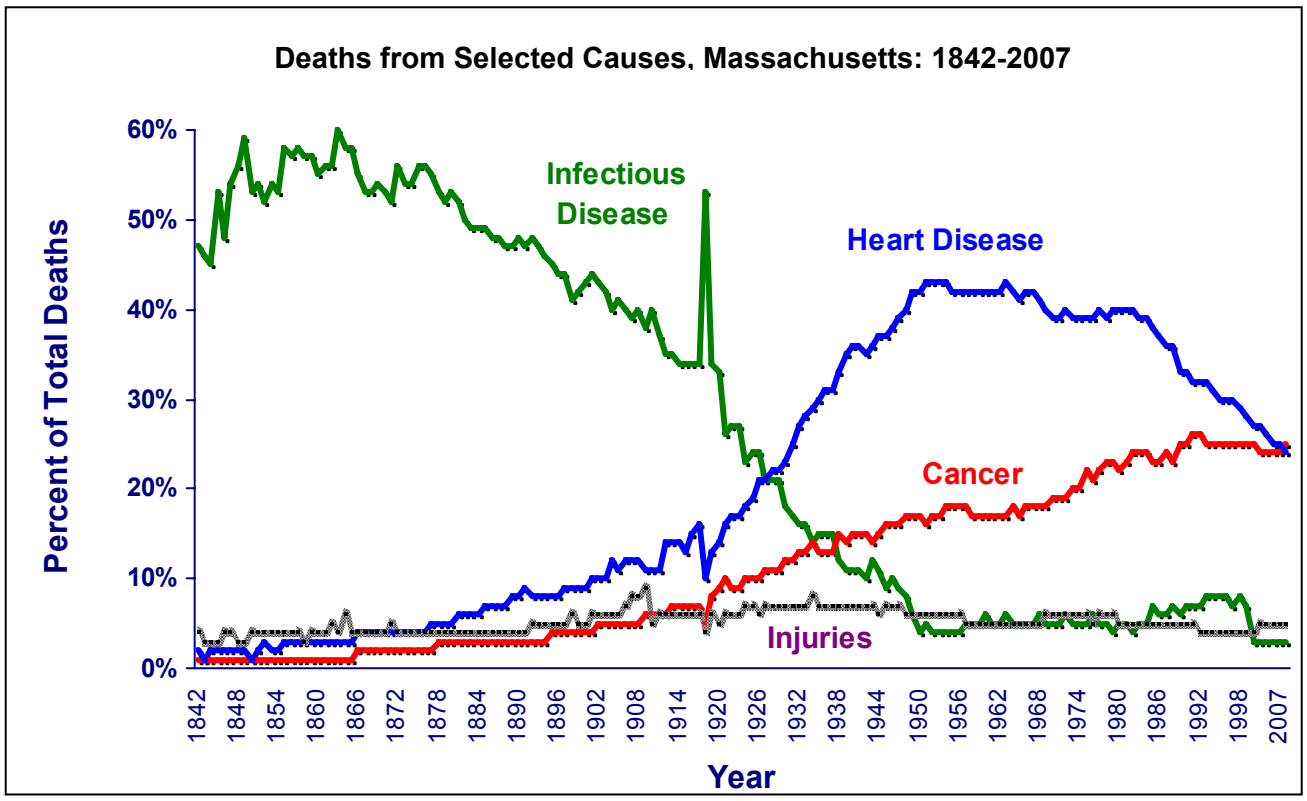
Massachusetts Deaths 2007



Bureau of Health Information, Statistics, Research, and Evaluation

Massachusetts Department of Public Health

April 2009

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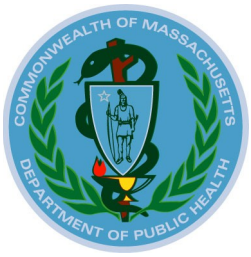

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Registry of Vital Records and Statistics

Massachusetts Department of Public Health

April 2009

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To obtain additional copies of this report, contact:

Massachusetts Department of Public Health
Bureau of Health Information, Statistics, Research, and Evaluation
250 Washington Street, 6th floor
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Note to Readers

Please review the information below before reading the report.

1. **Population Sources:** Two sources of population estimates were used to calculate population-based rates in *Massachusetts Deaths 2007*:

    - State and County Death Rates
      We used the 2007 Modified Age, Race/Ethnicity, and Sex (MARS) estimates, from the National Center for Health Statistics (NCHS) and the Census Bureau Population Estimates Program. These population estimates are stratified by single year of 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.

    - City and town death rates
      We used internal estimates based upon NCHS and Census Bureau population estimates for 2005, which are the most up-to-date estimates available by age, race, and sex at the sub-county level. If the population in your community increased from 2006 to 2007, the rates listed may **overestimate** the actual rate. If the population in your community declined from 2006 to 2007, 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. Occasionally, we will indicate that a value is "approaching significance" when it is very close to meeting the test criteria. Please see the Appendix for a discussion of how statistical significance is determined.

3. **Comparisons with National Death Statistics:** Because U.S. death statistics for 2007 were not available at the time of publication of this report, we are using the national statistics from 2006. Although a direct comparison cannot be made between statistics from different years, we are presenting the U.S. statistics for 2006 to give a sense how Massachusetts statistics differ from those of the U.S.

4. **Resident deaths:** All data in this publication are resident data unless otherwise stated. Resident data include all events that occur to residents of the Commonwealth, wherever they occur.

5. **Race and Ethnicity:** In the text, the race categories, white, black, American Indian, Asian, and Hispanic are mutually exclusive, for example, when we refer to white residents, this means white non-Hispanic residents.

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Massachusetts Deaths 2007. Boston, MA: Division of Research and Epidemiology, Bureau of Health Information, Statistics, Research, and Evaluation, Massachusetts Department of Public Health. April 2009.

Highlights

- The age-adjusted death rate for Massachusetts fell to a record low of 704.4 in 2007, down 16% from 834.8 in 1997, and down 2% from 717.6 deaths per 100,000 in 2006, continuing a decreasing trend in the death rate and mirroring a decline in the death rate nationwide. The number of deaths declined by 603 from 2006 (52,690 v. 53,293). Most of the decrease occurred in the 75-84 age group, which had 552 fewer deaths.

- In 2007, for the second year in a row, cancer was the leading cause of death in Massachusetts, followed by heart disease. As in previous years, cancer and heart disease accounted for almost half of all deaths, and more women continued to die from heart disease than men did. In 2007, there was a 4% decline in the overall cancer death rate and a 13% decline in the death rate for female breast cancer from 2006.

- In 2007, age-adjusted death rates for three of the top 10 leading causes of death dropped significantly from 2006. The death rate for influenza and pneumonia decreased by 14%, chronic lower respiratory disease decreased by 9%, and cancer decreased by 4% from 2006. Death rates due to heart disease, stroke, diabetes, and Alzheimer's disease remained stable since 2006.

- Life expectancy reached an all-time high in Massachusetts of 80.2 years overall in 2007. An infant girl born in Massachusetts could expect to live to be 83, and an infant boy could expect to live to be 78 years old.

- More than half of the leading cause-specific mortality rates are lower in Massachusetts than in the U.S., including cancer, heart disease, stroke, unintentional injuries, Alzheimer 's disease, and diabetes. The age-adjusted death rate for influenza and pneumonia was about the same as that of the U.S.

- In 2007, the HIV/AIDS death rate was 25% lower than it was in 2006. This rate approached statistical significance[1]. There were 143 deaths from HIV/AIDS, which was the lowest annual number of HIV/AIDS deaths in Massachusetts since the peak of the epidemic in 1994 (981 HIV/AIDS deaths). There were two changes in the distribution of HIV/AIDS deaths since 1994: 1) the proportion of HIV/AIDS deaths among women almost doubled (33% vs. 19%); and 2) the proportion of HIV/AIDS deaths for persons ages 45 and older increased more than 3.5 times (73% in 2007 vs. 20% in 1994). Deaths of persons ages 45 and older accounted for three-fourths of HIV/AIDS deaths, which was its largest proportion ever.

- In 2007, there was a 28% increase in the number of suicides among males. This increase occurred primarily among white males and all males ages 25-44. Most of the increase in suicides was due to deaths from "hanging, strangulation, or suffocation".

- Fall-related deaths continued its increase at an average of 31% per year since 2005. Falls are now the second leading cause of injury death in Massachusetts. The majority of fall-related deaths occurred among persons ages 65 and older (80%), among men (72%), and over half (57%) of these injuries occurred at home.

[1] The CI for the HIV/AIDS rate in 2007 was [2.27-3.05] and for 2006, it was [1.69-2.36].

- While the homicide rate for Massachusetts in 2007 was the same as it was in 2006, it has increased 45% since 2000. Although homicide rates for whites, Asians and Hispanics remained stable from 2000, the rate for blacks has almost doubled (9.4 to 18.0 deaths per 100,000). Homicide rates for blacks and Hispanics continued to be more than 5 times higher than that of whites.

- Poisonings, which include drug overdoses, continue to be the leading cause of injury death in MA. In 2007 there were 965 poisoning deaths compared with 989 in 2006. Sixty-six percent of these deaths were associated with an opioid, which includes drugs such as heroin, oxycodone, morphine, codeine, and methadone, and 28% were associated with cocaine. The percentage of alcohol-associated deaths rose significantly from 5% in 2006 to 18% in 2007.

- 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, and accounted for almost 4,000 deaths.

- The infant mortality rate was 4.9 deaths per 1,000 live births in 2007, compared with 4.8 deaths per 1,000 live births in 2006. This change was not statistically significant. The infant mortality rate has decreased by 30% since 1990, from 7.0 deaths per 1,000 live births to 4.9 deaths per 1,000 live births.

- As expected, in 2007, 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 three deaths was a person ages 85 or older (36%); almost 2 out of 3 deaths were persons aged 75 and older (64%).

- Disparities by gender, race, ethnicity, education, and geography persist:
  - Hispanics, blacks, and Asians had a higher proportion of deaths occurring at younger ages than whites had. Twenty percent of white deaths occurred at 64 years and younger; whereas, 59% of Hispanic deaths; 45% of black deaths, and 34% of Asian deaths occurred at ages 64 years and younger.
  - The overall cancer death rate for men was 46% higher than the rate for women (222.0 vs. 152.1 per 100,000).
  - The overall age-adjusted death rate for blacks was 15% higher than the age-adjusted death rate for whites (820.5 vs. 711.1).
  - 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[2] (PMR) for blacks (428.3) was 1.5 times higher than that of whites (293.5).
  - Springfield, Lowell, Fall River, Taunton, Worcester, and New Bedford had the highest premature mortality rates among the state's 30 largest communities.

- Massachusetts has achieved or moved closer to achieving over one-half of the Healthy People 2010 mortality objectives[3]. Out of forty HP2010 mortality objectives

[2] 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.

[3] 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

examined, Massachusetts has achieved 19 targets and is within 25% of achieving targets for nine additional indicators.

Introduction

This report presents detailed data on the number and characteristics of Massachusetts deaths in 2007. The data presented in this report can be used to monitor and evaluate the 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.

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, U.S. 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 deaths of its residents.

The data in this publication refer to the underlying cause of death as generated by the Super Mortality Medical Indexing, Classification, and Retrieval system (Super 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 assignment of cause of death codes are consistent 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 age- 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

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these 467 objectives, HP2010 has 46 mortality goals both using the underlying cause of death as well as other mentionable causes.

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 affect 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". Because of this new policy, only 4% of all injuries in 2007 (3% in 2006) were classified as injuries of undetermined intent[4], compared with an average of 20% before 2005.

Comparison of rates is based on tests of statistical significance. 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 2007, 52,690 Massachusetts residents died, which was 603 fewer deaths than there were in 2006, but this difference was not statistically significant (Table 1). This year's lower number of deaths was accounted for by 657 fewer female deaths and 53 more male deaths. The *number* of deaths declined significantly by 552 for 75 to 84 year olds, but the *rate* did not decline significantly.

The age-adjusted death rate in 2007 was 704.4, which was 2% lower than the death rate in 2006, when it was also a record low (717.6 deaths per 100,000 persons). The death rate for females was 3% lower than the rate in 2006 (596.3 v. 589.2), but the rate for males did not vary significantly from the previous year (853.3 v. 858.8). Compared with the rates in 1997, the male rate has declined by 18%, and the female rate has declined by 14%.

Age-adjusted death rates varied greatly by race and Hispanic ethnicity in Massachusetts in 2007, as they have historically. Blacks had the highest death rate, which was 1.2 times the death rate of whites (820.5 vs. 723.3 deaths per 100,000). The rate for Asians was the lowest for all groups at 342.0 followed by Hispanics (477.7 deaths per 100,000). In 2007, the age-adjusted death rate for whites was nearly significantly higher[5] than it was in 2006 (711.1 v. 723.3), while the rates for the other groups remained stable.

The true 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[6,7]. Evaluation studies since the early 1990s have demonstrated inaccuracy in

[4] Injury death of undetermined intent means that the medical examiner lacked sufficient evidence to classify the deaths as homicide, suicide, or accidental.
[5] The 2006 CI for Whites in 2007 was [704.8 - 717.3], and the CI for 2006 was [717.0 - 729.6].
[6] 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.

mortality statistics for these race and ethnicity groups[8,9]. 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 17 regarding Life Expectancy).

In 2007, cancer was the leading cause of death in Massachusetts, surpassing heart disease for the second year in a row. There were 226 more cancer deaths than heart disease deaths. The number of female breast cancer deaths was down 124, significantly lower than in 2006 (837 v. 962). There were also significant declines in the numbers of influenza and pneumonia and chronic lower respiratory disease deaths.

In 2007, the age-adjusted death rates for three of the top ten leading causes of death declined. The cancer death rate declined by 4%, from 186.3 to 179.0 deaths per 100,000. The chronic lower respiratory disease death rate declined by 9%, from 34.5 to 31.5, and the influenza and pneumonia death rate declined 14%, from 22.5 to 19.4 (Table 2). Death rates remained stable for the 7 other leading causes of death.

A Comparison of Massachusetts and U.S. Indicators

In 2007, certain Massachusetts mortality indicators were better than those for the U.S., and the ranking of the leading causes differed (Table 2). According to preliminary U.S. death statistics for 2006[10] (Note: 2007 data were not available at the time of release of this report):

- The 2007 Massachusetts overall age-adjusted death rate was 9% lower than the 2006 United States rate (704.4 vs. 776.4 deaths per 100,000), and has been consistently lower than that of the U.S. from 1990 to the present.

- In 2007, life expectancy at birth continued to be higher in Massachusetts as compared with the U.S. (80.2 years vs. 78.1 years).

- The top 10 causes of death in Massachusetts were the same as those of the U.S., but they were not in the same rank order. Cancer was the leading cause of death in Massachusetts, and heart disease was the second; whereas, heart disease was the leading cause of death in the United States and cancer was the second.

- The next four leading causes of death were in the same order for both Massachusetts and the U.S.: stroke, chronic lower respiratory disease, unintentional injuries, and Alzheimer's disease. However, influenza and pneumonia was the seventh leading cause of death followed by nephritis and diabetes in Massachusetts; whereas, for the U.S., diabetes, influenza and pneumonia, and nephritis were the seventh, eighth, and

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[7] 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.

[8] 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.

[9] Sorlie, P. D., Rogot, E., & Johnson, N. J. (1992). Validity of the Death Certificate. Epidemiology, 3(2), 181-184.

[10] Heron MP, Hoyert DL, Xu J, Scott, C, Tejada-Vera B. Deaths: Preliminary Data for 2006. National Vital Statistics Reports; vol 56, no 16. Hyattsville, MD: National Center for Health Statistics. June 2008.

ninth leading causes of death, respectively. The tenth leading cause of death for both the U.S. and Massachusetts was septicemia.

- Massachusetts death rates were lower than those of the U.S. for heart disease, stroke, chronic lower respiratory disease, unintentional injuries, cancer, Alzheimer's disease, and diabetes. The age-adjusted death rate for influenza and pneumonia was about the same as that of the U.S. despite Massachusetts' older population.

- The homicide rate in Massachusetts (2.9 deaths per 100,000) was 52% lower than the U.S. homicide rate (6.0 deaths per 100,000). The Massachusetts rate for suicides (7.5) was 29% below the U.S. rate (10.6).

- The rate of all firearm-related deaths in Massachusetts was about one-third the rate of firearm-related deaths in the United States (3.5 deaths per 100,000 compared with 10.1 per 100,000).

- The infant mortality rate (IMR) in Massachusetts (4.9 deaths per 1,000 live births) was 27% lower than that of the U.S. (6.7 deaths per 1,000 live births).

Life Expectancy

In 2007, 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 2007 could expect to live, on average, an additional 35 years than a person born in 1900 (80.2 years vs. 45.0 years).

In 2007, a woman born in Massachusetts could expect to live, on average, until the age of 83, 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 do. 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 and Table 2). At birth, white women could expect to live 83 years; black women, 80 years; Hispanic women, 91 years; white men, 78 years; black men 74 years; and Hispanic men, 83 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 whites: 80% of Hispanics are under 45 years of age compared with 56% of whites, and, 29% of deaths among Hispanics occur to persons under age 45 compared with 5% for whites. 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 historical trends. From 1900 to 2007, the proportion of Massachusetts residents ages 45 and older increased by 91%, from 21% to 40% of the population and the proportion of persons ages 85 and older increased by 90% from 0.2% to 2.0% (Figure 3). Although persons ages 85 and over make up only 2% of the Massachusetts population, they continued to have the highest number of deaths in the state in the year 2007 (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 2007, in a reversal of rank order, 25% of the deaths in Massachusetts were due to cancer, 24% to heart disease, 6% to intentional and unintentional injuries, and 3% were due to infectious diseases.

Place of Occurrence

Of the 52,690 deaths in 2007, 22,097 (42%) occurred in hospitals – 34% of persons who died were patients in (or admitted to) hospitals, and 8% died in emergency departments; 15,924 (30%) died in nursing homes, 12,524 (24%) died at home, and 613 (1%) were pronounced dead on arrival at emergency departments. These percentages have been consistent for the last 5 years (Table 4).

Medical Examiner Certified Deaths[11]

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 because of violence). Please refer to the Appendix for a list of these circumstances. The total number of deaths certified by medical examiners was 5,457 in 2007 (10.4%) compared with 5,126 in 2006 (7.7%).

Of those deaths certified by medical examiners, 32% were reported as a result of natural causes (non-injury related). All homicide and suicide deaths were certified by medical examiners in 2007 compared with only 13% 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[12,13]. The premature mortality rate (PMR) measures the rate of premature death, that is, deaths that occur before the age of 75 years of age 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 years and older are due to chronic conditions associated with aging. By examining deaths to persons younger than 75 years, 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 2007

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

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

[13] 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

(Figure 6). Blacks had the highest PMR, experiencing 1.5 times the rate of premature deaths as whites (428.3 vs. 293.5 deaths per 100,000). Asians had the lowest PMR (141.3 deaths per 100,000). The Hispanic PMR (277.4) was similar to that of whites but higher than that of Asians. The overall PMR remained stable from 2006 as well as for each of the race and Hispanic ethnicity groups. 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[14]

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 535.2 per 100,000 population - almost 3 times higher than the rate of 187.2 for those with 13 years of education or more (Table 5). This is true for each race and ethnicity group. However, 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 (358.5 vs. 181.0 deaths per 100,000).

Daily Mortality Statistics

On an average day in 2007, 144 Massachusetts residents died (Figure 7). Approximately 36 of these deaths were due to cancer, 35 to heart disease, 14 to respiratory diseases, 8 to injuries, 7 to stroke, 5 to Alzheimer's disease, 3 to diabetes, 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[15] (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***.

Unlike mortality rates, rankings do not convey cause-specific mortality risk or the absolute burden of causes of death. 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.

The top 10 leading causes of death in Massachusetts in 2007 were: (1) cancer, (2) heart disease, (3) stroke, (4) chronic lower respiratory disease, (5) unintentional injuries, (6) Alzheimer's disease, (7) influenza and pneumonia, (8) nephritis, (9) diabetes, and (10) septicemia (Table 6). Alzheimer's disease switched places with influenza and pneumonia from 2006.

Cancer continued to be the top leading cause of death in Massachusetts, out-ranking heart disease for only the second year. While eight of the top 10 leading causes of death had lower numbers than they did in 2006, the decline was significant only for chronic lower respiratory disease and influenza and pneumonia, which decreased by 9% and 14%

[14] **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.

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

respectively. The number of Alzheimer's disease and diabetes deaths increased, but not significantly. The top ten leading causes of deaths together accounted for 75% of deaths in 2007, and heart disease and cancer accounted for almost half of all deaths.

In Tables 6 and 7, we present the leading causes of death by age groups. Injuries (all intents) was the leading cause of death for persons between the ages of 1 to 44 years and account for 49% of all injuries in this age group. Unintentional injuries, which include motor vehicle-related deaths, drug overdoses, falls, fires, and drowning, accounted for the highest percentage of injury deaths (68%). The remainder of injury deaths were intentional: suicide (20%) and homicide (12%). Unintentional injuries accounted for 32% of all deaths among persons ages 1 to 44 years, 34% of male deaths, and 26% of females in this age group.

For all persons ages 1 to 14 years, unintentional injuries was the first leading cause of death, and cancer was the second leading cause. In 2007, homicide was the third leading cause in this age group overall; whereas, in 2006, homicide was ranked sixth for this age group. For females in this age group, homicide was the second leading cause of death, and for males, it tied cancer as the second leading cause of death. The number of homicides in this age group was 5 in 2006 and 16 in 2007.

Unintentional injuries was the first leading cause of death for individuals 15-24 years old, and it accounted for 46% of deaths. Both males and females in this age group had unintentional injuries as the first leading cause of death, although male deaths comprised 71% of these deaths. Homicide ranked second for males in this age group, while cancer ranked second for females ages 15 to 24. The rank for suicides was third for both males and females ages 15-24 years, with males experiencing more than 6 times the number of suicides (43 v. 7).

Unintentional injuries was the first leading cause of death for males and overall deaths for persons ages 25-44. The first leading cause of death for females in this age group was cancer. The third leading cause of death for males in this age group in 2007 was suicide, up from fourth place in 2006. The increase in the suicide rate for males almost reached statistical significance this year[16] (17.8 v. 13.2 deaths per 100,000 males ages 25-44 years). For females in this age group, the number of HIV/AIDS deaths dropped by almost two thirds from 30 to 9. The overall number of HIV/AIDS deaths dropped by almost one-half from 77 to 39.

Cancer and heart disease were the leading causes of death for both males and females ages 45 to 64 years. In 2007, the cancer death rate for this age group was 7% lower than it was in 2006 (183.2 v. 196.5). Among persons ages 65 years and older, heart disease was the leading cause of death overall and for females but, cancer was the leading cause of death for males, and heart disease was the second; however, their rates are not significantly different. Stroke was the third leading cause of death overall and for both males and females for persons ages 65 and older.

The leading causes of death for persons 65 years and older are shown in Table 8. Among persons ages 65-74 years and 75-84 years, cancer was the leading cause of death, and heart disease was the second leading cause of death of both males and females. For females ages 75 to 84 years, the number and rate of deaths from Alzheimer's disease (5th leading cause) was significantly higher than it was in 2006, and pneumonia and influenza (7th ranked leading cause) had significantly lower numbers and rates in 2007. The overall

[16] The 2006 CI for suicide for males ages 25-44 was [10.7 - 15.4] and the CI for 2007 was [15.0 - 20.6].

pneumonia and influenza rate was lower in 2007 for all persons in this age group than it had been in 2006.

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. Females in this age group had a lower death rate overall than they did in 2006. This drop was a result of 241 fewer heart disease deaths (3,780 v. 4,021).

Patterns by Race and Ethnicity

The top two leading causes of death were cancer and heart disease for all race and Hispanic ethnicity groups in Massachusetts in 2007 (Table 9). In addition to cancer and heart disease, stroke, unintentional injuries, nephritis, and diabetes were in the top 10 leading causes of death for all race and ethnicity groups. However, there were differences among the race and ethnicity groups in the rank of the leading causes of death, which they have in common. Whites and Asians had nine of the top 10 causes in common, and blacks and Hispanics shared nine of the 10.

The overall age-adjusted death rate for blacks was 16% higher than that of whites. Age-adjusted death rates for blacks were higher than those of all other groups for nephritis, homicide, and perinatal conditions. Additionally, the death rate for blacks was higher than that of whites for HIV/AIDS and diabetes. In 2007 HIV/AIDS replaced septicemia for the 8th rank among the top 10 leading causes. Blacks had a lower rate of chronic lower respiratory disease than whites did for 2007.

In 2007, chronic liver disease replaced ill-defined conditions as the 10th leading cause of death for Hispanics. Hispanics had lower cancer and heart disease rates than did whites and blacks. Stroke rates were not significantly different among the groups. Alzheimer's was a top leading cause only for whites, and only Asians and whites had septicemia and influenza and pneumonia among their top 10 leading causes of death in 2007. Hypertension was a leading cause of death unique to Asians in 2007. It replaced Alzheimer's disease in the 10th place for 2007.

Cancer

In 2007, for the second year, cancer ranked first in the number of all deaths, in the deaths of all men, and in the number of deaths of all women except for white women in Massachusetts. The overall age-adjusted cancer mortality rate declined by 4% from 2006 (179.2 vs. 186.3 per 100,000). In 2007, there were 12,961 cancer deaths, accounting for 25% of all deaths and approximately 3 out of 4 cancer deaths in Massachusetts occurred to persons ages 65 years and older.

Cancer mortality occurred more frequently among younger persons of minority populations. Fifty-two percent of cancer deaths occurred at ages under 65 years among Hispanics, followed by 39% among blacks, and 38% among Asians; while this age group accounted only for 26% of all cancer deaths among whites (Figure 11).

Among all cancer deaths, lung cancer ranked first (28% of cancer deaths), colorectal second (9% of cancer deaths), and pancreatic cancer third (7% of cancer deaths) in the number of cancer deaths (Table 11). The second cause of cancer deaths was breast cancer for females (837 deaths) and prostate cancer for males (656 deaths). In 2007, there was a 13% decline in the death rate for female breast cancer from the previous year.

Leading types of cancer deaths varied by racial and ethnic groups. Lung cancer ranked first in the number of cancer deaths for all racial groups. Colorectal cancer ranked second for all except for blacks where pancreatic cancer ranked second. Prostate cancer ranked second in the number of cancer deaths for men of all racial groups; female breast cancer ranked second for women of all racial groups (data not shown).

Among women, the breast cancer mortality rate was less than half the lung cancer mortality rate (42.8 for lung vs. 20.3 deaths per 100,000). The overall cancer death rate for men was 46% higher than the rate for women (222.0 vs. 152.1 per 100,000) (Table 11). Men also had higher cancer death rates for site-specific cancers including: bladder, colorectal, esophagus, leukemia, lung, non-Hodgkin lymphoma, pancreas, and stomach among others.
Leading types of cancer deaths were different by age. In 2007, the smallest number of cancer deaths was seen among persons under the age of 45 years (370 deaths, Table 12). Leukemia ranked first in the number of cancer deaths for persons ages 15-24 years. Among cancers affecting both men and women, lung cancer ranked first in the number of cancer deaths for persons ages 25 years and older. Female breast cancer (319 deaths) ranked second in the number of cancer deaths among all persons ages 25 to 64. Lung cancer ranked first, and colorectal cancer ranked second in the number of cancer deaths among persons ages 45 and older.

Cancer mortality rate affected racial and ethnic groups differently. In 2007, the overall cancer death rate for blacks was 10% higher than that of whites, and almost twice the Hispanic rate. Asians had the lowest cancer death rates for men and women combined (Table 10). Compared with 2006, whites were the only racial and ethnic group to experience a decline in its cancer death rate (down 4%); death rates for the other groups remained stable.

Lung cancer mortality rate was the highest among all site-specific cancer death rates, for men, women, and for all racial and ethnic groups in 2007, except for Hispanics and blacks where prostate was the highest cancer mortality rate (Table 13).

Heart Disease

Heart disease accounted for 24% of all deaths in Massachusetts in 2007 (12,735 out of 52,690 total). Heart disease deaths occur predominantly among the older population and in 2007, 78% of all heart disease deaths occurred among people ages 65 years and older (Table 7).

Heart disease mortality occurred more frequently at younger ages of minority populations than among whites. Forty-five percent of heart disease deaths among Hispanics were to persons ages under 65 years, followed by 34% among blacks, and 33% among Asians. This age group accounted only for 14% of all heart disease deaths among whites (Figure 9).

While the number of women who died of heart disease was higher than that of men (6,622 vs. 6,113), men had a higher death rate of heart disease than women (212.3 for men vs. 132.0 deaths for women, per 100,000) (Figure 8). White women were the only racial group where heart disease continued as the leading cause of death. Although women experienced more than twice as many heart disease deaths than men at ages 85 and older (3,780 women vs. 1,913 men) (Figure 8), the female death rate for ages 85 years and older was lower than that of men (3,833.7 vs. 4,648.4) (Table 8). The female population was 2.2 times greater than that of men for persons ages 85 years and older. The overall heart disease death rate for men was 61% higher than the rate for women (212.3 vs. 132.0 per 100,000).

In 2007, the heart disease death rate remained stable from 2006 (165.7 vs. 168.8 per 100,000), but it has decreased by 24% since 2000 (165.7 vs. 218.0 per 100,000). In 2007, heart disease death rates remained stable from 2006 for males, females, and for all racial and ethnic groups, but the rate for black and Hispanic males has remained the same as in 2000 while it has decreased by 23% and 25% for white and Asian men, respectively. The rate for females has decreased since 2000 for all racial groups (Table 10).

Stroke

Despite declines in the number of deaths from stroke, stroke remained the third leading cause of death in Massachusetts in 2007, after cancer and heart disease. In 2007, there were 2,710 stroke deaths, yielding an age-adjusted rate of 35.0 deaths per 100,000 persons. This rate has declined by 31% since 2000 (35.0 vs. 50.9 deaths per 100,000) (Table 2).

In 2007, the death rate for stroke was similar to the rate in 2006 (35.0 vs. 36.7 deaths per 100,000). This was also true for all racial groups except for blacks where this rate declined by 35% (35.6 vs. 54.5 deaths per 100,000). Though for the first time in 2007, the stroke death rate for blacks was similar to the rate for whites (35.6 vs.34.8 per 100,000) (Table 15) the disproportion of stroke deaths occurring among young blacks compared to whites continued.

Stroke deaths increased with increasing age (Figure 12), and occurred more frequently among younger people of minority groups than in whites. Thirty percent of stroke deaths among Asians occurred at ages under 65 years, followed by 28% among Hispanics, and 27% among blacks. However, this age group accounted for only 8% of all stroke deaths among whites (Figure 13).

In 2007, 26% of strokes were deaths from hemorrhage (22% from intracerebral hemorrhage and 4% from subarachnoid hemorrhage) (Table 14). Cerebral infarction accounted for about 5% for all stroke deaths in 2007. For 48% of all stroke deaths, the type was not specified.

Diabetes

In order to accurately capture the mortality burden of diabetes in Massachusetts, in this report, diabetes mortality is presented in two ways: 1) the underlying cause of death; and 2) mentioned as a contributing cause or as the underlying cause of death which will be referred to as “diabetes-related” deaths. In 2007, diabetes was either the underlying or a contributing cause of death (i.e., a diabetes-related cause of death) for 3,899, or 7.4% 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 2,683 deaths.

As an underlying cause of death, diabetes ranked ninth, but when considering all mentioned conditions, diabetes-related deaths ranked third as a cause of death for both females and males, and for all racial and ethnicity groups. Blacks and Hispanics died from diabetes-related causes at higher rates than whites. In 2007, the diabetes-related age-adjusted death rate for blacks was 101.2 deaths per 100,000, which is twice the rate for whites (50.6). The rate for Hispanics was 76.4 deaths per 100,000, which is 51% higher than the white rate (Figure 15).

Diabetes as the underlying cause of death was found in 619 deaths among men and in 597 deaths among females (Table 16). Diabetes-related deaths accounted for 8.0% of all deaths among males and 6.9% of all deaths among females. Hispanics (13.1%) and blacks (11.6%) had a higher proportion of diabetes-related deaths than that of whites (7.0%) (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 2007, 79% 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 45 years and older. In 2007, the diabetes-related death rate has remained stable from 2006, but has declined by 15% since 2000 (Figure 17).

Injuries

In 2007, there were 2,967 injury deaths among Massachusetts residents. By combining injuries of all intents (unintentional, suicide, homicide, injuries of undetermined intent), injuries become the third leading cause of death in 2007 among residents of all ages and the leading cause of death among residents 1-44 years of age. The leading causes of injury deaths in order of percentages were: poisonings[17] (33%), the majority of which were drug overdoses, falls (16%), motor vehicle-related deaths (15%), "hanging, strangulation or suffocation" (11%), and firearm-related deaths (8%) (Table 18). The vast majority (71%) of injury deaths was unintentional or "accidental"; 17% were suicides; 6% were homicides; and 4% 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, Table 20, and Table 22).

- There were 6 injury deaths among infants under 1 year of age. "Hanging, strangulation or suffocation" (N=2) was the leading cause of injury death.
- There were 41 injury deaths among children under 15 years of age. "Hanging, strangulation or suffocation" (N=9) was the leading cause of injury death in children ages 1-14 years.
- Motor vehicle-related deaths were the leading cause of injury and overall death in persons ages 15-24 years, accounting for 27% (n=134) of all deaths and 37% of the injury deaths in this age group. Homicide accounted for 20% (n=73) of the injury deaths in persons 15-24 years.
- Fifty-eight percent (58%) of all injury deaths occurred among persons ages 25 to 64 years. The majority (51%) of injury death in this age group was due to poisoning; this age group accounted for 88% of all poisoning deaths in 2007. Twenty-two percent (22%) of all injury deaths in this age group in 2007 were due to suicide.
- Persons ages 65 years and older accounted for 28% of all injury deaths; 78% of all fall deaths were in this age group; and, 36% of all pedestrian deaths were in this age group.

Injuries by Sex and Race and Hispanic Ethnicity

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):

- Males were 2.4 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.

[17] 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.

- Black males had the highest death rate from firearms: 27.4 deaths per 100,000 compared to 4.3 deaths per 100,000 white males.
- The leading cause of injury deaths varied by race and Hispanic ethnicity. Poisonings was the leading cause of injury deaths for whites and Hispanics, while firearm-related was the leading cause for blacks.

Injuries by Intent

Unintentional or "Accidental" Injury
In 2007, there were 2,113 unintentional injury deaths among Massachusetts residents, accounting for 71% of all injury deaths. In 2007, the leading causes of unintentional injury deaths were poisonings (37%), which includes drug overdoses, falls (21%), and motor vehicle-related deaths (21%) (Table 20).

Men had twice the death rate as women for unintentional injuries (42.7 vs. 19.5) (Table 20). The unintentional injury death rates for men were higher than that of women by certain race and ethnicity: 2.1 times higher among whites, 3.3 times higher among Asians, 2.4 times higher among blacks, and 4.2 times higher among Hispanics. Hispanic men had the highest unintentional injury death rate to poisonings (22.0 deaths per 100,000 population) while white men had the highest unintentional injury death rate to falls (8.7 deaths per 100,000 population) (Table 21).

Suicides:
In 2007, there were 504 suicides compared with 437 in 2006 (this increase was not statistically significant) (Table 22). The suicide rate for Massachusetts in 2007 was relatively stable from 2006 (7.5 deaths per 100,000 in 2007, compared with 6.5 in 2006). The trend analysis shows that after a continued decline of 3% per year since 1994, suicide rates have leveled off since 2002.

The majority of suicides (76%) occurred among persons ages 25-64 years. Overall, suicide rates were highest for persons ages 85 years and older (11.4 deaths per 100,000), persons ages 45-64 years (11.0 deaths per 100,000), and ages 25-44 years (10.7 deaths per 100,000) in 2007. For men, suicide rates were highest for persons ages 85 years and older while for women, rates were highest for persons ages 45-64 years. The majority of suicides continued to be among males (79%). In 2007, there were significant increases in the number of suicides for males (398 vs. 312 deaths) and in the rate for males (12.4 vs. 9.6 deaths per 100,000) from 2006. The increase in suicides occurred primarily among white males and males ages 25-44 years. Most of the increase in suicides was due to deaths from "hanging, strangulation or suffocation".

Whites accounted for 89% of all suicides in 2007, and continued to have the highest suicide rate: 8.0 deaths per 100,000. The suicide rates for other racial and ethnicity groups remained stable from 2006 (Table 23). The leading causes of suicide deaths were "hanging, strangulation, or suffocation" (44%), followed by poisoning (23%) and firearm (22%) (Table 24).

Homicides:
In 2007, there were 183 homicides. The majority (75%) of homicides occurred among persons ages 15-44 years; 85% of the homicides among men and 45% of the homicides among females were among persons ages 15-44 years (Table 22). Most homicides occurred among black men (39%), who also had the highest homicide rate (30.8 deaths per 100,000), which was 24 times higher than that of white men (1.3 deaths per 100,000) (Table

23). The leading cause of homicides was firearms (62%) (Table 24). In 2007, homicides were among the 10 leading causes of death for blacks and for Hispanics (as the seventh cause for both). Homicides were the 30th cause of death for whites. While homicide rates for whites, Asians and Hispanics remained stable from 2000, the rate for blacks has increased by 91%, from 9.4 to 18.0 deaths per 100,000.

Injuries by the Leading Three Causes:

Poisonings:
Poisonings, which include drug overdoses, accounted for 965 (33%) of all injury deaths in 2007 (Table 25). Sixty-six percent of these deaths were associated with an opioid, which includes drugs such as heroin, oxycodone, morphine, codeine and methadone, and 28% 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 (88%) were classified as unintentional or of undetermined intent (see method notes page 14) and 12% were suicides.

Falls:
Fall-related deaths continued its increase at an average of 31% per year since 2005. Fall-related deaths were the second leading cause of all injury and unintentional injury deaths (they were the third leading cause in 2006). The vast majority (80%) of these deaths occurred among older adults ages 65 years, among men (72%), and over half (57%) of these fall injuries occurred in the home. Fall death rates were highest among residents ages 85 years and older (126.7 deaths per 100,000) compared with elders in other age subgroups (rates among those ages 65-74 years and ages 75-84 years were 14.7 and 42.1 deaths per 100,000, respectively). Fall death rates among males were higher than females for all age subgroups except for ages 15-24 years (Table 18-Table 21 and Table 25). In 2007, there were 89 unintentional fall-related deaths among persons under 65 years of age compared with 66 fall-related deaths in 2006 (increase not statistically significant). Close to 60% of these injuries occurred at home.

Motor-Vehicle Related:
In 2007, there were 437 motor vehicle-related injury deaths compared with 475 deaths in 2006. Occupants accounted for 22%; pedestrians accounted for 17%; motorcyclists accounted for 14% of all unintentional motor vehicle-related deaths; and other or unspecified persons accounted for 54% (Note: this category may include a substantial number of occupant deaths) (Table 25). In 2000, motor vehicle-related deaths to other or unspecified person accounted for 60% of all unintentional motor vehicle-related deaths. Motor vehicle-related deaths were the third leading cause of all injury and unintentional injury deaths. Motor vehicle-related deaths rates were highest among residents ages 15-24 years (14.8 deaths per 100,000).

HIV/AIDS
In 2007, there were 143 Massachusetts residents who died from HIV/AIDS, which was the lowest annual number of HIV/AIDS deaths in Massachusetts since the peak of the epidemic in 1994 (981 HIV/AIDS deaths). This continues the decline from 2006, when the number of HIV/AIDS deaths was also at a historic low since 1994. The death rate for HIV/AIDS deaths was 2.0 in 2007, which was 24% less (approaching statistical significance[18]) than the 2.7 rate

[18] The CI for the HIV/AIDS rate in 2007 was [2.27-3.05] and for 2006, it was [1.69-2.36].

in 2006. The proportion of HIV/AIDS deaths for persons ages 45 years and older is 3.7 times what it was at the peak of the epidemic in 1994 (73% vs. 20%) (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 ethnicity groups. In 2007, the white rate declined from 1.6 in 2006 to1.0. The black and Hispanic HIV/AIDS death rates were stable, with blacks dying at a rate more than 13 times that of whites (13.0 vs.1.0 deaths per 100,000) (Table 30). For Hispanics, the HIV/AIDS death rate was 5.3 times higher than that of whites (8.9 vs. 1.0 deaths per 100,000).

Infant Deaths

In 2007, there were 380 infant deaths (deaths of infants less than one year of age) and 77,934 live births among Massachusetts residents, which meant that the infant mortality rate (IMR) was 4.9 deaths per 1,000 live births. The 2007 IMR was similar to the 2006 rate (4.8 deaths per 1,000 live births), and it has decreased by 30% since 1990, from 7.0 deaths per 1,000 live births to 4.9 deaths per 1,000 live births (Table 31).

In 2007, blacks continued to have the highest IMR among all race and ethnicity groups at 10.2 deaths per 1,000 live births compared to 11.1 deaths per 1,000 live births in 2006 (Figure 8). The white IMR was 4.2 in 2006 and 3.9 in 2007. The IMR for Asians was 1.8 in 2006 and 3.1 in 2007. The Hispanic IMR was 5.8 in 2006 and 7.4 in 2007. None of these changes was statistically significant.

In 2007, 69% of infant deaths occur in the first month of life. The leading causes of infant death were conditions arising in the perinatal period (56% of all infant deaths) followed by congenital malformations (17% of all infant deaths) (Table 32). Deaths occurring in the neonatal period (less than 28 days after birth) accounted for 69% 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. Twenty-six percent of all Hispanic infant deaths were due to congenital malformations compared with 15.0% of all white infant deaths and 9.1% of all black 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 under 75 years of age.

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[19]. 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,

[19] 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.

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 years in suburban areas.

In 2007, the state PMR was 295.4 deaths per 100,000 persons under age 75 years. Seventeen of the 30 largest communities in Massachusetts had age-adjusted PMRs significantly higher than the state PMR. The highest PMRs were in Springfield (472.9), Lowell (443.8), Fall River (432.1), Taunton (421.8), and Worcester (413.3). Four of the 30 largest communities in the state had significantly lower PMRs than the state PMR. These communities were Framingham (242.9), Cambridge (208.3), Brookline (172.3), and Newton (167.6) (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].

Healthy People 2010

In 2007, Massachusetts achieved or moved closer to over one-half of the Healthy People 2010 mortality objectives. Out of 40 objectives presented, Massachusetts' 2007 death data indicated that the state has already met 19 of the 2010 target goals, including those for female breast cancer, cervical cancer, oropharyngeal cancer, prostate cancer, coronary heart disease, homicide, firearm-related, motor vehicle crashes, stroke, postneonatal, birth defects, congenital malformations, death rates for children ages 1-4, children ages 5-9, children ages 10-14, asthma death rates for children under age 5, asthma death rates for children ages 5-14, asthma death rates for persons ages 15-34, and asthma death rates for persons ages 65 years and older (Table 34).

For nine objectives, the 2007 Massachusetts indicators were within 25% of the target goals. These objectives included: overall cancer deaths, lung cancer deaths, colorectal cancer, drownings, infant mortality rate, neonatal mortality rate, death rates for children ages 15-19, death rates for persons ages 20-24, and asthma deaths for persons ages 35-64.

However, Massachusetts still needs to improve in the following 12 areas: malignant melanoma deaths, cirrhosis deaths, HIV/AIDS deaths, poisoning deaths, fall deaths, fire deaths, "hanging, strangulation, or suffocation" deaths, suicides, drug-induced deaths, unintentional injuries, maternal deaths, 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: 1997 - 2007

Year		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Resident deaths[1]												
	Number	54,634	55,204	55,763	56,591	56,733	56,881	56,194	54,419	53,776	53,293	52,690
	Crude rate[2,3,4]	877.3	877.5	881.9	889.5	887.1	887.0	875.2	848.1	840.4	827.9	816.9
	Age-adjusted rate[5]	834.8	808.8	808.8	812.2	803.4	793.8	772.6	739.3	720.6	717.6	704.4
Race/ethnicity of decedent [6,7]												
White non-Hispanic	Number	51,398	51,829	52,282	52,959	52,792	52,839	52,050	50,439	49,639	49,132	48,518
	Percent[8]	94.1	93.9	93.8	93.6	93.1	92.9	92.6	92.7	92.3	92.2	92.1
	Age-adjusted rate	835.1	808.5	808.7	814.5	804.4	796.0	775.2	744.7	725.0	723.3	711.1
Black non-Hispanic	Number	2,033	1,969	2,018	2,109	2,226	2,275	2,378	2,225	2,263	2,233	2,211
	Percent	3.7	3.6	3.6	3.7	3.9	4.0	4.2	4.1	4.2	4.2	4.2
	Age-adjusted rate	1,142.1	1,076.6	995.2	933.5	951.0	935.6	949.1	866.2	865.8	838.4	820.5
Asian non-Hispanic	Number	403	413	449	467	510	531	579	531	570	635	610
	Percent	0.7	0.7	0.8	0.8	0.9	0.9	1.0	1.0	1.1	1.2	1.2
	Age-adjusted rate	512.0	500.7	422.4	401.4	396.9	397.6	411.9	353.7	345.0	379.0	342.0
Hispanic	Number	749	924	975	1,014	1,059	1,166	1,121	1,115	1,230	1,194	1,264
	Percent	1.4	1.7	1.7	1.8	1.9	2.0	2.0	2.1	2.3	2.2	2.4
	Age-adjusted rate	391.0	463.8	507.8	585.2	556.5	591.0	520.6	482.1	500.4	479.9	477.7
Gender of decedent [7]												
Female	Number	29,261	29,568	29,786	30,465	30,780	30,427	30,053	29,067	28,695	28,508	27,851
	Age-adjusted rate	699.0	678.0	676.9	688.8	689.5	674.4	659.3	632.3	617.8	612.7	596.3
Male	Number	25,373	25,635	25,977	26,126	25,953	26,454	26,141	25,352	25,079	24,785	24,838
	Age-adjusted rate	1,035.0	1,000.8	1,001.6	988.7	957.6	955.1	923.3	878.0	852.5	858.9	853.3
Age of decedent [7]												
<1 year	Number	425	414	418	377	407	397	383	376	391	369	380
1-14 years	Number	174	128	165	181	169	167	149	137	113	124	128
15-24 years	Number	422	413	407	403	444	460	490	517	489	471	505
25-44 years	Number	2,348	2,373	2,397	2,375	2,571	2,490	2,484	2,247	2,173	1,953	2,023
45-64 years	Number	7,416	7,501	7,431	7,841	8,004	8,344	8,476	8,347	8,355	8,660	8,560
65-74 years	Number	10,286	10,216	9,782	9,746	9,323	8,922	8,611	8,126	7,905	7,572	7,494
75-84 years	Number	16,884	16,946	17,397	17,554	17,416	17,262	16,973	16,342	15,632	15,333	14,781
85+ years	Number	16,677	17,213	17,765	18,113	18,395	18,838	18,627	18,327	18,718	18,811	18,816

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 2000-2006 (MMARS00-06), released October 2006. Population estimates from the National Center for Health Statistics for 2007 were used to calculate death rates at the state level 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: 1997-2007

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]
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		184.9		183.8		38.1		46.6	
	% of Total	24.6		26.6		24.5		22.8		5.5		5.9	
2006	Rate	168.8		199.4		186.3		180.8		36.7		43.6	
	% of Total	24.2		25.9		25.1		23.1		5.4		5.7	
2007	Rate	165.7[5]		199.4[6]		179.2[5]		180.8[6]		35.0[5]		43.6[6]	
	% of Total	24.2		25.9		24.6		23.1		5.1		5.7	

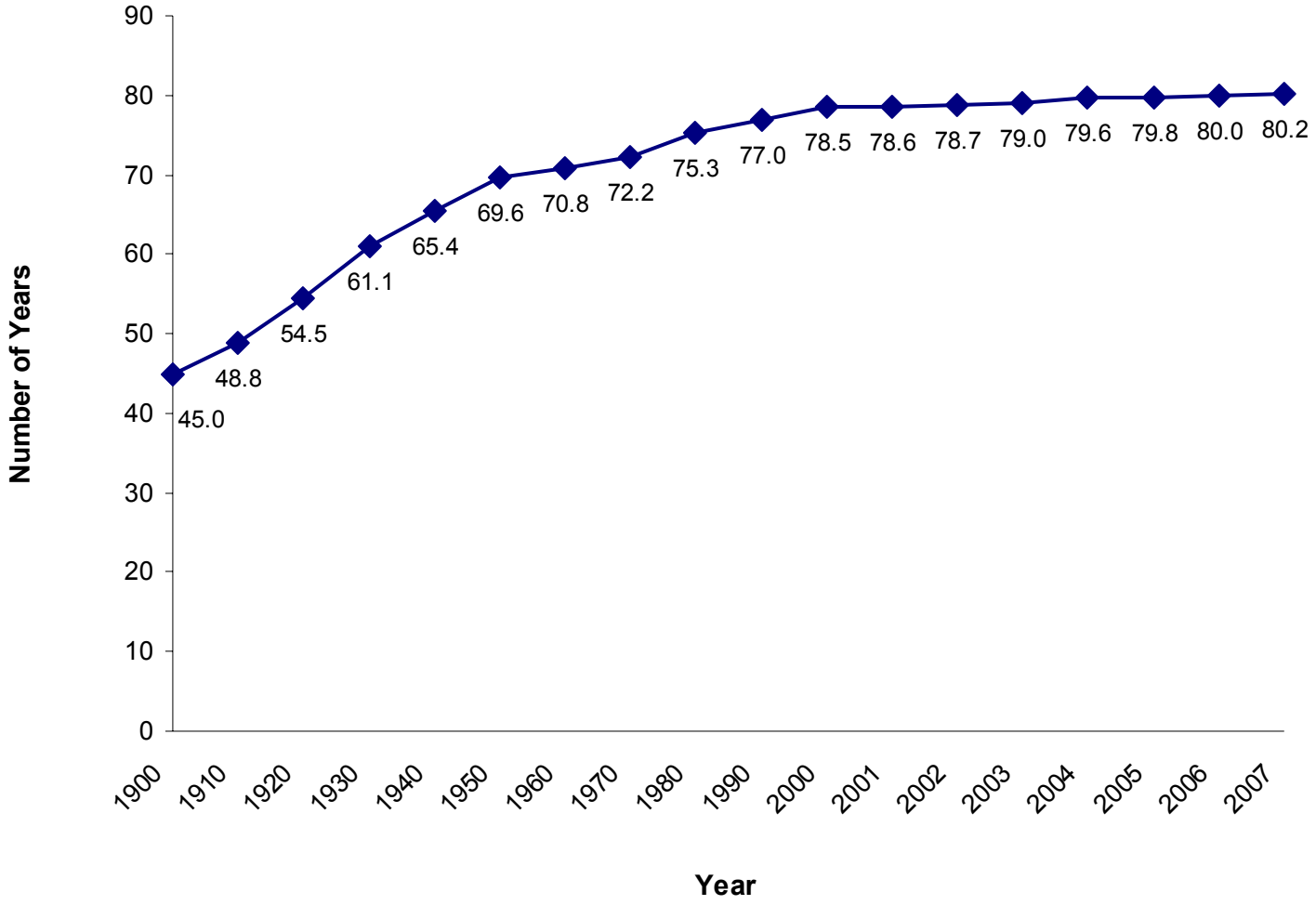
1. Cause of death: the disease or injury that initiated the events leading to death; or the circumstances of the unintentional or intentional injury that resulted in the death. 2. 1990-1998 data coded according to ICD-9. 1999-2007 data coded according to ICD-10. ICD-9 and ICD-10 codes used in this publication 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. MA population denominators are from the NCHS Modified Age, Race/Ethnicity, & Sex Estimates 2007, released September 5, 2008. 6. U.S. data for 2006 obtained from NCHS. Deaths: Preliminary Data for 2006. National Vital Statistics Report, June 2008.

Table 2 (continued). Five Leading Causes of Death[1], Comparability Unmodified and Comparability Modified Age-Adjusted Rates, Massachusetts and United States: 1997-2007

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]		
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		27.4		39.1		720.6	798.8
	% of Total	3.6		2.6		3.5		4.8			
2006	Rate	22.0		17.7		31.4		38.5		717.6	776.4
	% of Total	3.3		2.3		4.1		4.8			
2007	Rate	19.4[7]		17.7[8]		30.5[7]		38.5[8]		704.4	776.4[8]
	% of Total	2.9		2.3		4.0		4.9			

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. 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. MA population denominators are from the NCHS Modified Age, Race/Ethnicity, & Sex Estimates 2007, released September 5, 2008. 8. U.S. data for 2006 obtained from NCHS. Deaths: Preliminary Data for 2006. National Vital Statistics Report, June 2008.

Figure 1. Life Expectancy at Birth[1], Massachusetts: 1900-2007



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 estimates are from the NCHS Modified Age, Race/Ethnicity, & Sex Estimates 2007, released September 5, 2008.

Figure 2. Expected Years of Life Remaining at Different Ages by Race and Hispanic Ethnicity, Massachusetts: 2007

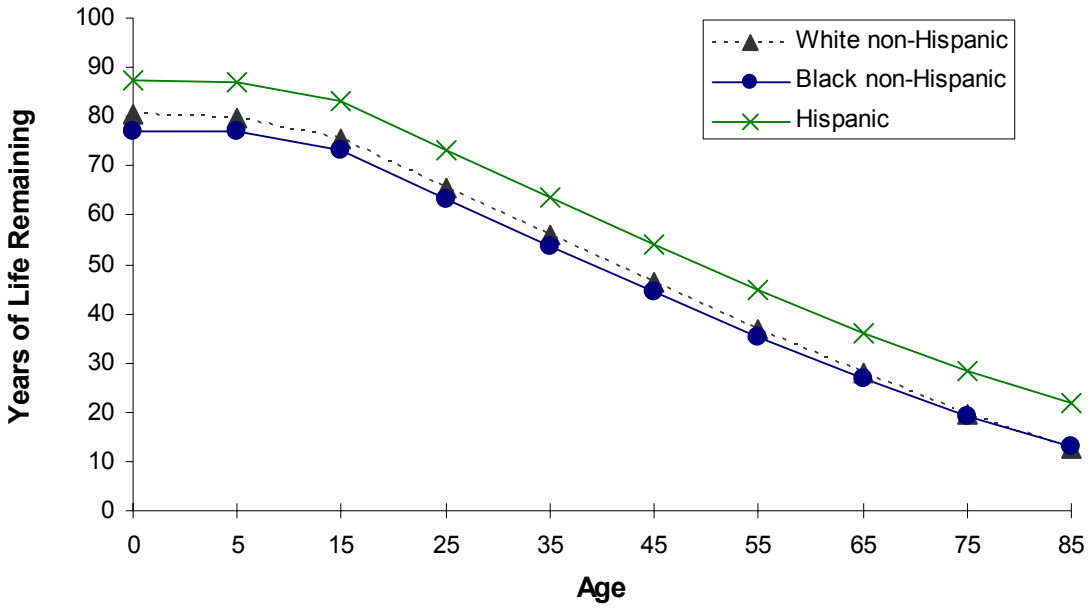
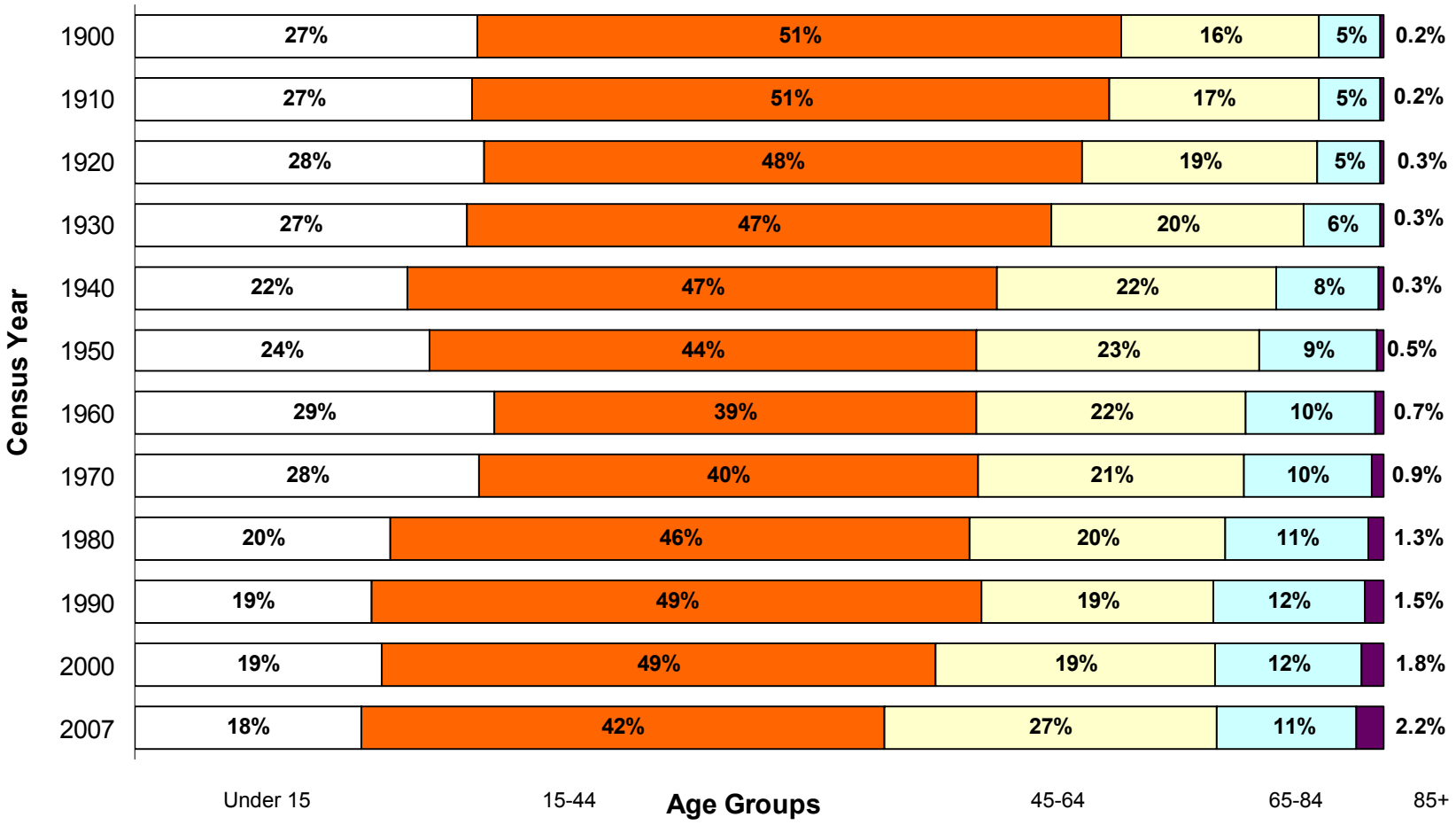


Table 3. Years of Life Remaining[1] by Race and Hispanic Ethnicity and Gender, Massachusetts: 2007

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	80.2	82.5	82.5	80.1	90.9	77.6	77.7	73.7	83.4
1 year old	79.6	81.8	81.7	79.9	90.5	77.1	77.0	73.7	83.1
5 years old	75.7	77.9	77.8	76.0	86.6	73.1	73.1	69.7	79.1
15 years old	65.7	68.0	67.8	66.1	76.7	63.2	63.1	59.9	69.3
25 years old	56.1	58.2	58.0	56.3	66.9	53.7	53.6	50.9	59.9
35 years old	46.4	48.4	48.3	46.6	57.1	44.2	44.1	41.6	50.5
45 years old	37.0	38.9	38.7	37.5	47.6	34.9	34.8	32.7	41.5
55 years old	28.1	29.7	29.5	28.9	38.3	26.1	26.0	24.2	33.3
65 years old	19.8	21.1	20.9	20.8	30.3	18.1	18.0	17.2	25.8
75 years old	12.6	13.5	13.4	13.9	23.2	11.3	11.1	11.3	20.2
85 years old	7.4	7.9	7.8	8.1	18.2	6.5	6.3	7.7	16.8

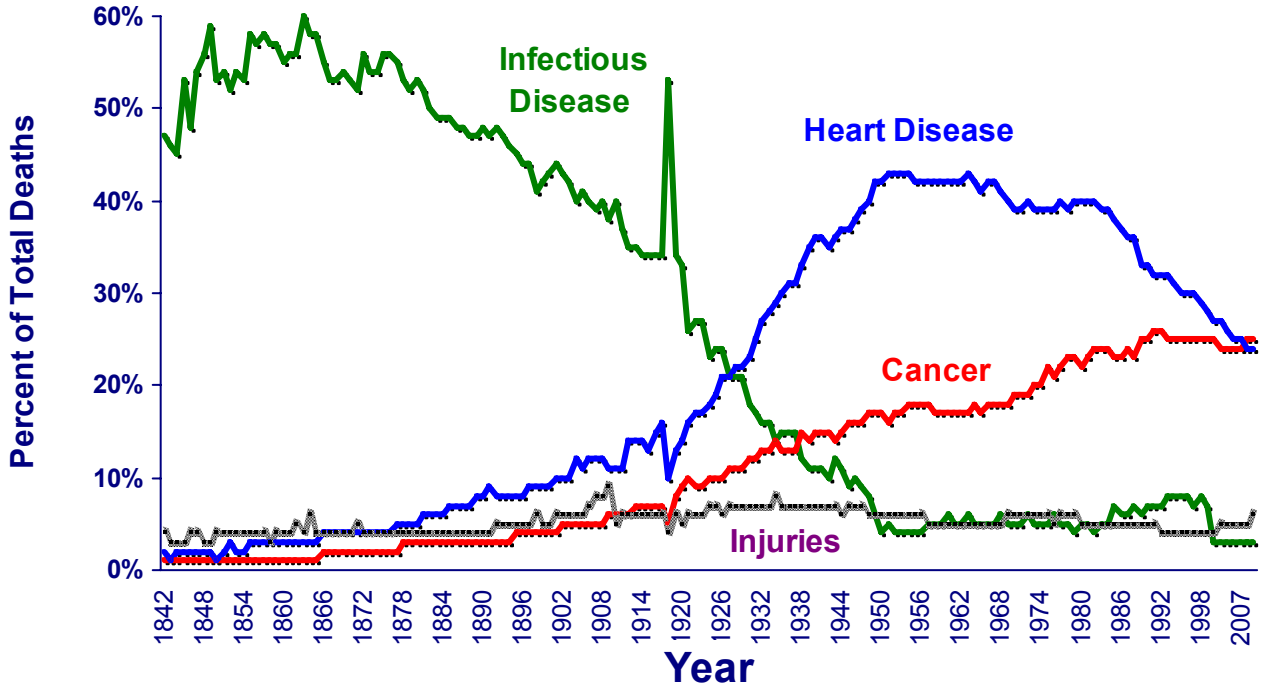
1. Years of Life Remaining calculated using the Greville Abridged Life Table Method (source: Dublin LI. Length of Life - A Study of the Life Table. Ronald Press Co. New York. 1949). 2. Population estimates are from the NCHS Modified Age, Race/Ethnicity, & Sex Estimates 2007, released September 5, 2008. 3. 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: 1900-2007



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. Population estimates for 2007 are from the NCHS Modified Age, Race/Ethnicity, & Sex Estimates 2007, released September 5, 2008.

Figure 4. Trends in Percentage of Deaths from Selected Causes, Massachusetts: 1842-2007

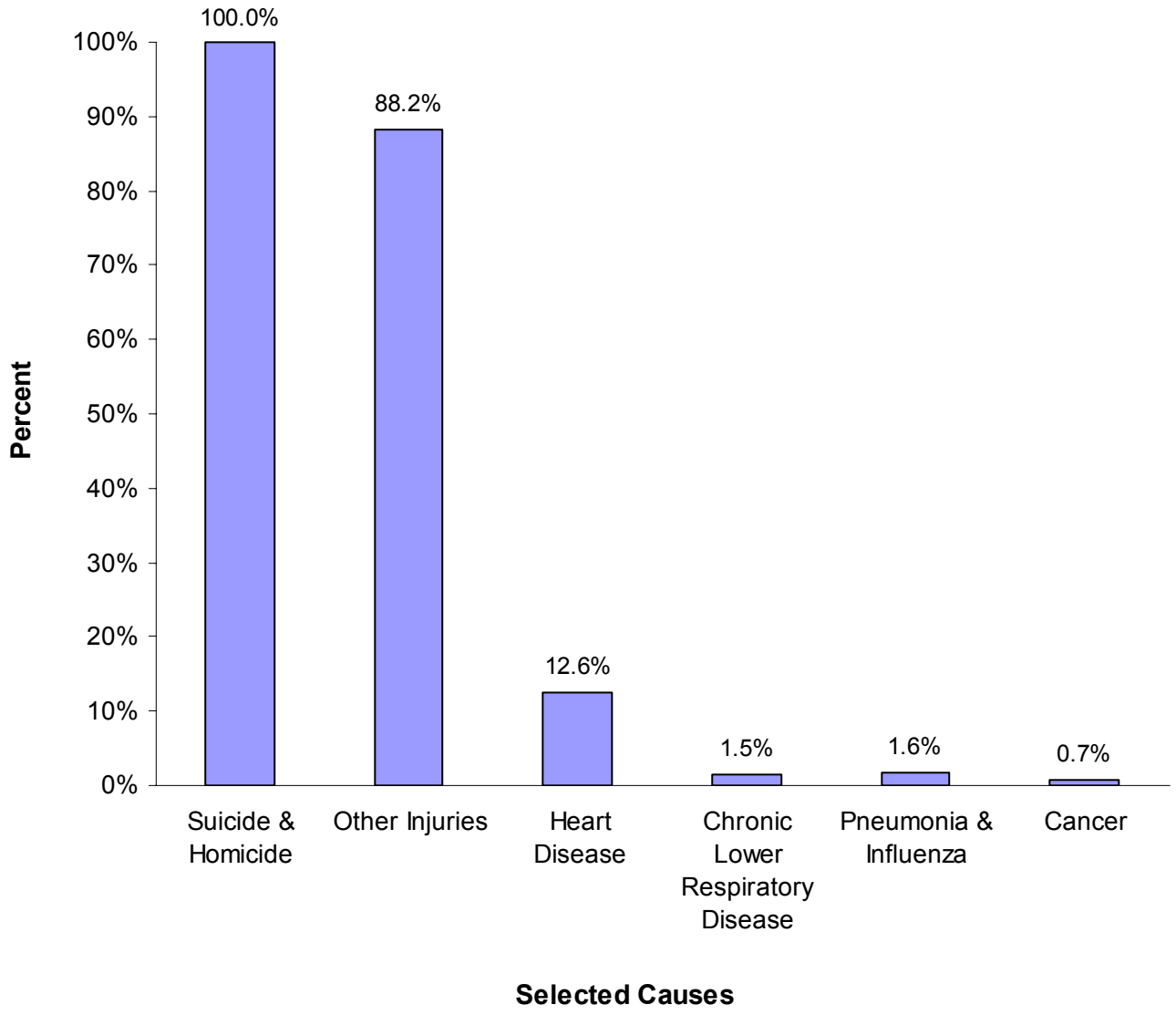


Source: Registry of Vital Records & Statistics.

Table 4. Distribution of Deaths by Place of Occurrence, Massachusetts: 2003-2007

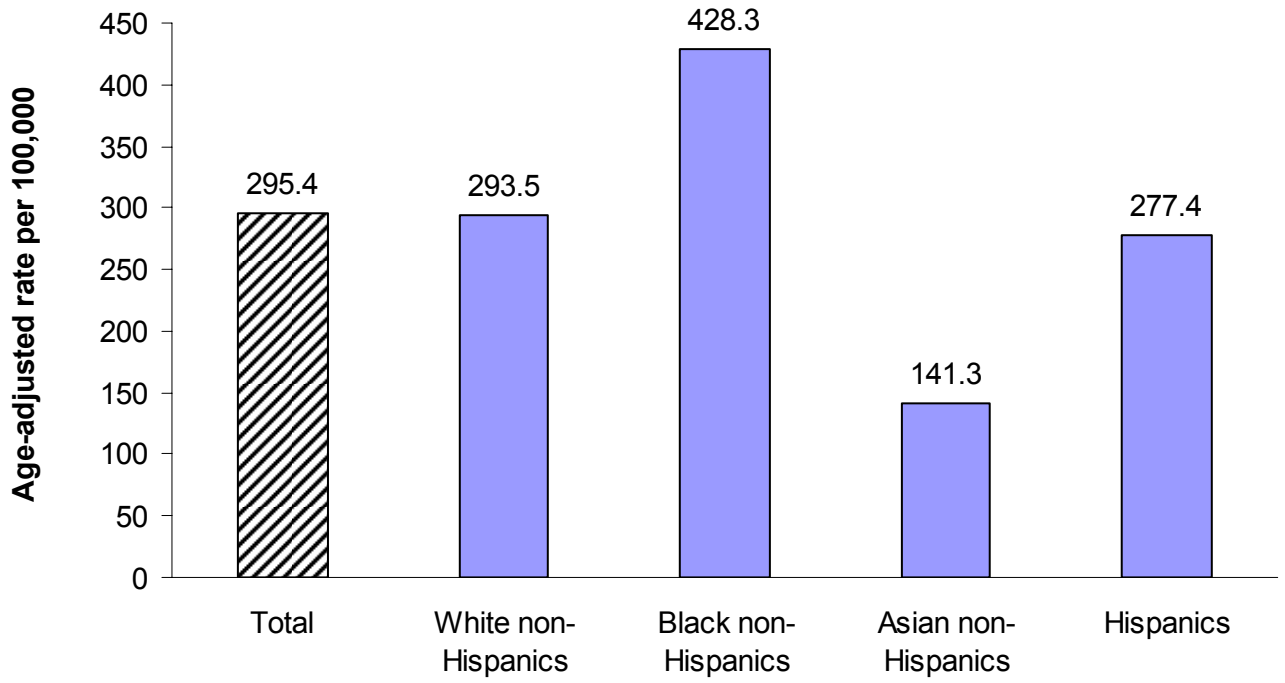
Type of Place where Death Occurred	2003		2004		2005		2006		2007	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Hospital (inpatient/outpatient)	24,936	44%	23,558	43%	23,129	43%	22,512	42%	22,097	42%
Dead on Arrival	905	2	936	2	871	2	692	1	613	1
Nursing Home	16,888	30	16,511	30	16,446	31	16,205	30	15,924	30
At Home	12,439	22	12,287	23	12,004	22	12,372	23	12,524	24
Other	968	2	1,104	2	1,311	2	1,491	3	1,498	3
Unknown	58	0.1	23	0.04	15	0.03	21	0.04	34	0.1

Figure 5. Proportion of Deaths Certified by Medical Examiner for Selected Causes[1] of Death, Massachusetts: 2007



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: 2007

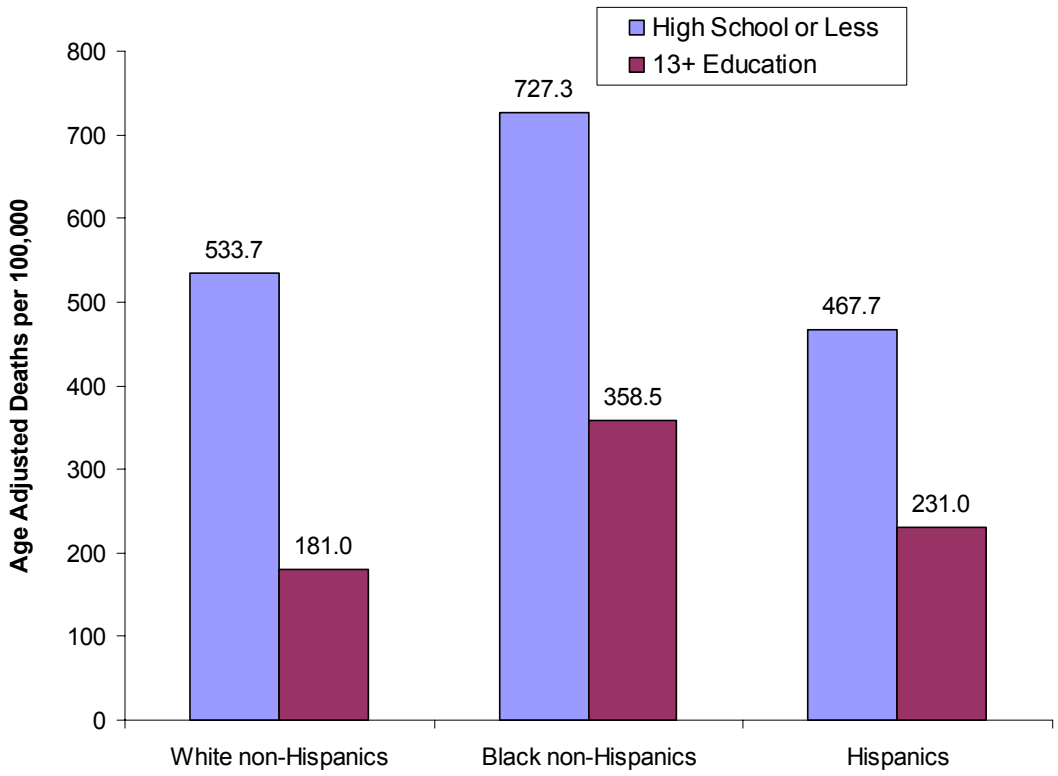


[1] Deaths that occur before the age of 75 years per 100,000, age-adjusted to the 2000 U.S. standard population under 75 years of age.

Table 5. Age-Adjusted Death Rates for Ages 25-64 Years by Educational Attainment*, Massachusetts: 2007

	Age-Specific Rates			Age-Adjusted Rates
	25-34 years	**35-44 years**	**45-64 years**	**25-64 years**
Years of school completed				
High school or less	131.7	248.6	959.2	**535.2**
13+ Education	32.3	61.2	353.6	**187.2**

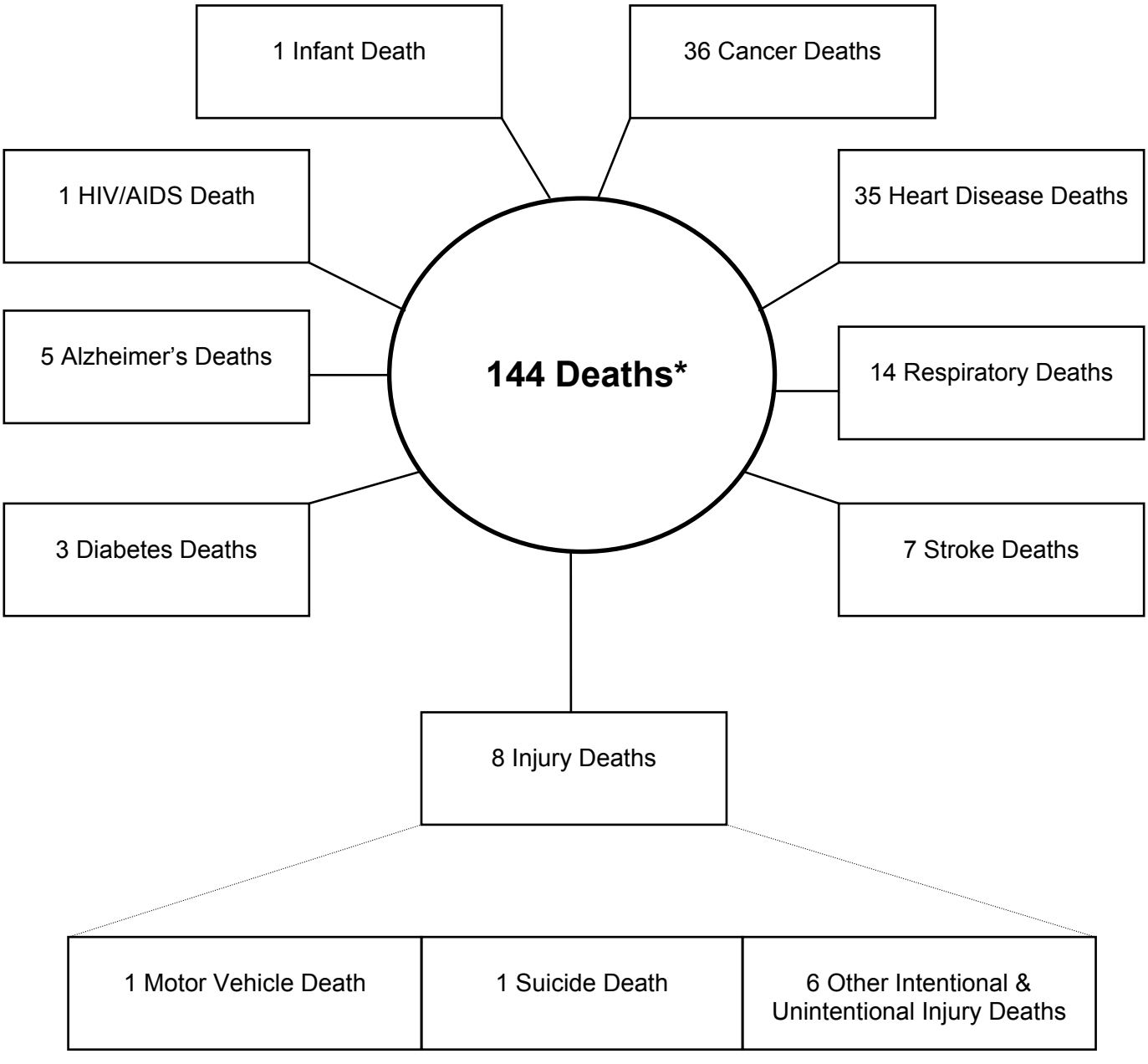
Age-Adjusted Death Rates by Education and Race and Hispanic Ethnicity Adults Ages 25-64, Massachusetts: 2007



*Note: For this table and figure, 2000 denominator figures are used since these are the latest numbers available for population by age and education. Rates are per 100,000 age-adjusted to the 2000 U.S. standard population.

Figure 7. Daily Mortality Statistics, Massachusetts: 2007

Every day in 2007, in Massachusetts there were on average:



*includes 34 deaths due to other causes

Table 6. Top Ten Leading Underlying Causes of Death[1] by Age, Massachusetts: 2007

	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 (80)	Unintentional Injuries (20)	Unintentional Injuries (234)	Unintentional Injuries (587)	Cancer (3,149)	Cancer (2,961)	Cancer (4,039)	Heart Disease (5,693)	**Cancer (12,961)**
2	Congenital malformations (63)	Cancer (18)	Homicide (73)	Cancer (317)	Heart Disease (1,655)	Heart Disease (1,551)	Heart Disease (3,554)	Cancer (2,439)	**Heart Disease (12,735)**
3	SIDS (31)	Homicide (16)	Suicide (50)	Heart Disease (246)	Unintentional Injuries (565)	Chronic Lower Respiratory Disease (476)	Chronic Lower Respiratory Disease (854)	Stroke (1,345)	**Stroke (2,710)**
4	Pregnancy Complications (26)	Congenital malformations (12)	Cancer (35)	Suicide (193)	Chronic liver disease (337)	Stroke (285)	Stroke (845)	Alzheimer's Disease (1,109)	**Chronic Lower Respiratory Disease (2,325)**
5	Complications of placenta (20)	Ill-defined conditions (9)	Heart Disease (23)	Homicide (64)	Diabetes (249)	Diabetes (236)	Alzheimer's Disease (480)	Influenza & Pneumonia (870)	**Unintentional Injuries (2,113)**
6	Neonatal hemorrhage (15)	Heart Disease (6)	Ill-defined conditions (10)	Chronic liver disease (52)	Chronic Lower Respiratory Disease (241)	Nephritis (188)	Nephritis (453)	Chronic Lower Respiratory Disease (743)	**Alzheimer's Disease (1,695)**
7	Bacterial sepsis of newborn (9)	Septicemia (4)	Injuries of undetermined intent (7)	Ill-defined conditions (41)	Stroke (206)	Unintentional Injuries (143)	Influenza & Pneumonia (419)	Nephritis (571)	**Influenza & Pneumonia (1,528)**
8	Circulatory System (8)	Stroke (3)	Congenital malformations (6)	HIV/AIDS (39)	Suicide (189)	Influenza & Pneumonia (131)	Diabetes (378)	Ill-defined conditions (325)	**Nephritis (1,356)**
9	Necrotizing entercolitis (8)	In situ neoplasms (2)	Other infections (4)	Diabetes (34)	Septicemia (124)	Septicemia (130)	Septicemia (299)	Unintentional Injuries (325)	**Diabetes (1,216)**
10	Respiratory distress (7)	Meningitis (2)	Chronic Lower Respiratory Disease (4)	Injuries of undetermined intent (34)	Nephritis (122)	Chronic liver disease (83)	Unintentional Injuries (236)	Diabetes (317)	**Septicemia (879)**
All Causes	**380**	**124**	**505**	**2,023**	**8,560**	**7,494**	**14,781**	**18,816**	**52,690**

[1] 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[5], Numbers and Age-Specific Rates by Gender, Massachusetts: 2007

		Total		Female		Male	
Age	**Cause of death[1]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**
1-14 years	**TOTAL**	**128**	**11.7**	**57**	**10.7**	**71**	**12.7**
	Unintentional Injuries	20	1.8	4	--[5]	16	2.9
	Cancer	18	1.6	11	2.1	7	1.3
	Homicide	16	1.5	9	1.7	7	1.3
	Congenital malformations	12	1.1	7	1.3	5	0.9
15-24 years	**TOTAL**	**505**	**55.7**	**139**	**30.7**	**366**	**80.6**
	Unintentional Injuries	234	25.8	68	15.0	166	36.6
	Homicide	73	8.1	6	1.3	67	14.8
	Suicide	50	5.5	7	1.5	43	9.5
	Cancer	35	3.9	12	2.7	23	5.1
25-44 years	**TOTAL**	**2,023**	**112.5**	**684**	**75.6**	**1,339**	**150.0**
	Unintentional Injuries	587	32.6	161	17.8	426	47.7
	Cancer	317	17.6	174	19.2	143	16.0
	Heart Disease	246	13.7	62	6.8	184	20.6
	Suicide	193	10.7	34	3.8	159	17.8
45-64 years	**TOTAL**	**8,560**	**498.0**	**3,352**	**378.7**	**5,208**	**624.7**
	Cancer	3,149	183.2	1,493	168.7	1,656	198.6
	Heart Disease	1,655	96.3	457	51.6	1,198	143.7
	Unintentional Injuries	565	32.9	175	19.8	390	46.8
	Chronic Liver disease	337	19.6	92	10.4	245	29.4
65+ years[4]	**TOTAL**	**41,091**	**4,783.9**	**23,454**	**4,603.1**	**17,637**	**5,047.6**
	Heart Disease	10,798	1,257.1	6,086	1,194.5	4,712	1,348.5
	Cancer	9,439	1,098.9	4,707	923.8	4,732	1,354.3
	Stroke	2,475	288.1	1,608	315.6	867	248.1
	Chronic Lower Respiratory Disease[3]	2,073	241.3	1,212	237.9	861	246.4

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. 5. 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: 2007

		Total		Female		Male	
Age	**Cause of death[1]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**
65-74 years	**TOTAL**	**7,494**	**1,805.4**	**3,339**	**1,471.0**	**4,155**	**2,209.1**
	Cancer	2,961	713.4	1,379	607.5	1,582	841.1
	Heart Disease	1,551	373.7	556	244.9	995	529.0
	Chronic Lower Respiratory Disease[3]	476	114.7	270	118.9	206	109.5
	Stroke	285	68.7	129	56.8	156	82.9
75-84 years	**TOTAL**	**14,781**	**4,860.5**	**7,655**	**4,162.0**	**7,126**	**5,929.6**
	Cancer	4,039	1,328.2	1,970	1,071.1	2,069	1,721.6
	Heart Disease	3,554	1,168.7	1,750	951.5	1,804	1,501.1
	Chronic Lower Respiratory Disease[3]	854	280.8	473	317.0	381	317.0
	Stroke	845	277.9	503	273.5	342	284.6
85+ years	**TOTAL**	**18,816**	**13,463.7**	**12,460**	**12,636.9**	**6,356**	**15,444.4**
	Heart Disease	5,693	4,073.6	3,780	3,833.7	1,913	4,648.4
	Cancer	2,439	1,745.2	1,358	1,377.3	1,081	2,626.7
	Stroke	1,345	962.4	976	989.9	369	896.6
	Alzheimer's Disease	1,109	793.5	847	859.0	262	636.6

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: 2007

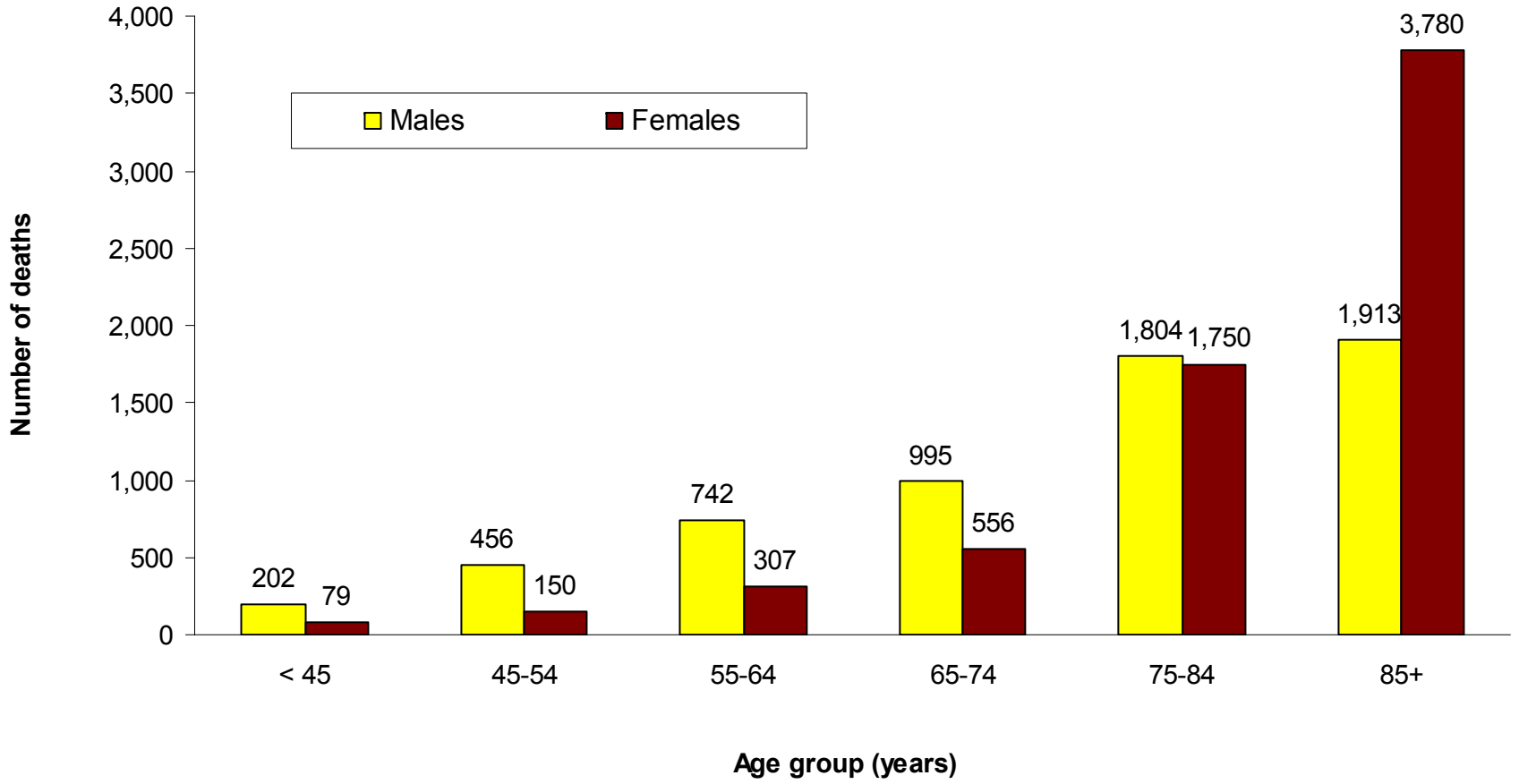
White non-Hispanic[2]			Black non-Hispanic[2]			Asian non-Hispanic[2]			Hispanic		
Cause[3]	**#**	**Rate[4]**	**Cause**	**#**	**Rate**	**Cause**	**#**	**Rate**	**Cause**	**#**	**Rate**
Total	**48,518**	**711.1**	**Total**	**2,211**	**820.5**	**Total**	**610**	**342.0**	**Total**	**1,264**	**477.7**
Cancer	11,994	183.2	Cancer	526	201.7	Cancer	184	98.4	Cancer	246	104.7
Heart Disease	11,939	168.5	Heart Disease	457	180.8	Heart Disease	120	67.4	Heart Disease	198	88.3
Stroke	2,512	34.9	Nephritis	105	44.4	Stroke	49	28.4	Unintentional Injuries[6]	122	25.8
Chronic Lower Resp. Disease[5]	2,237	33.0	Diabetes	96	37.4	Influenza & Pneumonia	21	14.9	Diabetes	62	28.2
Unintentional Injuries[6]	1,870	32.1	Unintentional Injuries[6]	94	26.1	Unintentional Injuries[6]	20	8.6	Stroke	58	28.9
Alzheimer's Disease	1,629	21.5	Stroke	87	35.6	Chronic Lower Resp. Disease[5]	16	11.4	Perinatal conditions	43	5.5
Influenza & Pneumonia	1,456	19.8	Homicide	82	18.0	Diabetes	15	9.9	Homicide	41	6.3
Nephritis	1,201	17.1	HIV/AIDS	48	13.0	Nephritis	15	9.5	HIV/AIDS	37	8.9
Diabetes	1,041	15.5	Chronic Lower Resp. Disease[5]	46	17.9	Septicemia	13	7.6	Nephritis	35	16.2
Septicemia	802	11.7	Perinatal conditions	45	10.3	Hypertension	13	9.1	Chronic liver disease	32	10.6

Total

Cause	#	Rate
Total	**52,690**	**704.4**
Cancer	12,961	179.2
Heart Disease	12,735	165.7
Stroke	2,710	35.0
Chronic Lower Respiratory Disease[5]	2,325	31.5
Unintentional Injuries[6]	2,113	30.5
Alzheimer's Disease	1,695	20.9
Influenza & Pneumonia	1,528	19.4
Nephritis	1,356	17.9
Diabetes	1,216	16.5
Septicemia	879	11.8

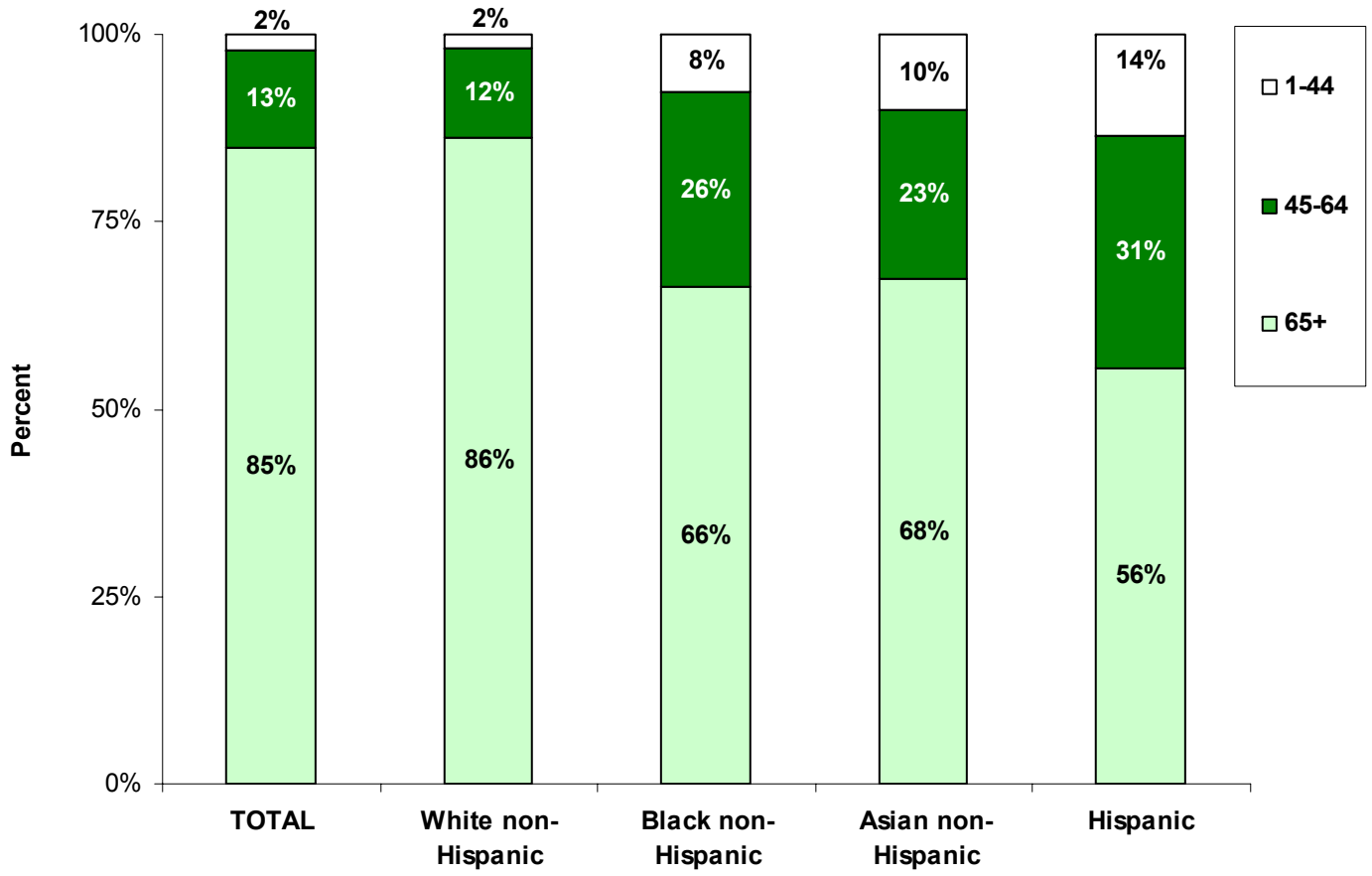
1. Ranking based on number of deaths. 2. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include 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: 2007



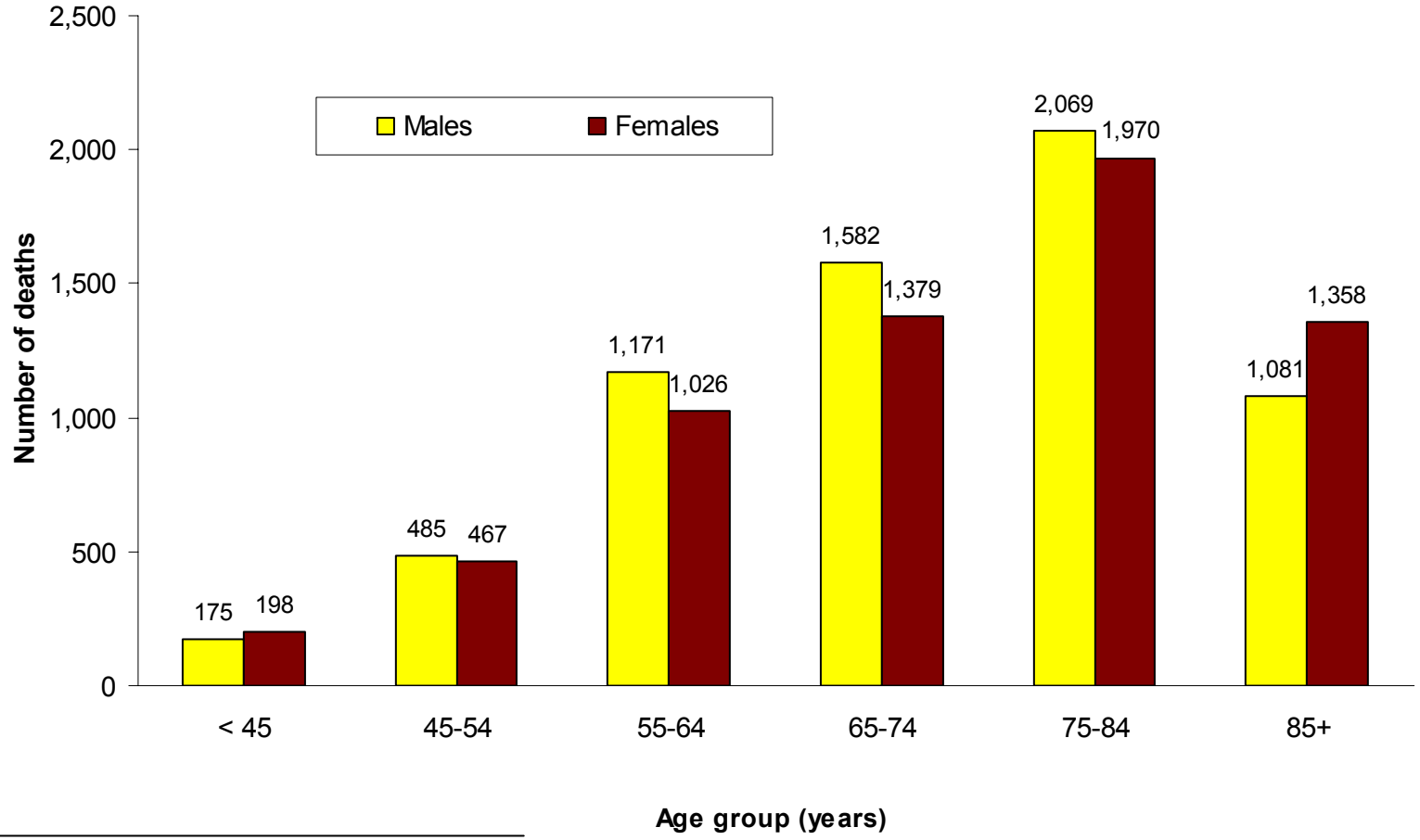
[1] **ICD-10**: I00-I09, I11, I13, I20-I51

Figure 9. Age Distribution by Race and Ethnicity for Heart Disease Deaths[1], Massachusetts: 2007



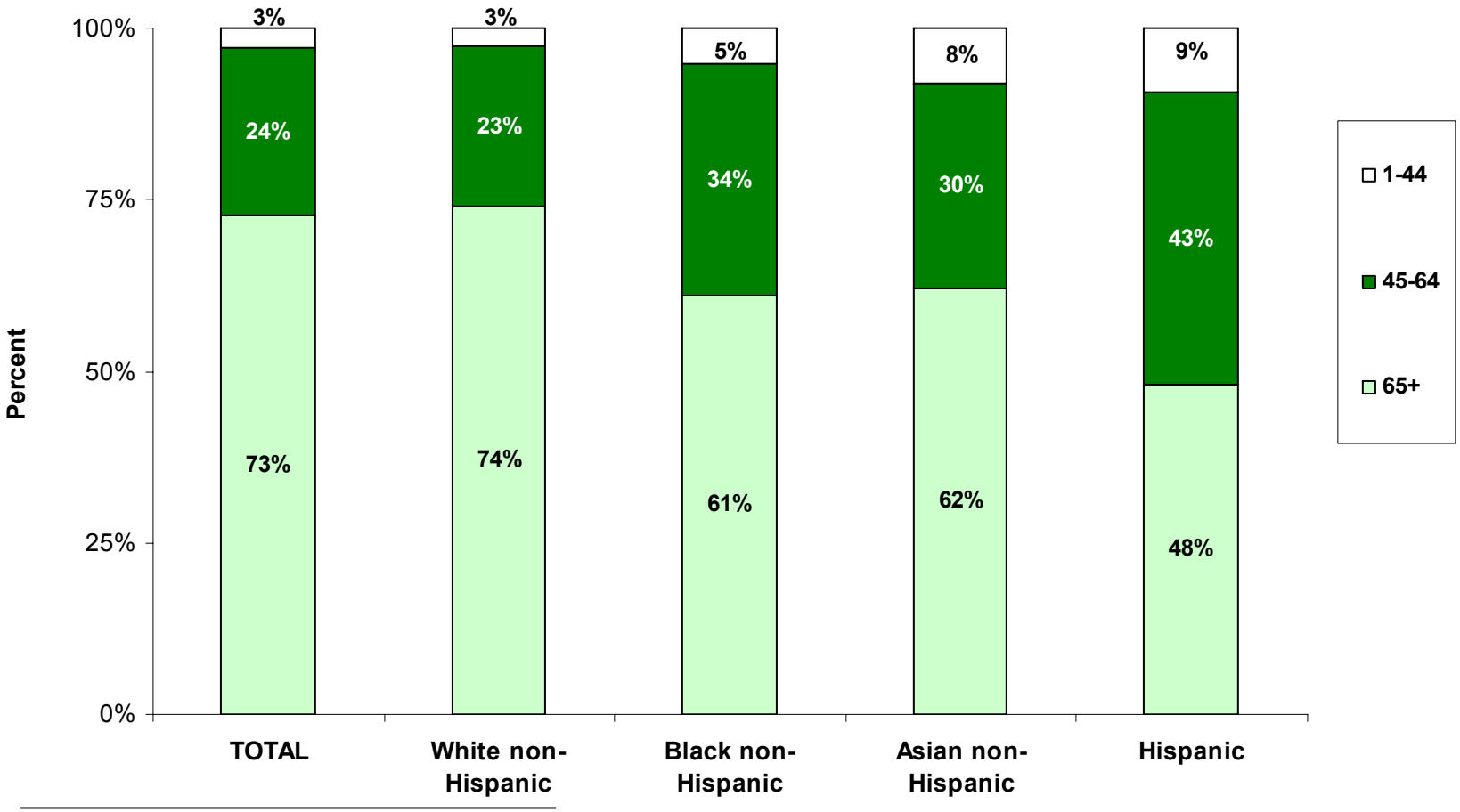
[1] **ICD-10**: I00-I09, I11, I13, I20-I51

Figure 10. Number of Cancer Deaths[1] by Age Group and Gender, Massachusetts: 2007



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

Figure 11. Age Distribution by Race and Ethnicity for Cancer Deaths[1], Massachusetts: 2007



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

Table 10. Heart Disease and Cancer Deaths by Race and Gender, Age-Adjusted Rates[1], Massachusetts: 1999-2007

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
2007	216.2	134.2	168.5	233.5	142.7	180.8

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
2007	83.3	52.9	67.4	124.9	61.8	88.3

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: 1999-2007

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
2007	226.0	156.5	183.2	270.7	159.7	201.7

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
2007	124.4	76.4	98.4	125.0	90.0	104.7

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: 2007

Cause of Death[1]	ICD-10 Code	Total		Female		Male	
		#	Rate[2,3]	#	Rate	#	Rate
Total Cancer Deaths	**C00-C97**	**12,961**	**179.2**	**6,398**	**152.1**	**6,563**	**222.0**
Bladder	C67	349	4.7	107	2.4	242	8.5
Brain and nervous system	C70-C72	295	4.2	123	3.2	172	5.5
Cervix	C53	46	1.1	46	1.1	NA	NA
Colorectal	C18-C21	1,178	15.9	622	13.8	556	19.0
Esophagus	C15	364	5.1	84	2.0	280	9.1
Female breast	C50[4]	837	20.3	837	20.3	NA	NA
Hodgkin disease	C81	24	0.4	11	0.3	13	0.4
Kidney and other urinary organs	C64, C65	289	4.0	102	2.4	187	6.1
Leukemia	C91-C95	446	6.2	184	4.4	262	9.1
Lung	C33, C34	3,604	50.7	1,756	42.8	1,848	62.4
Melanoma of the skin	C43	210	2.9	79	1.9	131	4.3
Multiple myeloma	C88, C90	254	3.5	113	2.7	141	4.9
Non-Hodgkin lymphoma	C82-C85	449	6.1	215	4.8	234	8.0
Ovary	C56	351	8.3	351	8.3	NA	NA
Pancreas	C25	869	12.0	472	11.2	397	13.0
Prostate	C61	656	23.9	NA	NA	656	23.9
Stomach	C16	257	3.5	107	2.5	150	5.0
Uterus	C54, C55	156	3.7	156	3.7	NA	NA
All other cancers	Residual	2,327	32.1	1,033	24.2	1,294	42.7

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 ICD-10 codes 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: 2007

Age	Cause of death[1]	ICD-10 Code	Number	Age-specific rate[2]
1-14 years	**Total**		**18**	**1.6**
	Brain and nervous system	C70-C72	8	0.7
	Leukemia	C91-C95	5	0.5
	Hodgkin disease	C81	1	--[3]
15-24 years	**Total**		**35**	**3.9**
	Leukemia	C91-C95	7	0.8
	Brain and nervous system	C70-C72	6	0.7
	Non-Hodgkin Lymphoma	C82-C85	3	--[3]
	Stomach	C16	1	--[3]
25-44 years	**Total**		**317**	**17.6**
	Female breast cancer[4]	C50	50	5.5
	Lung	C33, C34	44	2.4
	Brain and nervous system	C70-C72	24	1.3
	Leukemia	C91-C95	22	1.2
45- 64 years	**Total**		**3,149**	**183.2**
	Lung	C33, C34	885	51.5
	Female breast cancer[4]	C50	269	30.4
	Colorectal	C18-C21	233	13.6
	Pancreas	C25	224	13.0
65+ years	**Total**		**9,439**	**1,098.9**
	Lung	C33, C34	2,674	311.3
	Colorectal	C18-C21	925	107.7
	Pancreas	C25	632	73.6
	Prostate[5]	C61	617	176.6
65-74 years	**Total**		**2,961**	**713.4**
	Lung	C33, C34	992	239.0
	Colorectal	C18-C21	232	55.9
	Pancreas	C25	214	51.6
	Female breast cancer[4]	C50	162	71.4
75-84 years	**Total**		**4,039**	**1,328.2**
	Lung	C33, C34	1,236	406.4
	Colorectal	C18-C21	360	118.4
	Pancreas	C25	273	89.8
	Prostate[5]	C61	267	222.2
85+ years	**Total**		**2,439**	**1,745.2**
	Lung	C33, C34	446	319.1
	Colorectal	C18-C21	333	238.3
	Prostate[5]	C61	251	609.9
	Female breast cancer[4]	C50	151	153.1

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: 2007

White non-Hispanic[1]			Black non-Hispanic[1]			Asian non-Hispanic[1]			Hispanic		
Cause[2]	**#**	**Rate[3]**	**Cause**	**#**	**Rate**	**Cause**	**#**	**Rate**	**Cause**	**#**	**Rate**
Lung	3,387	52.6	Lung	127	49.0	Lung	44	25.4	Lung	44	21.9
Colorectal	1,099	16.3	Pancreas	43	16.0	Colorectal	19	10.2	Colorectal	21	9.9
Pancreas	802	12.3	Female Breast[4]	42	24.0	Pancreas	10	5.3	Prostate[5]	16	22.8
Female Breast[4]	772	20.9	Colorectal	39	16.1	Stomach	9	5.2	Stomach	15	6.1
Prostate[5]	591	23.4	Prostate[5]	39	49.4	Female Breast[4]	9	7.6	Pancreas	14	7.2
Total Cancer	**11,994**	**183.2**	**Total Cancer**	**526**	**201.7**	**Total Cancer**	**184**	**98.4**	**Total Cancer**	**246**	**104.7**

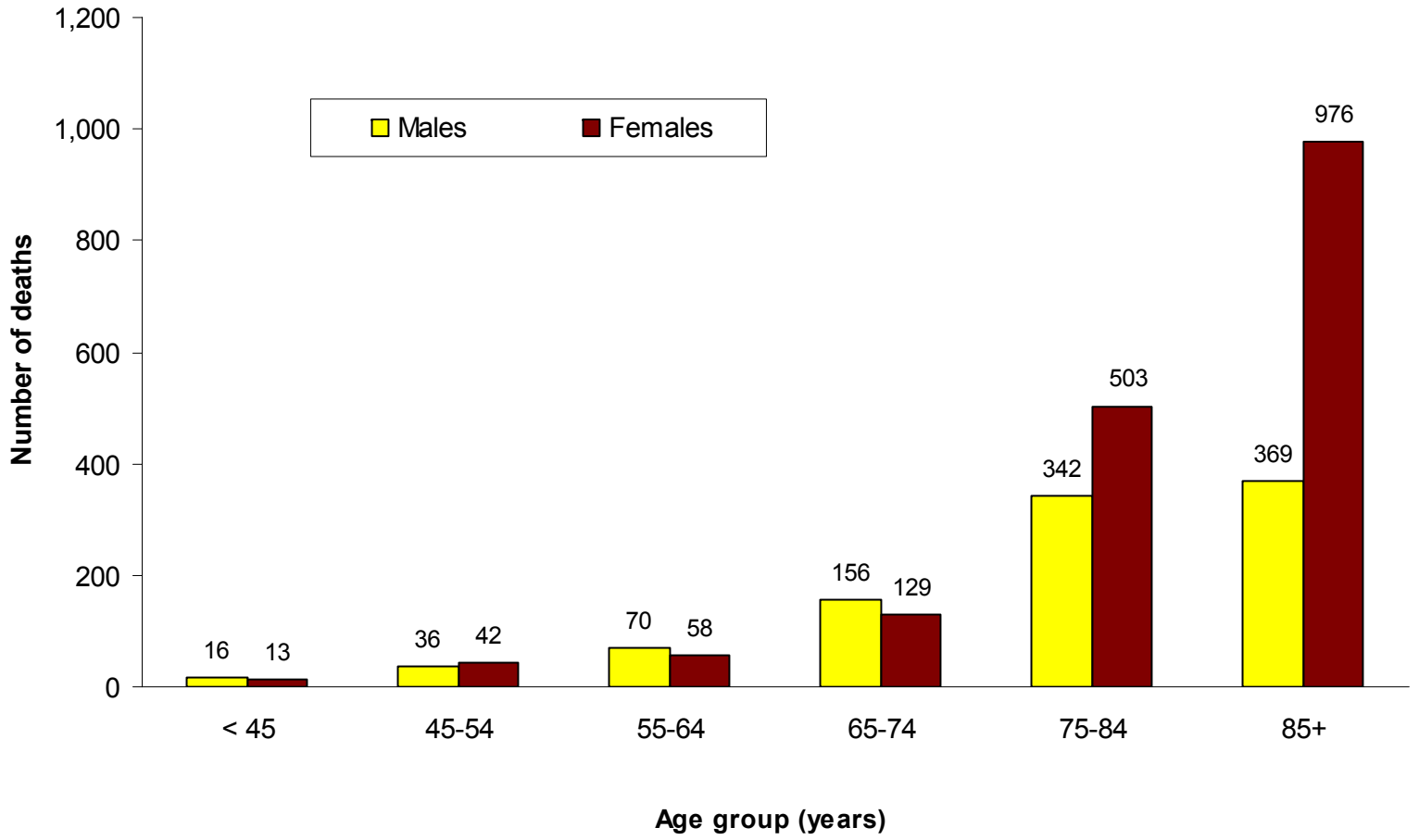
1. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include persons of Hispanic ethnicity in a race 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. 5. Calculation based on male population.

Table 14. Number, Percent, and Age-Adjusted Rates[1] of Stroke Deaths by Type and Gender, Massachusetts: 2007

Cause of Death	ICD-10 Code	Total			Female			Male		
		#	%	Rate[1]	#	%	Rate[1]	#	%	Rate[1]
Total Stroke Deaths	**I60-I69**	**2,710**	**100%**	**35.0**	**1,721**	**100%**	**34.3**	**989**	**100%**	**35.4**
Subarachnoid hemorrhage	I60	101	3.7%	1.4	63	3.7%	1.5	38	3.8%	1.3
Intracerebral and other intracranial hemorrhage	I61-I62	592	21.8%	8.0	346	20.1%	7.6	246	24.9%	8.6
Cerebral infarction	I63	123	4.5%	1.6	80	4.6%	1.6	43	4.3%	1.6
Stroke, not specified	I64	1,299	47.9%	16.5	860	50.0%	16.4	439	44.4%	15.9
Other	I67, I69	595	22.0%	7.5	372	21.6%	7.1	223	22.5%	8.1

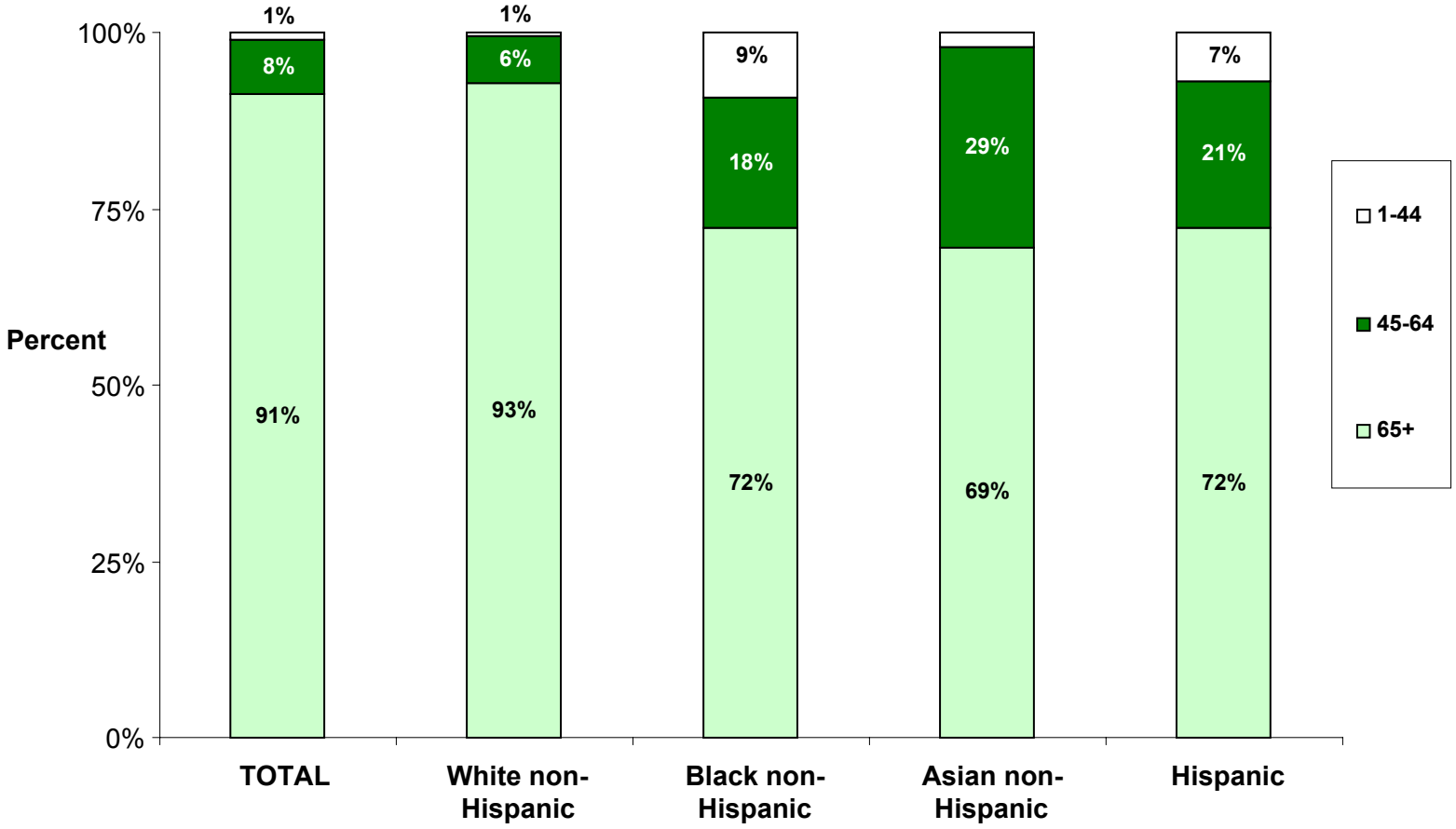
1. All rates are age-adjusted to the 2000 US Standard Population. Rates are per 100,000 population.

Figure 12. Number of Stroke Deaths[1] by Age Group and Gender, Massachusetts: 2007



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

Figure 13. Age Distribution by Race and Ethnicity for Stroke Deaths[1], Massachusetts: 2007



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

Table 15. Stroke Deaths by Race and Gender, Age-Adjusted Rates[1], Massachusetts: 1999-2007

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
2007	35.4	34.0	34.8	34.4	36.4	35.6

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
2007	26.7	29.5	28.4	32.0	26.7	28.9

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: 1999-2007

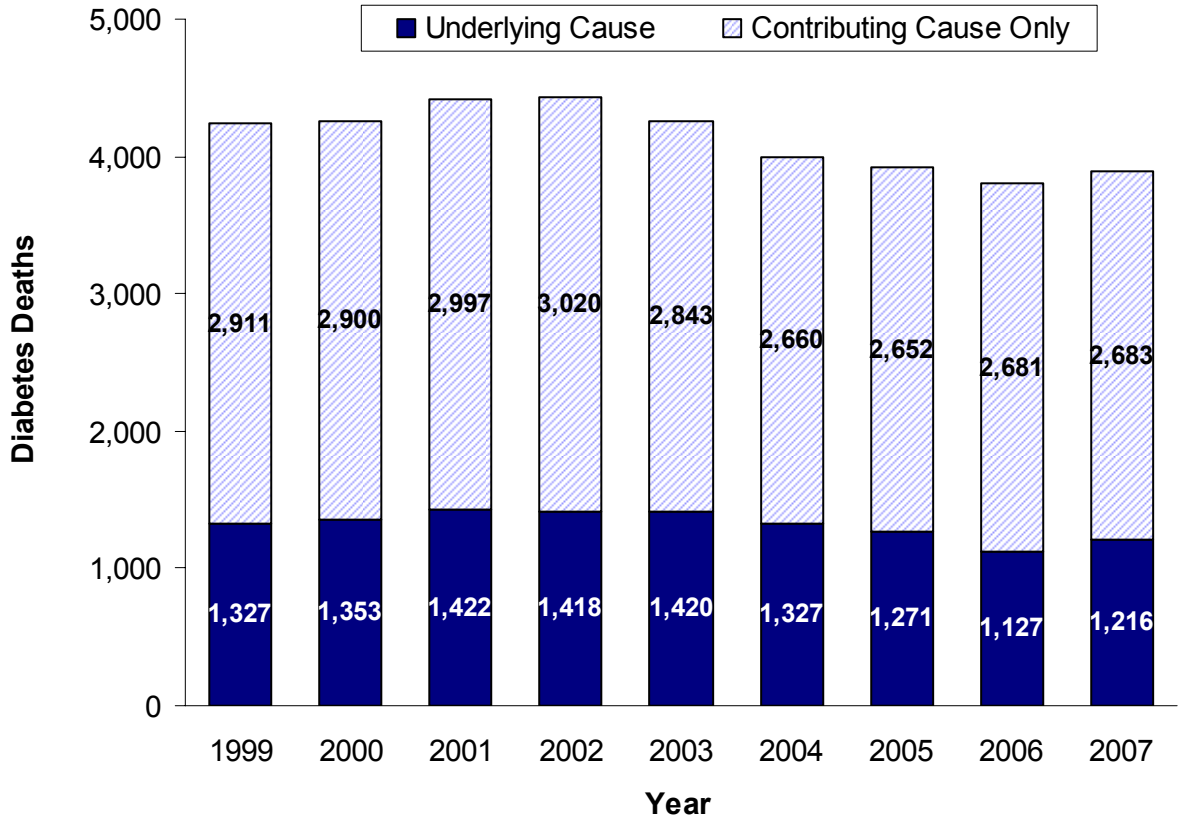


Table 16. Diabetes Deaths[1] by Gender, Massachusetts: 2007

	Proportion of all deaths (%)			Number		
Cause of death	Males	Females	Total	Males	Females	Total
Underlying	2.5%	2.1%	2.3%	619	597	1,216
Contributing/Associated	5.5%	4.7%	5.1%	1,365	1,318	2,683
Total diabetes-related	8.0%	6.9%	7.4%	1,984	1,915	3,899
Total deaths (all causes)	***100%***	***100%***	***100%***	***24,838***	***27,851***	***52,690***

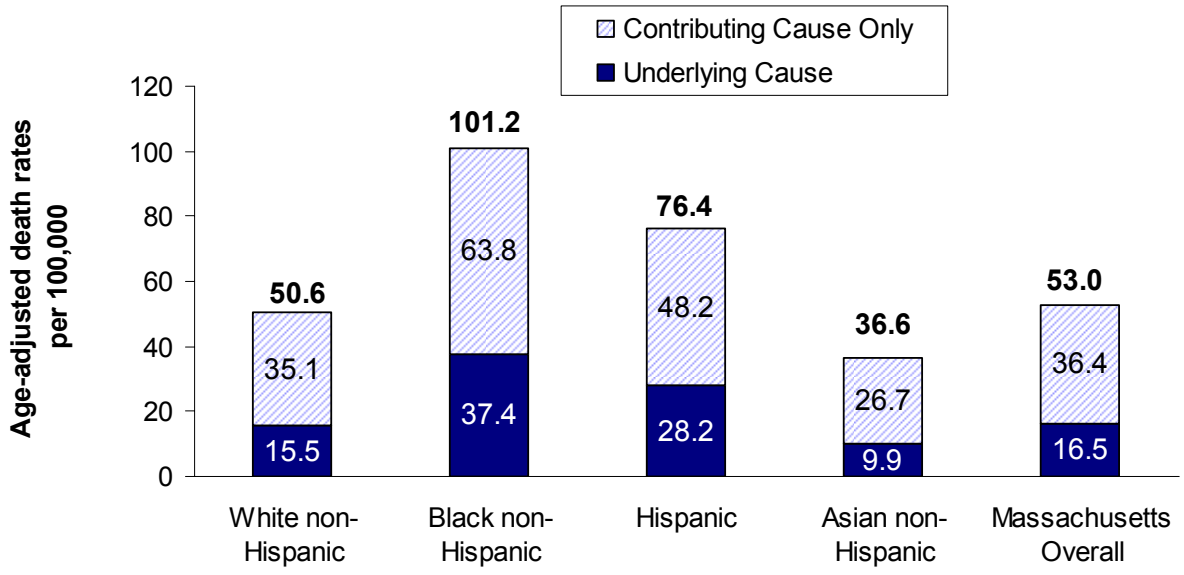
[1] **ICD-10: E10-E14**

Table 17. Diabetes Deaths[1] by Race and Hispanic Ethnicity, Massachusetts: 2007

Cause of death	Race/Hispanic Ethnicity				
	White non-Hispanic	Black non-Hispanic	Hispanic	Asian non-Hispanic	Total
	Number				
Underlying	1,041	96	62	15	1,216
Contributing/Associated	2,372	160	103	42	2,683
Total diabetes-related	3,413	256	165	57	3,899
Total deaths (all causes)	***48,518***	***2,211***	***1,264***	***610***	***52,690***
	Proportion of all deaths (%)				
Underlying	2.1	4.3	4.9	2.5	2.3
Contributing/Associated	4.9	7.2	8.1	6.9	5.1
Total diabetes-related	***7.0***	***11.6***	***13.1***	***9.3***	***7.4***

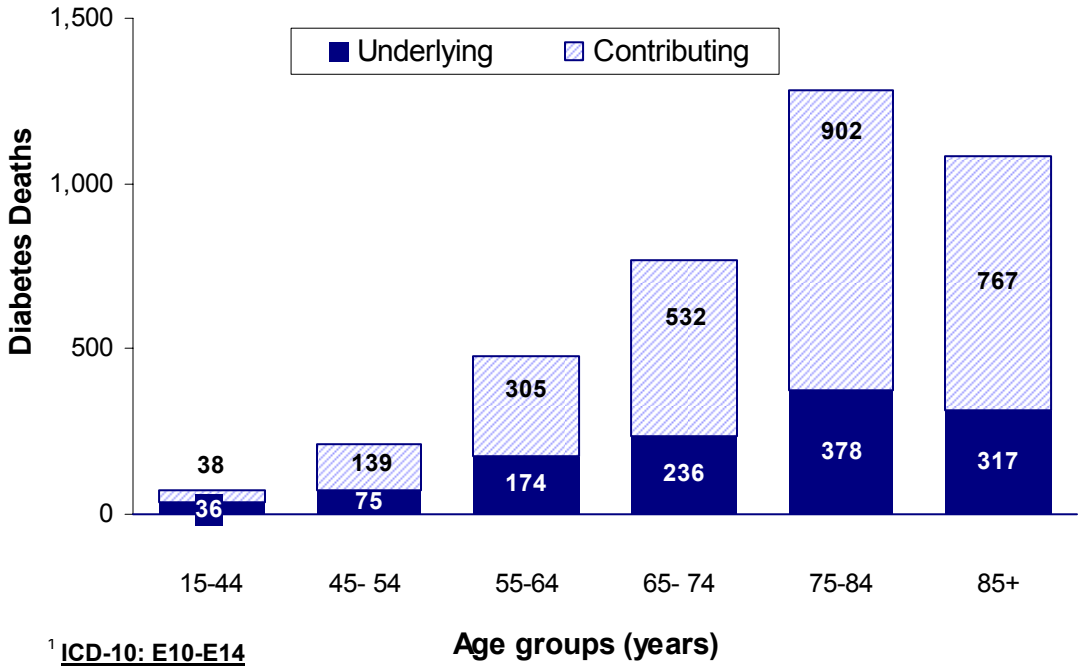
[1] **ICD-10: E10-E14**

Figure 15. Diabetes Death[1] Rates by Race and Hispanic Ethnicity, Massachusetts: 2007



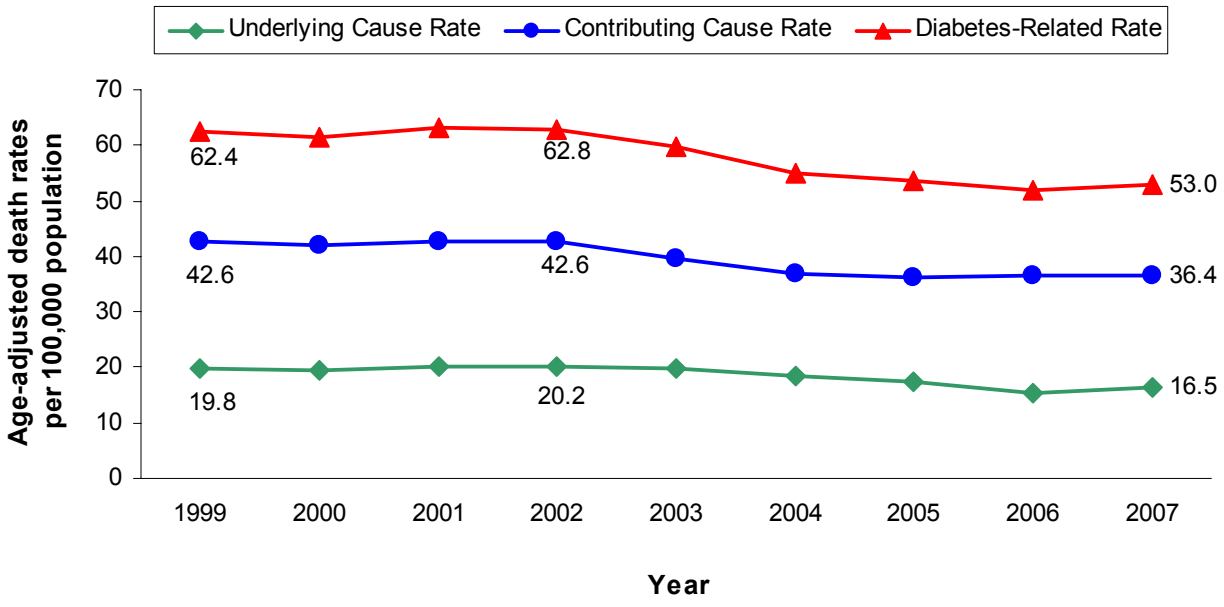
[1] **ICD-10: E10-E14**. Rates are per 100,000 age-adjusted to the 2000 U.S. standard population.

Figure 16. Age Distribution of Diabetes Deaths[1], Massachusetts: 2007



[1] ICD-10: E10-E14

Figure 17. Diabetes Death[1] Rates, Massachusetts: 1999-2007



[1] ICD-10: E10-E14. Rates are per 100,000 age-adjusted to the 2000 U.S. standard

Table 18. Injury Deaths[1] by Leading Causes, Gender, Age: Numbers, Age-Adjusted, and Age-Specific Rates, Massachusetts: 2007

	All Injury Deaths		Poisoning[2]		Falls		Motor Vehicle-related[3]		Hanging, strangulation, or suffocation		Firearm		Other[4]	
	Number	Rate[5]	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Persons	**2,967**	**43.2**	**965**	**14.5**	**470**	**6.3**	**437**	**6.6**	**341**	**5.0**	**231**	**3.5**	**523**	**7.4**
<1	6	7.9	0	0.0	0	0.0	0	0.0	2	--[6]	0	0.0	4	--[6]
1-14	41	3.8	1	--[6]	0	0.0	6	0.5	9	0.8	6	0.5	19	1.7
15-24	366	40.4	70	7.7	9	1.0	134	14.8	30	3.3	69	7.6	54	6.0
25-44	887	49.3	453	25.2	27	1.5	122	6.8	114	6.3	79	4.4	92	5.1
45-64	841	48.9	397	23.1	68	4.0	96	5.6	94	5.5	51	3.0	135	7.9
65-74	197	47.5	27	6.5	61	14.7	36	8.7	22	5.3	13	3.1	38	9.2
75-84	280	92.1	13	4.3	128	42.1	24	7.9	30	9.9	8	2.6	77	25.3
85+	348	249.0	4	--[6]	177	126.7	19	13.6	39	27.9	5	3.6	104	74.4
All Females	**1,010**	**26.0**	**352**	**10.2**	**220**	**4.6**	**132**	**3.8**	**84**	**2.2**	**24**	**0.7**	**198**	**4.6**
<1	4	--[6]	0	0.0	0	0.0	0	0.0	1	--[6]	0	0.0	3	--[6]
1-14	13	2.4	0	0.0	0	0.0	1	--[6]	4	--[6]	1	--[6]	7	1.3
15-24	83	18.4	15	3.3	6	1.3	44	9.7	4	--[6]	3	--[6]	11	2.4
25-44	228	25.2	147	16.2	5	0.6	32	3.5	17	1.9	12	1.3	15	1.7
45-64	269	30.4	160	18.1	25	2.8	20	2.3	17	1.9	6	0.7	41	4.6
65-74	74	32.6	18	7.9	17	7.5	18	7.9	9	4.0	2	--	10	4.4
75-84	127	69.0	10	5.4	56	30.4	6	3.3	13	7.1	0	0.0	42	22.8
85+	212	215.0	2	--[6]	111	112.6	11	11.2	19	19.3	0	0.0	69	70.0
All Males	**1,957**	**62.2**	**613**	**18.9**	**250**	**8.7**	**305**	**9.6**	**257**	**8.1**	**207**	**6.5**	**325**	**10.5**
<1	2	--[6]	0	0.0	0	0.0	0	0.0	1	--[6]	0	0.0	1	--[6]
1-14	28	5.0	1	--[6]	0	0.0	5	0.9	5	0.9	5	0.9	12	2.2
15-24	283	62.4	55	12.1	3	--[6]	90	19.8	26	5.7	66	14.5	43	9.5
25-44	659	73.8	306	34.3	22	2.5	90	10.1	97	10.9	67	7.5	77	8.6
45-64	572	68.6	237	28.4	43	5.2	76	9.1	77	9.2	45	5.4	94	11.3
65-74	123	65.4	9	4.8	44	23.4	18	9.6	13	6.9	11	5.8	28	14.9
75-84	153	127.3	3	--[6]	72	59.9	18	15.0	17	14.1	8	6.7	35	29.1
85+	136	330.5	2	--[6]	66	160.4	8	19.4	20	48.6	5	12.1	35	85.0

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: 2007

	All Injury Deaths		Poisoning[2]		Falls		Motor Vehicle-related[3]		Hanging, strangulation, or suffocation		Firearm		Other[4]	
	Number	Rate[5]	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
White non-Hispanic	**2,513**	**43.6**	**839**	**15.8**	**444**	**6.5**	**370**	**6.9**	**295**	**5.1**	**129**	**2.3**	**436**	**7.1**
Females	914	27.6	321	11.5	212	4.8	116	4.1	78	2.3	14	0.5	173	4.4
Males	1,599	61.6	518	20.1	232	8.9	254	9.9	217	8.3	115	4.3	263	10.0
Black non-Hispanic	**214**	**54.2**	**46**	**12.0**	**9**	**3.8**	**22**	**5.7**	**16**	**4.2**	**72**	**15.5**	**49**	**13.0**
Females	52	27.8	17	8.9	3	--[6]	6	2.8	3	--[6]	8	3.7	15	8.3
Males	162	81.6	29	15.1	6	5.7	16	9.1	13	6.6	64	27.4	34	17.6
Asian non-Hispanic	**36**	**12.6**	**8**	**2.2**	**5**	**2.2**	**6**	**2.4**	**9**	**2.8**	**4**	**--[6]**	**4**	**--[6]**
Females	7	5.3	3	--[6]	1	--[6]	1	--[6]	0	0.0	0	0.0	2	--[6]
Males	29	21.0	5	2.8	4	--[6]	5	4.0	9	6.1	4	--[6]	2	--[6]
Hispanic	**195**	**38.6**	**67**	**13.5**	**12**	**4.2**	**37**	**6.9**	**19**	**3.5**	**26**	**3.9**	**34**	**6.7**
Females	32	14.9	7	2.9	4	--[6]	8	3.0	3	--[6]	2	**--[6]**	8	3.9
Males	163	63.1	60	24.5	8	4.8	29	11.0	16	6.5	24	6.9	26	9.3

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: 2007

	All Unintentional		Poisonings		Falls		Motor Vehicle-related	
	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]
All Persons	**2,113**	**30.5**	**783**	**11.8**	**452**	**6.0**	**437**	**6.6**
<1	3	--[3]	0	0.0	0	0.0	0	0.0
1-14	20	1.8	0	0.0	0	0.0	6	0.5
15-24	234	25.8	60	6.6	7	0.8	134	14.8
25-44	587	32.6	394	21.9	19	1.1	122	6.8
45-64	565	32.9	311	18.1	63	3.7	96	5.6
65-74	143	34.5	9	2.2	61	14.7	36	8.7
75-84	236	77.6	7	2.3	126	41.4	24	7.9
85+	325	232.6	2	--[3]	176	125.9	19	13.6
All Females	**779**	**19.5**	**257**	**7.5**	**210**	**4.3**	**132**	**3.8**
<1	2	--[3]	0	0.0	0	0.0	0	0.0
1-14	4	--[3]	0	0.0	0	0.0	1	--[3]
15-24	68	15.0	13	2.9	4	--[3]	44	9.7
25-44	161	17.8	117	12.9	3	--[3]	32	3.5
45-64	175	19.8	114	12.9	20	2.3	20	2.3
65-74	54	23.8	7	3.1	17	7.5	18	7.9
75-84	109	59.3	5	2.7	56	30.4	6	3.3
85+	206	208.9	1	--[3]	110	111.6	11	11.2
All Males	**1,334**	**42.7**	**526**	**16.3**	**242**	**8.4**	**305**	**9.6**
<1	1	--[3]	0	0.0	0	0.0	0	0.0
1-14	16	2.9	0	0.0	0	0.0	5	0.9
15-24	166	36.6	47	10.4	3	--[3]	90	19.8
25-44	426	47.7	277	31.0	16	1.8	90	10.1
45-64	390	46.8	197	23.6	43	5.2	76	9.1
65-74	89	47.3	2	--[3]	44	23.4	18	9.6
75-84	127	105.7	2	--[3]	70	58.2	18	15.0
85+	119	289.2	1	--[3]	66	160.4	8	19.4

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. 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: 2007

	All Unintentional		Poisonings		Falls		Motor Vehicle-related	
	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]
White non-Hispanic	**1,870**	**32.1**	**673**	**12.8**	**429**	**6.2**	**370**	**6.9**
Females	723	21.2	233	8.5	203	4.5	116	4.1
Males	1,147	44.4	440	17.2	226	8.7	254	9.9
Black non-Hispanic	**94**	**26.1**	**40**	**10.5**	**8**	**3.5**	**22**	**5.7**
Females	29	15.7	14	7.4	3	--[3]	6	2.8
Males	65	37.8	26	13.7	5	5.3	16	9.1
Asian non-Hispanic	**20**	**8.6**	**6**	**1.6**	**4**	**--[3]**	**6**	**2.4**
Females	5	4.2	2	--[3]	1	--[3]	1	--[3]
Males	15	14.0	4	--[3]	3	--[3]	5	4.0
Hispanic	**122**	**25.8**	**59**	**11.8**	**11**	**4.0**	**37**	**6.9**
Females	17	9.9	4	--[3]	3	--[3]	8	3.0
Males	105	41.7	55	22.0	8	4.8	29	11.0

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 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: 2007

	All Intentional		Suicide		Homicide	
	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]
All Persons	**687**	**10.3**	**504**	**7.5**	**183**	**2.9**
<1	3	--[3]	0	0.0	3	--[3]
1-14	18	1.6	2	--[3]	16	1.5
15-24	123	13.6	50	5.5	73	8.1
25-44	257	14.3	193	10.7	64	3.6
45-64	211	12.3	189	11.0	22	1.3
65-74	38	9.2	35	8.4	3	--[3]
75-84	21	6.9	19	6.2	2	--[3]
85+	16	11.4	16	11.4	0	0.0
All Females	**154**	**4.5**	**106**	**3.0**	**48**	**1.5**
<1	2	--[3]	0	0.0	2	--[3]
1-14	9	1.7	0	0.0	9	1.7
15-24	13	2.9	7	1.5	6	1.3
25-44	50	5.5	34	3.8	16	1.8
45-64	60	6.8	48	5.4	12	1.4
65-74	14	6.2	11	4.8	3	--[3]
75-84	6	3.3	6	3.3	0	0.0
85+	0	0.0	0	0.0	0	0.0
All Males	**533**	**16.7**	**398**	**12.4**	**135**	**4.3**
<1	1	--[3]	0	0.0	1	--[3]
1-14	9	1.6	2	--[3]	7	1.3
15-24	110	24.2	43	9.5	67	14.8
25-44	207	23.2	159	17.8	48	5.4
45-64	151	18.1	141	16.9	10	1.2
65-74	24	12.8	24	12.8	0	0.0
75-84	15	12.5	13	10.8	2	--[3]
85+	16	38.9	16	38.9	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: 2007

	All Intentional		Suicide		Homicide	
	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]
White non-Hispanic	**503**	**9.1**	**446**	**8.0**	**57**	**1.1**
Females	126	4.4	101	3.4	25	0.9
Males	377	14.4	345	13.1	32	1.3
Black non-Hispanic	**102**	**22.8**	**20**	**4.8**	**82**	**18.0**
Females	12	5.9	1	--[3]	11	5.3
Males	90	40.0	19	9.2	71	30.8
Asian non-Hispanic	**14**	**3.6**	**11**	**2.6**	**3**	**--[3]**
Females	2	--[3]	1	--[3]	1	--[3]
Males	12	6.1	10	4.9	2	--[3]
Hispanic	**66**	**11.2**	**25**	**4.9**	**41**	**6.3**
Females	14	4.7	3	--[3]	11	3.6
Males	52	18.2	22	9.4	30	8.8

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: 2007

Type of Injury	All Injury Deaths		Female		Male	
	Number	Rate	Number	Rate	Number	Rate
Unintentional Injuries (Accidents)	**2,113**	**30.5**	**779**	**19.5**	**1,334**	**42.7**
Motor Vehicle-related	437	6.6	132	3.8	305	9.6
Injury to pedestrian	75	1.1	22	0.6	53	1.7
Injury to pedal cyclist	3	--[3]	0	0.0	3	--[3]
Injury to motorcyclist	59	0.9	4	--[3]	55	1.7
Injury to occupant	63	1.0	23	0.7	40	1.3
Other and unspecified	237	3.6	83	2.4	154	4.8
Poisoning	783	11.8	257	7.5	526	16.3
Falls	452	6.0	210	4.3	242	8.4
Hanging, strangulation or suffocation	105	1.4	45	1.0	60	2.0
Drowning or submersion	51	0.8	9	0.3	42	1.3
Smoke, fire and flames	32	0.5	16	0.4	16	0.5
Firearm	3	--[3]	0	0.0	3	0.1
Other and unspecified	220	2.9	103	2.0	117	3.9
Suicide	**504**	**7.5**	**106**	**3.0**	**398**	**12.4**
Hanging, strangulation or suffocation	220	3.3	29	0.8	191	6.0
Poisoning	117	1.7	60	1.7	57	1.7
Firearm	112	1.6	4	--[3]	108	3.4
Other and unspecified	55	0.8	13	0.4	42	1.3
Homicide	**183**	**2.9**	**48**	**1.5**	**135**	**4.3**
Firearm	113	1.8	20	0.6	93	2.9
Cut or pierce	33	0.5	8	0.2	25	0.8
Other and unspecified	37	0.6	20	0.7	17	0.5
Injury Deaths of Undetermined Intent	**112**	**1.6**	**51**	**1.4**	**61**	**1.8**
Poisoning	63	0.9	33	0.9	30	0.9
Other and unspecified	49	0.7	18	0.5	31	0.9
Legal Intervention	**5**	**0.1**	**0**	**0.0**	**5**	**0.2**
Firearm	3	--[3]	0	0.0	3	--[3]
Other and unspecified	2	--[3]	0	0.0	2	--[3]
Adverse Effects	**50**	**0.7**	**26**	**0.7**	**24**	**0.8**
Medical Care	43	0.6	22	0.5	21	0.7
Drugs	7	0.1	4	--[3]	3	--[3]
ALL INJURIES	**2,967**	**43.2**	**1,010**	**26.0**	**1,957**	**62.2**

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; 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: 2007

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	965	14.5	783	11.8	117	1.7	2	--[4]	63	0.9	0	0.0
Transport Injuries	470	7.0	467	7.0	2	--[4]	1	--[4]	0	0.0	0	0.0
Motor vehicle-related	437	6.6	437	6.6	0	0.0	0	0.0	0	0.0	0	0.0
Injury to pedestrian	75	1.1	75	1.1	0	0.0	0	0.0	0	0.0	0	0.0
Injury to pedal cyclist	3	--[4]	3	--[4]	0	0.0	0	0.0	0	0.0	0	0.0
Injury to motorcyclist	59	0.9	59	0.9	0	0.0	0	0.0	0	0.0	0	0.0
Injury to occupant	63	1.0	63	1.0	0	0.0	0	0.0	0	0.0	0	0.0
Other and unspecified	237	3.6	237	3.6	0	0.0	0	0.0	0	0.0	0	0.0
Other transport	33	0.5	30	0.4	2	--[4]	1	--[4]	0	0.0	0	0.0
Falls	470	6.3	452	6.0	13	0.2	0	0.0	5	0.1	0	0.0
Hanging, strangulation or suffocation	341	5.0	105	1.4	220	3.3	10	0.2	6	0.1	0	0.0
Firearm	231	3.5	3	--[4]	112	1.6	113	1.8	0	0.0	3	--[4]
Drowning and submersion	73	1.1	51	0.8	8	0.1	2	0.0	12	0.2	0	0.0
Cut or pierce	53	0.8	0	0.0	19	0.3	33	0.5	1	--[4]	0	0.0
Smoke, fire and flames	37	0.5	32	0.5	3	--[4]	2	--[4]	0	0.0	0	0.0
Other and unspecified	277	3.7	220	2.9	10	0.1	20	0.3	25	0.4	2	--[4]
Adverse Effects	50	0.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALL INJURIES	**2,967**	**43.2**	**2,113**	**30.5**	**504**	**7.5**	**183**	**2.9**	**112**	**1.6**	**5**	**0.1**

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[1], Massachusetts: 2000 and 2007

Poisoning Deaths – All Intents	2000 (N=586)		2007 (N=965)	
	Deaths Associated by Agent/Class of Agent[2]			
Leading Agent / Class of Agents	Number[2]	%[3]	Number[2]	%[3]
Opioids	363	61.9%	637	66.0%
Cocaine	171	29.2%	274	28.4%
Other & unspecified drugs, medicaments & biological substances	63	10.8%	199	20.6%
Toxic effect of alcohol	18	3.1%	178	18.4%
Tricyclic & tetracyclic antidepressants, Monoamine-oxidase-inhibitor antidepressants, & Other & unspecified antidepressants	46	7.8%	147	15.2%
Benzodiazepines	17	2.9%	100	10.4%
Phenothiazine antipsychotics & neuroleptics, Butyrophenone & thioxanthene neuroleptics, Other & unspecified antipsychotics & neuroleptics	6	1.0%	50	5.2%
Toxic effect of carbon monoxide	28	4.8%	20	2.1%
Poisoning by antiepileptic, sedative-hypnotic & antiparkinsonism drugs	7	1.2%	16	1.7%
All other agents combined	45	7.7%	126	13.1%

Unintentional/Undetermined Intent Poisoning Deaths[4]	2000 (N=485)		2007 (N=846)	
	Deaths Associated by Agent/Class of Agent[2]			
Leading Agent / Class of Agents	Number[2]	%[3]	Number[2]	%[3]
Opioids	338	69.7%	614	72.6%
Cocaine	167	34.4%	271	32.0%
Toxic effect of alcohol	17	3.5%	163	19.3%
Other & unspecified drugs, medicaments & biological substances	40	8.2%	137	16.2%
Tricyclic & tetracyclic antidepressants, Monoamine-oxidase-inhibitor antidepressants, & Other & unspecified antidepressants	19	3.9%	112	13.2%
Benzodiazepines	11	2.3%	84	9.9%
Phenothiazine antipsychotics & neuroleptics, Butyrophenone & thioxanthene neuroleptics, Other & unspecified antipsychotics & neuroleptics	1	--[5]	36	4.3%
Poisoning by antiepileptic, sedative-hypnotic & antiparkinsonism drugs	2	--[5]	11	1.3%
Toxic effect of carbon monoxide	6	1.2%	4	--[5]
All other agents combined	30	6.2%	75	8.9%

Table 26 (continued). Poisoning Deaths by Intent and Leading Agents[1], Massachusetts: 2000 and 2007

Suicide Poisoning Deaths	2000 (N=101)		2007 (N=117)	
	Deaths Associated by Agent/Class of Agent[2]			
Leading Agent / Class of Agents	Number[2]	%[3]	Number[2]	%[3]
Other & unspecified drugs, medicaments & biological substances	23	22.8%	62	53.0%
Tricyclic & tetracyclic antidepressants, Monoamine-oxidase-inhibitor antidepressants, & Other & unspecified antidepressants	27	26.7%	35	29.9%
Opioids	25	24.8%	23	19.7%
Benzodiazepines	6	5.9%	16	13.7%
Toxic effect of carbon monoxide	22	21.8%	16	13.7%
Toxic effect of alcohol	1	--[5]	15	12.8%
Phenothiazine antipsychotics & neuroleptics, Butyrophenone & thioxanthene neuroleptics, Other & unspecified antipsychotics & neuroleptics	5	5.0%	14	12.0%
Poisoning by antiepileptic, sedative-hypnotic & antiparkinsonism drugs	5	5.0%	5	4.3%
Cocaine	4	--[5]	3	--[5]
All other agents combined	15	14.9%	49	41.9%

[1] Leading Agents/Class of Agents are sorted in descending order by their count in 2007. 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 affected 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.
[5] Calculations based on values 1-4 are excluded.

Table 27. HIV/AIDS[1] Deaths by Place of Occurrence, Massachusetts: 1995-2007

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]
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	
2007	#	143[4]		15		98		2		28	
	%	100.0		10.5		68.5		-[5]		19.6	

**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 1999-2007 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: 1995-2007

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]
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	
2007	#	0		0		5		34		104	
	%	0.0		0.0		3.5		32.7		72.7	

**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 1999-2007 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: 1995-2007

		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													
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	
2007	#	96[6]		47[6]		58[6]		48[6]		0[6]		37[6]	
	%	67.4		32.9		40.6		33.6		0.0		25.9	

**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 1999-2007 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: 2000-2007

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
2007	58	41%	1.0	48	34%	13.0	37	26%	8.9
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
2007	48	50%	1.7	23	24%	13.4	25	26%	13.3
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
2007	10	21%	0.3	25	53%	12.8	12	26%	5.2

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. Population estimates are from the NCHS Modified Age, Race/Ethnicity, & Sex Estimates 2007, released September 5, 2008.

Table 31. Trends in Infant, Neonatal, and Post Neonatal Mortality, by Race and Hispanic Ethnicity, Massachusetts: 1997-2007

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]
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]
2007	380	4.9	206	3.9	66	10.2	81	7.4	18	3.1	4	--[4]

NEONATAL MORTALITY (birth to 27 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]
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]
2007	263	3.4	141	2.7	48	7.4	53	4.9	15	2.6	4	--[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]
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
2007	117	1.5	65	1.2	18	2.8	28	2.6	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: 2007

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		**380**	**100**	**263**	**100**	**117**	**100**
Infectious and parasitic diseases	**A00-B99**	**2**	**--[3]**	**0**	**0.0**	**2**	**--[3]**
Cancer	**C00-C97**	**3**	**--[3]**	**0**	**0.0**	**3**	**--[3]**
Diseases of the blood and blood forming organs (anemia)	**D50-D89**	**6**	**1.6**	**3**	**--[3]**	**3**	**--[3]**
Diseases of nervous system and ear	**G00-G98, H60-H93**	**10**	**2.6**	**3**	**--[3]**	**7**	**6**
Diseases of the respiratory system	**J00-J98**	**6**	**1.6**	**1**	**--[3]**	**5**	**4.3**
Diseases of digestive system	**K00-K92**	**9**	**2.4**	**0**	**0.0**	**9**	**7.7**
Congenital malformations	**Q00-Q99**	**63**	**16.6**	**42**	**16**	**21**	**17.9**
Congenital malformations of nervous system	Q00-Q07	8	12.7	5	11.9	3	--[3]
Anencephalus and similar malformations	Q00	3	--[3]	1	--[3]	2	--[3]
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	13	20.6	3	--[3]	10	47.6
Other congenital malformations of circulatory system	Q25-Q28	1	--[3]	1	--[3]	0	0.0
Congenital malformations of respiratory system	Q30-Q34	7	11.1	7	16.7	0	0.0
Cleft palate and other digestive tract malformations	Q35-Q45	3	--[3]	1	--[3]	2	--[3]
Congenital malformations of genitourinary system	Q50-Q64	3	--[3]	3	--[3]	0	0.0
Congenital malformations of musculoskeletal system	Q65-Q85	9	14.3	9	21.4	0	0.0
Chromosomal abnormalities	Q90-Q99	12	19.0	9	21.4	3	--[3]
Certain conditions originating in the perinatal period	**P00-P96**	**212**	**55.8**	**202**	**76.8**	**10.0**	**8.5**
Newborn affected by maternal conditions which may be unrelated to present pregnancy	P00	**1**	**--[3]**	1	**--[3]**	0	0.0
Newborn affected by maternal complications of pregnancy	P01	26	12.3	26	12.9	0	0.0
Newborn affected by complications of placenta, cord and membrane	P02	20	9.4	20	9.9	0	0.0
Newborn affected by other complications of labor and delivery	P03	0	0.0	0	0.0	0	0.0
Disorders relating to short gestation and low birthweight	P07	80	37.7	79	39.1	1	--[3]
Birth trauma	P10-P15	1	--[3]	1	--[3]	0	0.0
Intrauterine hypoxia and birth asphyxia	P20-P21	2	--[3]	2	--[3]	0	0.0
Respiratory distress of newborn	P22	7	3.3	7	3.5	0	0.0
Other respiratory conditions of newborn	P23-P28	8	3.8	8	4.0	0	0.0
Infections specific to the perinatal period	P35-P39	11	5.2	11	5.4	0	0.0
Neonatal hemorrhage	P50-P52, P54	15	7.1	14	6.9	1	--[3]
Other and ill-defined conditions originating in the perinatal period	P90-P96	10	4.7	8	4.0	2	--[3]
Symptoms, signs, and ill-defined conditions	**R00-R99**	**48**	**12.6**	**6**	**2.3**	**42**	**35.9**
Sudden Infant Death Syndrome (SIDS)	R95	31	64.6	2	**--[3]**	29	69.0
Unintentional Injuries	**V01-X59**	**3**	**--[3]**	**0**	**0.0**	**3**	**--[3]**
Homicide	**X85-Y09**	**3**	**--[3]**	**0**	**0.0**	**3**	**--[3]**
All other causes	**Residual**	**15**	**3.9**	**6**	**2.3**	**9**	**7.7**

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: 2007

Cause of Death[2]	ICD-10 Code	White non-Hispanic		Black non-Hispanic		Asian non-Hispanic		Hispanic	
		#	%	#	%	#	%	#	%
TOTAL		**206**	**100.0%**	**66**	**100.0%**	**18**	**100.0%**	**81**	**100.0%**
Certain conditions originating in the perinatal period	P00- P96	111	53.9%	45	68.2%	12	66.7%	42	51.9%
Congenital malformations	Q00-Q99	31	15.0%	6	9.1%	3	--[3]	21	25.9%
Symptoms, signs, and ill-defined conditions	R00-R99	30	14.6%	6	9.1%	0	0.0%	9	11.1%
SIDS	R95	21	10.2%	4	--[3]	0	0.0%	6	7.4%
Unintentional Injuries	V01-X59	1	--[3]	1	--[3]	0	0.0%	1	--[3]
Homicide	X85-Y09	1	--[3]	1	--[3]	0	0.0%	1	--[3]
All other causes	Residual	32	15.5%	7	10.6%	3	--[3]	7	8.6%

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 2006	MA 2007[2]	US 2006[3]	TARGET STATUS
	Age-adjusted rates (per 100,000 population)					
3-1	Overall Cancer death rate	159.9	186.3	179.2	180.8	O
3-2	Lung Cancer	44.9	52.6	51.0	51.5	O
3-3	Female Breast Cancer (per 100,000 females)	22.3	23.2	20.4	24.1[4]	√
3-4	Uterine Cervix (per 100,000 females)	2.0	1.4	1.1	1.3	√
3-5	Colorectal Cancer	13.9	17.1	16.0	17.2	O
3-6	Oropharyngeal Cancer	2.7	2.5	2.5	2.5[4]	√
3-7	Prostate Cancer (per 100,000 males)	28.8	24.5	24.1	24.5[4]	√
3-8	Malignant Melanoma	2.5	3.4	3.5	2.7	●
12-1	Coronary Heart Disease	166.0	111.9	111.7	160.0[4]	√
12-7	Stroke	48.0	37.4	35.0	43.6	√
13-14	HIV/AIDS	0.7	2.7	2.0	4.0	●
26-2	Cirrhosis	3.0	4.9	5.2	8.7	●
26-3	Drug-induced deaths	1.0	14.9	14.9	11.5	●
	Injury Deaths					
15-3	Firearm- related	4.1	3.2	3.5	10.2	√
15-8	Poisonings	1.5	14.9	14.5	11.0[4]	●
15-9	Hanging, strangulation or suffocation	3.0	4.2	6.3	4.6[4]	●
15-13	Unintentional injuries (Accidents)	17.5	31.4	30.5	38.5	●
15-15	Motor vehicle crashes	9.0	7.1	6.6	14.7	√
15-25	Residential fire deaths	0.2	0.4	0.4	1.1[4]	●
15-27	Falls	3.0	5.7	6.3	6.6[4]	●
15-29	Drowning	0.9	1.1	1.1	1.4[4]	O
15-32	Homicide	3.0	2.9	2.9	4.2	√
18-1	Suicide	5.0	6.5	7.5	10.6	●
	Death Rates (per 1,000 live births)					
16-1c	Infant deaths	4.5	4.8	4.8	6.7	O
16-1d	Neonatal deaths	2.9	3.6	3.6	4.5	O
16-1e	Postneonatal deaths	1.2	1.2	1.2	2.3	√
16-1f	Birth defects	1.1	0.7	0.8	1.4	√
16-1g	Congenital heart defects	0.38	0.21	0.17	0.33	√
16-1h	Sudden infant death syndrome (SIDS)	0.25	0.33	0.40	0.50	●
16-4	Maternal deaths (per 100,000 live births)	3.3	8.9	9.0	13.1[4]	●
	Child/Adolescent/Young Adults Death Rates (per 100,000 pop)					
16-2a	1-4 years old	25.0	15.4	14.6	28.4	√
16-2b	5-9 years old	14.3	7.7	9.4	14.5[4]	√
16-3a	10-14 years old	16.8	11.2	11.8	18.1[4]	√
16-3b	15-19 years old	43.2	31.9	43.7	65.1[4]	O
16-3c	20-24 years old	57.3	70.2	67.8	97.6[4]	O
24-1	Asthma deaths (per million)					
24-1a	Children under age 5 years	1.0	--[5]	--[5]	1.8[4]	√
24-1b	Children aged 5-14 years	1.0	--[5]	--[5]	2.6[4]	√
24-1c	Ages 15-34 years	3.0	--[5]	--[5]	4.4[4]	√
24-1d	Ages 35-64 years	9.0	6.4	11.1	12.7[4]	O
24-1e	Ages 65+ years	60.0	36.2	34.9	51.3[4]	√

✓ = YES, met target O = 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 2007 are calculated using 2007 Modified Age, Race/Ethnicity, and Sex (MARS) estimates, from the National Center for Health Statistics (NCHS) and the Census Bureau Population Estimates Program. 3. U.S. data for 2006 obtained from NCHS. Deaths: Preliminary Data for 2006. National Vital Statistics Report, Vol. 56, No. 16, June 2008. 4. Final Data for 2005 and 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: 2007 (Sorted by PMR)

City/Town	Number of Premature Deaths	PMR[2] (per 100,000)
Springfield	626	472.9*
Lowell	380	443.8*
Fall River	370	432.1*
Taunton	216	421.8*
Worcester	631	413.3*
New Bedford	358	408.0*
Attleboro	152	392.0*
Lynn	316	390.8*
Haverhill	208	389.5*
Brockton	337	383.3*
Revere	173	377.8*
Boston	1,722	376.0*
Quincy	339	360.3*
Lawrence	206	359.0*
Pittsfield	169	356.6*
Weymouth	200	350.2*
Chicopee	200	348.0*
Barnstable	181	340.8
Peabody	195	333.9
Malden	178	327.0
Leominster	123	316.9
Plymouth	155	297.6
Somerville	176	297.3
Waltham	167	297.1
Medford	165	292.2
Methuen	120	278.0
Framingham	152	242.9*
Cambridge	162	208.3*
Brookline	84	172.3*
Newton	139	167.6*
STATE TOTAL	**19,090**	**295.4**

[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 differently from State PMR.

Table 36. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2007

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
STATE	**19,090**	**295.4**
	WESTERN REGION	
Adams	41	439.6
Agawam	109	376.4
Alford	1	--[1]
Amherst	42	241.1
Ashfield	3	--[1]
Athol	42	360.3
Becket	7	301.9
Belchertown	42	347.3
Bernardston	1	--[1]
Blandford	0	0
Buckland	5	170.4
Charlemont	4	--[1]
Cheshire	10	271.7
Chester	3	--[1]
Chesterfield	1	--[1]
Chicopee	200	348
Clarksburg	4	--[1]
Colrain	3	--[1]
Conway	3	--[1]
Cummington	2	--[1]
Dalton	25	332.8
Deerfield	8	126
East Longmeadow	43	261
Easthampton	51	324.1
Egremont	5	243.1
Erving	7	511.4
Florida	2	--[1]
Gill	8	481.4
Goshen	3	--[1]
Granby	20	305.5
Granville	6	334.1
Great Barrington	31	409.7
Greenfield	62	355.2
Hadley	25	463.5
Hampden	9	144.9
Hancock	1	--[1]
Hatfield	8	174.7
Hawley	0	0
Heath	4	--[1]
Hinsdale	4	--[1]
Holyoke	136	385.1
Huntington	14	782.1
Lanesborough	7	240.3
Lee	25	378.3
Lenox	12	189.9
Leverett	5	234.5

Table 36. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2007

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Leyden	3	--[1]
Longmeadow	28	158.2
Ludlow	54	241.9
Middlefield	0	0
Monroe	0	0
Monson	28	352.8
Montague	31	342
Monterey	2	--[1]
Montgomery	2	--[1]
Mount Washington	0	0
New Ashford	0	0
New Marlborough	1	--[1]
New Salem	4	--[1]
North Adams	66	476.5
Northampton	114	433
Northfield	5	163.4
Orange	36	446.5
Otis	2	--[1]
Palmer	51	406.2
Pelham	6	435.1
Peru	1	--[1]
Petersham	2	--[1]
Phillipston	3	--[1]
Pittsfield	169	356.6
Plainfield	0	0
Richmond	4	--[1]
Rowe	0	0
Royalston	4	--[1]
Russell	1	--[1]
Sandisfield	4	--[1]
Savoy	2	--[1]
Sheffield	13	319.6
Shelburne	9	433.6
Shutesbury	5	311.5
South Hadley	40	216.8
Southampton	16	285.3
Southwick	29	317
Springfield	626	472.9
Stockbridge	8	367.1
Sunderland	10	410.9
Tolland	2	--[1]
Tyringham	0	0
Ware	47	480.4
Warwick	2	--[1]
Washington	0	0
Wendell	1	--[1]
West Springfield	107	371.1
West Stockbridge	5	396.2
Westfield	139	375.7
Westhampton	1	--[1]
Whately	6	415.3
Wilbraham	39	262.1

Table 36. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2007

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Williamsburg	7	300.7
Williamstown	24	308.1
Windsor	0	0
Worthington	5	235.2
	CENTRAL REGION	
Ashburnham	14	266.1
Ashby	12	440
Auburn	65	342.6
Ayer	19	283.1
Barre	13	280.3
Bellingham	53	354.3
Berlin	4	--[1]
Blackstone	25	328.8
Bolton	5	147.6
Boylston	5	102.3
Brimfield	14	425.2
Brookfield	14	427
Charlton	41	462.7
Clinton	40	295.7
Douglas	27	456.5
Dudley	31	314.4
East Brookfield	2	--[1]
Fitchburg	137	383.7
Franklin	54	222.9
Gardner	64	319.9
Grafton	38	247.2
Groton	23	297.8
Hardwick	11	466.3
Harvard	25	482.1
Holden	43	260.2
Holland	4	--[1]
Hopedale	13	215.7
Hubbardston	13	413.3
Lancaster	19	318
Leicester	43	413.6
Leominster	123	316.9
Lunenburg	37	391.8
Medway	19	179.2
Mendon	15	350.5
Milford	76	301
Millbury	51	358.2
Millville	11	517.1
New Braintree	2	--[1]
North Brookfield	12	265.6
Northbridge	40	297
Oakham	4	--[1]
Oxford	28	226.4
Paxton	4	--[1]
Pepperell	23	272.4

Table 36. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2007

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Princeton	9	222.7
Rutland	19	284.9
Shirley	25	363.3
Shrewsbury	80	255.0
Southbridge	60	379.9
Spencer	33	266.3
Sterling	12	174.9
Sturbridge	20	222.6
Sutton	16	240.0
Templeton	30	427.0
Townsend	16	210.6
Upton	19	388.7
Uxbridge	31	305.4
Wales	5	222.3
Warren	19	382.3
Webster	76	464.0
West Boylston	25	347.1
West Brookfield	15	412.6
Westminster	28	413.4
Winchendon	36	408.1
Worcester	631	413.3
	NORTHEAST REGION	
Amesbury	62	392.8
Andover	68	229.4
Beverly	108	270.0
Billerica	144	405.0
Boxford	17	211.7
Chelmsford	80	221.5
Danvers	75	259.4
Dracut	104	379.2
Dunstable	6	199.0
Essex	13	346.2
Everett	116	320.0
Georgetown	20	281.8
Gloucester	116	336.1
Groveland	13	223.3
Hamilton	14	186.4
Haverhill	208	389.5
Ipswich	43	308.4
Lawrence	206	359.0
Lowell	380	443.8
Lynn	316	390.9
Lynnfield	21	152.0
Malden	178	327.0
Manchester	7	115.3
Marblehead	36	168.9
Medford	165	292.2
Melrose	82	294.6
Merrimac	20	322.2
Methuen	120	278.0

Table 36. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2007

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Middleton	25	287.9
Nahant	10	226.0
Newbury	18	275.4
Newburyport	47	247.0
North Andover	51	203.8
North Reading	46	353.7
Peabody	195	333.9
Reading	34	138.8
Rockport	26	245.7
Rowley	13	247.8
Salem	137	338.6
Salisbury	42	464.8
Saugus	99	325.6
Stoneham	68	269.1
Swampscott	42	278.7
Tewksbury	75	255.0
Topsfield	8	117.0
Tyngsborough	27	301.7
Wakefield	65	253.6
Wenham	9	207.3
West Newbury	8	148.5
Westford	43	272.9
METROWEST REGION		
Acton	34	186.7
Arlington	91	201.4
Ashland	46	316.2
Bedford	27	186.8
Belmont	54	221.3
Boxborough	9	307.1
Braintree	120	313.2
Burlington	54	198.0
Cambridge	162	208.3
Canton	49	213.1
Carlisle	3	--[1]
Cohasset	16	181.2
Concord	35	171.6
Dedham	65	244.7
Dover	10	175.9
Foxborough	50	292.1
Framingham	152	242.9
Hingham	39	163.0
Holliston	21	176.4
Hopkinton	24	230.4
Hudson	51	272.0
Hull	38	300.7
Lexington	47	143.6
Lincoln	10	148.1
Littleton	18	225.0
Marlborough	113	327.3
Maynard	24	237.2

Table 36. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2007

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Medfield	23	199.5
Millis	20	267.3
Milton	69	266.6
Natick	74	224.2
Needham	60	204.2
Newton	139	167.6
Norfolk	18	218.9
Northborough	31	256.5
Norwell	17	166.6
Norwood	83	281.1
Plainville	22	289.1
Quincy	339	360.3
Randolph	114	361.9
Scituate	61	288.9
Sharon	29	188.1
Sherborn	2	--[1]
Somerville	176	297.4
Southborough	25	333.6
Stow	10	217.2
Sudbury	21	132.1
Walpole	43	186.2
Waltham	167	297.1
Watertown	76	229.5
Wayland	22	155.2
Wellesley	53	212.4
Westborough	36	237.3
Weston	10	79.4
Westwood	35	230.8
Weymouth	200	350.2
Wilmington	51	258.0
Winchester	36	151.3
Woburn	102	253.5
Wrentham	27	269.0
SOUTHEAST REGION		
Abington	61	384.4
Acushnet	38	333.7
Attleboro	152	392.0
Avon	21	388.1
Barnstable	181	340.8
Berkley	10	184.2
Bourne	69	338.9
Brewster	36	288.2
Bridgewater	63	306.8
Brockton	337	383.3
Carver	31	276.6
Chatham	22	201.5
Chilmark	3	--[1]
Dartmouth	84	267.6
Dennis	66	293.8
Dighton	16	242.3

Table 36. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2007

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Duxbury	32	203.4
East Bridgewater	42	316.3
Eastham	14	166.3
Easton	57	272.4
Edgartown	11	242.8
Fairhaven	60	348.4
Fall River	370	432.1
Falmouth	109	270.7
Freetown	24	295.9
Aquinnah	1	--[1]
Gosnold	0	0
Halifax	27	318.8
Hanover	28	206.2
Hanson	18	196.7
Harwich	45	290.1
Holbrook	53	444.3
Kingston	33	276.5
Lakeville	40	373.4
Mansfield	45	315.0
Marion	17	281.2
Marshfield	74	307.7
Mashpee	53	321.0
Mattapoisett	12	146.2
Middleborough	86	462.2
Nantucket	19	210.5
New Bedford	358	408.0
North Attleboro	78	333.8
Norton	47	332.4
Oak Bluffs	10	239.1
Orleans	24	207.7
Pembroke	46	293.3
Plymouth	155	297.6
Plympton	4	--[1]
Provincetown	14	333.9
Raynham	45	354.7
Rehoboth	25	244.6
Rochester	16	373.9
Rockland	73	404.2
Sandwich	55	268.9
Seekonk	26	189.4
Somerset	62	274.7
Stoughton	111	396.7
Swansea	60	341.5
Taunton	216	421.8
Tisbury	16	389.7
Truro	11	399.1
Wareham	81	324.7
Wellfleet	9	242.5
West Bridgewater	31	382.0
West Tisbury	2	--[1]
Westport	43	269.6
Whitman	47	353.3

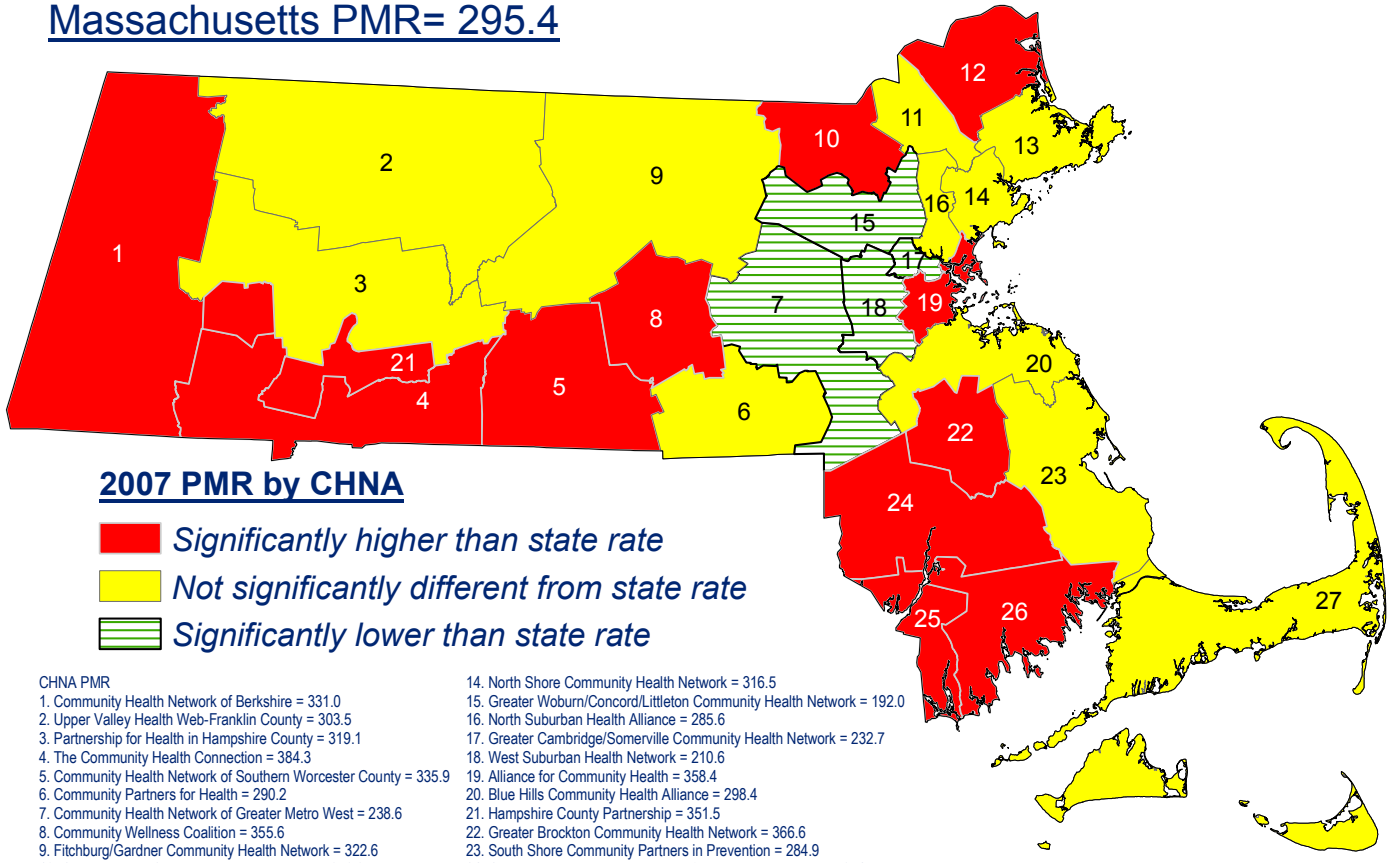
Table 36. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2007

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Yarmouth	113	360.3
	BOSTON REGION	
Boston	1,721	376.0
Brookline	84	172.3
Chelsea	102	390.3
Revere	173	377.8
Winthrop	64	364.6

* 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.

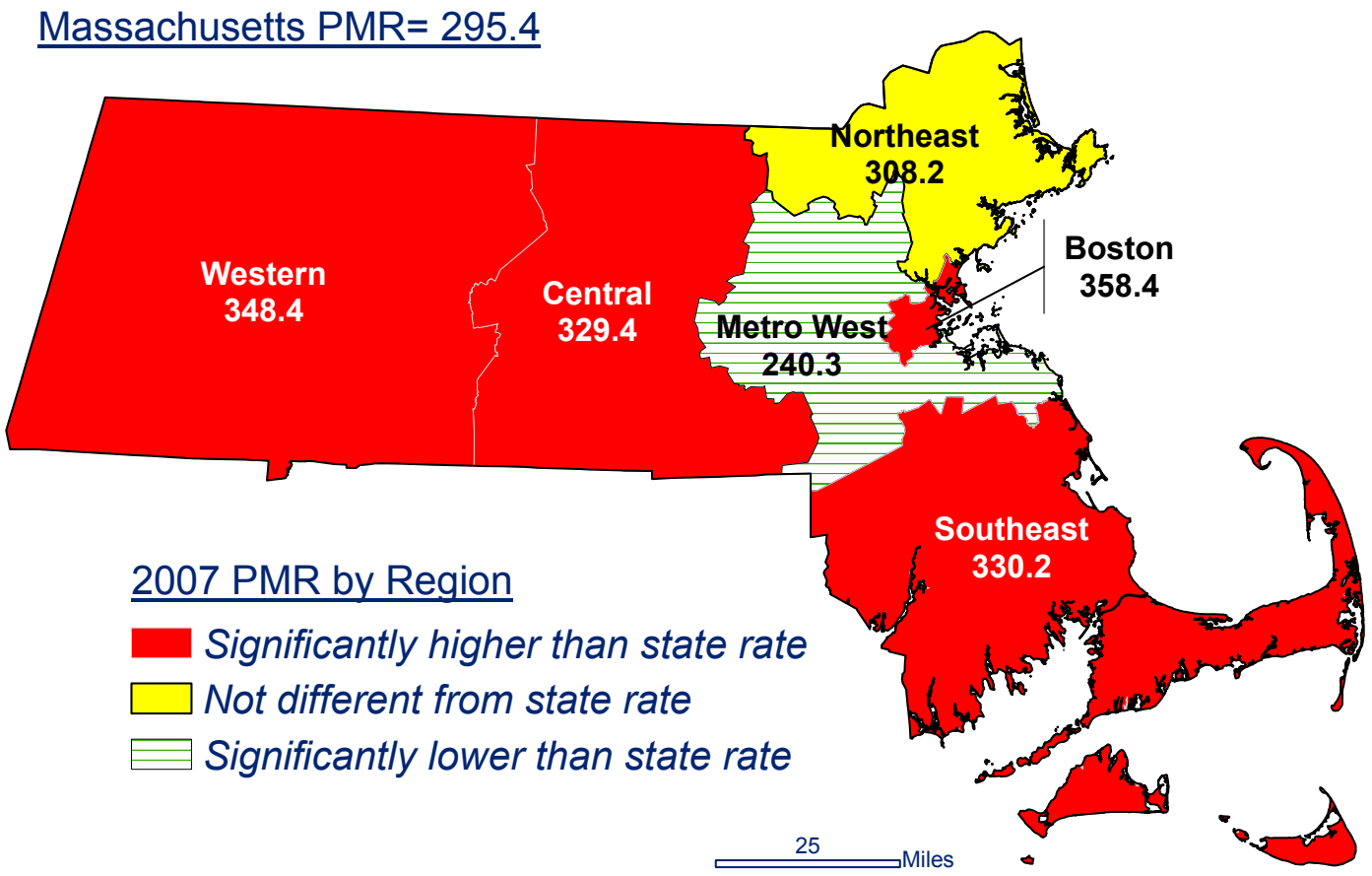
Map 1. Premature Mortality Rates (PMR) by Community Health Network Area (CHNA), Massachusetts: 2007



CHNA PMR
1. Community Health Network of Berkshire = 331.0
2. Upper Valley Health Web-Franklin County = 303.5
3. Partnership for Health in Hampshire County = 319.1
4. The Community Health Connection = 384.3
5. Community Health Network of Southern Worcester County = 335.9
6. Community Partners for Health = 290.2
7. Community Health Network of Greater Metro West = 238.6
8. Community Wellness Coalition = 355.6
9. Fitchburg/Gardner Community Health Network = 322.6
10. Greater Lowell Community Health Network = 350.9
11. Greater Lawrence Community Health Network = 281.9
12. Greater Haverhill Community Health Network = 331.3
13. Community Health Network North = 267.4
14. North Shore Community Health Network = 316.5
15. Greater Woburn/Concord/Littleton Community Health Network = 192.0
16. North Suburban Health Alliance = 285.6
17. Greater Cambridge/Somerville Community Health Network = 232.7
18. West Suburban Health Network = 210.6
19. Alliance for Community Health = 358.4
20. Blue Hills Community Health Alliance = 298.4
21. Hampshire County Partnership = 351.5
22. Greater Brockton Community Health Network = 366.6
23. South Shore Community Partners in Prevention = 284.9
24. Greater Attleboro-Taunton Health & Education Response = 354
25. Partners for a Healthier Community = 378.9
26. Greater New Bedford Health & Human Services Coalition = 343.5
27. Cape Cod & Islands Community Health Network = 295.9

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 up-to-date estimates available at the sub-state level by age groups.

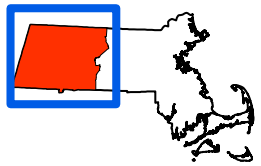
Map 2. Premature Mortality Rates (PMR) by Region, Massachusetts: 2007

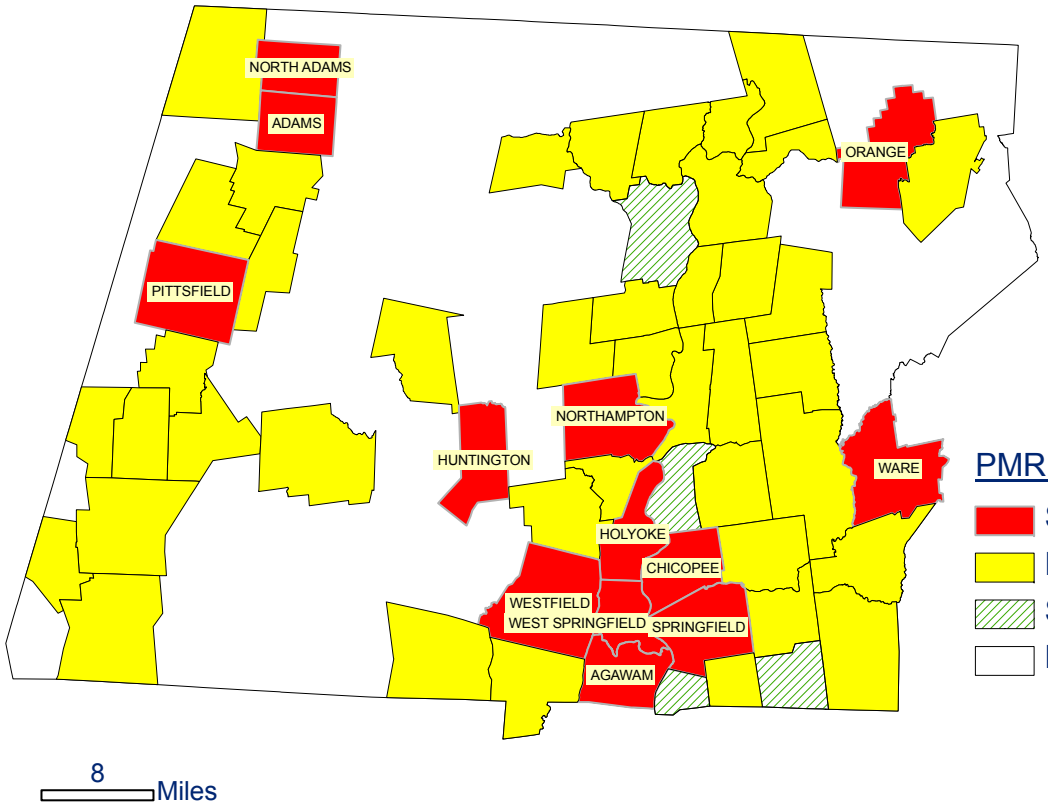


Rates are per 100,000 persons under 75 years of age, age-adjusted to the 2000 US standard population and are calculated using MDPH population estimates for 2005, which are the most up-to-date estimates available at the sub-state level by age groups.

Map 3. Premature Mortality Rates (PMR), Western Region by City/Town: 2007

Massachusetts PMR= 295.4
Western Region PMR= 348.4





PMR by City/Town

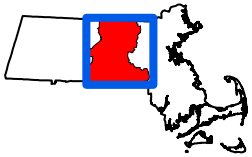
- Significantly higher than state rate
- Not different from state rate
- Significantly lower than state rate
- Less than 5 premature deaths.

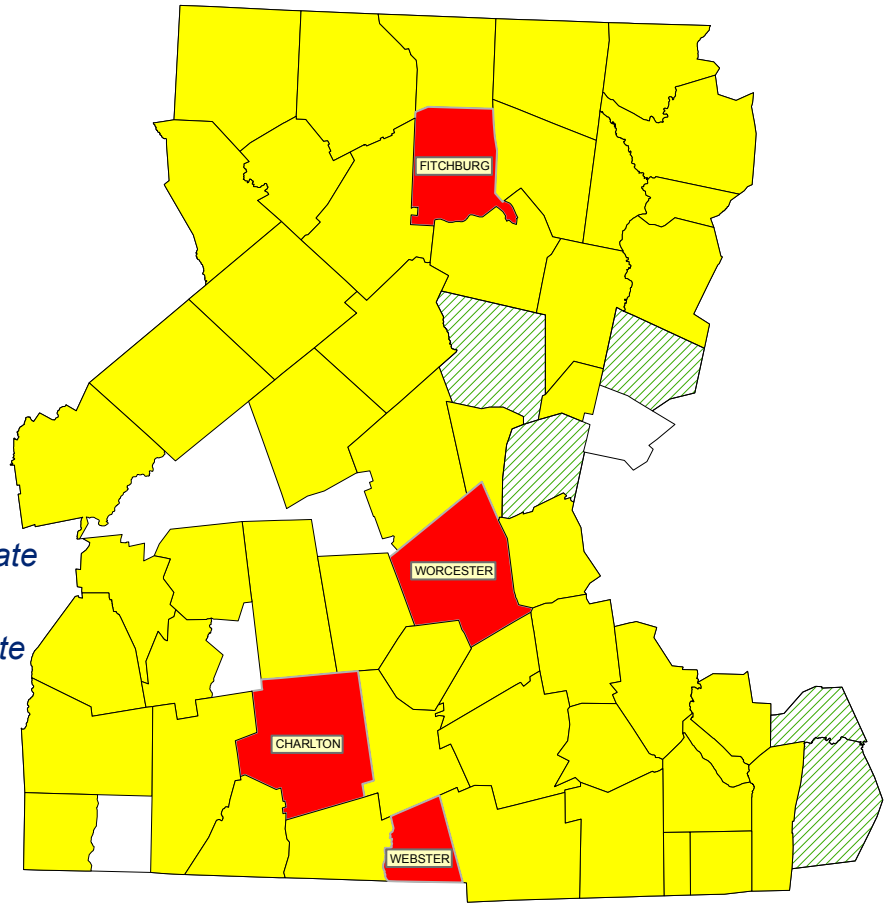
Rates are per 100,000 persons under 75 years of age, age-adjusted to the 2000 US standard population and are calculated using MDPH population estimates for 2005, which are the most up-to-date estimates available at the sub-state level by age groups.

Map 4. Premature Mortality Rates (PMR), Central Region by City/Town: 2007

Massachusetts PMR= 295.4

Central Region PMR= 329.4





2007 PMR by City/Town

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

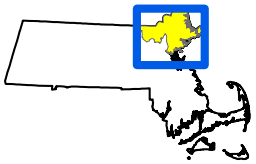
5 Miles

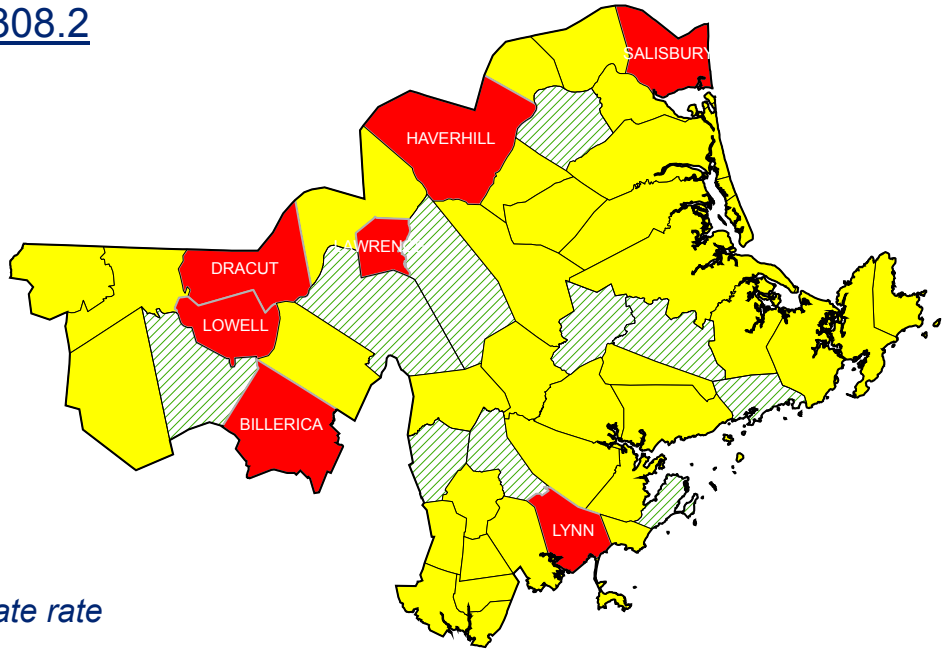
Rates are per 100,000 persons under 75 years of age, age-adjusted to the 2000 US standard population and are calculated using MDPH population estimates for 2005, which are the most up-to-date estimates available at the sub-state level by age groups.

Map 5. Premature Mortality Rates (PMR), Northeast Region by City/Town: 2007

Massachusetts PMR= 295.4

Northeast Region PMR= 308.2





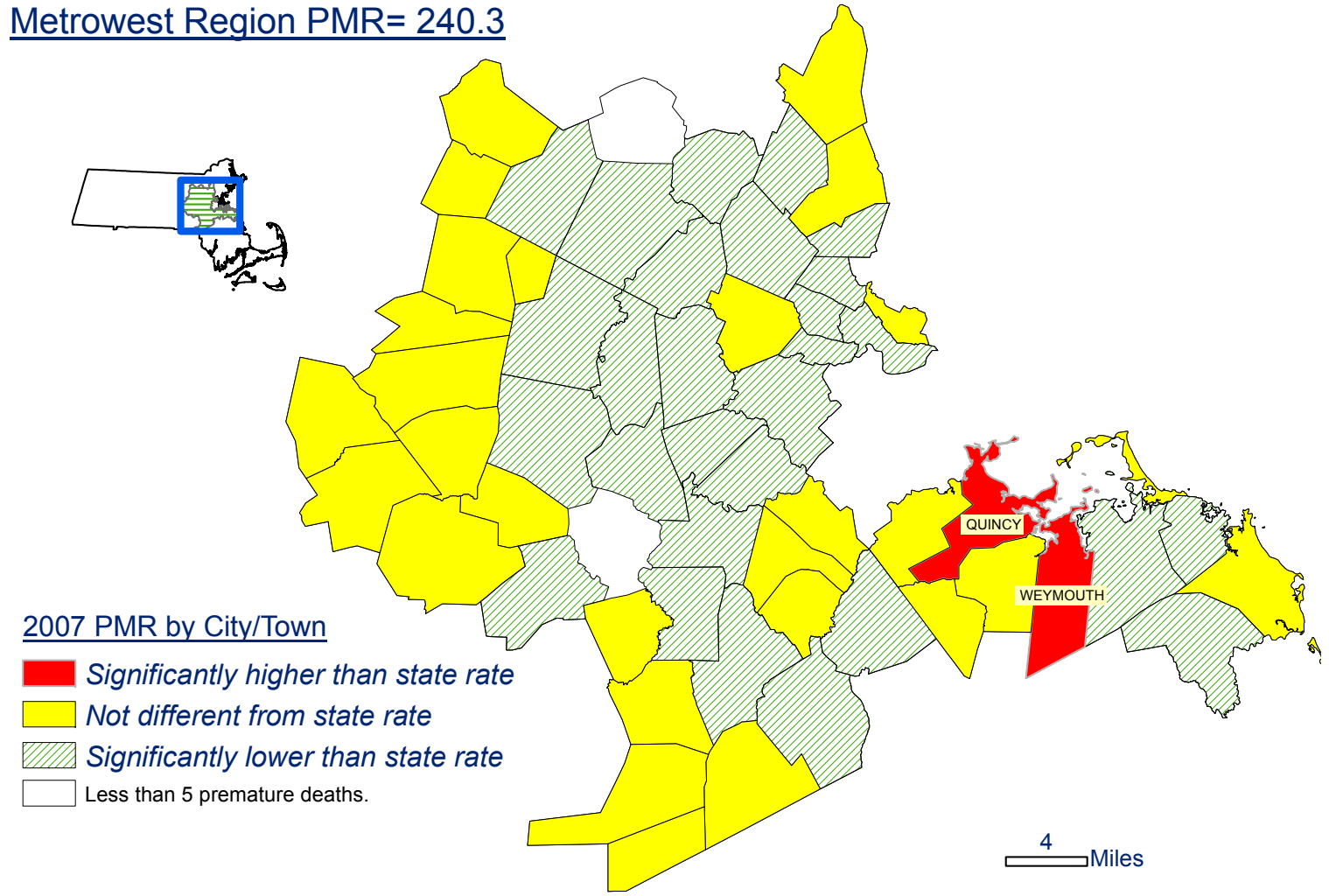
2007 PMR by City/Town

- *Significantly higher than state rate*
- *Not different from state rate*
- *Significantly lower than state rate*

5 Miles

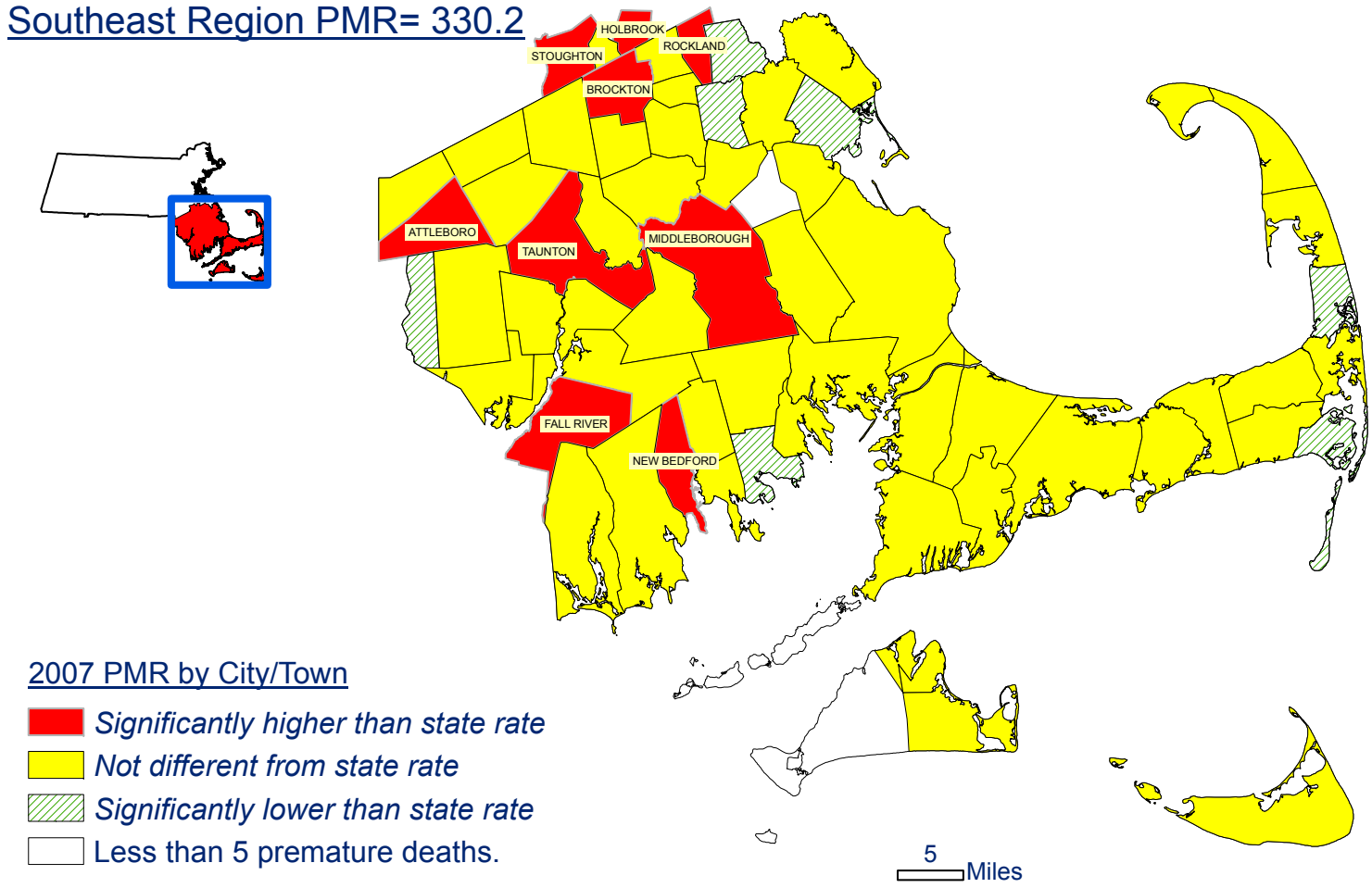
Rates are per 100,000 persons under 75 years of age, age-adjusted to the 2000 US standard population and are calculated using MDPH population estimates for 2005, which are the most up-to-date estimates available at the sub-state level by age groups.

Map 6. Premature Mortality Rates (PMR), Metrowest Region by City/Town: 2007



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 up-to-date estimates available at the sub-state level by age groups.

Map 7. Premature Mortality Rates (PMR), Southeast Region by City/Town: 2007

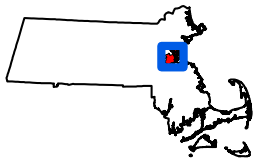


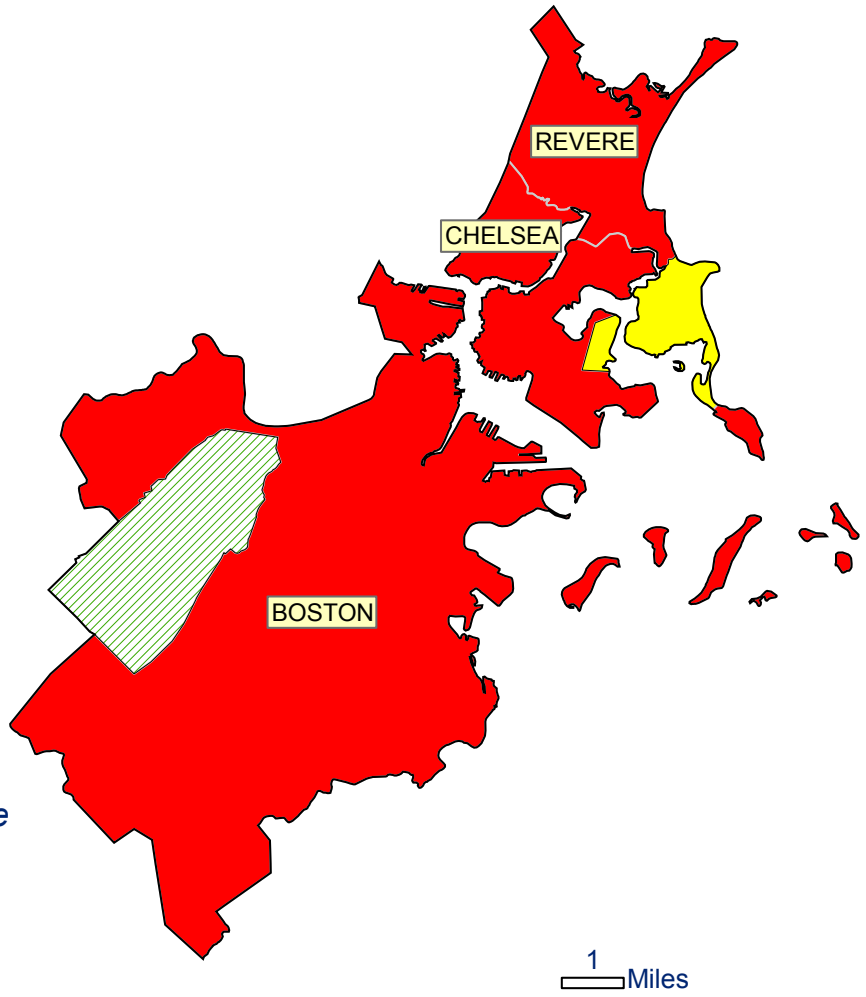
Rates are per 100,000 persons under 75 years of age, age-adjusted to the 2000 US standard population and are calculated using MDPHpopulation estimates for 2005, which are the most up-to-date estimates available at the sub-state level by age groups.

Map 8. Premature Mortality Rates (PMR), Boston Region by City/Town: 2007

Massachusetts PMR= 295.4

Boston Region PMR= 358.4





2007 PMR by City/Town

- *Significantly higher than state rate*
- *Not different from state rate*
- *Significantly lower than state rate*

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 up-to-date estimates available at the sub-state level by age groups.

APPENDIX

Additional Tables & Figures

Technical Notes

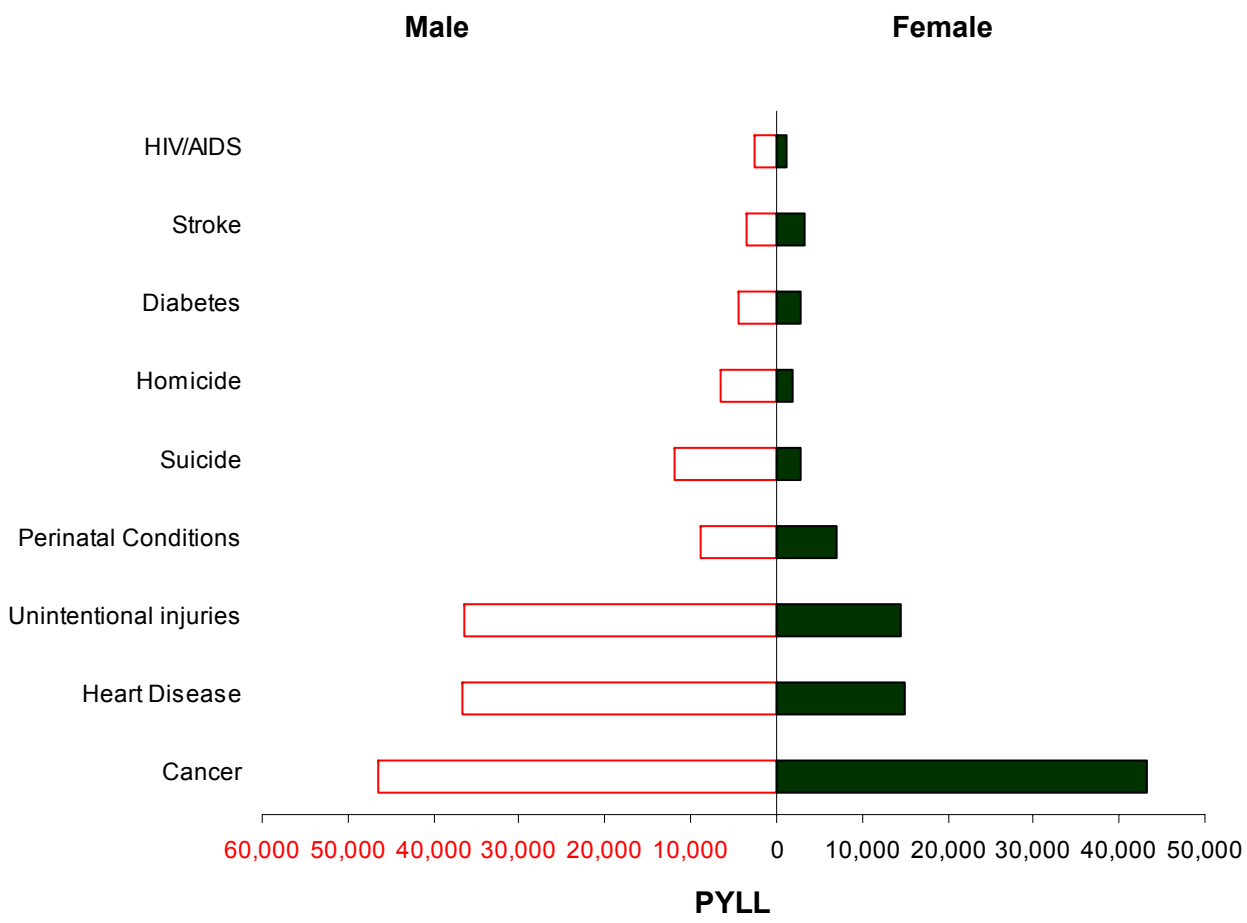
Glossary

Table 37. Rank by Potential Years of Life Lost (PYLL), Massachusetts: 2007

Cause	Total PYLL	Rank on PYLL	Average PYLL	# of Deaths before 75 years	Rank on Number of Deaths
All Causes	*348,923*		*18.3*	*19,090*	
Cancer	89,755	1	13.8	6,483	1
Heart Disease	51,640	2	14.8	3,487	2
Unintentional injuries	50,924	3	32.8	1,552	5
Perinatal Conditions	15,867	4	74.5	213	22
Suicide	14,815	5	31.5	470	14
Homicide	8,524	6	47.1	181	23
Diabetes	7,296	8	14.0	521	9
Stroke	6,869	7	13.2	520	3
HIV/AIDS	3,671	9	25.9	142	24
Alzheimer's Disease	978	10	9.3	105	6

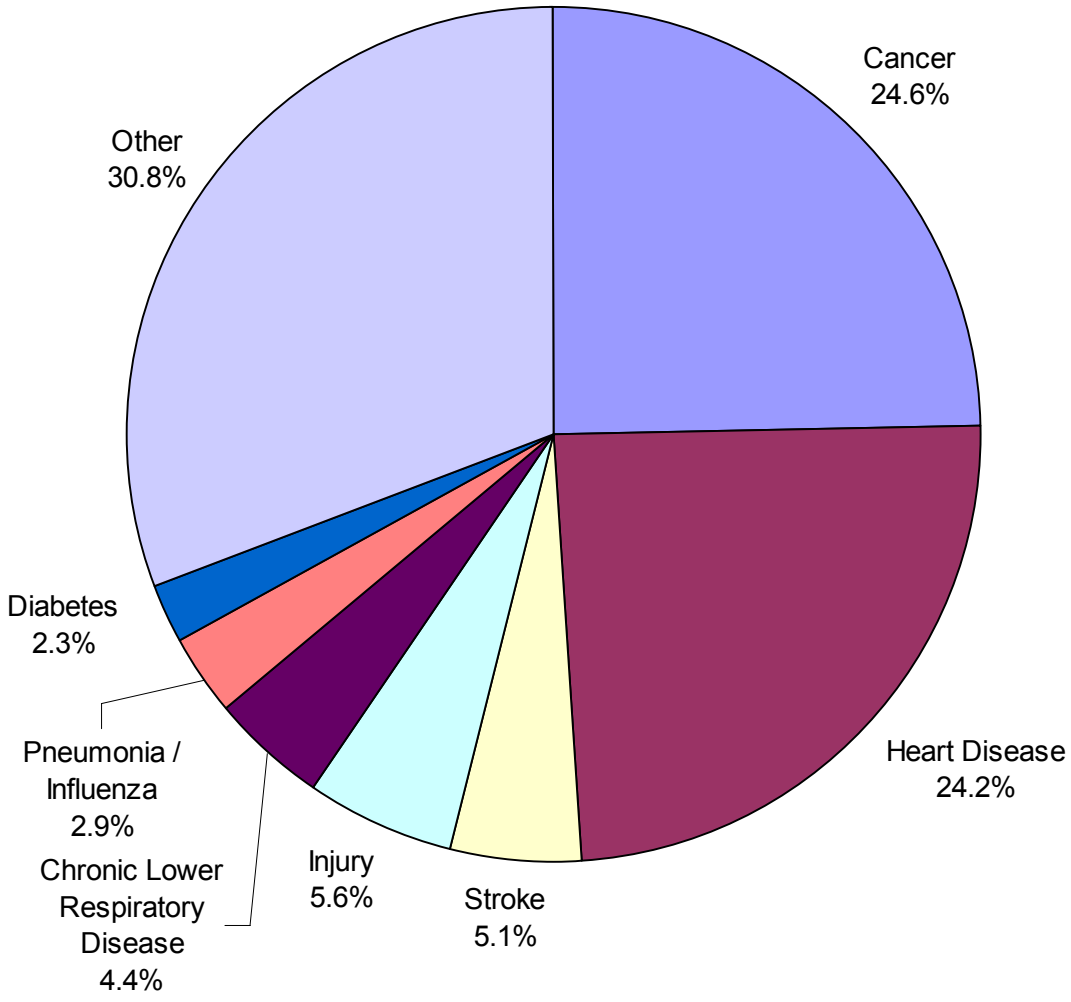
Note: Total potential years of life lost is calculated by multiplying the number of deaths for each group by the years of life lost (the difference between life expectancy and the midpoint of the age group, then adding the figures for all age groups).

Figure 18. Potential Years of Life Lost (PYLL) for Selected Causes by Gender, Massachusetts: 2007



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: 2007



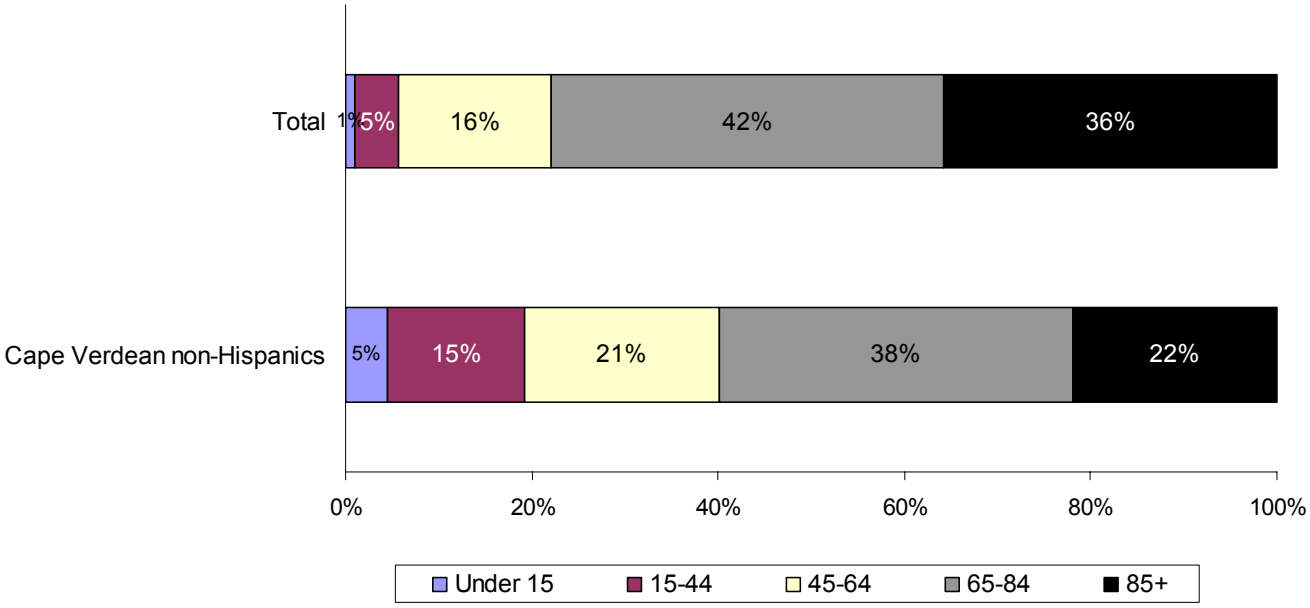
[1]Total Number of Deaths = 52,690
Causes of Death are classified according to ICD-10

Table 38. Leading Causes of Death[1] for Cape Verdean non-Hispanics[2], Massachusetts: 2007

	Number	Percent
Heart Disease	49	24.3
Cancer	45	22.3
Nephritis	9	4.5
Diabetes	8	4.0
Homicide	8	4.0
Stroke	6	3.0
Congenital Malformation	5	2.5
Chronic Liver Disease-Cirrhosis	4	--[3]
Pneumonitis	4	--[3]
Septicemia	64	31.7
All Deaths	**202**	**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; black; Asian; and Hispanic. Here, we separate Cape Verdeans from the Black non-Hispanic group. 3 Calculations bases on 1-4 events are excluded.

Figure 20. Age Distribution of Deaths for Cape Verdean non-Hispanics* and State Total, Massachusetts: 2007



* 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; black; Asian; 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: 2007

	Total		White non-Hispanic[1]		Black non-Hispanic[1]		Asian non-Hispanic[1]		Hispanic	
Selected Causes[2]	**#**	**Rate[3]**	**#**	**Rate**	**#**	**Rate**	**#**	**Rate**	**#**	**Rate**
Age: 1-14, TOTAL	**128**	**11.7**	**76**	**9.5**	**18**	**19.6**	**8**	**13.1**	**25**	**18.8**
Unintentional Injuries[4]	20	1.8	8	1.0	6	6.5	0	0.0	5	3.8
Cancer	18	1.6	13	1.6	0	0.0	3	--[5]	2	--[5]
Homicide	16	1.5	4	--[5]	5	5.5	0	0.0	7	5.3
Congenital malformations	12	1.1	10	1.2	1	--[5]	0	0.0	1	--[5]
Age: 15-24, TOTAL	**505**	**55.7**	**355**	**51.7**	**76**	**106.6**	**6**	**12.3**	**65**	**67.1**
Unintentional Injuries[4]	234	25.8	193	28.1	13	18.2	3	--[5]	24	24.8
Homicide	73	8.1	11	1.6	40	56.1	2	--[5]	20	20.6
Suicide	50	5.5	37	5.4	4	--[5]	1	--[5]	7	7.2
Cancer	35	3.9	32	4.7	1	--[5]	0	0.0	2	--[5]
Age: 25-44, TOTAL	**2,023**	**112.5**	**1,559**	**114.3**	**214**	**178.0**	**51**	**39.9**	**192**	**105.8**
Unintentional Injuries[4]	587	32.6	499	36.6	26	21.6	6	4.7	54	29.8
Cancer	317	17.6	260	19.1	25	20.8	12	9.4	19	10.5
Heart Disease	246	13.7	182	13.3	32	26.6	11	8.6	21	11.6
Suicide	193	10.7	157	11.5	13	10.8	9	7.0	13	7.2
Age: 45-64, TOTAL	**8,560**	**498.0**	**7,424**	**499.5**	**605**	**727.6**	**125**	**202.6**	**383**	**458.6**
Cancer	3,149	183.2	2,810	189.1	178	214.1	55	89.1	105	125.7
Heart Disease	1,655	96.3	1,438	96.7	119	143.1	27	43.8	61	73.0
Unintentional Injuries[4]	565	32.9	494	33.2	35	42.1	4	--[5]	29	34.7
Chronic liver disease	337	19.6	287	19.3	27	32.5	2	--[5]	20	23.9
Age: 65+, TOTAL	**41,091**	**4,783.9**	**38,896**	**4,950.4**	**1,224**	**4,242.5**	**402**	**1,946.0**	**518**	**2,326.6**
Heart Disease	10,798	1,257.1	10,293	1,310.0	303	1,050.2	81	392.1	110	494.1
Cancer	9,439	1,098.9	8,877	1,129.8	321	1,112.6	114	551.8	118	530.0
Stroke	2,475	288.1	2,333	296.9	63	218.4	34	164.6	42	188.6
Chronic Lower Respiratory Disease[6]	2,073	241.3	2,009	255.7	28	97.1	15	72.6	17	76.4

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. 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 (continued). Number and Age-Specific Rates for Selected Causes of Death by Race and Hispanic Ethnicity, Massachusetts: 2007

	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	**7,494**	**1,805.4**	**6,774**	**1,823.7**	**376**	**2,249.6**	**123**	**983.2**	**202**	**1,479.9**
Cancer	2,961	713.4	2,726	733.9	126	753.9	50	399.7	54	395.6
Heart Disease	1,551	373.7	1,380	371.5	96	574.4	28	223.8	44	322.3
Chronic Lower Respiratory Disease[4]	476	114.7	454	122.2	8	47.9	2	--[5]	10	73.3
Stroke	285	68.7	238	64.1	16	95.7	11	87.9	19	139.2
Age: 75-84, TOTAL	**14,781**	**4,860.5**	**13,976**	4,949.1	**447**	5,011.2	**159**	**2,582.8**	**178**	**2,883.1**
Cancer	4,039	1,328.2	3,815	1,350.9	127	1,423.8	45	731.0	49	793.7
Heart Disease	3,554	1,168.7	3,385	1,198.7	98	1,098.7	31	503.6	33	534.5
Chronic Lower Respiratory Disease[4]	854	280.8	833	295.0	13	145.7	4	--[5]	4	--[5]
Stroke	845	277.9	794	281.2	23	257.8	15	243.7	12	194.4
Age: 85+, TOTAL	**18,816**	**13,463.7**	**18,146**	**13,759.8**	**401**	**12,465.0**	**120**	**6,024.1**	**138**	**5,655.7**
Heart Disease	5,693	4,073.6	5,528	4,191.8	109	3,388.2	22	1,104.4	33	1,352.5
Cancer	2,439	1,745.2	2,336	1,771.3	68	2,113.8	19	953.8	15	614.8
Stroke	1,345	962.4	1,301	986.5	24	746.0	8	401.6	11	450.8
Alzheimer's Disease	1,109	793.5	1,069	810.6	22	683.9	7	351.4	11	450.8

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: 2007

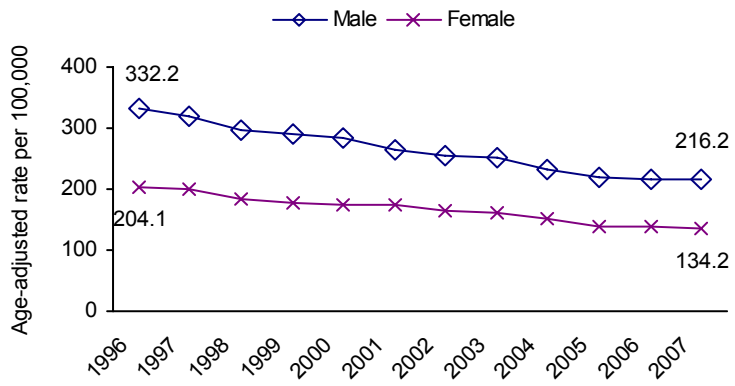
Ethnicity	Cancer	Heart Disease	Unintentional Injuries	Diabetes	Stroke	Perinatal	Homicide	HIV/AIDS	Nephritis	Ill defined conditions	ALL DEATHS
Puerto Rican	144	121	82	44	36	27	26	35	25	17	**837**
Dominican	35	29	12	6	8	10	9	1	4	2	**143**
Central American	20	12	10	7	5	2	4	0	3	1	**99**
South American	24	17	7	2	5	3	1	0	1	1	**84**
Cuban	15	11	2	1	4	0	0	1	2	1	**52**
Mexican	5	4	4	1	0	1	1	0	0	2	**26**
Other/Unknown	3	4	5	1	0	0	0	0	0	0	**22**
All Hispanics	**246**	**198**	**122**	**62**	**58**	**43**	**41**	**37**	**35**	**24**	**1,264**

[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).

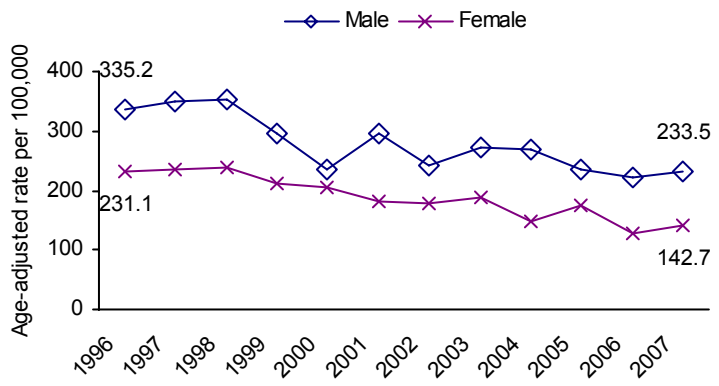
Figure 21. Heart Disease Death Rates[1] by Race/Ethnicity and Gender, Massachusetts: 1996-2007

(For 1996-1998 the comparability modified rates were used)

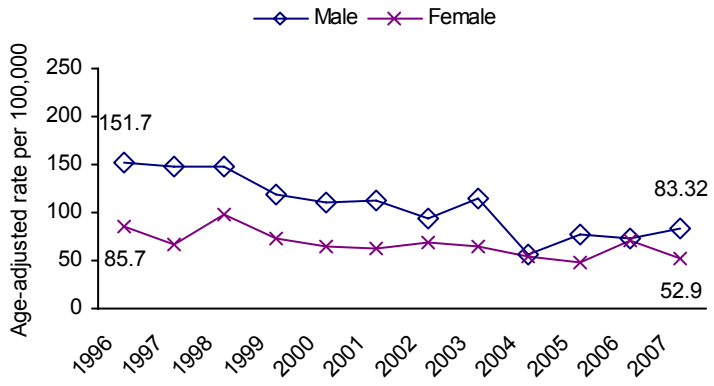
White non-Hispanics



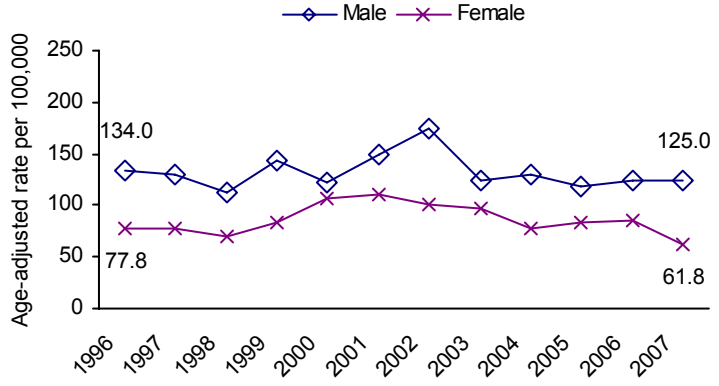
Black non-Hispanics



Asian non-Hispanics



Hispanics

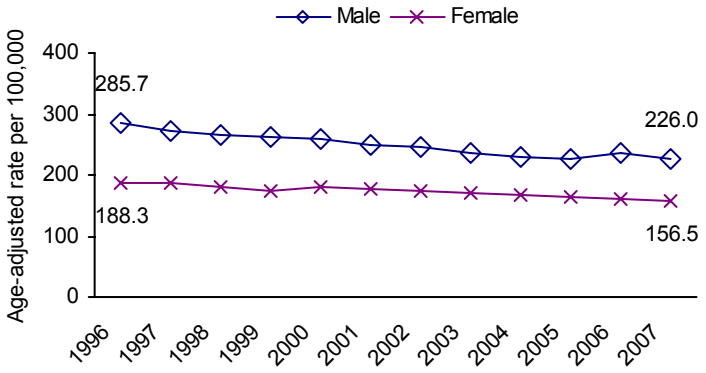


1 Rates are per 100,000 population, age-adjusted to the 2000 U.S. Standard Population.

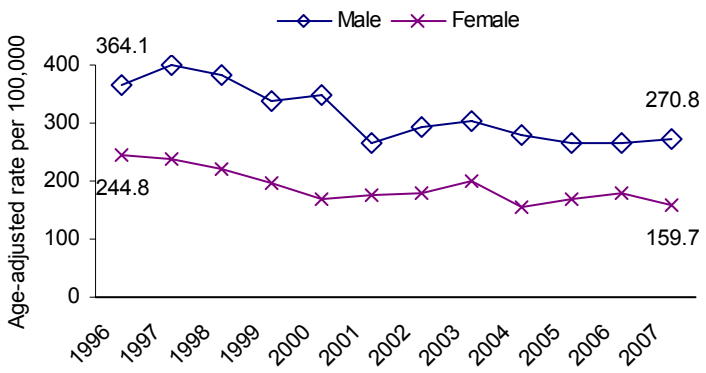
Figure 22. Cancer Death Rates[1] by Race/Ethnicity and Gender, Massachusetts: 1996-2007

(For 1996-1998 the comparability modified rates were used)

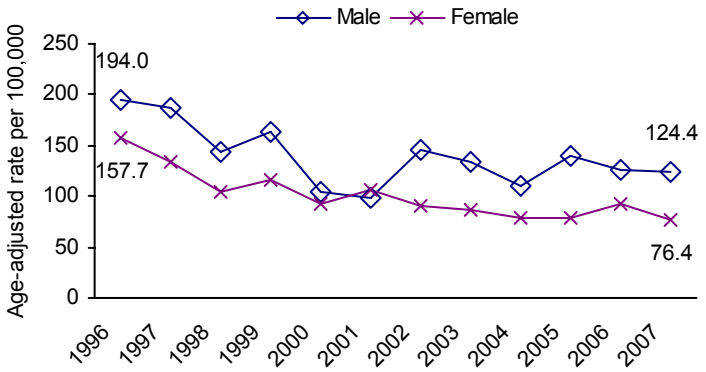
White non-Hispanics



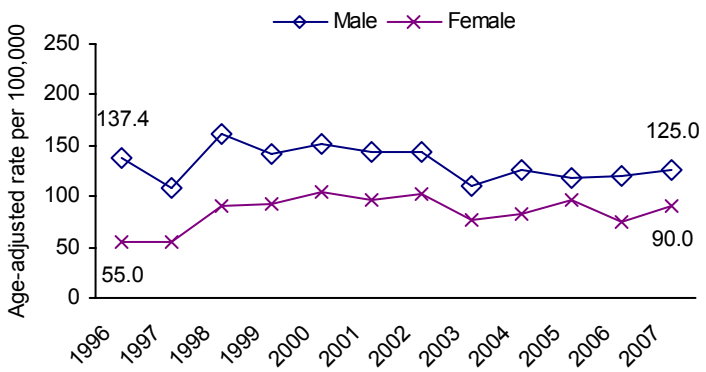
Black non-Hispanics



Asian non-Hispanics



Hispanics



1 Rates are per 100,000 population, age-adjusted to the 2000 U.S. Standard Population.

Table 41. Underlying Cause of Death where Diabetes[1] is a Contributing Cause, Massachusetts: 2007

Underlying Cause of Death	Number	Proportion (%)
Cardiovascular Diseases	1,207	45.0
Heart Disease	995	37.1
Stroke	143	5.3
Cancer	485	18.1
Diseases of the respiratory system	273	10.2
Chronic lower respiratory disease[2]	140	5.2
Influenza and pneumonia	75	2.8
Diseases of the digestive system	108	4.0
Diseases of the genito-urinary system	113	4.2
Nephritis	76	2.8
Diseases of the nervous system and sense organs	124	4.6
Alzheimer's Disease	73	2.7
Parkinson's Disease	16	0.6
Infectious and parasitic diseases	92	3.4
HIV/AIDS	7	0.3
Injury and poisoning	64	2.4
Endocrine, nutritional and metabolic diseases and immunity disorders	42	1.6
Diseases of the musculoskeletal systems and connective tissue	13	0.5
Other	162	6.0
Total deaths where diabetes is ONLY a contributing cause	**2,683**	**100%**

[1] ICD-10: E10-E14. [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).

Table 42. Associated Causes of Death where Diabetes[1] is the Underlying Cause of Death, Massachusetts: 2007

Associated Causes of Death	Number	Proportion (%)
Cardiovascular Disease alone	584	48.0%
Cardiovascular Disease and Diseases of the Genitourinary System	204	16.8%
No Associated Causes	104	8.6%
Cardiovascular Disease and Diseases of the Respiratory System	86	7.1%
Other Associated Cause Combinations less than 10	64	5.3%
Diseases of the Genitourinary System alone	61	5.0%
Cardiovascular Disease and Diseases of the Nervous System	34	2.8%
Cardiovascular Disease, Diseases of the Respiratory System and Diseases of the Genitourinary System	32	2.6%
Diseases of the Respiratory System	26	2.1%
Cancer & Cardiovascular Disease	21	1.7%
Total deaths where diabetes is the underlying cause of death	1,216	100.0%

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

Figure 23. Distribution of Injury Deaths by Intent, Massachusetts: 2007

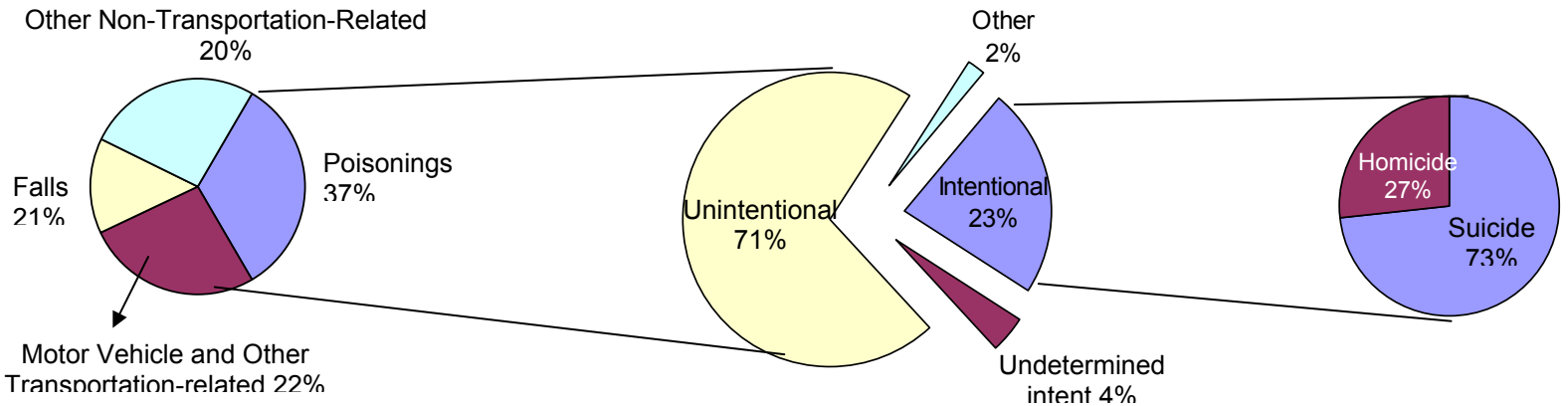


Table 43. HIV/AIDS[1] Deaths by Race, Hispanic Ethnicity, and Gender of Persons Ages 25-44, Massachusetts: 1997- 2007

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]	
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	
2007		16	1.2			11	9.1			12	6.6	
MALE												
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	
2007		16	2.4			5	8.5			9	9.7	
FEMALE												
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	
2007		0	0.0			6	9.8			3	--[5]	

1. AIDS and HIV disease deaths for years 1994-1998 coded using ICD-9: 042-044; 1999–2007 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. Calculations based on values 1-4 are excluded. 6. When comparing data over time after 1994, please use comparability modified data for years 1994-1998. MA population denominators are from the NCHS Modified Age, Race/Ethnicity, & Sex Estimates 2007, released September 5, 2008. Population estimates are from the NCHS Modified Age, Race/Ethnicity, & Sex Estimates 2007, released September 5, 2008.

Table 44. Premature Mortality Rates by Community Health Network Area (CHNA), Massachusetts: 2007

CHNA (Name and Number)	Number of Deaths	PMR* (per 100,000 population)
Massachusetts	19,090	295.4
Community Health Network of Berkshire (1)	476	331.0
Upper Valley Health Web (Franklin County) (2)	276	303.5
Partnership for Health in Hampshire County (Northampton) (3)	430	319.1
The Community Health Connection (Springfield) (4)	1080	384.3
Community Health Network of Southern Worcester County (5)	374	335.9
Community Partners for Health (Milford) (6)	399	290.2
Community Health Network of Greater Metro West (Framingham) (7)	854	238.6
Community Wellness Coalition (Worcester) (8)	985	355.6
Fitchburg/Gardner Community Health Network (9)	763	322.6
Greater Lowell Community Health Network (10)	860	350.9
Greater Lawrence Community Health Network (11)	470	281.9
Greater Haverhill Community Health Network (12)	468	331.3
Community Health Network North (Beverly/Gloucester) (13)	344	267.4
North Shore Community Health Network (14)	931	316.5
Greater Woburn/Concord/Littleton Community Health Network (15)	426	192.0
North Suburban Health Alliance (Medford/Malden/Melrose) (16)	754	285.6
Greater Cambridge/Somerville Community Health Network (17)	559	232.7
West Suburban Health Network (Newton/Waltham) (18)	539	210.6
Alliance for Community Health (Boston/Chelsea/Revere/Winthrop) (19)	2144	358.4
Blue Hills Community Health Alliance (Greater Quincy) (20)	1174	298.4
Four (For) Communities (Holyoke, Chicopee, Ludlow, Westfield) (21)	546	351.5
Greater Brockton Community Health Network (22)	823	366.6
South Shore Community Partners in Prevention (Plymouth) (23)	521	284.9
Greater Attleboro-Taunton Health & Education Response (24)	786	354.0
Partners for a Healthier Community (Fall River) (25)	535	378.9
Greater New Bedford Health & Human Services Coalition (26)	690	343.5
Cape Cod & Islands Community Health Network (27)	883	295.9

*Rates are age-adjusted to the 2000 U.S. Standard Population for persons ages 0-74 years. Rates are per 100,000 population age-adjusted to the 2000 U.S. Standard Population and 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.

Table 45. Premature Mortality Rates by County, Massachusetts: 2007

County	Number of Deaths	PMR* (per 100,000 population)
Massachusetts	19,090	295.4
Barnstable	821	302.4
Berkshire	476	331.0
Bristol	1,816	350.4
Dukes	43	248.5
Essex	2,213	302.2
Franklin	225	299.3
Hampden	1,635	369.7
Hampshire	444	325.2
Middlesex	3,592	255.0
Nantucket	19	210.5
Norfolk	1,840	278.4
Plymouth	1,509	312.1
Suffolk	2,060	376.1
Worcester	2,397	333.6

*Rates are age-adjusted to the 2000 U.S. Standard Population for persons ages 0-74 years. Rates are per 100,000 population age-adjusted to the 2000 U.S. Standard Population and 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.

Table 46. Selected Causes of Death by Community, Massachusetts: 2007

CITY/TOWN	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[5]
Massachusetts	**52,690**	**704.4**	**12,735**	**12,961**	**3,604**	**837**	**2,710**	**2,325**	**1,216**	**1,528**	**437**	**183**	**504**	**546**
Abington	127	721.0	29	33	10	3	5	10	4	5	1	1	1	2
Acton	84	554.5	14	22	3	0	6	8	3	2	1	0	3	0
Acushnet	87	713.7	23	24	7	0	6	3	1	2	0	0	3	1
Adams	123	884.8	35	27	7	0	4	5	5	8	1	0	0	0
Agawam	337	792.8	65	77	21	3	15	20	8	8	5	0	2	2
Alford	6	1,024.70	4	0	0	0	1	0	0	0	0	0	0	0
Amesbury	142	797.2	32	37	13	2	7	9	2	0	1	0	4	0
Amherst	127	608.9	22	34	5	1	13	5	1	4	1	0	2	2
Andover	233	640.9	45	59	10	2	11	13	5	4	1	0	1	1
Aquinnah	2	--[4]	0	1	0	0	0	1	0	0	0	0	0	0
Arlington	360	586.9	91	91	26	5	25	14	8	7	2	1	1	2
Ashburnham	30	705.2	10	6	1	0	1	2	0	1	1	0	0	0
Ashby	21	837.3	4	6	2	0	2	1	0	0	0	0	0	1
Ashfield	9	362.6	4	2	0	1	0	1	0	0	0	0	0	0
Ashland	102	896.1	29	29	7	1	6	6	4	1	1	0	0	0
Athol	140	792.1	40	32	6	4	4	10	3	8	1	0	1	1
Attleboro	399	847.8	89	92	34	3	20	30	10	9	2	2	4	4
Auburn	184	747.8	52	48	16	1	7	11	1	4	0	0	1	0
Avon	46	811.3	11	10	1	0	3	3	3	2	0	0	2	0
Ayer	72	899.9	20	11	2	0	4	6	2	1	0	0	1	0
Barnstable	483	654.7	100	140	37	12	13	24	13	5	6	1	7	7
Barre	37	650.2	12	14	3	0	0	2	0	2	1	0	0	0
Becket	14	721.2	2	5	2	0	0	3	0	0	0	0	0	0
Bedford	123	578.3	19	27	7	2	5	10	1	8	1	0	0	2
Belchertown	89	777.1	15	26	8	1	2	5	1	3	2	0	2	0
Bellingham	111	914.2	26	30	14	1	2	9	4	3	3	0	1	2
Belmont	193	542.3	34	46	11	6	12	8	3	5	2	0	1	1
Berkley	20	536.1	10	4	1	0	1	1	1	0	0	0	0	0
Berlin	15	583.3	7	3	2	0	0	0	0	0	0	0	0	0
Bernardston	10	295.8	3	1	0	0	1	1	0	2	0	0	0	0
Beverly	373	652.3	85	78	15	7	27	19	10	21	1	0	1	3
Billerica	282	963.0	57	89	31	1	10	10	5	8	1	0	4	4
Blackstone	55	710.0	11	22	4	4	1	4	2	0	1	0	2	0
Blandford	3	--[4]	0	1	1	0	0	0	0	0	0	0	0	0
Bolton	14	770.7	3	2	0	0	0	0	0	1	0	0	0	0

Table 46. Selected Causes of Death by Community, Massachusetts: 2007

CITY/TOWN	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[5]
Boston	3,812	729.1	802	930	229	55	175	138	108	108	23	60	33	73
Bourne	187	701.5	47	56	17	4	8	12	3	2	4	0	5	2
Boxborough	12	476.3	3	7	0	1	0	0	0	0	0	0	0	0
Boxford	39	617.0	9	16	3	2	2	2	0	1	0	0	1	0
Boylston	21	555.8	4	5	2	0	2	1	2	1	0	0	0	0
Braintree	345	684.4	73	96	30	3	18	19	7	11	1	1	3	2
Brewster	138	591.8	39	26	6	4	7	4	4	2	1	0	0	1
Bridgewater	136	722.9	30	44	15	2	4	13	4	5	0	0	2	2
Brimfield	27	761.8	7	11	3	0	2	1	1	0	0	0	0	0
Brockton	748	787.4	151	185	54	13	37	42	19	26	8	10	11	19
Brookfield	40	1,301.8	11	10	0	0	2	3	0	1	0	0	0	0
Brookline	334	483.7	79	91	16	7	25	8	3	16	0	0	4	2
Buckland	22	855.6	7	8	2	0	1	0	2	0	0	0	0	0
Burlington	166	789.9	38	46	10	6	6	6	6	5	0	0	0	1
Cambridge	482	565.0	115	106	33	6	25	17	15	15	5	1	8	5
Canton	233	662.4	43	68	24	4	10	3	2	6	1	0	2	1
Carlisle	13	431.2	3	5	2	0	0	0	0	0	0	0	0	0
Carver	75	573.4	20	22	7	3	3	5	2	1	1	0	1	0
Charlemont	7	562.7	1	3	0	0	2	0	0	0	0	0	0	1
Charlton	106	1,038.3	24	26	8	1	5	3	4	5	1	0	3	1
Chatham	132	598.7	28	28	12	1	10	5	8	3	0	0	2	1
Chelmsford	248	649.5	51	78	17	8	9	14	5	9	1	0	3	4
Chelsea	234	731.3	43	52	12	1	6	11	13	7	1	4	2	4
Cheshire	26	665.8	8	5	1	1	2	1	1	0	0	1	3	0
Chester	8	600.3	3	1	0	0	1	1	0	0	0	0	0	0
Chesterfield	3	--[4]	1	1	0	0	1	0	0	0	0	0	0	0
Chicopee	587	783.3	150	135	44	6	20	32	9	17	5	0	2	5
Chilmark	6	353.0	0	3	0	0	1	0	1	0	0	0	0	0
Clarksburg	16	865.0	3	3	2	0	0	2	0	0	0	0	0	0
Clinton	110	635.9	37	28	10	3	6	6	2	3	2	0	0	2
Cohasset	63	658.5	14	12	5	0	4	5	0	4	1	0	1	0
Colrain	6	318.9	1	1	1	0	1	0	0	0	0	0	0	0
Concord	147	553.0	33	36	4	5	10	10	4	8	0	0	1	1
Conway	7	388.9	3	1	0	0	0	0	0	0	0	0	0	0
Cummington	6	620.3	2	1	1	0	0	0	0	1	0	0	0	0
Dalton	91	927.0	18	25	6	1	5	2	3	1	2	0	0	1

Table 46. Selected Causes of Death by Community, Massachusetts: 2007

CITY/TOWN	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[5]
Danvers	277	705.5	77	63	13	5	13	10	3	8	1	0	3	1
Dartmouth	286	691.9	77	70	18	7	14	5	6	9	3	0	2	0
Dedham	232	693.3	55	57	14	4	8	7	6	3	1	0	3	3
Deerfield	48	816.4	16	12	3	0	5	1	1	0	1	0	0	0
Dennis	211	638.9	44	53	12	4	14	12	2	4	1	0	5	4
Dighton	45	598.2	14	11	2	2	3	4	3	2	1	0	0	1
Douglas	44	745.2	9	15	7	1	2	3	1	1	3	0	2	0
Dover	25	521.6	7	10	2	0	1	2	1	1	1	0	0	0
Dracut	229	930.1	44	74	18	10	9	11	8	4	4	0	5	0
Dudley	80	718.0	20	22	8	1	8	6	0	1	2	2	1	0
Dunstable	10	479.2	2	3	0	0	1	0	0	0	1	0	0	0
Duxbury	124	690.1	34	27	6	2	9	6	1	3	3	0	1	0
East Bridgewater	112	875.4	33	33	9	0	1	5	3	5	2	0	0	2
East Brookfield	13	545.6	2	6	0	0	0	0	0	0	0	0	0	0
East Longmeadow	187	740.6	51	41	9	2	6	8	2	8	0	0	2	2
Eastham	56	529.4	13	14	3	3	3	3	0	1	0	0	1	0
Easthampton	163	793.8	45	38	8	2	8	7	3	5	1	1	1	2
Easton	145	770.4	28	38	10	4	7	6	3	3	3	0	1	1
Edgartown	30	830.5	6	9	2	0	1	3	1	0	0	0	0	1
Egremont	13	657.9	2	4	0	1	1	0	2	0	0	0	0	0
Erving	17	994.7	5	4	2	0	0	0	1	0	0	0	0	0
Essex	27	731.7	7	11	4	0	2	2	0	0	0	0	0	0
Everett	311	700.2	82	81	21	1	17	8	4	9	2	3	4	4
Fairhaven	210	757.2	61	52	13	3	10	8	1	12	0	0	1	3
Fall River	1,001	803.3	262	228	57	16	40	34	18	35	9	5	7	22
Falmouth	415	685.4	97	104	30	11	30	27	10	5	3	0	2	8
Fitchburg	340	725.6	77	65	25	4	29	20	11	12	2	0	6	4
Florida	6	1,120.6	2	0	0	0	1	0	0	0	0	0	0	0
Foxborough	134	839.9	41	40	10	3	2	4	1	4	2	0	0	3
Framingham	527	670.4	137	120	30	7	31	24	4	23	4	0	3	1
Franklin	149	668.1	35	41	17	2	7	8	1	3	2	0	3	3
Freetown	40	544.2	11	13	5	0	1	0	0	1	1	0	1	0
Gardner	198	701.6	62	42	17	0	14	7	3	5	1	1	3	0
Georgetown	46	688.5	15	11	1	0	4	2	1	0	0	0	0	0
Gill	21	1,181.0	9	5	1	0	2	1	1	0	0	0	0	0
Gloucester	307	763.1	65	85	28	4	18	12	7	11	2	0	3	4

Table 46. Selected Causes of Death by Community, Massachusetts: 2007

CITY/TOWN	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[5]
Goshen	5	535.4	1	2	0	0	1	0	0	0	1	0	0	0
Gosnold	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Grafton	86	564.4	24	23	9	1	6	6	3	3	1	1	2	0
Granby	48	803.6	10	10	3	1	4	4	2	0	2	0	1	0
Granville	12	979.2	4	5	1	0	0	1	0	0	0	0	0	0
Great Barrington	101	822.3	20	30	6	2	6	6	4	2	1	1	2	0
Greenfield	207	710.0	47	45	18	2	10	17	5	13	1	0	1	1
Groton	57	839.4	18	16	3	1	5	1	1	1	2	0	0	0
Groveland	39	757.8	8	9	3	0	4	1	1	0	1	0	0	1
Hadley	70	828.6	17	18	3	3	4	3	4	5	0	0	0	0
Halifax	49	579.2	9	16	5	2	0	3	2	1	1	0	0	1
Hamilton	42	611.2	12	9	1	0	4	1	0	1	0	0	1	0
Hampden	53	823.3	15	12	2	5	3	5	1	3	0	0	1	0
Hancock	3	--[4]	1	1	0	0	0	0	0	0	0	0	0	0
Hanover	83	665.7	24	18	4	2	4	2	0	3	1	0	0	0
Hanson	48	750.1	14	11	3	0	0	4	3	1	0	0	1	0
Hardwick	24	848.3	6	3	0	1	0	2	0	1	1	0	0	1
Harvard	41	915.3	20	8	1	0	1	0	1	2	0	0	0	0
Harwich	170	589.7	43	41	11	3	11	6	2	2	2	0	0	0
Hatfield	26	527.5	2	8	1	0	1	0	0	2	0	0	0	0
Haverhill	576	827.3	147	129	34	5	25	20	13	16	7	1	1	6
Hawley	2	--[4]	0	0	0	0	0	1	0	0	1	0	0	0
Heath	4	--[4]	0	2	0	0	0	0	1	0	0	0	1	0
Hingham	179	652.9	45	45	13	1	12	3	4	13	0	0	2	2
Hinsdale	11	826.3	4	1	0	0	1	1	1	0	0	0	0	0
Holbrook	118	939.1	31	39	12	1	7	4	1	7	2	0	1	4
Holden	138	692.9	28	41	6	3	6	8	1	2	1	1	1	1
Holland	12	709.5	2	2	0	0	0	0	0	1	1	0	0	0
Holliston	63	680.2	18	15	3	1	3	3	1	3	1	0	0	2
Holyoke	443	811.8	116	73	17	4	23	25	9	17	3	0	1	6
Hopedale	52	591.9	15	9	1	0	1	4	0	3	0	0	0	0
Hopkinton	67	708.4	22	16	4	0	3	2	0	1	1	0	1	0
Hubbardston	31	1,216.4	11	5	0	1	0	6	0	1	2	0	1	0
Hudson	119	664.8	29	31	9	0	4	8	0	5	2	0	0	1
Hull	84	780.7	17	20	3	0	4	0	8	1	0	0	2	1
Huntington	21	1,075.2	5	5	3	0	1	1	1	1	1	0	1	0

Table 46. Selected Causes of Death by Community, Massachusetts: 2007

CITY/TOWN	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[5]
Ipswich	114	647.3	33	17	4	1	13	2	2	4	0	0	4	1
Kingston	96	603.3	16	20	6	1	6	3	2	4	3	0	3	1
Lakeville	84	719.0	19	24	6	0	5	2	4	6	1	2	0	1
Lancaster	45	709.4	10	15	2	2	3	2	0	1	1	0	1	0
Lanesborough	14	465.6	3	2	0	0	1	0	0	0	0	0	0	0
Lawrence	460	693.1	111	82	30	8	19	26	21	11	5	5	7	9
Lee	71	908.0	16	21	6	2	2	6	1	5	1	0	0	0
Leicester	102	880.1	21	18	9	1	2	12	2	5	5	0	1	3
Lenox	96	705.3	31	13	4	1	5	3	1	2	1	0	0	0
Leominster	347	750.0	88	71	14	5	34	21	13	6	4	0	6	4
Leverett	14	784.1	5	5	3	0	0	1	0	0	0	0	0	0
Lexington	216	421.4	51	49	11	3	19	7	2	5	6	0	1	1
Leyden	8	1,283.3	0	2	0	0	0	0	0	0	0	0	0	1
Lincoln	33	542.2	9	12	4	2	1	1	1	2	0	0	0	1
Littleton	42	449.2	5	11	3	0	3	3	0	4	0	0	1	0
Longmeadow	152	527.9	37	36	5	2	8	2	5	6	0	0	1	1
Lowell	828	869.1	212	173	52	9	40	37	18	15	5	3	7	12
Ludlow	187	754.8	40	53	16	2	11	4	2	5	2	0	2	1
Lunenburg	88	934.7	19	19	2	2	6	4	2	3	3	0	1	1
Lynn	712	766.1	170	200	58	11	28	22	15	20	9	4	5	18
Lynnfield	92	573.3	15	30	11	3	9	3	1	3	0	0	1	0
Malden	449	686.0	121	103	24	8	20	13	10	19	4	1	8	6
Manchester	34	466.6	4	12	3	1	5	3	0	0	0	0	1	0
Mansfield	99	717.6	19	34	8	1	10	5	5	2	1	0	1	1
Marblehead	143	524.5	29	36	8	5	9	6	0	4	0	0	3	2
Marion	58	706.7	20	12	1	1	5	4	1	2	1	0	0	0
Marlborough	314	790.8	75	73	20	2	16	10	9	14	1	0	2	7
Marshfield	173	864.0	37	57	16	1	14	7	6	5	1	1	0	1
Mashpee	135	711.3	24	41	9	2	5	11	3	2	2	0	1	2
Mattapoisett	42	474.5	9	16	6	2	4	1	0	2	1	0	0	0
Maynard	65	565.3	21	17	3	2	4	3	2	3	0	0	0	1
Medfield	56	556.4	21	15	4	4	0	4	1	1	0	0	0	0
Medford	550	689.8	126	133	35	9	24	21	20	18	2	2	5	4
Medway	67	625.2	18	16	3	0	6	2	0	4	1	0	0	0
Melrose	259	670.8	73	71	22	4	12	11	3	11	0	0	2	1
Mendon	39	908.1	8	14	1	1	0	2	0	1	1	0	0	0

Table 46. Selected Causes of Death by Community, Massachusetts: 2007

CITY/TOWN	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[5]
Merrimac	46	777.3	12	18	2	1	0	0	2	1	0	0	1	0
Methuen	388	665.3	105	97	22	6	11	14	9	9	4	0	4	6
Middleborough	211	1,016.2	62	47	19	1	12	10	9	7	1	0	2	1
Middlefield	3	--[4]	0	0	0	0	1	0	0	0	0	0	0	0
Middleton	58	775.0	12	16	3	1	1	3	0	1	0	0	1	2
Milford	221	692.7	66	47	17	1	7	11	5	5	1	2	0	2
Millbury	159	874.3	34	38	11	5	12	11	3	3	1	0	2	1
Millis	47	795.2	10	17	8	1	5	1	1	1	0	0	1	0
Millville	18	930.9	5	5	1	0	1	1	0	0	0	0	1	0
Milton	265	692.7	72	74	20	2	11	10	9	4	0	0	0	1
Monroe	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Monson	59	724.3	12	15	2	1	3	0	3	3	1	0	1	0
Montague	89	802.5	12	24	9	2	4	4	2	2	2	0	0	1
Monterey	7	735.6	1	2	1	0	0	0	0	0	0	0	0	0
Montgomery	5	963.1	3	0	0	0	0	1	0	1	0	0	0	0
Mount Washington	1	--[4]	0	0	0	0	0	1	0	0	0	0	0	0
Nahant	36	549.9	10	12	5	2	3	0	1	0	0	0	0	1
Nantucket	52	613.7	11	13	2	0	3	3	1	0	1	0	3	1
Natick	264	658.6	72	62	20	3	9	12	5	12	0	0	4	2
Needham	241	497.9	74	54	11	6	12	9	4	8	1	1	1	0
New Ashford	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0
New Bedford	944	775.5	282	197	48	11	42	23	17	27	12	2	9	11
New Braintree	5	664.9	2	1	0	0	0	0	0	0	0	0	0	0
New Marlborough	7	387.9	1	2	0	1	1	0	0	1	0	0	0	0
New Salem	7	676.9	1	2	1	0	1	0	0	0	0	0	0	0
Newbury	41	645.2	12	8	2	1	1	3	2	2	0	0	0	1
Newburyport	181	782.4	41	36	11	2	8	12	4	5	1	1	2	2
Newton	555	472.8	145	136	26	7	30	11	11	18	1	0	2	1
Norfolk	39	764.3	10	12	2	0	4	1	0	0	1	0	1	0
North Adams	162	814.6	44	28	11	0	8	9	7	12	0	0	1	2
North Andover	210	560.5	46	49	8	4	16	8	5	3	3	0	1	1
North Attleboro	176	727.6	44	46	20	5	10	7	6	5	2	0	3	2
North Brookfield	31	629.4	11	3	1	0	1	1	0	2	1	0	1	0
North Reading	101	849.0	24	26	10	2	7	5	2	1	1	1	0	1
Northampton	297	803.0	71	75	13	4	16	20	3	6	3	0	4	4
Northborough	104	958.3	26	23	6	2	2	7	3	4	1	0	1	0

Table 46. Selected Causes of Death by Community, Massachusetts: 2007

CITY/TOWN	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[5]
Northbridge	153	726.8	27	25	8	3	10	4	2	8	2	0	2	0
Northfield	19	487.0	3	4	1	0	0	0	2	0	0	0	0	0
Norton	113	796.0	35	24	3	5	6	3	5	1	0	1	1	1
Norwell	78	607.5	13	14	3	1	7	5	2	8	1	0	0	1
Norwood	296	690.2	78	66	20	6	19	9	9	8	4	0	2	2
Oak Bluffs	30	666.7	10	8	1	0	3	1	0	2	0	0	0	1
Oakham	6	442.5	0	2	1	0	0	0	0	0	0	0	0	0
Orange	78	872.8	25	20	6	1	2	4	2	0	0	0	2	0
Orleans	81	433.3	15	19	2	1	5	6	1	2	2	0	0	0
Otis	9	656.7	3	2	1	0	0	0	2	0	0	0	0	0
Oxford	83	683.5	19	24	6	1	3	1	2	0	1	0	1	1
Palmer	113	704.4	25	22	5	1	6	11	4	2	1	2	1	3
Paxton	28	573.2	7	7	0	0	0	1	1	2	0	0	0	0
Peabody	658	912.8	186	157	45	13	43	24	10	16	3	1	3	3
Pelham	21	1,639.6	7	6	2	0	1	0	0	0	0	0	0	0
Pembroke	99	776.7	27	29	11	1	5	2	1	3	2	0	0	3
Pepperell	56	750.5	10	11	3	3	4	0	0	0	0	0	0	1
Peru	2	--[4]	1	0	0	0	0	0	0	0	0	0	0	0
Petersham	12	635.3	1	6	1	1	0	0	0	0	0	0	0	0
Phillipston	8	741.7	3	3	0	1	1	0	0	0	0	0	0	0
Pittsfield	526	772.6	131	135	37	12	25	30	13	10	4	0	6	6
Plainfield	4	--[4]	1	0	0	0	0	1	0	1	0	0	0	0
Plainville	50	637.9	9	16	4	1	4	2	2	0	0	0	0	2
Plymouth	385	633.7	97	96	30	3	17	21	3	11	7	0	7	4
Plympton	16	988.1	4	6	3	0	0	1	1	0	0	0	0	0
Princeton	17	570.2	1	5	2	2	3	2	0	1	0	0	0	0
Provincetown	36	645.1	7	10	5	0	4	0	1	3	0	0	0	0
Quincy	842	703.5	208	236	80	10	51	35	18	23	4	3	11	7
Randolph	241	688.9	54	64	23	3	12	10	10	6	2	4	1	1
Raynham	109	755.3	28	27	8	3	3	5	1	1	4	0	1	0
Reading	159	552.3	37	42	16	4	11	10	3	4	0	0	1	1
Rehoboth	71	776.8	18	19	8	0	4	2	1	3	0	0	0	0
Revere	466	789.4	101	127	44	4	25	21	5	12	1	4	4	6
Richmond	11	575.2	3	0	0	0	1	0	0	3	0	0	0	0
Rochester	29	725.1	8	8	2	2	1	2	1	1	0	0	1	0

Table 46. Selected Causes of Death by Community, Massachusetts: 2007

CITY/TOWN	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[5]
Rockland	164	858.0	30	47	16	1	8	8	4	5	0	1	0	3
Rockport	96	653.4	24	21	1	3	9	3	1	4	0	0	2	0
Rowe	4	--[4]	2	1	1	0	0	0	0	0	0	0	0	0
Rowley	34	614.5	8	7	1	1	2	3	1	1	0	0	0	0
Royalston	9	667.8	1	1	0	0	2	1	0	0	0	0	0	0
Russell	5	425.6	3	0	0	0	0	0	0	0	0	0	0	0
Rutland	42	712.2	6	15	1	2	3	1	0	1	0	0	1	0
Salem	355	721.3	104	87	38	6	20	10	10	12	2	1	2	5
Salisbury	81	974.3	19	18	6	1	2	2	3	5	1	0	0	0
Sandisfield	11	998.5	5	2	1	0	1	1	0	0	0	0	0	0
Sandwich	173	688.9	36	42	8	2	13	14	4	2	2	0	2	1
Saugus	254	686.7	63	79	28	2	14	12	3	8	1	3	7	4
Savoy	5	727.2	0	2	1	0	1	1	0	0	0	0	0	0
Scituate	154	692.5	26	42	8	1	7	11	6	6	2	0	3	2
Seekonk	86	602.8	23	27	6	2	6	2	0	3	2	0	0	0
Sharon	104	651.6	20	29	9	4	4	4	5	2	0	0	2	1
Sheffield	27	650.4	6	8	2	0	0	5	0	0	0	0	0	0
Shelburne	19	628.0	7	5	2	0	1	1	2	0	0	0	0	0
Sherborn	17	452.4	3	4	0	0	0	0	1	0	0	0	0	0
Shirley	46	754.4	6	10	3	1	3	2	3	4	2	0	1	1
Shrewsbury	265	706.8	56	78	26	5	15	17	4	7	1	0	1	0
Shutesbury	7	560.7	2	4	1	1	0	0	0	0	0	0	0	0
Somerset	199	637.4	59	55	13	5	9	3	5	7	0	0	3	0
Somerville	464	667.3	101	117	41	11	20	17	12	14	4	0	7	4
South Hadley	158	609.4	35	45	11	6	13	7	2	4	2	0	1	1
Southampton	33	580.6	8	8	3	1	2	1	1	3	0	0	0	0
Southborough	48	727.5	12	15	7	1	3	1	2	1	0	0	1	0
Southbridge	157	723.2	28	30	9	2	8	6	9	4	3	0	2	0
Southwick	73	745.1	19	17	6	1	3	4	1	2	0	0	0	1
Spencer	83	681.7	22	21	10	2	3	5	2	0	1	2	3	3
Springfield	1,290	830.9	301	283	85	20	56	50	42	27	11	23	9	15
Sterling	63	1,176.9	16	11	3	0	8	3	1	2	0	0	0	0
Stockbridge	24	700.1	6	6	2	0	2	1	0	0	0	0	0	0
Stoneham	258	727.0	72	61	21	3	12	10	7	10	2	0	1	0
Stoughton	258	791.1	59	73	20	3	8	7	4	8	4	0	2	5
Stow	30	736.8	6	12	2	1	1	1	1	1	0	0	1	0

Table 46. Selected Causes of Death by Community, Massachusetts: 2007

CITY/TOWN	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[5]
Sturbridge	58	603.2	16	13	4	0	3	2	3	3	0	0	1	0
Sudbury	92	639.9	30	24	0	5	5	3	1	3	0	1	0	0
Sunderland	30	1,133.7	7	9	1	0	1	0	1	1	1	0	1	0
Sutton	38	635.8	11	6	1	2	1	4	3	0	2	0	1	0
Swampscott	154	611.9	39	39	11	0	7	4	4	5	2	0	0	0
Swansea	148	711.1	33	44	13	6	6	6	3	3	2	0	5	2
Taunton	498	816.6	147	109	31	3	23	24	12	17	9	1	8	2
Templeton	98	1,223.1	40	18	8	1	7	4	1	1	0	0	1	1
Tewksbury	193	704.9	45	42	15	2	12	12	7	6	0	0	1	1
Tisbury	40	701.0	10	12	4	2	1	0	1	3	0	0	0	1
Tolland	3	--[4]	0	2	1	0	0	0	0	0	0	0	0	0
Topsfield	50	629.2	9	8	0	1	4	4	0	0	1	0	0	1
Townsend	51	922.0	11	14	1	0	2	3	1	1	0	0	0	1
Truro	25	803.7	7	4	0	0	0	1	1	1	3	0	1	0
Tyngsborough	63	969.8	11	21	6	0	4	3	1	1	0	1	1	0
Tyringham	1	--[4]	0	0	0	0	0	0	0	0	0	0	0	0
Upton	33	632.5	8	9	4	0	2	2	0	1	1	0	1	1
Uxbridge	92	886.8	21	30	8	1	2	8	1	0	0	1	0	2
Wakefield	197	588.7	46	55	19	3	8	7	6	3	0	0	1	0
Wales	11	863.7	2	3	1	0	0	3	0	0	0	0	0	0
Walpole	157	521.2	39	42	8	3	9	9	4	2	0	1	1	0
Waltham	423	634.7	97	112	39	10	22	15	15	13	2	0	4	4
Ware	117	884.1	42	29	9	3	3	7	4	1	0	0	0	1
Wareham	202	727.9	55	57	20	3	10	10	6	10	2	0	4	0
Warren	44	831.9	13	10	4	0	3	3	1	1	0	0	0	0
Warwick	3	--[4]	0	0	0	0	0	1	0	0	0	0	0	0
Washington	1	--[4]	0	0	0	0	0	0	0	0	0	0	0	0
Watertown	272	568.3	69	75	23	8	18	10	8	8	0	0	2	3
Wayland	86	565.8	18	25	9	0	6	7	1	3	0	0	0	0
Webster	204	863.3	54	40	11	2	12	11	4	7	1	0	2	0
Wellesley	176	539.7	39	47	10	1	9	8	2	4	2	0	3	0
Wellfleet	30	606.3	9	9	3	2	0	2	0	0	1	0	0	0
Wendell	1	--[4]	0	0	0	0	0	0	0	0	1	0	0	0
Wenham	19	379.9	5	6	0	1	1	0	0	0	0	0	0	1
West Boylston	87	911.5	26	14	3	2	4	3	2	4	0	0	0	0
West Bridgewater	87	811.0	27	26	7	2	5	2	0	1	0	0	0	0

Table 46. Selected Causes of Death by Community, Massachusetts: 2007

CITY/TOWN	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[5]
West Brookfield	46	641.5	17	5	2	0	2	1	0	2	1	0	1	0
West Newbury	21	535.8	7	6	0	0	1	0	1	1	0	0	0	0
West Springfield	252	719.9	50	75	24	1	14	10	4	4	2	0	3	1
West Stockbridge	15	828.0	3	3	0	2	1	0	0	0	0	0	2	0
West Tisbury	10	475.3	1	3	0	1	4	1	0	1	0	0	0	0
Westborough	137	651.9	33	26	6	6	6	4	1	5	1	0	1	0
Westfield	379	799.1	95	103	20	8	18	16	5	6	8	0	3	1
Westford	103	712.2	22	23	2	2	3	5	2	2	1	0	1	0
Westhampton	6	477.0	2	0	0	0	1	0	0	1	0	0	0	0
Westminster	55	824.1	10	19	5	2	3	1	0	1	2	0	2	0
Weston	104	516.7	20	15	2	2	10	4	0	3	0	0	0	0
Westport	128	744.1	24	34	6	5	8	6	3	5	4	1	1	0
Westwood	139	555.1	32	43	11	2	5	5	1	5	0	0	1	2
Weymouth	472	709.9	123	114	40	7	30	28	16	15	2	2	3	5
Whately	11	620.7	3	2	1	1	1	1	0	1	1	0	1	0
Whitman	107	864.8	22	27	8	2	4	8	2	3	3	0	2	1
Wilbraham	145	712.7	40	37	9	2	6	5	4	3	1	0	1	1
Williamsburg	25	867.5	4	5	1	0	5	0	0	0	0	0	0	0
Williamstown	92	645.3	22	24	12	2	6	4	0	3	0	0	2	0
Wilmington	145	718.4	27	39	16	3	9	7	4	1	1	0	1	1
Winchendon	85	952.6	30	15	5	1	4	4	2	2	2	0	2	0
Winchester	156	443.8	30	32	16	2	19	6	5	5	0	1	0	3
Windsor	2	--[4]	0	0	0	0	0	0	1	0	0	0	0	0
Winthrop	177	767.3	39	50	18	2	7	6	5	4	0	0	2	4
Woburn	316	708.1	85	77	30	5	15	16	9	8	1	0	1	1
Worcester	1,710	832.3	403	356	102	25	80	78	35	54	12	6	16	29
Worthington	10	579	2	3	0	2	0	0	0	0	1	0	0	0
Wrentham	103	748.5	34	14	2	4	7	5	1	2	1	0	0	0
Yarmouth	388	669.5	87	106	31	11	25	13	12	5	1	0	3	5

1. Rates are per 100,000 population age-adjusted to the 2000 U.S. Standard Population and 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. 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. Rates based on 1 to 4 deaths are not calculated. 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: 2007

CHNA Name	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	Narcotics[4]
Massachusetts	**52,690**	**704.4**	**12,735**	**12,961**	**3,604**	**837**	**2,710**	**2,325**	**1,216**	**1,528**	**437**	**183**	**504**	**546**
Community Health Network of Berkshire	1,494	745.8	375	351	102	25	75	81	41	47	10	2	16	9
Upper Valley Health Web (Franklin County)	819	713.8	208	204	60	14	39	45	23	27	9	0	7	5
Partnership for Health in Hampshire County (Northampton)	1,211	721.4	287	309	68	24	76	60	21	36	13	1	11	10
The Community Health Connection (Springfield)	2,689	769.0	625	623	171	38	120	117	74	67	21	25	21	26
Community Health Network of Southern Worcester County	995	737.6	248	226	67	9	52	46	26	27	12	4	15	5
Community Partners for Health (Milford)	1,072	724.6	260	269	86	16	42	62	19	29	17	3	13	10
Community Health Network of Greater Metro West (Framingham)	2,621	678.1	695	648	164	47	130	117	45	89	16	2	17	19
Community Wellness Coalition (Worcester)	2,780	783.5	655	628	184	43	134	148	54	85	21	8	24	34
Fitchburg/Gardner Community Health Network	1,994	763.8	536	435	116	31	142	100	43	53	26	1	26	17
Greater Lowell Community Health Network	1,956	806.8	444	503	141	32	88	92	46	45	13	4	22	21
Greater Lawrence Community Health Network	1,349	653.5	319	303	73	21	58	64	40	28	13	5	14	19
Greater Haverhill Community Health Network	1,246	776.3	310	295	76	15	56	54	30	32	11	2	9	10
Community Health Network North (Beverly/Gloucester)	1,062	654.3	244	247	56	18	83	46	20	41	4	0	12	10
North Shore Community Health Network	2,681	735.2	693	703	217	47	146	91	47	76	18	9	24	34
Greater Woburn/Concord/Littleton Community Health Network	1,453	563.6	317	363	106	29	93	74	35	48	10	1	8	11
North Suburban Health Alliance (Medford/Malden/Melrose)	2,284	674.5	581	572	168	34	111	85	55	75	11	7	22	17
Greater Cambridge/Somerville Community Health Network	1,771	591.1	410	435	134	36	100	66	46	49	13	2	19	15
West Suburban Health Network (Newton/Waltham)	1,895	543.7	469	474	115	32	97	61	40	55	8	1	14	10
Alliance for Community Health (Boston/Chelsea/Revere/Winthrop)	5,023	713.8	1,064	1,250	319	69	238	184	134	147	25	68	45	89
Blue Hills Community Health Alliance (Greater Quincy)	3,356	687.9	786	880	278	42	189	142	96	107	18	10	32	26
Four (For) Communities (Holyoke, Chicopee, Ludlow, Westfield)	1,625	787.1	409	370	100	20	74	79	26	46	19	0	9	13
Greater Brockton Community Health Network	1,884	791.5	421	508	146	30	81	100	43	65	23	11	22	36
South Shore Community Partners in Prevention (Plymouth)	1,312	686.3	312	349	107	16	66	62	25	37	19	2	13	13
Greater Attleboro-Taunton Health & Education Response	1,911	780.1	508	464	146	25	103	95	57	56	23	6	20	13
Partners for a Healthier Community (Fall River)	1,476	756.9	378	361	89	32	63	49	29	50	15	6	16	24
Greater New Bedford Health & Human Services Coalition	1,898	726.2	546	449	120	29	93	56	33	66	20	2	21	15
Cape Cod & Islands Community Health Network	2,830	638.7	634	742	195	63	161	149	68	45	29	1	32	35

1. Rates are per 100,000 population age-adjusted to the 2000 U.S. Standard Population and 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. 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: 2007

County	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	Narcotics[4]
Massachusetts	**52,690**	**704.4**	**12,735**	**12,961**	**3,604**	**837**	**2,710**	**2,325**	**1,216**	**1,528**	**437**	**183**	**504**	**546**
Barnstable	2,660	643.7	596	693	186	60	148	140	64	39	28	1	29	31
Berkshire	1,494	745.8	375	351	102	25	75	81	41	47	10	2	16	9
Bristol	4,804	745.1	1287	1148	311	81	229	177	101	147	55	12	51	51
Dukes	118	618.7	27	36	7	3	10	6	3	6	0	0	0	3
Essex	6,338	708.7	1566	1548	422	101	343	255	137	177	46	16	59	73
Franklin	650	702.7	163	162	53	8	32	34	20	19	8	0	6	4
Hampden	4,343	773.9	1040	1004	272	58	195	199	100	113	40	25	29	39
Hampshire	1,232	726.2	292	314	71	24	77	61	22	37	14	1	12	10
Middlesex	10,595	647.1	2543	2632	737	177	562	439	244	327	64	15	90	87
Nantucket	52	613.7	11	13	2	0	3	3	1	0	1	0	3	1
Norfolk	5,343	656.6	1315	1426	420	82	283	221	116	153	36	12	49	46
Plymouth	3,750	729.8	878	982	291	50	189	190	98	138	42	15	43	47
Suffolk	4,689	736.1	985	1159	303	62	213	176	131	131	25	68	41	87
Worcester	6,619	757.9	1656	1493	427	106	351	343	138	194	68	16	76	58

1. Rates are per 100,000 population age-adjusted to the 2000 U.S. Standard Population and 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. 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: 2007

		White[2]			Black[2]		
Cause	**ICD-10 Code**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
All Deaths		**861.5**	**601.6**	**710.6**	**921.7**	**617.4**	**743.5**
Heart Disease	I00-I09, I11, I13, I20-I51	214.9	133.2	167.4	211.1	130.7	164.5
Cancer	C00-C97	224.3	155.0	181.7	244.0	146.1	183.2
Stroke	I60-I69	35.6	34.2	35.0	31.1	33.1	32.3
Chronic Lower Respiratory Disease[3]	J40-J47	36.0	30.9	32.6	17.5	16.2	16.1
Influenza and Pneumonia	J10-J18	24.3	17.0	19.7	18.2	9.5	12.7
Diabetes	E10-E14	20.6	12.8	16.0	39.7	30.0	33.7
Alzheimer's Disease	G30	17.6	23.4	21.5	16.9	12.4	13.8
Nephritis	N00-N07, N17-N19, N25-N27	23.6	13.5	17.2	54.5	32.9	40.9
Septicemia	A40-A41	14.3	10.2	11.7	14.4	14.1	14.2
HIV/AIDS	B20-B24	2.4	0.7	1.5	12.3	11.1	11.6
Perinatal Conditions	P00-P96	3.4	3.3	3.3	11.4	5.4	8.5
All Injuries	V01-Y98	63.2	27.0	44.2	71.9	24.5	47.7
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	10.1	4.0	7.0	8.6	2.4	5.2
Suicide	X60-X84, Y87.0	13.0	3.3	7.9	7.9	0.4	4.1
Homicide	X85-Y09, Y87.1	2.3	1.3	1.8	26.2	4.9	15.5

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

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; 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 Asians, 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 NCHS. 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

Source for 2007 Population Estimates (used for state-wide rates)

National Center for Health Statistics. Postcensal estimates of the resident population of the United States for July 1, 2000-July 1, 2007, by year, county, age, bridged race, Hispanic origin, and sex (Vintage 2007). Prepared under a collaborative arrangement with the U.S. Census Bureau; released August 7, 2008. Available from: http://www.cdc.gov/nchs/about/major/dvs/popbridge/popbridge.htm as of September 5, 2008.

Source for 2005 Population Estimates (used for city/town rates)

Massachusetts Department of Public Health, Bureau of Health Information, Statistics, Research, and Evaluation, Division of Research and Epidemiology. Massachusetts Department of Public Health Modified Age, Race/Ethnicity, and Sex (MMARS00-05) which is based upon 2005 estimates produced by the National Center for Health Statistics in collaboration with the Census Bureau's Population Estimation Program. October 2006. Available on the Internet from: http://masschip.state.ma.us.

For additional information about population and MDPH estimation methods, refer to the Technical Notes in the report, *Massachusetts Births 2005,* which can be downloaded from the following website: http://www.mass.gov/dph/pubstats.htm

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 begins 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.

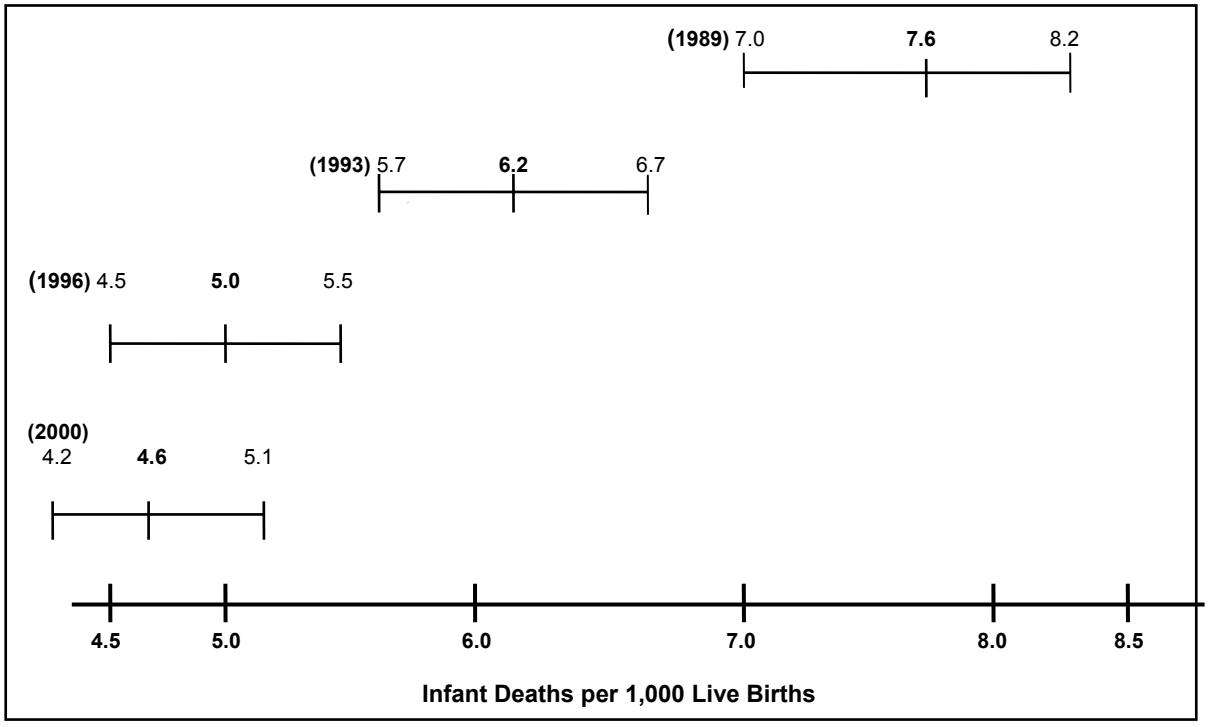
When two statistics are determined to differ significantly, they are referred to in the text with language expressing differences, such as, “higher” and “lower”, or “increased” and “decreased”. Otherwise, differences that are not significant are reported as having “no change” or “no statistical difference.”

CONFIDENCE INTERVALS AND INFANT MORTALITY RATES

The confidence interval (CI) provides a measure of stability of the infant mortality rates (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 that 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 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 forward.

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 2007 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 ,Washington, DC, Canada, the U.S. Virgin Islands, and Guam 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 except for diabetes mortality.

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 Disease	C81	201
Non-Hodgkin 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 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 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
Unintentional non-transport injuries	W00-X59, Y86	E850-E869, E880-E928, E929.2-E929.9
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 Disease	C81	201	0.9855
Non-Hodgkin 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 A10. Population Estimates for Massachusetts Communities, 2005

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

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

TOWN NAME	COUNTY	CHNA	POPULATION	TOWN NAME	COUNTY	CHNA	POPULATION
Holland	Hampden	5	2,529	New Marlborough	Berkshire	1	1,522
Holliston	Middlesex	7	13,830	New Salem	Franklin	2	986
Holyoke	Hampden	21	41,089	Newbury	Essex	12	6,990
Hopedale	Worcester	6	6,234	Newburyport	Essex	12	17,395
Hopkinton	Middlesex	7	14,048	Newton	Middlesex	18	83,346
Hubbardston	Worcester	9	4,340	Norfolk	Norfolk	7	10,506
Hudson	Middlesex	7	18,847	North Adams	Berkshire	1	14,031
Hull	Plymouth	20	11,279	North Andover	Essex	11	27,137
Huntington	Hampshire	21	2,180	North Attleboro	Bristol	24	28,078
Ipswich	Essex	13	13,285	North Brookfield	Worcester	5	4,812
Kingston	Plymouth	23	12,435	North Reading	Middlesex	16	13,930
Lakeville	Plymouth	24	10,618	Northampton	Hampshire	3	28,803
Lancaster	Worcester	9	7,069	Northborough	Worcester	7	14,652
Lanesborough	Berkshire	1	2,951	Northbridge	Worcester	6	14,184
Lawrence	Essex	11	81,591	Northfield	Franklin	2	3,226
Lee	Berkshire	1	5,882	Norton	Bristol	24	19,106
Leicester	Worcester	8	10,953	Norwell	Plymouth	20	10,382
Lenox	Berkshire	1	5,149	Norwood	Norfolk	20	28,472
Leominster	Worcester	9	42,120	Oak Bluffs	Dukes	27	3,794
Leverett	Franklin	2	1,769	Oakham	Worcester	9	1,892
Lexington	Middlesex	15	30,452	Orange	Franklin	2	7,659
Leyden	Franklin	2	815	Orleans	Barnstable	27	6,459
Lincoln	Middlesex	15	7,935	Otis	Berkshire	1	1,391
Littleton	Middlesex	15	8,561	Oxford	Worcester	5	13,710
Longmeadow	Hampden	4	15,556	Palmer	Hampden	4	12,895
Lowell	Middlesex	10	105,749	Paxton	Worcester	8	4,556
Ludlow	Hampden	21	21,835	Peabody	Essex	14	50,954
Lunenburg	Worcester	9	10,008	Pelham	Hampshire	3	1,415
Lynn	Essex	14	92,186	Pembroke	Plymouth	23	18,069
Lynnfield	Essex	14	11,540	Pepperell	Middlesex	9	11,386
Malden	Middlesex	16	56,730	Peru	Berkshire	1	836
Manchester	Essex	13	5,332	Petersham	Worcester	2	1,282
Mansfield	Bristol	24	22,933	Phillipston	Worcester	2	1,753
Marblehead	Essex	14	20,285	Pittsfield	Berkshire	1	43,949
Marion	Plymouth	26	5,316	Plainfield	Hampshire	3	600
Marlborough	Middlesex	7	37,163	Plainville	Norfolk	7	7,994
Marshfield	Plymouth	23	24,879	Plymouth	Plymouth	23	54,781
Mashpee	Barnstable	27	14,159	Plympton	Plymouth	23	2,777
Mattapoisett	Plymouth	26	6,477	Princeton	Worcester	9	3,520
Maynard	Middlesex	7	10,221	Provincetown	Barnstable	27	3,444
Medfield	Norfolk	7	12,328	Quincy	Norfolk	20	90,458
Medford	Middlesex	16	53,801	Randolph	Norfolk	20	32,552
Medway	Norfolk	6	12,780	Raynham	Bristol	24	13,428
Melrose	Middlesex	16	26,366	Reading	Middlesex	16	23,161
Mendon	Worcester	6	5,743	Rehoboth	Bristol	24	11,229
Merrimac	Essex	12	6,350	Revere	Suffolk	19	45,551
Methuen	Essex	11	44,532	Richmond	Berkshire	1	1,618
Middleborough	Plymouth	24	21,153	Rochester	Plymouth	26	5,295
Middlefield	Hampshire	3	549	Rockland	Plymouth	23	17,842
Middleton	Essex	11	9,077	Rockport	Essex	13	7,761
Milford	Worcester	6	27,523	Rowe	Franklin	2	350
Millbury	Worcester	8	13,443	Rowley	Essex	12	5,832
Millis	Norfolk	7	7,949	Royalston	Worcester	2	1,366
Millville	Worcester	6	2,938	Russell	Hampden	4	1,723
Milton	Norfolk	20	26,243	Rutland	Worcester	9	7,406
Monroe	Franklin	2	100	Salem	Essex	14	41,647
Monson	Hampden	4	8,744	Salisbury	Essex	12	8,264
Montague	Franklin	2	8,416	Sandisfield	Berkshire	1	830
Monterey	Berkshire	1	959	Sandwich	Barnstable	27	20,707
Montgomery	Hampden	4	743	Saugus	Essex	14	26,867
Mt. Washington	Berkshire	1	135	Savoy	Berkshire	1	724
Nahant	Essex	14	3,591	Scituate	Plymouth	20	18,119
Nantucket	Nantucket	27	10,095	Seekonk	Bristol	24	13,660
Natick	Middlesex	7	31,895	Sharon	Norfolk	20	17,269
Needham	Norfolk	18	28,445	Sheffield	Berkshire	1	3,360
New Ashford	Berkshire	1	247	Shelburne	Franklin	2	2,054
New Bedford	Bristol	26	94,502	Sherborn	Middlesex	7	4,220
New Braintree	Worcester	9	1,090	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. 2007 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	38,637	27,413	3,081	2,518	5,535
	FEMALE	36,933	26,147	2,952	2,410	5,337
	TOTAL	75,570	53,560	6,033	4,928	10,872
1 TO 4	MALE	153,875	109,003	14,294	9,761	20,468
	FEMALE	147,403	104,405	13,545	9,497	19,589
	TOTAL	301,278	213,408	27,839	19,258	40,057
5 TO 14	MALE	404,130	302,621	32,426	20,774	47,321
	FEMALE	386,772	287,885	31,350	21,156	45,393
	TOTAL	790,902	590,506	63,776	41,930	92,714
15 TO 24	MALE	453,849	343,463	35,778	23,491	49,771
	FEMALE	452,312	343,110	35,486	25,128	47,158
	TOTAL	906,161	686,573	71,264	48,619	96,929
25 TO 34	MALE	412,990	296,475	29,889	33,549	51,935
	FEMALE	410,806	298,200	30,234	34,389	46,960
	TOTAL	823,796	594,675	60,123	67,938	98,895
35 TO 44	MALE	479,880	378,648	28,952	30,589	40,606
	FEMALE	494,452	390,962	31,165	29,235	42,004
	TOTAL	974,332	769,610	60,117	59,824	82,610
45 TO 54	MALE	483,680	412,598	24,877	19,010	25,958
	FEMALE	505,647	429,083	26,649	19,835	28,794
	TOTAL	989,327	841,681	51,526	38,845	54,752
55 TO 64	MALE	350,035	310,985	14,318	11,010	12,974
	FEMALE	379,415	333,674	17,308	11,848	15,792
	TOTAL	729,450	644,659	31,626	22,858	28,766
65 TO 74	MALE	188,086	169,045	6,908	5,968	5,766
	FEMALE	226,996	202,395	9,806	6,542	7,884
	TOTAL	415,082	371,440	16,714	12,510	13,650
75 TO 84	MALE	120,177	111,610	3,207	2,685	2,468
	FEMALE	183,926	170,784	5,713	3,471	3,706
	TOTAL	304,103	282,394	8,920	6,156	6,174
85 +	MALE	41,154	38,529	968	754	839
	FEMALE	98,600	93,348	2249	1,238	1,601
	TOTAL	139,754	131,877	3,217	1,992	2,440
ALL AGES	MALE	3,126,493	2,500,390	194,698	160,109	263,641
	FEMALE	3,323,262	2,679,993	206,457	164,749	264,218
	TOTAL	6,449,755	5,180,383	401,155	324,858	527,859

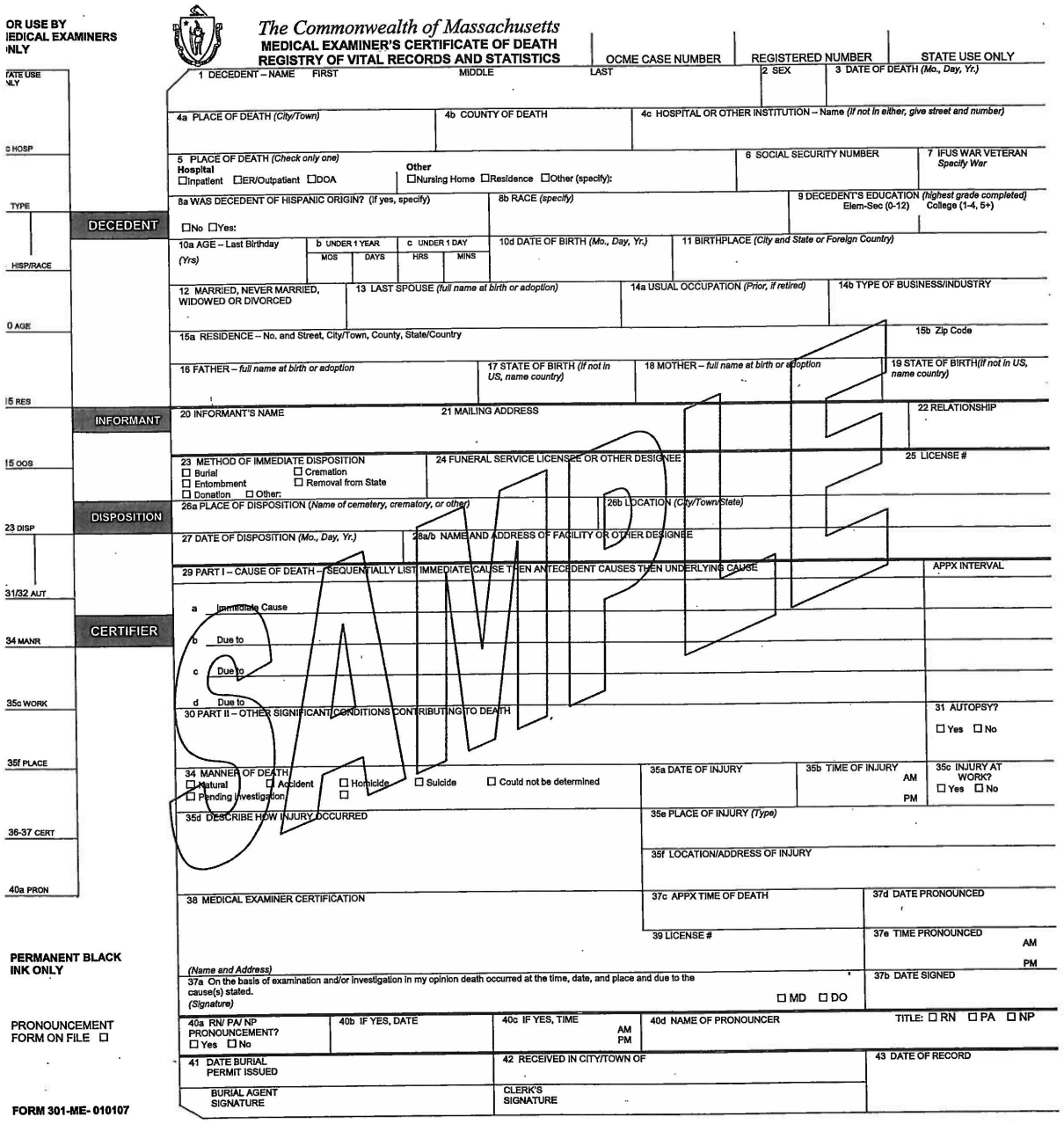
1. National Center for Health Statistics. Estimates of the July 1, 2000-July 1, 2006, United States resident population from the Vintage 2006 postcensal series by year, county, age, sex, race, and Hispanic origin, prepared under a collaborative arrangement with the U.S. Census Bureau. Available on the 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. 2007 Massachusetts Population Estimates[1] By Age Group, Gender, Race and Hispanic Ethnicity[2]

AGE	GENDER	TOTAL	WHITE	BLACK	ASIAN	HISPANIC ETHNICITY
UNDER 1	MALE	38,637	31,937	3,987	2,593	5,535
	FEMALE	36,933	30,511	3,826	2,480	5,337
	TOTAL	75,570	62,448	7,813	5,073	10,872
1 TO 4	MALE	153,875	125,308	18,185	9,969	20,468
	FEMALE	147,403	119,919	17,331	9,704	19,589
	TOTAL	301,278	245,227	35,516	19,673	40,057
5 TO 14	MALE	404,130	341,870	39,368	21,334	47,321
	FEMALE	386,772	325,674	37,810	21,733	45,393
	TOTAL	790,902	667,544	77,178	43,067	92,714
15 TO 24	MALE	453,849	385,205	42,301	24,190	49,771
	FEMALE	452,312	382,654	41,758	25,736	47,158
	TOTAL	906,161	767,859	84,059	49,926	96,929
25 TO 34	MALE	412,990	341,556	35,238	34,228	51,935
	FEMALE	410,806	337,730	36,379	35,013	46,960
	TOTAL	823,796	679,286	71,617	69,241	98,895
35 TO 44	MALE	479,880	413,353	33,861	31,016	40,606
	FEMALE	494,452	426,162	36,818	29,788	42,004
	TOTAL	974,332	839,515	70,679	60,804	82,610
45 TO 54	MALE	483,680	434,312	28,437	19,305	25,958
	FEMALE	505,647	453,013	30,684	20,235	28,794
	TOTAL	989,327	887,325	59,121	39,540	54,752
55 TO 64	MALE	350,035	321,794	16,140	11,157	12,974
	FEMALE	379,415	346,946	19,398	12,033	15,792
	TOTAL	729,450	668,740	35,538	23,190	28,766
65 TO 74	MALE	188,086	173,881	7,693	6,037	5,766
	FEMALE	226,996	208,977	10,903	6,647	7,884
	TOTAL	415,082	382,858	18,596	12,684	13,650
75 TO 84	MALE	120,177	113,682	3,542	2,722	2,468
	FEMALE	183,926	173,871	6,223	3,516	3,706
	TOTAL	304,103	287,553	9,765	6,238	6,174
85 +	MALE	41,154	39,261	1,047	774	839
	FEMALE	98,600	94,726	2434	1,263	1,601
	TOTAL	139,754	133,987	3,481	2,037	2,440
ALL AGES	MALE	3,126,493	2,722,159	229,799	163,325	263,641
	FEMALE	3,323,262	2,900,183	243,564	168,148	264,218
	TOTAL	6,449,755	5,622,342	473,363	331,473	527,859

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: 2007



OR USE BY
EDICAL EXAMINERS
NLY

The Commonwealth of Massachusetts
MEDICAL EXAMINER'S CERTIFICATE OF DEATH
REGISTRY OF VITAL RECORDS AND STATISTICS

OCME CASE NUMBER | REGISTERED NUMBER | STATE USE ONLY

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

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

5 PLACE OF DEATH *(Check only one)*
Hospital ☐Inpatient ☐ER/Outpatient ☐DOA
Other ☐Nursing Home ☐Residence ☐Other (specify):

6 SOCIAL SECURITY NUMBER | 7 IFUS WAR VETERAN *Specify War*

DECEDENT

8a WAS DECEDENT OF HISPANIC ORIGIN? (If yes, specify) ☐No ☐Yes:

8b RACE *(specify)*

9 DECEDENT'S EDUCATION *(highest grade completed)* Elem-Sec (0-12) College (1-4, 5+)

10a AGE – Last Birthday *(Yrs)* | b UNDER 1 YEAR MOS DAYS | c UNDER 1 DAY HRS MINS

10d DATE OF BIRTH *(Mo., Day, Yr.)*

11 BIRTHPLACE *(City and State or Foreign Country)*

12 MARRIED, NEVER MARRIED, WIDOWED OR DIVORCED

13 LAST SPOUSE *(full name at birth or adoption)*

14a USUAL OCCUPATION *(Prior, if retired)*

14b TYPE OF BUSINESS/INDUSTRY

15a RESIDENCE – No. and Street, City/Town, County, State/Country | 15b Zip Code

16 FATHER – *full name at birth or adoption*

17 STATE OF BIRTH *(If not in US, name country)*

18 MOTHER – *full name at birth or adoption*

19 STATE OF BIRTH *(If not in US, name country)*

INFORMANT

20 INFORMANT'S NAME | 21 MAILING ADDRESS | 22 RELATIONSHIP

23 METHOD OF IMMEDIATE DISPOSITION
☐ Burial ☐ Cremation
☐ Entombment ☐ Removal from State
☐ Donation ☐ Other:

24 FUNERAL SERVICE LICENSEE OR OTHER DESIGNEE | 25 LICENSE #

DISPOSITION

26a PLACE OF DISPOSITION *(Name of cemetery, crematory, or other)* | 26b LOCATION *(City/Town/State)*

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

CERTIFIER

29 PART I – CAUSE OF DEATH – SEQUENTIALLY LIST IMMEDIATE CAUSE THEN ANTECEDENT CAUSES THEN UNDERLYING CAUSE | APPX INTERVAL

a Immediate Cause
b Due to
c Due to
d Due to

30 PART II – OTHER SIGNIFICANT CONDITIONS CONTRIBUTING TO DEATH | 31 AUTOPSY? ☐Yes ☐No

34 MANNER OF DEATH
☐Natural ☐Accident ☐Homicide ☐Suicide ☐Could not be determined
☐Pending Investigation ☐

35a DATE OF INJURY | 35b TIME OF INJURY AM PM | 35c INJURY AT WORK? ☐Yes ☐No

35d DESCRIBE HOW INJURY OCCURRED | 35e PLACE OF INJURY *(Type)* | 35f LOCATION/ADDRESS OF INJURY

38 MEDICAL EXAMINER CERTIFICATION | 37c APPX TIME OF DEATH | 37d DATE PRONOUNCED

39 LICENSE # | 37e TIME PRONOUNCED AM PM

(Name and Address)

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. ☐MD ☐DO | 37b DATE SIGNED

(Signature)

40a RN/ PA/ NP PRONOUNCEMENT? ☐Yes ☐No | 40b IF YES, DATE | 40c IF YES, TIME AM PM | 40d NAME OF PRONOUNCER | TITLE: ☐RN ☐PA ☐NP

41 DATE BURIAL PERMIT ISSUED | 42 RECEIVED IN CITY/TOWN OF | 43 DATE OF RECORD

BURIAL AGENT SIGNATURE | CLERK'S SIGNATURE

TATE USE
NLY
C HOSP
TYPE
HISP/RACE
0 AGE
15 RES
15 OOS
23 DISP
31/32 AUT
34 MANR
35c WORK
35f PLACE
36-37 CERT
40a PRON

PERMANENT BLACK INK ONLY

PRONOUNCEMENT FORM ON FILE ☐

FORM 301-ME- 010107

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: 2007 Evaluation Form

TO OUR READERS:
In an attempt to better serve our users, we are enclosing this evaluation form. Please take the time to complete this questionnaire and return it to the address at the bottom of the page. Thank you.

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Are there other tables and charts that you would like added to this publication? If yes, please describe them in detail.
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Malena Hood
Division of Research and Epidemiology
Bureau of Health Information, Statistics, Research & Evaluation
Massachusetts Department of Public Health
250 Washington Street, 6th floor
Boston, MA 02108

FAX: (617) 624-5631