 | 17 | 4 | 9 | 2 | 0 | 6 | 10 | 1 | 2 |
| Avon | 43 | 454.0 | 11 | 13 | 6 | 1 | 2 | 0 | 0 | 3 | 6 | 1 | 1 |
| Ayer | 69 | 635.7 | 18 | 14 | 4 | 1 | 4 | 0 | 0 | 5 | 7 | 4 | 1 |
| Barnstable | 481 | 366.4 | 137 | 118 | 28 | 6 | 24 | 6 | 2 | 19 | 34 | 12 | 4 |
| Barre | 33 | 302.3 | 11 | 11 | 1 | 5 | 3 | 0 | 0 | 1 | 0 | 0 | 1 |
| Becket | 10 | 283.1 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| Bedford | 158 | 508.6 | 40 | 39 | 11 | 3 | 18 | 2 | 0 | 5 | 2 | 4 | 0 |
| Belchertown | 79 | 431.2 | 25 | 24 | 6 | 4 | 4 | 1 | 0 | 1 | 4 | 2 | 1 |
| Bellingham | 98 | 482.4 | 20 | 27 | 7 | 4 | 4 | 1 | 0 | 7 | 8 | 1 | 1 |
| Belmont | 223 | 250.0 | 65 | 55 | 8 | 8 | 9 | 1 | 0 | 18 | 6 | 5 | 0 |
| Berkley | 20 | 383.7 | 5 | 5 | 2 | 0 | 2 | 1 | 0 | 1 | 1 | 0 | 0 |
| Berlin | 24 | 545.6 | 8 | 4 | 3 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 0 |
| Bernardston | 26 | 431.5 | 6 | 6 | 1 | 1 | 3 | 0 | 0 | 2 | 2 | 0 | 1 |
| Beverly | 437 | 469.9 | 139 | 83 | 29 | 5 | 35 | 2 | 0 | 22 | 23 | 11 | 4 |
| Billerica | 240 | 510.1 | 55 | 67 | 23 | 2 | 15 | 0 | 0 | 8 | 14 | 13 | 2 |
| Blackstone | 52 | 419.1 | 15 | 19 | 6 | 1 | 7 | 0 | 0 | 2 | 2 | 0 | 0 |
| Blandford | 6 | 291.4 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bolton | 14 | 236.9 | 4 | 5 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Boston | 4501 | 533.2 | 1203 | 1068 | 283 | 78 | 244 | 31 | 35 | 272 | 157 | 116 | 50 |

Table 15. Selected Causes of Death by Community, 1998 (continued)

| COMMUNITY | Total Deaths | Age-adjusted Death Rate ¹ | Heart Disease | Total Cancer | Lung Cancer | Breast Cancer ² | Stroke | Motor Vehicle | Homicide | Pneumonia & Influenza | COPD ³ | Diabetes | Suicide |
|--------------|--------------|--------------------------------------|---------------|--------------|-------------|----------------------------|--------|---------------|----------|-----------------------|-------------------|----------|---------|
| Bourne | 181 | 432.2 | 70 | 33 | 10 | 1 | 4 | 1 | 0 | 11 | 10 | 6 | 3 |
| Boxborough | 10 | 326.0 | 4 | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Boxford | 37 | 314.0 | 7 | 16 | 1 | 2 | 1 | 0 | 0 | 0 | 2 | 1 | 0 |
| Boylston | 40 | 598.1 | 14 | 10 | 3 | 1 | 2 | 1 | 0 | 2 | 3 | 1 | 1 |
| Braintree | 421 | 472.1 | 113 | 110 | 30 | 13 | 22 | 0 | 0 | 29 | 12 | 12 | 7 |
| Brewster | 142 | 343.0 | 38 | 28 | 5 | 4 | 18 | 3 | 0 | 6 | 8 | 3 | 0 |
| Bridgewater | 127 | 406.8 | 36 | 36 | 6 | 1 | 8 | 6 | 0 | 5 | 7 | 4 | 3 |
| Brimfield | 26 | 345.0 | 7 | 9 | 1 | 0 | 2 | 0 | 0 | 3 | 1 | 0 | 0 |
| Brockton | 869 | 521.4 | 258 | 205 | 67 | 18 | 50 | 13 | 4 | 39 | 41 | 14 | 10 |
| Brookfield | 32 | 588.0 | 9 | 7 | 3 | 0 | 1 | 1 | 0 | 3 | 0 | 0 | 0 |
| Brookline | 436 | 273.0 | 126 | 105 | 16 | 11 | 24 | 1 | 2 | 38 | 7 | 2 | 3 |
| Buckland | 15 | 330.7 | 9 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Burlington | 140 | 387.1 | 22 | 57 | 12 | 6 | 11 | 2 | 0 | 7 | 8 | 3 | 3 |
| Cambridge | 579 | 376.5 | 166 | 149 | 31 | 9 | 31 | 8 | 2 | 20 | 23 | 18 | 8 |
| Canton | 206 | 478.7 | 60 | 47 | 12 | 2 | 14 | 1 | 0 | 12 | 9 | 4 | 1 |
| Carlisle | 14 | 213.3 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Carver | 97 | 508.9 | 31 | 29 | 11 | 1 | 3 | 5 | 0 | 2 | 4 | 2 | 0 |
| Charlemont | 13 | 543.2 | 5 | 7 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Charlton | 87 | 572.0 | 28 | 24 | 3 | 0 | 4 | 2 | 1 | 0 | 2 | 3 | 0 |
| Chatham | 120 | 370.9 | 35 | 32 | 8 | 5 | 9 | 0 | 0 | 5 | 3 | 3 | 0 |
| Chelmsford | 264 | 424.2 | 90 | 72 | 14 | 4 | 12 | 2 | 0 | 13 | 9 | 4 | 1 |
| Chelsea | 282 | 530.2 | 86 | 54 | 19 | 2 | 13 | 2 | 3 | 17 | 20 | 5 | 1 |
| Cheshire | 29 | 414.6 | 12 | 6 | 3 | 0 | 1 | 0 | 0 | 1 | 2 | 2 | 1 |
| Chester | 15 | 832.6 | 7 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Chesterfield | 5 | 326.5 | 1 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chicopee | 675 | 516.7 | 197 | 175 | 50 | 14 | 36 | 6 | 1 | 36 | 39 | 11 | 5 |
| Chilmark | 6 | 331.7 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Clarksburg | 17 | 361.3 | 5 | 8 | 3 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| Clinton | 135 | 549.8 | 39 | 38 | 11 | 4 | 8 | 0 | 0 | 6 | 5 | 5 | 1 |
| Cohasset | 63 | 364.0 | 17 | 20 | 5 | 3 | 2 | 1 | 0 | 3 | 4 | 1 | 1 |
| Colrain | 16 | 531.1 | 5 | 2 | 0 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 0 |
| Concord | 136 | 303.0 | 37 | 29 | 4 | 6 | 9 | 0 | 0 | 6 | 8 | 2 | 2 |
| Conway | 8 | 207.5 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| Cummington | 5 | 420.4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Dalton | 72 | 423.9 | 19 | 15 | 6 | 1 | 2 | 2 | 0 | 6 | 2 | 2 | 0 |
| Danvers | 269 | 451.0 | 101 | 68 | 21 | 3 | 21 | 1 | 0 | 17 | 12 | 1 | 1 |
| Dartmouth | 245 | 340.8 | 76 | 62 | 12 | 7 | 14 | 8 | 0 | 9 | 9 | 9 | 2 |

Table 15. Selected Causes of Death by Community, 1998 (continued)

| COMMUNITY | Total Deaths | Age-adjusted Death Rate¹ | Heart Disease | Total Cancer | Lung Cancer | Breast Cancer² | Stroke | Motor Vehicle | Homicide | Pneumonia & Influenza | COPD³ | Diabetes | Suicide |
|---------------------|---------------------|--|----------------------|---------------------|--------------------|----------------------------------|---------------|----------------------|-----------------|----------------------------------|-------------------------|-----------------|----------------|
| Dedham | 231 | 391.9 | 67 | 57 | 14 | 1 | 15 | 0 | 0 | 12 | 11 | 1 | 1 |
| Deerfield | 41 | 386.2 | 14 | 16 | 4 | 2 | 3 | 0 | 0 | 1 | 0 | 0 | 0 |
| Dennis | 254 | 435.0 | 64 | 65 | 14 | 6 | 27 | 0 | 0 | 7 | 15 | 12 | 2 |
| Dighton | 60 | 553.8 | 20 | 16 | 4 | 0 | 2 | 0 | 0 | 2 | 4 | 0 | 1 |
| Douglas | 42 | 448.7 | 16 | 8 | 0 | 1 | 4 | 0 | 0 | 3 | 6 | 0 | 0 |
| Dover | 31 | 263.0 | 8 | 7 | 1 | 1 | 2 | 0 | 0 | 1 | 0 | 1 | 1 |
| Dracut | 185 | 449.0 | 48 | 58 | 16 | 4 | 11 | 1 | 0 | 10 | 10 | 4 | 1 |
| Dudley | 88 | 461.9 | 36 | 22 | 5 | 2 | 1 | 2 | 0 | 1 | 4 | 3 | 1 |
| Dunstable | 18 | 766.2 | 9 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Duxbury | 134 | 464.0 | 27 | 38 | 8 | 6 | 8 | 2 | 0 | 8 | 5 | 2 | 1 |
| East Bridgewater | 93 | 490.0 | 30 | 22 | 5 | 1 | 1 | 0 | 0 | 3 | 8 | 3 | 0 |
| East Brookfield | 18 | 329.7 | 7 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 |
| East Longmeadow | 170 | 404.2 | 57 | 31 | 9 | 5 | 9 | 1 | 0 | 7 | 12 | 3 | 1 |
| Eastham | 63 | 356.2 | 18 | 21 | 7 | 3 | 2 | 0 | 0 | 4 | 4 | 0 | 1 |
| Easthampton | 152 | 498.5 | 57 | 40 | 10 | 6 | 8 | 2 | 0 | 6 | 5 | 0 | 3 |
| Easton | 129 | 400.7 | 33 | 42 | 15 | 5 | 5 | 1 | 0 | 10 | 8 | 2 | 3 |
| Edgartown | 26 | 312.2 | 6 | 8 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 |
| Egremont | 7 | 240.6 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 |
| Erving | 10 | 336.9 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Essex | 26 | 421.1 | 5 | 10 | 0 | 1 | 0 | 0 | 0 | 1 | 4 | 1 | 1 |
| Everett | 383 | 509.1 | 97 | 104 | 30 | 10 | 17 | 2 | 1 | 18 | 16 | 15 | 2 |
| Fairhaven | 223 | 498.9 | 80 | 48 | 14 | 8 | 15 | 2 | 0 | 6 | 10 | 4 | 2 |
| Fall River | 1109 | 549.4 | 352 | 241 | 64 | 18 | 76 | 10 | 3 | 36 | 55 | 44 | 6 |
| Falmouth | 381 | 415.2 | 106 | 95 | 28 | 7 | 23 | 7 | 0 | 26 | 21 | 9 | 2 |
| Fitchburg | 402 | 505.4 | 95 | 108 | 35 | 8 | 34 | 2 | 1 | 29 | 26 | 14 | 3 |
| Florida | 2 | 188.7 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| Foxborough | 119 | 442.0 | 28 | 36 | 8 | 2 | 8 | 0 | 1 | 8 | 7 | 6 | 1 |
| Framingham | 546 | 393.6 | 148 | 141 | 41 | 12 | 29 | 1 | 0 | 32 | 28 | 8 | 5 |
| Franklin | 150 | 420.1 | 52 | 38 | 9 | 3 | 9 | 1 | 1 | 9 | 3 | 0 | 1 |
| Freetown | 39 | 288.0 | 15 | 12 | 5 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Gardner | 221 | 435.1 | 68 | 60 | 9 | 5 | 8 | 2 | 0 | 11 | 10 | 6 | 3 |
| Gay Head (Aquinnah) | 6 | 1050.2 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Georgetown | 48 | 393.7 | 14 | 10 | 3 | 0 | 4 | 1 | 0 | 3 | 5 | 0 | 2 |
| Gill | 17 | 540.1 | 5 | 6 | 3 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |

Table 15. Selected Causes of Death by Community, 1998 (continued)

| COMMUNITY | Total Deaths | Age-adjusted Death Rate¹ | Heart Disease | Total Cancer | Lung Cancer | Breast Cancer² | Stroke | Motor Vehicle | Homicide | Pneumonia & Influenza | COPD³ | Diabetes | Suicide |
|------------------|---------------------|--|----------------------|---------------------|--------------------|----------------------------------|---------------|----------------------|-----------------|----------------------------------|-------------------------|-----------------|----------------|
| Gloucester | 322 | 486.1 | 86 | 82 | 22 | 7 | 32 | 0 | 1 | 12 | 12 | 11 | 2 |
| Goshen | 2 | 50.4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gosnold | 0 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grafton | 95 | 391.9 | 24 | 21 | 4 | 4 | 8 | 0 | 0 | 6 | 3 | 6 | 1 |
| Granby | 33 | 327.6 | 13 | 9 | 0 | 2 | 1 | 0 | 0 | 0 | 3 | 0 | 0 |
| Granville | 7 | 329.0 | 1 | 3 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Great Barrington | 128 | 565.9 | 37 | 22 | 6 | 3 | 10 | 1 | 0 | 7 | 6 | 7 | 0 |
| Greenfield | 231 | 517.7 | 51 | 62 | 17 | 4 | 17 | 4 | 0 | 16 | 14 | 3 | 2 |
| Groton | 43 | 377.3 | 12 | 11 | 5 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 0 |
| Groveland | 30 | 347.0 | 13 | 3 | 0 | 1 | 4 | 0 | 0 | 0 | 1 | 1 | 2 |
| Hadley | 40 | 297.9 | 14 | 6 | 3 | 0 | 4 | 0 | 0 | 1 | 2 | 1 | 0 |
| Halifax | 45 | 271.7 | 14 | 16 | 3 | 1 | 2 | 1 | 0 | 2 | 2 | 0 | 1 |
| Hamilton | 44 | 255.1 | 9 | 12 | 4 | 0 | 3 | 0 | 0 | 5 | 3 | 0 | 0 |
| Hampden | 33 | 236.6 | 17 | 5 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 0 |
| Hancock | 4 | 487.5 | 1 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hanover | 80 | 402.3 | 14 | 25 | 5 | 2 | 3 | 1 | 0 | 3 | 4 | 3 | 2 |
| Hanson | 68 | 464.4 | 18 | 19 | 4 | 2 | 4 | 1 | 0 | 3 | 2 | 4 | 0 |
| Hardwick | 23 | 366.3 | 5 | 8 | 3 | 3 | 1 | 1 | 0 | 1 | 2 | 0 | 0 |
| Harvard | 22 | 288.9 | 7 | 4 | 0 | 1 | 0 | 1 | 0 | 0 | 3 | 0 | 0 |
| Harwich | 194 | 501.4 | 51 | 54 | 12 | 3 | 24 | 1 | 1 | 3 | 11 | 6 | 1 |
| Hatfield | 20 | 319.9 | 7 | 5 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 1 |
| Haverhill | 522 | 482.8 | 164 | 129 | 30 | 11 | 29 | 5 | 2 | 19 | 26 | 7 | 8 |
| Hawley | 3 | 171.9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Heath | 9 | 1006.3 | 3 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Hingham | 167 | 338.3 | 39 | 36 | 6 | 1 | 12 | 2 | 0 | 11 | 10 | 4 | 0 |
| Hinsdale | 21 | 369.2 | 8 | 5 | 2 | 0 | 0 | 0 | 0 | 1 | 3 | 2 | 0 |
| Holbrook | 96 | 455.2 | 24 | 20 | 7 | 2 | 2 | 1 | 1 | 5 | 6 | 3 | 4 |
| Holden | 126 | 337.1 | 37 | 27 | 9 | 1 | 4 | 0 | 0 | 12 | 3 | 4 | 0 |
| Holland | 15 | 477.5 | 2 | 4 | 2 | 0 | 1 | 0 | 0 | 2 | 1 | 1 | 0 |
| Holliston | 73 | 400.3 | 15 | 25 | 5 | 2 | 7 | 0 | 0 | 1 | 4 | 2 | 3 |
| Holyoke | 541 | 671.5 | 155 | 107 | 27 | 3 | 49 | 8 | 3 | 37 | 25 | 18 | 5 |
| Hopedale | 47 | 347.5 | 11 | 9 | 3 | 1 | 3 | 1 | 0 | 7 | 4 | 1 | 1 |
| Hopkinton | 53 | 374.3 | 22 | 13 | 4 | 1 | 2 | 0 | 0 | 3 | 2 | 0 | 1 |
| Hubbardston | 11 | 259.4 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Hudson | 100 | 331.4 | 32 | 25 | 8 | 0 | 7 | 1 | 0 | 2 | 5 | 2 | 1 |
| Hull | 64 | 341.0 | 19 | 25 | 5 | 4 | 1 | 1 | 0 | 1 | 1 | 2 | 0 |

Table 15. Selected Causes of Death by Community, 1998 (continued)

| COMMUNITY | Total Deaths | Age-adjusted Death Rate ¹ | Heart Disease | Total Cancer | Lung Cancer | Breast Cancer ² | Stroke | Motor Vehicle | Homicide | Pneumonia & Influenza | COPD ³ | Diabetes | Suicide |
|---------------|--------------|--------------------------------------|---------------|--------------|-------------|----------------------------|--------|---------------|----------|-----------------------|-------------------|----------|---------|
| Huntington | 12 | 277.0 | 9 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Ipswich | 103 | 343.0 | 39 | 20 | 3 | 0 | 7 | 2 | 0 | 4 | 5 | 2 | 1 |
| Kingston | 84 | 350.4 | 24 | 15 | 2 | 1 | 6 | 1 | 0 | 4 | 3 | 2 | 0 |
| Lakeville | 77 | 516.8 | 24 | 19 | 2 | 0 | 3 | 2 | 0 | 4 | 2 | 7 | 3 |
| Lancaster | 50 | 412.1 | 17 | 8 | 1 | 1 | 3 | 0 | 0 | 5 | 2 | 1 | 2 |
| Lanesborough | 33 | 524.6 | 12 | 7 | 4 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 0 |
| Lawrence | 570 | 490.7 | 180 | 120 | 31 | 9 | 30 | 3 | 10 | 20 | 28 | 21 | 9 |
| Lee | 68 | 501.7 | 15 | 16 | 6 | 1 | 5 | 2 | 0 | 12 | 1 | 4 | 1 |
| Leicester | 97 | 546.9 | 28 | 19 | 3 | 1 | 7 | 0 | 0 | 7 | 6 | 4 | 0 |
| Lenox | 79 | 408.3 | 22 | 20 | 6 | 0 | 6 | 1 | 0 | 10 | 1 | 1 | 1 |
| Leominster | 373 | 475.4 | 111 | 93 | 28 | 8 | 42 | 6 | 1 | 25 | 13 | 5 | 2 |
| Leverett | 3 | 84.7 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| Lexington | 243 | 264.9 | 66 | 61 | 21 | 4 | 20 | 1 | 0 | 16 | 4 | 1 | 2 |
| Leyden | 3 | 253.5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lincoln | 35 | 240.9 | 7 | 10 | 1 | 1 | 2 | 0 | 0 | 3 | 5 | 1 | 0 |
| Littleton | 73 | 477.1 | 22 | 18 | 8 | 0 | 4 | 0 | 0 | 4 | 7 | 1 | 1 |
| Longmeadow | 176 | 415.8 | 42 | 40 | 9 | 5 | 13 | 0 | 0 | 16 | 9 | 4 | 3 |
| Lowell | 938 | 573.8 | 250 | 231 | 66 | 11 | 60 | 11 | 3 | 51 | 44 | 37 | 9 |
| Ludlow | 158 | 412.4 | 50 | 46 | 14 | 0 | 7 | 3 | 0 | 1 | 6 | 3 | 1 |
| Lunenburg | 77 | 465.3 | 18 | 27 | 9 | 4 | 2 | 1 | 0 | 4 | 4 | 1 | 1 |
| Lynn | 797 | 517.7 | 229 | 204 | 52 | 14 | 41 | 7 | 1 | 45 | 42 | 16 | 13 |
| Lynnfield | 93 | 340.8 | 24 | 27 | 7 | 2 | 4 | 1 | 0 | 3 | 3 | 2 | 1 |
| Malden | 522 | 479.3 | 140 | 133 | 40 | 8 | 25 | 5 | 0 | 18 | 36 | 13 | 1 |
| Manchester | 48 | 380.8 | 10 | 16 | 4 | 1 | 6 | 1 | 0 | 1 | 2 | 2 | 0 |
| Mansfield | 111 | 458.6 | 41 | 31 | 7 | 5 | 5 | 1 | 0 | 3 | 4 | 1 | 2 |
| Marblehead | 177 | 304.8 | 49 | 49 | 11 | 7 | 10 | 1 | 0 | 14 | 10 | 2 | 1 |
| Marion | 60 | 609.7 | 19 | 13 | 5 | 0 | 9 | 0 | 0 | 5 | 4 | 0 | 0 |
| Marlborough | 296 | 495.9 | 80 | 85 | 22 | 8 | 22 | 1 | 0 | 20 | 12 | 3 | 3 |
| Marshfield | 170 | 539.7 | 44 | 49 | 17 | 6 | 13 | 1 | 0 | 5 | 17 | 4 | 2 |
| Mashpee | 95 | 480.5 | 18 | 38 | 10 | 3 | 8 | 0 | 1 | 3 | 6 | 3 | 0 |
| Mattapoissett | 64 | 338.9 | 25 | 14 | 5 | 3 | 4 | 0 | 0 | 3 | 3 | 0 | 0 |
| Maynard | 62 | 317.5 | 14 | 17 | 10 | 0 | 3 | 0 | 0 | 8 | 1 | 2 | 0 |
| Medfield | 65 | 353.2 | 24 | 9 | 0 | 1 | 5 | 0 | 0 | 3 | 5 | 0 | 1 |
| Medford | 667 | 480.6 | 190 | 170 | 43 | 11 | 37 | 5 | 0 | 38 | 18 | 17 | 4 |
| Medway | 77 | 429.4 | 20 | 23 | 4 | 2 | 5 | 1 | 0 | 6 | 2 | 3 | 0 |
| Melrose | 277 | 375.8 | 89 | 73 | 23 | 4 | 17 | 2 | 0 | 12 | 10 | 3 | 3 |
| Mendon | 31 | 468.7 | 6 | 12 | 2 | 1 | 2 | 0 | 0 | 2 | 1 | 1 | 0 |

Table 15. Selected Causes of Death by Community, 1998 (continued)

| COMMUNITY | Total Deaths | Age-adjusted Death Rate¹ | Heart Disease | Total Cancer | Lung Cancer | Breast Cancer² | Stroke | Motor Vehicle | Homicide | Pneumonia & Influenza | COPD³ | Diabetes | Suicide |
|------------------|---------------------|--|----------------------|---------------------|--------------------|----------------------------------|---------------|----------------------|-----------------|----------------------------------|-------------------------|-----------------|----------------|
| Merrimac | 32 | 347.8 | 7 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 |
| Methuen | 391 | 431.3 | 141 | 91 | 28 | 6 | 16 | 8 | 1 | 18 | 15 | 17 | 1 |
| Middleborough | 174 | 596.2 | 49 | 43 | 13 | 5 | 10 | 4 | 1 | 12 | 4 | 3 | 1 |
| Middlefield | 3 | 517.9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Middleton | 37 | 338.7 | 15 | 9 | 4 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 |
| Milford | 220 | 456.4 | 61 | 54 | 14 | 3 | 6 | 2 | 0 | 13 | 14 | 5 | 4 |
| Millbury | 159 | 529.0 | 48 | 33 | 10 | 2 | 16 | 1 | 1 | 6 | 11 | 4 | 0 |
| Millis | 63 | 591.8 | 18 | 22 | 7 | 0 | 3 | 1 | 0 | 3 | 1 | 1 | 1 |
| Millville | 15 | 348.4 | 6 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 |
| Milton | 257 | 355.4 | 74 | 61 | 9 | 5 | 32 | 1 | 0 | 14 | 10 | 3 | 1 |
| Monroe | 2 | 266.2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Monson | 59 | 419.7 | 16 | 17 | 2 | 2 | 3 | 1 | 0 | 3 | 4 | 1 | 0 |
| Montague | 96 | 572.4 | 20 | 27 | 8 | 2 | 4 | 1 | 0 | 11 | 4 | 3 | 2 |
| Monterey | 7 | 299.7 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 |
| Montgomery | 4 | 173.0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mount Washington | 2 | 253.9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Nahant | 52 | 459.4 | 18 | 16 | 4 | 1 | 3 | 1 | 0 | 2 | 0 | 1 | 1 |
| Nantucket | 66 | 450.7 | 29 | 13 | 6 | 3 | 5 | 0 | 1 | 2 | 0 | 0 | 1 |
| Natick | 250 | 352.5 | 73 | 60 | 20 | 2 | 16 | 2 | 0 | 17 | 10 | 5 | 1 |
| Needham | 276 | 265.9 | 67 | 63 | 14 | 10 | 24 | 0 | 0 | 19 | 13 | 5 | 1 |
| New Ashford | 1 | 386.8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| New Bedford | 1073 | 495.8 | 356 | 231 | 58 | 24 | 72 | 12 | 6 | 51 | 45 | 36 | 2 |
| New Braintree | 5 | 463.1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| New Marlborough | 4 | 66.2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| New Salem | 6 | 297.9 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Newbury | 39 | 342.7 | 13 | 14 | 1 | 2 | 3 | 0 | 0 | 2 | 1 | 0 | 0 |
| Newburyport | 163 | 421.8 | 64 | 31 | 7 | 2 | 8 | 0 | 0 | 7 | 7 | 5 | 0 |
| Newton | 595 | 271.9 | 164 | 174 | 34 | 15 | 33 | 3 | 0 | 36 | 15 | 14 | 7 |
| Norfolk | 31 | 306.9 | 7 | 10 | 2 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 1 |
| North Adams | 208 | 515.4 | 80 | 29 | 9 | 2 | 14 | 1 | 0 | 9 | 17 | 4 | 2 |
| North Andover | 239 | 483.5 | 62 | 62 | 12 | 3 | 13 | 3 | 0 | 11 | 14 | 7 | 6 |
| North Attleboro | 160 | 379.7 | 43 | 48 | 12 | 4 | 7 | 2 | 0 | 5 | 11 | 5 | 1 |
| North Brookfield | 31 | 416.5 | 6 | 7 | 2 | 2 | 4 | 1 | 0 | 3 | 1 | 1 | 0 |

Table 15. Selected Causes of Death by Community, 1998 (continued)

| COMMUNITY | Total Deaths | Age-adjusted Death Rate¹ | Heart Disease | Total Cancer | Lung Cancer | Breast Cancer² | Stroke | Motor Vehicle | Homicide | Pneumonia & Influenza | COPD³ | Diabetes | Suicide |
|------------------|---------------------|--|----------------------|---------------------|--------------------|----------------------------------|---------------|----------------------|-----------------|----------------------------------|-------------------------|-----------------|----------------|
| North Reading | 82 | 411.8 | 15 | 22 | 6 | 1 | 6 | 3 | 0 | 1 | 5 | 3 | 1 |
| Northampton | 269 | 446.0 | 82 | 57 | 10 | 5 | 12 | 2 | 1 | 17 | 15 | 6 | 3 |
| Northborough | 85 | 431.6 | 28 | 20 | 4 | 1 | 7 | 1 | 0 | 7 | 4 | 3 | 0 |
| Northbridge | 166 | 510.4 | 62 | 34 | 8 | 5 | 10 | 1 | 0 | 13 | 7 | 6 | 2 |
| Northfield | 14 | 296.0 | 5 | 3 | 2 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| Norton | 97 | 433.9 | 39 | 30 | 7 | 3 | 7 | 2 | 0 | 2 | 1 | 0 | 0 |
| Norwell | 94 | 533.4 | 20 | 32 | 9 | 2 | 3 | 1 | 0 | 9 | 5 | 2 | 0 |
| Norwood | 282 | 381.2 | 91 | 69 | 22 | 8 | 15 | 2 | 0 | 13 | 15 | 3 | 1 |
| Oak Bluffs | 60 | 722.2 | 21 | 13 | 3 | 0 | 6 | 0 | 1 | 1 | 1 | 2 | 0 |
| Oakham | 16 | 774.2 | 3 | 6 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Orange | 58 | 434.9 | 17 | 12 | 4 | 1 | 2 | 1 | 0 | 4 | 3 | 0 | 0 |
| Orleans | 107 | 333.5 | 24 | 28 | 4 | 1 | 12 | 1 | 0 | 2 | 3 | 1 | 1 |
| Otis | 8 | 405.5 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Oxford | 104 | 418.9 | 27 | 19 | 3 | 4 | 6 | 1 | 0 | 7 | 8 | 2 | 2 |
| Palmer | 146 | 537.2 | 41 | 34 | 13 | 1 | 8 | 3 | 0 | 7 | 9 | 4 | 2 |
| Paxton | 25 | 235.6 | 6 | 7 | 1 | 1 | 4 | 1 | 0 | 1 | 1 | 0 | 0 |
| Peabody | 470 | 411.7 | 151 | 115 | 37 | 5 | 29 | 2 | 0 | 25 | 23 | 12 | 1 |
| Pelham | 3 | 123.5 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pembroke | 108 | 535.5 | 32 | 33 | 14 | 5 | 3 | 4 | 0 | 3 | 6 | 3 | 1 |
| Pepperell | 48 | 319.2 | 9 | 15 | 2 | 2 | 0 | 1 | 0 | 4 | 3 | 3 | 1 |
| Peru | 3 | 154.4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Petersham | 10 | 351.0 | 4 | 4 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Phillipston | 6 | 303.8 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 |
| Pittsfield | 554 | 442.4 | 178 | 123 | 23 | 11 | 32 | 9 | 0 | 29 | 33 | 12 | 7 |
| Plainfield | 1 | 92.3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Plainville | 55 | 419.7 | 15 | 18 | 8 | 2 | 0 | 1 | 0 | 3 | 3 | 1 | 0 |
| Plymouth | 432 | 459.8 | 131 | 99 | 35 | 6 | 28 | 3 | 0 | 24 | 17 | 11 | 7 |
| Plympton | 9 | 287.6 | 4 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| Princeton | 13 | 282.7 | 3 | 7 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Provincetown | 58 | 595.1 | 9 | 12 | 2 | 1 | 2 | 0 | 0 | 4 | 6 | 0 | 2 |
| Quincy | 925 | 470.5 | 243 | 232 | 73 | 9 | 48 | 5 | 2 | 60 | 35 | 18 | 9 |
| Randolph | 295 | 426.1 | 97 | 71 | 23 | 8 | 25 | 2 | 0 | 11 | 14 | 10 | 1 |
| Raynham | 88 | 409.7 | 33 | 25 | 6 | 2 | 6 | 0 | 0 | 3 | 2 | 1 | 0 |
| Reading | 188 | 349.7 | 61 | 37 | 10 | 7 | 15 | 1 | 0 | 8 | 8 | 3 | 2 |
| Rehoboth | 39 | 216.6 | 14 | 11 | 3 | 2 | 0 | 1 | 0 | 2 | 1 | 2 | 1 |
| Revere | 467 | 548.6 | 139 | 122 | 31 | 9 | 26 | 3 | 2 | 21 | 21 | 17 | 3 |
| Richmond | 18 | 399.6 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 |
| Rochester | 29 | 397.3 | 14 | 8 | 2 | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 0 |

Table 15. Selected Causes of Death by Community, 1998 (continued)

| COMMUNITY | Total Deaths | Age-adjusted Death Rate¹ | Heart Disease | Total Cancer | Lung Cancer | Breast Cancer² | Stroke | Motor Vehicle | Homicide | Pneumonia & Influenza | COPD³ | Diabetes | Suicide |
|------------------|---------------------|--|----------------------|---------------------|--------------------|----------------------------------|---------------|----------------------|-----------------|----------------------------------|-------------------------|-----------------|----------------|
| Rockland | 146 | 528.8 | 32 | 49 | 16 | 2 | 10 | 0 | 0 | 8 | 3 | 2 | 2 |
| Rockport | 89 | 378.1 | 30 | 26 | 5 | 2 | 4 | 1 | 0 | 6 | 4 | 0 | 0 |
| Rowe | 6 | 364.7 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rowley | 39 | 439.6 | 11 | 10 | 4 | 1 | 2 | 0 | 0 | 0 | 1 | 1 | 2 |
| Royalston | 11 | 479.0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 1 | 1 | 0 |
| Russell | 8 | 282.7 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 |
| Rutland | 24 | 271.8 | 9 | 9 | 1 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 |
| Salem | 376 | 457.9 | 114 | 97 | 27 | 11 | 23 | 2 | 0 | 23 | 13 | 9 | 2 |
| Salisbury | 78 | 619.2 | 26 | 20 | 5 | 3 | 3 | 1 | 2 | 2 | 2 | 1 | 0 |
| Sandisfield | 7 | 433.2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |
| Sandwich | 147 | 307.7 | 43 | 41 | 12 | 4 | 8 | 0 | 0 | 11 | 11 | 7 | 1 |
| Saugus | 253 | 451.1 | 69 | 72 | 15 | 2 | 15 | 3 | 0 | 12 | 17 | 3 | 3 |
| Savoy | 5 | 413.8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Scituate | 146 | 353.5 | 41 | 31 | 12 | 2 | 4 | 1 | 0 | 13 | 9 | 2 | 0 |
| Seekonk | 90 | 355.8 | 23 | 25 | 5 | 0 | 4 | 1 | 0 | 1 | 6 | 0 | 2 |
| Sharon | 105 | 309.1 | 24 | 40 | 6 | 5 | 11 | 1 | 0 | 2 | 4 | 2 | 2 |
| Sheffield | 27 | 406.6 | 4 | 11 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shelburne | 30 | 483.7 | 12 | 5 | 1 | 0 | 1 | 0 | 0 | 5 | 2 | 0 | 0 |
| Sherborn | 22 | 305.0 | 3 | 8 | 0 | 3 | 3 | 0 | 0 | 1 | 0 | 0 | 3 |
| Shirley | 41 | 451.2 | 16 | 8 | 0 | 2 | 1 | 1 | 0 | 2 | 2 | 2 | 1 |
| Shrewsbury | 245 | 425.8 | 63 | 49 | 13 | 2 | 22 | 3 | 0 | 19 | 11 | 9 | 2 |
| Shutesbury | 7 | 270.4 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Somerset | 182 | 357.6 | 49 | 58 | 16 | 5 | 9 | 1 | 0 | 6 | 5 | 3 | 1 |
| Somerville | 570 | 452.1 | 188 | 160 | 57 | 10 | 13 | 6 | 0 | 21 | 26 | 15 | 8 |
| South Hadley | 181 | 466.1 | 59 | 46 | 11 | 6 | 13 | 0 | 0 | 6 | 13 | 4 | 1 |
| Southampton | 30 | 321.5 | 6 | 13 | 5 | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 0 |
| Southborough | 32 | 290.7 | 6 | 10 | 2 | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 0 |
| Southbridge | 203 | 560.4 | 72 | 48 | 14 | 5 | 6 | 3 | 1 | 8 | 2 | 3 | 3 |
| Southwick | 69 | 507.3 | 20 | 22 | 5 | 1 | 3 | 0 | 0 | 2 | 7 | 0 | 1 |
| Spencer | 113 | 520.4 | 43 | 27 | 7 | 1 | 5 | 1 | 1 | 2 | 6 | 2 | 1 |
| Springfield | 1438 | 580.8 | 384 | 341 | 94 | 29 | 81 | 11 | 9 | 67 | 68 | 52 | 13 |
| Sterling | 43 | 440.6 | 13 | 12 | 5 | 1 | 3 | 0 | 0 | 1 | 1 | 3 | 1 |
| Stockbridge | 12 | 215.5 | 3 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Stoneham | 217 | 410.7 | 61 | 62 | 16 | 5 | 20 | 0 | 0 | 10 | 13 | 4 | 0 |
| Stoughton | 230 | 397.3 | 83 | 54 | 12 | 7 | 12 | 1 | 0 | 14 | 8 | 5 | 2 |
| Stow | 22 | 292.6 | 7 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 |
| Sturbridge | 68 | 449.8 | 13 | 22 | 3 | 1 | 3 | 2 | 0 | 1 | 6 | 3 | 0 |
| Sudbury | 84 | 348.8 | 24 | 21 | 5 | 2 | 7 | 0 | 0 | 5 | 3 | 5 | 0 |

Table 15. Selected Causes of Death by Community, 1998 (continued)

| COMMUNITY | Total Deaths | Age-adjusted Death Rate¹ | Heart Disease | Total Cancer | Lung Cancer | Breast Cancer² | Stroke | Motor Vehicle | Homicide | Pneumonia & Influenza | COPD³ | Diabetes | Suicide |
|------------------|---------------------|--|----------------------|---------------------|--------------------|----------------------------------|---------------|----------------------|-----------------|----------------------------------|-------------------------|-----------------|----------------|
| Sunderland | 19 | 500.6 | 4 | 7 | 3 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 1 |
| Sutton | 42 | 382.1 | 10 | 13 | 4 | 0 | 4 | 1 | 0 | 0 | 4 | 3 | 0 |
| Swampscott | 165 | 359.7 | 57 | 40 | 10 | 4 | 7 | 0 | 0 | 6 | 9 | 5 | 0 |
| Swansea | 156 | 429.3 | 52 | 34 | 13 | 1 | 12 | 3 | 0 | 8 | 7 | 9 | 2 |
| Taunton | 457 | 447.7 | 136 | 114 | 27 | 10 | 22 | 3 | 0 | 28 | 21 | 18 | 2 |
| Templeton | 82 | 565.7 | 27 | 24 | 5 | 2 | 6 | 0 | 0 | 4 | 3 | 2 | 0 |
| Tewksbury | 203 | 449.1 | 56 | 60 | 22 | 5 | 8 | 2 | 0 | 11 | 8 | 5 | 5 |
| Tisbury | 28 | 379.9 | 7 | 9 | 1 | 3 | 0 | 0 | 0 | 0 | 2 | 1 | 1 |
| Tolland | 4 | 931.6 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Topsfield | 50 | 366.2 | 14 | 16 | 7 | 0 | 3 | 0 | 0 | 3 | 2 | 2 | 0 |
| Townsend | 43 | 415.7 | 15 | 12 | 4 | 0 | 1 | 1 | 0 | 1 | 4 | 1 | 0 |
| Truro | 26 | 350.8 | 5 | 12 | 2 | 2 | 0 | 0 | 0 | 2 | 2 | 0 | 0 |
| Tyngsborough | 57 | 520.8 | 14 | 16 | 6 | 1 | 1 | 1 | 1 | 5 | 4 | 1 | 1 |
| Tyringham | 2 | 110.1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Upton | 41 | 376.4 | 8 | 7 | 1 | 1 | 2 | 1 | 0 | 5 | 2 | 1 | 0 |
| Uxbridge | 62 | 311.5 | 15 | 22 | 7 | 2 | 3 | 1 | 0 | 2 | 3 | 2 | 1 |
| Wakefield | 212 | 350.6 | 61 | 58 | 10 | 5 | 17 | 1 | 0 | 10 | 7 | 3 | 2 |
| Wales | 15 | 786.4 | 6 | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Walpole | 200 | 458.5 | 53 | 50 | 11 | 0 | 10 | 0 | 1 | 6 | 15 | 5 | 0 |
| Waltham | 496 | 450.5 | 127 | 142 | 49 | 8 | 30 | 1 | 0 | 27 | 25 | 19 | 3 |
| Ware | 98 | 457.6 | 32 | 21 | 6 | 2 | 5 | 0 | 0 | 8 | 5 | 4 | 1 |
| Wareham | 242 | 583.1 | 82 | 53 | 15 | 3 | 16 | 4 | 0 | 16 | 11 | 10 | 3 |
| Warren | 44 | 560.6 | 15 | 13 | 4 | 1 | 2 | 1 | 0 | 3 | 0 | 1 | 2 |
| Warwick | 7 | 471.9 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Washington | 3 | 27.7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Watertown | 338 | 428.7 | 95 | 96 | 24 | 8 | 29 | 1 | 0 | 28 | 10 | 2 | 3 |
| Wayland | 80 | 294.9 | 27 | 16 | 4 | 0 | 11 | 1 | 0 | 4 | 4 | 0 | 0 |
| Webster | 212 | 539.3 | 61 | 48 | 11 | 5 | 9 | 4 | 0 | 17 | 12 | 12 | 2 |
| Wellesley | 182 | 231.6 | 49 | 36 | 5 | 5 | 10 | 0 | 0 | 14 | 4 | 2 | 1 |
| Wellfleet | 35 | 442.7 | 9 | 14 | 3 | 2 | 2 | 0 | 0 | 1 | 1 | 0 | 2 |
| Wendell | 6 | 382.9 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Wenham | 37 | 413.9 | 6 | 12 | 6 | 2 | 1 | 0 | 0 | 3 | 4 | 0 | 1 |
| West Boylston | 70 | 400.2 | 18 | 24 | 5 | 1 | 3 | 0 | 0 | 4 | 6 | 1 | 0 |
| West Bridgewater | 70 | 451.3 | 22 | 19 | 5 | 3 | 4 | 1 | 0 | 3 | 2 | 0 | 0 |
| West Brookfield | 42 | 372.9 | 11 | 9 | 0 | 0 | 3 | 0 | 1 | 4 | 3 | 2 | 0 |
| West Newbury | 18 | 325.5 | 4 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 |

Table 15. Selected Causes of Death by Community, 1998 (continued)

| COMMUNITY | Total Deaths | Age-adjusted Death Rate ¹ | Heart Disease | Total Cancer | Lung Cancer | Breast Cancer ² | Stroke | Motor Vehicle | Homicide | Pneumonia & Influenza | COPD ³ | Diabetes | Suicide |
|------------------|--------------|--------------------------------------|---------------|--------------|-------------|----------------------------|--------|---------------|----------|-----------------------|-------------------|----------|---------|
| West Springfield | 285 | 440.8 | 73 | 65 | 10 | 5 | 18 | 3 | 0 | 17 | 20 | 7 | 6 |
| West Stockbridge | 11 | 365.9 | 3 | 3 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |
| West Tisbury | 14 | 371.4 | 2 | 4 | 1 | 1 | 2 | 2 | 0 | 1 | 1 | 0 | 0 |
| Westborough | 139 | 397.3 | 32 | 28 | 9 | 1 | 9 | 2 | 0 | 12 | 7 | 5 | 1 |
| Westfield | 346 | 395.8 | 109 | 89 | 28 | 7 | 15 | 4 | 0 | 22 | 11 | 6 | 5 |
| Westford | 75 | 314.5 | 22 | 27 | 8 | 1 | 6 | 0 | 0 | 3 | 5 | 0 | 2 |
| Westhampton | 5 | 291.1 | 1 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Westminster | 41 | 364.6 | 9 | 9 | 2 | 0 | 5 | 0 | 1 | 2 | 0 | 2 | 1 |
| Weston | 118 | 362.6 | 32 | 21 | 6 | 2 | 12 | 1 | 0 | 9 | 3 | 5 | 1 |
| Westport | 118 | 375.1 | 37 | 38 | 12 | 1 | 6 | 1 | 1 | 5 | 2 | 6 | 1 |
| Westwood | 139 | 393.2 | 39 | 34 | 7 | 4 | 12 | 2 | 0 | 5 | 8 | 0 | 1 |
| Weymouth | 523 | 509.1 | 142 | 154 | 48 | 14 | 32 | 3 | 0 | 16 | 24 | 13 | 6 |
| Whately | 7 | 128.1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Whitman | 87 | 426.5 | 26 | 24 | 9 | 2 | 2 | 0 | 0 | 5 | 7 | 1 | 2 |
| Wilbraham | 115 | 374.9 | 35 | 27 | 5 | 5 | 6 | 1 | 0 | 6 | 2 | 4 | 3 |
| Williamsburg | 22 | 454.0 | 4 | 8 | 3 | 0 | 0 | 1 | 0 | 0 | 2 | 1 | 1 |
| Williamstown | 89 | 365.0 | 29 | 13 | 5 | 1 | 10 | 1 | 0 | 7 | 6 | 1 | 1 |
| Wilmington | 156 | 630.0 | 41 | 46 | 17 | 3 | 6 | 1 | 0 | 4 | 6 | 2 | 1 |
| Winchendon | 71 | 492.4 | 26 | 17 | 2 | 3 | 6 | 4 | 0 | 1 | 5 | 1 | 0 |
| Winchester | 181 | 307.6 | 43 | 64 | 12 | 6 | 12 | 1 | 1 | 12 | 9 | 4 | 1 |
| Windsor | 6 | 353.6 | 2 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| Winthrop | 203 | 464.9 | 62 | 40 | 11 | 5 | 10 | 0 | 0 | 9 | 12 | 5 | 1 |
| Woburn | 319 | 446.8 | 100 | 96 | 37 | 8 | 19 | 1 | 0 | 8 | 17 | 8 | 2 |
| Worcester | 1885 | 554.1 | 554 | 408 | 121 | 40 | 97 | 14 | 4 | 116 | 74 | 72 | 12 |
| Worthington | 2 | 54.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wrentham | 91 | 551.5 | 23 | 27 | 8 | 2 | 4 | 2 | 0 | 6 | 3 | 0 | 0 |
| Yarmouth | 386 | 402.9 | 100 | 114 | 33 | 8 | 22 | 4 | 0 | 15 | 17 | 13 | 2 |

¹ All rates are age adjusted using the 1940 US Census standard population. ² Includes only female breast cancer. ³ Chronic Obstructive Pulmonary Disease

Table 16. Selected Causes of Death by Community Health Network Area (CHNA), 1998

| CHNA (Name and number) | Total Deaths | Age-adjusted Death Rate¹ | Heart Disease | Total Cancer | Lung Cancer | Breast Cancer² | Stroke | Motor Vehicle | Homicide | Pneumonia & Influenza | COPD³ | Diabetes | Suicides |
|--|---------------------|--|----------------------|---------------------|--------------------|----------------------------------|---------------|----------------------|-----------------|----------------------------------|-------------------------|-----------------|-----------------|
| MASSACHUSETTS | 55,204 | 433.1 | 15,998 | 13,796 | 3,699 | 1,096 | 3,321 | 484 | 123 | 2,897 | 2,542 | 1,403 | 503 |
| Alliance for Community Health (Boston, Chelsea, Revere, Winthrop) (19) | 5,889 | 505.6 | 1616 | 1389 | 360 | 105 | 317 | 37 | 42 | 357 | 217 | 145 | 58 |
| Beverly/Gloucester Area (13) | 1,156 | 421.6 | 338 | 277 | 80 | 18 | 91 | 6 | 1 | 57 | 59 | 29 | 9 |
| Blue Hills Community Health Alliance (Quincy) (20) | 3,548 | 423.6 | 980 | 928 | 260 | 76 | 221 | 21 | 2 | 194 | 152 | 76 | 29 |
| Cambridge/Somerville Area (17) | 2,186 | 392.2 | 659 | 576 | 151 | 46 | 116 | 19 | 3 | 111 | 83 | 45 | 21 |
| Cape Cod & Islands Community Health Network (27) | 2,876 | 395.3 | 797 | 756 | 191 | 64 | 199 | 25 | 6 | 124 | 158 | 79 | 24 |
| Community Health Network of Berkshire (1) | 1,566 | 423.2 | 489 | 325 | 83 | 21 | 101 | 21 | 0 | 103 | 92 | 42 | 14 |
| Community Partners for Health (Milford Area) (6) | 1,043 | 420.7 | 302 | 268 | 66 | 24 | 59 | 10 | 1 | 70 | 58 | 23 | 11 |
| Community Wellness Coalition (Worcester Area) (8) | 2,903 | 489.6 | 840 | 651 | 186 | 57 | 172 | 22 | 5 | 179 | 128 | 102 | 18 |
| Fitchburg/Gardner Community Health Network (9) | 1,971 | 436.0 | 560 | 533 | 139 | 53 | 137 | 23 | 3 | 107 | 97 | 57 | 20 |
| Greater Attleboro/Taunton Area (24) | 1,731 | 444.0 | 534 | 453 | 106 | 37 | 96 | 22 | 2 | 81 | 75 | 44 | 15 |
| Greater Brockton Community Health Network (22) | 1,864 | 455.1 | 556 | 462 | 143 | 40 | 94 | 23 | 6 | 95 | 99 | 34 | 25 |
| Greater Framingham Area (7) | 2,539 | 384.9 | 701 | 665 | 186 | 41 | 164 | 13 | 2 | 146 | 129 | 53 | 24 |
| Greater Haverhill Area (12) | 1,151 | 442.3 | 373 | 279 | 63 | 25 | 65 | 11 | 4 | 39 | 55 | 24 | 16 |
| Greater Holyoke Area (3) | 1,058 | 394.7 | 337 | 274 | 67 | 31 | 52 | 9 | 1 | 52 | 52 | 24 | 12 |
| Greater Lawrence Area (11) | 1,456 | 422.8 | 466 | 334 | 92 | 21 | 77 | 14 | 11 | 58 | 68 | 52 | 17 |
| Greater Lowell Community Health Network (10) | 1,980 | 478.7 | 544 | 536 | 156 | 28 | 114 | 17 | 4 | 101 | 94 | 64 | 21 |
| Greater New Bedford Area (26) | 2,048 | 445.7 | 684 | 460 | 120 | 47 | 137 | 28 | 6 | 91 | 87 | 64 | 9 |
| Greater Southbridge Area (5) | 1,098 | 484.9 | 343 | 267 | 60 | 21 | 48 | 19 | 4 | 54 | 48 | 33 | 11 |
| Greater Springfield Community Health Network (4) | 2,811 | 489.4 | 772 | 654 | 171 | 56 | 166 | 22 | 9 | 152 | 145 | 80 | 29 |
| Greater Woburn/Concord/Littleton Area (15) | 1,557 | 362.4 | 413 | 447 | 128 | 41 | 106 | 12 | 1 | 71 | 72 | 28 | 13 |
| Hampshire County Partnership for Health (21) | 1,747 | 507.1 | 527 | 424 | 122 | 24 | 107 | 21 | 4 | 96 | 82 | 39 | 16 |
| Medford/Malden/Melrose Area (16) | 2,548 | 433.5 | 714 | 659 | 178 | 51 | 154 | 19 | 1 | 115 | 113 | 61 | 15 |
| North Shore Community Health Network (14) | 2,652 | 435.0 | 812 | 688 | 184 | 49 | 153 | 18 | 1 | 147 | 129 | 51 | 23 |
| Partners for a Healthier Community (Fall River) (25) | 1,565 | 478.9 | 490 | 371 | 105 | 25 | 103 | 15 | 4 | 55 | 69 | 62 | 10 |
| South Shore Partners in Prevention (Plymouth) (23) | 1,373 | 458.8 | 371 | 373 | 115 | 32 | 81 | 20 | 0 | 62 | 63 | 33 | 16 |
| Upper Valley Health Web (Franklin County) (2) | 820 | 439.9 | 227 | 213 | 57 | 17 | 53 | 10 | 0 | 57 | 39 | 12 | 11 |
| West Suburban Health Network (Newton/Waltham) (18) | 2,068 | 319.1 | 553 | 534 | 130 | 46 | 138 | 7 | 0 | 123 | 79 | 47 | 16 |

1. All rates are age-adjusted using the 1940 US Census standard population. 2. Includes only female breast cancer. 3. Chronic Obstructive Pulmonary Disease.

Table 17. Selected Causes of Death by County, 1998

| County Name | Total Deaths | Age-adjusted Death Rate ¹ | Heart Disease | Total Cancer | Lung Cancer | Breast Cancer ² | Stroke | Motor Vehicle | Homicide | Pneumonia & Influenza | COPD ³ | Diabetes | Suicide |
|----------------------|---------------|--------------------------------------|---------------|---------------|--------------|----------------------------|--------------|---------------|------------|-----------------------|-------------------|--------------|------------|
| Massachusetts | 55,204 | 433.1 | 15,998 | 13,796 | 3,699 | 1,096 | 3,321 | 484 | 123 | 2,897 | 2,542 | 1,403 | 503 |
| Barnstable | 2,670 | 391.4 | 727 | 705 | 178 | 56 | 185 | 23 | 4 | 119 | 152 | 75 | 21 |
| Berkshire | 1,566 | 423.2 | 489 | 325 | 83 | 21 | 101 | 21 | 0 | 103 | 92 | 42 | 14 |
| Bristol | 4,827 | 440.8 | 1528 | 1176 | 304 | 102 | 298 | 55 | 11 | 196 | 213 | 152 | 30 |
| Dukes | 140 | 441.4 | 41 | 38 | 7 | 5 | 9 | 2 | 1 | 3 | 6 | 4 | 2 |
| Essex | 6,415 | 429.8 | 1989 | 1578 | 419 | 113 | 386 | 49 | 17 | 301 | 311 | 156 | 65 |
| Franklin | 668 | 441.6 | 184 | 172 | 51 | 13 | 42 | 9 | 0 | 47 | 31 | 8 | 7 |
| Hampden | 4,602 | 495.5 | 1305 | 1092 | 296 | 80 | 276 | 44 | 13 | 253 | 229 | 119 | 45 |
| Hampshire | 1,070 | 393.2 | 346 | 276 | 68 | 31 | 52 | 9 | 1 | 52 | 52 | 25 | 12 |
| Middlesex | 11,404 | 395.6 | 3194 | 3061 | 846 | 226 | 687 | 83 | 9 | 579 | 501 | 279 | 103 |
| Nantucket | 66 | 450.7 | 29 | 13 | 6 | 3 | 5 | 0 | 1 | 2 | 0 | 0 | 1 |
| Norfolk | 5,690 | 393.1 | 1595 | 1453 | 374 | 125 | 355 | 28 | 8 | 322 | 239 | 103 | 50 |
| Plymouth | 3,856 | 457.7 | 1108 | 980 | 292 | 78 | 217 | 56 | 6 | 200 | 185 | 86 | 38 |
| Suffolk | 5,453 | 531.3 | 1490 | 1284 | 344 | 94 | 293 | 36 | 40 | 319 | 210 | 143 | 55 |
| Worcester | 6,777 | 459.2 | 1973 | 1643 | 431 | 149 | 415 | 69 | 12 | 401 | 321 | 211 | 60 |

1. All rates are age-adjusted using the 1940 US Census standard population. 2. Includes only female breast cancer. 3. Chronic Obstructive Pulmonary Disease

APPENDIX

Technical Notes

Change in Categories of Cancer Causes

The grouping of ICD-9 codes for selected causes of cancer used in this document was updated beginning with Advance Data: Deaths, 1994. The current format follows the NCHS ICD-9 groupings for 16 selected sub-categories of malignant neoplasms (including neoplasms of lymphatic and hematopoietic tissues) with the addition of female breast cancer and leukemia.

Change in Categories of Causes of Infant Deaths

The ICD-9 cause categories presented in the infant mortality tables were changed to an expanded format starting with Advance Data: Deaths, 1994. The current format follows the NCHS ICD-9 groupings for 61 selected causes of infant deaths.

Data Sources

Data for this document are derived from Massachusetts death certificates, Massachusetts birth certificates, the Public Document No. 1 (an annual report of Massachusetts vital statistics), the U.S. Federal Census, the Massachusetts Institute for Social and Economic Research (MISER) population estimates updated in September 1999 and November 1999, and the National Center for Health Statistics (NCHS).

The most recent year of population estimates available from MISER is 1997. The 1997 population estimates are used to calculate rates for 1998 deaths.

Differences from Previously Published Data

The population estimates for 1991-1995 and 1996-1997 were re-calculated using updated estimates from MISER released in September 1999 and November 1999, respectively. Population estimates by race were modified by the Massachusetts Department of Public Health, Bureau of Health Statistics Research and Evaluation, Division of Research and Epidemiology, to be consistent with US Census definitions of race and ethnicity. MISER estimates did not include Hispanics in any race category. MISER population estimates are made for the following mutually exclusive categories: Non-Hispanic white, Non-Hispanic black, Non-Hispanic Asian/Pacific Islander and American Indian, and Hispanics. In order to calculate total white, total black, total Asian/Pacific Islander, total American Indian population estimates, Hispanics were assigned a race category based on 1990 US Census proportions of Hispanics by race. Asian/Pacific Islanders were separated from the combined category of Asian/Pacific Islander and American Indians by using the proportions from the 1990 US Census. These updated estimates yielded different age-adjusted mortality rates, particularly for minority populations than published in previous editions of Advance Data: Deaths. This re-estimation will affect the comparison of 1991-1997 rates published here with previously published MDPH rates.

In addition, beginning with this report, the assignment of race was improved to better reflect what is reported on the death certificate. The death rates in all trend tables that contain data from 1989-1998, have been re-tabulated using the new race modification.

Therefore, the death rates published in this report will vary from previous reports. This modification will affect the comparison of 1989-1997 rates and counts published here with previously published MDPH data. Also, minor differences from previous reports may occur because of the updating of death certificate files.

Limitations of Small Numbers

Cells in some tables and columns on some graphs contain small numbers. Rates and proportions based on fewer than five observations are suppressed, and trends based upon small numbers should be interpreted cautiously.

Glossary

Age-Adjusted Rate

A procedure for adjusting rates, designed to minimize the distortions created by differences in age distribution when comparing rates for populations with different age compositions. This calculation is useful when comparing death rates from different populations or in the same population over time. For example, if one wished to compare the 1997 death rates between Barnstable County (Cape Cod) and Hampshire County, the age-adjusted formula would account for the fact that 24% of the Barnstable County residents were 65 years of age or older, whereas only 11% of the Hampshire County residents were in this age group.

Age-adjusted rates are calculated by weighting the age-specific rates for a given year by the age distribution of a standard population. The weighted age-specific rates are then added to produce the adjusted rate for all ages combined. The 1940 U.S. population is used as the standard in this document for consistency with data published by NCHS.

Age-Specific Rate

Rates are for a specified age group. Age-specific rates are calculated by dividing the actual number of deaths in a given year by the estimated population in that age group for that year. The numerator and denominator refer to the same age group.

$$\text{Age-specific death rate (ages 25-34)} = \frac{\text{Number of deaths among residents ages 25-34 in a given year}}{\text{Average (or midyear) population ages 25-34 in that year}} \times 100,000$$

Cause of Death

The disease or injury that initiated the series of events leading to death, or the circumstances of the unintentional or intentional injury that resulted in the death. See the definition of "Death Certificate" on page 74.

Community Health Network Areas (CHNA)

The Department of Public Health, in collaboration with health service providers, coalition members, and interested citizens, has designated 27 areas for community health planning. It is the Department's intention to foster in each of these areas the development of Community Health Networks -- consortia of health care providers, human service agencies, schools, churches, youth, parents, elders, advocacy groups, and individual consumers -- to address the health needs of the community. These community coalitions will participate in monitoring outcomes and progress of strategies and responses to those health needs. To determine which cities and towns make up a particular CHNA, the table on pages 79-81 provides the appropriate CHNA code for each city and town based on the new geographic definitions.

A Community Health Network Area (CHNA) is defined as an aggregation of cities and towns. It is hoped the Networks will mobilize around key health issues impacting the community, promote prevention efforts, enhance access to care, provide opportunities for more collaboration among agencies, and create a client-centered, outcome-oriented health service delivery system. Community Health Networks will also promote efficiency in service delivery by working to reduce duplication and overlap, and by identifying gaps, in service.

Crude Death Rate

An estimate of the proportion of a population that died during the year. The numerator is the number of persons who died during the year and the denominator is the size of the population. The death rate in a population is calculated by the formula:

$$\text{Crude death rate} = \frac{\text{Number of resident deaths in a year}}{\text{Number of residents}} \times 100,000$$

Death Certificate

A vital record signed by a licensed physician that includes cause of death, decedent's name, sex, birth date, place of residence, and place of occurrence. (A copy of the Massachusetts death certificate used in 1998 is on page 84.) Immediate cause of death is recorded on the first line, followed by conditions giving rise to the immediate cause. This information is coded according to the International Classification of Diseases, Ninth Revision, then processed by a software program developed by the National Center for Health Statistics. The result of the coding and programming procedures is the determination of the underlying cause of death.

ICD-9

See International Classification of Diseases, Ninth Revision.

International Classification of Diseases, Ninth Revision

The International Classification of Diseases (ICD) classifies mortality information for statistical purposes. The ICD was first used in 1900 and has since been revised about every 10 years, with the exception of the current version which has been in use for 20 years. The Ninth Revision, published in 1977, is used to code mortality data beginning with 1979. ICD-9 codes used in this publication are listed on pages 77-78. The tenth revision of the ICD (ICD-10) has been released and went into effect beginning with 1999 Death Certificates. Next year, Advance Data: Deaths, 1999 will present data using ICD-10 coding for causes of death.

MISER

MISER is the acronym for Massachusetts Institute for Social and Economic Research, which is the state data center. The 1991-1995 Massachusetts annual population estimates (released in September 1999) and 1996-1997 population estimates (released in November 1999) used in this publication are from this Institute.

NCHS

National Center for Health Statistics (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention).

Occurrence Death

Occurrence deaths include all deaths that occur within the state, including deaths of nonresidents. An interstate exchange agreement among the 50 states and Canada provides for exchanges of copies of birth and death records. These records are used for statistical purposes only and allow each state or province to track the births and deaths of residents.

Population

Population counts are based on U.S. decennial census counts, and population estimates are calculated for intercensal years. For 1981-1989, population estimates are derived as linear interpolations from the 1980 and 1990 census. For 1991-1995, population estimates are based on MISER's annual estimates released in September 1999. Population estimates for 1996 and 1997 are based on MISER's annual estimates released in November 1999. The population estimates from MISER are categorized by white non-Hispanic, black non-Hispanic, Asian/American Indian non-Hispanic and Hispanic while the mortality data in this publication are presented in the race/ethnicity categories of white, black, Asian and/or American Indians, where Hispanics are included within the race categories. In order to estimate the 1991-1997 population distribution for the race/ethnicity categories that are used in this publication, the age-sex-race distribution from the 1990 US Census (MARS file) were applied to the 1991-1997 population estimates. This technique was used to separate Asians from the combined category of Asian and American Indian, and to add Hispanics back into the estimates of whites, blacks, and Asians. (The 1997 Massachusetts population estimates used in this publication appear on pages 79-83).

Race and Hispanic Ethnicity

For death records, race and Hispanic ethnicity are specified by the death record informant (for example, spouse or next of kin). Prior to 1989, death certificates included a question on race, but a separate question on Hispanic origin was added to the death record beginning on January 1, 1989. Therefore, trend tables that reflect pre-1989 data do not contain a separate category for Hispanics. For tables that do provide a separate category for Hispanics, it should be noted that persons of Hispanic ethnicity are also included in the race categories, consistent with the U.S. Census population classification and NCHS

publication procedures. Beginning with this report, the aggregation of race categories was modified to better reflect race responses as reported on the death certificate. All trend data from 1989-1998 presented in this report have been re-tabulated to reflect this modification. Data presented by race in this report are not directly comparable to previously published data by race.

Resident Death

The death of a person whose usual place of residence or permanent address (as reported by the informant) is in one of the 351 cities or towns of Massachusetts, regardless of where the death took place. Unless otherwise noted, all data in this publication are resident data. An interstate exchange agreement among the 50 states and Canada provides for exchange of copies of birth and death records. These records are used for statistical purposes only, and allow each state or province to track the births and deaths of residents.

Total Rate of Change

The total rate of change is calculated as follows:

$$\frac{P_n - P_o}{P_o}$$

where P_n is the rate during the later time period and P_o is the rate during the earlier time period.

Population Estimates for Massachusetts Communities, 1997

| TOWN NAME | COUNTY | CHNA | POPULATION | TOWN NAME | COUNTY | CHNA | POPULATION |
|--------------|------------|------|------------|---------------------|------------|------|------------|
| Abington | Plymouth | 22 | 15,061 | Conway | Franklin | 2 | 1,666 |
| Acton | Middlesex | 15 | 20,652 | Cummington | Hampshire | 3 | 828 |
| Acushnet | Bristol | 26 | 10,289 | Dalton | Berkshire | 1 | 7,500 |
| Adams | Berkshire | 1 | 9,308 | Danvers | Essex | 14 | 25,341 |
| Agawam | Hampden | 4 | 30,146 | Dartmouth | Bristol | 26 | 28,742 |
| Alford | Berkshire | 1 | 458 | Dedham | Norfolk | 18 | 23,867 |
| Amesbury | Essex | 12 | 16,347 | Deerfield | Franklin | 2 | 5,297 |
| Amherst | Hampshire | 3 | 45,806 | Dennis | Barnstable | 27 | 14,395 |
| Andover | Essex | 11 | 30,971 | Dighton | Bristol | 24 | 6,077 |
| Arlington | Middlesex | 17 | 42,486 | Douglas | Worcester | 6 | 7,029 |
| Ashburnham | Worcester | 9 | 6,228 | Dover | Norfolk | 18 | 5,938 |
| Ashby | Middlesex | 9 | 2,522 | Dracut | Middlesex | 10 | 27,913 |
| Ashfield | Franklin | 2 | 1,817 | Dudley | Worcester | 5 | 9,655 |
| Ashland | Middlesex | 7 | 13,972 | Dunstable | Middlesex | 10 | 2,832 |
| Athol | Worcester | 2 | 11,123 | Duxbury | Plymouth | 23 | 14,620 |
| Attleboro | Bristol | 24 | 38,834 | East Bridgewater | Plymouth | 22 | 12,723 |
| Auburn | Worcester | 8 | 15,921 | East Brookfield | Worcester | 5 | 2,104 |
| Avon | Norfolk | 22 | 5,258 | East Longmeadow | Hampden | 4 | 14,546 |
| Ayer | Middlesex | 9 | 5,013 | Eastham | Barnstable | 27 | 4,792 |
| Barnstable | Barnstable | 27 | 45,912 | Easthampton | Hampshire | 3 | 16,674 |
| Barre | Worcester | 9 | 4,898 | Easton | Bristol | 22 | 21,586 |
| Becket | Berkshire | 1 | 1,541 | Edgartown | Dukes | 27 | 3,630 |
| Bedford | Middlesex | 15 | 13,609 | Egremont | Berkshire | 1 | 1,200 |
| Belchertown | Hampshire | 3 | 12,424 | Erving | Franklin | 2 | 1,399 |
| Bellingham | Norfolk | 6 | 15,771 | Essex | Essex | 13 | 3,294 |
| Belmont | Middlesex | 17 | 25,407 | Everett | Middlesex | 16 | 36,545 |
| Berkley | Bristol | 24 | 5,113 | Fairhaven | Bristol | 26 | 16,389 |
| Berlin | Worcester | 9 | 2,440 | Fall River | Bristol | 25 | 89,246 |
| Bernardston | Franklin | 2 | 2,165 | Falmouth | Barnstable | 27 | 29,702 |
| Beverly | Essex | 13 | 41,016 | Fitchburg | Worcester | 9 | 37,864 |
| Billerica | Middlesex | 10 | 38,145 | Florida | Berkshire | 1 | 793 |
| Blackstone | Worcester | 6 | 9,057 | Foxborough | Norfolk | 7 | 16,280 |
| Blandford | Hampden | 4 | 1,257 | Frammingham | Middlesex | 7 | 64,503 |
| Bolton | Worcester | 9 | 4,107 | Franklin | Norfolk | 6 | 26,117 |
| Boston | Suffolk | 19 | 560,741 | Freetown | Bristol | 26 | 8,702 |
| Bourne | Barnstable | 27 | 16,130 | Gardner | Worcester | 9 | 20,619 |
| Boxborough | Middlesex | 15 | 4,776 | Gay Head (Aquinnah) | Dukes | 27 | 184 |
| Boxford | Essex | 12 | 7,772 | Georgetown | Essex | 12 | 7,512 |
| Boylston | Worcester | 8 | 3,910 | Gill | Franklin | 2 | 1,499 |
| Braintree | Norfolk | 20 | 35,299 | Gloucester | Essex | 13 | 27,960 |
| Brewster | Barnstable | 27 | 10,408 | Goshen | Hampshire | 3 | 987 |
| Bridgewater | Plymouth | 22 | 23,985 | Gosnold | Dukes | 27 | 201 |
| Brimfield | Hampden | 5 | 3,104 | Grafton | Worcester | 8 | 13,877 |
| Brockton | Plymouth | 22 | 91,410 | Granby | Hampshire | 3 | 6,262 |
| Brookfield | Worcester | 5 | 2,921 | Granville | Hampden | 4 | 1,584 |
| Brookline | Norfolk | 19 | 59,664 | Great Barrington | Berkshire | 1 | 8,354 |
| Buckland | Franklin | 2 | 1,958 | Greenfield | Franklin | 2 | 18,811 |
| Burlington | Middlesex | 15 | 24,081 | Groton | Middlesex | 9 | 9,277 |
| Cambridge | Middlesex | 17 | 102,211 | Groveland | Essex | 12 | 5,769 |
| Canton | Norfolk | 20 | 20,202 | Hadley | Hampshire | 3 | 4,617 |
| Carlisle | Middlesex | 15 | 4,361 | Halifax | Plymouth | 23 | 6,961 |
| Carver | Plymouth | 23 | 11,233 | Hamilton | Essex | 13 | 7,649 |
| Charlemont | Franklin | 2 | 1,106 | Hampden | Hampden | 4 | 4,851 |
| Charlton | Worcester | 5 | 11,437 | Hancock | Berkshire | 1 | 709 |
| Chatham | Barnstable | 27 | 6,702 | Hanover | Plymouth | 23 | 12,668 |
| Chelmsford | Middlesex | 10 | 35,528 | Hanson | Plymouth | 23 | 9,770 |
| Chelsea | Suffolk | 19 | 30,102 | Hardwick | Worcester | 9 | 2,590 |
| Cheshire | Berkshire | 1 | 3,811 | Harvard | Worcester | 9 | 11,128 |
| Chester | Hampden | 21 | 1,273 | Harwich | Barnstable | 27 | 11,290 |
| Chesterfield | Hampshire | 3 | 1,067 | Hatfield | Hampshire | 3 | 3,462 |
| Chicopee | Hampden | 21 | 56,571 | Haverhill | Essex | 12 | 55,547 |
| Chilmark | Dukes | 27 | 746 | Hawley | Franklin | 2 | 313 |
| Clarksburg | Berkshire | 1 | 1,767 | Heath | Franklin | 2 | 833 |
| Clinton | Worcester | 9 | 13,614 | Hingham | Plymouth | 20 | 21,752 |
| Cohasset | Norfolk | 20 | 7,321 | Hinsdale | Berkshire | 1 | 2,147 |
| Colrain | Franklin | 2 | 1,888 | Holbrook | Norfolk | 22 | 10,974 |
| Concord | Middlesex | 15 | 18,922 | Holden | Worcester | 8 | 16,010 |

Population Estimates for Massachusetts Communities, 1997, continued

| TOWN NAME | COUNTY | CHNA | POPULATION | TOWN NAME | COUNTY | CHNA | POPULATION |
|----------------|------------|------|------------|------------------|------------|------|------------|
| Holland | Hampden | 5 | 2,261 | New Marlborough | Berkshire | 1 | 1,686 |
| Holliston | Middlesex | 7 | 14,639 | New Salem | Franklin | 2 | 898 |
| Holyoke | Hampden | 21 | 38,092 | Newbury | Essex | 12 | 6,185 |
| Hopedale | Worcester | 6 | 5,819 | Newburyport | Essex | 12 | 16,670 |
| Hopkinton | Middlesex | 7 | 10,850 | Newton | Middlesex | 18 | 83,886 |
| Hubbardston | Worcester | 9 | 3,303 | Norfolk | Norfolk | 7 | 9,818 |
| Hudson | Middlesex | 7 | 18,832 | North Adams | Berkshire | 1 | 18,844 |
| Hull | Plymouth | 20 | 10,817 | North Andover | Essex | 11 | 23,819 |
| Huntington | Hampshire | 21 | 2,463 | North Attleboro | Bristol | 24 | 27,487 |
| Ipswich | Essex | 13 | 11,806 | North Brookfield | Worcester | 5 | 5,011 |
| Kingston | Plymouth | 23 | 10,083 | North Reading | Middlesex | 16 | 12,695 |
| Lakeville | Plymouth | 24 | 8,779 | Northampton | Hampshire | 3 | 31,784 |
| Lancaster | Worcester | 9 | 7,038 | Northborough | Worcester | 7 | 13,361 |
| Lanesborough | Berkshire | 1 | 3,212 | Northbridge | Worcester | 6 | 13,316 |
| Lawrence | Essex | 11 | 69,220 | Northfield | Franklin | 2 | 3,259 |
| Lee | Berkshire | 1 | 5,490 | Norton | Bristol | 24 | 15,018 |
| Leicester | Worcester | 8 | 10,804 | Norwell | Plymouth | 20 | 9,691 |
| Lenox | Berkshire | 1 | 5,197 | Norwood | Norfolk | 20 | 29,690 |
| Leominster | Worcester | 9 | 41,236 | Oak Bluffs | Dukes | 27 | 3,238 |
| Leverett | Franklin | 2 | 2,014 | Oakham | Worcester | 9 | 1,650 |
| Lexington | Middlesex | 15 | 31,549 | Orange | Franklin | 2 | 7,435 |
| Leyden | Franklin | 2 | 742 | Orleans | Barnstable | 27 | 6,559 |
| Lincoln | Middlesex | 15 | 7,522 | Otis | Berkshire | 1 | 1,231 |
| Littleton | Middlesex | 15 | 7,686 | Oxford | Worcester | 5 | 13,609 |
| Longmeadow | Hampden | 4 | 16,444 | Palmer | Hampden | 4 | 12,741 |
| Lowell | Middlesex | 10 | 104,270 | Paxton | Worcester | 8 | 4,283 |
| Ludlow | Hampden | 21 | 19,741 | Peabody | Essex | 14 | 50,877 |
| Lunenburg | Worcester | 9 | 10,028 | Pelham | Hampshire | 3 | 1,462 |
| Lynn | Essex | 14 | 79,589 | Pembroke | Plymouth | 23 | 15,911 |
| Lynnfield | Essex | 14 | 12,080 | Pepperell | Middlesex | 9 | 10,979 |
| Malden | Middlesex | 16 | 51,486 | Peru | Berkshire | 1 | 836 |
| Manchester | Essex | 13 | 5,399 | Petersham | Worcester | 2 | 1,211 |
| Mansfield | Bristol | 24 | 19,759 | Phillipston | Worcester | 2 | 1,673 |
| Marblehead | Essex | 14 | 21,260 | Pittsfield | Berkshire | 1 | 48,652 |
| Marion | Plymouth | 26 | 6,653 | Plainfield | Hampshire | 3 | 587 |
| Marlborough | Middlesex | 7 | 34,045 | Plainville | Norfolk | 7 | 7,345 |
| Marshfield | Plymouth | 23 | 22,983 | Plymouth | Plymouth | 23 | 49,895 |
| Mashpee | Barnstable | 27 | 9,778 | Plympton | Plymouth | 23 | 2,744 |
| Mattapoisett | Plymouth | 26 | 5,946 | Princeton | Worcester | 9 | 3,414 |
| Maynard | Middlesex | 7 | 10,357 | Provincetown | Barnstable | 27 | 3,241 |
| Medfield | Norfolk | 7 | 12,389 | Quincy | Norfolk | 20 | 84,989 |
| Medford | Middlesex | 16 | 56,134 | Randolph | Norfolk | 20 | 31,669 |
| Medway | Norfolk | 6 | 11,933 | Raynham | Bristol | 24 | 11,009 |
| Melrose | Middlesex | 16 | 26,727 | Reading | Middlesex | 16 | 24,146 |
| Mendon | Worcester | 6 | 4,398 | Rehoboth | Bristol | 24 | 9,812 |
| Merrimac | Essex | 12 | 5,674 | Revere | Suffolk | 19 | 44,121 |
| Methuen | Essex | 11 | 42,644 | Richmond | Berkshire | 1 | 2,000 |
| Middleborough | Plymouth | 24 | 19,437 | Rochester | Plymouth | 26 | 4,355 |
| Middlefield | Hampshire | 3 | 475 | Rockland | Plymouth | 23 | 17,386 |
| Middleton | Essex | 11 | 5,266 | Rockport | Essex | 13 | 8,346 |
| Milford | Worcester | 6 | 23,877 | Rowe | Franklin | 2 | 356 |
| Millbury | Worcester | 8 | 12,695 | Rowley | Essex | 12 | 5,160 |
| Millis | Norfolk | 7 | 7,440 | Royalston | Worcester | 2 | 926 |
| Millville | Worcester | 6 | 2,840 | Russell | Hampden | 4 | 1,886 |
| Milton | Norfolk | 20 | 27,383 | Rutland | Worcester | 9 | 5,911 |
| Monroe | Franklin | 2 | 165 | Salem | Essex | 14 | 40,784 |
| Monson | Hampden | 4 | 7,951 | Salisbury | Essex | 12 | 6,921 |
| Montague | Franklin | 2 | 7,342 | Sandisfield | Berkshire | 1 | 642 |
| Monterey | Berkshire | 1 | 885 | Sandwich | Barnstable | 27 | 18,246 |
| Montgomery | Hampden | 4 | 746 | Saugus | Essex | 14 | 25,593 |
| Mt. Washington | Berkshire | 1 | 135 | Savoy | Berkshire | 1 | 692 |
| Nahant | Essex | 14 | 4,092 | Scituate | Plymouth | 20 | 17,325 |
| Nantucket | Nantucket | 27 | 7,500 | Seekonk | Bristol | 24 | 14,093 |
| Natick | Middlesex | 7 | 30,855 | Sharon | Norfolk | 20 | 16,300 |
| Needham | Norfolk | 18 | 27,485 | Sheffield | Berkshire | 1 | 3,313 |
| New Ashford | Berkshire | 1 | 214 | Shelburne | Franklin | 2 | 1,910 |
| New Bedford | Bristol | 26 | 96,835 | Sherborn | Middlesex | 7 | 4,595 |
| New Braintree | Worcester | 9 | 909 | Shirley | Middlesex | 9 | 6,295 |

Population Estimates for Massachusetts Communities, 1997, continued

| <u>TOWN NAME</u> | <u>COUNTY</u> | <u>CHNA</u> | <u>POPULATION</u> | <u>TOWN NAME</u> | <u>COUNTY</u> | <u>CHNA</u> | <u>POPULATION</u> |
|------------------|---------------|-------------|-------------------|------------------|---------------|-------------|-------------------|
| Shrewsbury | Worcester | 8 | 27,171 | Warwick | Franklin | 2 | 755 |
| Shutesbury | Franklin | 2 | 1,957 | Washington | Berkshire | 1 | 652 |
| Somerset | Bristol | 25 | 19,151 | Watertown | Middlesex | 17 | 26,734 |
| Somerville | Middlesex | 17 | 78,535 | Wayland | Middlesex | 7 | 12,889 |
| South Hadley | Hampshire | 3 | 20,052 | Webster | Worcester | 5 | 16,090 |
| Southampton | Hampshire | 3 | 5,430 | Wellesley | Norfolk | 18 | 28,688 |
| Southborough | Worcester | 7 | 7,804 | Wellfleet | Barnstable | 27 | 2,458 |
| Southbridge | Worcester | 5 | 18,460 | Wendell | Franklin | 2 | 1,139 |
| Southwick | Hampden | 4 | 8,835 | Wenham | Essex | 13 | 4,579 |
| Spencer | Worcester | 5 | 11,789 | West Boylston | Worcester | 8 | 6,899 |
| Springfield | Hampden | 4 | 141,908 | West Bridgewater | Plymouth | 22 | 6,830 |
| Sterling | Worcester | 9 | 7,186 | West Brookfield | Worcester | 5 | 3,623 |
| Stockbridge | Berkshire | 1 | 2,819 | West Newbury | Essex | 12 | 3,973 |
| Stoneham | Middlesex | 16 | 21,693 | West Springfield | Hampden | 4 | 29,196 |
| Stoughton | Norfolk | 22 | 28,143 | West Stockbridge | Berkshire | 1 | 1,292 |
| Stow | Middlesex | 7 | 6,193 | West Tisbury | Dukes | 27 | 2,340 |
| Sturbridge | Worcester | 5 | 7,503 | Westborough | Worcester | 7 | 16,798 |
| Sudbury | Middlesex | 7 | 16,125 | Westfield | Hampden | 21 | 43,491 |
| Sunderland | Franklin | 2 | 3,256 | Westford | Middlesex | 10 | 19,369 |
| Sutton | Worcester | 6 | 7,678 | Westhampton | Hampshire | 3 | 1,569 |
| Swampscott | Essex | 14 | 14,827 | Westminster | Worcester | 9 | 6,316 |
| Swansea | Bristol | 25 | 16,156 | Weston | Middlesex | 18 | 11,905 |
| Taunton | Bristol | 24 | 51,745 | Westport | Bristol | 25 | 14,933 |
| Templeton | Worcester | 9 | 6,706 | Westwood | Norfolk | 18 | 13,949 |
| Tewksbury | Middlesex | 10 | 29,913 | Weymouth | Norfolk | 20 | 54,606 |
| Tisbury | Dukes | 27 | 3,510 | Whately | Franklin | 2 | 1,243 |
| Tolland | Hampden | 4 | 203 | Whitman | Plymouth | 22 | 13,649 |
| Topsfield | Essex | 13 | 6,257 | Wilbraham | Hampden | 4 | 13,349 |
| Townsend | Middlesex | 9 | 9,300 | Williamsburg | Hampshire | 3 | 2,673 |
| Truro | Barnstable | 27 | 1,722 | Williamstown | Berkshire | 1 | 8,424 |
| Tyngsborough | Middlesex | 10 | 9,635 | Wilmington | Middlesex | 15 | 19,585 |
| Tyringham | Berkshire | 1 | 559 | Winchendon | Worcester | 9 | 9,003 |
| Upton | Worcester | 6 | 4,839 | Winchester | Middlesex | 15 | 21,134 |
| Uxbridge | Worcester | 6 | 10,902 | Windsor | Berkshire | 1 | 899 |
| Wakefield | Middlesex | 16 | 24,723 | Winthrop | Suffolk | 19 | 18,255 |
| Wales | Hampden | 5 | 1,589 | Woburn | Middlesex | 15 | 36,670 |
| Walpole | Norfolk | 7 | 22,561 | Worcester | Worcester | 8 | 167,877 |
| Waltham | Middlesex | 18 | 61,260 | Worthington | Hampshire | 3 | 1,428 |
| Ware | Hampshire | 3 | 10,566 | Wrentham | Norfolk | 7 | 10,295 |
| Wareham | Plymouth | 26 | 19,680 | Yarmouth | Barnstable | 27 | 22,760 |
| Warren | Worcester | 5 | 4,869 | | | | |

1. 1997 MISER population estimates (released November 1999).

**Population Estimates for Massachusetts
Community Health Network Areas (CHNA) and Counties, 1997¹**

| CHNA | POPULATION | COUNTY | POPULATION |
|---|-------------------|---------------|-------------------|
| 1. Community Health Network of Berkshire | 139,534 | Barnstable | 203,694 |
| 2. Upper Valley Health Web (Franklin County) | 86,725 | Berkshire | 139,534 |
| 3. Greater Holyoke Area | 156,320 | Bristol | 524,030 |
| 4. Greater Springfield Community Health Network | 289,271 | Dukes | 14,050 |
| 5. Greater Southbridge Area | 113,140 | Essex | 704,737 |
| 6. Community Partners for Health (Milford Area) | 147,599 | Franklin | 71,416 |
| 7. Greater Framingham | 362,270 | Hampden | 452,688 |
| 8. Community Wellness Coalition (Worcester Area) | 279,818 | Hampshire | 158,575 |
| 9. Fitchburg/Gardner Area Community Health Network | 256,816 | Middlesex | 1,450,533 |
| 10. Greater Lowell Community Health Network | 268,276 | Nantucket | 7,454 |
| 11. Greater Lawrence Area | 174,449 | Norfolk | 648,969 |
| 12. Greater Haverhill Area | 138,389 | Plymouth | 462,230 |
| 13. Beverly/Gloucester Area | 117,320 | Suffolk | 647,682 |
| 14. North Shore Community Health Network | 274,579 | Worcester | 742,030 |
| 15. Greater Woburn/Concord/Littleton | 210,556 | | |
| 16. Medford/Malden/Melrose Area | 254,911 | STATE | 6,227,622 |
| 17. Cambridge/Somerville Area | 274,008 | | |
| 18. West Suburban Health Network (Newton/Waltham) | 258,243 | | |
| 19. City of Boston/Chelsea/Revere/Winthrop | 706,588 | | |
| 20. Blue Hills Community Health Alliance (Quincy Area) | 363,531 | | |
| 21. Hampshire County Partnership for Health | 158,434 | | |
| 22. Greater Brockton Community Health Network | 229,083 | | |
| 23. South Shore Community Partners in Prevention (Greater Plymouth Area) | 174,915 | | |
| 24. Greater Attleboro/Taunton Area | 230,976 | | |
| 25. Partners for a Healthier Community (Fall River Area) | 138,244 | | |
| 26. Greater New Bedford Area | 198,429 | | |
| 27. Cape and Islands Community Health Network | 225,198 | | |

1. 1997 population estimates from MISER (released November 1999).

**1997 Massachusetts Population Estimates¹
By Age Group, Gender, Race² and Hispanic Ethnicity³**

| AGE | GENDER | TOTAL | WHITE | BLACK | ASIAN | HISPANIC ETHNICITY |
|------------|---------------|--------------|--------------|--------------|--------------|---------------------------|
| UNDER 1 | MALE | 41,472 | 36,022 | 3,635 | 1,677 | 4,322 |
| | FEMALE | 39,366 | 34,118 | 3,485 | 1,616 | 4,143 |
| | TOTAL | 80,846 | 70,146 | 7,135 | 3,297 | 8,485 |
| 1 TO 4 | MALE | 165,922 | 144,095 | 14,581 | 6,733 | 17,356 |
| | FEMALE | 157,463 | 136,517 | 14,021 | 6,502 | 16,626 |
| | TOTAL | 323,377 | 280,606 | 28,587 | 13,231 | 33,962 |
| 5 TO 14 | MALE | 411,576 | 367,214 | 29,145 | 13,940 | 34,274 |
| | FEMALE | 391,602 | 348,207 | 28,671 | 13,470 | 32,884 |
| | TOTAL | 803,178 | 715,421 | 57,816 | 27,410 | 67,158 |
| 15 TO 24 | MALE | 437,279 | 393,286 | 27,626 | 15,171 | 30,273 |
| | FEMALE | 437,356 | 392,225 | 28,220 | 15,716 | 29,692 |
| | TOTAL | 874,635 | 785,511 | 55,846 | 30,887 | 59,965 |
| 25 TO 34 | MALE | 511,647 | 461,753 | 30,744 | 17,898 | 33,667 |
| | FEMALE | 512,591 | 462,389 | 31,381 | 17,590 | 33,416 |
| | TOTAL | 1,024,238 | 924,142 | 62,125 | 35,488 | 67,083 |
| 35 TO 44 | MALE | 500,991 | 458,785 | 25,204 | 15,605 | 24,074 |
| | FEMALE | 514,637 | 471,963 | 25,632 | 15,648 | 24,579 |
| | TOTAL | 1,015,628 | 930,748 | 50,836 | 31,253 | 48,653 |
| 45 TO 54 | MALE | 388,716 | 363,479 | 15,222 | 9,101 | 13,018 |
| | FEMALE | 410,020 | 382,841 | 17,087 | 9,102 | 14,257 |
| | TOTAL | 798,736 | 746,320 | 32,309 | 18,203 | 27,275 |
| 55 TO 64 | MALE | 228,265 | 214,954 | 8,138 | 4,640 | 6,504 |
| | FEMALE | 250,497 | 235,150 | 10,299 | 4,555 | 7,791 |
| | TOTAL | 478,762 | 450,104 | 18,437 | 9,195 | 14,295 |
| 65 TO 74 | MALE | 188,788 | 180,709 | 5,339 | 2,415 | 3,675 |
| | FEMALE | 241,066 | 229,948 | 7,525 | 3,167 | 4,842 |
| | TOTAL | 429,854 | 410,657 | 12,864 | 5,582 | 8,517 |
| 75 TO 84 | MALE | 105,302 | 101,701 | 2,396 | 1,086 | 1,741 |
| | FEMALE | 178,808 | 172,966 | 4,189 | 1,422 | 2,968 |
| | TOTAL | 284,110 | 274,667 | 6,585 | 2,508 | 4,709 |
| 85 + | MALE | 29,558 | 28,471 | 727 | 303 | 772 |
| | FEMALE | 84,700 | 82,384 | 1,697 | 534 | 1,386 |
| | TOTAL | 114,258 | 110,855 | 2,424 | 837 | 2,158 |
| ALL AGES | MALE | 3,009,516 | 2,750,469 | 162,757 | 88,569 | 169,676 |
| | FEMALE | 3,218,106 | 2,948,708 | 172,207 | 89,322 | 172,584 |
| | TOTAL | 6,227,622 | 5,699,177 | 334,964 | 177,891 | 342,260 |

1. 1997 Population estimates from MISER (November 1999), modified by MDPH-BHSR&E. 2. The age-gender-race distributions from the 1990 US Census (MARS) file were applied to the 1997 population estimates to separate Asians from the combined category of Asian and American Indian, and to add Hispanics back into the estimates of white, black, and Asian populations. 3. Persons of Hispanic ethnicity are also included in the race categories, consistent with NCHS and US Census population classification of race and ethnicity.

ICD-9 Codes Used in this Publication

(Sorted by ICD-9 Codes)

| Cause of Death | ICD-9 Codes |
|---|-----------------------------------|
| Infectious and parasitic diseases | 001-139 |
| Septicemia | 038 |
| AIDS and HIV-related diseases | 042-044 |
| AIDS | 042 |
| AIDS-like syndrome | 043 |
| Other HIV infection | 044 |
| Cancer | 140-208 |
| Cancer of the esophagus | 150 |
| Cancer of the stomach | 151 |
| Cancer of the colon, rectum, rectosigmoid junction, and anus | 153-154, 159.9 |
| Cancer of the pancreas | 157 |
| Cancer of the lung and other respiratory organs | 160-165 |
| Cancer of the trachea, bronchus, and lung | 162 |
| Melanoma of the skin | 172 |
| Cancer of the female breast | 174 |
| Cancer of the body of the uterus and of uterus, parts unspecified | 179,182 |
| Cancer of the cervix | 180 |
| Cancer of the ovary and uterine adnexa | 183 |
| Cancer of the prostate | 185 |
| Cancer of the bladder | 188 |
| Cancer of the kidneys and other unspecified urinary organs | 189 |
| Cancer of the brain & unspecified parts of the nervous system | 191-192 |
| Non-Hodgkin's lymphoma | 200,202 (except 202.4) |
| Hodgkin's Disease | 201 |
| Leukemia | 202.4,204-208 |
| Multiple myeloma and other immunoproliferative neoplasms | 203 |
| Diabetes (diabetes mellitus) | 250 |
| Heart disease | 390-398, 402, 404-429 |
| Cerebrovascular disease (stroke) | 430-438 |
| Other diseases of arteries, arterioles, and capillaries (other artery diseases) | 441-448 |
| Pneumonia | 480-486 |
| Pneumonia and influenza | 480-487 |
| Chronic obstructive pulmonary disease (COPD) | 490-496 |
| Chronic liver disease and cirrhosis | 571 |
| Nephritis | 580-589 |
| Congenital anomalies | 740-759 |
| Perinatal conditions (certain conditions of the perinatal period) | 760-779 |
| Sudden infant death syndrome (SIDS) | 798.0 |
| External causes of injuries and poisonings (intentional, unintentional and of undetermined intent) | E800-E999 |
| Unintentional injuries | E800-E949 |
| Unintentional injuries excluding motor vehicle-related injuries | E800-E809, E826-949 |
| Other injuries | E800-E809, E826-949, E970-E999 |
| Motor vehicle-related injuries | E810-E825 |
| Suicide and self-inflicted injuries | E950-E959 |
| Homicide | E960-E969 |
| Legal Intervention | E970-E978 |
| Injuries of undetermined intent (also called external causes, undetermined intent) | E980-E989 |

ICD-9 Codes Used in this Publication

(Sorted by Cause of Death)

| Cause of Death | ICD-9 Codes |
|---|-----------------------------------|
| AIDS | 042 |
| AIDS and HIV-related diseases | 042-044 |
| AIDS-like syndrome | 043 |
| Cancer | 140-208 |
| Cancer of the brain and unspecified parts of the nervous system | 191-192 |
| Cancer of the bladder | 188 |
| Cancer of the body of the uterus, and of the uterus, parts unspecified | 179,182 |
| Cancer of the cervix | 180 |
| Cancer of the colon, rectum, rectosigmoid junction, and anus | 153-154, 159.9 |
| Cancer of the esophagus | 150 |
| Cancer of the female breast | 174 |
| Cancer of the kidney and other unspecified urinary organs | 189 |
| Cancer of the lung and other respiratory organs | 160-165 |
| Cancer of the ovary and uterine adnexa | 183 |
| Cancer of the pancreas | 157 |
| Cancer of the prostate | 185 |
| Cancer of the stomach | 151 |
| Cancer of the trachea, bronchus, and lung | 162 |
| Cerebrovascular disease (stroke) | 430-438 |
| Certain conditions of the perinatal period | 760-779 |
| Chronic liver disease and cirrhosis | 571 |
| Chronic obstructive pulmonary disease (COPD) | 490-496 |
| Congenital anomalies | 740-759 |
| Diabetes (diabetes mellitus) | 250 |
| External causes of injuries and poisonings (intentional, unintentional, and undetermined intent) | E800-E999 |
| Heart Disease | 390-398, 402,404-429 |
| Hodgkin's Disease | 201 |
| Homicide | E960-E969 |
| Infectious and parasitic diseases | 001-139 |
| Injuries of undetermined intent | E980-E989 |
| Legal intervention | E970-E978 |
| Leukemia | 202.2, 204-208 |
| Melanoma of the skin | 172 |
| Motor vehicle-related injuries | E810-E825 |
| Multiple myeloma and other immunoproliferative neoplasms | 203 |
| Nephritis | 580-589 |
| Non-Hodgkin's lymphoma | 200,202 (except 202.4) |
| Other diseases of arteries, arterioles, and capillaries (other artery diseases) | 441-448 |
| Other HIV infection | 044 |
| Other injuries | E800-E809, E826-949, E970-E999 |
| Perinatal conditions (certain conditions of the perinatal period) | 760-779 |
| Pneumonia | 480-486 |
| Pneumonia and influenza | 480-487 |
| Septicemia | 038 |
| Stroke (cerebrovascular disease) | 430-438 |
| Sudden infant death syndrome (SIDS) | 798.0 |
| Suicide and self-inflicted injuries | E950-E959 |
| Unintentional Injuries | E800-E949 |
| Unintentional injuries excluding motor vehicle-related injuries | E800-E809, E826-949 |

Massachusetts Death Certificate: 1998



The Commonwealth of Massachusetts

(INSTRUCTIONS ON REVERSE SIDE)

STANDARD CERTIFICATE OF DEATH
REGISTRY OF VITAL RECORDS AND STATISTICS

FOR USE BY
PHYSICIANS AND
MEDICAL EXAMINERS

REGISTERED NUMBER

STATE USE ONLY

| |
|----------------|
| STATE USE ONLY |
| 4c Hosp |
| 5 Type |
| 6 Hsp Race |
| 10 Age |
| 15 Resid |
| 15 Out-State |
| 23 Disp |
| 31-32 Autop |
| 34 Manner |
| 35c Work Inj |
| 35f Place |
| 36-37 Cert |
| 40a Pron |

DECEDENT

INFORMANT

DISPOSITION

CERTIFIER

| | | | | |
|--|--|---|---------------------------------|---|
| 1 DECEDENT - NAME FIRST MIDDLE LAST | | 2 SEX | 3 DATE OF DEATH (Mo., Day, Yr.) | |
| 4a PLACE OF DEATH (City/Town): | | 4b COUNTY OF DEATH | | 4c HOSPITAL OR OTHER INSTITUTION - Name (If not in either, give street and number) |
| 4a PLACE OF DEATH (Check only one): HOSPITAL: <input type="checkbox"/> Inpatient <input type="checkbox"/> ER/Outpatient <input type="checkbox"/> DOA | | OTHER <input type="checkbox"/> Nursing Home <input type="checkbox"/> Residence <input type="checkbox"/> Other (Specify) | | 6 SOCIAL SECURITY NUMBER |
| 5 WAS DECEDENT OF HISPANIC ORIGIN? (If yes, Specify Puerto Rican, Dominican, Cuban, etc.) <input type="checkbox"/> NO <input type="checkbox"/> YES | | 8a RACE (e.g. White, Black, American Indian, etc.) (Specify) | | 7 DECEDENT'S EDUCATION (Highest Grade Completed) Elementary Sec (0-12) College (1-4, 5+) |
| 8a Specify: AGE - Last Birthday (Yrs.) | | 8b UNDER 1 YEAR MOS. DAYS HOURS MINS | 9 DATE OF BIRTH (Mo., Day, Yr.) | |
| 10a MARRIED, NEVER MARRIED WIDOWED OR DIVORCED | | 10b LAST SPOUSE (If wife, give maiden name) | | 11 USUAL OCCUPATION (Prior - If Retired) |
| 12 RESIDENCE - NO. & ST., CITY/TOWN, COUNTY, STATE/COUNTRY | | 14a | | 14b KIND OF BUSINESS OR INDUSTRY |
| 15a FATHER - FULL NAME | | 17 STATE OF BIRTH (If not in US, name country) | | 15b STATE OF BIRTH (If not in the US name country) |
| 16 INFORMANT'S NAME | | 21 MAILING ADDRESS - NO. & ST., CITY/TOWN, STATE, ZIP CODE | | 19 RELATIONSHIP |
| 23 METHOD OF DISPOSITION <input type="checkbox"/> BURIAL <input type="checkbox"/> CREMATION <input type="checkbox"/> ENTOMBMENT <input type="checkbox"/> REMOVAL FROM STATE <input type="checkbox"/> DONATION <input type="checkbox"/> OTH. SPEC. | | 24 FUNERAL SERVICE LICENSEE OR OTHER DESIGNEE | | 22 LICENSE # |
| 26a DATE OF DISPOSITION (Mo., Day, Yr.) | | 26b NAME AND ADDRESS OF FACILITY OR OTHER DESIGNEE | | 25 LOCATION (City/Town, State) |
| 27 | | 28a/b | | |
| 29 PART I - Enter the diseases, injuries, or complications that caused the death. Do not use only the mode of dying, such as cardiac or respiratory arrest, shock or heart failure. List only one cause on each line (a through d) PRINT OR TYPE LEGIBLY. | | | | Approximate Interval Between Onset and Death |
| IMMEDIATE CAUSE (Final disease or condition resulting in death) → a. DUE TO (OR AS A CONSEQUENCE OF) | | | | |
| Sequentially list conditions, if any, leading to immediate cause. Enter UNDERLYING CAUSE (disease or injury that initiated events resulting in death) LAST b. DUE TO (OR AS A CONSEQUENCE OF) | | | | |
| c. DUE TO (OR AS A CONSEQUENCE OF) | | | | |
| d. DUE TO (OR AS A CONSEQUENCE OF) | | | | |
| PART II - Other significant conditions contributing to death but not resulting in underlying cause given in Part I. | | | | |
| 30 WAS CASE REFERRED TO M.E.? (Yes or No) | | 34 MANNER OF DEATH <input type="checkbox"/> NATURAL <input type="checkbox"/> HOMICIDE <input type="checkbox"/> COULD NOT BE DETERMINED | | 31 DATE OF INJURY (Mo., Day, Yr.) |
| 33 DESCRIBE HOW INJURY OCCURRED | | 35a PLACE OF INJURY (At home, farm, street, factory, office bldg., etc.) Specify | | 32 TIME OF INJURY |
| 35d | | 35b | | 35c INJURY AT WORK (Yes or No) |
| 36a To the best of my knowledge, death occurred at the time, date, and place and due to the cause(s) stated. (Signature and Title) | | 37a On the basis of examination and/or investigation in my opinion death occurred at the time, date, and place and due to the cause(s) stated. (Signature and Title) | | |
| 36b DATE SIGNED (Mo., Day, Yr.) | | 37b DATE SIGNED (Mo., Day, Yr.) | | 38 HOUR OF DEATH |
| 36c NAME OF ATTENDING PHYSICIAN IF NOT CERTIFIER | | 37c PRONOUNCED DEAD (Mo., Day, Yr.) | | 39 PRONOUNCED DEAD (H) |
| 36d NAME AND ADDRESS OF CERTIFYING PHYSICIAN OR MEDICAL EXAMINER (Type or Print) | | 37d | | 37e LICENSE NO. OF CERTIFIER |
| 38 WAS THERE A PRONOUNCEMENT FORM? (Yes or No) | | 40d NAME OF PRONOUNCER | | 39 TITLE |
| 40a IF YES, DATE PRONOUNCED | | 40c IF YES, TIME PRONOUNCED | | <input type="checkbox"/> R.N. <input type="checkbox"/> P.A. |
| 40b DATE OF BURIAL PERMIT ISSUED | | 40e RECEIVED IN THE CITY/TOWN OF | | 40 DATE OF RECORD |
| 41 SIGNATURE-BO. OF HEALTH AGENT | | 42 CLERK'S SIGNATURE | | 43 |

SAMPLE

Pronouncement of Death Form (R-312) on File:

BLACK INK ONLY