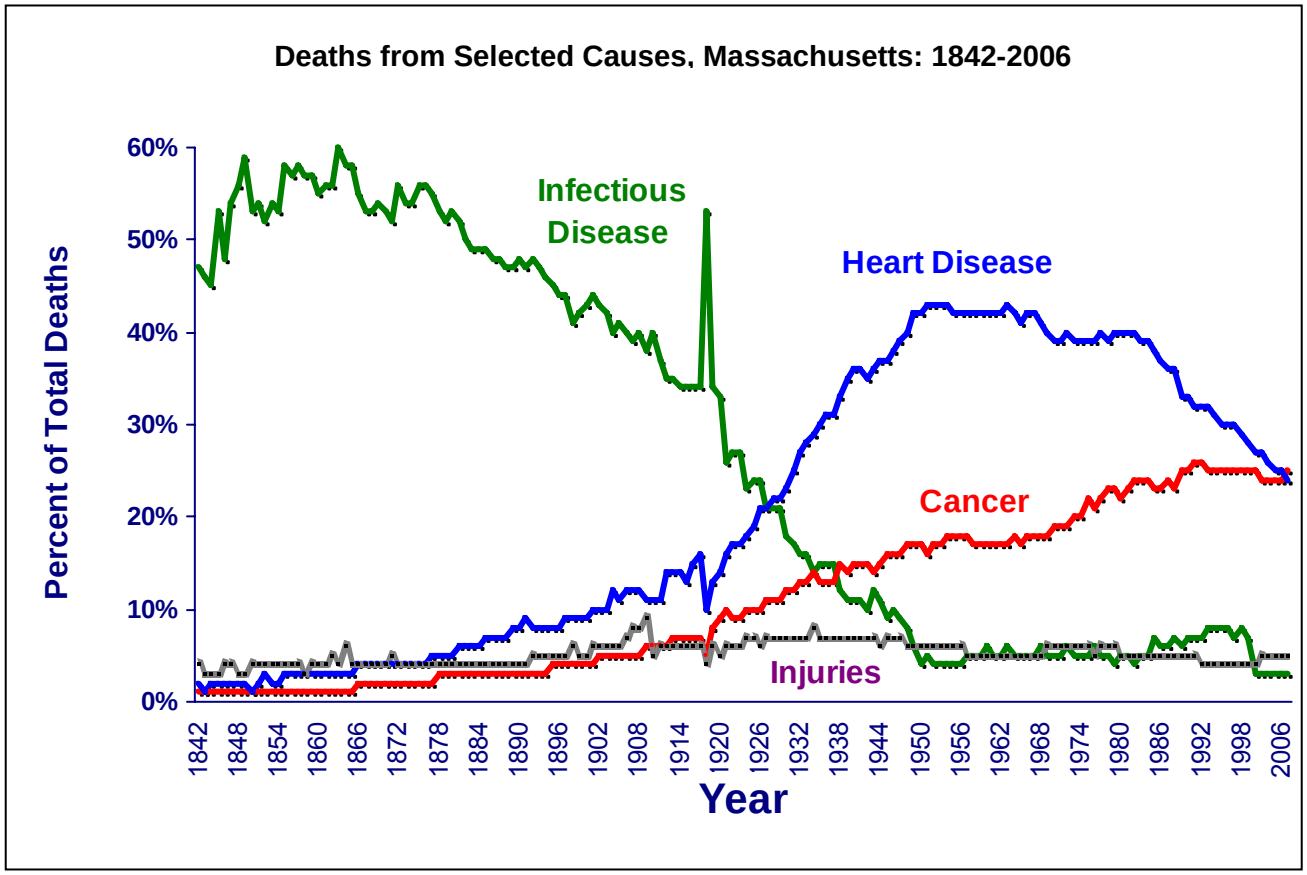
Massachusetts Deaths 2006



Bureau of Health Information, Statistics, Research and Evaluation

Massachusetts Department of Public Health

April 2008

Massachusetts Deaths 2006

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Massachusetts Department of Public Health

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Note to Readers

Please review the information below before reading the report.

1. **Population changes:** In *Massachusetts Deaths 2006*, we have used two sources for population denominators to calculate population-based rates. For state level death rates, we used the latest available population for 2006 from the National Center for Health Statistics (NCHS). This file, referred to as the MARS (Modified Age, Race/Ethnicity, and Sex) file, produced by NCHS and the Census Bureau Population Estimates Program, includes data by single year or age, sex, race and Hispanic ethnicity in the five mutually exclusive categories used by the Department: white non-Hispanic, Black Non-Hispanic, Asian Non-Hispanic, American Indian/Alaska Native Non-Hispanic, and Hispanic. These estimates are not available for geographic levels below the county.

   For city and town rates, we have used population estimates for 2005, which are the most up-to-date population estimates available by age, race, and sex at the sub-county level. If the population in your community increased from 2005 to 2006, the rates listed may **overestimate** the actual rate. If the population in your community declined from 2005 to 2006, the rates given in the publication may **underestimate** the actual rate. As soon as new population data are available, revised rates will be posted on MassCHIP, the Department's online database (http://masschip.state.ma.us).

2. **Rate, Proportion, and Number comparisons**: The comparison of rates, proportions, and numbers made in this year's report is based on tests of statistical significance. Comparative words, for example, "higher", "lower", "increase", and "decrease" are used only when the statistics being compared are statistically different (i.e., statistically significant) at the $P \leq .05$ level. Please see the Appendix for a discussion of how statistical significance is determined.

3. **Format:** The Report has been revised to follow the National Center for Health Statistics (NCHS) death report format. This format emphasizes important findings in text and provides detailed statistics in tables. Additional tables (previously published in the main body) have been moved to the Appendix. By adopting this format, we have eliminated redundancy in the text, reduced the report production time, and made it easy to compare Massachusetts with U.S. data. The report is divided into five parts: 1) Highlights; 2) Introduction; 3) Methods; 4) Results; and 5) Appendix.

Suggested Citation

Massachusetts Deaths 2006. Boston, MA: Division of Research and Epidemiology, Bureau of Health Information, Statistics, Research, and Evaluation, Massachusetts Department of Public Health. April 2008.

Highlights

- The age-adjusted death rate for Massachusetts fell to a record low of 717.6 deaths per 100,000 population in 2006, down 16% from 853.0 deaths per 100,000 in 1996, continuing a trend toward a lower rate and mirroring a decline in the death rate nationwide. The decrease in the number of deaths was observed primarily in the 25-44 age group, which had 220 fewer deaths.

- In 2006, cancer was the leading cause of death in Massachusetts, surpassing heart disease for the first time by 484 deaths. In 2006, as in previous years, cancer and heart disease accounted for half of all deaths, and more women continue to die from heart disease than men.

- In 2006, age-adjusted death rates for 2 of the top 10 leading causes of death changed significantly from 2005. The death rate for diabetes decreased by 12%, while the rate for unintentional injuries increased by 15% from 2005. Causes due to other leading causes of death such as cancer, heart disease, chronic lower respiratory disease, influenza and pneumonia, and Alzheimer's disease remained stable when compared with 2005 rates.

- In 2006, there was a 23% increase in the number of poisoning deaths among Massachusetts residents. This increase, which includes drug overdoses, occurred primarily among white non-Hispanic males and persons ages 45 and 64 years. Nearly two-thirds (64.4%) of poisoning deaths were associated with opioids such as heroin or methadone, and 31.4% were associated with cocaine.

- In 2006, there was a 50% increase in the number of fall deaths among Massachusetts residents. The majority of fall deaths (80%) occurred among persons ages 65 and older and over half (56%) of these injuries occurred at home.

- In 2006, there were 179 Massachusetts residents who died from HIV/AIDS, similar to the number in 2005, but it was the lowest annual number of HIV/AIDS deaths in Massachusetts since the peak in the epidemic in 1994 (981 HIV/AIDS deaths). HIV/AIDS deaths account for less than 1% of all deaths; however, there are two continued noteworthy changes in the distribution of HIV/AIDS deaths: 1) the proportion of HIV/AIDS deaths among women has almost doubled (32% vs. 19%), and 2) the proportion of HIV/AIDS deaths for persons ages 45 and older has tripled (56% vs. 20%) since 1994.

- Life expectancy reached an all-time high in Massachusetts. In 2006, an infant girl born in Massachusetts could expect to live to be 82, and an infant boy could expect to live to be 78 years old.

- About half of the leading cause-specific mortality rates are lower in Massachusetts than in the U.S., including heart disease, stroke, and diabetes. Cancer and Alzheimer's age-adjusted death rates are about the same as those of the U.S.

- While the homicide rate for Massachusetts in 2006 was similar to the one in 2005, it has increased 45% since 2000. While homicide rates for white non-Hispanics, Asian non-Hispanics and Hispanics remained stable from 2000, the rate for black non-

Hispanics has increased by 9%. Homicide rates for black non-Hispanics and Hispanics continued to be significantly higher than that of white non-Hispanics.

- The infant mortality rate was 4.8 deaths per 1,000 live births in 2006, compared with 5.1 deaths per 1,000 live births in 2005. The infant mortality rate has decreased by 31% since 1990, from 7.0 deaths per 1,000 live births to 4.8 deaths per 1,000 live births.

- As expected, in 2006, among Massachusetts residents most deaths occurred among the oldest residents (75+ years), and the largest number of deaths continued to be among the oldest old (people aged 85 and over). One out of 3 deaths is to a person ages 85 or older (35%); almost 2 out of 3 deaths is to a person ages 75 and older (64%).

- Disparities by gender, race, ethnicity, education, and geography persist:
    - The overall cancer death rate for men was 46% higher than the rate for women (230.5 vs. 158.0 per 100,000).
    - The overall age-adjusted death rate for black non-Hispanics is 16% higher than the age-adjusted death rate for white non-Hispanics (838.4 vs. 723.3).
    - The death rate for those with a high school education or less was almost 3 times higher than the rate for those with 13 years of education or more.
    - The age-adjusted premature mortality rate (PMR) for black non-Hispanics (427.3) was higher than that of white non-Hispanics (298.8), Hispanics (279.8), and Asian non-Hispanics (140.3).
    - Lowell, Springfield, Fall River, New Bedford, Brockton, Taunton and Revere had the highest premature mortality rates[1] among the state's 30 largest communities.

- Massachusetts has achieved or moved closer to over one-half of the Healthy People 2010 mortality objectives[2]. Out of 40 HP2010 mortality objectives examined, Massachusetts has achieved 17 targets and is within 25% of achieving targets for 8 additional indicators.

Introduction

This report presents detailed data on the number and characteristics of Massachusetts deaths in 2006. The data presented in this report can be used to monitor and evaluate the current status and long-term trends in mortality and health of the population in Massachusetts. Furthermore, this report can be used to identify the groups within the Massachusetts population that are at greatest risk for death from specific diseases and injuries and to inform policies and programs directed toward these groups. It is important to note that variation in death rates among demographic groups, such as racial and ethnic groups, may reflect group differences such as socio-economic status, access to health care, and the prevalence of specific risk factors.

[1] The premature mortality rate (PMR) measures the rate of premature death, that is, deaths that occur before the age of 75 years per 100,000, and is age-adjusted to the 2000 U.S. Standard Population.

[2] In January 2000, the U.S. Department of Health and Human Services launched Healthy People 2010 (HP2010), a comprehensive, nationwide health promotion and disease prevention agenda. Healthy People 2010 contains 467 objectives designed to serve as a road map for improving the health of all people in the United States. Within these 467 objectives, HP2010 has 46 mortality goals both using the underlying cause of death as well as other mentionable causes.

Methods

Data on mortality are based on information on death certificates filed with the Massachusetts Registry of Vital Records and Statistics. Physicians and medical examiners assign the cause of death through a system that acknowledges the possibility of multiple causes. Demographic information on the certificates, such as age, race, Hispanic ethnicity, gender, educational attainment, marital status, and occupation is recorded by the funeral director based on information provided by an informant, usually a family member, or, in the absence of an informant, based on observation or omitted. Resident data include all deaths that occur to residents of the Commonwealth, regardless of where they happen. In Massachusetts, a resident is a person with a permanent address in one of the 351 cities or towns. Occurrence data include all events that occur within the state, whether to residents or nonresidents. All data in this publication are for Massachusetts residents unless otherwise stated. There is an exchange agreement among the 50 states, District of Columbia, Puerto Rico, Virgin Islands, Guam, and Canadian provinces that provides for the exchange of copies of death records for persons dying in a state other than their state of residence. These records are used for statistical purposes only, and allow each state or province to track the births and deaths of its residents.

The data in this publication refer to the underlying cause of death as generated by the Mortality Medical Indexing, Classification, and Retrieval system (MICAR), unless specifically noted. This is a computer software algorithm developed by the National Center for Health Statistics and used by all U.S. jurisdictions so that coding of death data will be comparable throughout the U.S.

Throughout this report, both the number of deaths and age-adjusted rates are presented. The number of deaths is presented to highlight the overall public health burden of disease in the state. Disease rates are presented to allow for comparisons across groups so that we can better target our programs. All mortality rates were adjusted to the 2000 U.S. Standard Population and are per 100,000 population.

Data on the cause and intent of injury deaths is generated through information listed in the cause and manner of death fields on official death certificates. Due to Massachusetts General Laws (MGL) reporting requirements, nearly all death certificates for individuals dying from an injury are completed by the Massachusetts Office of the Chief Medical Examiner (OCME). Policy changes affecting the classification of these deaths at the OCME can therefore impact the injury death data reported.

In May 2005, there was a change in OCME policy regarding the classification of fatal poisonings (which includes acute intoxications and overdoses) where there is no evidence of suicide or homicide. The new policy states that fatal poisonings should be certified as “accidents”, that is unintentional events, rather than “undetermined” (old policy) if there is no evidence of suicide or homicide. This new policy brings Massachusetts policy in line with the policies in most other states. Prior to this policy change (affecting poisoning deaths in 2004 and at least 10 years prior) the manner of death in these cases was listed as “undetermined”. As a consequence of this new policy, only 3% of all injuries in 2006 (4% in 2005) were classified as injuries of undetermined intent[3]. Seventy-five percent of all injury-related deaths in 2006 were due to unintentional injuries (71% in 2005), and 21% were intentional injuries (15% suicide and 6% homicide) (24% in 2005; 18% suicide and 7% homicide).

[3] Injury death of undetermined intent means that the medical examiner lacked sufficient evidence to classify the deaths as homicide, suicide, or accidental.

Comparison of rates is based on tests of statistical significance. In all tables, statistically significant results are marked. Comparative words, for example, "higher," "lower," "increase," and "decrease" are used only when the rates being compared are statistically different at $P \leq .05$ level.

Results

Number of Deaths and Age-Adjusted Death Rates

In 2006, 53,293 Massachusetts residents died (Table 1). The number of resident deaths remained stable from 2005 (53,776) but decreased by 6% from 2002. In 2006, there was a significant decrease of 10%, 220 fewer deaths among persons ages 25-44 from 2005.

The age-adjusted death rate in 2006 for Massachusetts was a record low of 717.6 deaths per 100,000 persons, which was a 16% decline since 1996 and a 0.4% decline from the previous year. The rate for males was considerably higher than that for females—about 1.4 times higher. Death rates for males have declined by 20%, and death rates for females have declined by 13% since 1996.

Age-adjusted death rates varied greatly by race and Hispanic ethnicity in Massachusetts in 2006, as they have throughout the last decade. Black non-Hispanics had the highest death rate, experiencing 1.2 times the death rate of white non-Hispanics (838.4 vs. 723.3 deaths per 100,000), similar to 2005. Asian non-Hispanics had the lowest death rate (379.0 deaths per 100,000) followed by Hispanics (479.9 deaths per 100,000). In 2006, the age-adjusted death rate for all racial and ethnicity groups (i.e. white non-Hispanics, black non-Hispanics, Asian non-Hispanics, and Hispanics) remained stable from 2005.

The actual death rates for both Asians and Hispanics may be higher than the rates presented in this report for several reasons. There are well-known difficulties in calculating accurate mortality rates for Massachusetts smaller populations such as Asians, Native Americans and Hispanics[4,5]. Evaluation studies since the early 1990s have demonstrated inaccuracy in mortality statistics for these racial and ethnicity groups[6,7]. Race and ethnicity are collected differently for death certificates than in the census. They are self-reported in the decennial Census count, which is the denominator of the mortality rates; whereas, race and ethnicity on death certificates are collected by the funeral director from an informant or by observation. Use caution when interpreting mortality data because the potential undercounts in population data and misclassification on death certificates may result in inaccuracies in mortality statistics (For example, see page 16 regarding Life Expectancy).

In 2006, cancer was the leading cause of death in Massachusetts, surpassing heart disease for the first time. There were 484 more deaths from cancer than heart disease. In 2006, there were significant declines in the number of influenza and pneumonia deaths as well as diabetes deaths in Massachusetts. On the other hand, the number of injury deaths

[4] Rosenberg HM, Maurer JD, Sorlie PD, et al. Quality of death rates by race and Hispanic origin: A summary of current research, 1999. National Center for Health Statistics. Vital Health Stat 2 (128). 1999.
[5] Arias E. Quality of race and Hispanic origin reporting on death certificates in the United States. Presented at the 2004 NCHS Data Users Conference. Washington, DC, July 14, 2004. Available at: http://www.cdc.gov/nchs/ppt/duc2004/arias.pps.
[6] U.S. Centers for Disease Control and Prevention, National Center for Health Statistics. Vital and Health Statistics (Series 2, Number 128), Quality of Death Rates by Race and Hispanic Origin: A Summary of Current Research, 1999. U.S. Department of Health and Human Services.
[7] Sorlie, P. D., Rogot, E., & Johnson, N. J. (1992). Validity of the Death Certificate. Epidemiology, 3(2), 181-184.

increased significantly from 2005, and increases were seen in the number of fall deaths and poisoning related deaths.

In 2006, death rates remained stable for 8 of the leading causes of death from 2005. Cancer had a death rate similar to that in 2005 (186.3 vs. 184.9), but has declined by 10% since 2000. Heart disease, the second leading cause of death, had a death rate similar to that in 2005 (168.8 vs. 172.2), but has declined by 22% since 2000. The death rate for diabetes declined by 12% from 2005 (15.3 vs. 17.4 deaths per 100,000); while the death rate for unintentional injuries increased by 15% from 2005 (31.4 vs. 27.4 deaths per 100,000) (Table 2).

A Comparison of Massachusetts and U.S. Indicators

In 2006, certain Massachusetts mortality indicators were better than those for the U.S., and the ranking of the leading causes differed (Table 2). According to U.S. death statistics for 2005[8] (Note: 2006 data were not available at the time of release of this report):

- The 2006 Massachusetts overall age-adjusted death rate was 10% lower than the 2005 United States rate (717.6 vs. 798.8 deaths per 100,000), and has been consistently lower than that of the U.S. from 1990 to the present.

- In 2006, life expectancy at birth continued to be higher in Massachusetts as compared with the U.S. (80.0 years vs. 77.8 years).

- The top 10 causes of death in Massachusetts are the same as those of the U.S., but they are not in the same rank order. Cancer was the leading cause of death in Massachusetts followed by heart disease; whereas, heart disease was the leading cause of death in the United States followed by cancer. The next 3 leading causes of death are in the same order: stroke, chronic lower respiratory disease, and unintentional injuries. However, influenza and pneumonia is the 6th leading cause of death followed by Alzheimer's disease and nephritis and diabetes in Massachusetts; whereas, for the U.S., diabetes, Alzheimer's disease, influenza and pneumonia, and nephritis are the 6th, 7th, 8th, and 9th leading causes of death, respectively. The 10th leading cause for both the U.S. and Massachusetts was septicemia.

- About half of the leading cause-specific mortality rates are lower in Massachusetts than the U.S. rates, including heart disease, stroke, chronic lower respiratory disease, and diabetes. Cancer and Alzheimer's disease age-adjusted death rates are about the same as those of the U.S.

- The infant mortality rate (IMR) in Massachusetts (4.8) was 30% lower than that of the U.S. (6.9 deaths per 1,000 live births).

Life Expectancy

In 2006, the Massachusetts life expectancy at birth reached a record high of 80 years. Figure 1 shows the trend toward longer life expectancy for Massachusetts residents in the last century. A person born in Massachusetts in 2006 could expect to live, on average, an additional 35 years than a person born in 1900 (80.0 years vs. 45.0 years).

[8] Kung HC, Hoyert DL, XU JQ, Murphy SL. Deaths: Final data for 2005. National Vital Statistics Reports; Vol 56, no 10. Hyattsville, MD: National Center for Health Statistics. January 2008.

In 2006, a woman born in Massachusetts could expect to live, on average, until the age of 82, and a man could expect to live until the age of 78. This difference in life expectancy between the sexes is, in part, because men tend to die younger from injuries (such as unintentional injuries, homicide and suicide) than women. At age 65, men could expect to live an average of 18 more years, while women could expect to live 21 more years (Table 3).

Life expectancy varied by race and ethnicity, and gender as well (Figure 2). At birth, white non-Hispanic women could expect to live 82 years; black non-Hispanic women, 80 years; Hispanic women, 91 years; white non-Hispanic men, 78 years; black non-Hispanic men 74 years; and Hispanic men, 84 years**.**

Another potential ramification of the undercount and misclassification of deaths among Asians, Native Americans and Hispanics, discussed previously is that Hispanics showed an exceptionally high life expectancy. Hispanics are expected to have a shorter life span, since they are more likely to have characteristics, such as low educational attainment and living in poverty, which are associated with adverse health outcomes. The method of calculating life expectancy here does not count younger deaths as heavily. Hispanics are a much younger population than white non-Hispanics: 80% of Hispanics are under 45 years of age compared with 57% of white non-Hispanics, and, 27% of deaths among Hispanics occur to persons under age 45 compared with 4% for white non-Hispanics. Therefore, life expectancy for Hispanics is artificially inflated. Some studies have suggested that an adjustment factor be applied to mortality statistics to account for this.

The age composition of the Massachusetts population reflects changes in life expectancy and natural historic trends. From 1900 to 2006, the proportion of Massachusetts residents ages 45 and over increased by 81%, from 21% to 39% (Figure 3). While persons ages 85 and over accounted for only 2% of the population in Massachusetts in 2006, naturally, they continue to have the highest number of deaths in the state in the year 2006 (Table 1).

Massachusetts has a rich history of collecting and reporting vital statistics, as demonstrated by Figure 4, which presents historical mortality trend data from 1842 to the present. In 1842, infectious diseases were the leading causes of death in Massachusetts, accounting for 47% of all deaths; 4% were due to intentional and unintentional injuries, 2% were attributed to heart disease, and 1% of all deaths were due to cancer. In 2006, in almost a reversal of rank order, 25% of the deaths in Massachusetts were due to cancer, 24% to heart disease, 5% to intentional and unintentional injuries, and 3% were due to infectious diseases.

Place of Occurrence

Of the 53,293 deaths in 2006, 22,512 (42%) occurred in hospitals – 35% of persons who died were patients in (or admitted to) hospitals, and 7% died in emergency departments; 16,205 (30%) died in nursing homes, 12,372 (23%) died at home, and 692 (1%) were pronounced dead on arrival at emergency departments. These percentages have been consistent for the last 4 years (Table 4).

Medical Examiner Certified Deaths[9]

There are 19 circumstances in which a death is referred to the Medical Examiner's Office (not all of these deaths occur under suspicious circumstances or as a result of violence). Please refer to the Appendix for a list of these circumstances. The total number of deaths certified by medical examiners increased significantly by 23% from 4,153 in 2005 (7.7%) to 5,126 in 2006 (9.6%).

[9] Massachusetts General Laws, Chapter 38, Section 3. http://www.mass.gov/legis/laws/mgl/38-3.htm.

Of those deaths certified by medical examiners, 32% were reported as a result of natural causes (non-injury related). Almost 100% of homicide and suicide deaths were certified by medical examiners in 2006 compared with only 11% of heart disease deaths and less than 1% of cancer deaths (Figure 5).

Premature Mortality

A good summary measure of the impact of death on different groups in the population is premature mortality[10,11]. The premature mortality rate (PMR) measures the rate of premature death, that is, deaths that occur before the age of 75 years. PMR is the number of deaths less than 75 per 100,000 age-adjusted to the 2000 U.S. standard population under 75 years of age. PMR is considered an excellent, single measure of the health status of a population.

The reason PMR is an excellent measure of health status is that the vast majority of deaths to persons ages 75 and older are due to chronic conditions associated with aging. By examining deaths to persons younger than 75, it is possible to identify many issues that are amenable to systematic public health approaches to health promotion and disease prevention. An attractive feature of PMR analyses is that it moves away from considering single causes or single risk factors of death to taking a broader community perspective. PMR may be related to socioeconomic status, and its correlates such as environmental conditions, housing, education, and stress, higher rates of smoking, substance abuse, violence, obesity, and lack of access to care.

Age-adjusted premature mortality rates varied by race and Hispanic ethnicity in 2006 (Figure 6). Black non-Hispanics had the highest PMR, experiencing almost 1.4 times the rate of premature deaths as white non-Hispanics (427.3 vs. 298.8 deaths per 100,000). Asian non-Hispanics had the lowest PMR (140.3 deaths per 100,000). The Hispanic PMR (279.8) was higher than the Asian non-Hispanic rate, but lower than the black non-Hispanic rate and it was similar to the white non-Hispanic rate. The only racial and ethnicity group to experience a decline in its PMR was white non-Hispanics, decreasing by 5% from 2005. For a discussion of mortality rates for Hispanics and Asians please see the first entry in the "Results" section, *Number of Deaths and Age-Adjusted Death Rates.*

Educational Attainment[12]

Mortality is inversely associated with educational attainment, that is, the average risk of death decreases markedly with increasing educational attainment. The age-adjusted death rate for those with a high school education or less was 534.8 per 100,000 population- almost 3 times higher than the rate of 190.8 for those with 13 years of education or more (Table 5). This is true for each race and ethnicity group. For instance, among the more educated, there is enormous variation by race: the rate for more educated blacks was higher than the rate for more educated whites (365.7 vs. 185.3 deaths per 100,000).

Daily Mortality Statistics

On an average day in 2006, 146 Massachusetts residents died (Figure 7). Approximately 37 of these deaths were due to cancer, 35 to heart disease, 15 to respiratory diseases, 8 to

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[10] Carstairs V, Morris R. *Deprivation and Health in Scotland*. Aberdeen, Scotland: Aberdeen University Press, 1991.

[11] Patricia Martens, et al. The Health and Health Care Use of Registered First Nations People Living in Manitoba: A Population-Based Study. http://www.umanitoba.ca/centres/mchp/reports/reports_02/rfn.htm

[12] **Note that 2000 denominator figures are used since these are the latest number available for population by age and education**. Rates are shown only for ages 25-64 years because persons under age 25 may not have completed their education.

stroke, 8 to injuries, 3 to diabetes, 4 to Alzheimer's disease; 1 was an infant death, 1 was an HIV/AIDS death, and 34 were due to other causes.

Leading Causes of Death

Cause-of-death ranking[13] (leading causes of death) is a useful tool for illustrating the relative burden of cause-specific mortality. Literally, the rankings denote the most frequently occurring causes of death among those causes *eligible to be ranked*. NCHS publishes a list of 113 selected causes of death from which we select 57 causes and order them by their number of deaths. The main point to remember about the leading causes of death is that they are causes that are ranked according to their ***number***, and not their mortality ***rate***.

Rankings do not illustrate cause-specific mortality risk or absolute burden as depicted by mortality rates. The rank of a specific cause—its mortality burden relative to other causes—may decline over time even if its mortality rate has not changed, or its rank may remain the same over time even if its mortality rate is rising or declining.

In 2006, cancer was the leading cause of death in Massachusetts, surpassing heart disease for the first time. There were 484 more deaths from cancer than heart disease. Heart disease and cancer accounted for almost half of all deaths (Table 6). In 2006, 13,375 Massachusetts residents died of cancer, which resulted in an age-adjusted death rate of 186.3 deaths per 100,000 persons. Heart disease was the second leading cause of death, with 12,891 deaths, and an age-adjusted death rate of 168.8 per 100,000.

The ten leading causes of death accounted for 76% of all deaths in 2006. In 2006, there were four changes in the leading causes of death in Massachusetts. Cancer passed heart disease as the leading cause of death. Stroke and chronic lower respiratory disease remained in the same order as in 2005, third and fourth. Unintentional injuries and influenza and pneumonia switched ranks in 2006. Alzheimer's disease, nephritis, diabetes and septicemia remained in the same order as in 2005 (See Table 6 for a complete listing).

Injuries (with all intents combined) was the leading cause of death for persons between the ages of 1 to 44 years (Table 6). Unintentional injuries such as include motor vehicle-related deaths, drug overdoses, falls, fires, and drownings, accounted for the highest percentage of injury deaths in this age group (68%), followed by suicide (17%), and homicide (12%). Unintentional injuries accounted for 32% of all deaths among persons ages 1 to 44 and it accounted for 37% of males and 23% of females in this age group.

In Table 7, we compare the number of deaths and age-adjusted death rates for males and females by leading causes of death by age group. For all persons ages 1 to 14, and for males in this group, unintentional injuries was the first leading cause of death followed by cancer. For females ages 1 to 14, cancer ranked first and unintentional injuries ranked second. Forty-four percent of deaths overall among individuals 15-24 years were caused by unintentional injuries. For both males and females in this age group, unintentional injuries was the first leading cause of death. Homicide ranked second for males in this age group, while cancer ranked second for females ages 15 to 24. The rate of homicides for men ages 15-24 was 8 times higher than that of women for the same age group (13.8 vs. 1.8 deaths per 100,000). The rank for suicides was third for males and fourth for females ages 15-24.

[13] Heron MP. Deaths: Leading causes for 2004.National vital statistics reports; vol 56 no 5.Hyattsville, MD: National Center for Health Statistics.2007.

Unintentional injuries was the leading cause of death for persons ages 25-44. The four leading causes of death among persons ages 25 to 44 were the same for males and females, but the rank order varied by sex. Unintentional injuries ranked first for males and second for females; while cancer ranked first among females and third among males. Suicide ranked fourth for both males and females, homicide ranked fifth for males and eighth for females, and HIV/AIDS ranked fifth for females and seventh for males in this age group (data not shown).

In the older age groups, chronic diseases were the most common causes of death. In 2006, cancer remained the number one cause of death for Massachusetts residents ages 45 to 84 (33%). Heart disease, chronic lower respiratory disease, and stroke were other leading causes of death. Heart disease was the leading cause of death for Massachusetts residents age 85 and older (31%).

Cancer and heart disease were the leading causes of death for both males and females ages 45 to 64. Among persons ages 65 and older altogether, heart disease was the leading cause of death overall and for females whereas cancer was the leading cause of death for males followed by heart disease. Stroke was the third leading cause of death overall and for females, while chronic lower respiratory disease was the third leading cause of death followed by stroke for males.

In Table 8, we examine the leading causes of death for persons 65 years and older. Among persons in the 65-74 and 75-84 age groups, cancer was the leading cause of death for both males and females, and heart disease was the second leading cause. For persons ages 85 years and older, heart disease was the leading cause of death for both males and females; cancer was the second and stroke the third.

Patterns by Race and Ethnicity

The leading causes of death varied markedly by race and Hispanic ethnicity in Massachusetts in 2006 as they had in previous years (Table 9). The overall age-adjusted death rate for black non-Hispanics was 16% higher than that of white non-Hispanics. Age-adjusted death rates for black non-Hispanics were higher than for white non-Hispanics for most leading causes of death. HIV/AIDS disease remained among the 10 leading causes of death only for Hispanics (ranked sixth), while Alzheimer's disease remained in the top ten for white non-Hispanics and Asian non-Hispanics only (ranked seventh and tenth, respectively).

The four major race and ethnic groups share six of the 10 leading causes of death (Table 9). Cancer and heart disease were the first and second leading causes of death in all groups. Stroke was the third leading cause of death for white non-Hispanics, black non-Hispanics and Asian non-Hispanics, while unintentional injuries was the third leading cause of death for Hispanics. The leading causes of death among Hispanics also included HIV/AIDS, and homicide, both of which occur more frequently among younger people. The leading causes of deaths among Hispanics also included perinatal conditions.

In 2006, HIV/AIDS was the 6th leading cause of death for Hispanics, and it was the 11th leading cause of death for black non-Hispanics, dropping from the top 10 list. It was the 25th leading cause of death for white non-Hispanics and the 24th leading cause of death for the state overall. Homicide was the 7th leading cause of death for black non-Hispanics and the 10th leading cause of death for Hispanics. It was the 28th leading cause of death for white non-Hispanics and the 23rd leading cause of death for the state overall.

Cancer

Cancer accounted for 25% of all deaths in Massachusetts in 2006. Cancer is largely a disease of older persons, except among Hispanics. In 2006, approximately 3 out of 4 cancer deaths in Massachusetts occurred to persons age 65 and older (Figure 10 and Figure 11). This age group accounted for 74% of all cancer deaths among white non-Hispanics, 58% of cancer deaths among black non-Hispanics, 54% of cancer deaths among Asian non-Hispanics and 46% of cancer deaths among Hispanics.

Lung cancer ranked first in the number of deaths for both men and women (28% of cancer deaths) followed by colorectal cancer (9% of cancer deaths) (Table 11). The second cause of cancer deaths was breast cancer for females (962 deaths) and prostate cancer for males (672 deaths).

Among women, the breast cancer mortality rate was less than half the lung cancer mortality (43.3 vs. 23.2 deaths per 100,000). Men had higher death rates than women for the most common site-specific cancers including: bladder, colorectal, esophagus, leukemia, lung, non-Hodgkin's lymphoma, pancreas, and stomach among others. The overall cancer death rate for men was 46% higher than the rate for women (230.5 vs. 158.0 per 100,000) (Table 11).

When we examine the number of cancer deaths by age and gender, there are differences in the rankings. In 2006, the smallest number of cancer deaths was seen among persons under the age of 45 (376 deaths, Table 12). Leukemia ranked first in the number of cancer deaths for persons between the ages of 15-24. Among cancers affecting both men and women, lung cancer was ranked first in the number of cancer deaths for persons ages 25 and older. Female breast cancer (381 deaths) ranked second in the number of cancer deaths among women ages 25 to 64. Lung cancer ranked first in the number of cancer deaths for persons ages 45 and older. Colorectal cancer ranked second in the number of cancer deaths (by the number of deaths) among persons ages 45 and older.

Cancer mortality affects race and ethnic groups differently. Lung cancer ranked first in the number of cancer deaths for all race and ethnic groups in 2006 except for Hispanics where female breast cancer ranked first. Prostate cancer ranked second in the number of cancer deaths for white non-Hispanics and black non-Hispanic men; female breast cancer ranked second for Asian women; and lung cancer ranked second for all Hispanics (Table 13).

In 2006, the cancer death rate remained stable from 2005 (186.3 per 100,000 vs. 184.9), but it has decreased by 10% since 2000. Cancer death rates for both females and males have also decreased by 10% since 2000. In 2006, the overall cancer death rate for black non-Hispanics was 12% higher than that of white non-Hispanics, and Hispanic. Asian non-Hispanics had the lowest cancer death rates for men and women combined (Table 10).Compared with 2000, white non-Hispanics were the only racial and ethnicity group to experience a decline in its cancer death rate (down 9%); death rates for the other groups remained stable.

Heart Disease

Heart disease accounted for 24% of all deaths in Massachusetts in 2006 (12,891 out of 53,293 total). Heart disease deaths occur predominantly among the older population, and in 2006, 86% of all heart disease deaths occurred among people ages 65 years and older. The proportion of deaths that were from heart disease varied by race and ethnicity in this age group: white non-Hispanics, 87%; Asian non-Hispanics, 79%; black non-Hispanics, 69%; and Hispanics, 64% (Figure 8 and Figure 9).

While the number of women who die of heart disease is higher than that of men (6,876 vs. 6,015), men have a higher death rate of heart disease than women (211.2 for men vs. 136.6 deaths for women, per 100,000). Although women experience more than twice as many heart disease deaths than men at ages 85 and older (4,021 women vs. 1,806 men), the female population is 2.2 times greater than that of men in the same age group, so the female death rate for ages 85 and older is smaller than that of men (4,149.0 vs. 4,502.8) (Table 8). The overall heart disease death rate for men was 55% higher than the rate for women (211.2 vs. 136.6 per 100,000).

In Massachusetts during the past 7 years, heart disease has continually declined by about 3.7% per year. In 2006, the heart disease death rate remained stable from 2005 (168.8 per 100,000 vs. 172.2), but it has decreased by 22% since 2000. In 2006, heart disease death rates for males and females were stable from 2005, but the rate for males has decreased 24%, and rate for females had decreased 21% since 2000 (Table 10). Compared with 2000, white non-Hispanic heart disease mortality decreased by 22% and black non-Hispanic mortality declined by 25%; heart disease death rates for the other groups remained stable.

Stroke

Despite declines in the number of deaths from stroke, stroke remained the third leading cause of death in Massachusetts in 2006, after cancer and heart disease. In 2006, there were 2,868 stroke deaths, yielding an age-adjusted rate of 37.4 deaths per 100,000 persons. In 2006, the death rate for stroke was similar to the rate in 2005 (38.1 deaths per 100,000) but has declined by 12% since 2004 (42.5 deaths per 100,000) and by 27% since 2000 (50.9 deaths per 100,000).

In 2006, 24% of strokes were deaths from hemorrhage (20% from intracerebral hemorrhage and 4% from subarachnoid hemorrhage) (Table 14). Cerebral infarction accounted for about 5% for all stroke deaths in 2006. For half of all stroke deaths, the type was not specified. In 2006, 9 out of 10 stroke deaths in Massachusetts occurred in persons ages 65 and older (Figure 12). This age group accounted for 93% of all stroke deaths among white non-Hispanics, 86% of stroke deaths among Asian non-Hispanics, 80% of stroke deaths among black non-Hispanics, and 62% of stroke deaths among Hispanics (Figure 13).

The stroke death rate for black non-Hispanics (54.5 per 100,000) was 1.5 times or 49% higher than the rate for white non-Hispanics (36.7 per 100,000) (Table 15). In 2006, the overall stroke death rate was similar to the rate in 2005 but has declined by 27% since 2000.

Diabetes

In 2006, diabetes was either the underlying or a contributing cause of death (i.e., a diabetes-related cause of death) for 3,808, or 7.1% of all deaths in Massachusetts. In one-third of these deaths, diabetes was recorded as the underlying cause of death (Figure 14). Diabetes was also listed as a contributing cause of death on an additional 2,681 deaths.

When diabetes is examined as a contributing cause of death as well as the underlying cause of death, we capture the full mortality burden of diabetes. As an underlying cause of death, diabetes ranked 9th, but when considering all mentioned conditions, diabetes-related deaths ranked 3rd as a cause of death for both females and males.

Diabetes-related deaths ranked as the 3rd leading cause of death among all racial and ethnicity groups except for Asians for which it was the 4th leading cause of death. Black non-Hispanics and Hispanics died from diabetes-related causes at higher rates than white non-Hispanics. In 2006, the diabetes-related age-adjusted death rate for black non-Hispanics was 89.2 deaths per 100,000, which is almost twice the rate for white non-Hispanics (50.5).

The rate for Hispanics was 65.2 deaths per 100,000, which is 29% higher than the white non-Hispanic rate (Figure 15).

There were slightly more male than female deaths with diabetes as the underlying cause of death (Table 16). Overall, males had a higher proportion of diabetes-related deaths (7.6% vs. 6.7% of all deaths). Hispanics (11.0%) and black non-Hispanics (9.8%) had a higher proportion of diabetes-related deaths than that of white non-Hispanics (6.9%) (Table 17).

Figure 16 illustrates that diabetes-related deaths rise with age. The rise is particularly rapid from age 45 years to age 84. In 2006, 81% of diabetes-related deaths occurred to individuals aged 65 years and older. Figure 16 compares the number of deaths from diabetes as a contributory cause and underlying cause by age group. There were more diabetes-related deaths as a contributing cause among adults ages 35 years and older. In 2006, the diabetes-related death rate has remained stable from 2005, but has declined by 15% since 2000 (Figure 17).

Injuries

In 2006, there were 2,910 injury deaths among Massachusetts residents. Injuries were the 3rd leading cause of death in 2006 among residents of all ages and the leading cause of death among residents 1-44 year of age. The leading causes of injury deaths in order of percentages were: poisonings (34%), the majority of which were drug overdoses[14], motor vehicle-related deaths (16%), falls (15%), "hanging, strangulation or suffocation" (10%), and firearm-related deaths (7%) (Table 18). The vast majority (75%) of injury deaths were unintentional or "accidental"; 15% were suicides; 6% were homicides; and 3% were of undetermined intent. The following subsections provide details on the leading causes, intents and selected demographic differences in these events:

Injuries by Age-Groups

The causes and intents of injury deaths vary substantially by age group (Table 18 and Table 22).

- Unintentional suffocation was the leading cause of injury death among infants under 1 year of age (n=6).
- Motor vehicle-related deaths were the leading cause of injury and overall death in 15-24 year olds, accounting for 25% (n=119) of all deaths and 37% of the injury deaths in this age group. Homicide accounted for 22% (n=70) of the injury deaths in persons 15-24 years.
- Nearly 58% of all injury deaths occurred among 25 to 64 year-olds.
- The majority (52%) of injury death among 25-64 year olds was due to poisoning; this age group accounted for 90% of all poisoning deaths in 2006.
- Twenty-one percent (21%) of all injury deaths in 25-64 year olds in 2006 were due to suicide. The leading mechanism of suicide in this age group was hanging or suffocation.
- Persons ages 65 and older accounted for 29% of all injury deaths; 80% of all fall deaths were in this age group.

Injuries by Sex

For all types of injuries in Massachusetts, age-specific death rates for males were higher than those of females for all age groups (Table 18 and Table 19):

[14] Poisoning refers to the damaging physiologic effects of ingestion, inhalation, or other exposure to a range of pharmaceuticals, illicit drugs, and chemicals, including pesticides, heavy metals, gases/vapors, and common household substances such as bleach and ammonia.

- Males were 2.3 times more likely to die from an injury than females, and nearly 10 times more likely to die from a firearm injury than females in Massachusetts.
- Black non-Hispanic males had the highest death rate from firearms: 29.6 deaths per 100,000 compared to 3.5 deaths per 100,000 white non-Hispanic males.

Injuries by Race and Hispanic Ethnicity
The leading cause of injury deaths varied by race and Hispanic ethnicity (Table 19).

- *Poisoning* was the leading cause of injury deaths for white non-Hispanics and Hispanics, while *firearms* was the leading cause for black non-Hispanics and *motor vehicle-related* for Asian non-Hispanics. In 2006, the poisoning death rate increased for white non-Hispanics overall and for white non-Hispanic males from 2005.

Injuries by Intent

Unintentional or "Accidental" Injury
In 2006, there were 2,170 unintentional injury deaths among Massachusetts residents, accounting for 75% of all injury deaths. The death rate for unintentional injuries in 2006 (31.4 deaths per 100,000) increased by 15% from 2005 (27.4). In 2006, the leading causes of unintentional injury deaths were poisonings (38%), which includes drug overdoses, motor vehicle-related deaths (22%), and falls (19%) (Table 18).

Men had twice the death rate due to unintentional injuries as women (43.7 vs. 20.1) (Table 20). The unintentional injury death rates for men were higher than that of women by certain race and ethnicity: 2 times higher among white non-Hispanics, 2.6 times higher among black non-Hispanics, and 3.5 times higher among Hispanics. There were no gender differences in these rates among Asians. Hispanic and black non-Hispanic men had the highest unintentional injury death rate to poisonings (23.5 and 22.2 deaths per 100,000 population, respectively) while white non-Hispanic men had the highest unintentional injury death rate to falls (7.0 deaths per 100,000 population) (Table 21).

Suicides:
In 2006, there were 437 suicides. The suicide rate for Massachusetts in 2006 was stable from 2005 (6.5 deaths per 100,000 in 2006, compared with 7.1 in 2005) (Table 22). The leading causes of suicide deaths were "hanging, strangulation, or suffocation" (38%), followed by poisoning (26%) and firearm (22%) (Table 24). For both men and women, suicide rates were highest for persons ages 45-64; 43% of suicides occurred among persons in this age group. The vast majority (71%) of suicides in 2006 is among males. While the proportion occurring among females increased from 2005 the increase was not statistically significantly: 29% of all suicides occurred among females compared to 25% in 2005. White non-Hispanics accounted for 90% of all suicides in 2006, and continued to have the highest suicide rate: 7.1 deaths per 100,000. The suicide rates for all racial and ethnicity groups remained stable from 2005 (Table 23).

Homicides:
In 2006, there were 183 homicides. The leading cause of homicides was firearms (57%) (Table 24). The majority (80%) of homicides occurred among persons ages 15-44; 84% of the homicides among men and 63% of the homicides among females were among persons 15-44 years (Table 22). Most homicides occurred among black non-Hispanic men (40%) and white non-Hispanic men (24%) (Table 23). In 2006, homicides were among the 10 leading causes of death for black non-Hispanics (as the seventh cause) and for Hispanics (as the tenth cause). While homicide rates for white non-Hispanics, Asian non-Hispanics and Hispanics remained stable from 2000, the rate for black non-Hispanics has increased by

9%. The homicide rate among black non-Hispanic men was the highest (31.9 deaths per 100,000) and it was 19 times higher than that of white non-Hispanic men (1.7 deaths per 100,000).

Injuries by the Leading Three Causes:

Poisonings:
Poisonings, which include drug overdoses, accounted for 989 (34%) of all injury deaths in 2006 (Table 25). Poisoning deaths increased 23% from 2005 to 2006. Sixty-four percent of these deaths were associated with an opioid, which includes drugs such as heroin, oxycodone, morphine, codeine and methadone, and 31% were associated with cocaine (note: these groups are not necessarily mutually exclusive as some deaths may involve more than one agent) . Additional breakouts on the agents involved in these deaths are listed in Table 26. Most poisoning deaths (89%) were classified as unintentional or of undetermined intent (see method notes page 14) and 12% were suicides.

Motor-Vehicle Related:
In 2006, there were 493 motor vehicle-related injury deaths. Motor vehicle-related deaths were the 2nd leading cause of all injury and unintentional injury deaths. Occupants accounted for 20%, pedestrians accounted for 16%, motorcyclists accounted for 12% of all unintentional motor vehicle-related deaths; 50% were to an other or unspecified person (Table 25)(Note: this category may include a substantial number of occupant deaths.) In 2000, motor vehicle-related deaths to other or unspecified person accounted for 60% of all unintentional motor vehicle-related deaths.

Falls:
In 2006, there were 424 fall-related deaths, representing a 50% increase in these deaths since 2005. The vast majority (80%) of these deaths occurred among older adults ages 65 years and over half (56%) of these fall injuries occurred in the home. Fall death rates were highest among residents 85 years and over (118.7 per 100,000) compared with elders in other age subgroups (rates among those 65-74 and 75-84 years were 14.4 and 36.2 per 100,000, respectively). Fall death rates among males were higher than females for all age subgroups (Table 18-Table 21 and Table 25).

HIV/AIDS
In 2006, there were 179 Massachusetts residents who died from HIV/AIDS, which was the lowest annual number of HIV/AIDS deaths in Massachusetts since the peak in the epidemic in 1994 (981 HIV/AIDS deaths). The death rate for HIV/AIDS deaths was 2.7 in 2006, same as in 2005, but has declined by 83% since 1994 (15.9 deaths per 100,000).

In 2006, 68% of all HIV/AIDS deaths occurred in the hospital, 18% occurred in hospices or nursing homes, and 12% occurred at home (Table 27). The age distribution of HIV/AIDS deaths continued to change. The proportion of HIV/AIDS deaths for persons ages 45 and older has almost tripled (56% vs. 20%) since 1994 (Table 28).

The proportion of HIV/AIDS deaths among women has almost doubled since 1994 (32% vs. 19%) (Table 29). Disparities continued in the HIV/AIDS death rate among race and ethnic groups, with black non-Hispanics dying at a rate 8.6 times that of white non-Hispanics (13.7 vs. 1.6 deaths per 100,000) (Table 30). For Hispanics, the HIV/AIDS rate was 5.3 times higher than that of white non-Hispanics (8.4 vs. 1.6 deaths per 100,000).

Infant Deaths

In 2006, there were 369 infant deaths (deaths of infants less than one year of age) and 77,670 live births among Massachusetts residents, which meant that the infant mortality rate (IMR) was 4.8 deaths per 1,000 live births. The 2006 IMR was similar to the 2005 rate (5.1 deaths per 1,000 live births), and it has decreased by 31% since 1990, from 7.0 deaths per 1,000 live births to 4.8 deaths per 1,000 live births (Table 31).

In 2006, black non-Hispanics continued to have the highest IMR among race and ethnicity groups (Figure 8) at 11.1 deaths per 1,000 live births. The white non-Hispanic IMR was 4.3 in 2005 and 4.1 in 2006. The IMR for Asians was 3.4 in 2005 and 1.8 in 2006. The Hispanic IMR was 7.7 in 2005 and 5.9 in 2006. None of these changes was statistically significant.

The leading causes of infant death were conditions arising in the perinatal period (63% of all infant deaths) followed by congenital malformations (14% of all infant deaths) (Table 32). Deaths occurring in the neonatal period (less than 28 days after birth) accounted for 76% of all infant deaths. The leading causes of death in the neonatal period were disorders relating to short gestation and low birthweight, while Sudden Infant Death Syndrome (SIDS) was the leading cause of death in the post neonatal period (28-364 days).

The distribution of the leading causes of infant death varied among race and ethnicity groups. Fifty-two percent of all Hispanic infant deaths were due to certain conditions originating in the perinatal period compared with 65.0% of all white non-Hispanic infant deaths (Table 33).

Deaths in the 30 Largest Massachusetts Cities and Towns

The premature mortality rate (PMR) measures the rate of premature death, that is, deaths that occur before the age of 75 years per 100,000, and is age-adjusted to the 2000 U.S. Standard Population.

Though strictly a mortality measure, the premature mortality rate has been found to be highly correlated with morbidity indicators, which measure the level of "sickness" rather than death for a given population. Therefore, it is expected that populations with high PMRs would also tend to report poorer general health status, a greater number of symptoms, and more illness both at the subjective self-reported level and the objective illness level[15]. PMR analyses make it clear that community health status is related to many factors. Health care is certainly one of these factors, but not the only factor. PMR may be related to socioeconomic status and its correlates such as, higher rates of smoking, substance abuse, violence, obesity, stress, pollution, and lack of access to care. However, there are other possible reasons for high PMRs: specific sub-populations of younger persons at risk for motor vehicle-related deaths in rural areas and heart attack deaths in persons ages 45 to 64 in suburban areas.

In 2006, the state PMR was 300.5 deaths per 100,000 persons under 75 years old. Among the 30 largest communities in Massachusetts, the age-adjusted PMRs were significantly higher in Lowell (453), Springfield (448), Fall River (441), New Bedford (423), Brockton (422), Taunton (409), Revere (402), Worcester (393), Chicopee (392), Lynn (390), Haverhill (389), Attleboro (382), Boston (382), Quincy (360), and Plymouth (360). Communities that were significantly lower than the state average were Newton (170), Brookline (176), and Framingham (249) (Table 35). [Please note that Table 36 presents PMR for all cities/towns in the Commonwealth, and Table 46 presents selected Causes of Death for all cities/towns].

[15] Eyles J, Birch S. A population needs-based approach to health care resource allocation and planning in Ontario: A link between policy goals and practice. *Can J Public Health* 1993; 84 (2): 112-117.

Healthy People 2010

In 2006, Massachusetts achieved or moved closer to over one-half of the Healthy People 2010 mortality objectives. Out of 40 objectives presented, Massachusetts' 2006 death data indicated that the state has already met 17 of the 2010 target goals, including those for cervical cancer, prostate cancer, coronary heart disease, homicide, motor vehicle crashes, and stroke (Table 34).

For eight objectives, the 2006 Massachusetts indicators were within 25% of the target goals. These objectives included: overall cancer deaths, lung cancer deaths, female breast cancer deaths, colorectal cancer, infant mortality rate, and neonatal death rates.

However, Massachusetts still needs to improve in the following areas: malignant melanoma deaths, cirrhosis deaths, HIV deaths, poisoning deaths, fall deaths, fire deaths, hanging/suffocation/strangulation deaths, suicide deaths, drug-induced deaths, unintentional injuries, maternal deaths, death rates for persons ages 10-24 years, and SIDS. Although these rates were greater than 25% from the target goals, most were still lower than the rates for the United States overall.

Table 1. Trends in Mortality Characteristics, Massachusetts: 1996 - 2006

Year		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Resident deaths[1]												
	Number	55,187	54,634	55,204	55,763	56,591	56,733	56,881	56,194	54,419	53,776	53,293
	Crude rate[2,3,4]	892.4	877.3	877.5	881.9	889.5	887.1	887.0	875.2	848.1	840.4	827.9
	Age-adjusted rate[5]	853.0	834.8	808.8	808.8	812.2	803.4	793.8	772.6	739.3	720.6	717.6
Race/ethnicity of decedent [6,7]												
White non-Hispanic	Number	51,917	51,398	51,829	52,282	52,959	52,792	52,839	52,050	50,439	49,639	49,132
	Percent[8]	94.1	94.1	93.9	93.8	93.6	93.1	92.9	92.6	92.7	92.3	92.2
	Age-adjusted rate	852.2	835.1	808.5	808.7	814.5	804.4	796.0	775.2	744.7	725.0	723.3
Black non-Hispanic	Number	2,025	2,033	1,969	2,018	2,109	2,226	2,275	2,378	2,225	2,263	2,233
	Percent	3.7	3.7	3.6	3.6	3.7	3.9	4.0	4.2	4.1	4.2	4.2
	Age-adjusted rate	1,141.1	1,142.1	1,076.6	995.2	933.5	951.0	935.6	949.1	866.2	865.8	838.4
Asian non-Hispanic	Number	398	403	413	449	467	510	531	579	531	570	635
	Percent	0.7	0.7	0.7	0.8	0.8	0.9	0.9	1.0	1.0	1.1	1.2
	Age-adjusted rate	534.5	512.0	500.7	422.4	401.4	396.9	397.6	411.9	353.7	345.0	379.0
Hispanic	Number	803	749	924	975	1,014	1,059	1,166	1,121	1,115	1,230	1,194
	Percent	1.5	1.4	1.7	1.7	1.8	1.9	2.0	2.0	2.1	2.3	2.2
	Age-adjusted rate	430.0	391.0	463.8	507.8	585.2	556.5	591.0	520.6	482.1	500.4	479.9
Gender of decedent [7]												
Female	Number	29,152	29,261	29,568	29,786	30,465	30,780	30,427	30,053	29,067	28,695	28,508
	Age-adjusted rate	702.7	699.0	678.0	676.9	688.8	689.5	674.4	659.3	632.3	617.8	612.7
Male	Number	26,035	25,373	25,635	25,977	26,126	25,953	26,454	26,141	25,352	25,079	24,785
	Age-adjusted rate	1,074.0	1,035.0	1,000.8	1,001.6	988.7	957.6	955.1	923.3	878.0	852.5	858.9
Age of decedent [7]												
<1 year	Number	403	425	414	418	377	407	397	383	376	391	369
1-14 years	Number	197	174	128	165	181	169	167	149	137	113	124
15-24 years	Number	434	422	413	407	403	444	460	490	517	489	471
25-44 years	Number	2,720	2,348	2,373	2,397	2,375	2,571	2,490	2,484	2,247	2,173	1,953
45-64 years	Number	7,477	7,416	7,501	7,431	7,841	8,004	8,344	8,476	8,347	8,355	8,660
65-74 years	Number	10,711	10,286	10,216	9,782	9,746	9,323	8,922	8,611	8,126	7,905	7,572
75-84 years	Number	16,839	16,884	16,946	17,397	17,554	17,416	17,262	16,973	16,342	15,632	15,333
85+ years	Number	16,400	16,677	17,213	17,765	18,113	18,395	18,838	18,627	18,327	18,718	18,811

1. Deaths presented in all tables and figures are resident deaths. 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 1994-1995 (released in September 1999), 1996-1997 (released in November 1999), and 1998 (released in September 2000). Resident death data for 2000-2006 are calculated using the Massachusetts (Department of Public Health) Modified Age, Race/Ethnicity, & Sex Estimates 2000-2005 (MMARS00-05), released October 2006. 5. Rates are age-adjusted per 100,000 residents using the 2000 US standard population. 6. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include persons of Hispanic ethnicity in race categories. Please see 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. 8. Percent of all resident deaths in that year.

Table 2. Five Leading Causes of Death[1], Comparability Unmodified and Comparability Modified Age-Adjusted Rates, Massachusetts and United States: 1996-2006

Year[2]		Heart Disease				Cancer				Stroke			
		MA		US		MA		US		MA		US	
		Comparability Unmodified[3]	Comparability Modified[4]	Comparability Unmodified[3]	Comparability Modified[4]	Comparability Unmodified[3]	Comparability Modified[4]	Comparability Unmodified[3]	Comparability Modified[4]	Comparability Unmodified[3]	Comparability Modified[4]	Comparability Unmodified[3]	Comparability Modified[4]
1996	Rate	257.1	253.4	293.4	289.2	221.2	222.7	206.7	208.1	50.5	53.4	63.2	61.0
	% of Total	30.4		32.2		25.2		23.1		6.1		6.9	
1997	Rate	249.0	245.5	285.7	281.6	215.4	216.8	203.7	205.1	50.6	53.5	61.8	60.1
	% of Total	30.2		32.0		25.0		23.1		6.2		6.9	
1998	Rate	231.0	227.7	272.4	273.9	209.0	210.4	202.4	204.4	47.1	49.7	59.5	63.1
	% of Total	29.0		31.6		25.0		23.0		6.0		6.8	
1999	Rate	222.1		265.9		206.6		201.6		50.2		61.4	
	% of Total	27.9		30.3		24.8		23.0		6.4		7.0	
2000	Rate	216.7		258.2		206.1		200.9		50.9		60.9	
	% of Total	27.1		29.5		24.8		23.0		6.4		6.9	
2001	Rate	211.0		247.7		200.0		195.8		46.7		57.9	
	% of Total	26.7		28.9		24.2		22.9		6.2		6.8	
2002	Rate	201.1		240.4		200.1		194.0		48.1		56.3	
	% of Total	26.0		28.4		24.0		22.8		6.0		6.7	
2003	Rate	196.6		232.3		193.0		190.1		45.0		53.5	
	% of Total	26.0		28.0		24.1		22.7		6.0		6.5	
2004	Rate	182.8		217.0		188.4		185.8		42.5		50.0	
	% of Total	25.3		27.2		24.5		23.1		6.0		6.3	
2005	Rate	172.2		211.0[6]		184.9		183.8[6]		38.1		46.6[6]	
	% of Total	24.6		26.6		24.5		22.8		5.5		5.9	
2006	Rate	168.8[5]		211.0[6]		186.3[5]		183.8[6]		36.7[5]		46.6[6]	
	% of Total	24.2		26.6		25.1		22.8		5.4		5.9	

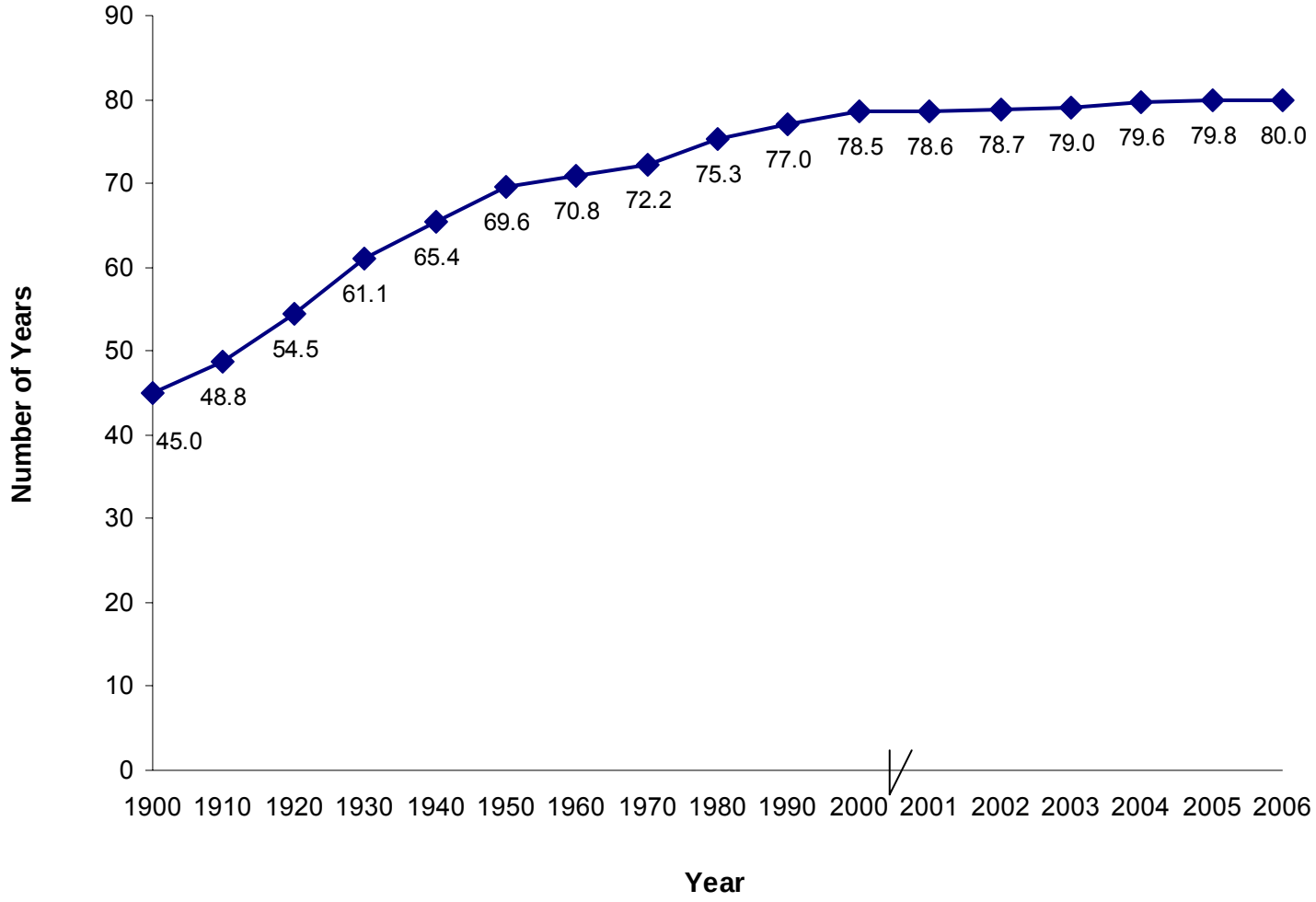
1. Cause of death: the disease or injury that initiated the events leading to death; or the circumstances of the unintentional or intentional injury that resulted in the death. 2. 1990-1998 data coded according to ICD-9. 1999-2006 data coded according to ICD-10. ICD-9 and ICD-10 codes used in this publication are listed in the Appendix. 3. Comparability unmodified rate: this rate has not been modified to account for changes from ICD-9 to ICD-10. 4. Comparability Modified Rate: this rate is adjusted using the preliminary comparability ratio (CR) from NCHS, February 2001 in order to account for changes from ICD-9 to ICD-10. Please see Appendix for a more detailed explanation and for a list of CR used in this report. 5. When comparing data over time between 1994 through 2004, use the comparability modified rates for years 1994-1998. Resident death data for 2000-2005 are calculated using the Massachusetts (Department of Public Health) Modified Age, Race/Ethnicity, & Sex Estimates 2000-2005 (MMARS00-05), released October 2006. 6. U.S. data for 2005 obtained from NCHS. Deaths: Final Data for 2005. National Vital Statistics Report, January 2008.

Table 2 (continued). Five Leading Causes of Death[1], Comparability Unmodified and Comparability Modified Age-Adjusted Rates, Massachusetts and United States: 1996-2006

Year[2]		Influenza/Pneumonia				Unintentional Injuries				All Causes	
		MA		US		MA		US		MA	US
		Comparability Unmodified[3]	Comparability Modified[4]	**Comparability Unmodified[3]**	Comparability Modified[4]	**Comparability Unmodified[3]**	Comparability Modified[4]	**Comparability Unmodified[3]**	Comparability Modified[4]		
1996	Rate	41.5	29.0	32.9	23.0	19.5	19.5	36.2	35.6	853.0	902.1
	% of Total	5.1		3.6		2.3		4.1			
1997	Rate	39.1	27.3	33.3	23.3	19.7	19.7	36.0	35.3	834.8	887.0
	% of Total	4.9		3.7		2.3		4.1			
1998	Rate	40.2	28.1	34.6	24.2	19.9	19.8	35.0	36.1	808.8	875.4
	% of Total	5.2		3.9		2.3		4.2			
1999	Rate	30.3		23.4		19.3		35.9		808.8	881.9
	% of Total	3.9		2.7		2.3		4.1			
2000	Rate	29.1		23.7		20.2		35.6		812.2	872.0
	% of Total	3.7		2.8		2.4		3.9			
2001	Rate	24.0		21.8		21.9		34.3		803.5	855.0
	% of Total	3.1		2.6		2.6		4.0			
2002	Rate	27.3		22.7		20.5		35.3		793.8	846.8
	% of Total	4.0		2.7		2.0		4.2			
2003	Rate	26.0		22.0		20.1[7]		37.3		772.6	832.7
	% of Total	3.6		2.7		2.5		4.3			
2004	Rate	24.9		19.8		19.4		37.7		739.3	800.8
	% of Total	3.6		2.5		2.5		4.7			
2005	Rate	24.2		20.3[8]		27.4		39.1[8]		720.6	798.8[8]
	% of Total	3.6		2.6		3.5		4.8			
2006	Rate	22.0[7]		20.3[8]		31.4[7]		39.1[8]		717.6	798.8[8]
	% of Total	3.3		2.6		4.1		4.8			

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. 1994-1998 data coded according to ICD-9. 1999-2006 data coded according to ICD-10. ICD-9 and ICD-10 codes used in this publication are listed in the Appendix. 3. Comparability unmodified rate: this rate has not been modified to account for changes from ICD-9 to ICD-10. 4. Comparability Modified Rate: this rate is adjusted using the preliminary comparability ratio (CR) from NCHS, February 2001 in order to account for changes from ICD-9 to ICD-10. Please see Appendix for a more detailed explanation and for a list of CR used in this report. 5. All rates are age-adjusted per 100,000 residents using the 2000 US standard population. U.S. data for years 1994-1998 obtained from Compressed Mortality File on CDC Wonder, February 2001. 6. NA: comparability ratio is not applicable for years prior to 1994. 7. When comparing data over time between 1994 through 2004, please use the comparability modified rate for years 1994-1998. Resident death data for 2000-2005 are calculated using the Massachusetts (Department of Public Health) Modified Age, Race/Ethnicity, & Sex Estimates 2000-2005 (MMARS00-05), released October 2006. 8. U.S. data for 2005 obtained from NCHS. Deaths: Final Data for 2005. National Vital Statistics Report, January 2008.

Figure 1. Life Expectancy at Birth[1], Massachusetts: 1900-2006



1. Life Expectancy at birth calculated using the Greville Abridged Life Table Method (source: Dublin LI. Length of Life - A Study of the Life Table. Ronald Press Co. New York. Population data from the Massachusetts (Department of Public Health) Modified Age, Race/Ethnicity, & Sex Estimates 2005 (MMARS05), released October, 2006.

Figure 2. Expected Years of Life Remaining at Different Ages by Race and Hispanic Ethnicity, Massachusetts: 2006

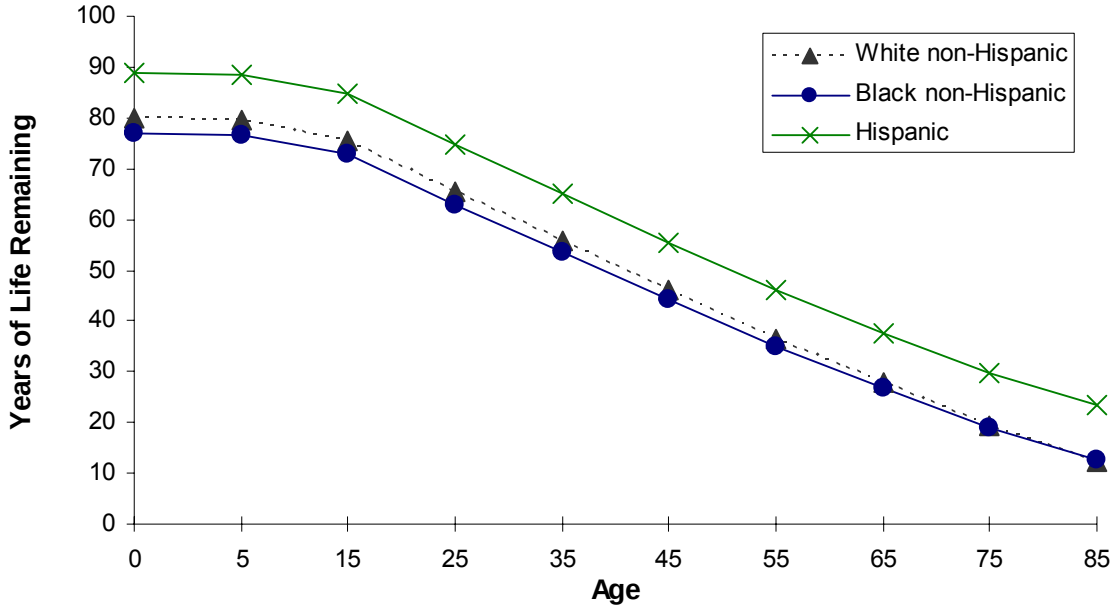
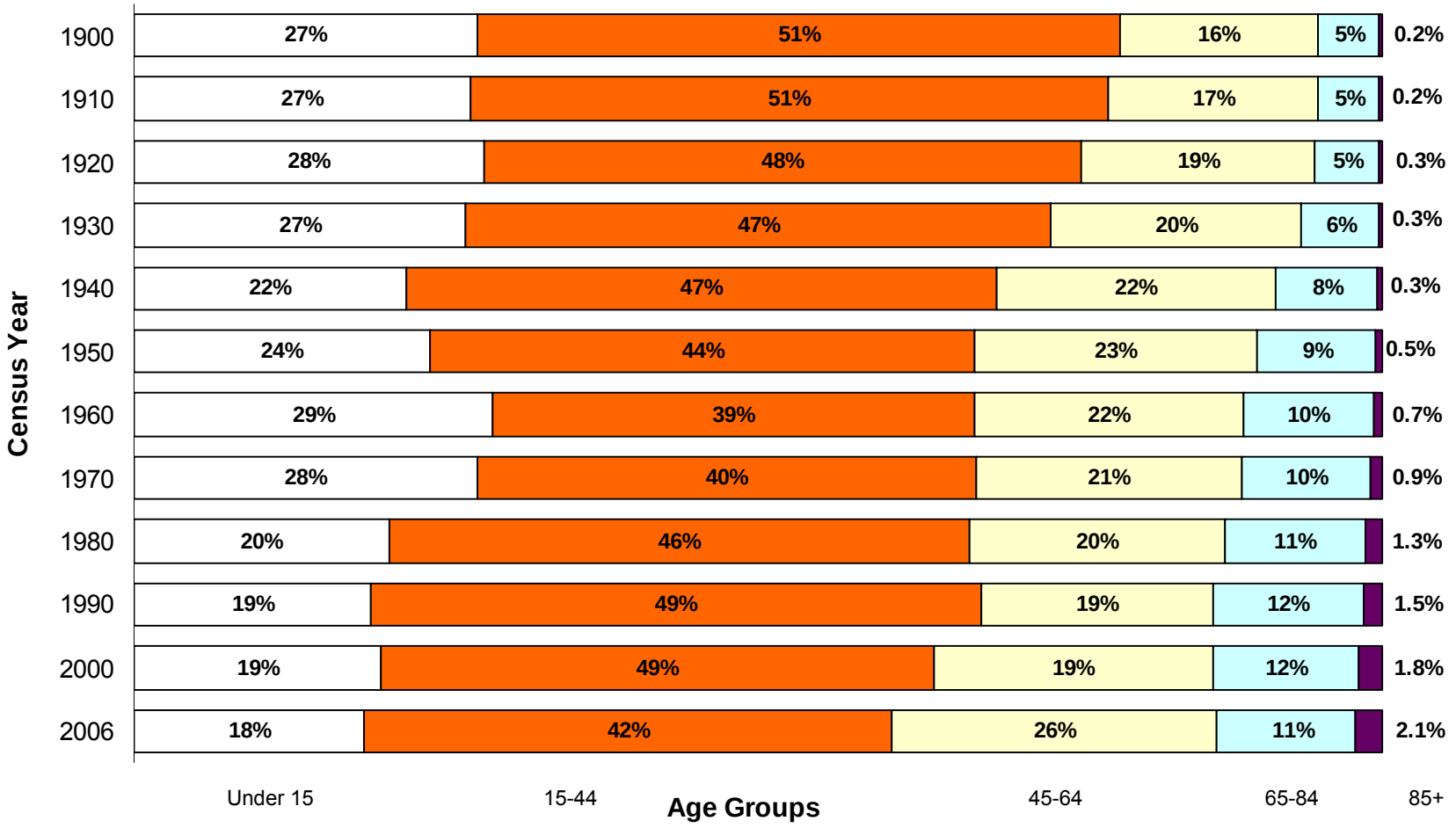


Table 3. Years of Life Remaining[1] by Race and Hispanic Ethnicity and Gender, Massachusetts: 2006

At Age:	All	Females	White non-Hispanic Females	Black non-Hispanic Females	Hispanic Females[2]	Males	White non-Hispanic Males	Black non-Hispanic Males	Hispanic Males[2]
Birth	80.0	82.3	82.2	80.0	90.7	77.6	77.7	73.6	83.5
1 year old	79.4	81.7	81.5	79.8	90.2	76.9	77.0	73.3	83.1
5 years old	75.5	77.7	77.6	75.8	86.4	73.0	73.0	69.2	79.2
15 years old	65.5	67.7	67.6	65.9	76.4	63.1	63.1	59.4	69.3
25 years old	55.8	57.9	57.8	56.1	66.6	53.5	53.4	50.4	59.8
35 years old	46.2	48.1	48.0	46.5	56.7	44.0	43.9	41.3	50.4
45 years old	36.8	38.5	38.4	37.1	47.3	34.7	34.6	32.3	41.4
55 years old	27.8	29.4	29.2	28.6	38.2	26.0	25.9	24.2	33.3
65 years old	19.6	20.8	20.6	20.5	29.7	18.0	17.9	17.0	26.0
75 years old	12.5	13.3	13.1	13.6	22.9	11.3	11.1	10.7	20.4
85 years old	7.3	7.6	7.5	8.0	18.0	6.6	6.4	7.1	16.5

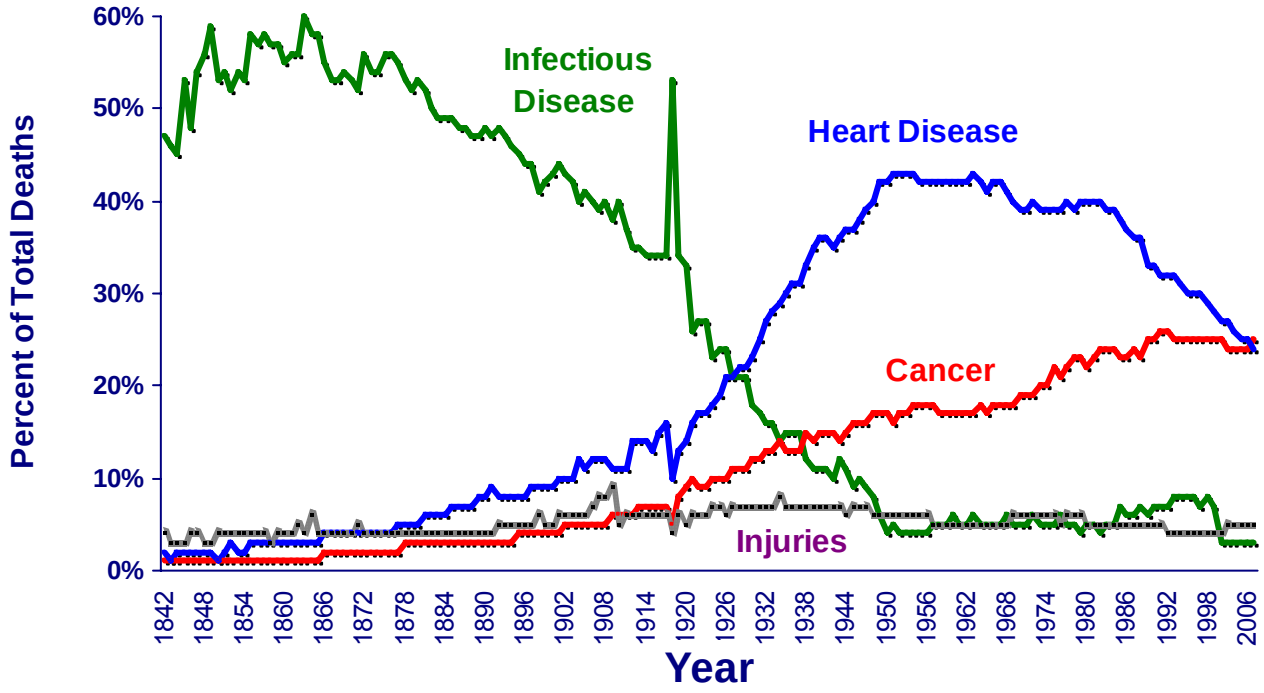
1. Years of Life Remaining calculated using the Greville Abridged Life Table Method (source: Dublin LI. Length of Life - A Study of the Life Table. Ronald Press Co. New York. 1949). Population data from the Massachusetts (Department of Public Health) Modified Age, Race/Ethnicity, & Sex Estimates 2005 (MMARS05), released October 2006. 2. There are well-known difficulties in calculating accurate mortality rates for Massachusetts smaller populations such as Asians, Native Americans and Hispanics- please see the first entry in the "Results" section, *Number of Deaths and Age-Adjusted Death Rates.*

Figure 3. Changes in Age Composition of the Population, Massachusetts: 1900-2006



Source: US Census Bureau 1900-1999. Resident death data for 2000 are calculated using the Massachusetts (Department of Public Health) Modified Age, Race/Ethnicity, & Sex Estimates 2000 (MMARS00), released October, 2006. Resident data for 2006 comes from the National Center for Health Statistics (NCHS).
Note: Percentages based on counts with known age.

Figure 4. Trends in Percentage of Deaths from Selected Causes, Massachusetts: 1842-2006

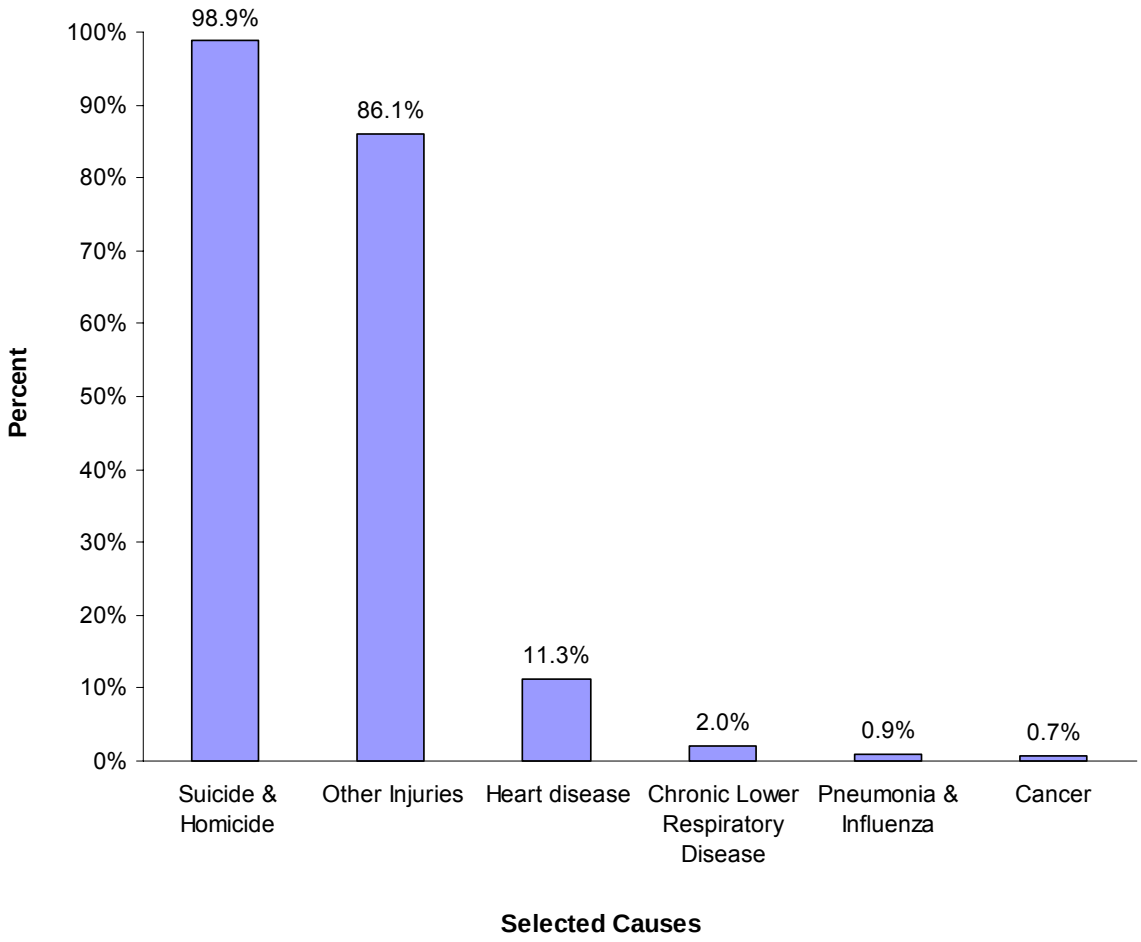


Source: Registry of Vital Records & Statistics.

Table 4. Distribution of Deaths by Place of Occurrence, Massachusetts: 2003-2006

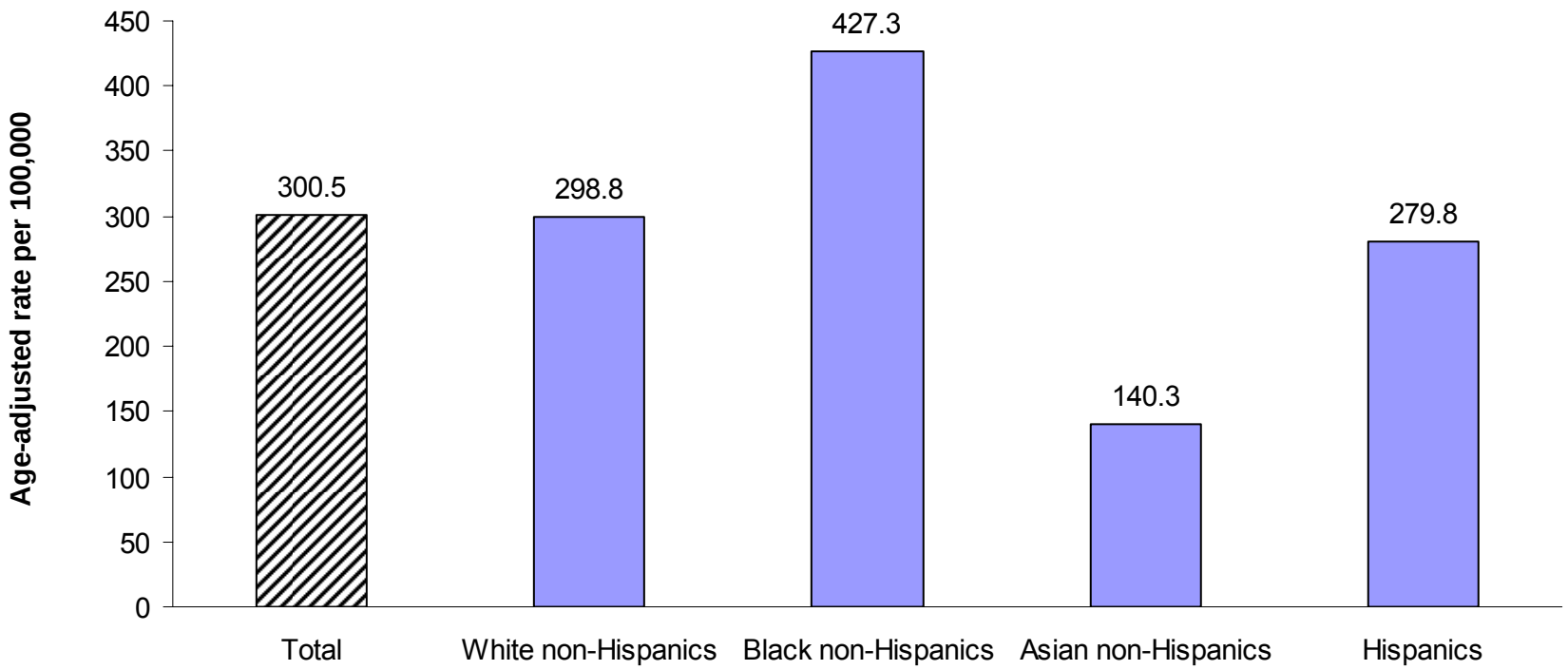
Type of Place where Death Occurred	2003		2004		2005		2006	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Hospital (inpatient/outpatient)	24,936	44%	23,558	43%	23,129	43%	22,512	42%
Dead on Arrival	905	2	936	2	871	2	692	1
Nursing Home	16,888	30	16,511	30	16,446	31	16,205	30
At Home	12,439	22	12,287	23	12,004	22	12,372	23
Other	968	2	1,104	2	1,311	2	1,491	3
Unknown	58	0.1	23	0.04	15	0.03	21	0.04

Figure 5. Proportion of Deaths Certified by Medical Examiner for Selected Causes[1] of Death, Massachusetts: 2006



See the Appendix section, "Circumstance for Referral to the Office of the Chief Medical Examiner (OCME)" for a list of circumstances requiring referral to the Medical Examiner's Office.

Figure 6. Premature Mortality Rate[1] (PMR) by Race and Hispanic Ethnicity, Massachusetts: 2006

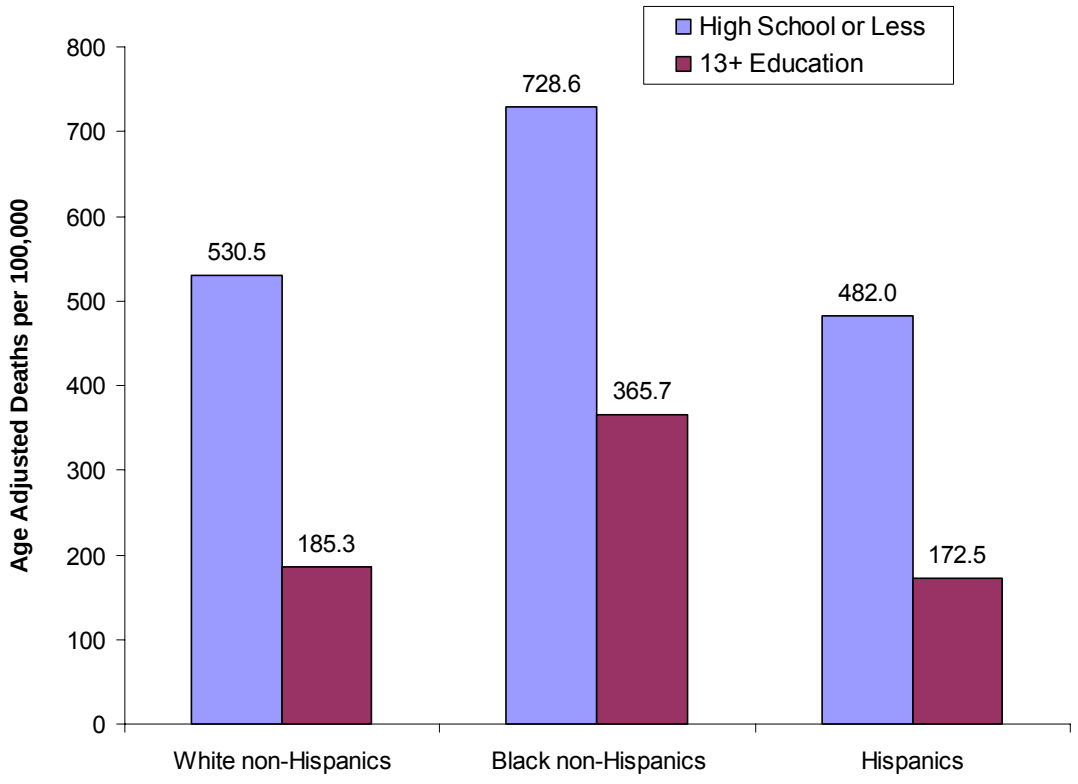


[1] Deaths that occur before the age of 75 years per 100,000, age-adjusted to the 2000 U.S. standard population under 75 years of age.

Table 5. Age-Adjusted Death Rates for Ages 25-64 Years by Educational Attainment*, Massachusetts: 2006

	Age-Specific Rates			Age-Adjusted Rates
Years of school completed	**25-34 years**	**35-44 years**	**45-64 years**	**25-64 years**
Both sexes				
High School or Less	126.4	239.6	961.0	**534.8**
13+ education	31.5	59.2	359.4	**190.8**

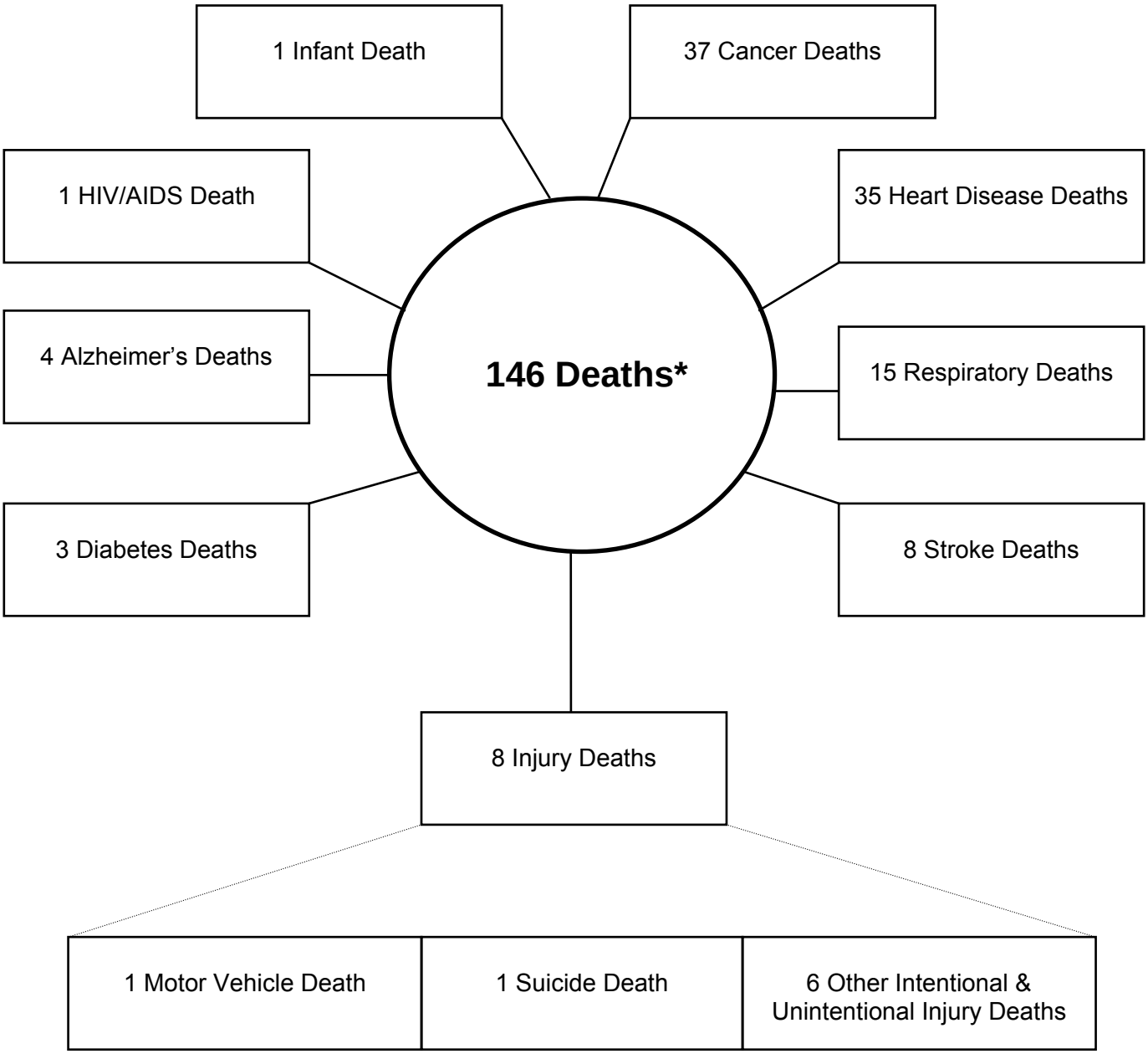
Age-Adjusted Death Rates by Education and Race and Hispanic Ethnicity Adults Ages 25-64, Massachusetts: 2006



*Note: For this table and figure, 2000 denominator figures are used since these are the latest number available for population by age and education.

Figure 7. Daily Mortality Statistics, Massachusetts: 2006

Every day in 2006, in Massachusetts there were on average:



*includes 34 deaths due to other causes

Table 6. Top Ten Leading Underlying Causes of Death* by Age, Massachusetts: 2006

	Age Groups (number of deaths)								
Rank	**<1 year**	**1-14 years**	**15-24 years**	**25-44 years**	**45-64 years**	**65-74 years**	**75-84 years**	**85+ years**	**All**
1	Short gestation (114)	Unintentional Injuries (32)	Unintentional Injuries (206)	Unintentional Injuries (588)	Cancer (3,295)	Cancer (3,024)	Cancer (4,189)	Heart Disease (5,827)	**Cancer (13,375)**
2	Congenital malformations (52)	Cancer (19)	Homicide (70)	Cancer (323)	Heart Disease (1587)	Heart Disease (1,518)	Heart Disease (3,705)	Cancer (2,490)	**Heart Disease (12,891)**
3	SIDS (26)	Congenital malformations (7)	Suicide (43)	Heart Disease (231)	Unintentional Injuries (578)	Chronic Lower Respiratory Disease (491)	Stroke (972)	Stroke (1,362)	**Stroke (2,868)**
4	Pregnancy Complications (20)	Ill-defined conditions (6)	Cancer (34)	Suicide (158)	Chronic liver disease (272)	Stroke (292)	Chronic Lower Respiratory Disease (951)	Alzheimer's Disease (1,041)	**Chronic Lower Respiratory Disease (2,529)**
5	Complications of placenta (15)	Heart Disease (5)	Ill-defined conditions (22)	HIV/AIDS (77)	Chronic Lower Respiratory Disease (270)	Diabetes (194)	Influenza & Pneumonia (524)	Influenza & Pneumonia (936)	**Unintentional Injuries (2,170)**
6	Intrauterine Hypoxia (10)	Homicide (5)	Heart Disease (15)	Homicide (76)	Diabetes (239)	Nephritis (168)	Nephritis (442)	Chronic Lower Respiratory Disease (797)	**Influenza & Pneumonia (1,748)**
7	Neonatal hemorrhage (10)	Influenza & Pneumonia (4)	Congenital malformations (7)	Ill-defined conditions (68)	Stroke (205)	Septicemia (161)	Alzheimer's Disease (417)	Nephritis (620)	**Alzheimer's Disease (1,556)**
8	Unintentional Injuries (9)	Septicemia (2)	Stroke (4)	Stroke (32)	Suicide (189)	Influenza & Pneumonia (153)	Diabetes (365)	Unintentional Injuries (356)	**Nephritis (1,390)**
9	Bacterial sepsis of newborn (6)	In situ neoplasms (2)	Aortic aneurysm (4)	Chronic liver disease (29)	Septicemia (141)	Unintentional Injuries (141)	Septicemia (284)	Ill-defined conditions (315)	**Diabetes (1,127)**
10	Necrotizing entercolitis (6)	Acute bronchitis (2)	Nephritis (3)	Diabetes (27)	Nephritis (137)	Chronic liver disease (90)	Unintentional Injuries (260)	Diabetes (299)	**Septicemia (893)**
All Causes	**369**	**124**	**471**	**1,953**	**8,660**	**7,572**	**15,333**	**18,811**	**53,293**

* Ranking based on number of deaths. The number of deaths is shown in parentheses.

Injuries is subdivided into 4 separate categories by intent (unintentional, homicide, suicide) and injuries of undetermined intent (deaths where investigation has not determined whether injuries were accidental or purposely inflicted).

Table 7. Leading Underlying Causes of Death*, Numbers and Age-Specific Rates by Gender, Massachusetts: 2006

		Total		Female		Male	
Age	**Cause of death[1]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**
1-14 years	**TOTAL**	**124**	**11.2**	**54**	**10.0**	**70**	**12.3**
	Unintentional Injuries	32	2.9	8	1.5	24	4.2
	Cancer	19	1.7	10	1.8	9	1.6
	Congenital Malformations	7	0.6	4	--[5]	3	--[5]
	Signs and symptoms	6	0.5	4	--[5]	2	--[5]
15-24 years	**TOTAL**	**471**	**52.6**	**127**	**28.4**	**344**	**76.6**
	Unintentional Injuries	206	23.0	47	10.5	159	35.4
	Homicide	70	7.8	8	1.8	62	13.8
	Suicide	43	4.8	8	1.8	35	7.8
	Cancer	34	3.8	16	3.6	18	4.0
25-44 years	**TOTAL**	**1,953**	**107.2**	**647**	**70.4**	**1,306**	**144.6**
	Unintentional Injuries	588	32.3	137	14.9	451	49.9
	Cancer	323	17.7	171	18.6	152	16.8
	Heart Disease	231	12.7	53	5.8	178	19.7
	Suicide	158	8.7	40	4.4	118	13.1
45-64 years	**TOTAL**	**8,660**	**516.4**	**3,420**	**394.8**	**5,240**	**646.4**
	Cancer	3,295	196.5	1,556	179.6	1,739	646.4
	Heart Disease	1,587	94.6	428	49.4	1,159	214.5
	Unintentional Injuries	578	34.5	194	22.4	384	143.0
	Chronic Liver Disease	272	16.2	71	8.2	201	47.4
65+ years[4]	**TOTAL**	**41,716**	**4,873.6**	**24,081**	**4,738.9**	**17,635**	**5,070.4**
	Heart Disease	11,050	1,290.9	6,391	1,257.7	4,659	1,339.6
	Cancer	9,703	1,133.6	4,861	956.6	4,842	1,392.2
	Stroke	2,626	306.8	1,705	335.5	921	264.8
	Chronic Lower Respiratory Disease[3]	2,239	261.6	1,306	257.0	933	268.3

1. Cause of Death classified using ICD-10. See Appendix for a list of ICD-10 codes. 2. Number of deaths per 100,000 residents in each age group. 3. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title). 4. See Table 8 for leading causes of death for detailed age groups for persons ages 65+ years. 5. Calculations based on values 1-4 are excluded.

* Ranking based on number of deaths for all persons.

Table 8. Leading Underlying Causes of Death, Numbers and Age-Specific Rates (Ages 65 and older) by Gender, Massachusetts: 2006

		Total		Female		Male	
Age	**Cause of death[1]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**
65-74 years	**TOTAL**	**7,572**	**1,848.3**	**3,354**	**1,498.1**	**4,218**	**2,270.2**
	Cancer	3,024	738.1	1,389	620.4	1,635	880.0
	Heart Disease	1,518	370.5	569	254.1	949	510.8
	Chronic Lower Respiratory Disease[3]	491	119.8	245	109.4	246	132.4
	Stroke	292	71.3	135	60.3	157	84.5
75-84 years	**TOTAL**	**15,333**	**4,958.0**	**7,986**	**4,262.3**	**7,347**	**6,027.3**
	Cancer	4,189	1,354.5	2,055	1,096.8	2,134	1,750.7
	Heart Disease	3,705	1,198.0	1,801	961.2	1,904	1,562.0
	Stroke	972	314.3	562	300.0	410	336.4
	Chronic Lower Respiratory Disease[3]	951	307.5	533	284.5	418	342.9
85+ years	**TOTAL**	**18,811**	**13,728.5**	**12,741**	**13,146.7**	**6,070**	**15,134.1**
	Heart Disease	5,827	4,252.6	4,021	4,149.0	1,806	4,502.8
	Cancer	2,490	1,817.2	1,417	1,462.1	1,073	2,675.3
	Stroke	1,362	994.0	1,008	1,040.1	354	882.6
	Alzheimer's Disease	1,041	759.7	830	856.4	211	526.1

1. Cause of Death classified according to ICD-10. See Appendix for a list of-10 codes. 2. Number of deaths per 100,000 residents in each age group. 3. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title).

Table 9. Leading Causes of Death[1] and Age-Adjusted Death Rates by Race and Hispanic Ethnicity, Massachusetts: 2006

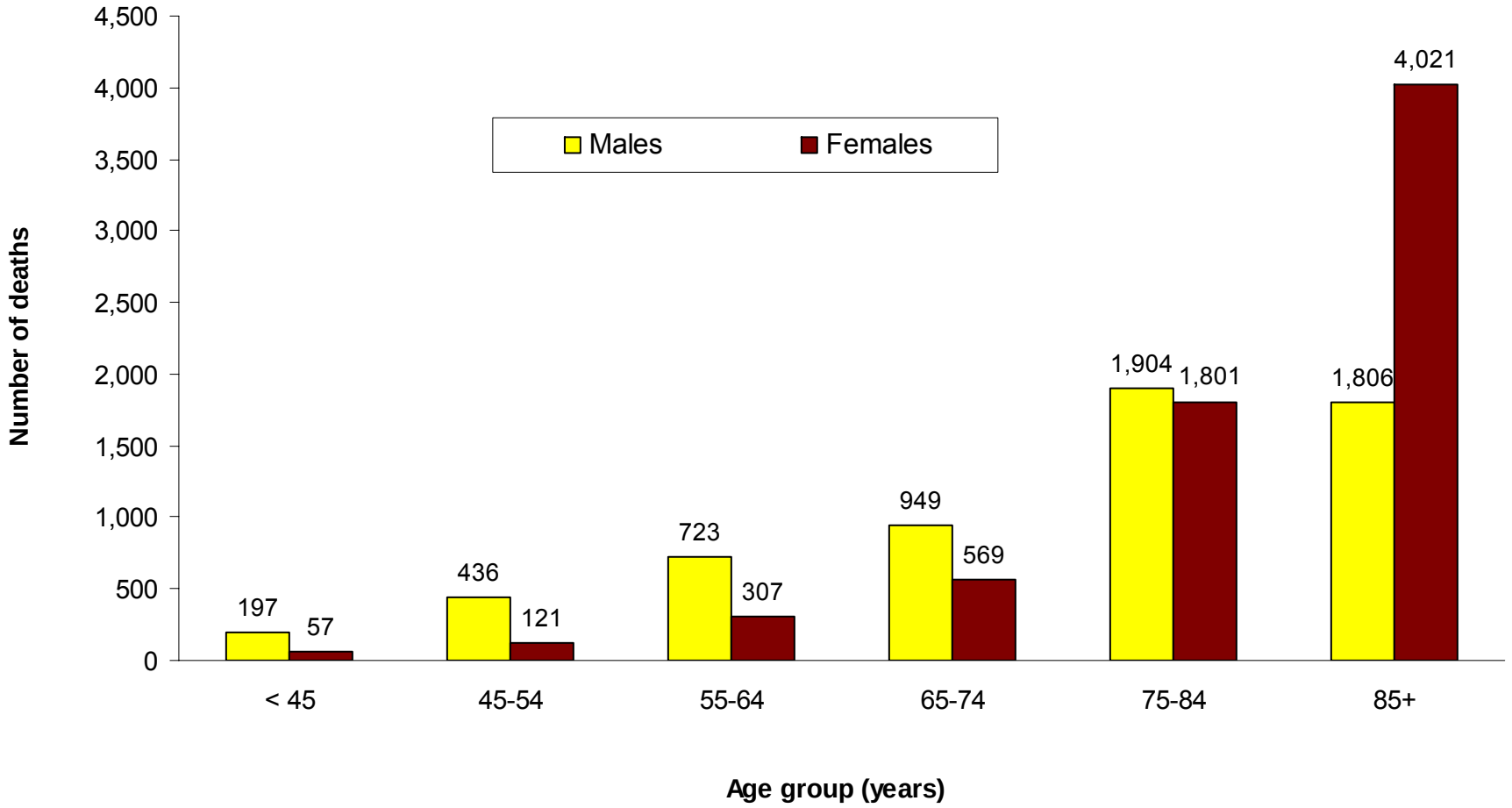
White non-Hispanic[2]			Black non-Hispanic[2]			Asian non-Hispanic[2]			Hispanic		
Cause[3]	**#**	**Rate[4]**	**Cause**	**#**	**Rate**	**Cause**	**#**	**Rate**	**Cause**	**#**	**Rate**
Total	**49,132**	**723.3**	**Total**	**2,233**	**838.4**	**Total**	**635**	**379.0**	**Total**	**1,194**	**479.9**
Cancer	12,384	190.0	Cancer	555	212.4	Cancer	201	107.2	Cancer	218	93.7
Heart disease	12,158	172.2	Heart Disease	403	165.3	Heart Disease	113	72.8	Heart Disease	196	102.3
Stroke	2,623	36.7	Stroke	125	54.5	Stroke	57	39.2	Unintentional Injuries	129	28.4
Chronic Lower Resp. Disease[5]	2,434	36.0	Unintentional injuries[6]	123	33.7	Unintentional injuries[6]	28	13.4	Stroke	58	28.8
Unintentional injuries[6]	1,889	32.3	Diabetes	91	36.1	Chronic Lower Resp. Disease[5]	18	12.7	Diabetes	51	24.0
Influenza and Pneumonia	1,662	22.9	Nephritis	90	37.0	Nephritis	17	11.9	HIV/AIDS	37	8.4
Alzheimer's Disease	1,488	19.7	Homicide	81	18.2	Influenza and Pneumonia	15	10.6	Nephritis	35	16.9
Nephritis	1,246	17.6	Chronic Lower Resp. Disease[5]	54	23.1	Suicide	14	4.3	Perinatal conditions	34	5.1
Diabetes	969	14.4	Septicemia	52	20.1	Diabetes	13	8.5	ill-defined conditions	31	7.6
Septicemia	803	11.8	Perinatal Conditions	51	9.1	Alzheimer's Disease	12	9.6	Homicide	30	5.5

Total

Cause	#	Rate
Total	**53,293**	**717.6**
Cancer	13,375	186.3
Heart disease	12,891	168.8
Stroke	2,868	37.4
Chronic Lower Respiratory Disease[5]	2,529	34.5
Unintentional injuries[6]	2,170	31.4
Influenza and Pneumonia	1,748	22.5
Alzheimer's Disease	1,556	19.3
Nephritis	1,390	18.3
Diabetes	1,127	15.3
Septicemia	893	12.1

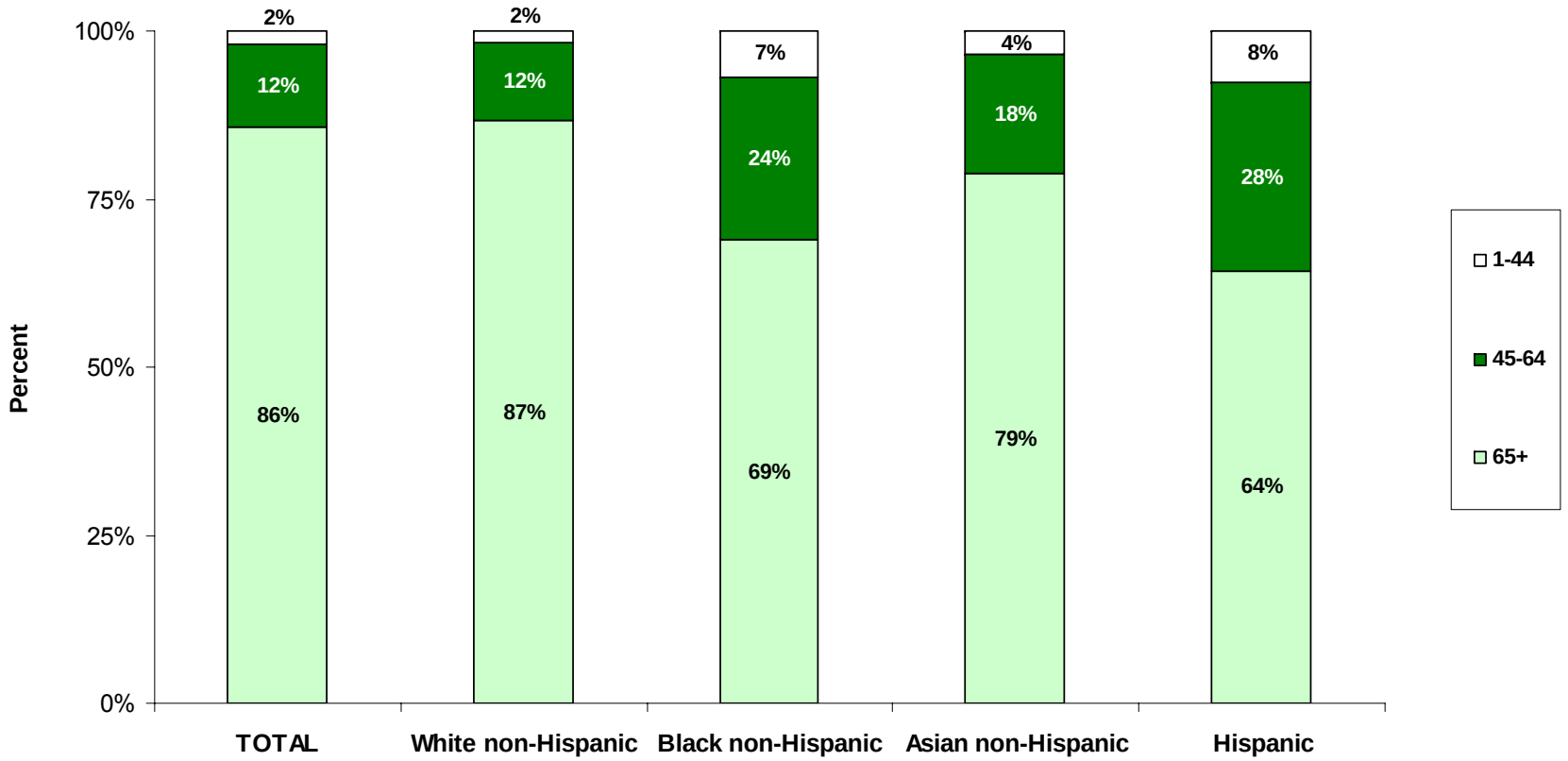
1. Ranking based on number of deaths. 2. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include persons of Hispanic ethnicity in a race category. Please see the Technical Notes in the Appendix for a more detailed explanation. 3. Underlying Cause of Death based on ICD-10 (Please see Appendix for a list of ICD-10 codes used). 4. All rates are age-adjusted per 100,000 residents using the 2000 US standard population. 5. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title). 6. Unintentional injuries such as motor vehicle-related and other transportation related deaths, falls, fires, and drownings that were not intended to occur.

Figure 8. Number of Heart Disease Deaths[1] by Age Group and Gender, Massachusetts: 2006



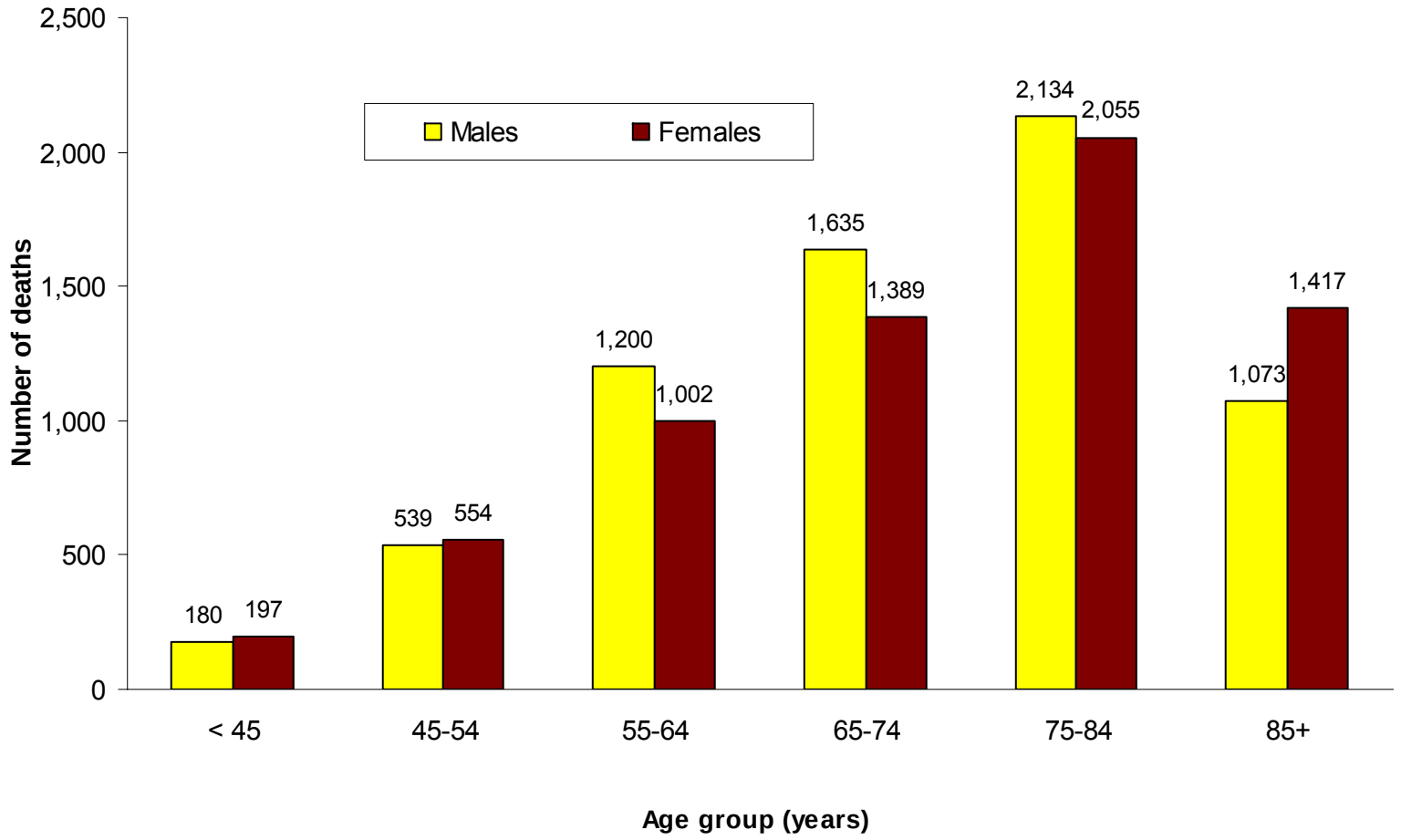
[1] **ICD-10:** I00-I09, I11, I13, I20-I51

Figure 9. Age Distribution by Race and Ethnicity for Heart Disease Deaths[1], Massachusetts: 2006



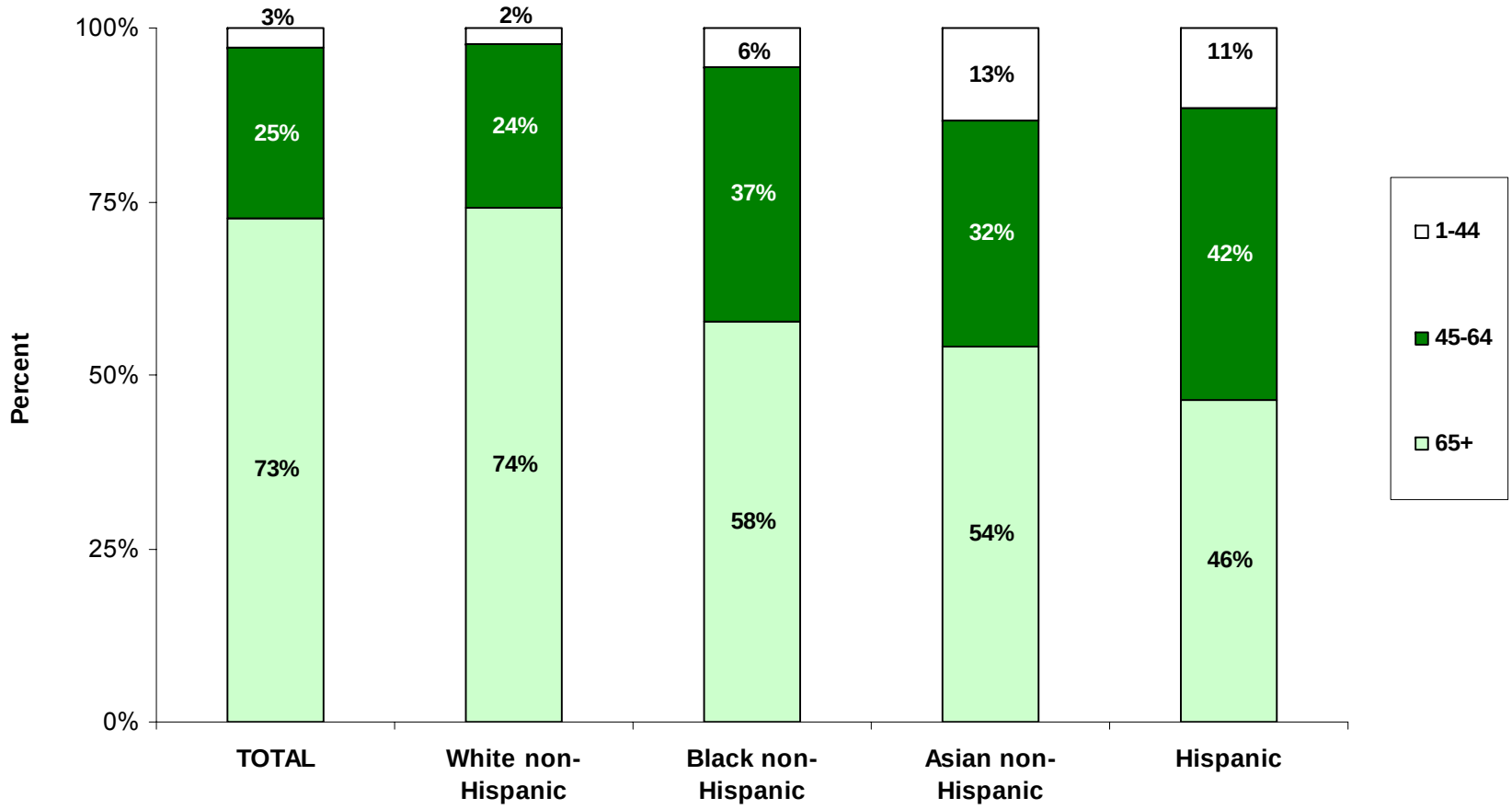
[1] **ICD-10:** I00-I09, I11, I13, I20-I51

Figure 10. Number of Cancer Deaths[1] by Age Group and Gender, Massachusetts: 2006



[1] **ICD-10**: C00-C97

Figure 11. Age Distribution by Race and Ethnicity for Cancer Deaths[1], Massachusetts: 2006



[1]**ICD-10**: C00-C97

Table 10. Heart Disease and Cancer Deaths by Race and Gender, Age-Adjusted Rates[1], Massachusetts: 1999-2006

Heart Disease

Year	White non-Hispanic[2] Male	White non-Hispanic[2] Female	White non-Hispanic[2] Total	Black non-Hispanic[2] Male	Black non-Hispanic[2] Female	Black non-Hispanic[2] Total
1999	289.8	178.4	224.3	296.5	211.5	248.0
2000	282.4	174.4	219.3	235.1	203.6	221.9
2001	265.9	174.0	213.4	295.2	181.3	228.6
2002	254.7	163.5	202.3	242.2	177.6	205.9
2003	250.3	160.2	198.5	272.1	188.5	223.9
2004	233.1	150.3	185.7	268.1	148.3	198.8
2005	220.6	139.1	174.9	233.7	174.5	199.8
2006	216.5	138.8	172.2	222.3	127.6	165.3

Year	Asian non-Hispanic[2] Male	Asian non-Hispanic[2] Female	Asian non-Hispanic[2] Total	Hispanic Male	Hispanic Female	Hispanic Total
1999	119.6	73.7	94.7	143.4	83.5	108.2
2000	111.2	65.5	85.6	122.1	106.6	115.6
2001	113.5	62.6	85.1	148.7	110.0	126.9
2002	94.6	69.5	79.9	174.1	101.2	131.9
2003	115.2	65.0	87.6	124.8	96.2	109.7
2004	56.9	54.3	56.1	129.9	77.4	100.3
2005	77.5	48.2	61.3	118.5	83.7	99.2
2006	73.6	70.0	72.8	124.2	84.9	102.3

1. Rates are per 100,000 age-adjusted to the 2000 US standard population. 2. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include persons of Hispanic ethnicity in a race category. Please see the Technical Notes in the Appendix for a more detailed explanation.

Table 10 (continued). Heart Disease and Cancer Deaths by Race and Gender, Age-Adjusted Rates[1], Massachusetts: 1999-2006

Cancer

Year	White non-Hispanic[2] Male	White non-Hispanic[2] Female	White non-Hispanic[2] Total	Black non-Hispanic[2] Male	Black non-Hispanic[2] Female	Black non-Hispanic[2] Total
1999	263.4	174.3	207.7	337.2	195.7	251.5
2000	258.7	179.0	209.0	348.1	167.4	237.8
2001	249.2	175.8	203.5	264.7	176.4	212.1
2002	245.7	175.3	202.2	293.5	179.5	224.3
2003	237.1	169.4	195.7	304.5	199.0	238.7
2004	230.4	168.4	192.5	277.6	155.7	200.1
2005	226.1	163.2	188.1	264.2	168.1	204.1
2006	234.9	161.5	190.0	265.6	180.9	212.4

Year	Asian non-Hispanic[2] Male	Asian non-Hispanic[2] Female	Asian non-Hispanic[2] Total	Hispanic Male	Hispanic Female	Hispanic Total
1999	162.8	116.9	136.7	141.8	92.5	113.8
2000	104.7	92.1	99.0	151.9	104.5	123.8
2001	98.3	105.6	103.1	142.9	97.4	116.4
2002	145.8	90.0	114.3	144.3	103.3	120.6
2003	134.6	87.4	109.3	110.0	76.6	90.0
2004	109.5	79.7	93.1	125.6	82.5	100.4
2005	138.9	79.5	106.1	118.2	97.3	105.7
2006	126.0	91.7	107.2	119.9	74.3	93.7

1. Rates are per 100,000 age-adjusted to the 2000 US standard population. 2. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include persons of Hispanic ethnicity in a race category. Please see the Technical Notes in the Appendix for a more detailed explanation.

Table 11. Number and Age-Adjusted Rates of Cancer Deaths by Selected Causes and Gender, Massachusetts: 2006

Cause of Death[1]	ICD-10 Code	Total		Female		Male	
		#	Rate[2,3]	#	Rate	#	Rate
Total Cancer Deaths	**C00-C97**	**13,375**	**186.3**	**6,614**	**158.0**	**6,761**	**230.5**
Bladder	C67	355	4.8	94	2.0	261	9.3
Brain and nervous system	C70-C72	296	4.2	121	3.1	175	5.6
Cervix	C53	51	1.4	51	1.4	NA	NA
Colorectal	C18-C21	1,247	17.1	630	14.1	617	21.2
Esophagus	C15	393	5.5	86	2.0	307	10.0
Female breast	C50[4]	962	23.2	962	23.2	NA	NA
Hodgkin's disease	C81	26	0.4	13	0.3	13	0.4
Kidney and other urinary organs	C64, C65	292	4.1	113	2.7	179	6.1
Leukemia	C91-C95	518	7.3	232	5.5	286	9.8
Lung	C33, C34	3,717	52.6	1,758	43.3	1,959	66.1
Melanoma of the skin	C43	214	3.0	85	2.0	129	4.3
Multiple myeloma	C88, C90	244	3.4	115	2.7	129	4.5
Non-Hodgkin's lymphoma	C82-C85	488	6.8	236	5.4	252	8.8
Ovary	C56	386	9.5	386	9.5	NA	NA
Pancreas	C25	810	11.3	419	9.9	391	13.1
Prostate	C61	672	24.5	NA	NA	672	24.5
Stomach	C16	264	3.6	95	2.1	169	5.8
Uterus	C54, C55	180	4.3	180	4.3	NA	NA
All other cancers	Residual	2,260	31.3	1,038	24.4	1,222	41.0

1. Common terms are used to describe the causes of cancer deaths. For detailed terminology of cancer sites, please see the ICD-10 code list in the Appendix. 2. All rates are age-adjusted by the direct method using the 2000 US standard population. Rates are per 100,000 population. 3. The total resident population is used to calculate all "Total Rates" except for a list of-10 C50, C53-C56, which are based on the total female population, and ICD-10 C61, which is based on the total male population. 4. Includes only female breast cancer.

Table 12. Selected Causes of Cancer Deaths by Age, Massachusetts: 2006

Age	Cause of death[1]	ICD-10 Code	Number	Age-specific rate[2]
1 – 14 years	**TOTAL**		**19**	**1.7**
	Leukemia	C91-C95	6	0.5
	Brain and nervous system	C70-C72	4	--[3]
15 - 24 years	**TOTAL**		**34**	**3.8**
	Leukemia	C91-C95	13	1.5
	Brain and nervous system	C70-C72	7	0.8
	Cervix	C53	2	--[3]
	Non-Hodgkin's Lymphoma	C82-C85	2	--[3]
25 – 44 years	**TOTAL**		**323**	**17.7**
	Female breast[4]	C50	54	5.9
	Lung	C33, C34	47	2.6
	Colorectal	C18-C21	34	1.9
	Leukemia	C91-C95	19	1.0
45 – 64 years	**TOTAL**		**3,295**	**196.5**
	Lung	C33, C34	983	58.6
	Female breast[4]	C50	327	37.7
	Colorectal	C18-C21	249	14.8
	Pancreas	C25	205	12.2
65 + years	**TOTAL**		**9,703**	**1,133.6**
	Lung	C33, C34	2,687	313.9
	Colorectal	C18-C21	963	112.5
	Prostate[5]	C61	624	179.4
	Pancreas	C25	599	70.0
65-74 years	**TOTAL**		**3,024**	**738.1**
	Lung	C33, C34	1,035	252.6
	Colorectal	C18-C21	234	57.1
	Pancreas	C25	198	48.3
	Female breast[4]	C50	163	72.8
75-84 years	**TOTAL**		**4,189**	**1,354.5**
	Lung	C33, C34	1,203	389.0
	Colorectal	C18-C21	392	126.8
	Pancreas	C25	263	85.0
	Prostate[5]	C61	253	207.6
85+ years	**TOTAL**		**2,490**	**1,817.2**
	Lung	C33, C34	449	327.7
	Colorectal	C18-C21	337	245.9
	Prostate[5]	C61	248	618.3
	Female Breast[4]	C50	190	196.1

1. Common terms are used to describe causes of cancer death. For detailed terminology, please see the ICD-10 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 13. Leading Causes of Cancer Deaths and Age-Adjusted Rates by Race and Hispanic Ethnicity, Massachusetts: 2006

White non-Hispanic[1]			Black non-Hispanic[1]			Asian non-Hispanic[1]			Hispanic		
Cause[2]	**#**	**Rate[3]**	**Cause**	**#**	**Rate**	**Cause**	**#**	**Rate**	**Cause**	**#**	**Rate**
Lung	3,496	54.6	Lung	132	51.3	Lung	54	31.4	Lung	31	12.2
Colorectal	1,147	17.1	Female Breast [4]	59	35.3	Colorectal	20	9.6	Colorectal	22	9.6
Female Breast[4]	867	23.3	Colorectal	57	22.8	Female Breast[4]	14	11.2	Female Breast[4]	20	14.0
Pancreas	750	11.5	Pancreas	31	12.6	Pancreas	12	7.0	Pancreas	16	6.8
Prostate	632	25.0	Prostate	30	36.0	Esophagus	8	5.0	Non-Hodgkin's Lymphoma	13	6.8
Total Cancer	**12,384**	**190.0**	**Total Cancer**	**555**	**212.4**	**Total Cancer**	**201**	**107.2**	**Total Cancer**	**217**	**93.4**

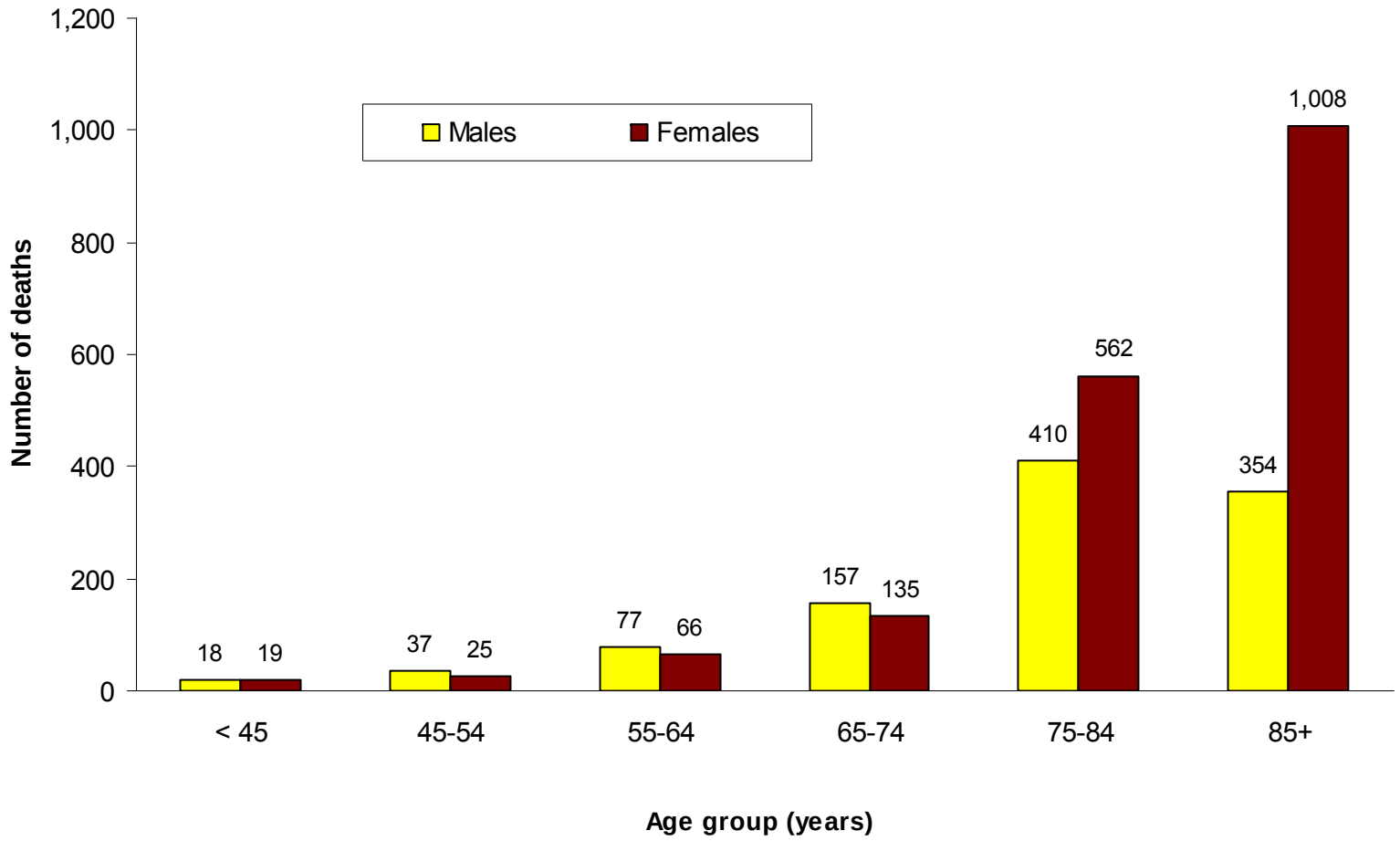
1. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include persons of Hispanic ethnicity in a race category. Please see the Technical Notes in the Appendix for a more detailed explanation. 2. ICD-10 codes used. Please see the ICD-10 codes listing in the Appendix for detailed terminology. 3. All rates are age-adjusted by the direct method using the 2000 US standard population. Rates are per 100,000 population. 4. Calculation based on female population in specified age group

Table 14. Number, Percent, and Age-Adjusted Rates of Stroke Deaths by Type and Gender, Massachusetts: 2006

Cause of Death[1]	ICD-10 Code	Total			Female			Male		
		#	%	Rate[1]	#	%	Rate[1]	#	%	Rate[1]
Total Stroke Deaths	**I60-I69**	**2,868**	**100%**	**37.4**	**1,815**	**100%**	**36.4**	**1,053**	**100%**	**38**
Subarachnoid hemorrhage	I60	112	3.9%	1.6	75	4.1%	1.8	37	3.5%	1.2
Intracerebral and other intracranial hemorrhage	I61-I62	575	20.0%	7.8	331	18.2%	7.3	244	23.2%	8.6
Cerebral infarction	I63	153	5.3%	2	92	5.1%	1.9	61	5.8%	2.2
Stroke, not specified	I64	1,443	50.3%	18.5	959	52.8%	18.5	484	46.0%	17.7
Other	I67, I69	585	20.4%	7.6	358	19.7%	7	227	21.6%	8.3

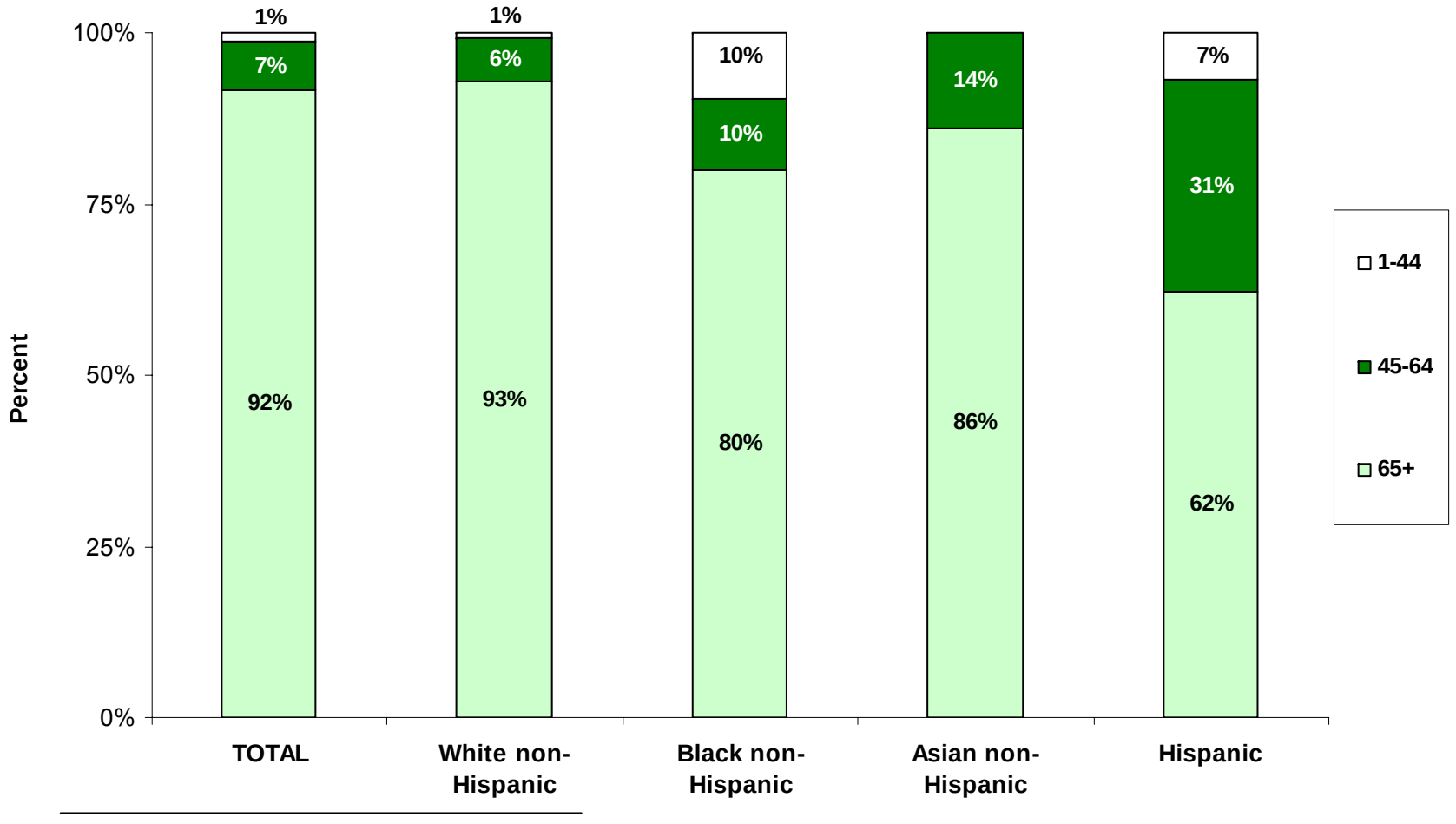
1. All rates are age-adjusted by the direct method using the 2000 US standard population. Rates are per 100,000 population.

Figure 12. Number of Stroke Deaths[1] by Age Group and Gender, Massachusetts: 2006



[1] **ICD-10**: I60-I69

Figure 13. Age Distribution by Race and Ethnicity for Stroke Deaths[1], Massachusetts: 2006



[1] **ICD-10**: I60-I69

Table 15. Stroke Deaths by Race and Gender, Age-Adjusted Rates[1], Massachusetts: 1999-2006

Year	White non-Hispanic[2]			Black non-Hispanic[2]		
	Male	Female	Total	Male	Female	Total
1999	52.1	48.5	50.2	71.5	47.5	57.5
2000	48.8	50.6	50.5	65.3	56.4	60.8
2001	51.5	46.0	48.5	50.8	61.5	59.3
2002	50.2	45.7	47.9	57.9	60.2	59.5
2003	44.7	43.9	44.7	45.9	54.9	52.7
2004	42.8	40.4	41.9	52.1	58.3	56.2
2005	37.7	37.3	37.9	50.6	44.9	47.5
2006	37.5	35.6	36.7	57.6	51.9	54.5

Year	Asian non-Hispanic[2]			Hispanic		
	Male	Female	Total	Male	Female	Total
1999	51.3	28.6	37.6	38.3	30.0	33.8
2000	50.9	49.4	50.4	40.6	47.1	45.0
2001	23.8	38.0	32.0	39.4	28.5	33.2
2002	21.2	28.7	25.6	49.6	30.2	38.3
2003	39.3	28.7	33.4	44.3	36.0	39.3
2004	35.2	32.7	34.1	39.7	32.6	35.5
2005	28.2	27.5	28.1	33.2	24.5	28.2
2006	34.5	41.9	39.2	26.5	29.6	28.8

1. Rates are per 100,000 age-adjusted to the 2000 US standard population. 2. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include persons of Hispanic ethnicity in a race category. Please see the Technical Notes in the Appendix for a more detailed explanation.

Figure 14. Diabetes Deaths[1], Massachusetts: 1999-2006

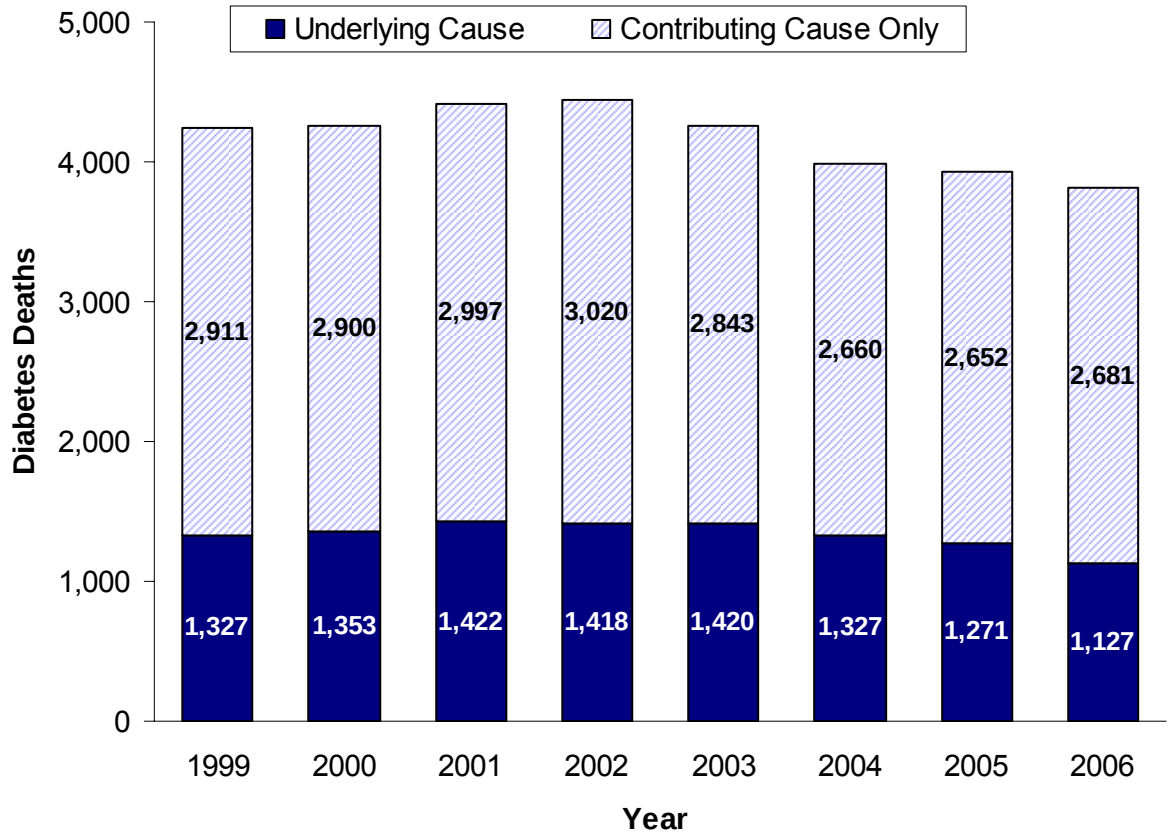


Table 16. Diabetes Deaths[1] by Gender, Massachusetts: 2006

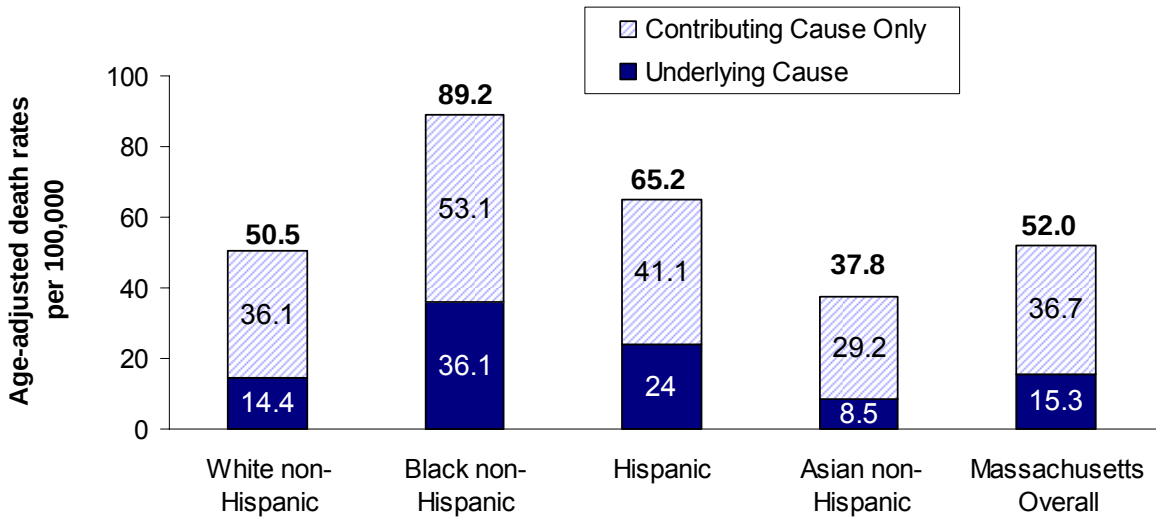
	Proportion of all deaths (%)			Number		
Cause of death	Males	Females	Total	Males	Females	Total
Underlying	2.3%	2.0%	2.1%	569	558	1,127
Contributing/Associated	5.3%	4.8%	5.0%	1,316	1,365	2,681
Total diabetes-related	7.6%	6.7%	7.1%	1,885	1,923	3,808
Total deaths (all causes)	***100***	***100***	***100***	***24,785***	***28,508***	***53,293***

[1] **ICD-10: E10-E14**

Table 17. Diabetes Deaths[1] by Race and Hispanic Ethnicity, Massachusetts: 2006

Cause of death	Race/Hispanic Ethnicity				
	White non-Hispanic	Black non-Hispanic	Hispanic	Asian non-Hispanic	Total
	Number				
Underlying	969	91	51	13	1,127
Contributing/Associated	2,427	128	80	43	2,681
Total diabetes-related	3,396	219	131	56	3,808
Total deaths (all causes)	***49,132***	***2,233***	***1,194***	***635***	***53,293***
	Proportion of all deaths (%)				
Underlying	2.0	4.1	4.3	2.0	2.1
Contributing/Associated	4.9	5.7	6.7	6.8	5.0
Total diabetes-related	***6.9***	***9.8***	***11.0***	***8.8***	***7.1***

Figure 15. Diabetes Death[1] Rates by Race and Hispanic Ethnicity, Massachusetts: 2006



[1] **ICD-10: E10-E14**

Figure 16. Age Distribution of Diabetes Deaths[1], Massachusetts: 2006

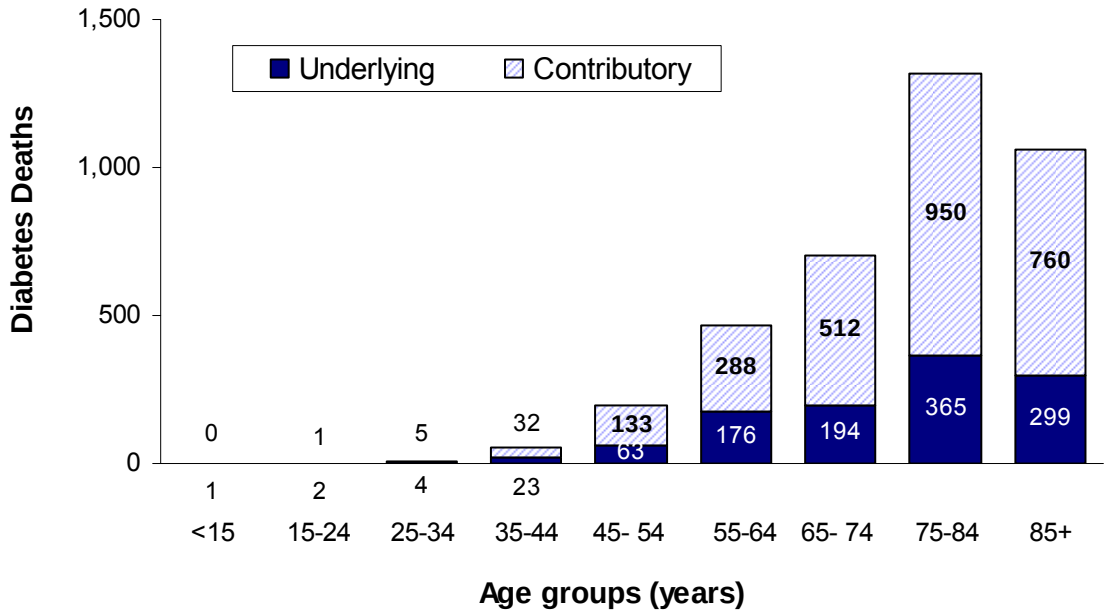
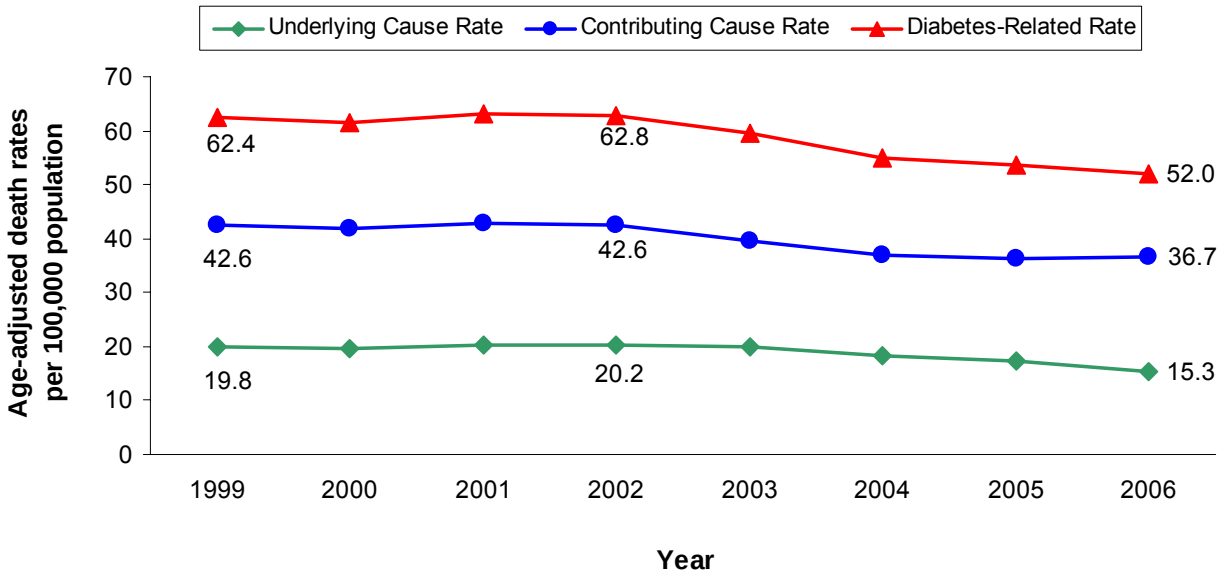


Figure 17. Diabetes Death[1] Rates, Massachusetts: 1999-2006



[1] **ICD-10: E10-E14**

Table 18. Injury Deaths[1] by Leading Causes, Gender, Age: Numbers, Age-Adjusted, and Age-Specific Rates, Massachusetts: 2006

	All Injury Deaths		Poisoning[2]		Motor Vehicle-related[3]		Hanging, strangulation, or suffocation		Falls		Firearm		Other[4]	
	Number	Rate[5]	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Persons	**2,910**	**42.5**	**989**	**14.9**	**475**	**7.2**	**285**	**4.2**	**424**	**5.6**	**207**	**3.2**	**530**	**7.5**
<1	11	13.8	0	0.0	0	0.0	6	7.5	0	0.0	1	--[6]	4	--[6]
1-14	41	3.7	1	--[6]	12	1.1	6	0.5	1	--[6]	1	--[6]	20	1.8
15-24	325	38.2	70	8.2	119	14.0	28	3.3	7	0.8	64	7.5	37	4.3
25-44	851	45.3	454	24.2	122	6.5	80	4.3	17	0.9	78	4.2	100	5.3
45-64	839	51.9	434	26.8	124	7.7	73	4.5	58	3.6	48	3.0	102	6.3
65-74	178	45.6	14	3.6	35	9.0	24	6.2	56	14.4	6	1.5	43	11.0
75-84	296	92.4	14	4.4	41	12.8	30	9.4	116	36.2	6	1.9	89	27.8
85+	369	259.2	2	--[6]	22	15.5	38	26.7	169	118.7	3	--[6]	135	94.8
All Females	**1,036**	**26.3**	**332**	**9.6**	**141**	**4.0**	**85**	**2.2**	**218**	**4.5**	**22**	**0.6**	**238**	**5.4**
<1	4	--[6]	0	0.0	0	0.0	2	--[6]	0	0.0	1	--[6]	1	--[6]
1-14	11	2.0	0	0.0	3	--[6]	1	--[6]	0	0.0	0	0.0	7	1.3
15-24	64	15.3	12	2.9	34	8.1	7	1.7	2	--[6]	3	--[6]	6	1.4
25-44	202	21.2	124	13.0	22	2.3	19	2.0	5	0.5	9	0.9	23	2.4
45-64	286	34.2	177	21.2	38	4.5	15	1.8	15	1.8	6	0.7	35	4.2
65-74	71	33.2	10	4.7	13	6.1	7	3.3	24	11.2	0	0.0	17	7.9
75-84	160	82.7	8	4.1	21	10.9	14	7.2	65	33.6	2	--[6]	50	25.8
85+	238	241.8	1	--[6]	10	10.2	20	20.3	107	108.7	1	--[6]	99	100.6
All Males	**1,874**	**59.8**	**657**	**20.4**	**334**	**10.6**	**200**	**6.5**	**206**	**7.0**	**185**	**5.8**	**292**	**9.6**
<1	7	17.2	0	0.0	0	0.0	4	--[6]	0	0.0	0	0.0	3	--[6]
1-14	30	5.2	1	--[6]	9	1.6	5	0.9	1	--[6]	1	--[6]	13	2.3
15-24	261	60.4	58	13.4	85	19.7	21	4.9	5	1.2	61	14.1	31	7.2
25-44	649	70.0	330	35.6	100	10.8	61	6.6	12	1.3	69	7.4	77	8.3
45-64	553	70.8	257	32.9	86	11.0	58	7.4	43	5.5	42	5.4	67	8.6
65-74	107	60.8	4	--[6]	22	12.5	17	9.7	32	18.2	6	3.4	26	14.8
75-84	136	107.1	6	4.7	20	15.7	16	12.6	51	40.1	4	--[6]	39	30.7
85+	131	298.4	1	--[6]	12	27.3	18	41.0	62	141.2	2	--[6]	36	82.0

1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Includes drug overdoses, which account for the largest percentage (74%). 3. Motor vehicle deaths to occupants, pedestrians, motorcyclists and bicyclists. 4. All remaining injury causes. 5. Number of deaths per 100,000 persons in each age group; rates for all rows except the age group rows are age-adjusted to the 2000 US standard population. 6. Calculations based on values 1-4 are excluded.

Table 19. Injury Deaths[1] by Leading Causes, Gender and Race and Hispanic Ethnicity: Numbers and Age Adjusted Rates, Massachusetts: 2006

	All Injury Deaths		Poisoning[2]		Motor Vehicle-related[3]		Hanging, strangulation, or suffocation		Falls		Firearm		Other[4]	
	Number	Rate[5]	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
White non-Hispanic	**2,453**	**42.3**	**853**	**15.8**	**391**	**7.2**	**254**	**4.4**	**395**	**5.7**	**110**	**2.0**	**450**	**7.2**
Females	929	27.2	299	10.5	120	4.1	75	2.2	204	4.5	17	0.6	214	5.3
Males	1,524	58.4	554	21.3	271	10.5	179	6.9	191	7.1	93	3.5	236	9.1
Black non-Hispanic	**231**	**60.6**	**66**	**18.1**	**35**	**9.1**	**11**	**2.5**	**9**	**3.5**	**69**	**15.6**	**41**	**11.7**
Females	54	28.9	23	12.1	7	3.7	3	--[6]	6	3.7	4	--[6]	11	6.1
Males	177	94.9	43	24.8	28	14.9	8	3.8	3	--[6]	65	29.6	30	18.4
Asian non-Hispanic	**47**	**20.0**	**4**	**--[6]**	**11**	**4.5**	**10**	**3.6**	**9**	**6.1**	**5**	**1.3**	**8**	**3.5**
Females	23	19.7	1	--[6]	5	4.1	5	3.7	5	5.7	1	--[6]	6	5.2
Males	24	20.8	3	--[6]	6	5.0	5	3.4	4	--[6]	4	--[6]	2	--[6]
Hispanic	**175**	**37.2**	**66**	**13.8**	**38**	**6.6**	**9**	**1.6**	**10**	**4.0**	**22**	**3.4**	**30**	**7.7**
Females	28	15.8	9	4.4	9	3.9	1	--[6]	3	--[6]	0	0.0	6	4.2
Males	147	62.3	57	24.8	29	9.7	8	3.0	7	5.7	22	6.8	24	12.4

1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Includes drug overdoses, which account for the largest percentage (74%). 3. Motor vehicle deaths to occupants, pedestrians, motorcyclists and bicyclists. 4. All remaining injury causes. 5. Number of deaths per 100,000 persons in each group; rates are age-adjusted to the 2000 US standard population. 6. Calculations based on values 1-4 are excluded.

Table 20. Unintentional Injury Deaths[1] by Gender, Age: Numbers, Age-Adjusted, and Age-Specific Rates, Massachusetts: 2006

	All Unintentional		Poisonings		Motor Vehicle-related		Falls	
	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]
All Persons	**2,170**	**31.4**	**821**	**12.4**	**475**	**7.1**	**406**	**5.4**
<1	9	11.7	0	0.0	0	0.0	0	0.0
1-14	32	2.9	1	--[3]	12	1.1	1	--[3]
15-24	206	23.0	62	6.9	119	13.3	5	0.6
25-44	588	32.3	404	22.2	122	6.7	12	0.7
45-64	578	34.5	341	20.3	124	7.4	48	2.9
65-74	141	34.4	4	--[3]	35	8.5	56	13.7
75-84	260	84.1	8	2.6	41	13.3	115	37.2
85+	356	259.8	1	--[3]	22	16.1	169	123.3
All Females	**817**	**20.1**	**241**	**7.0**	**141**	**3.9**	**212**	**4.4**
<1	3	--[3]	0	0.0	0	0.0	0	0.0
1-14	8	1.5	0	0.0	3	--[3]	0	0.0
15-24	47	10.5	9	2.0	34	7.6	1	--[3]
25-44	137	14.9	102	11.1	22	2.4	2	--[3]
45-64	194	22.4	124	14.3	38	4.4	13	1.5
65-74	55	24.6	2	--[3]	13	5.8	24	10.7
75-84	142	75.8	4	--[3]	21	11.2	65	34.7
85+	231	238.4	0	0.0	10	10.3	107	110.4
All Males	**1,353**	**43.7**	**580**	**18.0**	**334**	**10.6**	**194**	**6.8**
<1	6	15.3	0	0.0	0	0.0	0	0.0
1-14	24	4.2	1	--[3]	9	1.6	1	--[3]
15-24	159	35.4	53	11.8	85	18.9	4	--[3]
25-44	451	49.9	302	33.4	100	11.1	10	1.1
45-64	384	47.4	217	26.8	86	10.6	35	4.3
65-74	86	46.3	2	--[3]	22	11.8	32	17.2
75-84	118	96.8	4	--[3]	20	16.4	50	41.0
85+	125	311.7	1	--[3]	12	29.9	62	154.6

1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Number of deaths per 100,000 persons in each age group; rates for all rows except the age group rows are age-adjusted to the 2000 US standard population. 3. Calculations based on values 1-4 are excluded.

Table 21. Unintentional Injury Deaths[1] by Gender and Race and Hispanic Ethnicity: Numbers, and Age-Adjusted Rates, Massachusetts: 2006

	All Unintentional		Poisonings		Motor Vehicle-related		Falls	
	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]
White non-Hispanic	**1,889**	**32.3**	**694**	**13.1**	**391**	**7.1**	**382**	**5.5**
Females	741	20.9	213	7.7	120	4.0	201	4.5
Males	1,148	44.7	481	18.7	271	10.5	181	7.0
Black non-Hispanic	**123**	**33.7**	**59**	**15.7**	**35**	**8.8**	**6**	**2.7**
Females	36	19.2	19	9.7	7	3.6	4	--[3]
Males	87	50.2	40	22.2	28	14.3	2	--[3]
Asian non-Hispanic	**28**	**13.4**	**4**	**--[3]**	**11**	**4.3**	**8**	**5.7**
Females	15	13.8	1	--[3]	5	3.9	4	--[3]
Males	13	13.3	3	--[3]	6	4.8	4	--[3]
Hispanic	**129**	**28.4**	**64**	**13.4**	**38**	**6.6**	**10**	**4.0**
Females	24	12.7	8	3.7	9	3.7	3	--[3]
Males	105	44.4	56	23.5	29	9.4	7	5.2

1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Number of deaths per 100,000 persons in each group; rates are age-adjusted to the 2000 US standard population. 3. Calculations based on values 1-4 are excluded.

Table 22. Intentional Injury Deaths[1] by Gender, Age: Numbers, Age-Adjusted, and Age-Specific Rates, Massachusetts: 2006

	All Intentional		Suicide		Homicide	
	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]
All Persons	**620**	**9.3**	**437**	**6.5**	**183**	**2.9**
<1	2	--[3]	0	0.0	2	--[3]
1-14	7	0.6	2	--[3]	5	0.5
15-24	113	12.6	43	4.8	70	7.8
25-44	234	12.8	158	8.7	76	4.2
45-64	212	12.6	189	11.3	23	1.4
65-74	29	7.1	23	5.6	6	1.5
75-84	15	4.9	15	4.9	0	0.0
85+	8	5.8	7	5.1	1	--[3]
All Females	**163**	**4.7**	**125**	**3.5**	**38**	**1.2**
<1	1	--[3]	0	0.0	1	--[3]
1-14	2	--[3]	0	0.0	2	--[3]
15-24	16	3.6	8	1.8	8	1.8
25-44	56	6.1	40	4.4	16	1.7
45-64	68	7.8	61	7.0	7	0.8
65-74	10	4.5	7	3.1	3	--[3]
75-84	6	3.2	6	3.2	0	0.0
85+	4	--[3]	3	--[3]	1	--[3]
All Males	**457**	**14.2**	**312**	**9.6**	**145**	**4.6**
<1	1	--[3]	0	0.0	1	--[3]
1-14	5	0.9	2	--[3]	3	--[3]
15-24	97	21.6	35	7.8	62	13.8
25-44	178	19.7	118	13.1	60	6.6
45-64	144	17.8	128	15.8	16	2.0
65-74	19	10.2	16	8.6	3	--[3]
75-84	9	7.4	9	7.4	0	0.0
85+	4	--[3]	4	--[3]	0	0.0

1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Number of deaths per 100,000 persons in each age group; rates for all rows except the age group rows are age-adjusted to the 2000 US standard population. 3. Calculations based on values 1-4 are excluded.

Table 23. Intentional Injury Deaths[1] by Gender and Race and Hispanic Ethnicity: Numbers and Age-Adjusted Rates, Massachusetts: 2006

	All Intentional		Suicide		Homicide	
	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]
White non-Hispanic	**461**	**8.4**	**395**	**7.1**	**66**	**1.3**
Females	137	4.8	113	3.9	24	1.0
Males	324	12.3	282	10.6	42	1.7
Black non-Hispanic	**96**	**22.2**	**15**	**4.0**	**81**	**18.2**
Females	14	6.8	4	--[3]	10	4.8
Males	82	38.2	11	6.4	71	31.9
Asian non-Hispanic	**18**	**5.4**	**14**	**4.3**	**4**	**--[3]**
Females	8	4.9	7	4.3	1	--[3]
Males	10	5.9	7	4.2	3	--[3]
Hispanic	**42**	**7.8**	**12**	**2.3**	**30**	**5.5**
Females	3	--[3]	1	--[3]	2	--[3]
Males	39	13.7	11	3.9	28	9.8

1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Number of deaths per 100,000 persons in each group; rates are age-adjusted to the 2000 US standard population. 3. Calculations based on values 1-4 are excluded.

Table 24. Injury[1] Deaths by Intent, Method and Gender: Number and Age-Adjusted Rates[2], Massachusetts: 2006

Type of Injury	All Injury Deaths		Female		Male	
	Number	Rate	Number	Rate	Number	Rate
Unintentional Injuries (Accidents)	**2,170**	**31.4**	**817**	**20.1**	**1,353**	**43.7**
Motor Vehicle-related	475	7.1	141	3.9	334	10.6
Injury to pedestrian	74	1.1	34	0.9	40	1.3
Injury to pedal cyclist	4	--[3]	0	0.0	4	--[3]
Injury to motorcyclist	55	0.8	4	--[3]	51	1.6
Injury to occupant	95	1.4	30	0.8	65	2.1
Other and unspecified	247	3.7	73	2.1	174	5.5
Poisoning	821	12.4	241	7.0	580	18.0
Falls	406	5.4	212	4.4	194	6.8
Hanging, strangulation or suffocation	109	1.5	46	1.0	63	2.2
Drowning or submersion	45	0.7	13	0.4	32	1.0
Smoke, fire and flames	30	0.4	13	0.4	17	0.6
Firearm	1	--[3]	0	0.0	1	--[3]
Other and unspecified	265	3.5	149	2.9	116	4.0
Suicide	**437**	**6.5**	**125**	**3.5**	**312**	**9.6**
Hanging, strangulation or suffocation	166	2.5	31	0.9	135	4.2
Poisoning	114	1.7	63	1.7	51	1.5
Firearm	98	1.4	13	0.4	85	2.6
Other and unspecified	59	0.9	18	0.5	41	1.3
Homicide	**183**	**2.9**	**38**	**1.2**	**145**	**4.6**
Firearm	105	1.7	9	0.3	96	3.0
Cut or pierce	40	0.6	12	0.4	28	0.9
Other and unspecified	38	0.6	17	0.5	21	0.7
Injury Deaths of Undetermined Intent	**80**	**1.2**	**34**	**1.0**	**46**	**1.4**
Poisoning	54	0.8	28	0.8	26	0.8
Other and unspecified	26	0.4	6	0.2	20	0.6
Legal Intervention	**3**	**--[3]**	**0**	**0.0**	**3**	**--[3]**
Firearm	3	--[3]	0	0.0	3	--[3]
Other and unspecified	0	0.0	0	0.0	0	0.0
Adverse Effects	**37**	**0.5**	**22**	**0.5**	**15**	**0.5**
Medical Care	32	0.5	18	0.4	14	0.5
Drugs	5	0.1	4	--[3]	1	--[3]
ALL INJURIES	**2,910**	**42.5**	**1,036**	**26.3**	**1,874**	**59.8**

1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Number of deaths per 100,000 persons; rates are adjusted to the 2000 US standard population. 3. Calculations based on values 1-4 are excluded.

Table 25. Type of Injury[1] Deaths by Method and Intent Categories: Number and Age-Adjusted Rates[2], Massachusetts: 2006

Method	All Injury Deaths		Intent									
			Unintentional		Intentional				Undetermined		Other[3]	
	Total		"Accidents"		Suicide		Homicide				Legal Intervention	
	Total Number	Rate	Total Number	Rate	Total Number	Rate	Total Number	Rate	Total Number	Rate	Total Number	Rate
Poisoning	989	14.9	821	12.4	114	1.7	0	0.0	54	0.8	0	0.0
Transport Injuries	493	7.4	493	7.4	0	0.0	0	0.0	0	0.0	0	0.0
Motor vehicle-related	475	7.1	475	7.1	0	0.0	0	0.0	0	0.0	0	0.0
Injury to pedestrian	74	1.1	74	1.1	0	0.0	0	0.0	0	0.0	0	0.0
Injury to pedal cyclist	4	--[4]	4	--[4]	0	0.0	0	0.0	0	0.0	0	0.0
Injury to motorcyclist	55	0.8	55	0.8	0	0.0	0	0.0	0	0.0	0	0.0
Injury to occupant	95	1.4	95	1.4	0	0.0	0	0.0	0	0.0	0	0.0
Other and unspecified	247	3.7	247	3.7	0	0.0	0	0.0	0	0.0	0	0.0
Other transport	18	0.3	18	0.3	0	0.0	0	0.0	0	0.0	0	0.0
Hanging, strangulation or suffocation	285	4.2	109	1.5	166	2.5	9	0.1	1	--[4]	0	0.0
Falls	424	5.6	406	5.4	16	0.2	0	0.0	2	--[4]	0	0.0
Firearm	207	3.2	1	--[4]	98	1.4	105	1.7	0	0.0	3	--[4]
Drowning and submersion	67	1.1	45	0.7	13	0.2	0	0.0	9	0.1	0	0.0
Cut or pierce	56	0.8	2	--[4]	13	0.2	40	0.6	1	--[4]	0	0.0
Smoke, fire and flames	34	0.5	30	0.4	2	--[4]	1	--[4]	1	--[4]	0	0.0
Other and unspecified	318	4.3	263	3.5	15	0.2	28	0.4	12	0.2	0	0.0
Adverse Effects	37	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALL INJURIES	**2,910**	**42.5**	**2,170**	**31.4**	**437**	**6.5**	**183**	**2.9**	**80**	**1.2**	**3**	**--[4]**

1. Data presented in this table are classified according to ICD-10. Please refer to Appendix for list of ICD-10 codes used in this table. 2. Number of deaths per 100,000; rates are adjusted to the 2000 US standard population. 3. Includes legal intervention and operations of war. 4. Calculations based on values 1-4 are excluded.

Table 26. Poisoning Deaths by Intent and Leading Agents, Massachusetts[1]: 2000 and 2006

Poisoning Deaths – All Intents	2000 (N=586)		2006 (N=989)	
	Deaths Associated by Agent/Class of Agent[2]			
Leading Agent / Class of Agents	Number[2]	%[3]	Number[2]	%[3]
Opioids	363	61.9%	637	64.4%
Cocaine	171	29.2%	311	31.4%
Tricyclic & tetracyclic antidepressants, Monoamine-oxidase-inhibitor antidepressants, & Other & unspecified antidepressants	46	7.8%	156	15.8%
Other & unspecified drugs, medicaments & biological substances	63	10.8%	109	11.0%
Benzodiazepines	17	2.9%	84	8.5%
Phenothiazine antipsychotics & neuroleptics, Butyrophenone & thioxanthene neuroleptics, Other & unspecified antipsychotics & neuroleptics	6	1.0%	53	5.4%
Toxic effect of alcohol	18	3.1%	50	5.1%
Poisoning by antiepileptic, sedative-hypnotic & antiparkinsonism drugs	7	1.2%	25	2.5%
Toxic effect of carbon monoxide	28	4.8%	25	2.5%
All other agents combined	45	7.7%	121	12.2%

Unintentional/Undetermined Intent Poisoning Deaths[4]	2000 (N=485)		2006 (N=875)	
	Deaths Associated by Agent/Class of Agent[2]			
Leading Agent / Class of Agents	Number[2]	%[3]	Number[2]	%[3]
Opioids	338	69.7%	615	70.3%
Cocaine	167	34.4%	303	34.6%
Tricyclic & tetracyclic antidepressants, Monoamine-oxidase-inhibitor antidepressants, & Other & unspecified antidepressants	19	3.9%	116	13.3%
Other & unspecified drugs, medicaments & biological substances	40	8.2%	81	9.3%
Benzodiazepines	11	2.3%	70	8.0%
Toxic effect of alcohol	17	3.5%	45	5.1%
Phenothiazine antipsychotics & neuroleptics, Butyrophenone & thioxanthene neuroleptics, Other & unspecified antipsychotics & neuroleptics	1	0.2%	38	4.3%
Poisoning by antiepileptic, sedative-hypnotic & antiparkinsonism drugs	2	0.4%	15	1.7%
Toxic effect of carbon monoxide	6	1.2%	7	0.8%
All other agents combined	30	6.2%	86	9.8%

Table 26. Poisoning Deaths by Intent and Leading Agents, Massachusetts[1]: 2000 and 2006 (contd.)

Suicide Poisoning Deaths	2000 (N=101)		2006 (N=114)	
	Deaths Associated by Agent/Class of Agent			
Leading Agent / Class of Agents	Number[2]	%[3]	Number[2]	%[3]
Tricyclic & tetracyclic antidepressants, Monoamine-oxidase-inhibitor antidepressants, & Other & unspecified antidepressants	27	26.7%	40	35.1%
Other & unspecified drugs, medicaments & biological substances	23	22.8%	28	24.6%
Opioids	25	24.8%	22	19.3%
Toxic effect of carbon monoxide	22	21.8%	18	15.8%
Phenothiazine antipsychotics & neuroleptics, Butyrophenone & thioxanthene neuroleptics, Other & unspecified antipsychotics & neuroleptics	5	5.0%	15	13.2%
Benzodiazepines	6	5.9%	14	12.3%
Poisoning by antiepileptic, sedative-hypnotic & antiparkinsonism drugs	5	5.0%	10	8.8%
Cocaine	4	4.0%	8	7.0%
Toxic effect of alcohol	1	1.0%	5	4.4%
All other agents combined	15	14.9%	35	30.7%

[1] Leading Agents/Class of Agents are sorted in descending order by their count in 2006. See the Appendix for a list of specific ICD10 codes used.

[2] The sum of the number of deaths associated with agents or class of agents is greater than the number of deaths because some deaths involve multiple agents or classes of agents.

[3] The sum of the percentage of deaths associated with agents or class of agents is greater than the number of deaths because some deaths involve multiple agents or classes of agents.

[4] There was a policy change at the MA Office of the Chief Medical Examiner in 2005, which impacted the classification of poisoning deaths. In order to allow consistent comparisons and interpretation of historical trends, unintentional poisoning deaths and poisoning deaths of undetermined intent have been combined into one category, which is comparable to the sum of the categories from previous years. Suicide-associated poisoning deaths were not affected by the policy change.

Table 27. HIV/AIDS[1] Deaths by Place of Occurrence, Massachusetts: 1994-2006

Year		Total		Place of Occurrence: At Home		Hospital		Out of State		Hospice/Nursing Home/Other	
		Comparability Unmodified	Comparability Modified[2]	Comparability Unmodified	Comparability Modified[2]	Comparability Unmodified	Comparability Modified[2]	Comparability Unmodified	Comparability Modified[2]	Comparability Unmodified	Comparability Modified[2]
1994	#	938	998	265	282	514	547	13	14	142	151
	%	100.0		28.3	28.3	54.8	54.8	1.4	1.4	15.1	15.1
1995	#	937	997	303	322	500	532	7	7	127	135
	%	100.0		32.3	32.3	53.4	53.4	0.7	0.7	13.6	13.5
1996	#	609	648	154	164	336	357	9	10	110	117
	%	100.0		25.3	25.3	55.2	55.1	1.5	1.5	18.1	18.1
1997	#	242	277	59	68	158	181	4	5	21	24
	%	100.0		24.4	24.5	65.3	65.3	-[5]	1.8	8.6	8.7
1998	#	213	244	46	53	130	149	2	2	35	40
	%	100.0		21.6	21.7	61.0	61.1	-[5]	-[5]	16.4	16.4
1999	#	242[4]		55		142		2		43	
	%	100.0		22.7		58.7		-[5]		17.8	
2000	#	226[4]		48		145		0		33	
	%	100.0		21.2		64.2		-[5]		14.6	
2001	#	249[4]		47		164		4		34	
	%	100.0		18.9		65.9		-[5]		13.7	
2002	#	229[4]		33		156		4		36	
	%	100.0		14.4		68.1		-[5]		15.7	
2003	#	226[4]		55		134		5		32	
	%	100.0		24.3		59.3		2.2		14.2	
2004	#	211[4]		45		134		1		31	
	%	100.0		21.3		63.5		-[5]		14.7	
2005	#	180[4]		28		122		1		30	
	%	100.0		15.6		67.8		-[5]		16.7	
2006	#	179[4]		22		122		2		33	
	%	100.0		12.3		68.2		-[5]		18.4	

**PLEASE NOTE: this table has been updated June 2001 to reflect the revised comparability ratio of HIV Disease Deaths, issued by the National Center for Health Statistics. 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. Deaths for 1992-1998 were coded according to the ICD-9 classification schedule, which began with 1987 death data (codes 042-044). Deaths for 1999-2006 were coded according to the ICD-10 (codes B20-B24). 2. Comparability Modified (CM): this number has been adjusted using the preliminary comparability ratio (CR) from NCHS (revised June 2001). CM data for 1994-1996 use 1996 based CR; CM data for 1997-1998 use revised 1998 based CR. 3. NA: Comparability ratio is not applicable for years prior to 1994. 4. When comparing data after 1994, please use the comparability modified number for years 1994-1998. Please see Appendix for a detailed explanation. 5. Calculations based on values 1-4 are excluded.

Table 28. HIV/AIDS[1] Deaths by Age, Massachusetts: 1994-2006

Year		Age (in years) <15		15-24		25-34		35-44		45+	
		Comparability Unmodified	Comparability Modified[2]	Comparability Unmodified	Comparability Modified[2]	Comparability Unmodified	Comparability Modified[2]	Comparability Unmodified	Comparability Modified[2]	Comparability Unmodified	Comparability Modified[2]
1994	#	7	7	8	9	272	289	464	494	187	199
	%	0.7	0.7	0.9	0.9	29.0	29.0	49.5	49.5	19.9	19.9
1995	#	11	12	5	5	272	289	443	471	206	219
	%	1.2	1.2	0.5	0.5	29.0	29.0	47.3	47.2	22.0	22.0
1996	#	4	4	8	9	154	164	300	319	143	152
	%	0.7	0.6	1.3	1.4	25.3	25.3	49.3	49.2	23.5	23.5
1997	#	5	6	1	1	35	40	135	155	66	76
	%	2.1	2.2	-[5]	-[5]	14.5	14.4	55.8	56.0	27.3	27.4
1998	#	0	0	0	0	47	54	106	121	60	69
	%	0.0	0.0	0.0	0.0	22.1	22.1	49.8	50.0	28.2	28.3
1999	#	2[4]		9[4]		34[4]		112[4]		85[4]	
	%	-[5]		3.7		14.0		46.3		35.1	
2000	#	4[4]		0[4]		26[4]		104[4]		92[4]	
	%	-[5]		0.0[4]		11.5[4]		46.0[4]		40.7[4]	
2001	#	1[4]		2[4]		25[4]		111[4]		110[4]	
	%	-[5]		-[5]		10.0		44.6		44.2[4]	
2002	#	1[4]		1[4]		10[4]		91[4]		126[4]	
	%	-[5]		-[5]		4.4		39.7		55.0[4]	
2003	#	1[4]		3[4]		14[4]		94[4]		114[4]	
	%	-[5]		-[5]		6.2		41.6		50.4	
2004	#	0[4]		2[4]		9[4]		79[4]		121[4]	
	%	0.0		-[5]		4.3		37.4		57.4	
2005	#	0[4]		1[4]		6[4]		64[4]		109[4]	
	%	0.0		-[5]		3.3		35.6		60.6	
2006	#	0[4]		1[4]		6[4]		71[4]		101[4]	
	%	0.0		-[5]		3.4		39.7		56.4	

**PLEASE NOTE: this table has been updated June 2001 to reflect the revised comparability ratio of HIV Disease Deaths, issued by the National Center for Health Statistics. 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. Deaths for 1992-1998 were coded according to the ICD-9 classification schedule, which began with 1987 death data (codes 042-044). Deaths for 1999-2006 were coded according to the ICD-10 (codes B20-B24). 2. Comparability Modified (CM): this number has been adjusted using the preliminary comparability ratio (CR) from NCHS (revised June 2001). CM data for 1994-1996 use 1996 based CR; CM data for 1997-1998 use revised 1998 based CR. 3. NA: Comparability ratio is not applicable for years prior to 1994. 4. When comparing data over time after 1994, please use the comparability modified number for years 1994-1998. Please see Appendix for a detailed explanation. 5. Calculations based on values 1-4 are excluded.

Table 29. HIV/AIDS[1] Deaths by Gender, Race and Hispanic Ethnicity, Massachusetts: 1994-2006

		Gender				Race and Ethnicity							
		Male		Female		White non-Hispanic[2]		Black non-Hispanic[2]		Other[3]		Hispanic[2]	
		Comparability Unmodified	Comparability Modified[4]	Comparability Unmodified	Comparability Modified[4]	Comparability Unmodified	Comparability Modified[4]	Comparability Unmodified	Comparability Modified[4]	Comparability Unmodified	Comparability Modified[4]	Comparability Unmodified	Comparability Modified[4]
Year													
1994	#	763	812	175	186	581	618	193	205	7	7	157	167
	%	81.3	81.4	18.7	18.6	61.9	61.9	20.6	20.5	0.7	0.7	16.7	16.7
1995	#	753	801	184	196	554	589	223	237	5	5	155	165
	%	80.4	80.3	19.6	19.7	59.1	59.1	23.8	23.8	0.5	0.5	16.5	16.5
1996	#	494	525	115	122	341	363	161	171	5	5	101	107
	%	81.1	81.0	18.9	18.8	56.0	56.0	26.4	26.4	0.8	0.8	16.6	16.5
1997	#	190	218	52	60	121	139	74	85	0	0	47	54
	%	78.5	78.7	21.5	21.7	50.0	50.2	30.6	30.7	-[5]	-[5]	19.4	19.5
1998	#	169	193	44	50	104	119	51	58	0	0	58	66
	%	79.3	79.1	20.7	20.5	48.8	48.8	23.9	23.8	-[5]	-[5]	27.2	27.0
1999	#	177[6]		65[6]		126[6]		51[6]		2[6]		63[6]	
	%	73.1		26.9		52.1		21.1		-[5]		26.0	
2000	#	161[6]		65[6]		104[6]		61[6]		2[6]		59[6]	
	%	71.2		28.8		46.0		27.0		-[5]		26.1	
2001	#	182[6]		67[6]		125[6]		73[6]		0[6]		51[6]	
	%	73.1		26.9		50.2		29.3		-[5]		20.5	
2002	#	163[6]		66[6]		108[6]		68[6]		1[6]		52[6]	
	%	71.2		28.8		47.1		29.7		-[5]		22.7	
2003	#	150[6]		76[6]		113[6]		58[6]		2[6]		53[6]	
	%	66.4		33.6		50.0		25.7		-[5]		23.5	
2004	#	151[6]		60[6]		97[6]		55[6]		4[6]		55[6]	
	%	71.6		28.4		46.0		26.1		-[5]		26.1	
2005	#	122[6]		58[6]		75[6]		56[6]		4[6]		45[6]	
	%	67.8		32.2		41.7		31.1		-[5]		25.0	
2006	#	122[6]		57[6]		91[6]		49[6]		2[6]		37[6]	
	%	68.2		31.8		50.8		27.4		-[5]		20.7	

**PLEASE NOTE: this table was updated in June 2001 to reflect the revised comparability ratio of HIV Disease Deaths, issued by the National Center for Health Statistics. 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. Deaths for 1992-1998 were coded according to the ICD-9 classification schedule, which began with 1987 death data (codes 042-044). Deaths for 1999-2006 were coded according to the ICD-10 (codes B20-B24). 2. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include persons of Hispanic ethnicity in a race category. Please see the Technical Notes in the Appendix for a more detailed explanation. 3. The "Other" category represents Asian non-Hispanics, American Indian non-Hispanics, and other non-Hispanics. 4. Comparability Modified: this number has been adjusted using the preliminary comparability ratio (CR) from NCHS (June 2001). CM data for 1994-1996 use 1996 based CR; CM data for 1997-1998 use revised 1998 based CR. 5. Calculations based on values 1-4 are excluded. 6. When comparing data over time after 1994, please use the comparability modified number for years 1994-1998. Please see Appendix for a detailed explanation.

Table 30. HIV/AIDS[1] Deaths by Gender, Race and Hispanic Ethnicity: Numbers, Percent and Age-adjusted Rates, Massachusetts: 2000-2006

TOTAL	White non-Hispanic[2]			Black non-Hispanic[2]			Hispanic		
Year	#	Percent	Rate[3]	#	Percent	Rate[3]	#	Percent	Rate[3]
2000	104	46%	1.9	61	27%	18.3	59	26%	17.4
2001	125	50%	2.2	73	29%	21.1	51	20%	13.5
2002	108	47%	1.9	68	30%	20.3	52	23%	13.5
2003	113	50%	2.0	58	26%	17.2	53	23%	14.9
2004	97	46%	1.7	55	26%	15.8	55	26%	13.9
2005	75	42%	1.3	56	31%	16.0	45	25%	11.5
2006	91	51%	1.6	49	27%	13.7	37	21%	8.4
MALE									
2000	77	48%	2.8	40	25%	26.0	42	26%	27.7
2001	92	51%	3.3	50	27%	31.4	40	22%	22.5
2002	86	53%	3.1	43	26%	27.9	34	21%	18.7
2003	74	49%	2.7	36	24%	23.4	39	26%	23.8
2004	74	49%	2.7	39	26%	24.0	34	23%	18.4
2005	52	43%	1.9	34	28%	20.9	33	27%	18.4
2006	67	55%	2.4	33	27%	20.0	21	17%	9.8
FEMALE									
2000	27	42%	1.0	21	32%	11.4	17	26%	8.6
2001	33	49%	1.2	23	34%	12.1	11	16%	5.4
2002	22	33%	0.8	25	38%	13.8	18	27%	8.7
2003	39	51%	1.4	22	29%	12.0	14	18%	7.1
2004	23	38%	0.8	16	27%	8.7	21	35%	10.0
2005	23	40%	0.8	22	38%	11.8	12	21%	5.4
2006	24	42%	0.9	16	28%	8.3	16	28%	7.1

1. AIDS and HIV disease deaths coded using ICD-10: B20-B24. 2. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include persons of Hispanic ethnicity in a race category. Please see the Technical Notes in the Appendix for a more detailed explanation. 3. Number of deaths per 100,000 persons; rates are age-adjusted to the 2000 U.S. standard population. Resident death rates for 2000-2005 are calculated using the Massachusetts (Department of Public Health) Modified Age, Race/Ethnicity, & Sex Estimates 2000-2005 (MMARS00-05), released October 2006. Data for 2006 use the NCHS population estimates for 2006 by age, sex, race, and Hispanic origin.

Table 31. Trends in Infant, Neonatal, and Post Neonatal Mortality, by Race and Hispanic Ethnicity, Massachusetts: 1996-2006

INFANT MORTALITY (less than one year of age)

	State Total[1]		White non-Hispanic		Black non-Hispanic		Hispanic		Asian non-Hispanic		Other[2]	
Year	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]
1996	403	5.0	289	4.7	63	11.4	40	5.1	8	2.2	2	--[4]
1997	425	5.3	294	4.8	64	11.7	55	6.7	10	2.6	2	--[4]
1998	414	5.1	287	4.6	59	10.6	58	6.7	10	2.7	0	0.0
1999	418	5.2	285	4.7	72	12.3	49	5.5	8	1.9	4	--[4]
2000	377	4.6	232	3.8	74	12.8	48	5.2	19	4.1	4	--[4]
2001	407	5.0	245	4.1	71	12.1	69	7.3	15	3.1	7	4.1
2002	397	4.9	239	4.1	69	11.6	67	7.0	16	3.0	6	3.8
2003	383	4.8	235	4.1	75	12.7	55	5.6	14	2.7	4	--[4]
2004	376	4.8	210	3.8	70	11.5	75	7.6	15	2.7	6	3.5
2005	391	5.1	230	4.3	57	9.4	77	7.7	18	3.4	8	4.3
2006	369	4.8	220	4.1	72	11.1	63	5.9	10	1.8	3	--[4]

NEONATAL MORTALITY (birth to 27days)

	State Total[1]		White non-Hispanic		Black non-Hispanic		Hispanic		Asian, non-Hispanic		Other[2]	
Year	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]
1996	290	3.6	222	3.6	34	6.2	27	3.5	5	1.4	1	--[4]
1997	323	4.0	228	3.7	44	8.0	43	5.2	7	1.8	1	--[4]
1998	315	3.9	218	3.5	47	8.5	43	5.0	7	1.9	0	0.0
1999	332	4.1	226	3.7	58	9.9	39	4.4	5	1.2	4	--[4]
2000	288	3.5	177	2.9	57	9.9	37	4.0	14	3.0	3	--[4]
2001	308	3.8	190	3.2	56	9.5	49	5.2	10	2.1	3	--[4]
2002	299	3.7	185	3.2	49	8.2	50	5.2	13	2.4	2	--[4]
2003	285	3.6	179	3.1	56	9.5	38	3.9	10	1.9	2	--[4]
2004	291	3.7	167	3.0	51	8.4	57	5.8	12	2.2	4	--[4]
2005	282	3.7	168	3.1	40	6.6	57	5.8	11	2.1	5	2.7
2006	279	3.6	173	3.3	53	8.2	42	3.9	7	1.3	3	--[4]

POST NEONATAL MORTALITY (28-365 days)

	State Total[1]		White non-Hispanic		Black Non-Hispanic		Hispanic		Asian, non-Hispanic		Other[2]	
Year	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]
1996	113	1.4	67	1.1	29	5.3	13	1.7	3	--[4]	1	--[4]
1997	102	1.3	66	1.1	20	3.7	12	1.5	3	--[4]	1	--[4]
1998	99	1.2	69	1.1	12	2.2	15	1.7	3	--[4]	0	0.0
1999	86	1.1	59	1.0	14	2.4	10	1.1	3	--[4]	0	0.0
2000	89	1.1	55	0.9	17	2.9	11	1.2	5	1.1	1	--[4]
2001	99	1.2	55	0.9	15	2.6	20	2.1	5	1.0	4	--[4]
2002	98	1.2	54	0.9	20	3.4	17	1.8	3	--[4]	4	--[4]
2003	98	1.2	56	1.0	19	3.2	17	1.7	4	--[4]	2	--[4]
2004	85	1.1	43	0.8	19	3.1	18	1.8	3	--[4]	2	--[4]
2005	109	1.4	62	1.2	17	2.8	20	2.0	7	1.3	3	--[4]
2006	90	1.2	47	0.9	19	2.9	21	2.0	3	--[4]	0	0.0

1. Deaths of infants of unknown race are included in the total calculation. For rate computations, births of infants of unknown race are allocated into the race categories according to the distribution of births of known race. 2. Other: American Indian and Other races. 3. Rates are expressed per 1,000 live births. 4. Calculations based on values 1-4 are excluded.

Table 32. Infant, Neonatal, and Post Neonatal Deaths by Cause, Massachusetts: 2006

Cause of Death[1]	ICD-10 Code	Infant (<1 year) #	Infant (<1 year) %[2,3]	Neonatal (<28 days) #	Neonatal (<28 days) %[2,3]	Post Neonatal (28-365 days) #	Post Neonatal (28-365 days) %[2,3]
TOTAL		**369**	**100**	**279**	**100**	**90**	**100**
Infectious and parasitic diseases	**A00-B99**	**4**	**--[3]**	**1**	**--[3]**	**3**	**--[3]**
Cancer	**C00-C97**	**1**	**--[3]**	**0**	**0.0**	**1**	**--[3]**
Diseases of the blood and blood forming organs (anemia)	**D50-D89**	**1**	**--[3]**	**0**	**0.0**	**1**	**--[3]**
Diseases of nervous system and ear	**G00-G98, H60-H93**	**7**	**1.9**	**3**	**--[3]**	**4**	**--[3]**
Diseases of the respiratory system	**J00-J98**	**8**	**2.2**	**1**	**--[3]**	**7**	**7.8**
Diseases of digestive system	**K00-K92**	**4**	**--[3]**	**2**	**--[3]**	**2**	**--[3]**
Congenital malformations	**Q00-Q99**	**52**	**14.1**	**37**	**13.3**	**15**	**16.7**
Congenital malformations of nervous system	Q00-Q07	8	2.2	4	--[3]	4	--[3]
Anencephalus and similar malformations	Q00	3	--[3]	3	--[3]	0	0.0
Congenital malformations of eye, ear, face, and neck	Q10-Q18	0	0.0	0	0.0	0	0.0
Congenital malformations of heart	Q20-Q24	16	4.3	11	3.9	5	5.6
Other congenital malformations of circulatory system	Q25-Q28	2	--[3]	2	--[3]	0	0.0
Congenital malformations of respiratory system	Q30-Q34	5	1.4	4	--[3]	1	--[3]
Cleft palate and other digestive tract malformations	Q35-Q45	1	--[3]	1	--[3]	0	0.0
Congenital malformations of genitourinary system	Q50-Q64	2	--[3]	2	--[3]	0	0.0
Congenital malformations of musculoskeletal system	Q65-Q85	3	--[3]	1	--[3]	2	--[3]
Chromosomal abnormalities	Q90-Q99	9	2.4	8	2.9	1	--[3]
Certain conditions originating in the perinatal period	**P00-P96**	**232**	**62.9**	**225**	**80.6**	**7**	**7.8**
Newborn affected by maternal conditions which may be unrelated to present pregnancy	P00	2	--[3]	2	--[3]	0	0.0
Newborn affected by maternal complications of pregnancy	P01	20	5.4	20	7.2	0	0.0
Newborn affected by complications of placenta, cord and membrane	P02	15	4.1	15	5.4	0	0.0
Newborn affected by other complications of labor and delivery	P03	3	--[3]	3	--[3]	0	0.0
Disorders relating to short gestation and low birthweight	P07	114	30.9	112	40.1	2	--[3]
Birth trauma	P10-P15	0	0.0	0	0.0	0	0.0
Intrauterine hypoxia and birth asphyxia	P20-P21	10	2.7	10	3.6	0	0.0
Respiratory distress of newborn	P22	5	1.4	5	1.8	0	0.0
Other respiratory conditions of newborn	P23-P28	6	1.6	3	--[3]	3	--[3]
Infections specific to the perinatal period	P35-P39	10	2.7	8	2.9	2	--[3]
Neonatal hemorrhage	P50-P52, P54	10	2.7	10	3.6	0	0.0
Other and ill-defined conditions originating in the perinatal period	P90-P96	9	2.4	9	3.2	0	0.0
Symptoms, signs, and ill-defined conditions	**R00-R99**	**41**	**11.1**	**5**	**1.8**	**36**	**40.0**
Sudden Infant Death Syndrome (SIDS)	R95	26	7.0	1	--[3]	25	27.8
Unintentional Injuries	**V01-X59**	**9**	**2.4**	**0**	**0.0**	**9**	**10.0**
Homicide	**X85-Y09**	**2**	**--[3]**	**0**	**0.0**	**2**	**--[3]**
All other causes	**Residual**	**8**	**2.2**	**5**	**1.8**	**3**	**--[3]**

1. Please see the Technical Notes in the Appendix for an explanation of ICD-10 codes. 2. Percents not calculated for subcategories. 3. Calculations based on values 1-4 are excluded.

Table 33. Infant Deaths by Major Causes, Race and Hispanic Ethnicity, Massachusetts: 2006

Cause of Death[2]	ICD-10 Code	White non-Hispanic		Black non-Hispanic		Asian non-Hispanic		Hispanic	
		#	%	#	%	#	%	#	%
TOTAL		**220**	**100.0%**	**72**	**100.0%**	**10**	**100.0%**	**63**	**100.0%**
Congenital malformations	Q00-Q99	32	14.5%	8	11.1%	3	30.0%	8	12.7%
Certain conditions originating in the perinatal period	P00-P96	143	65.0%	49	68.1%	4	40.0%	33	52.4%
Symptoms, signs, and ill-defined conditions	R00-R99	22	10.0%	10	13.9%	0	0.0%	9	14.3%
SIDS	R95	15	6.8%	5	6.9%	0	0.0%	6	9.5%
Unintentional Injuries	V01-X59	5	2.3%	2	2.8%	0	0.0%	2	3.2%
Homicide	X85-Y09	2	0.9%	0	0.0%	0	0.0%	0	0.0%
All other causes	Residual	16	7.3%	3	4.2%	3	30.0%	11	17.5%

1. Race and ethnicity data in this table are presented as mutually exclusive categories and Cape Verdeans are not included with Blacks. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include persons of Hispanic ethnicity in a race category. Please see the Technical Notes in the Appendix for a more detailed explanation. 2. Deaths are coded according to ICD-10. Please see Appendix for comparability ratios. 3. Calculations based on values 1-4 are excluded.

Table 34. Target Status for Selected Healthy People 2010 Mortality Objectives

Objective Number	HEALTHY PEOPLE 2010 OBJECTIVE	TARGET 2010[1]	MA 2005[2]	MA 2006[2]	US 2005[3]	TARGET STATUS
	Age-adjusted rates (per 100,000 population)					
3-1	Overall Cancer death rate	159.9	185.8	186.3	183.8	○
3-2	Lung Cancer	44.9	52.4	52.6	52.6	○
3-3	Female Breast Cancer (per 100,000 females)	22.3	23.1	23.2	24.1	○
3-4	Uterine Cervix (per 100,000 females)	2.0	1.6	1.4	2.4	✓
3-5	Colorectal Cancer	13.9	17.6	17.1	17.5	○
3-6	Oropharyngeal Cancer	2.7	2.1	2.5	2.5	✓
3-7	Prostate Cancer (per 100,000 males)	28.8	21.8	24.5	24.5	✓
3-8	Malignant Melanoma	2.5	3.3	3.4	2.7	●
12-1	Coronary Heart Disease	166.0	112.0	111.9	160.0[4]	✓
12-7	Stroke	48.0	38.7	37.4	46.6	✓
13-14	HIV/AIDS	0.7	2.7	2.7	4.2	●
26-2	Cirrhosis	3.0	5.1	4.9	9.0	●
26-3	Drug-induced deaths	1.0	12.9	14.9	10.2	●
	Injury Deaths					
15-3	Firearm- related	4.1	3.4	3.2	10.2	✓
15-8	Poisonings	1.5	12.2	14.9	11.0	●
15-9	Hanging, strangulation or suffocation	3.0	4.9	4.2	4.6	●
15-13	Unintentional injuries (Accidents)	17.5	27.4	31.4	39.1	●
15-15	Motor vehicle crashes	9.0	7.2	7.1	15.2	✓
15-25	Residential fire deaths	0.2	0.6	0.4	1.1[4]	●
15-27	Falls	3.0	3.8	5.7	6.6	●
15-29	Drowning	0.9	1.2	1.1	1.4	○
15-32	Homicide	3.0	2.8	2.9	6.1	✓
18-1	Suicide	5.0	7.0	6.5	10.9	●
	Death Rates (per 1,000 live births)					
16-1c	Infant deaths	4.5	5.1	4.8	6.9	○
16-1d	Neonatal deaths	2.9	3.7	3.6	4.5	○
16-1e	Postneonatal deaths	1.2	1.4	1.2	2.3[4]	✓
16-1f	Birth defects	1.1	0.9	0.7	1.3	✓
16-1g	Congenital heart defects	0.38	0.14	0.21	0.34[4]	✓
16-1h	Sudden infant death syndrome (SIDS)	0.25	0.26	0.33	0.51[4]	●
16-4	Maternal deaths (per 100,000 live births)	3.3	10.3	8.9	13.1[4]	●
	Child/Adolescent/Young Adults Death Rates (per 100,000 pop)					
16-2a	1-4 years old	25.0	14.2	15.4	29.4	✓
16-2b	5-9 years old	14.3	8.0	15.8	14.7[4]	○
16-3a	10-14 years old	16.8	8.8	23.0	18.7[4]	●
16-3b	15-19 years old	43.2	40.6	70.5	66.1[4]	●
16-3c	20-24 years old	57.3	74.4	139.9	94.0[4]	●
24-1	Asthma deaths (per million)					
24-1a	Children under age 5 years	1.0	0.0	--[5]	1.8[4]	✓
24-1b	Children aged 5-14 years	1.0	0.0	--[5]	2.6[4]	✓
24-1c	Ages 15-34 years	3.0	5.8	--[5]	4.4[4]	✓
24-1d	Ages 35-64 years	9.0	10.7	6.4	12.7[4]	✓
24-1e	Ages 65+ years	60.0	53.9	36.2	51.3[4]	✓

✓ = YES, met target ○ = NO, but within 25% of target ● = NO, > 25% from target

1. Data 2010 the Healthy People 2010 Database. CDC Wonder website. 2. Death data for 2004-2005 are calculated using the Massachusetts (Department of Public Health) Modified Age, Race/Ethnicity, & Sex Estimates 2004-2005 (MMARS04-05), released October, 2006. Data for 2006 use the NCHS population estimates for 2006 by age, sex, race, and Hispanic origin. 3. U.S. data for 2005 obtained from NCHS. Deaths: Final Data for 2005. National Vital Statistics Report, Vol. 56, No. 10, January 2008. 4. Final Data for 2004 at http://wonder.cdc.gov January 2007 Edition. 5. Calculations based on values 1-4 are excluded.

Table 35. Rank of Premature Mortality Rates for the Largest 30 Communities[1], Massachusetts: 2006 (Sorted by PMR)

City/Town	Number of Premature Deaths	PMR[2] (per 100,000)
Lowell	389	452.6*
Springfield	593	448.2*
Fall River	380	441.3*
New Bedford	370	423.3*
Brockton	370	421.5*
Taunton	209	408.6*
Revere	184	402.3*
Worcester	594	392.9*
Chicopee	227	391.8*
Lynn	309	389.7*
Haverhill	211	388.9*
Attleboro	150	382.4*
Boston	1,754	381.6*
Quincy	335	360.4*
Plymouth	175	360.2*
Pittsfield	167	347.8
Leominster	136	344.1
Lawrence	196	333.7
Weymouth	191	331.6
Medford	174	312.6
Malden	168	309.6
Peabody	178	306.7
Somerville	174	299.3
Methuen	127	296.9
Waltham	163	291.1
Barnstable	157	290.4
Cambridge	215	283.0
Framingham	157	249.1*
Brookline	86	175.8*
Newton	143	170.3*
STATE TOTAL	**19,149**	**300.5**

[1] Selected from among the 30 Massachusetts communities with the largest populations, based on 2000 Census.

[2] Rates are age-adjusted to the 2000 U.S. Standard Population for person ages 0-74 years.

* Significantly different from State PMR.

Table 36. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2006

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
STATE	**19,149**	**300.5**
	WESTERN REGION	
Adams	34	376.4
Agawam	94	317.1
Alford	1	--[1]
Amherst	34	192.9
Ashfield	5	247.4
Athol	41	354.1
Becket	8	405.2
Belchertown	34	302.1
Bernardston	5	190.6
Blandford	3	--[1]
Buckland	7	365.7
Charlemont	4	--[1]
Cheshire	14	380.3
Chester	2	--[1]
Chesterfield	3	--[1]
Chicopee	227	391.8
Clarksburg	6	313.1
Colrain	4	--[1]
Conway	2	--[1]
Cummington	2	--[1]
Dalton	33	467.9
Deerfield	18	358.9
East Longmeadow	47	289.9
Easthampton	50	308.9
Egremont	1	--[1]
Erving	7	404.5
Florida	2	--[1]
Gill	15	1126.8
Goshen	5	489.5
Granby	15	221.7
Granville	4	--[1]
Great Barrington	34	419.2
Greenfield	63	359.7
Hadley	14	259.4
Hampden	11	188.6
Hancock	1	--[1]
Hatfield	17	403.5
Hawley	1	--[1]
Heath	1	--[1]
Hinsdale	11	557.2
Holyoke	147	411.2
Huntington	5	290.6
Lanesborough	3	--[1]
Lee	20	291.5
Lenox	11	167.2
Leverett	2	--[1]

Table 36. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2006

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Leyden	2	--[1]
Longmeadow	35	214.2
Ludlow	62	282.7
Middlefield	1	--[1]
Monroe	4	--[1]
Monson	29	375.9
Montague	25	282.4
Monterey	1	--[1]
Montgomery	2	--[1]
Mount Washington	1	--[1]
New Ashford	1	--[1]
New Marlborough	6	337.9
New Salem	2	--[1]
North Adams	63	429.1
Northampton	85	328.9
Northfield	8	235.9
Orange	33	419.0
Otis	4	--[1]
Palmer	35	277.9
Pelham	2	--[1]
Peru	3	--[1]
Petersham	7	509.3
Phillipston	2	--[1]
Pittsfield	167	347.8
Plainfield	4	--[1]
Richmond	2	--[1]
Rowe	3	--[1]
Royalston	1	--[1]
Russell	4	--[1]
Sandisfield	2	--[1]
Savoy	3	--[1]
Sheffield	16	363.6
Shelburne	11	430.5
Shutesbury	4	--[1]
South Hadley	52	284.2
Southampton	11	220.6
Southwick	29	308.2
Springfield	593	448.2
Stockbridge	8	235.2
Sunderland	8	396.1
Tolland	1	--[1]
Tyringham	3	--[1]
Ware	44	455.2
Warwick	3	--[1]
Washington	2	--[1]
Wendell	5	697.1
West Springfield	115	395.3
West Stockbridge	2	--[1]
Westfield	131	349.0
Westhampton	2	--[1]
Whately	4	--[1]

Table 36. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2006

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Wilbraham	41	287.3
Williamsburg	7	250.0
Williamstown	18	246.6
Windsor	2	--[1]
Worthington	4	--[1]
	CENTRAL REGION	
Ashburnham	17	339.0
Ashby	7	282.4
Auburn	50	280.5
Ayer	21	313.0
Barre	17	343.6
Bellingham	51	343.3
Berlin	9	292.4
Blackstone	24	307.5
Bolton	8	231.1
Boylston	10	214.3
Brimfield	16	422.4
Brookfield	21	655.7
Charlton	26	333.0
Clinton	43	313.9
Douglas	22	373.7
Dudley	26	254.0
East Brookfield	8	357.6
Fitchburg	138	388.9
Franklin	65	283.8
Gardner	81	398.5
Grafton	45	311.8
Groton	16	198.0
Hardwick	7	262.2
Harvard	21	369.6
Holden	33	205.6
Holland	6	279.3
Hopedale	15	257.5
Hubbardston	6	234.2
Lancaster	14	238.1
Leicester	40	399.0
Leominster	136	344.1
Lunenburg	31	276.2
Medway	26	239.4
Mendon	5	115.8
Milford	58	232.2
Millbury	44	312.6
Millville	8	354.1
New Braintree	1	--[1]
North Brookfield	7	161.5
Northbridge	40	317.8
Oakham	3	--[1]
Oxford	49	378.5
Paxton	8	169.4

Table 36. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2006

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Pepperell	31	348.7
Princeton	4	--[1]
Rutland	16	263.5
Shirley	23	346.2
Shrewsbury	82	269.4
Southbridge	65	419.0
Spencer	48	420.2
Sterling	26	388.8
Sturbridge	19	214.8
Sutton	22	293.3
Templeton	24	319.6
Townsend	24	328.5
Upton	14	261.1
Uxbridge	27	267.5
Wales	8	588.5
Warren	21	400.6
Webster	62	379.8
West Boylston	23	339.5
West Brookfield	11	272.8
Westminster	21	279.8
Winchendon	31	358.9
Worcester	594	392.9
NORTHEAST REGION		
Amesbury	52	323.4
Andover	71	217.2
Beverly	127	320.6
Billerica	100	290.1
Boxford	24	307.1
Chelmsford	86	247.3
Danvers	85	291.2
Dracut	80	284.4
Dunstable	6	270.5
Essex	7	190.1
Everett	122	340.9
Georgetown	22	281.7
Gloucester	90	265.7
Groveland	17	280.2
Hamilton	11	145.5
Haverhill	211	388.9
Ipswich	34	228.0
Lawrence	196	333.7
Lowell	389	452.6
Lynn	309	389.7
Lynnfield	15	129.1
Malden	168	309.6
Manchester	6	93.3
Marblehead	35	156.3
Medford	174	312.6
Melrose	75	270.4
Merrimac	15	246.0

Table 36. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2006

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Methuen	127	296.9
Middleton	24	305.5
Nahant	15	359.9
Newbury	16	216.6
Newburyport	53	284.9
North Andover	57	231.5
North Reading	42	330.6
Peabody	178	306.7
Reading	60	255.2
Rockport	23	255.8
Rowley	9	202.8
Salem	121	300.0
Salisbury	35	419.0
Saugus	93	295.8
Stoneham	57	239.2
Swampscott	41	279.0
Tewksbury	97	334.2
Topsfield	8	113.4
Tyngsborough	18	222.4
Wakefield	72	284.1
Wenham	10	233.2
West Newbury	10	303.8
Westford	33	210.9
METROWEST REGION		
Acton	41	230.9
Arlington	94	207.9
Ashland	40	248.9
Bedford	30	203.6
Belmont	53	204.9
Boxborough	13	419.3
Braintree	100	264.2
Burlington	77	279.2
Cambridge	215	283.0
Canton	64	282.1
Carlisle	5	99.6
Cohasset	13	166.4
Concord	35	179.9
Dedham	72	271.5
Dover	8	159.6
Foxborough	41	254.5
Framingham	157	249.1
Hingham	50	216.8
Holliston	32	244.4
Hopkinton	25	245.8
Hudson	47	248.4
Hull	45	363.1
Lexington	60	170.7
Lincoln	13	175.2
Littleton	19	228.5
Marlborough	100	285.8

Table 36. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2006

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Maynard	24	237.2
Medfield	23	218.9
Millis	24	340.1
Milton	52	199.4
Natick	70	214.5
Needham	62	215.1
Newton	143	170.3
Norfolk	26	341.5
Northborough	36	268.0
Norwell	22	200.1
Norwood	93	307.4
Plainville	24	283.6
Quincy	335	360.4
Randolph	112	346.0
Scituate	56	259.3
Sharon	44	287.1
Sherborn	9	181.3
Somerville	174	299.3
Southborough	15	177.5
Stow	16	338.9
Sudbury	27	177.6
Walpole	75	325.4
Waltham	163	291.1
Watertown	80	240.9
Wayland	22	137.4
Wellesley	38	141.6
Westborough	29	208.7
Weston	21	183.9
Westwood	30	211.0
Weymouth	191	331.6
Wilmington	52	261.3
Winchester	43	184.8
Woburn	97	242.6
Wrentham	39	401.4
SOUTHEAST REGION		
Abington	44	270.2
Acushnet	28	253.7
Aquinnah	0	0.0
Attleboro	150	382.4
Avon	11	247.2
Barnstable	157	290.4
Berkley	14	257.9
Bourne	95	461.4
Brewster	27	242.8
Bridgewater	66	312.4
Brockton	370	421.5
Carver	41	355.5
Chatham	20	174.7
Chilmark	1	--[1]

Table 36. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2006

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Dartmouth	77	249.6
Dennis	65	318.1
Dighton	20	324.5
Duxbury	36	249.9
East Bridgewater	42	346.7
Eastham	14	196.5
Easton	52	253.1
Edgartown	14	348.0
Fairhaven	52	304.1
Fall River	380	441.3
Falmouth	114	275.2
Freetown	27	335.9
Gosnold	0	0.0
Halifax	25	302.5
Hanover	35	265.9
Hanson	28	297.6
Harwich	46	282.4
Holbrook	44	358.2
Kingston	35	293.0
Lakeville	22	224.9
Mansfield	36	257.2
Marion	15	239.9
Marshfield	66	265.5
Mashpee	47	291.4
Mattapoisett	11	128.5
Middleborough	85	457.7
Nantucket	24	259.0
New Bedford	370	423.3
North Attleboro	79	355.7
Norton	61	438.2
Oak Bluffs	14	336.9
Orleans	25	233.3
Pembroke	41	239.2
Plymouth	175	360.2
Plympton	7	323.4
Provincetown	14	341.8
Raynham	38	276.0
Rehoboth	31	266.4
Rochester	19	396.2
Rockland	77	428.4
Sandwich	66	321.6
Seekonk	30	218.1
Somerset	52	224.5
Stoughton	93	319.8
Swansea	59	334.3
Taunton	209	408.6
Tisbury	10	201.7
Truro	8	306.2
Wareham	103	418.2
Wellfleet	7	211.4
West Bridgewater	20	260.3

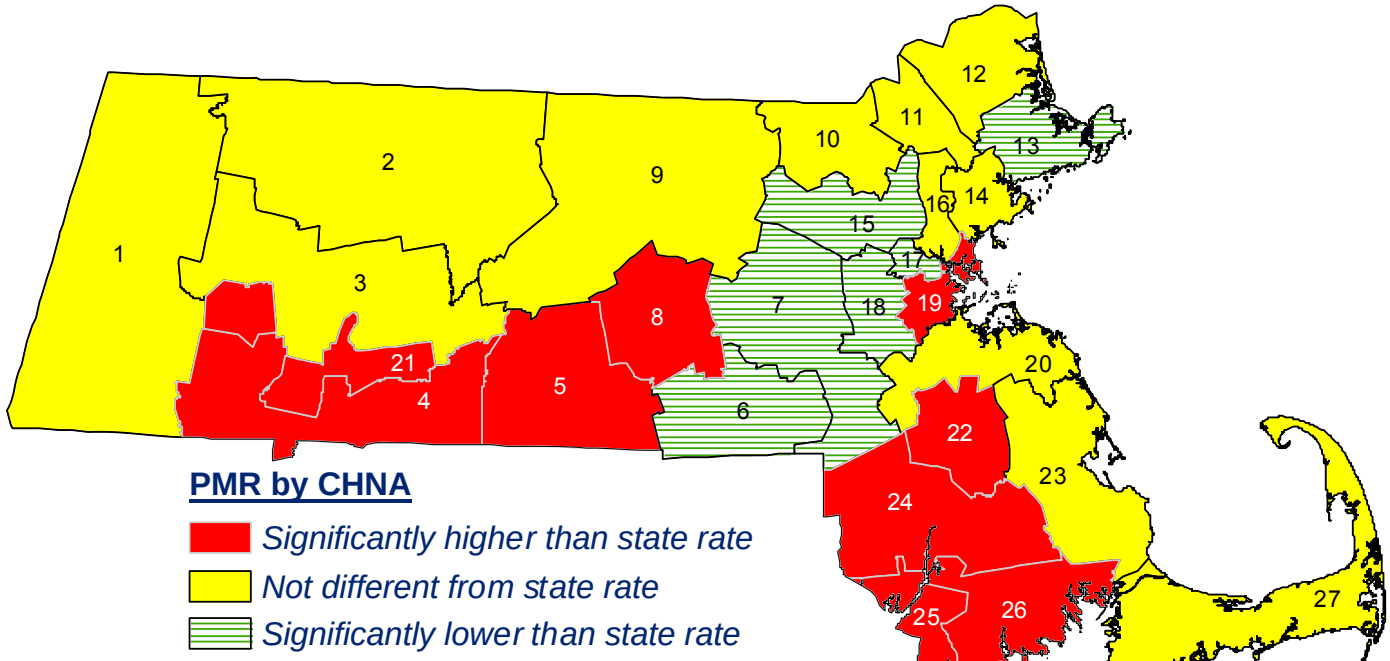
Table 36. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2006

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
West Tisbury	7	306.8
Westport	50	320.3
Whitman	47	358.6
Yarmouth	109	361.1
BOSTON REGION		
Boston	1,754	381.6
Brookline	86	175.8
Chelsea	94	361.9
Revere	184	402.3
Winthrop	74	422.5

* Premature Mortality Rates (PMR) for cities and towns were calculated using MDPH population estimates for 2005, which are the most up-to-date information available on the number of persons by age, race, and sex at the sub-state level. PMR are age-adjusted to the 2000 U.S. Standard Population for persons ages 0-74 years.

[1] Age-adjusted rates based on values 1-4 are excluded.

Map 1. Premature Mortality Rates (PMR) by Community Health Network Area (CHNA), Massachusetts: 2006

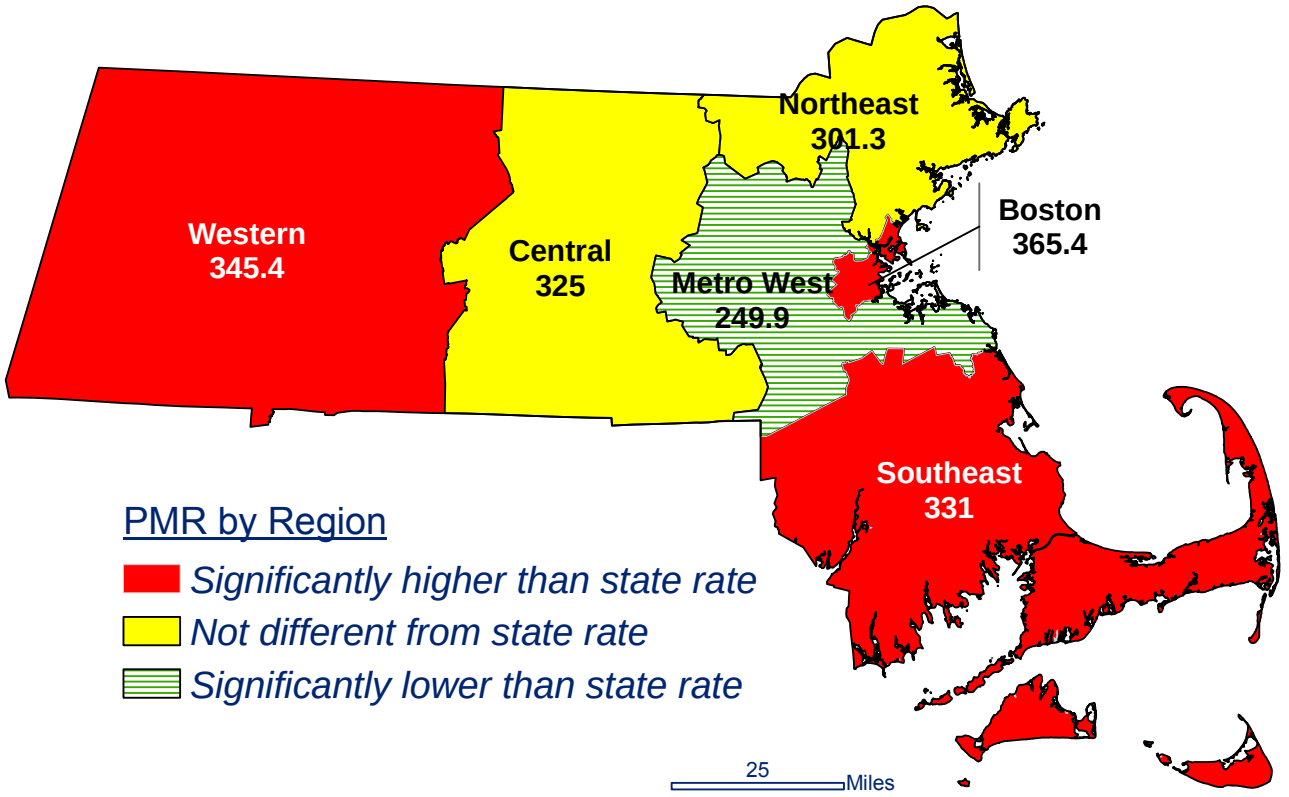


CHNA PMR

1. Community Health Network of Berkshire = 330.8
2. Upper Valley Health Web-Franklin County = 334.2
3. Partnership for Health in Hampshire County = 285.7
4. The Community Health Connection = 370.7
5. Community Health Network of Southern Worcester County = 354.9
6. Community Partners for Health = 277.1
7. Community Health Network of Greater Metro West = 250
8. Community Wellness Coalition = 339
9. Fitchburg/Gardner Community Health Network = 324.5
10. Greater Lowell Community Health Network = 333.4
11. Greater Lawrence Community Health Network = 285.6
12. Greater Haverhill Community Health Network = 328.1
13. Community Health Network North = 248.8
14. North Shore Community Health Network = 303.5
15. Greater Woburn/Concord/Littleton Community Health Network = 217.8
16. North Suburban Health Alliance = 294.5
17. Greater Cambridge/Somerville Community Health Network = 255.7
18. West Suburban Health Network = 208.2
19. Alliance for Community Health = 365.4
20. Blue Hills Community Health Alliance = 297.3
21. Hampshire County Partnership = 367.5
22. Greater Brockton Community Health Network = 349.2
23. South Shore Community Partners in Prevention = 313
24. Greater Attleboro-Taunton Health & Education Response = 347.1
25. Partners for a Healthier Community = 378.4
26. Greater New Bedford Health & Human Services Coalition = 351
27. Cape Cod & Islands Community Health Network = 295.1

Rates are per 100,000 persons under 75 years of age, age-adjusted to the 2000 US standard population and are calculated using MDPH population estimates for 2005, which are the most updated estimates available at the sub-state level by age groups.

Map 2. Premature Mortality Rates (PMR) by Region, Massachusetts: 2006

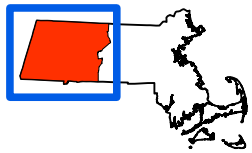


Rates are per 100,000 persons under 75 years of age, age-adjusted to the 2000 US standard population under 75 years of age.

Note: Premature Mortality Rates (PMR) for sub-state areas were calculated using MDPH population estimates for 2005, which are the most up-to-date information available on the number of persons by age, race, and sex at the sub-state level.

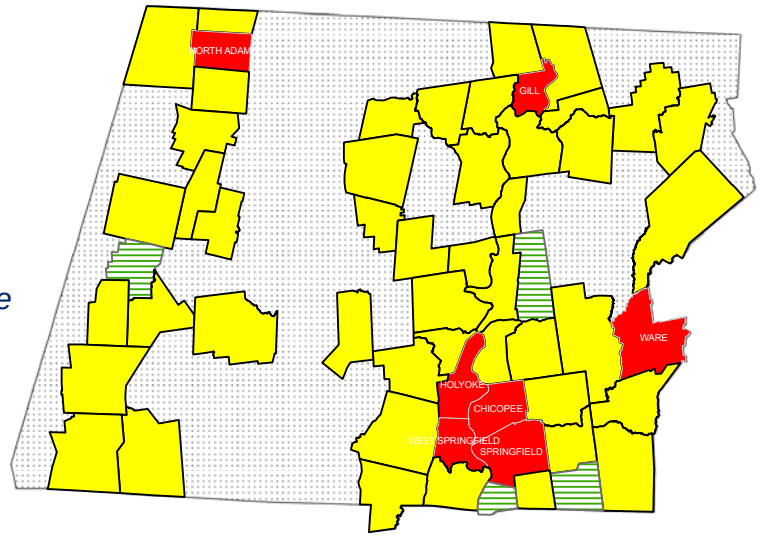
Map 3. Premature Mortality Rates (PMR), Western Region by City/Town: 2006

Western Region PMR= 345.4



PMR by City/Town

- *Significantly higher than state rate*
- *Not different from state rate*
- *Significantly lower than state rate*
- Less than 5 premature deaths.

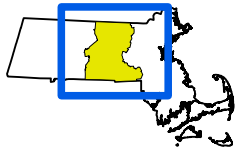


Rates are per 100,000 persons under 75 years of age, age-adjusted to the 2000 US standard population under 75 years of age.

Note: Premature Mortality Rates (PMR) for sub-state areas were calculated using MDPH population estimates for 2005, which are the most up-to-date information available on the number of persons by age, race, and sex at the sub-state level.

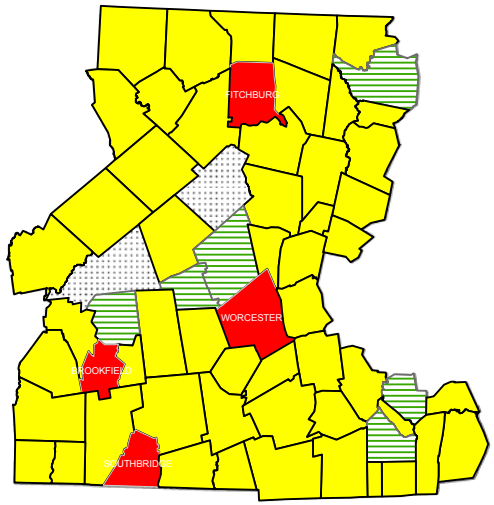
Map 4. Premature Mortality Rates (PMR), Central Region by City/Town: 2006

Central Region PMR= 325.0



PMR by City/Town

- *Significantly higher than state rate*
- *Not different from state rate*
- *Significantly lower than state rate*
- Less than 5 premature deaths.

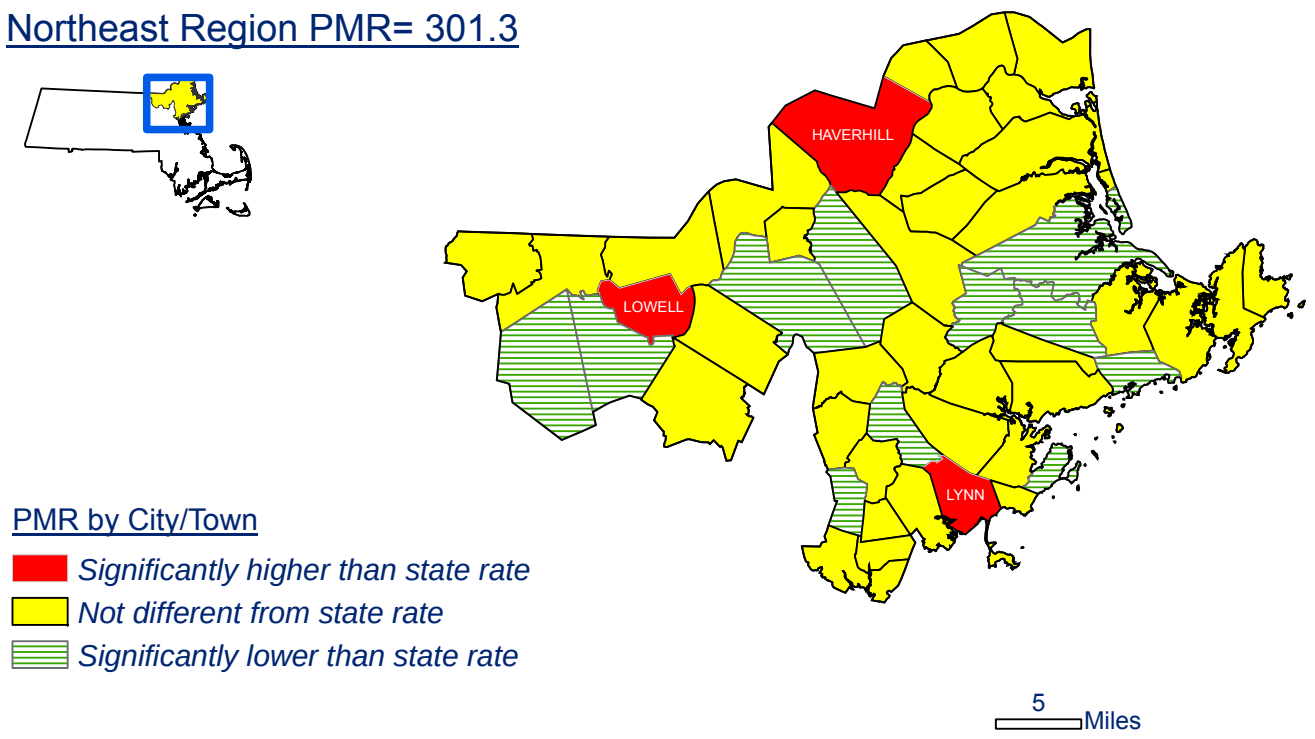


10 Miles

Rates are per 100,000 persons under 75 years of age, age-adjusted to the 2000 US standard population under 75 years of age.

Note: Premature Mortality Rates (PMR) for sub-state areas were calculated using MDPH population estimates for 2005, which are the most up-to-date information available on the number of persons by age, race, and sex at the sub-state level.

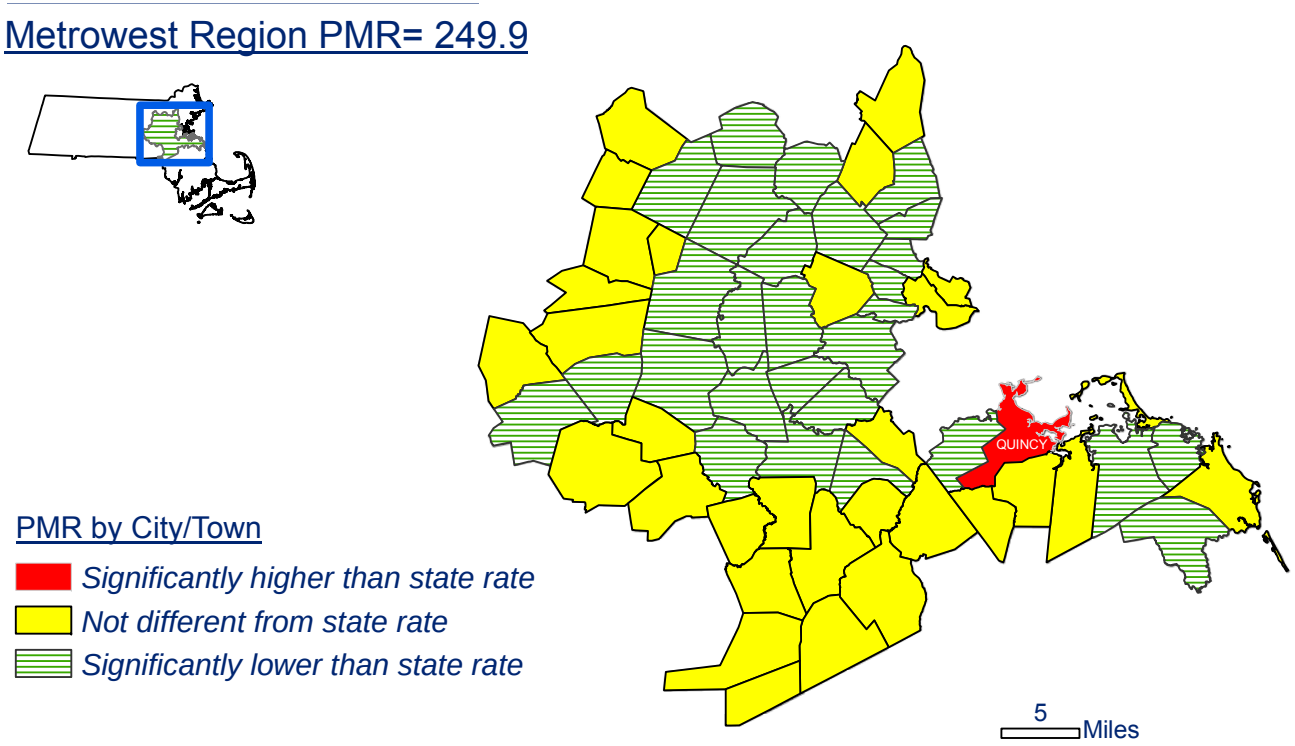
Map 5. Premature Mortality Rates (PMR), Northeast Region by City/Town: 2006



Rates are per 100,000 persons under 75 years of age, age-adjusted to the 2000 US standard population under 75 years of age.

Note: Premature Mortality Rates (PMR) for sub-state areas were calculated using MDPH population estimates for 2005, which are the most up-to-date information available on the number of persons by age, race, and sex at the sub-state level.

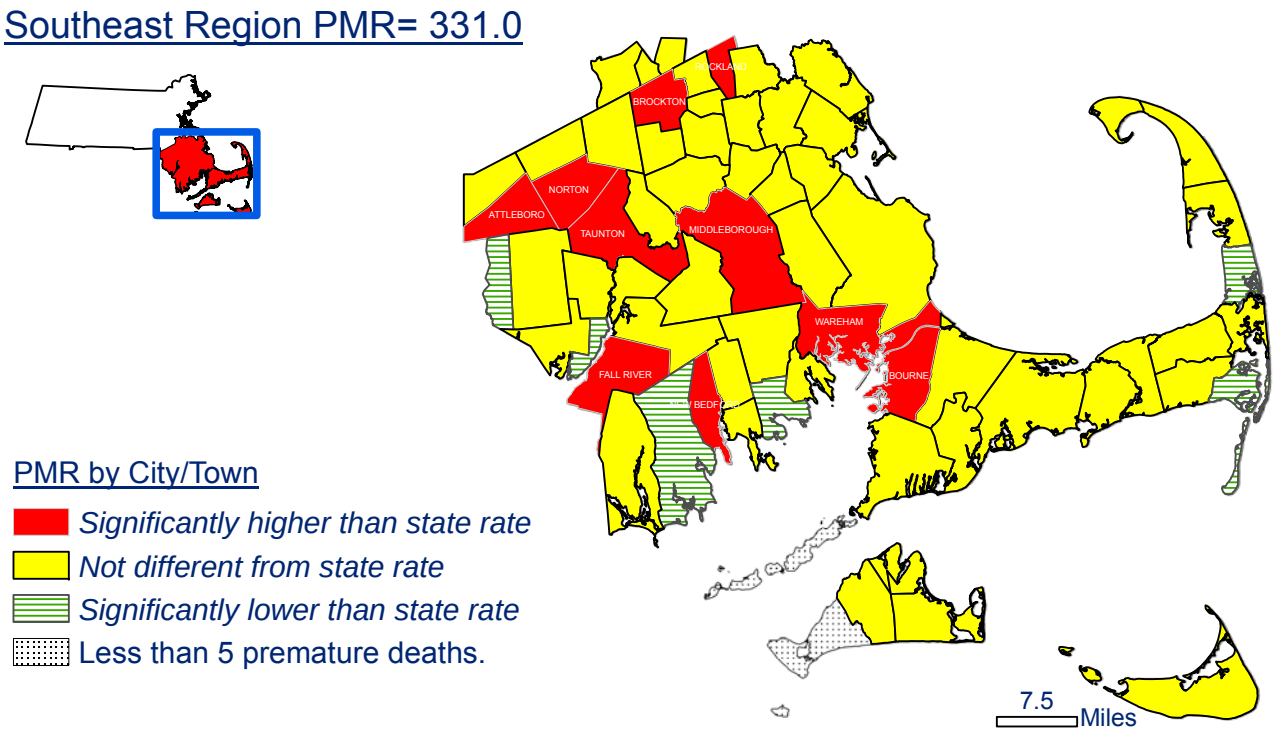
Map 6. Premature Mortality Rates (PMR), Metrowest Region by City/Town: 2006



Rates are per 100,000 persons under 75 years of age, age-adjusted to the 2000 US standard population under 75 years of age.

Note: Premature Mortality Rates (PMR) for sub-state areas were calculated using MDPH population estimates for 2005, which are the most up-to-date information available on the number of persons by age, race, and sex at the sub-state level.

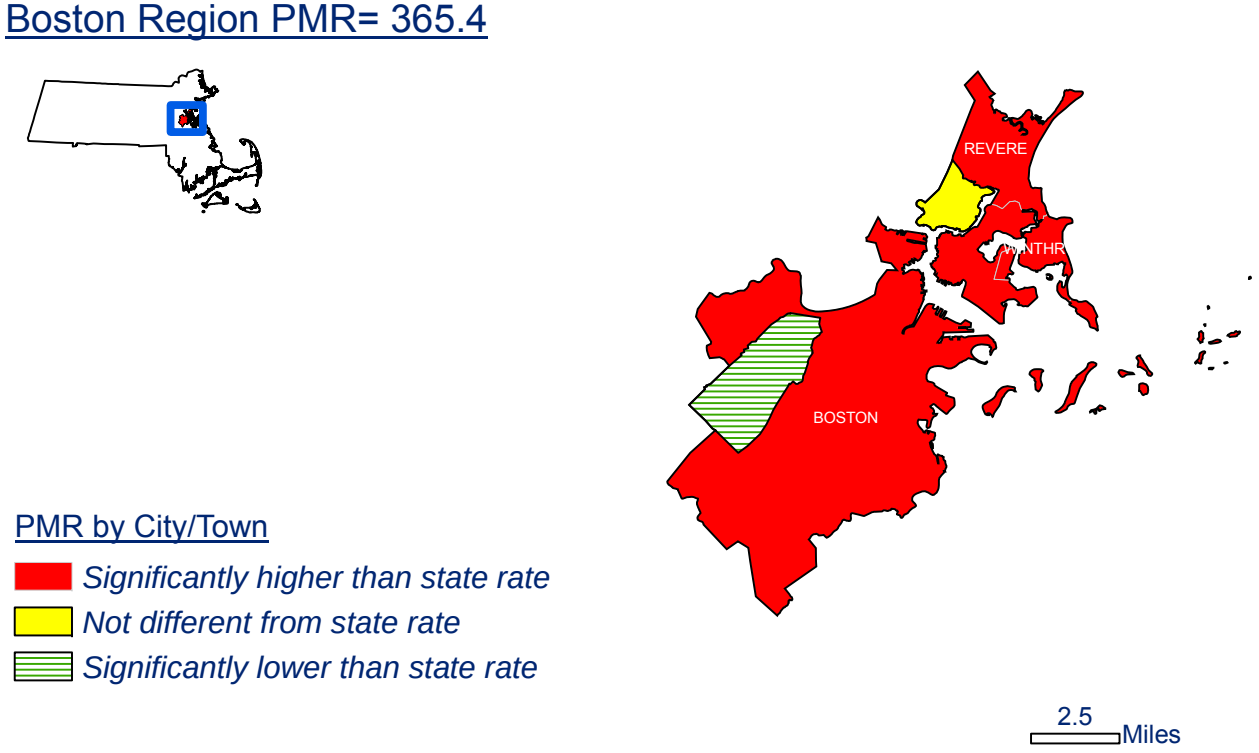
Map 7. Premature Mortality Rates (PMR), Southeast Region by City/Town: 2006



Rates are per 100,000 persons under 75 years of age, age-adjusted to the 2000 US standard population under 75 years of age.

Note: Premature Mortality Rates (PMR) for sub-state areas were calculated using MDPH population estimates for 2005, which are the most up-to-date information available on the number of persons by age, race, and sex at the sub-state level.

Map 8. Premature Mortality Rates (PMR), Boston Region by City/Town: 2006



Rates are per 100,000 persons under 75 years of age, age-adjusted to the 2000 US standard population under 75 years of age.

Note: Premature Mortality Rates (PMR) for sub-state areas were calculated using MDPH population estimates for 2005, which are the most up-to-date information available on the number of persons by age, race, and sex at the sub-state level.

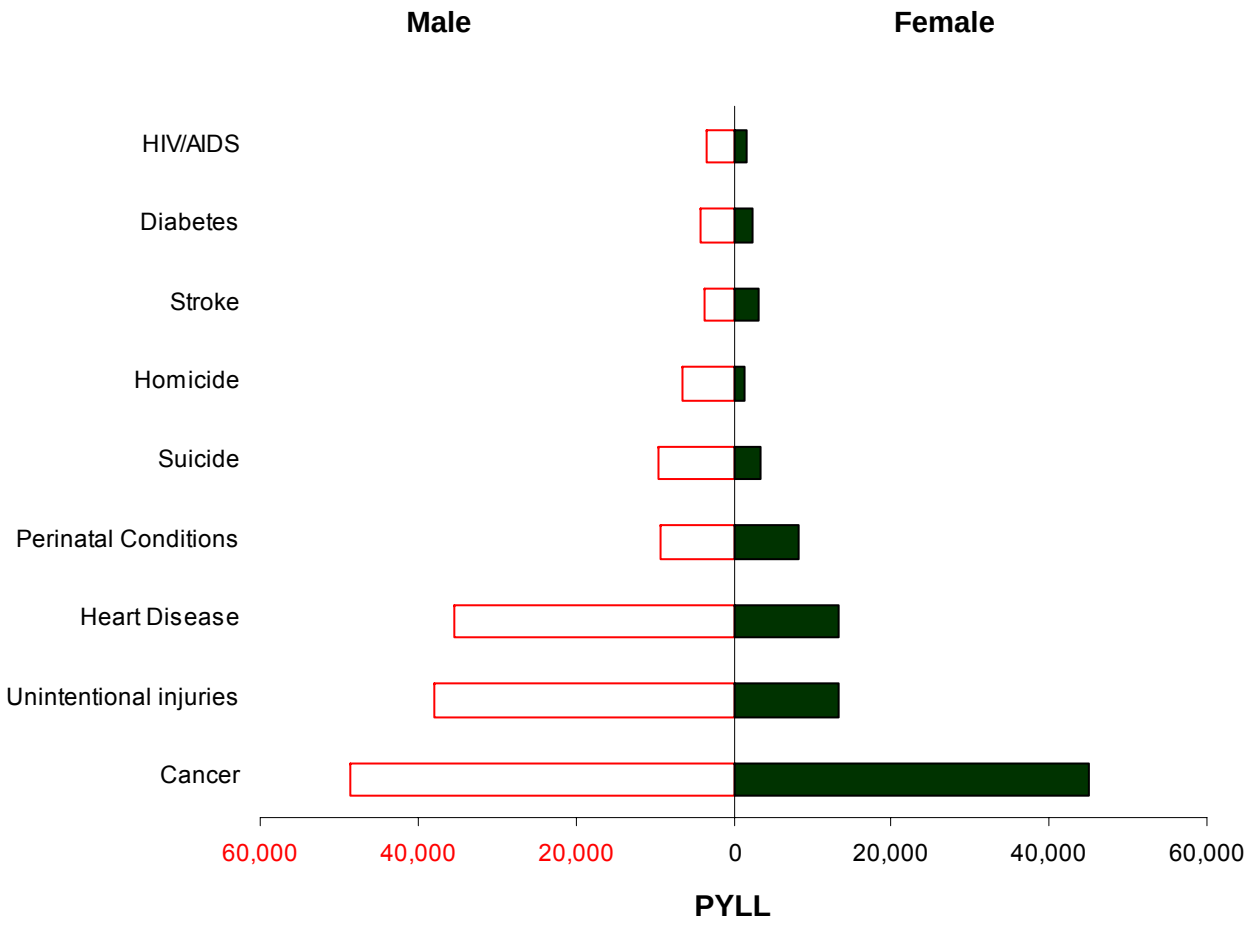
APPENDIX

Table 37. Rank by Potential Years of Life Lost (PYLL), Massachusetts: 2006

Cause	Total PYLL	Rank on PYLL	Average PYLL	# of Deaths before 75 years	Rank on Number of Deaths
All Causes	*346,597*		*18.1*	*19,149*	
Cancer	93,825	1	14.0	6,696	1
Unintentional injuries	51,345	2	33.0	1,554	5
Heart Disease	48,536	3	14.4	3,359	2
Perinatal Conditions	17,422	4	74.5	234	19
Suicide	13,437	5	31.8	423	14
Homicide	8,100	6	44.5	182	23
Stroke	6,877	7	12.9	534	3
Diabetes	6,577	8	14.2	463	9
HIV/AIDS	5,085	9	28.4	179	24
Alzheimer's Disease	759	10	7.7	98	7

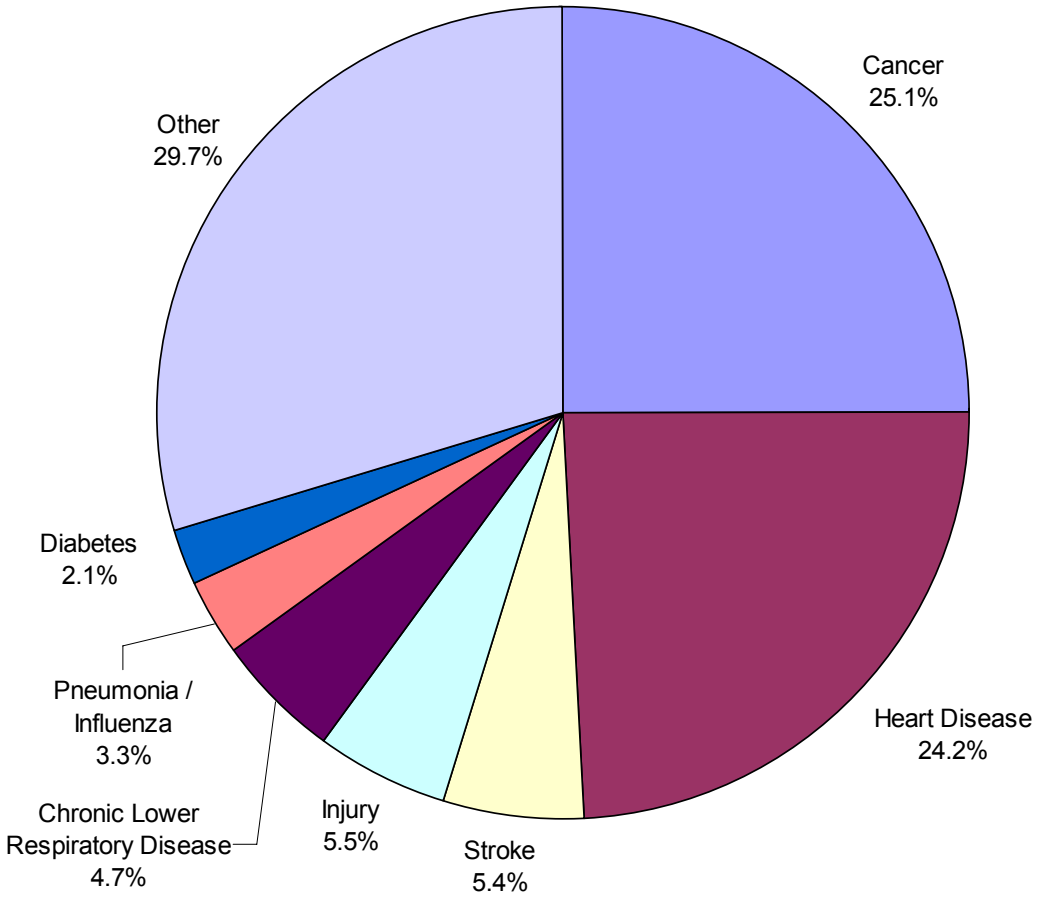
Note: Total potential years of life lost is calculated by multiplying the number of deaths for each group by the years of life lost (the difference between life expectancy and the midpoint of the age group, then adding the figures for all age groups).

Figure 18. Potential Years of Life Lost (PYLL) for Selected Causes by Gender, Massachusetts: 2006



Note: Total potential years of life lost is calculated by multiplying the number of deaths for each group by the years of life lost (the difference between life expectancy and the midpoint of the age group, then adding the figures for all age groups).

Figure 19. Percent Distribution of Leading Underlying Causes of Death[1], Massachusetts: 2006



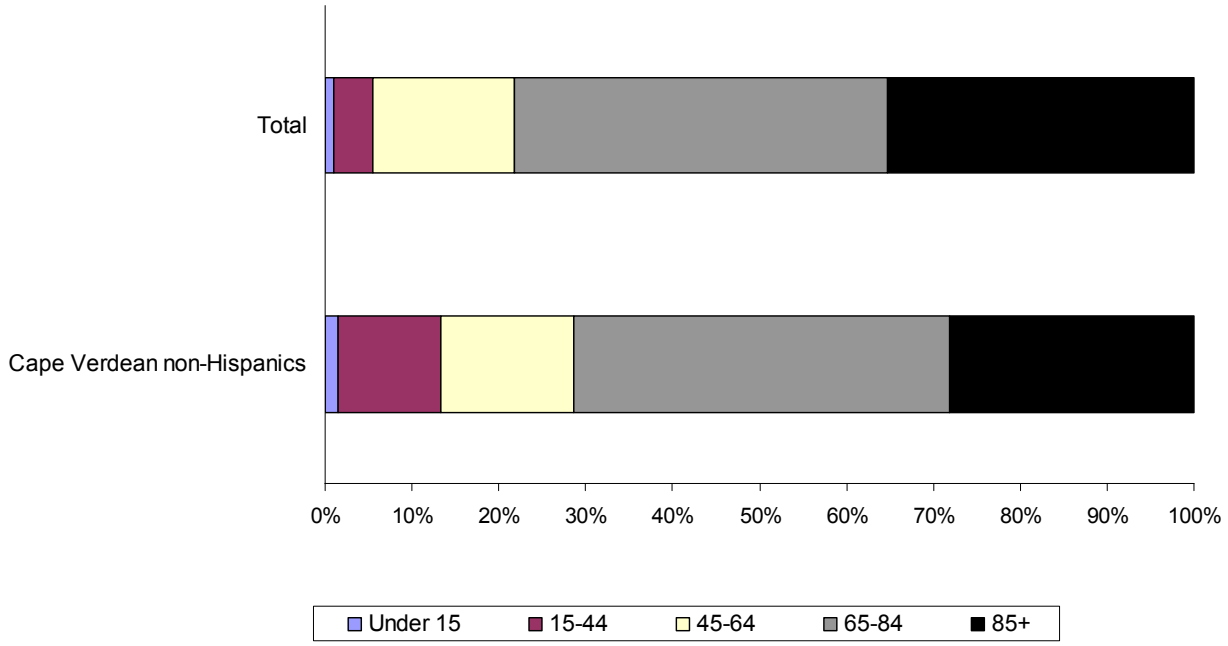
[1]Total Number of Deaths = 53,293
Causes of Death are classified according to ICD-10

Table 38. Leading Causes of Death[1] for Cape Verdean, non-Hispanics[2], Massachusetts: 2006

	Number	Percent
Heart disease	43	21.2
Cancer	39	19.2
Stroke	13	6.4
Alzheimer's disease	9	4.4
Chronic lower respiratory disease[3]	9	4.4
Nephritis	9	4.4
Unintentional injuries	9	4.4
Homicide	8	3.9
Diabetes	5	2.5
Other Causes	59	29.1
All Deaths	**203**	**100.0**

1. Deaths are coded according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2 Historically, MA DPH has followed federal definitions of race and ethnicity and has reported death rates for white, black, Asian races including persons of Hispanic origin; and Hispanic ethnicity. Furthermore, Cape Verdeans have been included with blacks, to be consistent with the National Center for Health Statistics. Starting with Deaths 1999, in all tables where data were classified by race and ethnicity, we presented mutually exclusive categories of white non-Hispanic; black non-Hispanic; Asian non-Hispanic; and Hispanic. Here, we separate Cape Verdeans from the Black non-Hispanic group. 3. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title).

Figure 20. Age Distribution of Deaths for Cape Verdean non-Hispanics* and State Total, Massachusetts: 2006



* Historically, MA DPH has followed federal definitions of race and ethnicity and has reported death rates for white, black, Asian races including persons of Hispanic origin; and Hispanic ethnicity. Furthermore, Cape Verdeans have been included with blacks, to be consistent with the National Center for Health Statistics. Starting with Deaths 1999, in all tables where data were classified by race and ethnicity, we presented mutually exclusive categories of white non-Hispanic; black non-Hispanic; Asian non-Hispanic; and Hispanic. Here, we separate Cape Verdeans from the Black non-Hispanic group.

Table 39. Number and Age-Specific Rates for Selected Causes of Death by Race and Hispanic Ethnicity, Massachusetts: 2006

Selected Causes[2]	Total		White non-Hispanic[1]		Black non-Hispanic[1]		Asian non-Hispanic[1]		Hispanic	
	#	Rate[3]	#	Rate	#	Rate	#	Rate	#	Rate
Age: 1-14, TOTAL	**124**	**11.2**	**79**	**9.6**	**14**	**15.0**	**8**	**13.4**	**21**	**16.2**
Unintentional Injuries[4]	32	2.9	18	2.2	8	8.6	3	--[5]	3	--[5]
Cancer	19	1.7	15	1.8	1	--[5]	2	--[5]	1	--[5]
Congenital malformations	7	0.6	5	0.6	1	--[5]	0	0.0	1	--[5]
Ill defined conditions	6	0.5	4	0.5	1	--[5]	0	0.0	1	--[5]
Age: 15-24, TOTAL	**471**	**52.6**	**327**	**48.2**	**82**	**117.0**	**9**	**18.0**	**50**	**52.8**
Unintentional Injuries[4]	206	23.0	168	24.8	18	25.7	0	0.0	20	21.1
Homicide	70	7.8	11	1.6	41	58.5	4	--[5]	12	12.7
Suicide	43	4.8	37	5.5	0	0.0	1	--[5]	5	5.3
Cancer	34	3.8	25	3.7	4	--[5]	1	--[5]	4	--[5]
Age: 25-44, TOTAL	**1,953**	**107.2**	**1,484**	**106.7**	**208**	**173.7**	**57**	**43.9**	**194**	**109.2**
Unintentional Injuries[4]	588	32.3	483	34.7	35	29.2	9	6.9	61	34.3
Cancer	323	17.7	248	17.8	27	22.6	24	18.5	20	11.3
Heart Disease	231	12.7	191	13.7	25	20.9	4	--[5]	10	5.6
Suicide	158	8.7	136	9.8	10	8.4	7	5.4	4	--[5]
Age: 45-64, TOTAL	**8,660**	**516.4**	**7,521**	**517.1**	**612**	**763.1**	**123**	**206.9**	**371**	**469.9**
Cancer	3,295	196.5	2,926	201.2	203	253.1	65	109.3	92	116.5
Heart Disease	1,587	94.6	1,407	96.7	97	121.0	20	33.6	55	69.7
Unintentional Injuries[4]	578	34.5	493	33.9	44	54.9	5	8.4	35	44.3
Chronic liver disease	272	16.2	241	16.6	13	16.2	0	0.0	16	20.3
Age: 65+, TOTAL	**41,716**	**4,873.6**	**39,501**	**5,031.6**	**1,242**	**4,350.9**	**428**	**2,154.9**	**495**	**2,343.6**
Heart Disease	11,050	1,290.9	10,546	1,343.3	278	973.9	89	448.1	126	596.6
Cancer	9,703	1,133.6	9,169	1,167.9	320	1,121.0	109	548.8	101	478.2
Stroke	2,626	306.8	2,436	310.3	100	350.3	49	246.7	36	170.4
Chronic Lower Respiratory Disease[6]	2,239	261.6	2,164	275.6	42	147.1	18	90.6	15	71.0

1. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include persons of Hispanic ethnicity in a race category. Please see the Technical Notes in the Appendix for a more detailed explanation. 2. Deaths are coded according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 3. Number of deaths per 100,000 persons in each age group. 4. Unintentional injuries include injuries such as motor vehicle-related and other transportation related deaths, falls, fires, and drownings that were not intended to occur. 5. Calculations based on values 1-4 are excluded. 6. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title).

Table 39 (cont). Number and Age-Specific Rates for Selected Causes of Death by Race and Hispanic Ethnicity, Massachusetts: 2006

	Total		White non-Hispanic[1]		Black non-Hispanic[1]		Asian non-Hispanic[1]		Hispanic	
Selected Causes[2]	**#**	**Rate[3]**	**#**	**Rate**	**#**	**Rate**	**#**	**Rate**	**#**	**Rate**
Age: 65-74, TOTAL	**7,572**	**1,848.3**	**6,887**	**1,874.0**	**361**	**2,195.7**	**114**	**946.1**	**197**	**1,520.4**
Cancer	3,024	738.1	2,803	762.7	124	754.2	43	356.8	53	409.0
Heart Disease	1,518	370.5	1,378	375.0	72	437.9	26	215.8	40	308.7
Chronic Lower Respiratory Disease[4]	491	119.8	468	127.3	10	60.8	6	49.8	7	54.0
Stroke	292	71.3	247	67.2	19	115.6	10	83.0	15	115.8
Age: 75-84, TOTAL	**15,333**	**4,958.0**	**14,492**	**5,031.5**	**469**	**5,249.6**	**176**	**2,963.0**	**169**	**2,859.6**
Cancer	4,189	1,354.5	3,983	1,382.9	124	1,388.0	45	757.6	34	575.3
Heart Disease	3,705	1,198.0	3,514	1,220.0	102	1,141.7	32	538.7	50	846.0
Stroke	972	314.3	895	310.7	41	458.9	22	370.4	10	169.2
Chronic Lower Respiratory Disease[4]	951	307.5	926	321.5	16	179.1	7	117.8	2	--[5]
Age: 85+, TOTAL	**18,811**	**13,728.5**	**18,122**	**13,991.0**	**412**	**12,992.7**	**138**	**7,371.8**	**129**	**5,723.2**
Heart Disease	5,827	4,252.6	5,654	4,365.1	104	3,279.7	31	1,656.0	36	1,597.2
Cancer	2,490	1,817.2	2,383	1,839.8	72	2,270.6	21	1,121.8	14	621.1
Stroke	1,362	994.0	1,294	999.0	40	1,261.4	17	908.1	11	488.0
Alzheimer's Disease	1,041	759.7	1,000	772.0	24	756.9	10	534.2	6	266.2

1. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include persons of Hispanic ethnicity in a race category. Please see the Technical Notes in the Appendix for a more detailed explanation. 2. Deaths are coded according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 3. Number of deaths per 100,000 persons in each age group. 4. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title). 5. Calculations based on values 1-4 are excluded.

Table 40. Number of Deaths for Leading Causes of Death[1] by Hispanic Ethnicity, Massachusetts: 2006

Ethnicity	Cancer	Heart Disease	Unintentional Injuries	Stroke	Diabetes	HIV/AIDS	Nephritis	Perinatal Conditions	Ill defined conditions	Homicide	**ALL DEATHS**
Puerto Rican	142	118	86	36	35	32	23	24	18	22	**810**
Dominican	31	21	19	5	7	3	2	6	5	5	**143**
Central American	13	16	16	3	1	0	7	4	3	2	**85**
South American	17	12	6	6	3	0	1	0	4	1	**69**
Cuban	9	18	0	5	3	2	2	0	1	0	**50**
Mexican	3	5	0	1	2	0	0	0	0	0	**23**
Other/Unknown	2	5	1	2	0	0	0	0	0	0	**11**
All Hispanics	**218**	**196**	**129**	**58**	**51**	**37**	**35**	**34**	**31**	**30**	**1,194**

[1] Ranking based on number of deaths. Underlying Cause of Death based on ICD-10 (Please see Appendix for a list of ICD-10 codes used).
[2] The title of this cause has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title).

Figure 21. Heart Disease Death Rates by Race/Ethnicity and Gender, Massachusetts: 1996-2006

(For 1996-1998 the comparability modified rates were used. Please see Table 10 footnotes for more details)

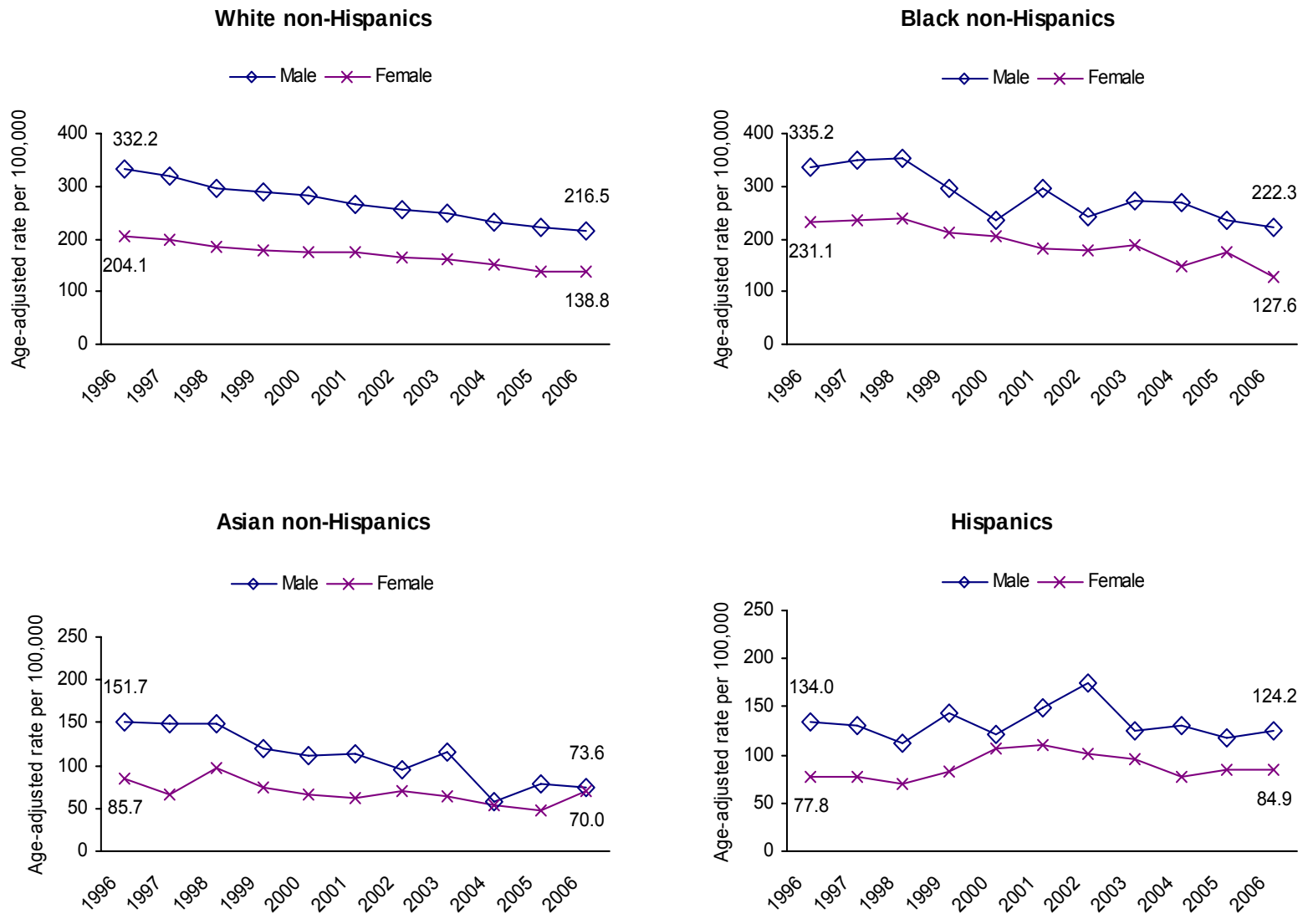


Figure 22. Cancer Death Rates by Race/Ethnicity and Gender, Massachusetts: 1996-2006

(For 1996-1998 the comparability modified rates were used. Please see Table 10 footnotes for more details)

Table 41. Underlying Cause of Death where Diabetes[1] is a Contributing Cause, Massachusetts: 2006

Underlying Cause of Death	Number	Proportion (%)
Cardiovascular Diseases	1,238	46.2
Heart Disease	1,008	37.6
Stroke	157	5.9
Cancer	454	16.9
Diseases of the respiratory system	293	10.9
CLRD	159	5.9
Influenza and pneumonia	78	2.9
Diseases of the digestive system	102	3.8
Diseases of the genitourinary system	115	4.3
Nephritis	81	3.0
Diseases of the nervous system and sense organs	145	5.4
Alzheimer's Disease	78	2.9
Parkinson's Disease	19	0.7
Infectious and parasitic diseases	83	3.1
HIV/AIDS	3	0.1
Injury and poisoning	41	1.5
Endocrine, nutritional and metabolic diseases and immunity disorders	33	1.2
Diseases of the musculoskeletal systems and connective tissue	15	0.6
Other	162	6.0
Total deaths where diabetes is ONLY a contributing cause	**2,681**	**100%**

[1] **ICD-10: E10-E14**

Table 42. Associated Causes of Death where Diabetes[1] is the Underlying Cause of Death, Massachusetts: 2006

Associated Causes of Death	Number	Proportion (%)
Cardiovascular Disease	524	46.5
Cardiovascular Disease and Diseases of the Genitourinary System	206	18.3
No Associated Causes	86	7.6
Diseases of the Genitourinary System	85	7.5
Other Associated Cause Combinations less than 10	70	6.2
Cardiovascular Disease and Diseases of the Respiratory System	68	6.0
Cardiovascular Disease, Diseases of the Respiratory System, and Diseases of the Genitourinary System	35	3.1
Cardiovascular Disease & Diseases of the Nervous System	19	1.7
Cancer and Cardiovascular Disease	18	1.6
Diseases of the Respiratory System	16	1.4
Total deaths where diabetes is the underlying cause of death	**1,127**	**100%**

[1] **ICD-10: E10-E14**

Figure 23. Distribution of Injury Deaths by Intent, Massachusetts: 2006

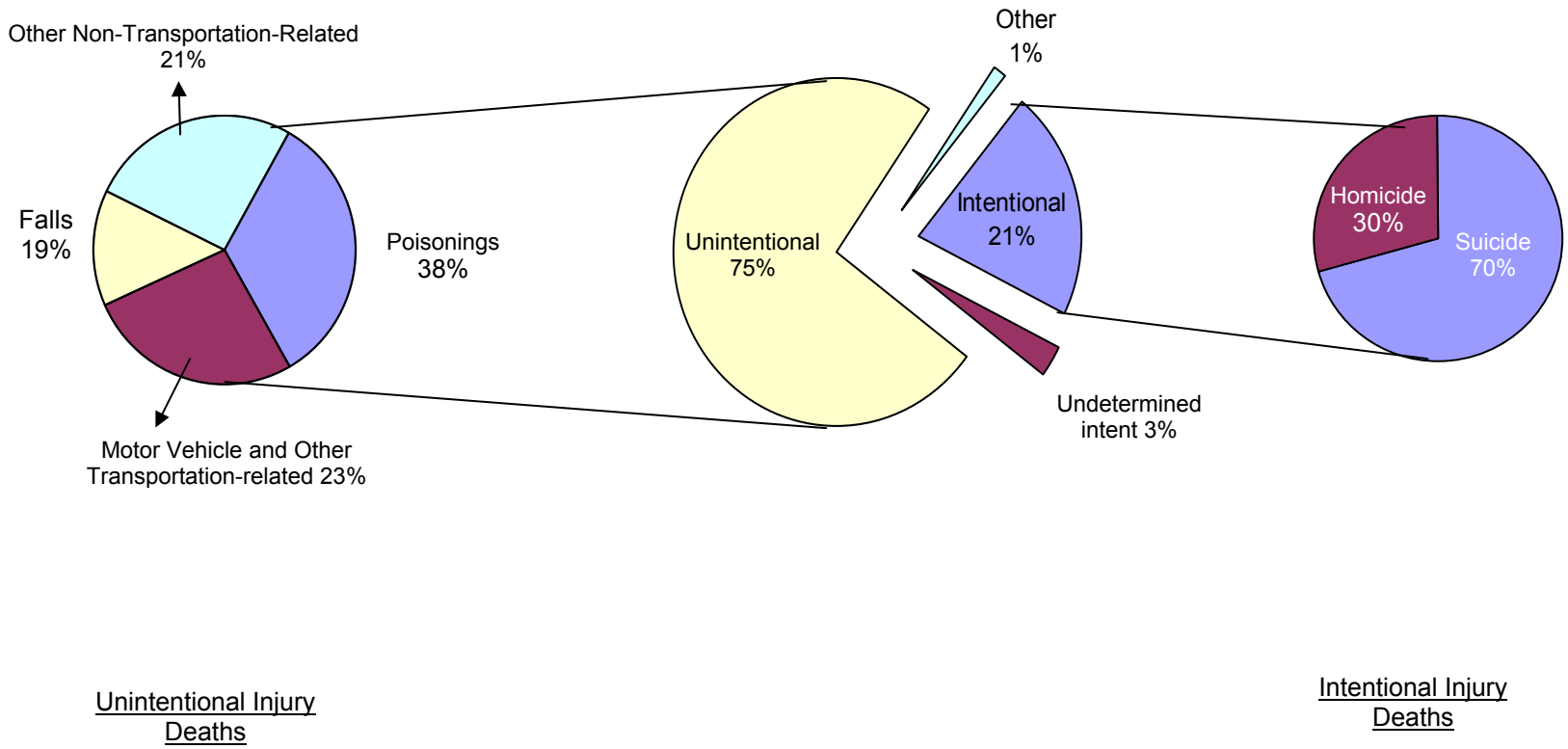


Table 43. HIV/AIDS[1] Deaths by Race, Hispanic Ethnicity, and Gender Persons Ages 25-44, Massachusetts: 1996- 2006

Year	White non-Hispanic[2]				Black non-Hispanic[2]				Hispanic			
TOTAL	#	Rate[3]	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate
	Comparability Unmodified		Comparability Modified[4]		Comparability Unmodified		Comparability Modified[4]		Comparability Unmodified		Comparability Modified[4]	
1996	251	14.2	267	15.1	113	121.1	120	128.8	85	75.4	90	80.2
1997	86	4.9	98	5.6	48	51.3	55	58.7	36	31.1	41	35.6
1998	68	3.9	78	4.5	38	40.7	44	46.6	47	39.8	54	45.6
1999	74[6]	4.4			32[6]	31.2			40[6]	30.5		
2000	60	3.7			28	23.8			40	27.6		
2001	70	4.4			35	29.3			31	20.3		
2002	42	2.7			24	20.1			35	22.1		
2003	63	4.1			19	15.8			25	15.1		
2004	38	2.6			17	14.0			31	18.0		
2005	29	2.0			22	18.2			19	10.7		
2006	35	2.5			17	14.2			23	12.9		
MALE												
1996	221	25.3	235	26.9	73	158.1	78	168.2	61	108.5	65	115.4
1997	71	8.1	81	9.3	30	64.6	34	74.0	28	48.5	32	55.5
1998	57	6.6	65	7.6	27	58.2	31	66.6	34	57.7	39	66.1
1999	54[6]	6.5			20[6]	39.9			30[6]	46.2		
2000	39	4.9			17	30.1			27	37.9		
2001	46	5.8			19	33.3			23	30.6		
2002	29	3.8			15	26.3			21	26.8		
2003	42	5.6			10	17.3			19	23.1		
2004	30	4.1			11	18.9			19	22.1		
2005	21	2.9			12	20.4			11	12.3		
2006	22	3.2			12	20.5			12	13.3		
FEMALE												
1996	30	3.4	32	3.6	40	84.9	43	90.3	24	42.4	26	45.1
1997	15	1.7	17	1.9	18	38.2	21	43.7	8	13.8	9	15.8
1998	11	1.3	13	1.5	11	23.4	13	26.8	13	22.0	15	25.2
1999	20[6]	2.3			12[6]	22.9			10[6]	15.1		
2000	21	2.5			11	17.9			13	17.6		
2001	24	2.9			16	25.7			8	10.3		
2002	13	1.6			9	14.4			14	17.4		
2003	21	2.7			9	14.4			6	7.2		
2004	8	1.1			6	9.6			12	13.9		
2005	8	1.1			10	16.0			8	9.0		
2006	13	1.8			5	8.2			11	12.5		

1. AIDS and HIV disease deaths for years 1994-1998 coded using ICD-9: 042-044; 1999–2005 deaths coded using ICD-10: B20-B24. Please see Appendix for comparability ratios. 2. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include persons of Hispanic ethnicity in a race category. Please see the Technical Notes in the Appendix for a more detailed explanation. 3. Number of deaths per 100,000 residents in the specified population group. 4. Comparability Modified (CM) number and rate based on preliminary comparability ratios (CR) from NCHS (June 2001). CM data for 1994-1996 use 1996 based CR; CM data for 1997-1998 use revised 1998 based CR. Please see Appendix for detailed explanation. 5. NA = not applicable. 6. When comparing data over time after 1994, please use comparability modified data for years 1994-1998. Resident death data for 2000-2005 are calculated using the Massachusetts (Department of Public Health) Modified Age, Race/Ethnicity, & Sex Estimates 2000-2005 (MMARS00-05), released October 2006. For data for 2006, use the NCHS population estimates for 2006 by age, sex, race, and Hispanic origin.

Table 44. Premature Mortality Rates by Community Health Network Area (CHNA), Massachusetts: 2006

CHNA (Name and Number)	Number of Deaths	PMR* (per 100,000 population)
Massachusetts	**19,149**	**300.5**
Community Health Network of Berkshire (1)	483	330.8
Upper Valley Health Web (Franklin County) (2)	297	334.2
Partnership for Health in Hampshire County (Northampton) (3)	386	285.7
The Community Health Connection (Springfield) (4)	1,043	370.7
Community Health Network of Southern Worcester County (5)	393	354.9
Community Partners for Health (Milford) (6)	377	277.1
Community Health Network of Greater Metro West (Framingham) (7)	901	250.0
Community Wellness Coalition (Worcester) (8)	929	339.0
Fitchburg/Gardner Community Health Network (9)	776	324.5
Greater Lowell Community Health Network (10)	809	333.4
Greater Lawrence Community Health Network (11)	475	285.6
Greater Haverhill Community Health Network (12)	464	328.1
Community Health Network North (Beverly/Gloucester) (13)	316	248.8
North Shore Community Health Network (14)	892	303.5
Greater Woburn/Concord/Littleton Community Health Network (15)	485	217.8
North Suburban Health Alliance (Medford/Malden/Melrose) (16)	770	294.5
Greater Cambridge/Somerville Community Health Network (17)	616	255.7
West Suburban Health Network (Newton/Waltham) (18)	537	208.2
Alliance for Community Health (Boston/Chelsea/Revere/Winthrop) (19)	2,192	365.4
Blue Hills Community Health Alliance (Greater Quincy) (20)	1,177	297.3
Four (For) Communities (Holyoke, Chicopee, Ludlow, Westfield) (21)	574	367.5
Greater Brockton Community Health Network (22)	789	349.2
South Shore Community Partners in Prevention (Plymouth) (23)	566	313.0
Greater Attleboro-Taunton Health & Education Response (24)	775	347.1
Partners for a Healthier Community (Fall River) (25)	541	378.4
Greater New Bedford Health & Human Services Coalition (26)	702	351.0
Cape Cod & Islands Community Health Network (27)	884	295.1

*Rates are age-adjusted to the 2000 U.S. Standard Population for person ages 0-74 years.

Table 45. Premature Mortality Rates by County, Massachusetts: 2006

County	Number of Deaths	PMR* (per 100,000 population)
Massachusetts	**19,149**	**300.5**
Barnstable	814	299.4
Berkshire	483	330.8
Bristol	1,815	348.9
Dukes	46	262.7
Essex	2,147	294.4
Franklin	246	337.8
Hampden	1,642	370.5
Hampshire	391	285.4
Middlesex	3,698	262.4
Nantucket	24	259.0
Norfolk	1,842	277.7
Plymouth	1,583	327.6
Suffolk	2,106	383.7
Worcester	2,312	322.8

*Rates are age-adjusted to the 2000 U.S. Standard Population for person ages 0-74 years.

Table 46. Selected Causes of Death by Community, Massachusetts: 2006

CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	All Narcotics, sychodysleptics hallucinogens[5]
Massachusetts	**53,293**	**717.6**	**12,891**	**13,375**	**3,717**	**962**	**2,868**	**2,529**	**1,127**	**1,748**	**475**	**183**	**437**	**628**
Abington	133	732.3	31	29	5	5	8	7	3	3	0	0	0	3
Acton	116	774.1	20	33	7	5	8	2	1	5	0	0	1	0
Acushnet	77	634.9	22	19	4	1	4	8	1	3	3	1	0	0
Adams	106	769.5	31	20	5	1	3	4	2	7	1	0	0	0
Agawam	328	727.6	60	90	22	9	14	18	9	10	0	0	4	3
Alford	3	--[4]	1	1	0	0	0	0	0	0	0	0	0	0
Amesbury	126	697.1	21	37	10	4	6	4	8	5	1	0	2	3
Amherst	122	570.0	27	30	5	3	12	3	4	3	2	0	1	0
Andover	240	649.1	68	57	7	8	13	8	2	7	1	0	4	1
Aquinnah	4	--[4]	3	1	1	0	0	0	0	0	0	0	0	0
Arlington	389	629.2	86	101	25	8	20	9	3	8	2	0	5	5
Ashburnham	34	798.8	9	13	2	0	1	1	0	0	0	0	1	1
Ashby	19	889.7	2	4	0	1	1	0	0	1	1	0	0	0
Ashfield	8	394.5	1	5	2	0	1	0	0	0	0	0	0	0
Ashland	99	857.8	24	37	8	3	6	4	2	4	1	0	1	1
Athol	133	761.9	43	34	11	1	8	3	1	5	0	0	1	0
Attleboro	382	811.1	99	91	27	4	16	19	7	15	6	1	3	2
Auburn	166	694.6	45	48	10	5	3	13	1	3	0	0	0	1
Avon	43	803.5	10	10	4	0	3	4	0	1	0	0	1	2
Ayer	62	818.2	7	17	5	3	4	2	1	2	2	0	1	1
Barnstable	485	636.5	89	143	43	13	20	31	14	10	9	0	6	4
Barre	40	692.9	12	8	4	1	1	2	1	1	1	0	1	1
Becket	12	623.8	1	8	5	0	0	0	0	0	0	0	0	0
Bedford	128	588.7	27	28	11	4	9	5	4	5	2	0	0	1
Belchertown	74	667.3	21	17	7	1	4	1	3	2	2	0	1	0
Bellingham	106	881.3	21	33	7	3	6	7	2	1	2	0	1	1
Belmont	183	502.0	53	45	6	2	21	0	3	11	1	0	1	0
Berkley	28	751.5	8	3	0	0	1	2	1	2	3	0	0	1
Berlin	18	668.4	4	7	3	0	2	1	0	1	0	0	0	0
Bernardston	17	557.7	3	3	0	0	1	0	0	0	0	0	0	0
Beverly	393	711.6	94	99	33	4	26	20	6	16	1	0	5	4
Billerica	236	845.9	54	77	23	4	3	11	6	8	2	0	1	4
Blackstone	50	636.8	16	11	2	0	1	0	1	2	0	0	2	0
Blandford	5	563.2	2	3	0	0	0	0	0	0	0	0	0	0
Bolton	18	842.1	2	10	4	0	0	0	0	0	0	0	0	0
Boston	3,864	740.3	813	944	255	78	209	139	98	105	29	59	31	93

Table 46. Selected Causes of Death by Community, Massachusetts: 2006 (continued)

CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	All Narcotics, psychodysleptic hallucinogens[5]
Bourne	253	946.9	80	74	27	1	10	8	3	3	0	1	0	1
Boxborough	18	744.0	1	7	1	2	1	1	0	0	1	0	0	0
Boxford	50	784.9	15	16	3	4	2	1	2	1	1	1	1	0
Boylston	25	630.6	5	8	0	1	1	1	1	1	0	0	0	0
Braintree	336	657.8	85	84	33	3	18	17	10	10	0	1	6	4
Brewster	153	627.2	41	34	13	0	15	7	1	9	2	0	0	2
Bridgewater	143	751.6	46	33	7	4	10	6	1	7	1	0	4	0
Brimfield	42	1,150.1	16	10	4	1	1	4	0	0	2	0	0	0
Brockton	822	866.2	214	191	47	12	41	38	20	30	8	11	5	13
Brookfield	34	1,041.9	13	9	5	1	3	3	1	1	0	0	1	0
Brookline	324	479.5	75	84	20	6	15	9	8	15	1	1	3	2
Buckland	13	639.5	3	4	1	1	1	1	0	0	0	0	0	0
Burlington	177	800.0	33	53	16	5	9	9	1	4	2	0	3	0
Cambridge	549	647.6	125	134	28	9	32	23	15	25	3	3	9	7
Canton	200	602.6	37	57	13	2	11	11	3	6	1	0	1	2
Carlisle	16	608.0	1	5	2	0	1	0	0	1	1	0	0	0
Carver	109	818.7	32	36	12	0	3	1	0	4	5	0	1	1
Charlemont	11	787.5	3	3	1	1	1	0	0	1	0	0	1	0
Charlton	78	870.4	24	18	8	1	4	3	2	1	1	0	0	1
Chatham	103	482.8	26	30	5	4	7	5	3	4	0	0	0	0
Chelmsford	293	778.2	66	77	18	11	10	9	5	14	2	1	3	1
Chelsea	262	805.9	74	55	8	2	17	16	10	6	1	3	1	2
Cheshire	25	644.4	4	7	1	0	3	2	2	1	0	0	0	0
Chester	12	1,022.7	3	2	1	1	1	1	0	0	0	0	0	0
Chesterfield	6	476.2	1	2	1	1	0	0	0	0	0	0	0	0
Chicopee	610	820.0	169	157	56	11	28	36	15	22	2	1	7	6
Chilmark	9	571.7	1	2	0	0	0	0	0	0	0	0	0	0
Clarksburg	13	697.9	3	2	0	0	1	2	0	1	0	0	0	0
Clinton	115	664.8	18	29	8	1	5	5	5	5	4	0	1	5
Cohasset	61	667.1	11	22	7	1	3	2	1	3	0	0	0	0
Colrain	13	700.7	3	4	0	0	0	0	0	2	0	0	0	0
Concord	175	686.7	35	47	9	7	8	6	3	8	1	0	0	0
Conway	6	385.6	3	1	0	0	1	0	0	0	0	0	0	0
Cummington	5	516.0	1	1	0	0	0	0	0	2	0	0	0	0
Dalton	81	884.2	14	23	7	2	5	5	2	2	1	0	1	0
Danvers	306	789.6	77	64	18	1	16	15	4	18	0	1	1	5
Dartmouth	273	666.0	76	79	19	3	16	15	3	6	3	0	2	2

Table 46. Selected Causes of Death by Community, Massachusetts: 2006 (continued)

CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	All Narcotics, psychodysleptic hallucinogens[5]
Dedham	242	727.1	73	50	11	8	18	16	3	5	0	0	1	5
Deerfield	47	846.0	9	11	0	2	2	5	1	1	1	0	0	0
Dennis	202	644.6	54	56	18	5	15	9	5	4	0	0	0	3
Dighton	48	661.5	12	14	6	0	3	2	0	4	2	0	0	0
Douglas	42	718.1	13	10	2	1	3	2	0	2	1	0	0	1
Dover	22	483.2	5	7	1	0	0	1	0	1	1	0	1	0
Dracut	219	876.2	55	67	20	8	11	11	3	7	1	1	1	3
Dudley	85	747.5	25	24	11	0	3	5	2	2	0	0	0	1
Dunstable	10	546.5	1	5	0	0	0	0	1	0	0	0	0	0
Duxbury	143	803.4	41	33	10	1	7	13	2	6	1	0	1	1
East Bridgewater	105	852.8	29	34	10	2	5	7	3	4	1	0	0	1
East Brookfield	16	653.8	2	5	2	0	1	2	0	0	1	0	1	1
East Longmeadow	187	756.8	50	32	3	4	10	10	1	4	3	0	0	1
Eastham	54	560.1	5	22	4	2	4	3	2	0	0	0	0	1
Easthampton	144	699.8	31	27	8	2	12	8	1	3	3	0	0	2
Easton	147	819.8	30	44	14	2	6	10	6	6	1	0	0	1
Edgartown	27	689.6	6	11	3	2	0	1	1	0	0	0	1	1
Egremont	11	566.9	4	3	1	1	0	0	1	0	0	0	0	0
Erving	11	594.4	1	5	1	0	0	1	0	0	0	0	0	0
Essex	19	513.3	3	6	1	1	1	0	1	0	0	0	0	0
Everett	330	743.7	80	84	25	6	16	15	9	5	1	0	3	5
Fairhaven	202	714.3	62	42	12	2	9	10	3	7	2	1	0	4
Fall River	1,030	823.3	288	225	57	14	58	46	29	32	10	1	9	19
Falmouth	393	654.7	95	104	26	4	25	29	7	4	2	1	2	4
Fitchburg	342	733.3	74	89	23	8	20	14	14	14	1	1	2	8
Florida	7	1,369.3	2	2	2	0	0	1	0	0	0	0	0	0
Foxborough	109	696.9	26	32	4	4	5	3	3	2	2	0	1	3
Framingham	566	725.4	142	113	25	11	33	26	11	28	5	3	4	5
Franklin	158	717.2	37	45	8	5	7	8	2	2	4	0	0	2
Freetown	57	815.7	13	16	4	2	4	1	1	1	2	0	1	0
Gardner	219	816.1	44	57	22	6	15	10	5	12	4	1	4	3
Georgetown	54	786.0	13	16	4	1	3	3	2	0	0	0	0	0
Gill	45	2,663.4	13	8	3	1	3	5	1	2	0	0	0	0
Gloucester	269	672.0	63	60	19	5	15	18	5	2	1	0	0	5
Goshen	8	807.4	3	1	0	0	1	1	0	0	0	0	0	0

Table 46. Selected Causes of Death by Community, Massachusetts: 2006 (continued)

CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	All Narcotics, Psychodyslepticcs, hallucinogens[5]
Gosnold	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Grafton	105	713.8	20	36	14	2	3	7	1	2	0	0	2	0
Granby	37	602.2	11	8	1	3	1	3	0	0	0	0	0	0
Granville	9	677.3	2	2	0	1	2	2	0	0	0	0	0	0
Great Barrington	109	853.0	32	19	5	3	8	7	4	2	3	0	1	1
Greenfield	197	690.2	40	35	9	1	12	8	1	10	1	0	2	2
Groton	54	813.6	10	19	3	2	0	2	1	0	1	0	1	0
Groveland	40	756.1	9	14	10	1	2	3	1	0	1	0	0	0
Hadley	84	913.8	21	13	1	1	2	5	2	1	1	0	1	0
Halifax	57	687.4	15	18	8	0	2	4	3	2	0	0	0	0
Hamilton	37	541.5	9	16	2	1	0	1	0	2	0	0	0	0
Hampden	58	871.4	20	8	2	0	7	2	2	3	1	0	0	1
Hancock	2	--[4]	0	0	0	0	0	0	0	0	0	0	0	0
Hanover	95	762.7	21	23	5	2	5	6	1	2	0	0	1	2
Hanson	59	866.7	20	12	5	1	3	2	1	0	1	0	1	0
Hardwick	21	692.8	5	8	3	0	2	0	0	0	1	0	0	0
Harvard	41	909.6	8	10	1	2	0	0	0	2	1	0	1	0
Harwich	195	633.2	36	58	15	4	10	14	5	6	1	0	3	1
Hatfield	50	1,041.3	16	17	6	0	2	2	1	2	0	0	0	0
Haverhill	553	795.7	141	128	40	13	25	32	12	19	4	0	5	8
Hawley	2	--[4]	0	1	0	0	1	0	0	0	0	0	0	0
Heath	6	1,067.0	1	3	1	0	0	0	0	0	0	0	0	0
Hingham	205	762.3	65	55	10	6	12	9	6	7	1	0	0	2
Hinsdale	19	1,327.3	3	5	1	2	0	3	1	0	0	0	0	0
Holbrook	99	787.9	21	22	6	2	10	3	1	4	1	0	0	0
Holden	112	557.5	19	25	7	1	15	5	1	5	1	0	0	0
Holland	12	697.9	5	1	1	0	1	0	2	0	0	0	0	0
Holliston	76	771.3	20	23	2	4	3	4	3	1	0	0	1	0
Holyoke	492	898.3	134	86	25	2	27	29	11	18	4	4	1	1
Hopedale	46	551.7	11	11	4	1	2	1	1	0	0	0	0	0
Hopkinton	63	666.5	15	16	3	2	5	4	2	2	3	2	1	0
Hubbardston	19	808.7	3	5	1	0	0	0	0	0	0	0	0	1
Hudson	106	585.4	34	29	9	2	6	5	3	4	0	0	0	0
Hull	88	803.4	24	27	7	2	5	4	0	1	0	1	0	3

Table 46. Selected Causes of Death by Community, Massachusetts: 2006 (continued)

CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	All Narcotics, psychodysleptic hallucinogens[5]
Huntington	12	602.5	7	3	1	0	0	0	0	1	0	0	0	0
Ipswich	107	583.2	23	34	3	5	3	4	2	9	0	0	0	0
Kingston	127	776.7	33	23	8	2	4	9	0	8	1	0	0	0
Lakeville	67	590.1	14	16	2	3	8	0	2	1	3	0	0	1
Lancaster	49	740.1	13	11	3	1	4	1	1	2	0	0	0	0
Lanesborough	10	351.4	1	0	0	0	1	1	0	1	0	0	0	0
Lawrence	432	650.3	95	113	29	4	13	12	19	17	6	5	3	9
Lee	63	789.9	14	16	4	1	0	3	2	2	1	0	1	0
Leicester	106	911.9	28	29	9	2	7	9	3	3	0	0	1	1
Lenox	85	576.5	30	16	2	0	6	3	0	2	0	0	0	0
Leominster	378	809.8	80	98	28	6	36	18	13	6	6	0	2	3
Leverett	7	427.8	2	2	1	0	1	0	0	0	0	0	0	0
Lexington	236	465.2	54	52	8	1	17	14	4	6	2	0	1	0
Leyden	4	--[4]	0	1	0	0	1	0	0	0	0	0	0	0
Lincoln	34	524.1	5	7	1	0	6	2	0	1	0	0	0	0
Littleton	63	671.2	12	21	7	2	5	3	0	0	2	0	0	0
Longmeadow	162	592.1	34	34	6	1	10	3	2	9	1	0	3	0
Lowell	881	924.3	200	200	64	12	41	42	11	40	11	12	3	13
Ludlow	174	704.9	47	46	15	2	9	6	3	5	3	0	2	0
Lunenburg	77	770.8	17	19	7	0	4	9	1	1	0	0	1	1
Lynn	708	770.5	173	165	49	13	39	33	23	21	9	2	7	20
Lynnfield	81	521.4	24	23	9	1	5	4	1	1	0	0	1	0
Malden	406	632.1	96	111	41	2	15	15	8	16	1	0	3	8
Manchester	33	461.2	6	10	3	1	1	5	0	0	0	0	0	0
Mansfield	94	697.5	21	23	8	1	5	2	4	5	0	0	1	1
Marblehead	137	500.3	36	44	9	0	8	8	1	3	0	0	0	0
Marion	59	703.1	23	16	6	0	5	3	1	0	2	0	0	0
Marlborough	273	689.3	83	62	14	4	18	9	4	13	0	1	1	2
Marshfield	160	795.7	43	48	14	2	9	4	2	5	2	0	3	1
Mashpee	118	627.9	19	38	9	1	9	8	1	5	2	0	3	0
Mattapoisett	47	507.1	17	9	1	0	6	0	0	1	0	0	0	0
Maynard	63	541.6	11	16	5	2	3	7	3	0	0	0	1	1
Medfield	67	699.3	14	24	5	2	2	1	2	2	0	0	1	0
Medford	538	686.8	120	145	44	10	29	25	14	29	1	1	2	8
Medway	77	722.4	12	18	4	0	5	8	1	0	1	0	0	0
Melrose	268	675.9	77	63	12	6	7	12	3	9	1	0	2	4
Mendon	26	640.1	5	5	2	0	2	1	0	0	0	1	2	1

Table 46. Selected Causes of Death by Community, Massachusetts: 2006 (continued)

CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	All Narcotics, psychodysleptic hallucinogens[5]
Merrimac	42	719.6	13	12	3	2	1	2	0	2	0	0	0	0
Methuen	364	638.6	112	82	20	8	17	19	13	14	2	1	3	3
Middleborough	193	943.4	48	58	17	3	3	6	6	6	2	1	3	2
Middlefield	3	--[4]	2	0	0	0	0	0	0	0	0	0	0	0
Middleton	61	850.8	19	18	9	1	4	3	0	0	2	0	0	1
Milford	198	614.0	62	48	16	2	10	6	5	5	4	1	2	2
Millbury	143	763.8	31	28	9	2	4	9	1	8	2	0	0	0
Millis	53	909.7	19	15	6	3	2	4	1	0	0	0	1	0
Millville	18	961.7	7	4	4	0	2	0	0	1	0	0	1	0
Milton	221	590.7	53	61	9	6	19	8	5	5	3	1	2	0
Monroe	5	3,880.2	2	1	1	0	0	0	0	0	1	0	0	0
Monson	67	835.3	13	19	10	1	1	5	2	1	1	0	0	1
Montague	60	552.5	12	15	2	3	3	4	3	3	0	1	0	2
Monterey	5	779.8	1	2	2	0	2	0	0	0	0	0	0	0
Montgomery	5	807.3	1	1	1	0	0	0	0	0	0	0	0	0
Mount Washington	1	--[4]	0	1	0	0	0	0	0	0	0	0	0	0
Nahant	45	725.7	7	11	4	0	4	1	1	3	0	0	1	1
Nantucket	62	725.2	15	14	3	3	4	5	1	2	0	0	2	0
Natick	235	588.1	57	62	14	4	10	9	3	13	1	0	2	2
Needham	297	590.7	70	69	20	6	25	16	4	12	7	0	2	0
New Ashford	1	--[4]	0	0	0	0	0	0	0	0	0	0	0	0
New Bedford	928	769.3	254	198	52	14	37	34	13	39	10	5	6	27
New Braintree	3	395.5	2	0	0	0	0	0	0	0	0	0	0	0
New Marlborough	12	647.4	1	7	2	0	0	0	1	1	2	0	0	0
New Salem	9	945.1	0	3	1	0	1	0	0	1	0	0	0	0
Newbury	39	600.6	6	11	6	0	0	1	1	1	0	0	0	1
Newburyport	176	763.2	42	37	11	2	8	9	2	13	0	1	1	0
Newton	599	506.4	141	186	47	12	36	20	7	19	4	0	3	3
Norfolk	56	1,117.8	13	15	2	1	2	2	1	4	1	0	0	1
North Adams	191	891.6	41	39	14	5	7	10	5	12	2	0	2	1
North Andover	219	580.8	66	49	13	7	11	13	7	2	3	0	1	1
North Attleboro	195	818.5	41	54	16	6	5	13	5	4	2	1	0	4
North Brookfield	22	439.6	7	5	1	0	0	2	0	0	0	1	1	0

Table 46. Selected Causes of Death by Community, Massachusetts: 2006 (continued)

CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	All Narcotics, psychodysleptic hallucinogens[5]
North Reading	101	863.9	19	31	9	2	7	2	1	4	1	0	0	1
Northampton	286	757.3	51	67	18	1	11	18	8	9	0	0	0	3
Northborough	104	924.7	21	28	6	2	8	4	0	7	0	0	2	2
Northbridge	129	675.7	29	33	15	1	8	4	2	5	1	0	1	1
Northfield	20	533.4	4	6	1	0	2	1	0	1	1	0	1	0
Norton	129	874.2	43	29	12	1	4	8	2	7	0	0	2	3
Norwell	79	611.6	14	23	6	1	5	8	2	3	0	0	0	1
Norwood	288	683.3	65	69	17	6	18	14	8	6	1	0	1	2
Oak Bluffs	44	945.2	14	7	2	0	3	2	0	1	0	0	0	0
Oakham	10	787.7	3	2	1	0	1	0	0	0	0	0	0	1
Orange	73	822.2	20	9	3	0	3	7	0	1	0	0	1	1
Orleans	97	520.5	28	27	9	3	5	3	0	2	0	0	1	1
Otis	11	713.0	3	6	0	0	0	0	0	0	0	0	0	0
Oxford	123	989.7	29	33	11	1	7	5	0	3	0	0	0	1
Palmer	139	794.8	41	23	6	0	9	3	3	12	0	0	0	2
Paxton	27	547.1	6	5	4	0	4	1	2	0	0	0	0	0
Peabody	619	858.3	153	167	36	10	36	34	11	25	4	2	13	4
Pelham	10	948.0	3	4	1	0	1	0	1	0	0	0	0	0
Pembroke	90	688.2	22	32	10	4	3	12	1	3	1	0	0	1
Pepperell	63	808.0	12	12	3	1	3	3	2	0	1	0	1	1
Peru	5	674.1	1	1	1	0	0	0	0	0	0	0	0	0
Petersham	15	876.9	3	6	1	0	0	0	1	1	0	0	0	0
Phillipston	6	586.0	0	2	1	0	1	0	0	0	1	0	0	0
Pittsfield	520	756.6	115	134	41	11	31	32	11	13	6	1	6	0
Plainfield	8	1,116.9	1	0	0	0	1	1	0	0	2	0	0	0
Plainville	62	756.9	16	18	5	2	5	5	1	0	1	0	0	1
Plymouth	463	788.8	134	132	38	10	21	26	6	17	7	0	6	0
Plympton	14	800.6	3	4	0	0	1	0	0	0	1	0	1	0
Princeton	10	416.3	3	3	0	1	0	0	0	0	1	0	0	0
Provincetown	40	746.4	4	11	5	0	2	6	0	1	0	0	1	0
Quincy	875	732.3	207	227	67	15	44	44	20	35	8	2	8	13
Randolph	260	730.2	56	78	26	6	11	16	5	9	3	2	2	2
Raynham	107	705.8	31	21	8	2	3	6	5	3	3	1	1	1
Reading	189	671.5	53	42	11	2	9	7	1	3	3	0	2	0
Rehoboth	63	625.9	12	19	1	1	2	3	1	2	2	0	2	1
Revere	478	815.0	120	118	39	7	28	29	16	14	5	0	3	11
Richmond	10	581.2	2	2	1	0	0	1	0	0	0	0	0	0
Rochester	34	798.0	9	10	4	0	2	2	0	0	0	0	0	0

Table 46. Selected Causes of Death by Community, Massachusetts: 2006 (continued)

CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	All Narcotics, psychodysleptic hallucinogens[5]
Rockland	187	980.7	43	45	14	6	10	14	6	3	1	0	1	4
Rockport	85	607.5	25	23	5	0	4	6	3	0	0	0	0	0
Rowe	5	777.4	0	3	0	0	0	0	0	0	0	0	0	0
Rowley	44	809.3	10	8	2	0	1	5	0	1	0	1	0	0
Royalston	5	356.3	1	1	0	0	0	0	0	0	0	0	0	0
Russell	11	856.5	1	1	1	0	2	1	0	1	1	0	0	0
Rutland	33	573.4	8	10	4	0	2	0	2	0	1	0	0	0
Salem	336	679.0	87	83	32	7	14	13	9	7	6	0	2	9
Salisbury	70	872.9	16	23	6	2	2	5	3	2	2	0	0	4
Sandisfield	3	--[4]	2	1	0	0	0	0	0	0	0	0	0	0
Sandwich	162	655.6	32	51	12	3	7	10	2	4	1	0	0	2
Saugus	262	689.7	72	66	25	5	21	8	3	6	2	1	1	5
Savoy	3	--[4]	0	1	0	0	0	1	1	0	0	0	0	0
Scituate	161	722.7	44	45	13	0	4	4	4	6	1	0	1	1
Seekonk	109	766.2	27	28	4	5	7	3	3	4	3	0	1	0
Sharon	115	714.8	29	37	12	1	8	5	2	5	0	0	3	0
Sheffield	21	468.0	2	7	1	2	3	1	0	1	0	0	1	0
Shelburne	26	721.8	6	2	0	2	2	2	2	1	1	0	0	0
Sherborn	29	712.3	4	10	0	1	3	1	0	1	0	0	0	0
Shirley	38	616.0	5	14	5	3	0	1	3	2	1	0	2	0
Shrewsbury	251	686.7	56	63	10	3	16	12	0	12	4	1	2	2
Shutesbury	7	591.2	2	3	1	1	0	0	0	0	1	0	0	0
Somerset	206	636.9	66	55	14	4	17	5	5	8	0	1	0	1
Somerville	467	676.7	115	128	34	3	25	21	15	12	1	1	5	7
South Hadley	178	698.9	37	39	11	2	12	9	3	3	1	0	3	5
Southampton	36	662.2	9	7	3	1	5	4	1	1	0	0	0	0
Southborough	42	654.0	8	12	3	0	3	1	0	2	0	0	0	2
Southbridge	159	751.0	35	36	8	1	9	5	4	7	1	0	2	2
Southwick	87	880.6	19	28	7	2	5	2	3	1	0	0	1	1
Spencer	109	923.9	25	22	5	1	9	15	4	4	2	0	0	2
Springfield	1,256	807.9	268	266	74	18	61	52	29	41	14	14	6	17
Sterling	71	1,240.8	19	20	4	1	5	3	3	1	1	0	0	1
Stockbridge	28	671.0	6	8	4	1	0	2	0	1	1	0	0	0
Stoneham	225	640.1	49	57	16	5	12	19	4	8	0	0	1	3
Stoughton	250	749.9	73	60	14	3	14	8	8	6	1	1	2	2
Stow	29	667.2	7	9	1	1	2	1	0	0	0	0	2	0
Sturbridge	59	611.7	13	20	4	0	3	0	2	1	0	0	0	1
Sudbury	86	619.5	24	19	3	0	6	2	2	2	0	0	1	0

Table 46. Selected Causes of Death by Community, Massachusetts: 2006 (continued)

CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	All Narcotics, psychodysleptic hallucinogens[5]
Sunderland	22	884.1	6	6	0	1	1	1	0	0	0	0	0	0
Sutton	54	869.5	11	17	4	1	4	4	2	0	0	0	1	0
Swampscott	163	658.1	41	39	10	5	6	5	1	6	0	1	2	1
Swansea	154	742.0	32	46	13	2	12	5	3	6	1	2	4	4
Taunton	516	844.2	155	125	48	8	20	24	16	21	8	1	7	5
Templeton	63	771.5	20	19	3	1	2	1	1	3	0	1	1	0
Tewksbury	227	826.9	48	73	17	5	3	14	4	10	0	0	0	0
Tisbury	31	490.6	9	11	6	0	3	0	1	0	0	0	1	0
Tolland	4	--[4]	1	2	1	0	0	0	1	0	0	0	0	0
Topsfield	42	527.8	11	8	2	0	4	4	1	3	0	0	0	0
Townsend	43	701.5	9	18	6	0	0	2	1	0	0	0	2	1
Truro	21	693.3	4	4	2	0	0	0	1	0	0	0	1	0
Tyngsborough	57	912.5	12	16	6	0	4	5	0	1	0	0	2	0
Tyringham	7	1,812.5	3	1	1	0	0	0	0	0	0	0	0	0
Upton	41	747.1	11	7	2	0	0	3	2	1	1	0	1	0
Uxbridge	78	747.8	14	24	8	3	4	7	3	1	3	0	1	1
Wakefield	225	666.5	63	42	9	6	17	10	4	6	2	2	0	3
Wales	14	1,254.6	1	6	2	1	2	2	0	0	0	0	0	1
Walpole	193	674.6	38	57	23	5	6	5	4	7	1	0	5	4
Waltham	412	618.5	104	91	27	6	36	14	1	15	7	1	7	5
Ware	110	838.0	28	26	7	0	9	4	3	3	2	0	2	0
Wareham	222	808.1	75	50	15	1	6	9	5	8	2	2	1	6
Warren	49	896.4	14	11	3	0	2	2	4	1	0	0	1	0
Warwick	7	1,104.8	2	1	0	0	0	0	0	0	0	0	0	0
Washington	3	--[4]	0	0	0	0	0	0	0	1	1	0	0	0
Watertown	275	575.3	59	68	13	9	21	9	3	13	3	0	5	2
Wayland	103	656.8	18	36	12	4	5	5	0	7	0	0	1	0
Webster	184	764.4	45	44	12	4	8	11	4	2	1	0	0	0
Wellesley	171	499.0	50	44	8	3	12	5	5	3	1	0	2	0
Wellfleet	31	637.9	6	10	3	3	2	1	0	0	0	0	0	0
Wendell	6	1,185.1	1	1	0	0	0	1	0	1	0	0	0	0
Wenham	39	755.6	13	8	1	2	1	1	0	1	0	0	0	0
West Boylston	87	930.3	21	14	5	1	6	6	2	6	1	0	0	0
West Bridgewater	76	696.7	25	14	5	0	5	2	2	0	2	0	1	2
West Brookfield	44	613.8	11	11	3	0	1	2	0	2	0	0	0	1
West Newbury	27	804.4	6	9	4	0	2	3	1	2	0	0	0	0

Table 46. Selected Causes of Death by Community, Massachusetts: 2006 (continued)

CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	All Narcotics, Psychodysleptics, hallucinogens[5]
West Springfield	315	871.8	80	70	23	4	20	12	2	13	3	0	5	4
West Stockbridge	5	291.6	1	1	0	0	0	0	0	0	1	0	0	0
West Tisbury	17	737.0	4	5	0	0	0	3	0	0	0	0	0	0
Westborough	143	639.2	35	32	13	2	7	9	4	3	1	0	0	0
Westfield	364	765.3	83	102	32	7	15	17	5	12	3	1	2	5
Westford	97	694.1	20	26	8	1	7	6	4	6	0	0	1	0
Westhampton	10	828.4	1	2	1	0	2	0	0	0	2	0	0	0
Westminster	50	732.3	17	10	3	0	3	1	1	1	0	0	1	2
Weston	84	467.7	13	22	3	3	3	7	1	2	0	0	1	0
Westport	117	688.1	29	39	9	4	3	5	2	1	1	0	2	1
Westwood	137	547.8	34	39	10	5	6	8	0	2	0	0	2	0
Weymouth	493	733.7	129	123	46	8	26	26	15	10	4	0	3	4
Whately	15	897.1	2	2	0	0	3	1	1	0	1	0	0	0
Whitman	83	657.4	15	26	9	3	4	6	2	1	3	0	2	3
Wilbraham	136	677.8	32	32	4	3	12	5	1	2	1	1	2	0
Williamsburg	16	527.3	0	5	2	0	1	2	0	1	1	0	0	1
Williamstown	72	517.4	15	18	6	1	9	4	0	3	0	0	0	0
Wilmington	160	800.3	34	51	22	4	5	12	2	5	0	0	0	2
Winchendon	72	810.3	13	27	9	1	2	3	1	3	0	0	0	2
Winchester	193	547.3	51	45	9	6	18	4	2	7	4	0	3	1
Windsor	7	891.9	3	1	0	0	0	1	0	0	0	0	0	0
Winthrop	198	859.2	47	53	15	3	7	9	5	9	0	0	0	5
Woburn	272	612.3	58	72	38	6	19	12	5	10	1	0	0	2
Worcester	1,656	811.6	382	385	101	31	80	99	38	68	14	6	13	16
Worthington	8	604.9	1	1	0	0	0	3	1	0	1	0	0	0
Wrentham	111	843.1	32	20	4	1	5	4	2	2	0	0	2	2
Yarmouth	366	643.5	92	76	21	5	29	17	8	7	3	1	3	3

1. Age-adjusted death rates are calculated using the Massachusetts (Department of Public Health) Modified Age, Race/Ethnicity, & Sex Estimates 2005 (MMARS05), released October 2006. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Includes only female breast cancer. 3. The title of this cause of death changed between ICD-10 an ICD-9. 3. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title). 4. Rates based on fewer than five events are excluded. 5. Deaths due to narcotics and hallucinogens including cannabis, cocaine, codeine, heroin, lysergic acid diethylamide (LSD), mescaline, methadone, morphine, and opium (alkaloids).

Table 47. Selected Causes of Death by Community Health Network Area (CHNA), Massachusetts: 2006

CHNA (Name and Number)	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	Narcotics[4]
Massachusetts	**53,293**	**717.6**	**12,891**	**13,375**	**3,717**	**962**	**2,868**	**2,529**	**1,127**	**1,748**	**475**	**183**	**437**	**628**
Community Health Network of Berkshire	1,451	721.4	336	352	106	30	79	83	32	50	19	1	12	2
Upper Valley Health Web (Franklin County)	801	712.9	186	181	41	14	49	40	11	30	8	1	6	5
Partnership for Health in Hampshire County	1,195	706.7	265	267	72	15	76	64	28	30	17	0	8	11
The Community Health Connection (Springfield)	2,769	783.5	624	611	160	43	153	115	55	97	25	15	21	30
Community Health Network of Southern Worcester County	1,030	772.4	265	255	80	11	54	61	25	24	8	1	6	11
Community Partners for Health (Milford)	1,023	695.6	249	266	78	17	54	51	21	20	17	2	12	9
Community Health Network of Greater Metro West (Framingham)	2,668	690.5	661	685	167	60	145	115	51	104	16	6	27	26
Community Wellness Coalition (Worcester)	2,678	760.1	613	641	169	48	139	162	50	108	22	7	18	20
Fitchburg/Gardner Community Health Network	1,962	749.7	419	539	155	39	113	79	56	57	27	3	22	32
Greater Lowell Community Health Network	2,020	840.7	456	541	156	41	79	98	34	86	16	14	11	21
Greater Lawrence Community Health Network	1,316	643.5	360	319	78	28	58	55	41	40	14	6	11	15
Greater Haverhill Community Health Network	1,221	761.2	292	311	99	29	52	68	32	46	9	3	9	16
Community Health Network North (Beverly/Gloucester)	1,024	636.5	247	264	69	19	55	59	18	33	2	0	5	9
North Shore Community Health Network	2,657	727.6	670	662	192	42	149	121	54	90	21	7	28	45
Greater Woburn/Concord/Littleton Community Health	1,588	618.6	331	421	131	42	106	70	22	52	16	0	8	6
North Suburban Health Alliance (Medford/Malden/Melrose)	2,282	677.5	557	575	167	39	112	105	44	80	10	3	13	32
Greater Cambridge/Somerville Community Health Network	1,863	621.5	438	476	106	31	119	62	39	69	10	4	25	21
West Suburban Health Network (Newton/Waltham)	1,964	558.5	490	508	127	43	136	87	21	59	20	1	19	13
Alliance for Community Health (Boston/Chelsea/Revere/Winthrop)	5,126	730.1	1,129	1,254	337	96	276	202	137	149	36	63	38	113
Blue Hills Community Health Alliance (Greater Quincy)	3,382	693.6	819	908	266	57	184	168	81	106	22	7	27	34
Four (For) Communities (Holyoke, Chicopee, Ludlow, Westfield)	1,664	807.1	443	396	130	23	80	89	34	58	12	6	12	12
Greater Brockton Community Health Network	1,901	797.6	494	463	121	33	106	91	46	62	18	12	15	27
South Shore Community Partners in Prevention	1,504	790.5	407	406	124	28	68	91	22	50	20	0	15	10
Greater Attleboro-Taunton Health & Education Response	1,931	785.5	511	481	149	34	77	88	52	74	34	5	20	21
Partners for a Healthier Community (Fall River)	1,507	768.1	415	365	93	24	90	61	39	47	12	4	15	25
Greater New Bedford Health & Human Services Coalition	1,899	729.5	551	439	117	23	89	82	27	65	24	9	10	39
Cape Cod & Islands Community Health Network	2,867	644.3	663	789	227	53	170	162	55	62	20	3	24	23

1. Age-adjusted death rates are calculated using the NCHS population estimates for 2006 by age, sex, race, and Hispanic origin. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Includes only female breast cancer. 3. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title). 4. Deaths due to narcotics and hallucinogens including cannabis, cocaine, codeine, heroin, lysergic acid diethylamide (LSD), mescaline, methadone, morphine, and opium (alkaloids).

Table 48. Selected Causes of Death by County, Massachusetts: 2006

County	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Breast Cancer[2]	Stroke	Chronic Lower Respiratory Disease[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	Narcotics[4]
Massachusetts	**53,293**	**717.6**	**12,891**	**13,375**	**3,717**	**962**	**2,868**	**2,529**	**1,127**	**1,748**	**475**	**183**	**437**	**628**
Barnstable	2,673	644.1	611	738	212	48	160	151	52	59	20	3	20	22
Berkshire	1,451	721.4	336	352	106	30	79	83	32	50	19	1	12	2
Bristol	4,862	752.3	1321	1170	328	76	232	221	110	176	62	15	41	77
Dukes	132	682.3	37	37	12	2	6	6	2	1	0	0	2	1
Essex	6,218	698.0	1569	1556	438	118	314	303	145	209	46	16	53	85
Franklin	642	711.2	139	138	28	13	40	37	9	24	7	1	5	5
Hampden	4,489	795.4	1082	1021	296	68	237	210	91	154	39	21	33	43
Hampshire	1,207	705.0	272	270	73	15	76	64	28	31	17	0	8	11
Middlesex	10,855	663.5	2524	2828	755	222	599	463	189	403	79	28	90	102
Nantucket	62	725.2	15	14	3	3	4	5	1	2	0	0	2	0
Norfolk	5,426	667.0	1311	1420	392	107	306	260	117	158	44	8	51	52
Plymouth	4,021	783.2	1100	1042	288	70	197	202	79	128	46	15	32	48
Suffolk	4,802	755.1	1054	1170	317	90	261	193	129	134	35	62	35	111
Worcester	6,453	742.1	1520	1619	469	100	357	331	143	219	61	13	53	69

1. Age-adjusted death rates are calculated using the NCHS population estimates for 2006 by age, sex, race, and Hispanic origin. All rates are age-adjusted using the 2000 U.S. standard population. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Includes only female breast cancer. 3. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title). 4. Deaths due to narcotics and hallucinogens including cannabis, cocaine, codeine, heroin, lysergic acid diethylamide (LSD), mescaline, methadone, morphine, and opium (alkaloids).

Table A1. Age-Adjusted Death Rates[1] for Selected Causes of Death by Race and Gender, Massachusetts: 2006

Cause	ICD-10 Code	White[2]			Black[2]		
		Total	Male	Female	Total	Male	Female
All Deaths		**722.8**	**866.5**	**616.4**	**762.0**	**953.4**	**631.0**
Heart Disease	I00-I09, I11, I13, I20-I51	171.3	215.0	138.3	150.8	203.7	116.1
Cancer	C00-C97	188.2	233.0	159.5	50.4	240.5	166.5
Stroke	I60-I69	36.8	37.5	35.8	50.4	54.5	47.3
Chronic Lower Respiratory Disease[3]	J40-J47	35.6	38.9	33.6	20.9	22.3	19.8
Influenza and Pneumonia	J10-J18	22.9	27.4	20.3	17.8	26.0	13.1
Diabetes	E10-E14	14.8	18.8	12.0	32.6	44.2	25.5
Alzheimer's Disease	G30	19.6	15.8	21.2	18.0	13.5	19.8
Nephritis	N00-N07, N17-N19, N25-N27	17.8	23.4	14.8	33.5	37.1	31.9
Septicemia	A40-A41	11.9	13.8	10.6	19.4	18.0	20.2
HIV/AIDS	B20-B24	2.1	3.0	1.3	12.1	17.5	7.6
Perinatal Conditions	P00-P96	3.9	4.1	3.7	7.5	7.4	7.6
All Injuries	V01-Y98	42.8	60.3	26.7	51.8	81.0	25.0
Motor Vehicle-Related Injuries	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2	7.3	10.8	4.0	7.6	12.3	3.1
Suicide	X60-X84, Y87.0	6.8	10.2	3.6	3.9	5.9	2.2
Homicide	X85-Y09, Y87.1	1.8	2.6	1.0	15.6	27.5	4.1

1. Age-adjusted death rates are calculated using the NCHS population estimates for 2006 by age, sex, race, and Hispanic origin. Age-adjusted to the 2000 U.S. standard population, per 100,000. 2. Race categories presented in this table are consistent with Federal definitions of race and ethnicity. Persons of Hispanic ethnicity are included in any race category. Please use data in this table to compare to national data by race. 3. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title).

TECHNICAL NOTES

Effective since our 1999 publication, the *Advance Data: Deaths* series has been renamed *Massachusetts Deaths*.

NOTE

Please note that death statistics are presented as both *numbers* (or percentages, proportions) and *rates. Numbers* are, of course, the basic, raw counts of deaths, while *rates* are population-based statistics, for example, *the number of deaths per 100,000*.

DATA SOURCES

Data for this document are derived from Massachusetts death certificates, Massachusetts birth certificates, the U.S. Census, the Massachusetts Institute for Social and Economic Research (MISER) (population data pre-2000), and the National Center for Health Statistics (NCHS).

CHANGES TO MORTALITY DATA, EFFECTIVE 1999

Beginning with data year 1999, two major changes in Federal classification and tabulation procedures occurred that affects the tabulation and analyses of mortality data over time. First, a new revision for classifying causes of death was implemented: The International Classification of Diseases, Tenth Revision (ICD-10) replaced the International Classification of Diseases, Ninth Revision (ICD-9) for coding all mortality data. Second, a new standard population for the tabulation of age-adjusted mortality rates was also implemented.

CHANGES TO THE PRESENTATION OF RACE AND ETHNICITY DATA

In response to readers' feedback, the presentation of race and ethnicity data has been changed. Previously, race and ethnicity data were presented according to Federal definitions of race and ethnicity; that is, persons of Hispanic ethnicity can be of any race group. Beginning with the 1999 report, race and ethnicity data are presented as mutually exclusive categories, that is, persons of Hispanic ethnicity are not included in a race group. All race and ethnicity data presented in trend tables have been updated to reflect this change. Thus, race and ethnicity data tables include the categories white non-Hispanic; black non-Hispanic; Asian non-Hispanic; and Hispanic. In addition, Table A1 in the Appendix contains data according to the Federal definitions so data can be compared with the nation and other states. Race data presented in Table A1 are for whites (including persons of Hispanic ethnicity) and blacks (including persons of Hispanic ethnicity). Furthermore, starting with the 2001 publication, there has been a nomenclature change in the way data for Asians are presented: the Asian/Pacific Islander non-Hispanics category was renamed Asian non-Hispanics, which includes Pacific Islanders.

CAPE VERDEANS

The U.S. Federal Census and the National Center for Health Statistics (NCHS) places persons who are Cape Verdean in the race category "Black". Historically, we have followed this federal definition in order to be consistent with the National Center for Health Statistics. Beginning with 1999 data, we have separated the concept of "Race" from "Ethnic Group" for reporting death statistics. This enables us to place Cape Verdeans where they self-identify: Cape Verdeans are classified as "Cape Verdeans" in ethnicity tables. With respect to race, 70% of Cape Verdeans classified their race as "Other" while only 24% classified themselves as Black and 6% as White in 1999. We have no Cape Verdean population counts or estimates with which to calculate rates at the state or lower geographic levels. Although we can identify Cape Verdeans in the count of deaths (numerator), because we have no count or estimate of the number of Cape Verdeans in the Massachusetts population (denominator), we are unable to calculate death

rates. Beginning with the 2000 report, we have included a detailed table and figure summarizing age and cause of deaths among Cape Verdeans.

POPULATION ESTIMATES

We calculated the proportion of the county total that each Massachusetts city/town contributed by age, sex, five-race group from the 2000 Massachusetts Race Age Census Estimates (MRACE) file (see below) and applied those proportions to the 2005 NCHS Modified Age, Race, and Sex (MARS) file to create the Massachusetts Modified Age Race Sex 2005 estimates (MMARS05) file.

The MRACE file was derived from the Census 2000 file by allocating persons who indicated "some other race" or multiple races to the conventional DPH race categories: "White," "Black or African American," "Asian," "Native American," and "Hispanic." In Census 2000, unlike previous censuses, respondents were able to classify themselves by Hispanic ethnicity and by single or multi-race categories, including "some other race." In order to make the DPH population 2000 file consistent with previous years' population files, the MRACE file maintains the prior mutually exclusive race and Hispanic categories.

In this year's report, we are using the most up-to-date population estimates for the calculation of population-based rates such as the teen birth rate. In the next paragraphs, the methods used in calculating these estimate are explained.

Note: Population-based statistics presented in this report for the years 2000-2005 will differ from previous publications due to the use of new population estimates for these years.

MDPH Census Year 2000 Estimates

MDPH estimated the population for the years since the 2000 Census using the MDPH 2000 population estimates file, the MRACE file. The MRACE file is a modification of the Census 2000 population counts for Massachusetts. In Census 2000, respondents could select one or more races for the race question. The Census Bureau reported the results by single race and two or more races, for example, in Massachusetts, the race population counts were:

Race	Population
Total:	6,349,097
Population of one race:	6,203,092
White alone	5,367,286
Black or African American alone	343,454
American Indian and Alaska Native alone	15,015
Asian alone	238,124
Native Hawaiian and Other Pacific Islander alone	2,489
Some other race alone	236,724
Population of two or more races	146,005

Source: Table P3. Census 2000 Summary File 1 (SF1).

Hispanic was considered an ethnicity, and not a race. Therefore, persons of any race could be Hispanic. This new Census reporting system made it difficult in Massachusetts to compare 2000 rates with previous years' rates in which there were five race categories: white non-

Hispanic, black non-Hispanic, Asian non-Hispanic, American Indian non-Hispanic, and Hispanic. The MRACE file reallocated (also known as, "bridging") the "Some other race alone" and "Two or more race" persons to the traditional five race categories used at the Department. This was done using an algorithm developed by the Massachusetts Institute of Social and Economic Research (MISER), in which those populations were redistributed at the city/town level according to the proportion of single race populations.

Postcensal Years

The MRACE file was used to calculate the population-based rates in the births reports from 2000 through 2004.

Every year the Population Estimates Program of the U.S. Census Bureau in collaboration with the National Center for Health Statistics (NCHS) produces bridged race files for the states and counties. These estimates are known as the Modified Age Race Sex (MARS) estimates. In previous years, we have not used these estimates since they are not available at the city/town level.

Methodology for New MDPH 2000 - 2005 Population Estimates

In the years since Census 2000, the distribution of Massachusetts residents has changed by age, race/ethnicity, and race. In 2006, because these changes were significant, MDPH decided to produce new population estimates by age, race/ethnicity, and sex at the city/town level.

These estimates were created using the city/town age, race/ethnicity, and sex proportions of their counties in the MRACE estimates and applying these to the MARS county estimates. The resulting estimates were called the Massachusetts Department of Public Health Modified Age, Race, & Sex 200*x* Estimates (MMARS0x), where *x* = year. Estimates were produced for 2000, 2001, 2002, 2003, 2004, and 2005.

The MMARS05 estimates were used to calculate the population-based rates in this year's report.

The MMARS00, MMARS01, MMARS02, MMARS03, and MMARS04 estimates were used to recalculate the population-based rates for births. **This means that trends from 2000-2005 presented in this report will differ from the previous years' reports.**

Population-based rates between 1991 and 1999 in this publication were calculated as follows:

- 1991-1998: Massachusetts Institute for Social and Economic Research (MISER) Population Estimates;

- 1999: Massachusetts Dept. of Public Health 1999 Population Estimate, which is a linear interpolation between the preliminary DPH Population 2000 file and the MISER 1998 Population Estimate.

Please note that the statewide age-adjusted rates published in this report cannot be compared with those published in previous years because the overall population count and the age distribution of the population, which were based on the Census 2000 count, differ. The difference in the new population estimates is pronounced for Hispanics and black non-Hispanics. The Hispanic and black non-Hispanic populations have increased by 15% since 2000, while the overall population has increased by 1%. It is important to remember that age-adjusted death rates are not a measure of the actual risk of death, but rather, age-adjusted

death rates are summary measures used to compare mortality trends over time or among different populations whose age distributions differ.

LIMITATIONS OF SMALL NUMBERS

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

APPLYING COMPARABILITY RATIOS TO EXAMINE TRENDS IN MORTALITY

Beginning with 1999, mortality data are coded according to the International Classification of Diseases-10th revision (ICD-10). Due to the changes in coding rules, comparison of mortality trends over time using different revisions of ICD is challenging. A method was devised to assess if changes in causes of death are "real" changes, or due to the new classification system. Using this method, death data for 1996 were coded twice; once according to ICD-9 and again according to ICD-10. A comparability ratio (CR) was then calculated by dividing the number of deaths coded according to ICD-10 by the number of deaths coded according to the most similar codes in ICD-9 (please refer to Table A7. Preliminary Comparability Ratios for a list of codes and CR used in this publication).

A CR of 1.00 indicates that the same number of deaths was assigned to a cause of death whether ICD-9 or ICD-10 was used. A CR of less then 1.00 results from 1) a decrease in the number of deaths assigned to a cause in ICD-10 compared with ICD-9 or 2) the cause described in ICD-10 is only a part of the ICD-9 title to which it is being compared. A CR of more than 1.00 results from 1) an increase in the assignments of deaths to a cause in ICD-10 compared with ICD-9 or 2) the ICD-10 title is broader than the ICD-9 title to which it is being compared.

EXAMPLE: **Influenza and Pneumonia[1] Deaths: Massachusetts, 1996-2000**

Year	Age-adjusted rate[2]	Comparability Ratio	Comparability Modified Rate (=age-adjusted rate* Comparability Ratio)
1996	41.5	0.6982	29.0
1997	39.1	0.6982	27.3
1998	40.2	0.6982	28.1
1999	30.3		
2000	29.3		

1. Influenza and pneumonia defined as ICD-9: 480-487 for years 1996-1998 and ICD-10: J10-J18 for year 1999 and 2000.
2. age-adjusted to the 2000 U.S. standard population, per 100,000.

If you look only at the age-adjusted rate over time, not taking the ICD coding changes into account, it appears that deaths from influenza and pneumonia have decreased between 1996-1999. However, because the coding rules changed between ICD-9 and ICD-10 revisions, we need to apply the comparability ratio to the rates for 1996-1998. (This is done by multiplying the age-adjusted rate by the comparability ratio). Now we can make a fairer comparison and examine the changes between the comparability modified rate and the 1999 or 2000 rate, we see that deaths to influenza and pneumonia have remained fairly constant between 1996-2000, and have actually increased between 1998 and 1999 (28.1 to 30.3 per 100,000, respectively) after taking the changes in the classification system into account.

PLEASE NOTE: the comparability ratios used in this report are based on the Preliminary Comparability Study conducted by the National Center for Health Statistics (NCHS), February 2001, and are subject to change once the Final Comparability Study is completed.

TESTS OF STATISTICAL SIGNIFICANCE

Beginning with *Massachusetts Deaths 2004,* statistics presented in the text section have been tested to determine whether they differ significantly from a target statistic. For example, the number of deaths in 2006 was compared with the number of deaths in 2005, to determine whether their difference was unlikely to have occurred by chance. When a difference is unlikely to have occurred by chance, it is referred to as "significant."

Note that with respect to statistical difference, the language of this year's report differs from the language of reports prior to 2004, and caution must be used when comparing the text of previous reports with this year's report.

In testing for statistical significance, we have used the testing methods from the National Center for Health Statistics (NCHS). These methods are presented in the following document:

> National Vital Statistics Reports, Volume 52, Number 10
> Births: Final Data for 2002
> by Joyce A. Martin, M.P.H.; Brady E. Hamilton, Ph.D.; Paul D. Sutton, Ph.D.; Stephanie J. Ventura, M.A.; Fay Menacker, Dr. P.H.; and Martha L. Munson, M.S.;
> From the Division of Vital Statistics, NCHS.
> Technical Notes, "Significance testing" section beginning on page 110.

This document is available from the following website:
http://www.cdc.gov/nchs/products/pubs/pubd/nvsr/52/52-23.htm

For comparisons of more than 100 events, whether they are rates, proportions, or numbers, the binomial distribution is assumed, and confidence intervals are examined to see whether they overlap (Refer to the "Confidence Intervals" section in the next page for an explanation of using confidence intervals to determine statistical significance). When the number of events is less than 100, a Poisson distribution is assumed, and confidence intervals are constructed based upon the Poisson distribution. For more details and exact formulas for calculating confidence intervals or other tests of statistical significance, refer to the publication listed above.

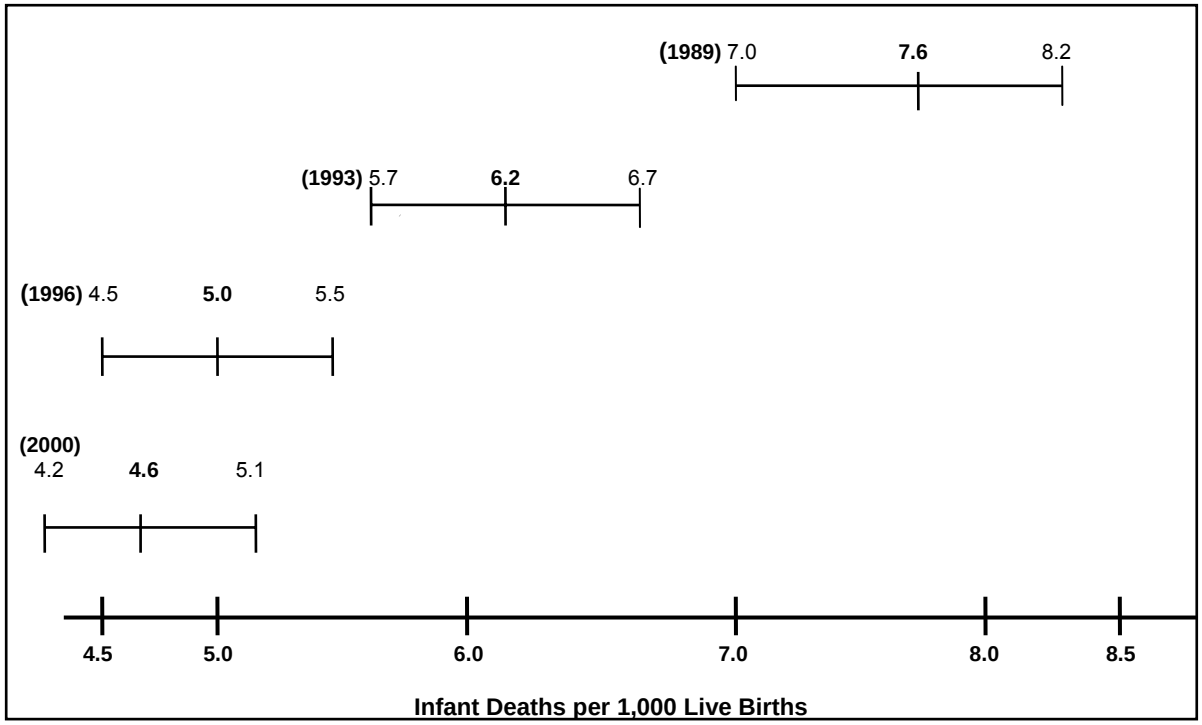
When two statistics are determined to differ significantly, they are referred to in the text with language expressing differences, such as, "higher" and "lower", or "increased" and "decreased". Otherwise, differences which are not significant are reported as having "no change" or "no statistical difference."

CONFIDENCE INTERVALS AND INFANT MORTALITY RATES

The confidence interval (CI) provides a measure of stability of the IMR and a basis for comparing rates to determine if they are statistically different. Rates can be compared for the same group in different years or for different groups in the same year. The width of the CI reflects the stability of the IMR. For example, a narrow CI reflects high stability, and a wide CI reflects low stability. If the CIs around two IMRs being compared do not overlap, the difference between the two rates is statistically significant. The following table and chart illustrate the concept of statistically significant differences using actual data from 1989, 1993, 1996, and 2000.

Comparison of Infant Mortality Rates and Confidence Intervals for Selected Years

Year	IMR (per 1,000 births)	95% Confidence Interval
1989	7.6	(7.0-8.2)
1993	6.2	(5.7-6.7)
1996	5.0	(4.5-5.5)
2000	4.6	(4.2-5.1)



The difference between the 1993 IMR and 1996 IMR is statistically significant – the confidence intervals do not overlap. The same is true for the differences between the 1989 IMR and each annual IMR for 1993, 1996, and 2000. However, the difference

between the 1996 and 2000 IMRs is not statistically significant, since their confidence intervals overlap.

GLOSSARY

Age-Adjusted Rate
A summary rate designed to minimize the distortions created by differences in age distribution when comparing rates for populations with different age compositions. Age-adjusted rates are useful when comparing death rates from different populations or in the same population over time. For example, if one wished to compare the 1998 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. (Please see example below).

The 2000 U.S. projected population is used as the standard population in this document for consistency with data published by the National Center for Health Statistics (NCHS). **ONLY RATES USING THE SAME STANDARD POPULATION CAN BE COMPARED**. All age-adjusted rates published in this report have been re-calculated using the 2000 U.S. standard population. These rates should NOT be compared with age-adjusted rates previously published which used the 1940 U.S. standard population.

Example: Calculation of 1999 Age-Adjusted Mortality Rate
Massachusetts: All Causes of Death

A	B	C	D	E	F	G
Age group (in years)	# of deaths (1999)	Population (1998)	1940 US standard	2000 US standard	Age-adjusted rate (using1940 standard) =[((B/C)*D)*100,000]	Age-adjusted rate (using 2000 standard) =[((B/C)*E)*100,000]
< 1	418	79,860	0.015343	0.013818	8.0	7.2
1-4	65	320,000	0.064718	0.055317	1.3	1.1
5-14	100	806,670	0.170355	0.145565	2.1	1.8
15-24	407	883,830	0.181677	0.138646	8.4	6.4
25-34	701	1,005,337	0.162066	0.135573	11.3	9.5
35-44	1,696	1,019,365	0.139237	0.162613	23.2	27.1
45-54	2,870	818,660	0.117811	0.134834	41.3	47.3
55-64	4,561	495,555	0.080294	0.087247	73.9	80.3
65-74	9,782	442,003	0.048426	0.066037	107.2	146.1
75-84	17,397	299,482	0.017303	0.044842	100.5	260.5
85+	17,765	120,501	0.002770	0.015508	40.8	228.6
Total					**418.0**	**815.9**

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

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

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. The Community Health Network Area (CHNA) 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. CHNAs also promote efficiency in service delivery by working to reduce duplication and overlap, and by identifying gaps in service. These community coalitions 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, please see Table A10, which provides the appropriate CHNA code for each city and town based on the geographic definitions established in 1997.

Comparability Modified Rate
A rate designed to assist in the analysis of mortality trends between revisions of the International Classification of Diseases (ICD). A comparability modified rate is calculated by multiplying the cause-specific comparability ratio by the cause-specific rate for years 1994-1998. Comparability modified rates should be used to compare trends between causes of death in 1994-1998 with causes of death in 1999.

Comparability Ratio (CR)
A factor used to adjust mortality statistics for causes of death classified in ICD-9 to be comparable with mortality statistics classified in ICD-10. It is calculated by dividing the number of deaths for a selected cause of death classified by the new revision (i.e. ICD-10) by the number of deaths for a selected cause of death classified by the old revision (i.e. ICD-9).

More specifically, the CRs used in this report were calculated by the National Center for Health Statistics (NCHS) based on a national sample of death records. Death records for 1996 were double coded, once according to ICD-9 and again according to ICD-10. Secondly, the leading causes of death were grouped according to ICD-10 titles, using the ICD-10 codes for data coded in ICD-10, and the most similar ICD-9 titles for data coded in ICD-9. Finally, the number of deaths coded in ICD-10 were divided by the number of deaths in ICD-9 to produce a CR for the cause of death.

A CR of 1.00 indicates that the same number of deaths was assigned to a cause of death whether ICD-9 or ICD-10 was used.

A CR of less then 1.00 results from 1) a decrease in the number of deaths assigned to a cause in ICD-10 compared with ICD-9 or 2) the cause described in ICD-10 is only a part of the ICD-9 title to which it is being compared.

A CR of more than 1.00 results from 1) an increase in the assignments of deaths to a cause in ICD-10 compared with ICD-9 or 2) the ICD-10 title is broader than the ICD-9 title to which it is being compared.

Preliminary comparability ratios supplied by the National Center for Health Statistics (NCHS) in February 2001 are used in this report (see Table A7 and A8).

See also, comparability modified rate.

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, gender, birth date, place of residence, and place of occurrence. (A copy of the Massachusetts death certificate used in 2006 is in the Appendix. In a properly completed death certificate, the immediate cause of death is recorded on line 29a. The other mentioned causes are written on lines 29 b-d. The underlying cause of death is the disease or injury that initiated the events leading to the death. All causes of death are data entered and processed by a software program supplied by NCHS. This software assigns the appropriate ICD-10 codes. Trained nosologists review the ICD-10 codes assigned.

International Classification of Diseases, Ninth Revision (ICD-9)
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 ICD-9, which was in use between 1979-1998. ICD-9 codes used in this publication are listed on Tables A2-Table A6.

Because of coding changes between the Ninth and Tenth revision, caution should be used when comparing data coded under ICD-9 and ICD-10.

International Classification of Diseases, Tenth Revision (ICD-10)
The tenth revision of the International Classification of Diseases was used to code mortality data beginning in 1999. For a list of ICD-10 codes used in the publication, please see Tables A2-A6.

Because of coding changes between the Ninth and Tenth revision, caution should be used when comparing data coded under ICD-9 and ICD-10.

Life expectancy at birth
Life expectancy at birth is based on the expected age at death for a newborn infant, based upon the actual experience of mortality of the population in Massachusetts.

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 out of state records are used for statistical purposes only and allow each state or province to track the births and deaths of residents.

Potential Years of Life Lost (PYLL)
Total potential years of life lost (PYLL) is calculated by multiplying the number of deaths for each group by the years of life lost (the difference between life expectancy and the midpoint of the age group, then adding the figures for all age groups).

A measure of the impact of death from various diseases on society, highlighting the total loss to society, especially the loss contributed by early deaths. For the purpose of calculating PYLL, since *Massachusetts Deaths 2002*, we have adjusted the maximum age to be 75 years so that we do not include deaths beyond average life expectancy. Data after 2002 are not comparable with previous publications because we used a different maximum age cutoff.

Premature Mortality Rate
Premature mortality rate (PMR) measures the rate of premature death, that is, death before the age of 75 years, and it is given as a rate per 100,000 and it is adjusted to the 2000 U.S. population. PMR is considered the best single measure to reflect the health status of a population.

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.

Beginning with the 1999 report, race and ethnicity categories are presented as mutually exclusive categories, except for Table A1 which provides race and ethnicity data consistent with federal guidelines so that national comparisons can be made. All trend data from 1989-2003 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.

Underlying 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. The underlying cause of death is used for all analyses published in this report.

Table A2. ICD-10 and ICD-9 Codes Used in this Publication

(Sorted by ICD-10 Codes)

Cause of Death	ICD-10 Code	ICD-9 Code
Infectious and parasitic diseases	A00-B99	001-139
Septicemia	A40-A41	038
Human Immunodeficiency Virus (HIV) disease	B20-B24	042-044
Cancer (Malignant Neoplasms)	C00-C97	140-208
of esophagus	C15	150
of stomach	C16	151
of colon, rectum, rectum and anus	C18-C21	153-154, 159.9
of pancreas	C25	157
of trachea, bronchus and lung	C33-C34	162
of female breast	C50	174
of cervix uteri	C53	180
of corpus uteri and uterus, part unspecified	C54-C55	179,182
of ovary	C56	183.0
of prostate	C61	185
of kidney and renal pelvis	C64-C65	189.0-189.1
of bladder	C67	188
of meninges, brain & other parts of central nervous system	C70-C72	191-192
Hodgkin's Disease	C81	201
Non-Hodgkin's lymphoma	C82-C85	200, 202 (except 202.4)
Leukemia	C91-C95	202.4, 204-208
Multiple myeloma and immunoproliferative neoplasms	C88, C90	203
Diabetes Mellitus	E10-E14	250
Alzheimer's disease	G30	331.0
Heart Disease	I00-I09, I11, I13, I20-I51	390-398, 402, 404-429
Stroke (Cerebrovascular disease)	I60-I69	430-438
Influenza and pneumonia	J10-J18	480-487
Chronic lower respiratory diseases[1]	J40-J47	490-496
Chronic liver disease and cirrhosis	K70, K73-K74	571
Nephritis	N00-N07, N17-N19, N25-N27	580-589
Congenital malformations, deformations, and chromosomal abnormalities	Q00-Q99	740-759
Certain conditions originating in the perinatal period (Perinatal Conditions)	P00-P96	760-779
Ill defined conditions	R00-R99	780-797, 798.1-798.9, 799
Sudden infant death syndrome (SIDS)	R95	798.0
External causes of injuries and poisonings (intentional, unintentional and of undetermined intent)	V01-Y89	E800-E999
Accidents (Unintentional Injuries)	V01-X59, Y85-Y86	E800-E949
Motor Vehicle-related injuries	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2	E810-E825
Unintentional non-transport injuries	W00-X59, Y86	E850-E869, E880-E928, E929.2-E929.9
Suicide	X60-X84, Y87.0	E950-E959
Homicide	X85-Y09, Y87.1	E960-E969
Injuries of undetermined intent	Y10-Y34,Y87.2,Y89.9	E980-E989

1. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title).

Table A3. ICD-10 and ICD-9 Codes Used in this Publication

(Sorted by Cause of Death)

Cause of Death	ICD-10 Code	ICD-9 Code
Alzheimer's Disease	G30	331.0
Cancer (Malignant Neoplasms)	C00-C97	140-208
of bladder	C67	188
of cervix uteri	C53	180
of colon, rectum, rectum and anus	C18-C21	153-154, 159.9
of corpus uteri and uterus, part unspecified	C54-C55	179,182
of esophagus	C15	150
of female breast	C50	174
Hodgkin's Disease	C81	201
of kidney and renal pelvis	C64-C65	189.0-189.1
Leukemia	C91-C95	202.4, 204-208
of meninges, brain & other parts of central nervous system	C70-C72	191-192
Multiple myeloma and immunoproliferative neoplasms	C88, C90	203
Non-Hodgkin's lymphoma	C82-C85	200, 202 (except 202.4)
of ovary	C56	183.0
of prostate	C61	185
of stomach	C16	151
of pancreas	C25	157
of trachea, bronchus and lung	C33-C34	162
Certain conditions originating in the perinatal period (Perinatal Conditions)	P00-P96	760-779
Chronic liver disease and cirrhosis	K70, K73-K74	571
Chronic lower respiratory diseases[1]	J40-J47	490-496
Congenital malformations, deformations, and chromosomal abnormalities	Q00-Q99	740-759
Diabetes Mellitus	E10-E14	250
External causes of injuries and poisonings (intentional, unintentional and of undetermined intent)	V01-Y98	E800-E999
Homicide	X85-Y09, Y87.1	E960-E969
Injuries of undetermined intent	Y10-Y34,Y87.2,Y89.9	E980-E989
Suicide	X60-X84, Y87.0	E950-E959
Accidents (Unintentional Injuries)	V01-X59	E800-E949
Motor Vehicle-related injuries	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2	E810-E825 E850-E869, E880-E928, E929.2-E929.9
Unintentional non-transport injuries	W00-X59, Y86	
Heart Disease	I00-I09, I11, I13, I20-I51	390-398, 402, 404-429
Infectious and parasitic diseases	A00-B99	001-139
Human Immunodeficiency Virus (HIV) disease (AIDS)	B20-B24	042-044
Septicemia	A40-A41	038
Influenza and pneumonia	J10-J18	480-487
Nephritis	N00-N07, N17-N19, N25-N27	580-589
Stroke (Cerebrovascular disease)	I60-I69	430-438
Ill defined conditions	R00-R99	780-797, 798.1-798.9, 799
Sudden infant death syndrome (SIDS)	R95	798.0

1. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title).

Table A4. ICD-10 Injury Codes Used in this Publication

Cause of Death	ICD-10 Code
Suicide	X60-X84, Y87.0
Poisoning	X60-X69
Hanging, strangulation or suffocation	X70
Firearm	X72-X74
Other and unspecified	Residual
Homicide	X85-Y09, Y87.1
Firearm	X93-X95
Cut or pierce	X99
Other and unspecified	Residual
Unintentional Injuries (Accidents)	V01-X59, Y85-Y86
Falls	W00-W19
Hanging, strangulation or suffocation	W75-W84
Drowning or submersion	W65-W74
Smoke, fire and flames and contact with heat and hot substances	X00-X19
Poisoning	X40-X49
Firearm	W32-W34
Motor Vehicle-related	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2
Injury to pedestrian	V02-V04, V09.0, V09
Injury to pedal cyclist	V12-V14, V19.0, V19.2, V19.4, V19.5, V19.6
Injury to motorcyclist	V20-V29
Injury to occupant	V30-V79, V80.3, V80.4, V80.5, V81.0,V81.1, V82.0, V82.1, V83-V86
Other and unspecified	Residual
Other and unspecified	Residual
Events of Undetermined Intent	Y10-Y34, Y87.2, Y89.9
Poisoning	Y10-Y19
Drowning or submersion	Y21
Other and unspecified	Residual
Legal Intervention	Y35-Y36, Y89.0, Y89.1
Firearm	Y35.0
Adverse Effects	Y40-Y59, Y60-Y84, Y88
Drugs	Y40-Y59, Y88.0
Medical Care	Y60-Y84, Y88.1, Y88.2, Y88.3

Table A5. ICD-10 Poisoning Agent Codes Used in Table 26

Opioids

T40.0 Opium
T40.1 Heroin
T40.2 Other opioids
T40.3 Methadone
T40.4 Other synthetic narcotics
T40.6 Other and unspecified narcotics

Cocaine

T40.5 Cocaine

Benzodiazepines

T42.4 Benzodiazepines

Poisoning by antiepileptic, sedative-hypnotic and antiparkinsonism drugs

T42.0 Hydantoin derivatives
T42.1 Iminostilbenes
T42.2 Succinimides and oxazolidinedione
T42.3 Barbiturates
T42.5 Mixed antiepileptics, not elsewhere classified
T42.6 Other antiepileptic and sedative-hypnotic drugs
T42.7 Antiepileptic and sedative-hypnotic drugs, unspecified

Tricyclic and tetracyclic antidepressants, & Monoamine-oxidase-inhibitor antidepressants, & Other and unspecified antidepressants

T43.0 Tricyclic and tetracyclic antidepressants
T43.1 Monoamine-oxidase-inhibitor antidepressants
T43.2 Other and unspecified antidepressants

Phenothiazine antipsychotics & neuroleptics, Butyrophenone & thioxanthene neuroleptics, Other & unspecified antipsychotics & neuroleptics

T43.3 Phenothiazine antipsychotics and neuroleptics
T43.4 Butyrophenone and thioxanthene neuroleptics
T43.5 Other and unspecified antipsychotics and neuroleptics
T43.8 Other psychotropic drugs, not elsewhere classified

Toxic effect of alcohol

T51.0 Ethanol
T51.1 Methanol
T51.2 2-Propanol
T51.3 Fusel oil
T51.8 Other alcohols
T51.9 Alcohol, unspecified

Other and unspecified drugs, medicaments and biological substances

T50.9 Other and unspecified drugs, medicaments and biological substances

All other agents combined

T36-T50 Poisoning by drugs, medicaments and biological substances - excluding the specific agent classes and agents listed above

Table A6. ICD-10 Codes for Selected Healthy People 2010 Mortality Objectives Used in this Publication
(Sorted by Objective Number)

Objective Number	Cause of Death*	ICD-10 Identifying Codes
3-1	Cancer (all sites)	C00-C97
3-2	Lung cancer	C33-C34
3-3	Female breast cancer	C50
3-4	Uterine Cervix cancer	C53
3-5	Colorectal cancer	C18-C21
3-6	Oropharyngeal cancer	C00-C14
3-7	Prostate cancer	C61
3-8	Malignant melanoma	C43
12-1	Coronary heart disease	I11, I20-I25
12-7	Stroke	I60-I69
13-14	HIV infection	B20-B24
15-3	Firearm-related deaths	W32-W34, X72-X74, Y22-Y24, Y35.0, X93-X95
15-8	Poisoning	X40-X49, X60-X69, X85-X90, Y10-Y19, Y35.2
15-9	Hanging, strangulation or suffocation	W75-W84, X70, X91, Y20
15-13	Unintentional injuries (Accidents)	V01-X59, Y85-Y86
15-15	Motor vehicle-related	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2
15-25	Residential fire deaths	X00, X02
15-27	Falls	W00-W19, X80, Y01, Y30
15-29	Drownings	W65-W74, X71, X92, Y21
15-32	Homicides	X85-Y09, Y87.1
16-1f	Birth defects	Q00-Q99
16-1g	Congenital heart and vascular defects	Q20-Q24
16-1h	Sudden infant death syndrome (SIDS)	R95
18-1	Suicide	X60-X84, Y87.0
24-1	Asthma	J45-J46
26-1	Motor-vehicle crash deaths	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2
26-2	Cirrhosis	K74
26-3	Drug induced deaths	F11.0-F11.5, F11.7-F11.9, F12.0-F12.5, F12.7-F12.9, F13.0-F13.5, F13.7-F13.9, F14.0-F14.5, F14.7-F14.9, F15.0-F15.5, F15.7-F15.9, F16.0-F16.5, F16.7-F16.9, F17.0, F17.3-F17.5, F17.7-F17.9, F18.0-F18.5, F18.7-F18.9, F19.0-F19.5, F19.7-F19.9,X40-X44,X60-64, X85,Y10-Y14

These Healthy People 2010 objectives use underlying cause of death data.

Table A7. Preliminary Comparability Ratios

Cause of Death	ICD-10 Code	ICD-9 Code (most similar title)	Comparability Ratio
Infectious and parasitic diseases	**A00-B99**		**NA**
Septicemia	A40-A41	038	1.1949
Human Immunodeficiency Virus (HIV) disease	B20-B24	042-044	1.0637[1] and 1.1448[2]
Cancer (Malignant Neoplasms)	C00-C97	140-208	1.0068
of esophagus	C15	150	0.9965
of stomach	C16	151	1.0063
of colon, rectum, rectum and anus	C18-C21	153-154	0.9993
of pancreas	C25	157	0.9980
of trachea, bronchus and lung	C33-C34	162	0.9837
of breast	C50	174-175	1.0056
of cervix uteri	C53	180	0.9871
of corpus uteri and uterus, part unspecified	C54-C55	179,182	1.0260
of ovary	C56	183.0	0.9954
of prostate	C61	185	1.0134
of kidney and renal pelvis	C64-C65	189.0-189.1	1.0000
of bladder	C67	188	0.9968
of meninges, brain & other parts of central nervous system	C70-C72	191-192	0.9691
Hodgkin's Disease	C81	201	0.9855
Non-Hodgkin's lymphoma	C82-C85	200, 202	0.9781
Leukemia	C91-C95	204-208	1.0119
Multiple myeloma and immunoproliferative neoplasms	C88, C90	203	1.0383
Diabetes Mellitus	E10-E14	250	1.0082
Alzheimer's Disease	G30	331.0	1.5536
Heart Disease	I00-I09, I11, I13, I20-I51	390-398, 402, 404, 410-429	0.9858
Stroke (Cerebrovascular disease)	I60-I69	430-434, 436-438	1.0588
Influenza and pneumonia	J10-J18	480-487	0.6982
Chronic lower respiratory diseases	J40-J47	490-494,496	1.0478
Chronic liver disease and cirrhosis	K70, K73-K74	571	1.0367
Nephritis	N00-N07, N17-N19, N25-N27	580-589	1.2320
Congenital malformations, deformations, and chromosomal abnormalities	Q00-Q99	740-759	0.8470
Certain conditions originating in the perinatal period (Perinatal Conditions)	P00-P96	760-771.2, 771.4-779	1.0658
External causes of injuries and poisonings (intentional, unintentional and of undetermined intent)	V01-Y89	E800-E999	NA
Accidents (Unintentional Injuries)	V01-X59, Y85-Y86	E800-E869, E880-E929	1.0305
Motor Vehicle-related injuries	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2	E810-E825	0.9754[3]
Non-transport injuries	W00-X59, Y86	E850-E869, E880-E928, E929.2-E929.9	1.0763
Suicide	X60-X84, Y87.0	E950-E959	0.9962
Homicide	X85-Y09, Y87.1	E960-E969	0.9983
Injuries of undetermined intent	Y10-Y34,Y87.2,Y89.9	E980-E989	*

Source: National Center for Health Statistics, Preliminary Comparability Study. February 2001. NA: not available *: not reliable

Please refer to the Appendix for an example of how to apply comparability ratios. 1. Comparability Modified number and rate based on preliminary comparability ratios (CR) from NCHS based on 1996 data (February 2001). 2. Comparability Modified number and rate based on preliminary comparability ratios (CR) from NCHS based on 1998 data (revised June 2001). 3. This is the revised comparability ratio for motor vehicle-related injuries, effective May 2001.

Table A8. Preliminary Comparability Ratios Causes of Infant Death

Cause of Death	ICD-10 Code	ICD-9 Code (most similar title)	Comparability Ratio
Certain infectious and parasitic diseases	A00-B99	001-033, 034.1-134, 136-139, 771.3	0.7339
Septicemia	A40-A41	038	1.3802
Human Immunodeficiency Virus (HIV) disease	B20-B24	042-044	1.0455
Cancer (Malignant Neoplasms)	C00-C97	140-208	1.0435
Influenza and pneumonia	J10-J18	480-487	0.7624
Certain conditions originating in the perinatal period (Perinatal Conditions)	P00-P96	760-771.2, 771.4-779	1.0581
Newborn affected by maternal complications of pregnancy	P01	761	1.0295
Newborn affected by complications of placenta, cord and membranes	P02	762	1.0470
Disorders relating to short gestation and low birthweight	P07	765	1.1060
Intrauterine hypoxia and birth asphyxia	P20-P21	768	1.4477
Respiratory distress of newborn	P22	769	1.0257
Other respiratory conditions originating in perinatal period	P23-P28	770	0.8455
Infections specific to the perinatal period	P35-P39	771.0-771.2, 771.4-771.8	1.0199
Neonatal hemorrhage	P50-P52, P54	772	1.4369
Congenital malformations, deformations, and chromosomal abnormalities	Q00-Q99	740-759	0.9064
Anecephaly and similar malformations	Q00	740	1.0000
Congenital malformations of heart	Q20-Q24	745-746	0.9951
Congenital malformations of respiratory system	Q30-Q34	748	0.6322
Congenital malformations of digestive system	Q35-Q45	749-751	*
Congenital malformations of genitourinary system	Q50-Q64	752-753	0.9432
Congenital malformations of musculoskeletal system	Q65-Q85	754-757	0.8650
Sudden Infant Death Syndrome (SIDS)	R95	798.0	1.0362
External causes of injuries and poisonings (intentional, unintentional and of undetermined intent)	V01-Y89	E800-E999	NA
Accidents (Unintentional Injuries)	V01-X59	E800-E869, E880-E929	1.0246
Motor Vehicle-related injuries	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2	E810-E825	0.9167
Homicide	X85-Y09	E960-E969	0.9481
Injuries of undetermined intent	Y10-Y34,Y87.2,Y89.9	E980-E989	*

Source: National Center for Health Statistics, Preliminary Comparability Study. February 2001. NA: not available *: not reliable
Please refer to the Appendix for an example of how to apply comparability ratios.

Table A9. Population Estimates for Massachusetts Community Health Network Areas (CHNA) and Counties, 2005[1]

CHNA	POPULATION	COUNTY	POPULATION
1. Community Health Network of Berkshire County	131,965	Barnstable	226,505
2. Upper Valley Health Web (Franklin County)	88,506	Berkshire	131,965
3. Partnership for Health in Hampshire County (Northampton)	151,801	Bristol	547,711
4. The Community Health Connection (Springfield)	299,490	Dukes	15,605
5. Community Health Network of Southern Worcester County	119,141	Essex	750,463
6. Community Partners for Health (Milford)	160,521	Franklin	72,415
7. Community Health Network of Greater Metro West (Framingham)	379,658	Hampden	466,739
8 .Community Wellness Coalition (Worcester)	303,669	Hampshire	153,981
9. Fitchburg/Gardner Community Health Network	261,369	Middlesex	1,464,179
10. Greater Lowell Community Health Network	272,893	Nantucket	10,095
11. Greater Lawrence Community Health Network	195,176	Norfolk	656,472
12. Greater Haverhill Community Health Network	148,557	Plymouth	497,687
13. Community Health Network North (Beverly/Gloucester)	119,378	Suffolk	655,181
14. North Shore Community Health Network	287,352	Worcester	787,943
15. Greater Woburn/Concord/Littleton Community Health Network	209,597		
16. North Suburban Health Alliance (Medford/Malden/Melrose)	257,235	**STATE**	**6,436,940**
17. Greater Cambridge/Somerville Community Health Network	273,883		
18. West Suburban Health Network (Newton/Waltham)	253,138		
19. Alliance for Community Health (Boston/Chelsea/Revere/Winthrop)	711,603		
20. Blue Hills Community Health Alliance (Greater Quincy)	372,309		
21. Four (For) Communities (Holyoke, Chicopee, Ludlow, Westfield)	161,454		
22. Greater Brockton Community Health Network	242,404		
23. South Shore Community Partners in Prevention (Plymouth)	188,787		
24. Greater Attleboro-Taunton Health & Education Response	252,919		
25. Partners for a Healthier Community (Fall River)	141,977		
26. Greater New Bedford Health & Human Services Coalition	199,955		
27. Cape and Islands Community Health Network	252,204		

1. Massachusetts (Department of Public Health) Modified Age, Race/Ethnicity, & Sex Estimates 2005 (MMARS05), released October 2006.

Table A 10. Population Estimates for Massachusetts Communities, 2005

TOWN NAME	COUNTY	CHNA	POPULATION
Abington	Plymouth	22	16,305
Acton	Middlesex	15	20,539
Acushnet	Bristol	26	10,535
Adams	Berkshire	1	8,456
Agawam	Hampden	4	28,547
Alford	Berkshire	1	400
Amesbury	Essex	12	16,617
Amherst	Hampshire	3	34,721
Andover	Essex	11	32,838
Aquinnah (Gay Head)	Dukes	27	362
Arlington	Middlesex	17	41,273
Ashburnham	Worcester	9	5,970
Ashby	Middlesex	9	2,926
Ashfield	Franklin	2	1,824
Ashland	Middlesex	7	15,431
Athol	Worcester	2	11,690
Attleboro	Bristol	24	43,364
Auburn	Worcester	8	16,393
Avon	Norfolk	22	4,345
Ayer	Middlesex	9	7,212
Barnstable	Barnstable	27	47,902
Barre	Worcester	9	5,375
Becket	Berkshire	1	1,783
Bedford	Middlesex	15	12,486
Belchertown	Hampshire	3	13,897
Bellingham	Norfolk	6	15,735
Belmont	Middlesex	17	23,453
Berkley	Bristol	24	6,352
Berlin	Worcester	9	2,683
Bernardston	Franklin	2	2,237
Beverly	Essex	13	39,833
Billerica	Middlesex	10	39,812
Blackstone	Worcester	6	9,051
Blandford	Hampden	4	1,266
Bolton	Worcester	9	4,428
Boston	Suffolk	19	558,435
Bourne	Barnstable	27	19,355
Boxborough	Middlesex	15	5,032
Boxford	Essex	12	8,162
Boylston	Worcester	8	4,253
Braintree	Norfolk	20	33,658
Brewster	Barnstable	27	10,242
Bridgewater	Plymouth	22	25,769
Brimfield	Hampden	5	3,627
Brockton	Plymouth	22	100,366
Brookfield	Worcester	5	3,096
Brookline	Norfolk	19	56,422
Buckland	Franklin	2	1,995
Burlington	Middlesex	15	23,265
Cambridge	Middlesex	17	101,529
Canton	Norfolk	20	21,481
Carlisle	Middlesex	15	4,823
Carver	Plymouth	23	11,552
Charlemont	Franklin	2	1,387
Charlton	Worcester	5	12,447
Chatham	Barnstable	27	6,833
Chelmsford	Middlesex	10	33,728
Chelsea	Suffolk	19	34,128
Cheshire	Berkshire	1	3,356
Chester	Hampden	21	1,320
Chesterfield	Hampshire	3	1,271
Chicopee	Hampden	21	54,599
Chilmark	Dukes	27	944
Clarksburg	Berkshire	1	1,663
Clinton	Worcester	9	13,997
Cohasset	Norfolk	20	7,219
Colrain	Franklin	2	1,858
Concord	Middlesex	15	16,858
Conway	Franklin	2	1,902
Cummington	Hampshire	3	986
Dalton	Berkshire	1	6,697
Danvers	Essex	14	25,999
Dartmouth	Bristol	26	31,371
Dedham	Norfolk	18	23,681
Deerfield	Franklin	2	4,786
Dennis	Barnstable	27	15,914
Dighton	Bristol	24	6,648
Douglas	Worcester	6	7,861
Dover	Norfolk	18	5,634
Dracut	Middlesex	10	28,805
Dudley	Worcester	5	10,787
Dunstable	Middlesex	10	3,142
Duxbury	Plymouth	23	14,655
East Bridgewater	Plymouth	22	13,832
East Brookfield	Worcester	5	2,111
East Longmeadow	Hampden	4	14,845
Eastham	Barnstable	27	5,550
Easthampton	Hampshire	3	15,994
Easton	Bristol	22	22,995
Edgartown	Dukes	27	3,934
Egremont	Berkshire	1	1,355
Erving	Franklin	2	1,542
Essex	Essex	13	3,342
Everett	Middlesex	16	37,100
Fairhaven	Bristol	26	16,223
Fall River	Bristol	25	92,117
Falmouth	Barnstable	27	33,620
Fitchburg	Worcester	9	40,514
Florida	Berkshire	1	666
Foxborough	Norfolk	7	16,288
Framingham	Middlesex	7	65,651
Franklin	Norfolk	6	30,748
Freetown	Bristol	26	8,963
Gardner	Worcester	9	20,955
Georgetown	Essex	12	8,023
Gill	Franklin	2	1,392
Gloucester	Essex	13	30,671
Goshen	Hampshire	3	956
Gosnold	Dukes	27	86
Grafton	Worcester	8	16,783
Granby	Hampshire	3	6,332
Granville	Hampden	4	1,644
Great Barrington	Berkshire	1	7,440
Greenfield	Franklin	2	17,888
Groton	Middlesex	9	10,396
Groveland	Essex	12	6,591
Hadley	Hampshire	3	4,820
Halifax	Plymouth	23	7,805
Hamilton	Essex	13	8,334
Hampden	Hampden	4	5,312
Hancock	Berkshire	1	1,018
Hanover	Plymouth	23	14,077
Hanson	Plymouth	23	9,915
Hardwick	Worcester	9	2,655
Harvard	Worcester	9	6,116
Harwich	Barnstable	27	12,673
Hatfield	Hampshire	3	3,280
Haverhill	Essex	12	60,032
Hawley	Franklin	2	345
Heath	Franklin	2	805
Hingham	Plymouth	20	21,470
Hinsdale	Berkshire	1	1,811
Holbrook	Norfolk	22	10,765
Holden	Worcester	8	16,571

Table A10. Population Estimates for Massachusetts Communities, 2005, continued

TOWN NAME	COUNTY	CHNA	POPULATION
Holland	Hampden	5	2,529
Holliston	Middlesex	7	13,830
Holyoke	Hampden	21	41,089
Hopedale	Worcester	6	6,234
Hopkinton	Middlesex	7	14,048
Hubbardston	Worcester	9	4,340
Hudson	Middlesex	7	18,847
Hull	Plymouth	20	11,279
Huntington	Hampshire	21	2,180
Ipswich	Essex	13	13,285
Kingston	Plymouth	23	12,435
Lakeville	Plymouth	24	10,618
Lancaster	Worcester	9	7,069
Lanesborough	Berkshire	1	2,951
Lawrence	Essex	11	81,591
Lee	Berkshire	1	5,882
Leicester	Worcester	8	10,953
Lenox	Berkshire	1	5,149
Leominster	Worcester	9	42,120
Leverett	Franklin	2	1,769
Lexington	Middlesex	15	30,452
Leyden	Franklin	2	815
Lincoln	Middlesex	15	7,935
Littleton	Middlesex	15	8,561
Longmeadow	Hampden	4	15,556
Lowell	Middlesex	10	105,749
Ludlow	Hampden	21	21,835
Lunenburg	Worcester	9	10,008
Lynn	Essex	14	92,186
Lynnfield	Essex	14	11,540
Malden	Middlesex	16	56,730
Manchester	Essex	13	5,332
Mansfield	Bristol	24	22,933
Marblehead	Essex	14	20,285
Marion	Plymouth	26	5,316
Marlborough	Middlesex	7	37,163
Marshfield	Plymouth	23	24,879
Mashpee	Barnstable	27	14,159
Mattapoisett	Plymouth	26	6,477
Maynard	Middlesex	7	10,221
Medfield	Norfolk	7	12,328
Medford	Middlesex	16	53,801
Medway	Norfolk	6	12,780
Melrose	Middlesex	16	26,366
Mendon	Worcester	6	5,743
Merrimac	Essex	12	6,350
Methuen	Essex	11	44,532
Middleborough	Plymouth	24	21,153
Middlefield	Hampshire	3	549
Middleton	Essex	11	9,077
Milford	Worcester	6	27,523
Millbury	Worcester	8	13,443
Millis	Norfolk	7	7,949
Millville	Worcester	6	2,938
Milton	Norfolk	20	26,243
Monroe	Franklin	2	100
Monson	Hampden	4	8,744
Montague	Franklin	2	8,416
Monterey	Berkshire	1	959
Montgomery	Hampden	4	743
Mt. Washington	Berkshire	1	135
Nahant	Essex	14	3,591
Nantucket	Nantucket	27	10,095
Natick	Middlesex	7	31,895
Needham	Norfolk	18	28,445
New Ashford	Berkshire	1	247
New Bedford	Bristol	26	94,502
New Braintree	Worcester	9	1,090
New Marlborough	Berkshire	1	1,522
New Salem	Franklin	2	986
Newbury	Essex	12	6,990
Newburyport	Essex	12	17,395
Newton	Middlesex	18	83,346
Norfolk	Norfolk	7	10,506
North Adams	Berkshire	1	14,031
North Andover	Essex	11	27,137
North Attleboro	Bristol	24	28,078
North Brookfield	Worcester	5	4,812
North Reading	Middlesex	16	13,930
Northampton	Hampshire	3	28,803
Northborough	Worcester	7	14,652
Northbridge	Worcester	6	14,184
Northfield	Franklin	2	3,226
Norton	Bristol	24	19,106
Norwell	Plymouth	20	10,382
Norwood	Norfolk	20	28,472
Oak Bluffs	Dukes	27	3,794
Oakham	Worcester	9	1,892
Orange	Franklin	2	7,659
Orleans	Barnstable	27	6,459
Otis	Berkshire	1	1,391
Oxford	Worcester	5	13,710
Palmer	Hampden	4	12,895
Paxton	Worcester	8	4,556
Peabody	Essex	14	50,954
Pelham	Hampshire	3	1,415
Pembroke	Plymouth	23	18,069
Pepperell	Middlesex	9	11,386
Peru	Berkshire	1	836
Petersham	Worcester	2	1,282
Phillipston	Worcester	2	1,753
Pittsfield	Berkshire	1	43,949
Plainfield	Hampshire	3	600
Plainville	Norfolk	7	7,994
Plymouth	Plymouth	23	54,781
Plympton	Plymouth	23	2,777
Princeton	Worcester	9	3,520
Provincetown	Barnstable	27	3,444
Quincy	Norfolk	20	90,458
Randolph	Norfolk	20	32,552
Raynham	Bristol	24	13,428
Reading	Middlesex	16	23,161
Rehoboth	Bristol	24	11,229
Revere	Suffolk	19	45,551
Richmond	Berkshire	1	1,618
Rochester	Plymouth	26	5,295
Rockland	Plymouth	23	17,842
Rockport	Essex	13	7,761
Rowe	Franklin	2	350
Rowley	Essex	12	5,832
Royalston	Worcester	2	1,366
Russell	Hampden	4	1,723
Rutland	Worcester	9	7,406
Salem	Essex	14	41,647
Salisbury	Essex	12	8,264
Sandisfield	Berkshire	1	830
Sandwich	Barnstable	27	20,707
Saugus	Essex	14	26,867
Savoy	Berkshire	1	724
Scituate	Plymouth	20	18,119
Seekonk	Bristol	24	13,660
Sharon	Norfolk	20	17,269
Sheffield	Berkshire	1	3,360
Shelburne	Franklin	2	2,054
Sherborn	Middlesex	7	4,220
Shirley	Middlesex	9	7,361

Table A10. Population Estimates for Massachusetts Communities, 2005, continued

TOWN NAME	COUNTY	CHNA	POPULATION
Shrewsbury	Worcester	8	33,171
Shutesbury	Franklin	2	1,843
Somerset	Bristol	25	18,564
Somerville	Middlesex	17	75,372
South Hadley	Hampshire	3	17,071
Southampton	Hampshire	3	5,828
Southborough	Worcester	7	9,511
Southbridge	Worcester	5	17,503
Southwick	Hampden	4	9,512
Spencer	Worcester	5	12,087
Springfield	Hampden	4	156,358
Sterling	Worcester	9	7,761
Stockbridge	Berkshire	1	2,256
Stoneham	Middlesex	16	21,594
Stoughton	Norfolk	22	26,782
Stow	Middlesex	7	6,159
Sturbridge	Worcester	5	8,825
Sudbury	Middlesex	7	17,035
Sunderland	Franklin	2	3,853
Sutton	Worcester	6	8,974
Swampscott	Essex	14	14,283
Swansea	Bristol	25	16,243
Taunton	Bristol	24	56,348
Templeton	Worcester	9	7,474
Tewksbury	Middlesex	10	28,990
Tisbury	Dukes	27	3,819
Tolland	Hampden	4	446
Topsfield	Essex	13	6,178
Townsend	Middlesex	9	9,273
Truro	Barnstable	27	2,162
Tyngsborough	Middlesex	10	11,297
Tyringham	Berkshire	1	352
Upton	Worcester	6	6,374
Uxbridge	Worcester	6	12,377
Wakefield	Middlesex	16	24,553
Wales	Hampden	5	1,818
Walpole	Norfolk	7	23,067
Waltham	Middlesex	18	59,564
Ware	Hampshire	3	9,988
Wareham	Plymouth	26	21,274
Warren	Worcester	5	5,040
Warwick	Franklin	2	763
Washington	Berkshire	1	546
Watertown	Middlesex	17	32,255
Wayland	Middlesex	7	13,015
Webster	Worcester	5	16,853
Wellesley	Norfolk	18	26,975
Wellfleet	Barnstable	27	2,821
Wendell	Franklin	2	1,035
Wenham	Essex	13	4,643
West Boylston	Worcester	8	7,708
West Bridgewater	Plymouth	22	6,819
West Brookfield	Worcester	5	3,896
West Newbury	Essex	12	4,301
West Springfield	Hampden	4	27,938
West Stockbridge	Berkshire	1	1,450
West Tisbury	Dukes	27	2,666
Westborough	Worcester	7	18,781
Westfield	Hampden	21	40,432
Westford	Middlesex	10	21,369
Westhampton	Hampshire	3	1,566
Westminster	Worcester	9	7,358
Weston	Middlesex	18	11,591
Westport	Bristol	25	15,053
Westwood	Norfolk	18	13,902
Weymouth	Norfolk	20	53,708
Whately	Franklin	2	1,584
Whitman	Plymouth	22	14,424
Wilbraham	Hampden	4	13,960
Williamsburg	Hampshire	3	2,433
Williamstown	Berkshire	1	8,276
Wilmington	Middlesex	15	21,431
Winchendon	Worcester	9	10,085
Winchester	Middlesex	15	21,139
Windsor	Berkshire	1	858
Winthrop	Suffolk	19	17,067
Woburn	Middlesex	15	37,074
Worcester	Worcester	8	179,839
Worthington	Hampshire	3	1,291
Wrentham	Norfolk	7	11,066
Yarmouth	Barnstable	27	24,663

1. Massachusetts (Department of Public Health) Modified Age, Race/Ethnicity, & Sex Estimates 2005 (MMARS05), released October 2006.

Table A11. 2006 Massachusetts Population Estimates[1] By Age Group, Gender, Race and Hispanic Ethnicity[2] (mutually exclusive)

AGE	GENDER	TOTAL	WHITE Non-Hispanic	BLACK Non-Hispanic	ASIAN Non-Hispanic	HISPANIC
UNDER 1	MALE	39,102	27,947	3,932	2,546	4,587
	FEMALE	38,081	27,213	3,831	2,343	4,618
	TOTAL	77,183	55,160	7,763	4,889	9,205
1 TO 4	MALE	158,783	114,279	15,527	9,724	18,895
	FEMALE	151,897	109,414	14,488	9,459	18,200
	TOTAL	310,680	223,693	30,015	19,183	37,095
5 TO 14	MALE	408,526	307,923	32,279	20,190	47,123
	FEMALE	390,066	292,495	30,995	20,452	45,127
	TOTAL	798,592	600,418	63,274	40,642	92,250
15 TO 24	MALE	449,170	339,724	35,269	24,025	48,844
	FEMALE	446,537	338,603	34,843	25,853	45,872
	TOTAL	895,707	678,327	70,112	49,878	94,716
25 TO 34	MALE	414,819	298,612	29,257	35,344	50,534
	FEMALE	414,742	300,752	29,813	36,406	46,709
	TOTAL	829,561	599,364	59,070	71,750	97,243
35 TO 44	MALE	488,318	389,235	29,180	29,358	39,425
	FEMALE	504,231	401,967	31,469	28,629	41,004
	TOTAL	992,549	791,202	60,649	57,987	80,429
45 TO 54	MALE	473,435	405,537	23,910	18,329	24,437
	FEMALE	498,309	424,657	25,915	19,353	27,144
	TOTAL	971,744	830,194	49,825	37,682	51,581
55 TO 64	MALE	337,251	300,002	13,726	10,457	12,333
	FEMALE	367,964	324,213	16,644	11,319	15,041
	TOTAL	705,215	624,215	30,370	21,776	27,374
65 TO 74	MALE	185,797	167,444	6,759	5,741	5,484
	FEMALE	223,884	200,061	9,682	6,309	7,473
	TOTAL	409,681	367,505	16,441	12,050	12,957
75 TO 84	MALE	121,896	113,627	3,153	2,545	2,363
	FEMALE	187,363	174,400	5,781	3,395	3,547
	TOTAL	309,259	288,027	8,934	5,940	5,910
85 +	MALE	40,108	37,599	952	722	777
	FEMALE	96,914	91,927	2219	1,150	1,477
	TOTAL	137,022	129,526	3,171	1,872	2,254
ALL AGES	MALE	3,117,205	2,501,929	193,944	158,981	254,802
	FEMALE	3,319,988	2,685,702	205,680	164,668	256,212
	TOTAL	6,437,193	5,187,631	399,624	323,649	511,014

1. National Center for Health Statistics. Estimates of the July 1, 2000-July 1, 2006, United States resident population from the Vintage 2006 postcensal series by year, county, age, sex, race, and Hispanic origin, prepared under a collaborative arrangement with the U.S. Census Bureau. Available on the Internet from http://www.cdc.gov/nchs/about/major/dvs/popbridge/popbridge.htm August 16, 2006. 2. Persons of Hispanic ethnicity are NOT included in the race categories. These estimates are used to calculate population based rates published in this report, except for Table A1.

Table A12. 2006 Massachusetts Population Estimates[1] By Age Group, Gender, Race and Hispanic Ethnicity[2]

AGE	GENDER	TOTAL	WHITE	BLACK	ASIAN	HISPANIC ETHNICITY
UNDER 1	MALE	39,102	31,543	4,874	2,587	4,587
	FEMALE	38,081	30,866	4,734	2,394	4,618
	TOTAL	77,183	62,409	9,608	4,981	9,205
1 TO 4	MALE	158,783	129,335	19,173	9,870	18,895
	FEMALE	151,897	123,923	17,972	9,612	18,200
	TOTAL	310,680	253,258	37,145	19,482	37,095
5 TO 14	MALE	408,526	346,690	39,428	20,782	47,123
	FEMALE	390,066	329,723	37,665	21,075	45,127
	TOTAL	798,592	676,413	77,093	41,857	92,250
15 TO 24	MALE	449,170	380,629	41,719	24,729	48,844
	FEMALE	446,537	376,888	41,133	26,448	45,872
	TOTAL	895,707	757,517	82,852	51,177	94,716
25 TO 34	MALE	414,819	342,346	34,645	35,996	50,534
	FEMALE	414,742	339,904	36,077	37,049	46,709
	TOTAL	829,561	682,250	70,722	73,045	97,243
35 TO 44	MALE	488,318	422,724	34,120	29,775	39,425
	FEMALE	504,231	436,240	37,076	29,163	41,004
	TOTAL	992,549	858,964	71,196	58,938	80,429
45 TO 54	MALE	473,435	425,851	27,374	18,623	24,437
	FEMALE	498,309	447,161	29,772	19,727	27,144
	TOTAL	971,744	873,012	57,146	38,350	51,581
55 TO 64	MALE	337,251	310,268	15,463	10,604	12,333
	FEMALE	367,964	336,830	18,668	11,504	15,041
	TOTAL	705,215	647,098	34,131	22,108	27,374
65 TO 74	MALE	185,797	172,012	7,541	5,801	5,484
	FEMALE	223,884	206,255	10,767	6,414	7,473
	TOTAL	409,681	378,267	18,308	12,215	12,957
75 TO 84	MALE	121,896	115,596	3,483	2,584	2,363
	FEMALE	187,363	177,341	6,291	3,431	3,547
	TOTAL	309,259	292,937	9,774	6,015	5,910
85 +	MALE	40,108	38,258	1,039	742	777
	FEMALE	96,914	93,170	2408	1,179	1,477
	TOTAL	137,022	131,428	3,447	1,921	2,254
ALL AGES	MALE	3,117,205	2,715,252	228,859	162,093	254,802
	FEMALE	3,319,988	2,898,301	242,563	167,996	256,212
	TOTAL	6,437,193	5,613,553	471,422	330,089	511,014

1. National Center for Health Statistics. Estimates of the July 1, 2000-July 1, 2006, United States resident population from the Vintage 2006 postcensal series by year, county, age, sex, race, and Hispanic origin, prepared under a collaborative arrangement with the U.S. Census Bureau. Available on the Internet from http://www.cdc.gov/nchs/about/major/dvs/popbridge/popbridge.htm August 16, 2006. 2. Persons of Hispanic ethnicity are included in the race categories. These estimates are used to calculate population based rates published in Table A1.

Massachusetts Death Certificate: 2006

[INSTRUCTIONS ON REVERSE SIDE]
FOR USE BY PHYSICIANS AND MEDICAL EXAMINERS

STATE USE ONLY

4a PLACE
4c HOSP.
5 TYPE
7 VET.
8 HISP / RACE
9 EDUC
10 AGE
11 NATIVITY
12 MARITAL
15 RESID
15 OUT-STATE
23 DISP.
31-32 AUTOP
33 MED EXAM
34 MANNER
35C WORK INJ
35F PLACE
36-37 CERT
40A RN PRO

BLACK INK ONLY

R-301-89

The Commonwealth of Massachusetts

STANDARD CERTIFICATE OF DEATH
REGISTRY OF VITAL RECORDS AND STATISTICS

REGISTERED NUMBER | STATE USE ONLY

DECEDENT

DECEDENT - NAME FIRST (1) | MIDDLE | LAST | SEX (2) | DATE OF DEATH (Mo., Day, Yr.) (3)

PLACE OF DEATH (City/Town) (4a) | COUNTY OF DEATH (4b) | HOSPITAL OR OTHER INSTITUTION - Name (If not in either, give street and number) (4c)

PLACE OF DEATH (Check only one): HOSPITAL: ☐ Inpatient ☐ ER/Outpatient ☐ DOA (5) | OTHER: ☐ Nursing Home ☐ Residence ☐ Other (Specify) | SOCIAL SECURITY NUMBER (6) | IF US WAR VETERAN SPECIFY WAR (7)

WAS DECEDENT OF HISPANIC ORIGIN? (If yes, Specify Puerto Rican, Dominican, Cuban, etc.) ☐ NO ☐ YES 8a Specify: | RACE (e.g. White, Black, American Indian, etc.) (Specify): (8b) | DECEDENT'S EDUCATION (Highest Grade Completed) Elem/Sec (0-12) / College (1-4, 5+) (9)

AGE - Last Birthday (Yrs.) (10a) | UNDER 1 YEAR MOS (b) / DAYS | UNDER 1 DAY HOURS (c) / MINS | DATE OF BIRTH (Mo., Day, Yr.) (10d) | BIRTHPLACE (City and State or Foreign Country) (11)

MARRIED, NEVER MARRIED, WIDOWED OR DIVORCED (12) | LAST SPOUSE (If wife, give maiden name) (13) | USUAL OCCUPATION (Prior - If retired) (14a) | KIND OF BUSINESS OR INDUSTRY (14b)

RESIDENCE - NO. & ST., CITY/TOWN, COUNTY, STATE/COUNTRY (15a) | ZIP CODE (15b)

FATHER - FULL NAME (16) | STATE OF BIRTH (If not in US, name country) (17) | MOTHER - NAME (GIVEN) (MAIDEN) (18) | STATE OF BIRTH (If not in US, name country) (19)

INFORMANT

INFORMANT'S NAME (20) | MAILING ADDRESS - NO. & ST., CITY/TOWN, STATE, ZIP CODE (21) | RELATIONSHIP (22)

DISPOSITION

METHOD OF DISPOSITION: ☐ BURIAL ☐ CREMATION ☐ ENTOMBMENT ☐ REMOVAL FROM STATE ☐ DONATION ☐ OTH. SPEC: (23) | FUNERAL SERVICE LICENSEE (24) | LICENSE # (25)

PLACE OF DISPOSITION (Name of Cemetery, Crematory or other) (26a) | LOCATION (City/Town, State) (26b)

DATE OF DISPOSITION (Mo., Day, Yr.) (27) | NAME AND ADDRESS OF FACILITY (28a/b)

CERTIFIER

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. ____

PART II - Other significant conditions contributing to death but not resulting in underlying cause given in Part I. (30) | WAS AUTOPSY PERFORMED? (Yes or No) (31) | WERE AUTOPSY FINDINGS AVAILABLE PRIOR TO COMPLETION OF CAUSE OF DEATH? (Yes or No) (32)

WAS CASE REFERRED TO M.E.? (Yes or No) (33) | 34 MANNER OF DEATH: ☐ NATURAL ☐ HOMICIDE ☐ COULD NOT BE DETERMINED ☐ ACCIDENT ☐ SUICIDE ☐ PENDING INVESTIGATION | DATE OF INJURY (Mo., Day, Yr.) (35a) | TIME OF INJURY (35b) M | INJURY AT WORK (Yes or No) (35c)

DESCRIBE HOW INJURY OCCURRED (35d) | PLACE OF INJURY - At home, farm, street, factory, office bldg., etc. Specify: (35e) | LOCATION (No. & St., City/Town, State) (35f)

To be Completed by CERTIFYING PHYSICIAN Only:
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)
DATE SIGNED (Mo., Day, Yr.) (36b) | HOUR OF DEATH (36c) M
NAME OF ATTENDING PHYSICIAN IF NOT CERTIFIER (36d)

To Be Completed by MEDICAL EXAMINER Only:
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)
DATE SIGNED (Mo., Day, Yr.) (37b) | HOUR OF DEATH (37c) M
PRONOUNCED DEAD (Mo., Day, Yr.) (37d) | PRONOUNCED DEAD (Hr.) (37e) M

NAME AND ADDRESS OF CERTIFYING PHYSICIAN OR MEDICAL EXAMINER (Type or Print) (38) | LICENSE NO. OF CERTIFIER (39)

WAS THERE AN R.N. PRONOUNCEMENT? Yes or No (40a) | IF YES, DATE PRONOUNCED (40b) | IF YES, TIME PRONOUNCED (40c) M | 40d NAME OF PRONOUNCING REGISTERED NURSE: NAME

DATE BURIAL PERMIT ISSUED: | RECEIVED IN THE CITY/TOWN OF: | DATE OF RECORD (43)

SIGNATURE - BD. OF HEALTH AGENT (41) | CLERK'S SIGNATURE (42)

SAMPLE

Circumstance for Referral to the Office of the Chief Medical Examiner (OCME)

http://www.mass.gov/legis/laws/mgl/38-3.htm

CHAPTER 38. MEDICAL EXAMINERS AND INQUESTS

Chapter 38: Section 3. Duty to report deaths; failure to report

Section 3. It shall be the duty of any person having knowledge of a death which occurs under the circumstances enumerated in this paragraph immediately to notify the office of the chief medical examiner, or the medical examiner designated to the location where the death has occurred, of the known facts concerning the time, place, manner, circumstances and cause of such death:

(1) death where criminal violence appears to have taken place, regardless of the time interval between the incident and death, and regardless of whether such violence appears to have been the immediate cause of death, or a contributory factor thereto;

(2) death by accident or unintentional injury, regardless of time interval between the incident and death, and regardless of whether such injury appears to have been the immediate cause of death, or a contributory factor thereto;

(3) suicide, regardless of the time interval between the incident and death;

(4) death under suspicious or unusual circumstances;

(5) death following an unlawful abortion;

(6) death related to occupational illness or injury;

(7) death in custody, in any jail or correctional facility, or in any mental health or mental retardation institution;

(8) death where suspicion of abuse of a child, family or household member, elder person or disabled person exists;

(9) death due to poison or acute or chronic use of drugs or alcohol;

(10) skeletal remains;

(11) death associated with diagnostic or therapeutic procedures;

(12) sudden death when the decedent was in apparent good health;

(13) death within twenty-four hours of admission to a hospital or nursing home;

(14) death in any public or private conveyance;

(15) fetal death, as defined by section two hundred and two of chapter one hundred and eleven, where the period of gestation has been twenty weeks or more, or where fetal weight is three

hundred and fifty grams or more;

(16) death of children under the age of 18 years from any cause;

(17) any person found dead;

(18) death in any emergency treatment facility, medical walk-in center, day care center, or under foster care; or

(19) deaths occurring under such other circumstances as the chief medical examiner shall prescribe in regulations promulgated pursuant to the provisions of chapter thirty A.

A physician, police officer, hospital administrator, licensed nurse, department of social services social worker, or licensed funeral director, within the commonwealth, who, having knowledge of such an unreported death, fails to notify the office of the chief medical examiner of such death shall be punished by a fine of not more than five hundred dollars. Such failure shall also be reported to the appropriate board of registration, where applicable.

Massachusetts Deaths: 2006 Evaluation Form

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