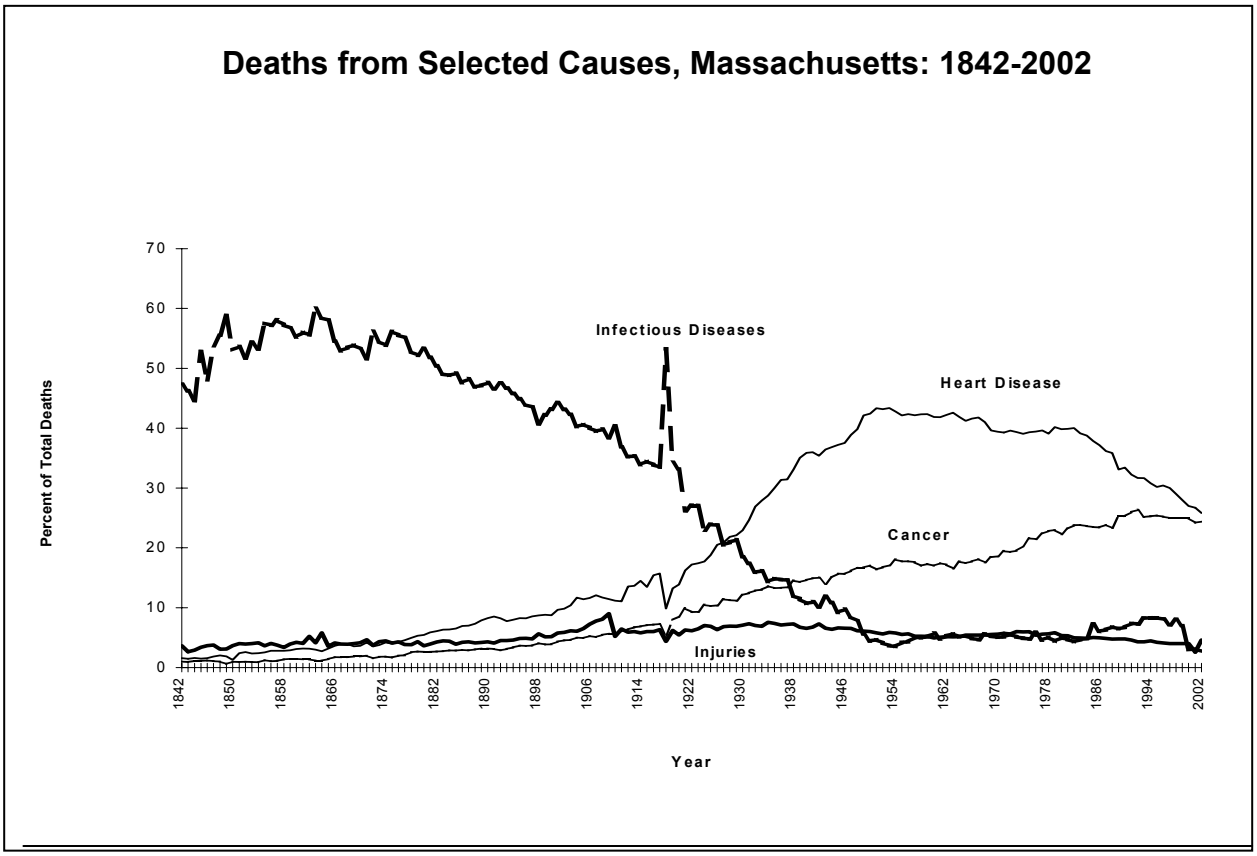
Massachusetts Deaths 2002



Center for Health Information, Statistics, Research and Evaluation

Massachusetts Department of Public Health

June 2004

Massachusetts Deaths 2002

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TECHNICAL FOREWORD

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

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

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.

International Classification of Diseases- Tenth Revision (ICD-10)

What is ICD-10?

ICD-10 is an abbreviation for the International Classification of Diseases - Tenth revision. The International Classification of Diseases is a classification system developed by the World Health Organization (WHO). The United States uses the ICD in accordance with an international agreement. The purpose of an international classification system is to promote international comparability in collecting, classifying and tabulating mortality statistics.

Why has the ICD been revised?

The ICD is revised to reflect advances in medical science. The ICD was first implemented in 1900, and has undergone revisions approximately every ten years, except for the Ninth revision which was in effect between 1979-1998. Beginning with 1999, mortality data are coded according to the Tenth revision of the ICD.

How is ICD-10 different from ICD-9?

ICD-10 has approximately 8,000 categories, about twice as many as in ICD-9. ICD-10 uses an alpha-numeric coding scheme, whereas ICD-9 used a numeric coding scheme only.

Can I compare data classified in ICD-10 to data classified in ICD-9?

Differences in the coding between ICD-9 and ICD-10 make direct comparisons between the two classification systems difficult. Because there have been changes made in the codes that are assigned to causes of death, changes to the rules used to determine the underlying cause of death, and changes in the codes that comprise the leading cause of death categories, direct comparisons of causes of death between post 1999 and pre 1999 data

cannot be made. Any comparison needs to take into account these changes in the classification system.

To help make comparisons, the National Center for Health Statistics (NCHS) has provided preliminary **comparability ratios** (CR) for leading causes of death, which will assist in the interpretation of trends between 1998, when ICD-9 was used and 1999-2002, when ICD-10 was used. In addition to comparing 1998 and 1999-2002 data, the comparability ratios can be applied to data going back to 1994 so longer term trends can still be examined.

What is a comparability ratio?

A comparability ratio (CR) may be thought of as a multiplier to adjust for changes in how data are classified between the two revisions of the ICD. The purpose of a comparability ratio is to examine whether an increase or decrease in the number of death is "real" or simply due to the changes in the classification system for a specific cause of death. It is defined as the number of deaths coded in the new classification system divided by the number of deaths coded using the old classification system. (Please see the Glossary in the Appendix, page 123, for a more detailed explanation).

How do I use comparability ratios?

Comparability ratios are used to make comparisons between data classified under the new system with data classified under the old system. For example, in 1998, there were 2,897 underlying causes of death classified as influenza and pneumonia using ICD-9 (ICD-9 codes: 480-487). However, changes in the classification and coding of underlying causes of deaths using ICD-10 reduce the assignment of influenza and pneumonia as an underlying cause of death. The preliminary comparability ratio for influenza and pneumonia is 0.6982. Applying the preliminary comparability ratio to the 1998 number yields 2,023 deaths that would have been classified as influenza and pneumonia deaths in 1998, had the ICD-10 classification system and coding rules been in place. We can now compare that comparability modified number for 1998 (2,023 deaths) with the actual number of influenza and pneumonia deaths in 1999 (2,176 deaths). In 1999, there was a slight increase in influenza and pneumonia deaths from what we would have expected if the same classification system were used for 1998.

In all trend tables in this report, comparability modified data are presented, as well as comparability unmodified data. Comparability modified data have been adjusted using the CR. When examining whether a change occurred between 1999 (or later) and 1998, comparability modified data should be used.

The comparability ratios used in this report are considered preliminary. The preliminary comparability ratios are based on a national sample of mortality data and may change when the final comparability study is completed by NCHS.

The preliminary comparability ratios used in this report are found on pages 134-135. An example of how to apply the comparability ratios is found on page 122. A more detailed definition of comparability ratio is found in the Glossary on page 124-125.

New Standard Population for Age-adjusted Rates

What is age adjustment?

Age adjustment is a statistical procedure used to make meaningful comparisons of mortality over time and among populations. Age adjustment (also called age standardization) reduces the effect of having many older individuals in one group (where the risk of mortality is naturally higher) compared with another group which has younger persons. Age-adjusted death rates should be used only for comparative purposes, and should not be interpreted as an actual or absolute risk of death.

What is a standard population?

A standard population is a set of arbitrary population weights representing the age distribution of a defined population. The standard population weights are used to adjust the age-specific rate for each of the comparison populations of interest (for example, the same population over time, or different geographies or race/ethnicity populations). The resulting weighted age-specific rates are then summed to produce the total age-adjusted rate for the populations of interest.

Why has the standard population changed?

Beginning with 1999, a new standard population is being used. The 2000 US projected population is the new standard population for age-adjustment of mortality rates. Previously, the 1940 US projected population was used by NHCS as the standard population for mortality statistics. However, other Federal agencies used different standard populations such as the 1970 or 1980 US standard population. The new standard has been adopted by Federal agencies to promote uniformity and comparability of data from many organizations. While there is no strong technical argument to be made for the use of the 2000 US population, there are some practical reasons for the adoption of the new standard. For example, the year 2000 standard population more closely resembles the current age distribution of the total population, and the year 2000 is a date that data users can relate to. (Please refer to the page 123 for a detailed definition of age-adjusted rates, and for an example of how to calculate an age-adjusted rate).

Why are age-adjusted rates so much higher than previously published?

Changing the standard population from 1940 to the year 2000 has affected the magnitude of age-adjusted death rates. This is because the age structures of the 1940 and 2000 US population are different. In the 2000 standard, older age groups are weighted more heavily than in the 1940 standard. It is important to remember that age-adjusted death rates are not an actual measure of risk of death, rather, age-adjusted death rates are a summary measure used to compare mortality trends over time or between different populations whose age structure differs.

Age-adjusted rates can only be compared with other age-adjusted rates that use the same standard population. Therefore, age-adjusted rates published in this report cannot be compared with previously published age-adjusted rates which use the 1940 US standard population.

What effect will the use of the new standard have on comparing populations?

Applying the 2000 standard population will show relative increases in older population groups and chronic diseases compared with younger population groups and causes of death that affect younger populations. For example, the 1998 age-adjusted heart disease death rate changed from 106.2 per 100,000 using the 1940 US standard population to 231.0 per 100,000 using the 2000 US standard population. In contrast, the 1998 age-adjusted homicide rate changed from 2.1 per 100,000 using the 1940 US standard population to 1.9 per 100,000 using the 2000 US standard population.

Similarly, the 1998 age-adjusted death rate for white non-Hispanics (an older population) will change from 413.0 using the 1940 US standard population to 808.5 using the 2000 US standard population. The 1998 age-adjusted death rate for black non-Hispanics (a younger population) will change from 653.3 using the 1940 US standard population to 1,076.6 using the 2000 US standard population. Using the 1940 US standard population, the age-adjusted death rate for black non-Hispanics was 58% higher than the white non-Hispanic age-adjusted death rate. However, using the 2000 US standard population, the age-adjusted death rate for black non-Hispanics is 33% higher than the white non-Hispanic death rate. This change does not represent a narrowing of the gap, but merely a statistical artifact of using a different standard population.

All age-adjusted rates published in this report have been recalculated using the 2000 US standard population. Again, it is important to note that ONLY RATES THAT ARE CALCULATED USING THE SAME STANDARD POPULATION CAN BE COMPARED. Therefore, age-adjusted rates published in this report cannot be compared with previously published age-adjusted rates, which used the 1940 US standard population.

CHANGES TO THE PRESENTATION OF RACE AND ETHNICITY DATA

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

Cape Verdeans

The US Federal Census and the National Center for Health Statistics (NCHS) places persons who are Cape Verdean in the race category "Black". Historically, we have followed this federal definition in order to be consistent with the National Center for Health Statistics.

Beginning with 1999 data, we have separated the concept of “Race” from “Ethnic group” for reporting birth 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 do not currently have accurate Cape Verdean population counts or estimates that we need to calculate rates either statewide or at the substate level. Thus, we can remove Cape Verdeans from the numerator (the count of deaths) but not from the denominator (population data) when we calculate rates. Beginning with our 2000 report, a more detailed table and figure summarizing age and cause specific patterns of deaths among Cape Verdeans were added.

NEW ADDITIONS TO THIS YEAR’S PUBLICATION

In this year’s publication, four new tables, 2 maps, and five new figures are provided to give more detailed information on death data to our readers:

CHANGES/ADDITIONS	REASONS	LOCATION
Age Adjusted Death Rates by Educational Attainment	More detail requested by readers	Table 5
Age Distribution by Race/Ethnicity for Heart Disease Deaths	More detail requested by readers	Figure 11b
Heart Disease Death Rates by Race/Ethnicity and Gender, MA: 1996-2002	More detail requested by readers	Figure 11c
Age Distribution by Race/Ethnicity for Cancer Deaths	More detail requested by readers	Figure 12b
Cancer Rates by Race/Ethnicity and Gender, MA: 1996-2002	More detail requested by readers	Figure 12c
Distribution of Injury Deaths by Intent	More detail requested by readers	Figure 13
Premature Mortality Rates for all cities	More detail requested by readers	Table 23a
Premature Mortality Rates by CHNA	More detail requested by readers	Table 23b
Premature Mortality Rates by County	More detail requested by readers	Table 23c
Map on Premature Mortality Rates by CHNA	Comparison purposes	Map 1
Map on Premature Mortality Rates by EOHHS Regions	Comparison purposes	Map 2

EXECUTIVE SUMMARY

Executive Summary

Data on mortality are based on information on death certificates filed in state vital statistics offices. Physicians and medical examiners assign 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. Unless otherwise noted, all data in this publication are for Massachusetts residents. These data include all events that occur to Massachusetts residents, regardless of in which state they occur.

The data in this publication refer to the underlying cause of death as generated by MICAR. This is a computer software algorithm developed by the National Center for Health Statistics and used by all U.S. jurisdictions so that coding of death data will be comparable throughout the U.S.

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

Throughout this report, both the *number* of deaths and age adjusted rates will be presented. The number of deaths are presented to highlight the overall public health burden of disease in the state. And, then *rates* for these diseases, which allow for comparisons across groups so that we can better target our programs. Rates will be age-adjusted to the 2000 US Standard Population and are per 100,000 population.

Overview

In 2002, 56,881 Massachusetts residents died; including 30,427 females and 26,454 males. The number of resident deaths in 2002 increased slightly by 0.3% (148 deaths) from 2001, which is a 6% increase since 1992.

The age-adjusted death rate in 2002 for Massachusetts was 819.9 deaths per 100,000 persons, which is a 7% decline since 1992 but a slight increase of 0.2% from the previous year (Please note: these rates are age-adjusted to the 2000 U.S. standard population). The 2002 Massachusetts age-adjusted death rate was 3% lower than the preliminary 2002 United States rate, and it has been consistently lower than the U.S. rate throughout the 1990's.

This report shows that the death rate from heart disease, the leading cause of death in Massachusetts, continues to decline, with a 3% decrease this year. In addition, there were continued reductions in chronic lower respiratory disease (2%), unintentional injuries (6%), and motor vehicle-related deaths (2%). There has also been a continued decline in the death rate for HIV/AIDS, which dropped by 8%. HIV mortality has decreased by 84% since 1995, but remains the leading cause of death for Hispanics ages 25-44. On the other hand,

the death rate for influenza and pneumonia significantly increased by 26% between 2001 and 2002. Mortality rates increased for some leading causes of death, including stroke (0.6%), diabetes (0.5%), cancer (1%), Alzheimer's Disease (3%), septicemia (6%), and nephritis (7%).

The largest number of deaths continues to occur among people age 85 and older. In 2002, life expectancy at birth continued to be higher in Massachusetts when compared with the U.S. (78.4 years compared with 77.4 years). In 2002, a woman born in Massachusetts could expect to live to be 81, and a man could expect to live to 76.

In 2002, there were 397 infant deaths (deaths of children less than one year of age) among Massachusetts residents, 10 fewer infant deaths than in 2001, and **the second lowest number of infant deaths in Massachusetts history.** The Massachusetts Infant Mortality Rate (IMR) was also 30% lower than the 2002 United States rate (4.9 deaths per 1,000 live births compared with 7.0 deaths per 1,000 live births).

Starting with this publication, death rates adjusted for educational attainment are presented in this report. Mortality is inversely associated with educational attainment: The age-adjusted death rate for those with a high school education or less was 539.4 per 100,000 U.S. Standard population, which is 3 times higher than the rate of 174.4 for those with 13 years of education or more.

Leading Causes of Death

Heart disease and cancer continued to be the leading causes of death among Massachusetts residents, accounting for 50% of all deaths. In 2002, 14,694 Massachusetts residents died of heart disease, which resulted in an age-adjusted death rate of 208.8 deaths per 100,000 persons. Cancer was the second leading cause of death, with 13,899 deaths, and an age-adjusted death rate of 204.9 per 100,000. While heart disease deaths continued to decline in 2002, cancer death rates showed a slight increase of 1% between 2001 and 2002.

The ten leading causes of death accounted for 77% of all deaths in 2002. While HIV/AIDS is not ranked among the 10 leading causes of death for Massachusetts overall, it remained among the leading causes of death for black non-Hispanics and Hispanics. The top 10 causes of death remained the same as in 2001, and in the same ranking order (1-heart disease, 2-cancer, 3-stroke, see Table 8 for complete listing), except for diabetes and unintentional injuries which switched in 2002.

Injuries were the leading cause of death for Massachusetts residents between the ages of 1 and 44. Heart disease was the leading cause of death for Massachusetts residents age 75 and older, while cancer was the leading cause of death for persons ages 45 to 74 years.

The age-adjusted death rates for many of the leading causes of death continued to be lower in Massachusetts than in the United States. Age-adjusted death rates for heart disease, stroke, unintentional injuries, diabetes, HIV/AIDS, suicide, homicide, chronic lower respiratory disease, motor vehicle-related deaths, and infant mortality were lower for Massachusetts when compared with preliminary figures for the United States. Age-adjusted death rates for cancer, Alzheimer's disease, nephritis, septicemia, and influenza/pneumonia continued to be higher in Massachusetts as compared with the United States.For all deaths

among Massachusetts residents in 2002, 374,080 potential years of life were lost. Potential years of life lost (PYLL) was calculated over the total age range of the Massachusetts population, from birth to death by specific age groups. Heart disease, cancer and stroke ranked high on both the number of deaths and PYLL. Unintentional injuries was the 8th leading cause of death in 2002, but it ranked third based on PYLL. This is because unintentional injuries tend to occur among younger persons, where the potential life lost is far greater than that of older persons. Consequently, causes of death where more young people die rank higher on PYLL than on the number of deaths.

Patterns by Race and Ethnicity

Age-adjusted mortality rates continued to vary markedly by race and Hispanic ethnicity in Massachusetts in 2002. The age-adjusted death rate for Asian non-Hispanics was 487.2 deaths per 100,000 persons, less than half the black non-Hispanic rate of 1,066.6 deaths per 100,000. In 2002, death rates for all racial and ethnic groups increased. Death rates for Hispanics, Asian non-Hispanics, black non-Hispanics, and white non-Hispanics increased by 15%, 8%, 2%, and less than 1%, respectively. The increases in the death rate for Hispanics and Asian non-Hispanics are partly due to the use of the same denominator for the last three years (2000 Estimates). The Hispanic population in Massachusetts was estimated to have increased by 9% in July 2002. The way in which the growth in the Asian and Hispanic populations is relevant to the report is that *death rates* are potentially being overestimated by having denominators that are too small.

Premature mortality rates (PMR) also varied by race and Hispanic ethnicity. Black non-Hispanics had the highest PMR, experiencing over one and a half times the rate of premature deaths as white non-Hispanics (572.2 vs. 336.0 deaths per 100,000). Hispanics had the next highest PMR (359.9 deaths per 100,000) followed by white non-Hispanics. Asian non-Hispanics had the lowest PMR in the state, 191.1 deaths per 100,000.

The leading causes of death varied by race and ethnicity in 2002 as in previous years. Cancer was the leading cause of death among Asian non-Hispanics and black non-Hispanics in 2002, followed by heart disease and stroke. Cancer was also the leading cause of death for Hispanics, followed by heart disease, unintentional injuries, and diabetes. HIV/AIDS was the 6th leading cause of death for Hispanics and the 8th leading cause of death for black non-Hispanics. It was the 25th leading cause of death for white non-Hispanics and the 23rd leading cause for the state overall.

Continuing research and prevention efforts are needed to reach high risk and underserved populations and to understand the reasons for the differences in mortality rates among racial and ethnic groups in Massachusetts.

Heart Disease

Heart disease accounted for 26% of all deaths in Massachusetts in 2002. While more women, in terms of absolute numbers die from heart disease each year, men have a 61% higher risk of dying from heart disease than women, as measured by the rate of heart disease. One reason that the number of heart disease deaths was higher for women is that there are 3 times as many women as men in the older age group.

Heart disease deaths occur predominantly among the older population, and this held true in 2002 with 86% of all heart disease deaths among people 65 years and older. This varied by race and ethnicity in this age group: 87% of heart disease deaths among white non-Hispanics, 76% of heart disease deaths among Asian non-Hispanics, 66% of heart disease deaths among black non-Hispanics, and 56% of deaths among Hispanics. Hispanics had a lower percentage of chronic ischaemic heart disease and heart failure deaths.

Cancer

Cancer accounted for 24% of all deaths in Massachusetts in 2002. The overall leading cause of cancer death was lung cancer (27%), followed by colorectal cancer (11%). Lung cancer was also the leading cause of cancer death for both men and women. Among women, the lung cancer mortality rate was 69% higher than the breast cancer mortality rate. The second leading cause of cancer death was breast cancer for females and prostate cancer for males.

Brain cancer was the leading cause of cancer death for all persons under the age of 15, while leukemia was the leading cause of cancer death for persons between the age of 15 and 24 years. Lung cancer was the leading cause of cancer death for persons age 45 and older.

Cancer is also largely a disease of older adults. In 2002, approximately 3 out of 4 cancer deaths in Massachusetts occurred in persons age 65 and older. This age group accounted for 76% of all cancer deaths among white non-Hispanics, 59% of cancer deaths among black non-Hispanics, 58% of cancer deaths among Asian non-Hispanics, and 50% of cancer deaths among Hispanics.

HIV/AIDS

There were 229 Massachusetts residents who died from HIV/AIDS in 2002, a decrease of 8% from 2001. The age-adjusted death rate from HIV/AIDS also decreased by 8% from 2001. The proportion of all HIV/AIDS deaths for persons age 45 and older has more than doubled since 1995 (55% vs. 20%).

Hispanics died at a rate almost eight times higher than of white non-Hispanics (15.4 vs. 1.9 deaths per 100,000). For black non-Hispanics, the rate was almost 12 times higher than white non-Hispanics (23.1 vs. 1.9 deaths per 100,000). The Massachusetts HIV/AIDS death rate was 29% lower than the 2002 United States rate (3.5 deaths per 100,000 compared with 4.9 deaths per 100,000).

Injuries

In 2002, 5% of all deaths to Massachusetts residents were the result of injuries (2,637 deaths). Injuries were the leading cause of death among persons ages 1-44, acoounting for 40% of deaths. Poisonings, which include drug overdoses, were the leading cause of injury death. Seventy-four percent of poisoning deaths were due to narcotics and other hallucinogens.

Over half of all injury-related deaths were due to unintentional injuries, 22% were injuries of undetermined intent and 23% were intentional injuries (suicide and homicide). Among

unintentional injuries, the leading causes of death included motor vehicle-related deaths (39%), falls (16%), and hanging, strangulation or suffocation (11%). The vast majority of intentional injuries were suicides (70%). Almost 95% of injuries of undetermined intent involved poisonings, which include drug overdoses. Eighty-five percent of these deaths involved narcotics and other hallucinogens.

Approximately 13% of all injury-related deaths occurred among persons ages 15 to 24 years. However, all injuries accounted for close to *three-fourths* of the deaths in this age group. Injury-related death rates were highest among persons ages 85 years and older (269.1 deaths per 100,000 population compared with 102.0 deaths per 100,000 among persons ages 75 to 84 who had the second highest injury-related death rate). For all types of injuries, the age-adjusted death rates for males were higher than that of females regardless of race and ethnicity. Males were almost 3 times more likely to die from an injury than females, and 6 times more likely to die from a firearm injury than females in Massachusetts.

In 2002, there were 553 motor vehicle-related deaths, a decrease of 3% from 2001. Although the greatest *number* of motor vehicle-related deaths occurred to men ages 25 to 44 years (179 deaths), males ages 85 years and older had the highest *rate* for motor vehicle-related deaths (32.3 deaths/100,000) followed by males ages 75-84 (24.9 deaths/100,000).

The homicide death rate increased by 21% while the suicide death rate remained unchanged from 2001. This increase in homicide was observed among firearm deaths (79 deaths in 2001 compared with 93 deaths in 2002). Out of the 185 homicides, half were a result of firearms while a quarter were the result of stabbings.

Hispanic males had the highest death rate for poisonings (including drug overdoses) among all racial and Hispanic ethnicity groups (20.9 deaths per 100,000). Black non-Hispanic males were 7.5 times more likely to be killed by firearms than their white counterparts in 2002 (30.7 vs. 4.1 deaths per 100,000).

In 2002, a total of 202 persons died from firearm injuries in Massachusetts. This number was 5% higher than the 193 deaths in 2001. Firearm suicides and homicides accounted for 49% and 46%, respectively, of all firearm deaths in 2002. The rate for all firearm deaths in Massachusetts was about one third the rate for the United States (3.2 vs.10.3 deaths per 100,000).

Causes of Infant Death

There were 397 infant deaths (deaths of infants less than one year of age) and 80,624 live births among Massachusetts residents for an infant mortality rate (IMR) of 4.9 deaths per 1,000 live births in the year 2002. While the infant mortality rate increased nationwide, Massachusetts had its second lowest IMR in recorded history. The 2002 infant mortality rate decreased 2% from the 2001 rate of 5.0 deaths per 1,000 live births and it has decreased 25% in the last decade. Infants born to black non-Hispanic mothers continued to have the highest IMR (11.6 per 1,000 live births), although this was slightly lower than the 2001 rate (12.1 deaths per 1,000 live births). The 2002 IMR rates for infants of Hispanic and Asian mothers were slightly lower than in 2001, while rates remained the same for infants born to white non-Hispanic mothers.

The infant mortality rate continued to be lower for Massachusetts when compared with figures for the United States. In 2002, the infant mortality rate for Massachusetts was 30%

lower than the figure for the United States (4.9 vs. 7.0, deaths per 1,000 live births). The Massachusetts IMR was lower than the U.S. figure for both white and black non-Hispanics but higher than the nationwide figure for Hispanic infants. This is because in Massachusetts, a greater proportion of Hispanic births are to Puerto Rican mothers, and Puerto Rican infants are known to have a higher mortality rate than infants of other Hispanic groups.

The leading causes of infant death were conditions arising in the perinatal period (63% of all infant deaths) followed by congenital malformations (16% of all infant deaths). Deaths occurring in the neonatal period (less than 28 days after birth) accounted for 75% 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 (28-365 days).

Healthy People 2010

In 2002, Massachusetts either achieved or moved in the direction of many of the Healthy People 2010 mortality objectives. Out of 40 objectives presented, Massachusetts' 2002 death data indicated that the state has already met 17 of the 2010 target goals.

For nine objectives, the 2002 Massachusetts indicators were within 25% of the target goals. These objectives included: lung cancer deaths, female breast cancer deaths, oropharyngeal cancer deaths, prostate cancer deaths, malignant melanoma deaths, stroke deaths, drownings, infant mortality rate, and adolescent mortality death rates.

However, Massachusetts still needs improvement in the following areas: overall cancer death rates, colorectal cancer deaths, cirrhosis deaths, HIV deaths, unintentional injuries, poisoning deaths, hanging/suffocation/strangulation deaths, fall deaths, fire deaths, suicide deaths, drug-induced deaths, neonatal deaths, and asthma death rates for person ages 15 to 34 and 35 to 64 years. Although these rates were greater than 25% away from the target goals, most were still lower than the rates for the United States overall.

Deaths in the 30 Largest Massachusetts Cities and Towns

In 2002, among the 30 largest communities in Massachusetts, the age-adjusted premature mortality rates (PMR) were significantly higher in Springfield (520.7), Brockton (486.7), New Bedford (472.3), Worcester (468.0), Lynn (454.4), Lowell (449.3), Fall River (448.4), Lawrence (447.4), Boston (430.1), Attleboro (420.9), and Malden (418.3) compared with the state overall (345.2). Age-adjusted death rates were significantly lower in Newton (211.2) and Brookline (193.5).

Table 23a presents PMR for all cities/towns in the Commonwealth and Tables 23b and 23c present PMR by CHNA and by County, respectively. Table 25 presents selected Causes of Death for all cities/towns and Tables 25b and 25c present selected Causes of Death by CHNA and by County, respectively.

TRENDS

Trends[1]

In 2002, 56,881 Massachusetts residents died (Table 1). The *number* of resident deaths in 2002 increased slightly by 0.3% (148 deaths) from 2001, and constituted a 6% increase since 1992. The age-adjusted death *rate* in 2002 was 819.9 deaths per 100,000 persons, a 7% decline since 1992, but a slight increase of 0.2% from the previous year. (Please note: rates are age-adjusted to the 2000 U.S. standard population). In 2002, there were 397 infant deaths (deaths of children less than one year of age) among Massachusetts residents, 10 fewer infant deaths than in 2001, and **the second lowest number of infant deaths in Massachusetts' history.**

Age-adjusted death rates varied greatly by race/ethnicity in Massachusetts in 2002, as they have throughout the last decade. Asian non-Hispanics continued to have the lowest age-adjusted death rate, followed by Hispanics and white non-Hispanics. In 2002, the age-adjusted death rate for Asian non-Hispanics was 487.2 deaths per 100,000 persons, less than half the black non-Hispanic rate of 1,066.6 deaths per 100,000. In 2002, death rates for all racial and ethnic groups increased. Death rates for Hispanics, Asian non-Hispanics, black non-Hispanics, and white non-Hispanics increased by 15%, 8%, 2%, and less than 1%, respectively from the previous year. The 15% increase in the death rate for Hispanics is partly due to the use of the same denominator for the last 3 years (2000 Estimates). The actual number of deaths to persons of Hispanic ethnicity increased by 10% from 2001 to 2002[2].

The age-adjusted mortality rate for women continued to be substantially lower than for men: 688.5 compared with 1,012.7 deaths per 100,000 population. However, men have experienced a larger decline in their age-adjusted rate since 1992 (10%) than women (3%).

The 2002 Massachusetts age-adjusted death rate was 3% lower than the preliminary 2002 United States rate (818.2 vs. 855.0 deaths per 100,000), and has been consistently lower than the U.S. rate throughout the 1990s (Table 2a). Massachusetts age-adjusted death rates have been consistently lower than the U.S. rates for stroke and unintentional injuries, and higher than the U.S. rates for cancer and pneumonia/influenza.

There are two common concepts related to life expectancy: "Life expectancy at birth" is based upon the observed ages of death for the entire population, and it can be thought of as the "typical" age of death; "future life expectancy" is the number of years one can expect to live, given that one has lived to a certain age. "Future life expectancy" increases as one gets older; for example, someone who has lived to be age 65 can expect to live 18.4 years because resilience has been proven by surviving to age 65, and so they are likely to live even longer.

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[1] Beginning in 1999, mortality data are coded according to the International Classification of Diseases- Tenth revision (ICD-10). Due to changes in the classification of disease beginning in data year 1999, trends in the cause of death between data after 1999 and previous years must be interpreted with caution.

[2] According to U.S. Census Estimates (Table ST-EST2002-ASRO-03-State Characteristic Estimates; Population Division, U.S. Census Bureau; September 18, 2003) the overall population for Massachusetts grew by about 1.2% between 2000 Census and July 1, 2002. The Hispanic population grew by an estimated 6.5%. This means that it is likely that the Hispanic death rate in this report **overestimates** the age-adjusted death rate for Hispanics. The overestimation of death rates is also like for all race and Hispanic ethnicity groups. Therefore, **caution** must be used when interpreting the age-adjusted death rates.

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

In 2002, life expectancy at birth continues to be higher in Massachusetts than in the United States (78.4 years compared with 77.4). In 2002, a woman born in Massachusetts could expect to live, on average, until the age of 80.8, and a man until the age of 75.7. This difference in life expectancy is because men tend to die younger from more external causes (such as unintentional injuries, homicide and suicide) than women. At age 65, men could expect to live an average of 17 more years, while women could expect to live almost 20 more years (Table 2b).

Life expectancy varied by race as well (Figure 1). At birth, white non-Hispanic women could expect to live 81.0 years; black non-Hispanic women, 76.1 years; Hispanic women, 82.8 years; white non-Hispanic men, 76.0 years; black non-Hispanic men 69.9 years; and Hispanic men, 75.9 years.

In 2002, life expectancy at birth remained the same as in 2001, 78.4 years. Figure 2 shows a continuation of the trend toward longer life expectancy for Massachusetts residents in the last decade.

The age composition of the Massachusetts population reflects changes in life expectancy and natural historic trends. From 1900 to 2000, the proportion of Massachusetts residents age 45 and over increased from 21% to 36%; the increase was greatest in the oldest age group (those age 85 and over) (Figure 3). While persons age 85 and over accounted for only 2% of the population in Massachusetts in 2000, naturally they continue to have the highest number of deaths in the state in the year 2002.

Massachusetts has a rich history of collecting and reporting vital statistics, as demonstrated by Figure 4 which presents historical mortality trend data for the Commonwealth from 1842 to the present. In 1842, infectious diseases were the leading causes of death in Massachusetts, accounting for 47% of all deaths; 4% were due to intentional and unintentional injuries, 2% were attributed to heart disease, and 1% of all deaths were due to cancer. In 2002, in almost reversal of rank order, 26% of the deaths in Massachusetts were due to heart disease, 24% to cancer, 3% to infectious diseases, and 5% were due to intentional and unintentional injuries.

Table 1. Trends in Mortality Characteristics Massachusetts: 1992 - 2002

Year		1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Resident deaths[1]												
	Number	53,804	55,557	54,914	55,296	55,187	54,634	55,204	55,763	56,591	56,733	56,881
	Crude rate[2,3,4]	891.2	916.2	899.2	900.2	892.4	877.3	877.5	881.9	891.3	893.6	895.9
	Age-adjusted rate[5]	877.4	885.7	868.2	866.2	853.0	834.8	808.8	808.8	816.5	818.2	819.9
Race/ethnicity of decedent [6,7]												
White, non-Hispanic	Number	50,815	52,371	51,600	51,785	51,917	51,398	51,829	52,282	52,959	52,792	52,839
	Percent[8]	94.4	94.3	94.0	93.7	94.1	94.1	93.9	93.8	93.6	93.1	92.9
	Age-adjusted rate	875.5	882.8	864.2	860.1	852.2	835.1	808.5	808.7	816.2	813.5	813.7
Black, non-Hispanic	Number	1,957	1,969	2,079	2,136	2,025	2,033	1,969	2,018	2,109	2,226	2,275
	Percent	3.6	3.5	3.8	3.9	3.7	3.7	3.6	3.6	3.7	3.9	4.0
	Age-adjusted rate	1,139.2	1,115.3	1,176.7	1,193.0	1,141.1	1,142.1	1,076.6	995.2	992.4	1,049.6	1,066.6
Asian, non-Hispanic	Number	284	360	335	403	398	403	413	449	467	510	531
	Percent	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.9	0.9
	Age-adjusted rate	463.8	613.4	521.2	565.2	534.5	512.0	500.7	422.4	418.5	452.4	487.2
Hispanic	Number	712	813	865	936	803	749	924	975	1,014	1,059	1,166
	Percent	1.3	1.5	1.6	1.7	1.5	1.4	1.7	1.7	1.8	1.9	2.0
	Age-adjusted rate	440.5	488.5	482.7	504.7	430.0	391.0	463.8	507.8	596.0[9]	616.2	708.4
Gender of decedent [7]												
Female	Number	27,770	29,109	28,733	29,262	29,152	29,261	29,568	29,786	30,465	30,780	30,427
	Age-adjusted rate	711.1	724.5	712.6	717.6	702.7	699.0	678.0	676.9	691.6	697.8	688.5
Male	Number	26,034	26,448	26,181	26,034	26,035	25,373	25,635	25,977	26,126	25,953	26,454
	Age-adjusted rate	1,130.2	1,123.5	1,096.9	1,080.6	1,074.0	1,035.0	1,000.8	1,001.6	996.7	988.5	1,012.7
Age of decedent [7]												
<1 year	Number	569	523	499	419	403	425	414	418	377	407	397
1-14 years	Number	225	239	192	204	197	174	128	165	181	169	167
15-24 years	Number	470	464	473	452	434	422	413	407	403	444	460
25-44 years	Number	3,062	3,055	3,210	3,196	2,720	2,348	2,373	2,397	2,375	2,571	2,490
45-64 years	Number	7973	7,920	7,766	7,611	7,477	7,416	7,501	7,431	7,841	8,004	8,344
65-74 years	Number	11,515	11,509	11,394	10,858	10,711	10,286	10,216	9,782	9,746	9,323	8,922
75-84 years	Number	15,912	16,346	16,092	16,497	16,839	16,884	16,946	17,397	17,554	17,416	17,262
85+ years	Number	14,076	15,494	15,283	16,054	16,400	16,677	17,213	17,765	18,113	18,395	18,838

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 1991-1995 (released in September 1999), 1996-1997 (released in November 1999), and 1998 (released in September 2000). Residents deaths rates for 1999 have been recalculated using 1999 population estimates. 2000 –2002 rates are calculated using 2000 population estimates. 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 refer to the Technical Notes in the Appendix for a more detailed explanation. 7. Column sum may not equal total because the race, gender or age of some decedents was unknown. 8. Percent of all resident deaths in that year.

Table 2a. Five Leading Causes of Death[1] Comparability Unmodified and Comparability Modified Age-Adjusted Rates Massachusetts and United States: 1992-2002

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]
1992	Rate	277.4	NA[6]	310.5	NA[6]	234.2	NA[6]	212.3	NA[6]	53.7	NA[6]	62.1	NA[6]
	% of Total	31.7		33.5		26.3		23.7		6.2		6.6	
1993	Rate	278.3	NA[6]	314.6	NA[6]	228.1	NA[6]	212.5	NA[6]	52.8	NA[6]	63.2	NA[6]
	% of Total	31.7		33.3		25.2		23.1		6.1		6.6	
1994	Rate	265.3	261.5	304.5	253.2	224.7	226.3	211.0	212.4	51.7	54.7	63.3	60.1
	% of Total	30.8		32.7		25.3		23.2		6.1		6.7	
1995	Rate	259.4	255.7	301.3	250.1	225.6	227.2	209.6	211.0	52.9	55.9	63.9	61.3
	% of Total	30.2		32.4		25.4		23.1		6.3		6.8	
1996	Rate	257.1	253.4	293.4	243.8	221.2	222.7	206.7	208.1	50.5	53.4	63.2	61.0
	% of Total	30.4		32.2		25.2		23.1		6.1		6.9	
1997	Rate	249.0	245.5	285.7	237.2	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	269.7	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[7]		265.9		206.6[7]		201.6		50.2[7]		61.4	
	% of Total	27.9		30.3		24.8		23.0		6.4		7.0	
2000	Rate	218.0[7]		258.2		206.9[7]		200.9		51.2[7]		60.9	
	% of Total	27.1		29.5		24.8		23.0		6.4		6.9	
2001	Rate	215.2[7]		247.7		202.8[7]		195.8		49.7[7]		57.9	
	% of Total	26.7		28.9		24.2		22.9		6.2		6.8	
2002	Rate	209.0[7]		240.4[8]		205.0[7]		194.0[8]		50.0[7]		56.3[8]	
	% of Total	26.0		28.4		24.0		22.8		6.0		6.7	

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. 1999-2001 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. US data for years 1990-1998 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 2002, please use the comparability modified rates for years 1994-1998. 8. US data for 2001 obtained from NCHS. Deaths: Preliminary Data for 2002. National Vital Statistics Report, Vol. 52, No. 13, February 11, 2004.

Table 2a (continued). Five Leading Causes of Death[1] Comparability Unmodified and Comparability Modified Age-Adjusted Rates, Massachusetts and United States: 1992-2002

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]		
1992	Rate	38.5	NA[6]	32.7	NA[6]	20.6	NA[6]	34.6	NA[6]	877.4	910.7
	% of Total	4.5		3.4		2.3		4.0			
1993	Rate	42.9	NA[6]	34.8	NA[6]	21.3	NA[6]	35.7	NA[6]	885.7	931.3
	% of Total	5.0		3.6		2.4		4.0			
1994	Rate	40.4	28.2	33.4	23.3	20.7	20.6	35.7	35.1	868.2	920.0
	% of Total	4.8		3.5		2.4		4.0			
1995	Rate	41.2	28.7	33.5	23.4	18.8	18.8	36.0	35.4	866.2	918.4
	% of Total	4.9		3.6		2.1		4.0			
1996	Rate	41.5	29.0	32.9	23.0	19.5	19.5	36.2	35.6	853.0	902.1
	% of Total	5.1		3.6		2.3		4.1			
1997	Rate	39.1	27.3	33.3	23.3	19.7	19.7	36.0	35.3	834.8	887.0
	% of Total	4.9		3.7		2.3		4.1			
1998	Rate	40.2	28.1	34.6	24.2	19.9	19.8	35.0	36.1	808.8	875.4
	% of Total	5.2		3.9		2.3		4.2			
1999	Rate	30.3[7]	23.4	19.3[7]	35.9	808.8	881.9				
	% of Total	3.9	2.7	2.3	4.1						
2000	Rate	29.3[7]		23.7		20.3[7]		35.6		816.5	872.0
	% of Total	3.7		2.8		2.4		3.9			
2001	Rate	24.6[7]		21.8		22.3[7]		34.3		818.2	855.0
	% of Total	3.1		2.6		2.6		4.0			
2002	Rate	29.0[7]		22.7[8]		21.0[7]		35.3[8]		819.9	846.8
	% of Total	4.0		2.7		2.0		4.2			

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. 1999-2002 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. US data for years 1990-1998 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 2002, please use the comparability modified rate for years 1994-1998. 8. US data for 2001 obtained from NCHS. Deaths: Preliminary Data for 2002. National Vital Statistics Report, Vol. 52, No. 13, February 11, 2004.

Figure 1

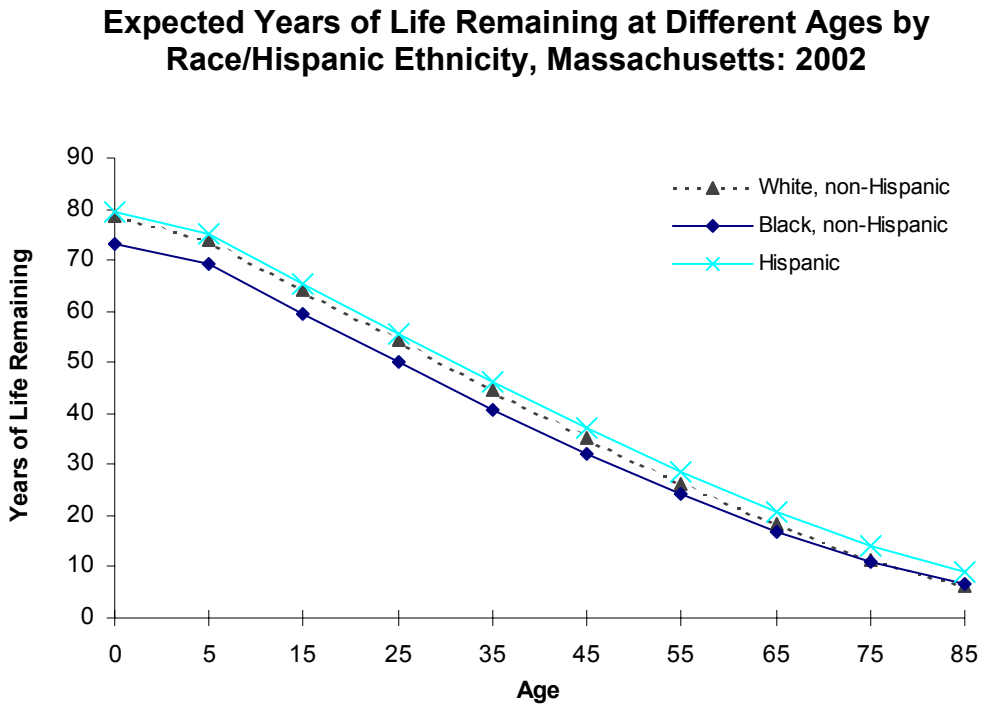


Table 2b. Years of Life Remaining[1], Massachusetts: 2002

At Age:	All	Females	White, non-Hispanic Females	Black, non-Hispanic Females	Hispanic Females	Males	White, non-Hispanic Males	Black, non-Hispanic Males	Hispanic Males
Birth	78.4	80.8	81.0	76.1	82.8	75.7	76.0	69.9	75.9
1 year old	77.8	80.1	80.3	76.1	82.3	75.1	75.4	69.9	75.5
5 years old	73.9	76.2	76.3	72.3	78.4	71.2	71.4	66.1	71.7
15 years old	63.9	66.3	66.4	62.5	68.5	61.2	61.4	56.2	61.8
25 years old	54.2	56.5	56.5	52.7	58.7	51.7	51.9	47.3	52.3
35 years old	44.6	46.7	46.8	43.1	48.9	42.2	42.3	38.2	43.1
45 years old	35.3	37.2	37.2	33.9	39.6	33.0	33.1	29.5	34.4
55 years old	26.4	28.1	28.1	25.7	30.5	24.4	24.4	22.0	26.1
65 years old	18.4	19.8	19.8	18.1	22.5	16.6	16.6	15.1	18.9
75 years old	11.5	12.3	12.3	11.7	14.9	10.1	10.0	9.6	12.7
85 years old	6.2	6.6	6.6	6.8	9.1	5.3	5.2	6.3	8.9

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.) DPH 2000 Preliminary Population Estimates (released January 2002) are used as the denominator.

Figure 2

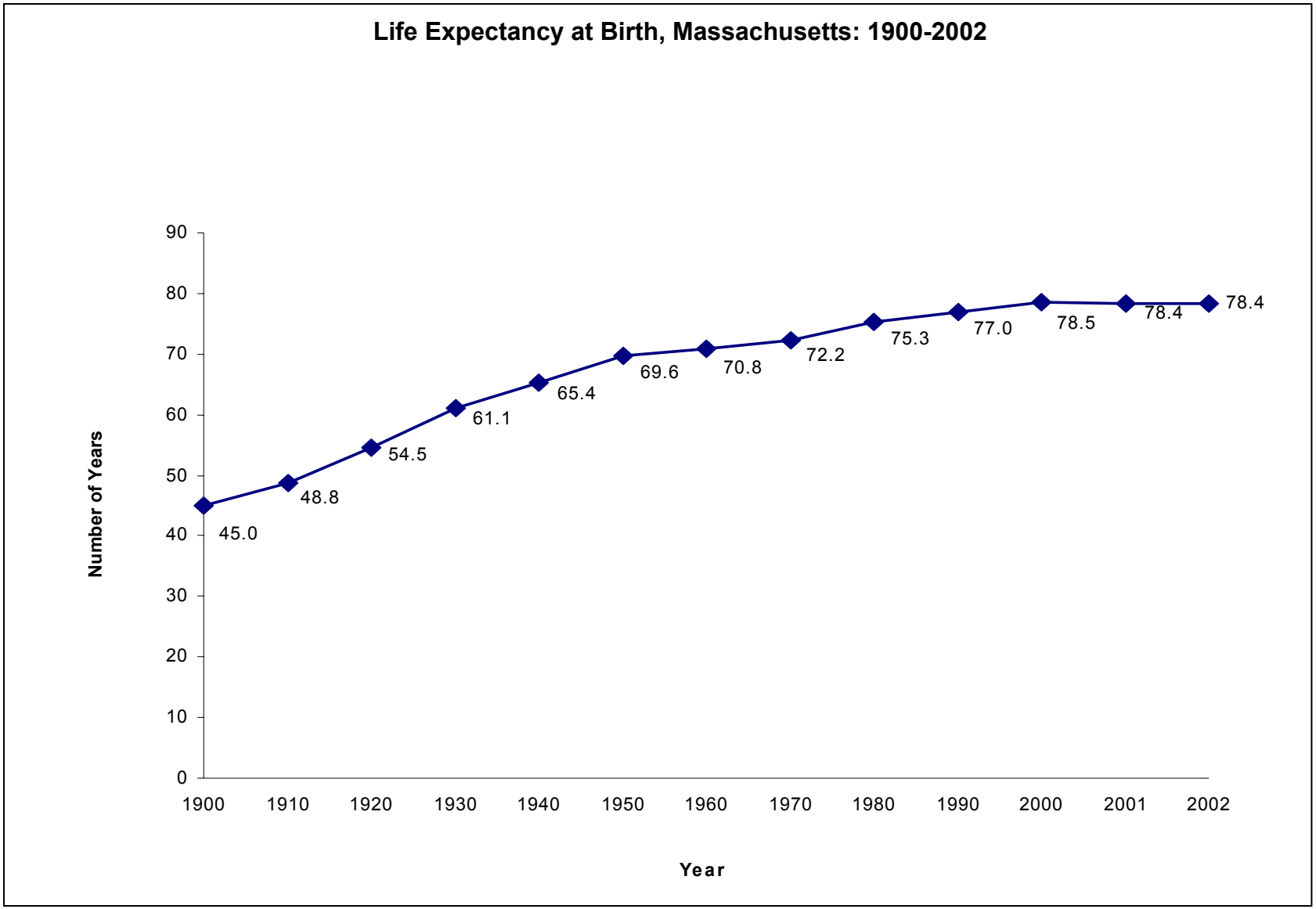
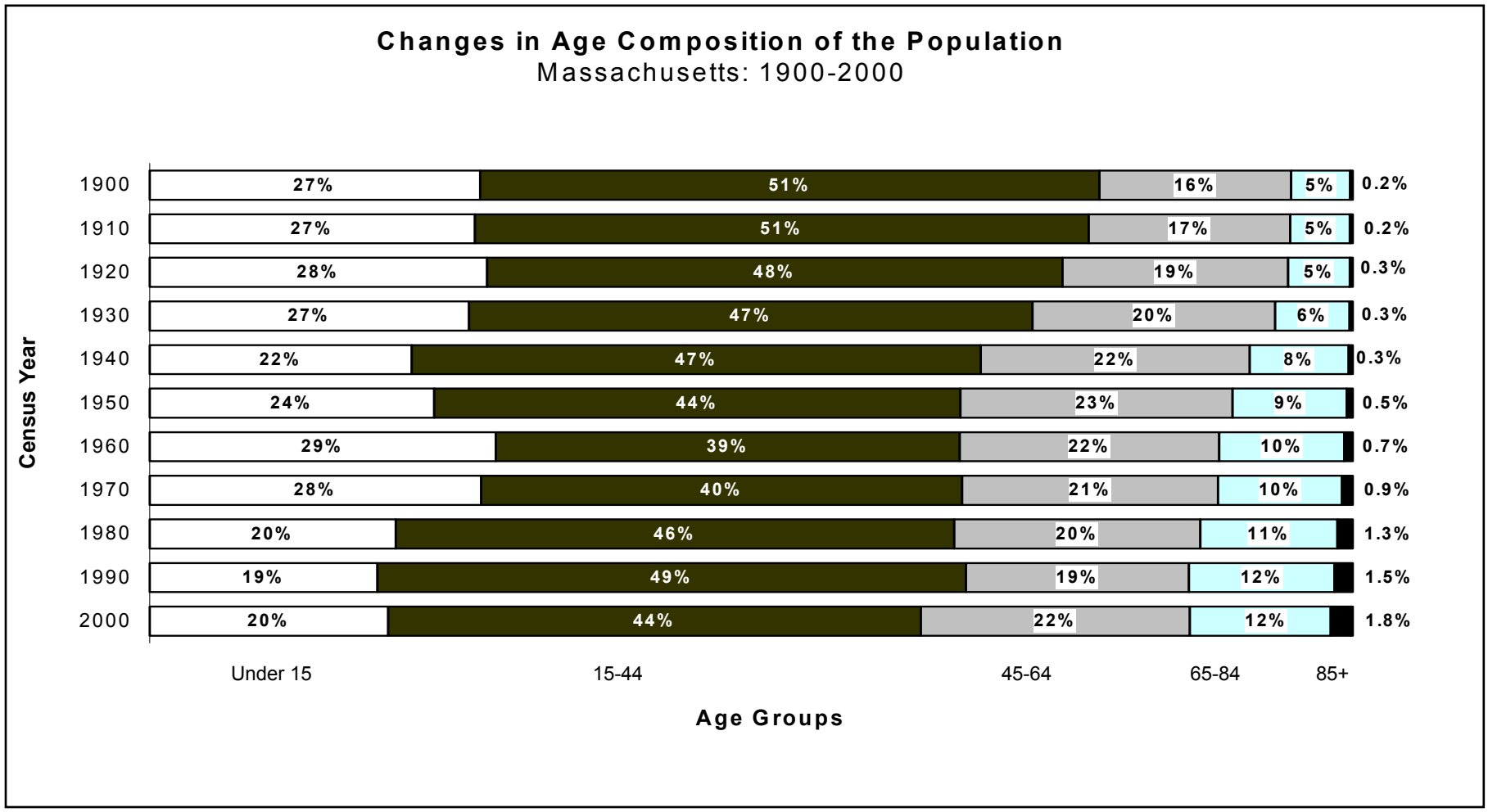

Life Expectancy at Birth, Massachusetts: 1900-2002
Number of Years
Year
0
10
20
30
40
50
60
70
80
90
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2001
2002
45.0
48.8
54.5
61.1
65.4
69.6
70.8
72.2
75.3
77.0
78.5
78.4
78.4

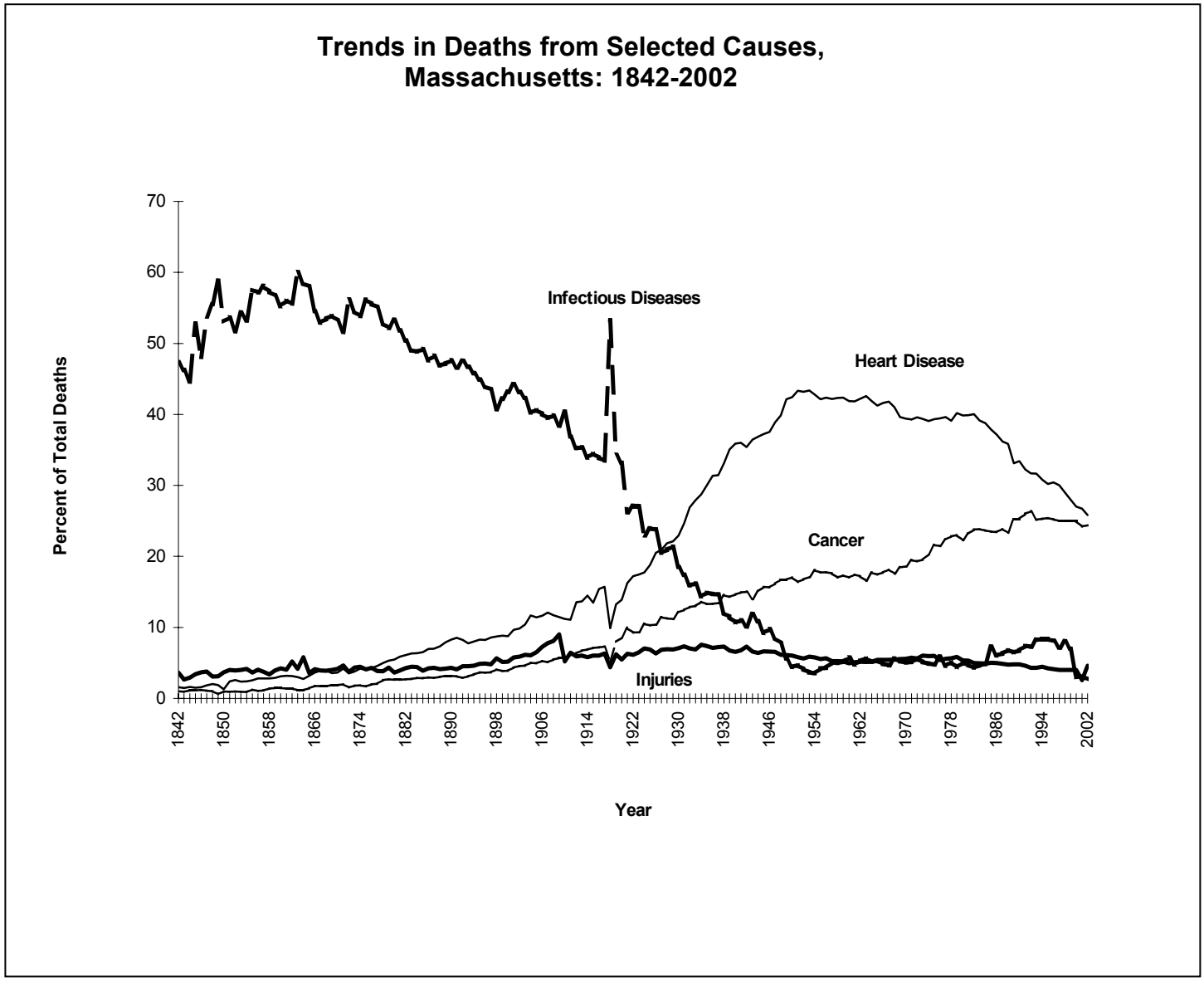
Figure 3



Source: US Census Bureau 1900-2000.

Note: Percentages based on counts with known age.

Figure 4


Trends in Deaths from Selected Causes,
Massachusetts: 1842-2002
Percent of Total Deaths
70
60
50
40
30
20
10
0
Infectious Diseases
Heart Disease
Cancer
Injuries
1842
1850
1858
1866
1874
1882
1890
1898
1906
1914
1922
1930
1938
1946
1954
1962
1970
1978
1986
1994
2002
Year

PLACE OF OCCURRENCE, MEDICAL EXAMINER CERTIFIED DEATHS, MEASURES OF MORTALITY, AND EDUCATIONAL ATTAINMENT

Place of Occurrence, Medical Examiner Certified Deaths, Measures of Mortality, and Educational Attainment

Place of Occurrence

Of the 56,881 deaths in 2002, 25,403 (45%) occurred in hospitals –38% were inpatients at hospitals and 7% died in emergency departments, 17,232 (30%) died in nursing homes, 12,296 (22%) died at home, and 927 (2%) were pronounced dead on arrival at emergency departments. These percentages have been consistent in the last 3 years (Table 3).

Medical Examiner Certified Deaths

There are 19 instances in which a death is referred to the Medical Examiner's Office (not all occur under suspicious circumstances or as a result of violence). The total number of deaths certified by medical examiners decreased from 4,251 in 2001 to 4,081 in 2002. Of these deaths certified by medical examiners, 47% were reported as a result of natural causes (non-injury related). Most homicide and suicide deaths were certified by medical examiners in 2002 compared with only 7% of heart disease deaths and less than 1% of cancer deaths (Figure 5).

Measures of Mortality

Premature Mortality

A good summary measure of the impact of death on different groups in the population is premature mortality. Premature mortality rate (PMR) measures the rate of premature death, that is, deaths that occur before the age of 75 years. It is given as a rate per 100,000 and is age-adjusted to the 2000 US standard population. PMR is considered an excellent, single measure that reflects the health status of a population[4,5].

The rationale is that the vast majority of deaths to persons ages 75 and older are due to chronic conditions associated with aging. By examining deaths to persons younger than 75, it is possible to identify many issues that are more 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 to a broader community perspective. PMR may be related to socioeconomic status and its correlates: potential issues such as environmental conditions, housing, education, stress, higher rates of smoking, substance abuse, violence, obesity, and lack of access to care.

PMR varied markedly by race and Hispanic ethnicity in Massachusetts in 2002. Black non-Hispanics had the highest PMR, experiencing over one and a half the rate of premature deaths as white non-Hispanics (572.2 vs. 336.0 deaths per 100,000). Hispanics had the next highest PMR (359.9 deaths per 100,000) followed by white non-Hispanics while Asian non-Hispanics had the lowest PMR in the state, 191.1 deaths per 100,000 (Figure 6). Table 23a presents PMR for all cities/towns in the Commonwealth.

[5] http://www.umanitoba.ca/centres/mchp/reports/reports_02/rfn.htm.

Potential years of life lost

The total potential years of life lost (PYLL), a measure of the overall impact of mortality in the population, is calculated by multiplying the total number of deaths for each age group by the difference between the life expectancy and the midpoint of the age group, then adding the figures for each specific cause of death for all age groups[6]. This is the quantitative measure of premature mortality This method gives more weight to causes of death occurring at younger ages than to those occurring at later ages. For the purpose of calculating PYLL, this year we have adjusted the maximum age to be 75 years so that we do not include deaths beyond average life expectancy. This year's data are not comparable with previous publications, which used a different maximum age cutoff. See Glossary for further explanation.

For all deaths among Massachusetts residents in 2002, 374,080 potential years of life were lost (Table 4). Heart disease and cancer ranked high on both the number of deaths and the PYLL. Yet, other causes had different rankings based upon number and PYLL. For instance, unintentional injuries was the 8th leading cause of death in 2002, but it ranked third based on PYLL. This is because unintentional injuries tend to occur among younger persons, where the potential life lost if far greater than that for older persons. Consequently, causes of death from which more young people die rank higher on PYLL than the number of deaths. In 2002, each death due to perinatal conditions, homicide, unintentional injuries, suicide, and HIV/AIDS continues to have, on average, the highest number of PYLL (Table 4).

There were gender differences between the PYLL measure of mortality and the number of deaths. For instance, when examining heart disease deaths, we can see that there were 954 more deaths for females than for males; however, males had over 23,000 more potential years of life lost than do females (Figure 7). This means that, on average, males died from heart disease at a younger age than did females.

Figure 7 illustrates that cancer was the leading cause of PYLL for men and women, with lung cancer responsible for 25,117 PYLL. Heart disease was the second leading cause for both genders. Perinatal Conditions was the third leading cause of PYLL for females, while unintentional injuries was for males. Males experienced substantially more PYLL due to injuries than females did; whereas females had 45 more years of life lost due to Alzheimer's Disease than did males.

Educational Attainment

Mortality is inversely associated with educational attainment; 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 539.4 per 100,000 US Standard population--3 times higher than the rate of 174.4 for those with 13 years of education or more (Table 5). Rates are shown only for ages 25-64 years because persons under age 25 may not have completed their education. Rates are not shown for the older ages because of unreliable recording of educational attainment on the death certificate.

[6] CDC. Premature Mortality in the United States: Public Health Issues in the Use of Years of Potential Life Lost. MMWR 1986; 35:1s-11s.

Table 3. Distribution of deaths by place of occurrence, Massachusetts: 2000-2002

Type of Place where death occurred	2000		2001		2002	
	Number	Percent	Number	Percent	Number	Percent
Hospital (inpatient/outpatient)	25,246	45%	25,393	45%	25,403	45%
Dead on Arrival	1,001	2%	923	2%	927	2%
Nursing Home	17,355	31%	17,265	30%	17,232	30%
At Home	11,744	21%	11,952	21%	12,296	22%
Other	892	2%	1,085	2%	956	2%
Unknown	353	1%	115	0.2%	67	0.1%

Figure 5

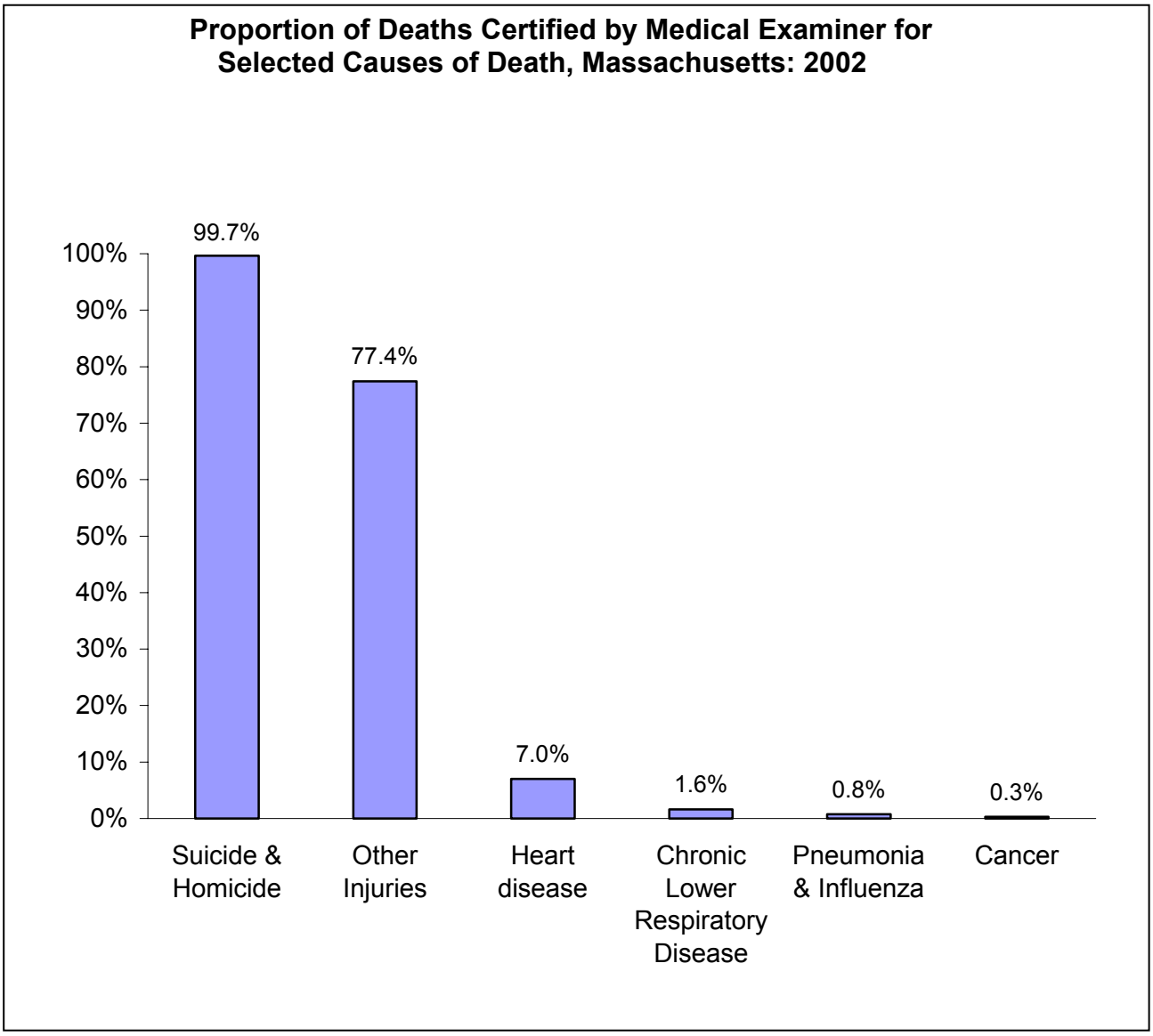
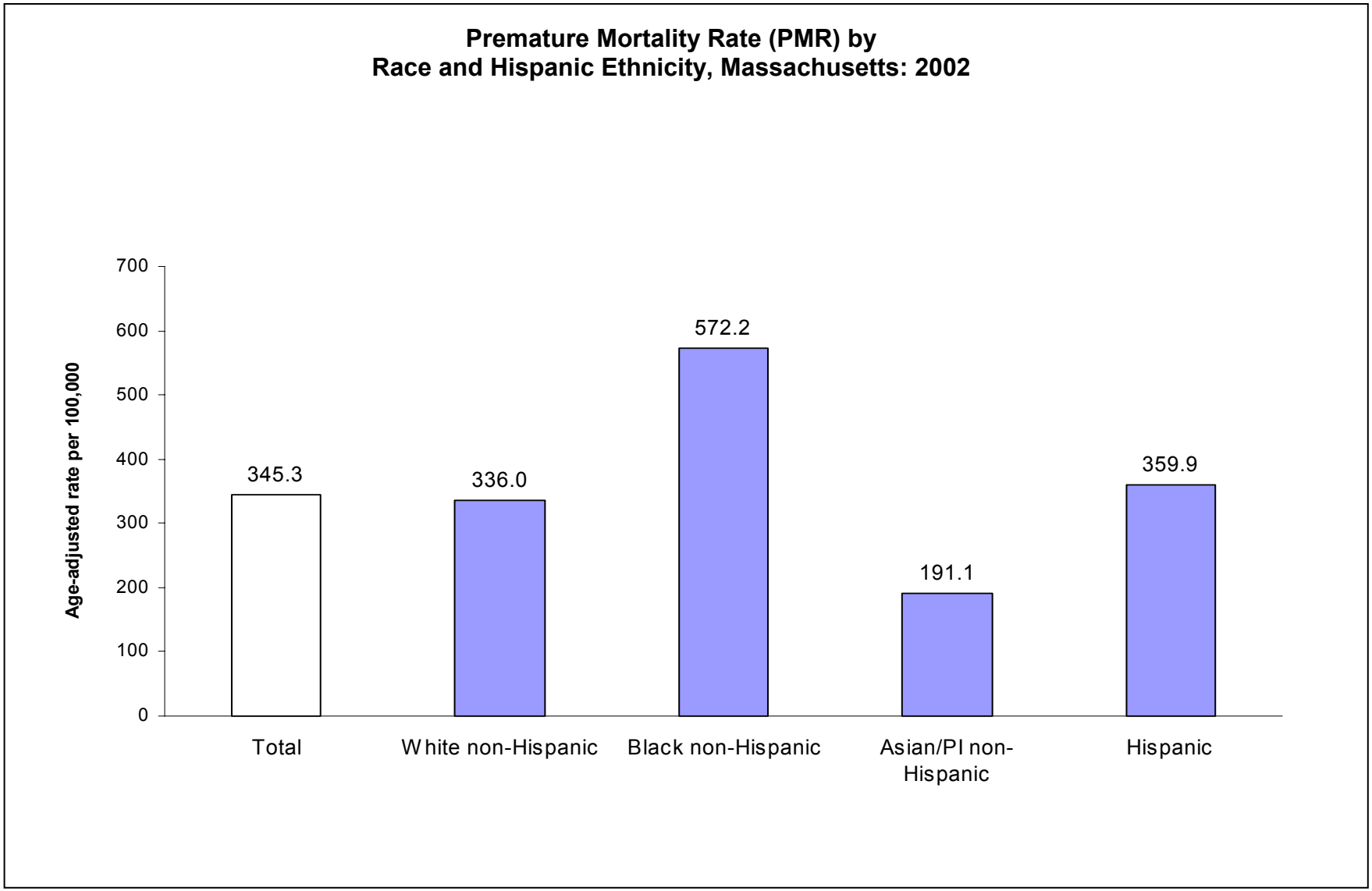

Proportion of Deaths Certified by Medical Examiner for Selected Causes of Death, Massachusetts: 2002
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
99.7%
77.4%
7.0%
1.6%
0.8%
0.3%
Suicide & Homicide
Other Injuries
Heart disease
Chronic Lower Respiratory Disease
Pneumonia & Influenza
Cancer

Figure 6



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

Table 4. Rank by Potential Years of Life Lost (PYLL), Massachusetts: 2002

Cause	PYLL	Rank on PYLL	Average PYLL	# of Deaths before 75 years	Rank on # of Deaths
All Causes	***374,080***		***18.00***	***20,780***	
Cancer	96,557	1	13.77	7,013	2
Heart Disease	56,496	2	13.77	4,102	1
Unintentional injuries	28,342	3	34.02	833	8
Perinatal Conditions	18,551	4	74.50	249	22
Suicide	12,885	5	33.04	390	17
Stroke	8,860	6	12.78	693	3
Homicide	8,019	7	44.30	181	24
HIV/AIDS	6,600	8	28.82	229	23
Diabetes	868	9	7.48	116	7
Alzheimer's Disease	868	10	7.48	116	6

Figure 7

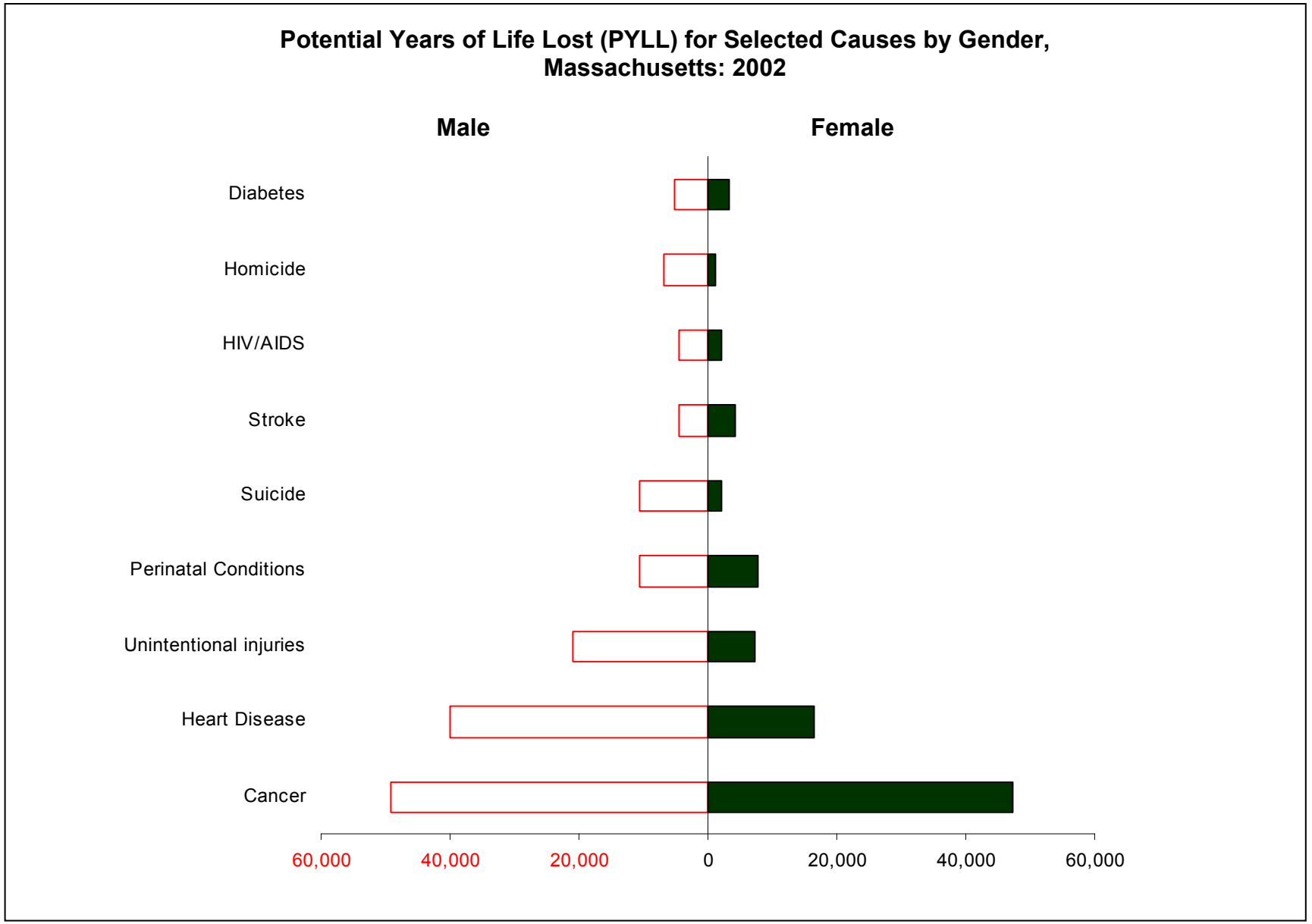
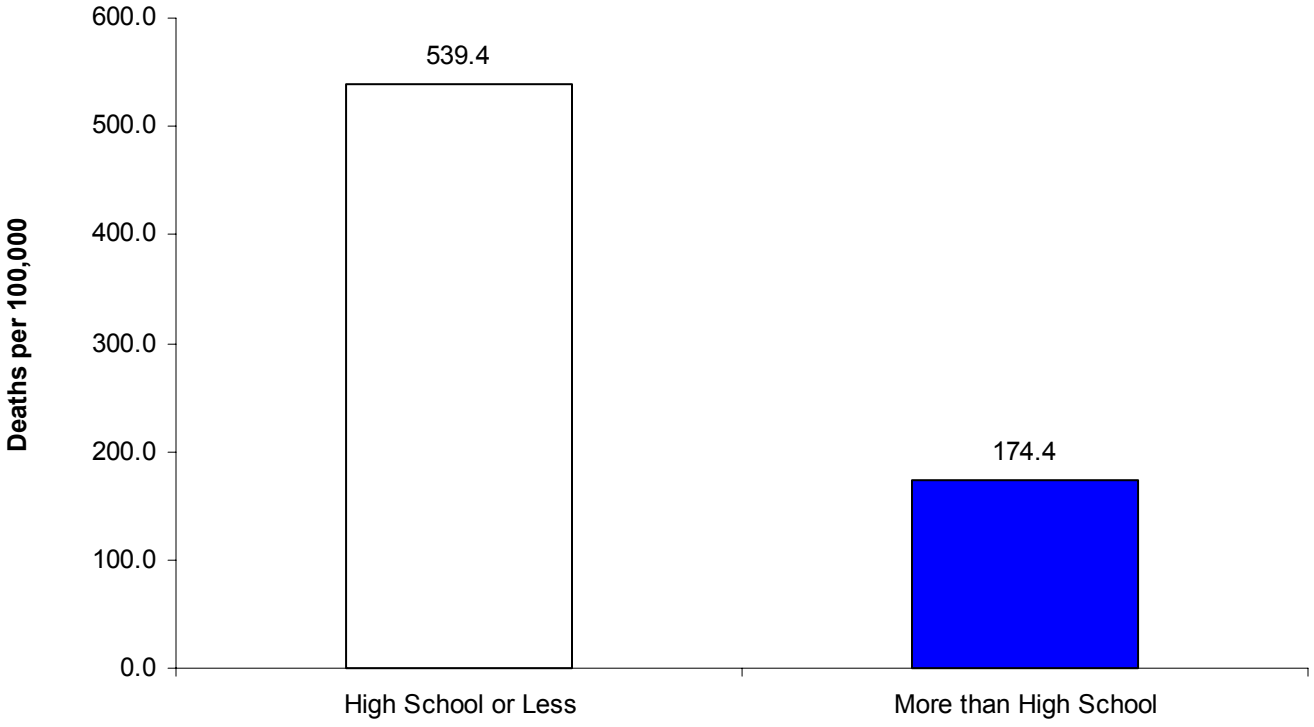

Potential Years of Life Lost (PYLL) for Selected Causes by Gender, Massachusetts: 2002
Male
Female
Diabetes
Homicide
HIV/AIDS
Stroke
Suicide
Perinatal Conditions
Unintentional injuries
Heart Disease
Cancer
60,000
40,000
20,000
0
20,000
40,000
60,000

Table 5. Age Adjusted Death Rates for Ages 25-64 Years by Educational Attainment, Massachusetts: 2002

	Age Specific Rates			Age Adjusted Rates
Years of school completed	**25-34 years**	**35-44 years**	**45-64 years**	**25-64 years**
Both sexes				
High School or Less	159.2	306.8	941.8	**539.4**
13+ education	34.6	75.0	332.5	**174.4**

Age-adjusted death rates by education for adults aged 25-64 Massachusetts: 2002.



LEADING CAUSES

Leading Causes

Ranking causes of death provides a condensed overview of the major forces of mortality. Causes are ranked according to the number of deaths.

Heart disease and cancer continued to be the leading causes of death among Massachusetts residents, accounting for 50% of all deaths (Figure 8). In 2002, 14,696 Massachusetts residents died of heart disease, which resulted in an age-adjusted death rate of 208.8 deaths per 100,000 persons. Cancer continues to approach heart disease, in 2002 it was the second leading cause of death, with 13,899 deaths, and an age-adjusted death rate of 204.9 deaths per 100,000 (Table 8). (Please note: rates are age-adjusted to the 2000 U.S. Standard Population).

On an average day in 2002, 156 Massachusetts residents died (Figure 9). Approximately 40 of these deaths were due to heart disease, 38 to cancer, 17 to respiratory diseases, 10 to stroke, 7 to injuries, 4 to diabetes and to Alzheimer's Disease. One was an infant death, 1 was an HIV/AIDS death, and 34 were due to other causes.

Leading causes of death varied substantially by age. All injuries combined (unintentional, intentional and injuries of undetermined intent) were the leading cause of death for persons between the ages of 1 to 44 years. In the older age groups, mortality due to chronic diseases was most prevalent (Table 6).

The lowest number of deaths (167) in the five-age groups was seen among 1 to 14 year olds (Table 7a). In this group, the leading causes of death were unintentional injuries (30), cancer (24), congenital malformations (15), and signs and symptoms (12).

For persons ages 15 to 24, there was a total of 460 deaths. Injuries accounted for over seventy percent of these deaths. Unintentional injuries, which included motor vehicle-related deaths, falls, fires, and drownings, accounted for the highest percentage of deaths in this age group (36%), followed by homicide (14%) and suicide (12%), and by injuries of undetermined intent (12%).

In 2002, cancer remained the number one cause of death for Massachusetts residents ages 25 to 74 (34%). Heart disease, chronic lower respiratory disease, and stroke were other leading causes.

Heart disease was the leading cause of death for Massachusetts residents age 75 and older (30%) (Table 7b). Chronic diseases are the dominant cause of death for older persons. For instance, the heart disease death rate among persons age 65 to 74 was over 4 times higher than the rate for persons age 45 to 64 (532.0 vs. 123.5 deaths per 100,000).

Death rates for children and young adults (ages 1 to 24) were much lower than those for older persons. Sixty percent of the deaths in this age group were due to injuries, both unintentional and intentional, and, therefore, largely preventable. The proportion of deaths due to injury increased with age from 32% for children 1 to 14 years old to 73% for young persons age, 15 to 24 years. However, these deaths only accounted for 7% and 2% of deaths to persons ages 45 to 64 and persons age 65 and older, respectively.

Tables 7a and 7b also compare leading causes of death for males and females. Unintentional injuries ranked first and cancer ranked second for both males and females ages 1 to 14. Unintentional injuries also ranked first for young males and females (ages 15 to 24). The rank for homicide was second for males and seventh for females. After combining all type of injuries (intentional, unintentional, and of undetermined intention) the next four leading causes of death were also the same, and in the same order, with cancer ranking second among young females and males.

The four leading causes of death among persons ages 25 to 44 were also the same for males and females, but not in the same order. Injuries of undetermined intent ranked first for males and second for females while cancer ranked first among females and second among males. Cancer and heart disease were the top two causes of death for both males and females ages 45 to 64. Among persons age 65 and older, the top three causes were the same for both females and males (heart disease, cancer and stroke).

The ten leading causes of death accounted for 77% of all deaths in 2002 (Table 8). The top 10 causes of death remained the same as in 2001(and in the same ranking order) except for diabetes and unintentional injuries which switched in 2002.

The leading causes of death varied markedly by race and Hispanic ethnicity in Massachusetts in 2002 as in previous years (Table 8). The overall age-adjusted death rate for black non-Hispanics exceeded that of white non-Hispanics by 31%. This excess increased from 25% in 2001. Age-adjusted death rates for black non-Hispanics were higher for most leading causes of death. HIV/AIDS disease remained among the 10 leading causes of death only for black non-Hispanics and Hispanics, while Alzheimer's and septicemia diseases remained in the top ten for white non-Hispanics only.

Cancer was the number one cause of death among Asian non-Hispanics and black non-Hispanics in 2002, followed by heart disease and stroke. Cancer was also the leading cause of death for Hispanics, followed by heart disease, unintentional injuries, and diabetes. In 2002, the age-adjusted rate for diabetes among Hispanics increased 68% from 2001. The leading causes of death for Hispanics also included HIV/AIDS, perinatal conditions, and injuries of undetermined intent, all of which occurred more frequently among younger people. Heart disease was the leading cause of death for white non-Hispanics followed by cancer and stroke.

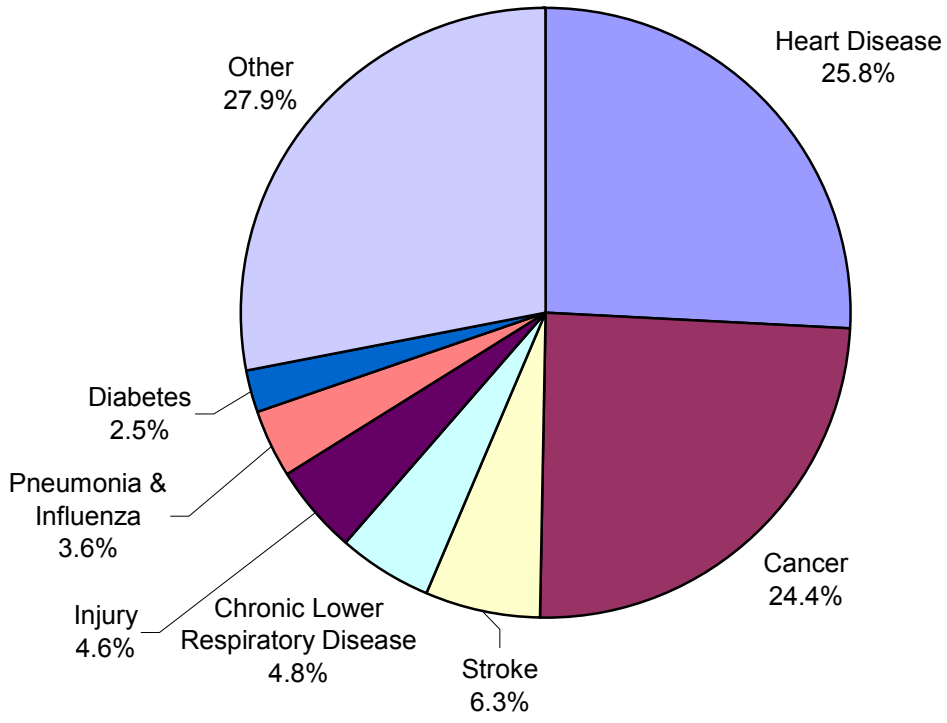
In 2002, heart disease and cancer were the leading causes of death among Cape Verdean non-Hispanics in Massachusetts, followed by diabetes, homicide, and stroke (Table 9) (see Technical Foreword for a discussion of Cape Verdeans non-Hispanics).

The differences in the 10 leading causes of death by race and ethnicity result from a combination of factors. Younger age distributions within the Massachusetts black non-Hispanic and Hispanic populations yield higher proportions of deaths from causes typically affecting the young. Black non-Hispanics and Hispanics have higher age-specific death rates for unintentional injuries as compared with white non-Hispanics among the 1 to 14 age group, and homicideamong the 15 to 24 age group. Among the 25 to 44 age group, Hispanics have higher age-specific death rate for injuries, unintentional and of undetermined intent, as compared with white non-Hispanics and black non-Hispanics. Among persons over the age of 44, Hispanics and Asian non-Hispanics have lower age-specific rates of death from heart disease and cancer as compared with white non-Hispanics and black non-Hispanics (Tables 10a and Table 10b).

Among Hispanic subgroups, the majority of deaths occurred among Puerto Ricans (68%), the largest Hispanic population group in Massachusetts. The leading causes of death varied by group among Hispanics. Heart disease was the leading cause of death for Puerto Ricans, while cancer was the leading cause for all other groups. Diabetes was the third leading cause of death among Puerto Ricans followed by HIV/AIDS disease (Table 10c).

Figure 8

Percent Distribution of Leading Causes of Death[1]
Massachusetts: 2002

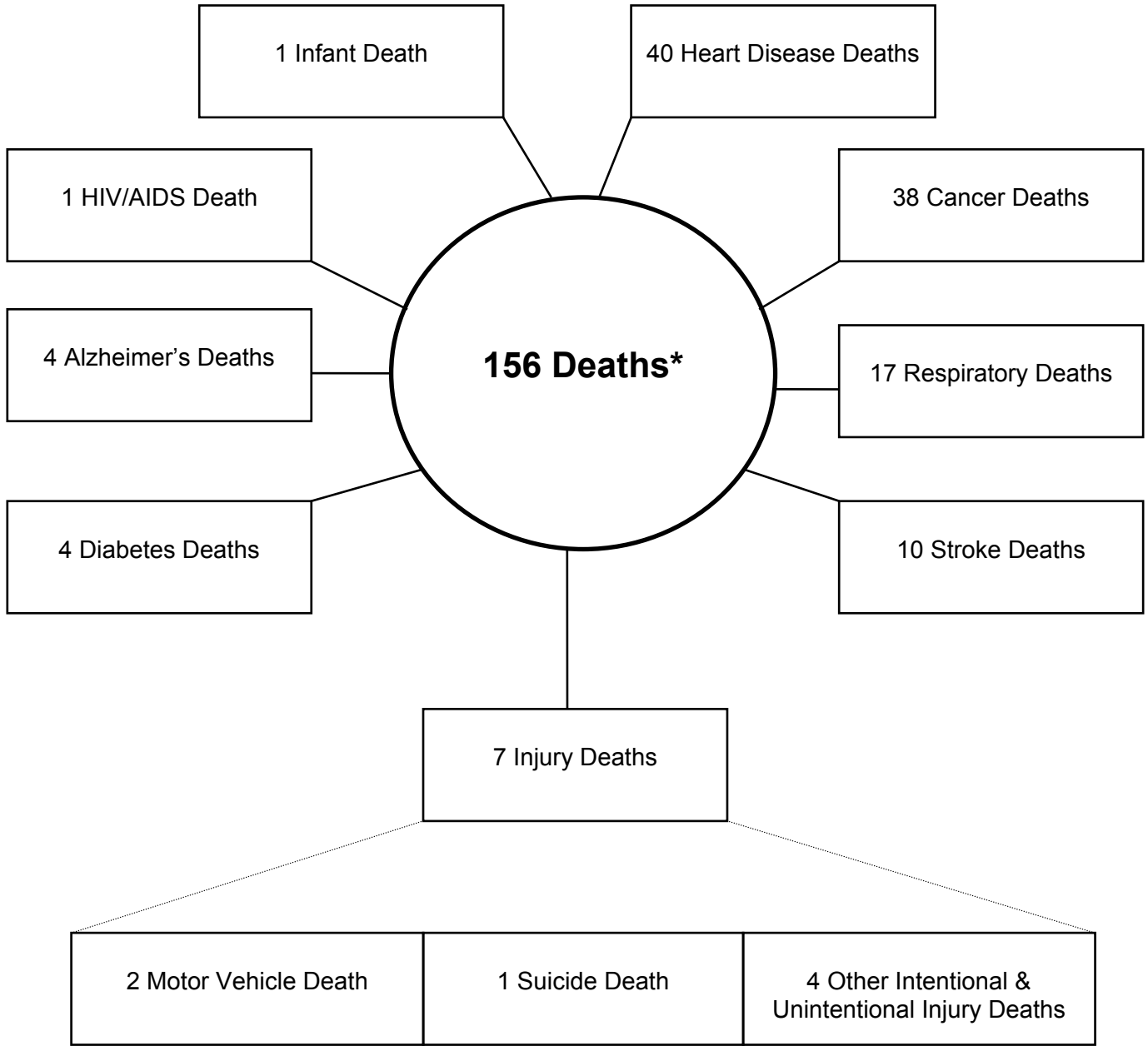


[1]Total Number of Deaths = 56,880
Causes of Death are classified according to ICD-10

Figure 9

Daily Death Statistics
Massachusetts: 2002

Every day in 2002, residents of Massachusetts experienced an average of the following:



*includes 34 deaths due to other causes

Table 6. Top Ten Leading Causes of Death* by Age, Massachusetts 2002

	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 (83)	Unintentional injuries (30)	Unintentional injuries (166)	Cancer (427)	Cancer (3,087)	Cancer (3,442)	Heart Disease (4,526)	Heart Disease (6,065)	Heart Disease (14,694)
2	Congenital malformations (65)	Cancer (24)	Homicide (63)	Injuries of undetermined intent (339)	Heart Disease (1,754)	Heart Disease (2,055)	Cancer (4,494)	Cancer (2,392)	Cancer (13,899)
3	Maternal Pregnancy Comp. (30)	Congenital malformations (15)	Suicide (53)	Unintentional injuries (280)	Chronic Lower Respiratory Disease (279)	Chronic Lower Respiratory Disease (556)	Stroke (1,238)	Stroke (1,626)	Stroke (3,557)
4	Respiratory Distress (21)	Signs and symptoms (12)	Injuries of undetermined intent (53)	Heart Disease (267)	Chronic Liver Disease (275)	Stroke (407)	Chronic Lower Respiratory Disease (1,106)	Influenza & Pneumonia (1,123)	Chronic Lower Respiratory Disease (2,744)
5	Complications of placenta, cord/membranes (20)	Homicide (11)	Cancer (33)	Suicide (173)	Diabetes (265)	Diabetes (307)	Influenza & Pneumonia (605)	Alzheimer's Disease (969)	Influenza & Pneumonia (2,050)
6	SIDS (17)	Septicemia (6)	Signs and symptoms (26)	Signs and symptoms (172)	Stroke (239)	Nephritis (192)	Alzheimer's Disease (502)	Chronic Lower Respiratory Disease (770)	Alzheimer's Disease (1,587)
7	Intrauterine Hypoxia (13)	In situ neoplasms (5)	Heart Disease (15)	HIV/AIDS (101)	Unintentional injuries (232)	Influenza & Pneumonia (180)	Diabetes (482)	Nephritis (489)	Diabetes (1,418)
8	Bacterial sepsis (10)	Heart Disease (5)	Congenital malformations (6)	Homicide (74)	Injuries of undetermined intent (177)	Septicemia (175)	Nephritis (449)	Septicemia (333)	Unintentional injuries (1,411)
9	Circulatory system (9)	Stroke (5)	Influenza & Pneumonia (4)	Chronic Liver Disease (64)	Septicemia (141)	Unintentional injuries (121)	Septicemia (324)	Diabetes (318)	Nephritis (1,292)
10	Burn trauma (7)	Chronic Liver Disease (5)	Septicemia (2)	Diabetes (45)	Suicide /Signs and symptoms (Tied) (133)	Chronic Liver Disease (113)	Unintentional injuries (281)	Pneumonitis (316)	Septicemia (1,015)
All Causes	**397**	**167**	**460**	**2,490**	**8,344**	**8,922**	**17,262**	**18,838**	**56,881**

* Ranking based on number of deaths. Number of deaths in parenthesis.

Injuries are broken down by intent (unintentional, homicide, suicide and injuries of undetermined intent (deaths where investigation has not determined whether injuries were accidental or purposely inflicted).

Table 7a. Leading Causes of Death*, Numbers and Age-Specific Rates by Gender, Massachusetts: 2002

		Total		Female		Male	
Age	**Cause of death[1]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**
1 – 14 years	**TOTAL**	**167**	**14.2**	**68**	**11.8**	**99**	**16.4**
	Unintentional Injuries	30	2.5	10	1.7	20	3.3
	Cancer	24	2.0	9	1.6	15	2.5
	Congenital Malformations	15	1.3	5	0.9	10	1.7
	Signs and Symptoms	12	1.0	5	0.9	7	1.2
15 - 24 years	**TOTAL**	**460**	**56.1**	**116**	**28.2**	**344**	**84.1**
	Unintentional Injuries	166	20.2	43	10.5	123	30.1
	Homicide	63	7.7	4	--[5]	59	14.4
	Suicide	53	6.5	9	2.2	44	10.8
	Injuries of Undetermined Intent	53	6.5	14	3.4	39	9.5
25 – 44 years	**TOTAL**	**2,490**	**125.1**	**851**	**84.1**	**1,639**	**167.6**
	Cancer	427	21.5	223	22.0	204	20.9
	Injuries of Undetermined Intent	339	17.0	102	10.1	237	24.2
	Unintentional Injuries	280	14.1	77	7.6	203	20.8
	Heart Disease	267	13.4	69	6.8	198	20.2
45 – 64 years	**TOTAL**	**8,344**	**587.7**	**3,322**	**451.9**	**5,022**	**733.6**
	Cancer	3,087	217.4	1,529	208.0	1,558	227.6
	Heart Disease	1,754	123.5	486	66.1	1,268	185.2
	Chronic Lower Respiratory Disease[3]	279	19.7	146	19.9	133	19.4
	Chronic Liver Disease	275	19.4	87	11.8	188	27.5
65 + years[4]	**TOTAL**	**45,022**	**5,234.1**	**25,906**	**4,995.2**	**19,116**	**5,597.0**
	Heart Disease	12,646	1,470.2	7,259	1,399.7	5,387	1,577.3
	Cancer	10,328	1,200.7	5,258	1,013.8	5,070	1,484.5
	Stroke	3,271	380.3	2,087	402.4	1,184	346.7
	Chronic Lower Respiratory Disease[3]	2,432	282.7	1,395	269.0	1,037	303.6

1. Cause of Death classified using ICD-10. See Appendix for 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 7b for leading causes of death for detailed age groups for persons ages 65+ years. 5. Calculations based on fewer than 5 events are excluded.

* Ranking based on number of deaths for all persons.

Table 7b. Leading Causes of Death, Numbers and Age-Specific Rates (Ages 65 and older) by Gender, Massachusetts: 2002

		Total		Female		Male	
Age	**Cause of death[1]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**
65-74 years	**TOTAL**	**8,922**	**2,085.4**	**3,902**	**1,642.7**	**5,020**	**2,638.0**
	Cancer	3,442	804.5	1,592	670.2	1,850	972.2
	Heart Disease	2,055	480.3	779	328.0	1,276	670.5
	Chronic Lower Respiratory Disease[3]	556	130.0	288	121.2	268	140.8
	Stroke	407	95.1	180	75.8	227	119.3
75-84 years	**TOTAL**	**17,262**	**5,468.9**	**9,019**	**4,616.9**	**8,243**	**6,852.4**
	Heart Disease	4,526	1,433.9	2,274	1,164.1	2,252	1,872.1
	Cancer	4,494	1,423.8	2,253	1,153.3	2,241	1,863.0
	Stroke	1,238	392.2	708	362.4	530	440.6
	Chronic Lower Respiratory Disease[3]	1,106	350.4	597	305.6	509	423.1
85+ years	**TOTAL**	**18,838**	**16,143.4**	**12,985**	**15,143.9**	**5,853**	**18,912.4**
	Heart Disease	6,065	5,197.4	4,206	4,905.3	1,859	6,006.9
	Cancer	2,392	2,049.8	1,413	1,647.9	979	3,163.4
	Stroke	1,626	1,393.4	1,199	1,398.3	427	1,379.7
	Influenza and Pneumonia	1,123	962.4	763	889.9	385	1,244.0

1. Cause of Death classified according to ICD-10. See Appendix for 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).

Table 8. Leading Causes of Death[1] and Age-Adjusted Death Rates by Race and Hispanic Ethnicity, Massachusetts: 2002

White, non-Hispanic[2]

Cause[3]	#	Rate[4]
Total	**52,839**	**813.7**
Heart disease	13,915	209.5
Cancer	12,983	205.8
Stroke	3,338	49.4
Chronic Lower Resp. Disease[5]	2,633	40.2
Influenza and Pneumonia	1,959	28.7
Alzheimer's Disease	1,542	22.2
Unintentional injuries[6]	1,247	20.8
Diabetes	1,238	19.3
Nephritis	1,180	17.8
Septicemia	938	14.4

Black, non-Hispanic[2]

Cause	#	Rate
Total	**2,275**	**1,066.6**
Cancer	534	254.7
Heart Disease	464	236.2
Stroke	126	67.9
Diabetes	96	47.5
Nephritis	78	38.6
Homicide	70	18.7
Unintentional injuries[6]	69	25.2
HIV/AIDS	68	23.1
Signs and symptoms	65	23.6
Chronic Lower Resp. Disease[5]	53	26.5

Asian, non-Hispanic[2]

Cause	#	Rate
Total	**531**	**487.2**
Cancer	161	138.6
Heart Disease	97	99.5
Stroke	33	31.4
Unintentional injuries[6]	24	17.3
Diabetes	18	20.4
Chronic Lower Resp. Disease[5]	18	19.2
Influenza and Pneumonia	16	20.8
Suicide	15	8.2
Nephritis	14	19.1
Perinatal Conditions	11	4.2

Hispanic

Cause	#	Rate
Total	**1,166**	**708.4**
Cancer	209	143.2
Heart Disease	205	160.1
Unintentional injuries[6]	70	24.7
Diabetes	64	47.8
Stroke	56	46.9
HIV/AIDS	52	15.4
Injuries of Undetermined Intent	46	11.6
Perinatal Conditions	42	6.5
Chronic Lower Resp. Disease[5]	40	30.6
Signs and symptoms	37	11.6

Total

Cause	#	Rate
Total	**56,881**	**819.9**
Heart disease	14,694	208.8
Cancer	13,899	204.9
Stroke	3,557	50.0
Chronic Lower Respiratory Disease[5]	2,744	39.5
Influenza and Pneumonia	2,050	28.5
Alzheimer's Disease	1,587	21.8
Diabetes	1,418	20.7
Unintentional injuries[6]	1,411	21.0
Nephritis	1,292	18.4
Septicemia	1,015	14.6

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 refer to the Technical Notes in the Appendix for a more detailed explanation. 3. Underlying Cause of Death based on ICD-10 (Please refer to Appendix for 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.

Table 9. Leading Causes of Death[1] for Cape Verdean, non-Hispanics*, Massachusetts: 2002

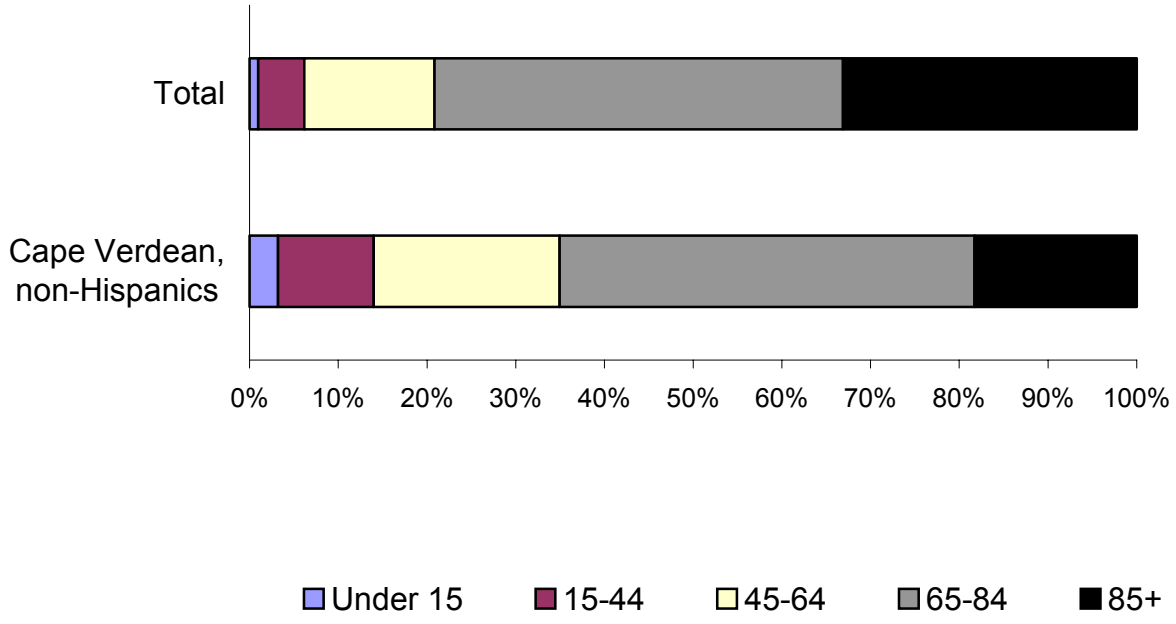
	Number	Percent
Heart Disease	43	23.1%
Cancer	38	20.4%
Diabetes	13	7.0%
Homicide	8	4.3%
Stroke	8	4.3%
Nephritis	7	3.8%
Influenza and Pneumonia	6	3.2%
HIV/AIDS	5	2.7%
Chronic Lower Respiratory Disease	5	2.7%
Unintentional Injuries	5	2.7%
Other	48	25.8%
All Deaths	**186**	**100%**

1. Deaths are coded according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. 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).

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

Figure 10

Age Distribution of Deaths for Cape Verdean, non-Hispanics and State Total, Massachusetts: 2002



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

Table 10a. Number and Age-Specific Rates for Selected Causes of Death by Race and Hispanic Ethnicity, Massachusetts: 2002

Selected Causes[2]	Total		White, non-Hispanic[1]		Black, non-Hispanic[1]		Asian, non-Hispanic[1]		Hispanic	
	#	Rate[3]	#	Rate	#	Rate	#	Rate	#	Rate
Age: 1-14, TOTAL	**167**	**14.2**	**99**	**10.7**	**29**	**35.2**	**5**	**10.4**	**34**	**27.0**
Unintentional Injuries[4]	30	2.5	15	1.6	8	9.7	0	0.0	7	5.6
Cancer	24	2.0	16	1.7	4	--[5]	1	--[5]	3	--[5]
Congenital malformations	15	1.3	10	1.1	2	--[5]	0	0.0	3	--[5]
Signs and symptoms	12	1.0	7	0.8	2	--[5]	0	0.0	3	--[5]
Age: 15-24, TOTAL	**460**	**56.1**	**330**	**52.0**	**70**	**128.3**	**12**	**26.2**	**45**	**53.9**
Unintentional Injuries[4]	166	20.2	136	21.4	15	27.5	3	--[5]	12	14.4
Homicide	63	7.7	15	2.4	29	53.1	4	--[5]	14	16.8
Suicide	53	6.5	41	6.5	6	11.0	4	--[5]	2	--[5]
Injuries of Undetermined Intent[6]	53	6.5	45	7.1	5	9.2	1	--[5]	2	--[5]
Age: 25-44, TOTAL	**2,490**	**125.1**	**1,950**	**119.1**	**246**	**222.3**	**48**	**50.4**	**240**	**167.6**
Cancer	427	21.5	351	21.4	38	34.3	14	14.7	24	16.8
Injuries of Undetermined Intent[6]	339	17.0	283	17.3	19	17.2	3	--[5]	34	23.7
Unintentional Injuries[4]	280	14.1	231	14.1	14	12.7	5	5.2	29	20.3
Heart Disease	267	13.4	211	12.9	30	27.1	4	--[5]	22	15.4
Age: 45-64, TOTAL	**8,344**	**587.7**	**7,280**	**576.0**	**609**	**1011.0**	**117**	**295.5**	**320**	**598.0**
Cancer	3,087	217.4	2,785	220.3	173	287.2	52	131.3	74	138.3
Heart Disease	1,754	123.5	1,542	122.0	126	209.2	19	48.0	63	117.7
Chronic Lower Respiratory Disease[7]	279	19.7	253	20.0	13	21.6	3	--[5]	10	18.7
Chronic Liver Disease	275	19.4	240	19.0	9	14.9	4	--[5]	22	41.1
Age: 65+, TOTAL[8]	**45,022**	**5234.1**	**42,940**	**5307.8**	**1,247**	**5329.1**	**333**	**2541.6**	**460**	**3332.6**
Heart Disease	12,646	1470.2	12,143	1501.0	305	1303.4	74	564.8	115	833.2
Cancer	10,328	1200.7	9,808	1212.4	313	1337.6	94	717.4	104	753.5
Stroke	3,271	380.3	3,112	384.7	99	423.1	22	167.9	34	246.3
Chronic Lower Respiratory Disease[7]	2,432	282.7	2,359	291.6	37	158.1	14	106.9	22	159.4

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 refer to 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 fewer than five events are excluded. 6. Injuries of undetermined intent include deaths from falls, fires, drownings, and drug overdoses, where the investigation has not determined whether the injuries were accidental or purposely inflicted. 7. 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). 8. Please see Table 9b for causes of death for detailed age groups for persons ages 65+ years.

Table 10b. Number and Age-Specific Rates for Selected Causes of Death, Persons age 65+ by Race and Hispanic Ethnicity, Massachusetts: 2002

	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	**8,922**	**2085.4**	**8,234**	**2076.9**	**408**	**2987.7**	**104**	**1236.8**	**160**	**1815.1**
Cancer	3,442	804.5	3,215	810.9	133	973.9	40	475.7	50	567.2
Heart Disease	2,055	480.3	1,907	481.0	90	659.1	20	237.8	34	385.7
Chronic Lower Respiratory Disease[4]	556	130.0	533	134.4	15	109.8	3	--[5]	5	56.7
Stroke	407	95.1	361	91.1	29	212.4	8	95.1	9	102.1
Age: 75-84, TOTAL	**17,262**	**5468.9**	**16,452**	**5475.9**	**489**	**6591.2**	**142**	**3841.0**	**168**	**4424.5**
Heart Disease	4,526	1433.9	4,328	1440.5	116	1563.6	37	1000.8	42	1106.1
Cancer	4,494	1423.8	4,280	1424.6	132	1779.2	37	1000.8	41	1079.8
Stroke	1,238	392.2	1,185	394.4	34	458.3	7	189.3	11	289.7
Chronic Lower Respiratory Disease[4]	1,106	350.4	1,075	357.8	15	202.2	7	189.3	9	237.0
Age: 85+, TOTAL	**18,838**	**16143.4**	**18,254**	**16284.1**	**350**	**15053.8**	**87**	**8734.9**	**132**	**11083.1**
Heart Disease	6,065	5197.4	5,908	5270.4	99	4258.1	17	1706.8	39	3274.6
Cancer	2,392	2049.8	2,313	2063.4	48	2064.5	17	1706.8	13	1091.5
Stroke	1,626	1393.4	1,566	1397.0	36	1548.4	7	702.8	14	1175.5
Influenza and Pneumonia	1,123	962.4	1,089	971.5	20	860.2	7	702.8	6	503.8

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 refer to 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 fewer than five events are excluded.

Table 10c. Number of Deaths for Leading Causes of Death[1] by Hispanic Ethnicity, Massachusetts: 2002

Ethnicity	Cancer	Heart Disease	Unintentional Injuries	Diabetes	Stroke	HIV /AIDS	Injuries of Undetermined Intent	Perinatal Conditions	Chronic Lower Respiratory Disease[2]	Homicide	ALL DEATHS
Puerto Rican	127	153	34	49	30	44	39	27	34	18	775
Dominican	23	18	12	7	11	3	4	7	2	8	140
Central American	18	7	9	2	6	3	0	6	1	7	76
South American	14	13	9	2	3	1	0	2	0	4	76
Cuban	18	7	2	2	4	1	3	0	2	0	56
Other/Unknown	4	5	3	0	2	0	0	0	0	0	23
Mexican	5	2	1	2	0	0	0	0	1	0	20
All Hispanics	**209**	**205**	**70**	**64**	**56**	**52**	**46**	**42**	**40**	**37**	**1,166**

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

HEART DISEASE AND CANCER

Heart Disease and Cancer

Heart disease and cancer continue to be the first and second leading causes of death among Massachusetts residents in 2002: 14,694 heart disease deaths and 13,899 cancer deaths, yielding age-adjusted rates of 209.0 and 205.0 deaths per 100,000 persons respectively (Table 2). Heart disease and cancer accounted for 50% of all deaths in Massachusetts in 2002. While heart disease deaths decreased in 2002, cancer continues to catch up with heart disease. The overall leading cause of cancer death was lung cancer (27%), followed by colorectal cancer (11%) (Table 12).

The introduction of a new revision of the ICD can create major discontinuities in trend data. The extent of this discontinuity is measured using a "comparability ratio", which measures the level of agreement between both classification systems. The National Center for Health Statistics (NCHS) has calculated preliminary comparability ratios using a large sample of national mortality data. **When comparing data after 1999 to previous years, the comparability modified data should be used.**

Gender Patterns

While more women (in terms of absolute numbers die from heart disease each year) men have a 61% higher risk of dying from heart disease than women, as measured by the rate of heart disease. One reason that the number of heart disease deaths was higher for women is that there are 3 times as many women as men in the older age group (Figure 11a).

In 2002, there were 13,899 cancer deaths – 6,866 men and 7,033 women (Table 12). The overall cancer death rate for men was 46% higher than the rate for women (255.6 vs. 175.4 per 100,000). While men's excess in risk of dying from cancer, as compared with women's, increased with age starting at age 25, men's excess in risk of dying from heart disease decreased with age starting at age 45, as compared with women's (Tables 7a and 7b).

For women, lung cancer (25%), breast cancer (15%), and colon cancer (12%) were the most common causes of death from cancer –accounting for 52% of all cancer deaths. For men, lung cancer (29%), prostate cancer (11%), and colon cancer (10%) accounted for 50% of all cancer deaths. Among women, the lung cancer mortality rate was 69% higher than the breast cancer mortality rate. Men also had higher death rates than women for site-specific cancers of the bladder (8.4 vs. 3.3), colorectal (26.1 vs. 19.2), esophagus (10.3 vs. 1.8), leukemia (8.4 vs. 5.3), lung (72.0 vs. 45.6), and stomach (6.8 vs. 3.9) among others (Table 12).

Age Patterns

Heart disease was the leading cause of death for Massachusetts residents age 75 and older, while cancer was the leading cause of death for persons ages 25 to 74 (Table 6). Heart disease deaths occur predominantly among the older population, and this held true in 2002 with 86% of all heart disease deaths among people age 65 and older. This varied by race-ethnicity: 87% of heart disease deaths occurred in this age group among white non-Hispanics; 66% of heart disease deaths among black non-Hispanics; 76% of heart disease deaths among Asian non-Hispanics; and 56% of deaths among Hispanics (Figure 11b). Hispanics had a lower percentage of chronic ischaemic heart disease and heart failure deaths.

Cancer is also largely a disease of older adults. In 2002, approximately 3 out of 4 cancer deaths in Massachusetts occurred in persons 65 years and older. This age group, accounted for 76% of all cancer deaths among white non-Hispanics, 59% of cancer deaths among black non-Hispanics, 58% of cancer deaths among Asian non-Hispanics, and 50% of cancer deaths among Hispanics (Figure 12b).

The fewest number of cancer deaths was seen among persons under the age of 45 (484 deaths, Table 13). Brain cancer was the leading cause of cancer death for all persons under the age of 15. Leukemia was the leading cause of cancer death for persons between the ages of 15-24. Among cancers affecting men and women, lung was the leading cause of cancer death for all persons, ages 25 and older. Female breast cancer was the leading cause of cancer death (74 deaths) followed by lung cancer (59 deaths) among persons ages 25-44 years. Lung and colorectal cancer accounted for 39% of all cancer deaths among persons, ages 65 and older.

Race/Ethnicity and Gender Patterns

In Massachusetts, between 1996 and 2002 the age-adjusted death rates for heart disease have declined for white non-Hispanics (18%), black non-Hispanics (15%), and Asian non-Hispanics (12%), but increased for Hispanics (58%) (Table 11). Similar patterns are seen for males and females (Figure 11c).

In 2002, 56% of all cancer-related deaths in Massachusetts were associated with five sites: lung, colorectal, female breast, pancreas and prostate (Table 12). Black non-Hispanics continued to have the highest cancer death rates (per 100,000) than any other racial and ethnic group for both men (282.6) and women (123.6). Asian non-Hispanics had the lowest cancer death rate for men (123.6) and women (83.7). Between 1996 and 2002, Hispanic rates experienced an increase in age-adjusted cancer death rates for men (59%) and women (58%) (Figure 11c).

Among the five leading causes of cancer death in each racial and ethnic group: lung, colorectal, and female breast were the 3 leading causes of cancer death for white non-Hispanics, black non-Hispanics, and Asian non-Hispanics, while lung, female breast, and pancreas were for Hispanics. Colorectal was the fifth leading cause of cancer death for Hispanics. Cancer of the pancreas was one of the five leading causes of cancer death for all racial and ethnic groups, while cancer of the prostate was only for white non-Hispanics (29.2 deaths per 100,000) and black non-Hispanics (56.6 deaths per 100,000). Stomach cancer was one of the five leading causes of cancer death only for Asian non-Hispanics (8.9 deaths per 100,000), and leukemia was one of the five leading causes of cancer death only for Hispanics (9 deaths per 100,000) (Table 14).

Cancer-related deaths do not affect racial/ethnic groups similarly. Data for 2002 continues to indicate that death rates for many cancer types were higher for black non-Hispanics than for other races and Hispanic ethnicity in the state. The 2002 age-adjusted prostate cancer death rate for black non-Hispanics was 1.9 times the rate for white non-Hispanics (1.8 times in 2001), similarly colorectal cancer death rate for black non-Hispanics was 1.4 times the rate for white non-Hispanics (Table 14).

Compared with 2001, 2002 cancer–specific death rates have not decreased equally for all populations and have increased in certain instances. For instance, lung cancer death rates increased by 31% for Hispanics, by 8% for Asian non-Hispanics, by 5% for black non-

Hispanics, and by 2% for white non-Hispanics. Death rates of female breast cancer increased for Asian non-Hispanics (208%) and Hispanics (71%), while it decreased for black non-Hispanics (12%) and white non-Hispanics (1%). Colorectal cancer death rates increased for black non-Hispanic (32%) and white non-Hispanics (4%), while it decreased for Asian non-Hispanics (24%) and Hispanics (5%). In 2002, compared with 2001, Hispanics experience a 55% increase in the death rate of cancer of the pancreas (13.6 vs. 8.8 per 100,000). Death rates should be interpreted with caution for Asian non-Hispanics and Hispanics since they are based on a small number of deaths

Trends in cancer death rates may reflect differences in cancer risk behaviors, changes in screening modalities, and the development and use of new and more effective treatments. Continuing research and prevention efforts are needed to reach high-risk and underserved populations and to understand the reasons for differences in mortality among racial and ethnic groups in Massachusetts.

Figure 11a

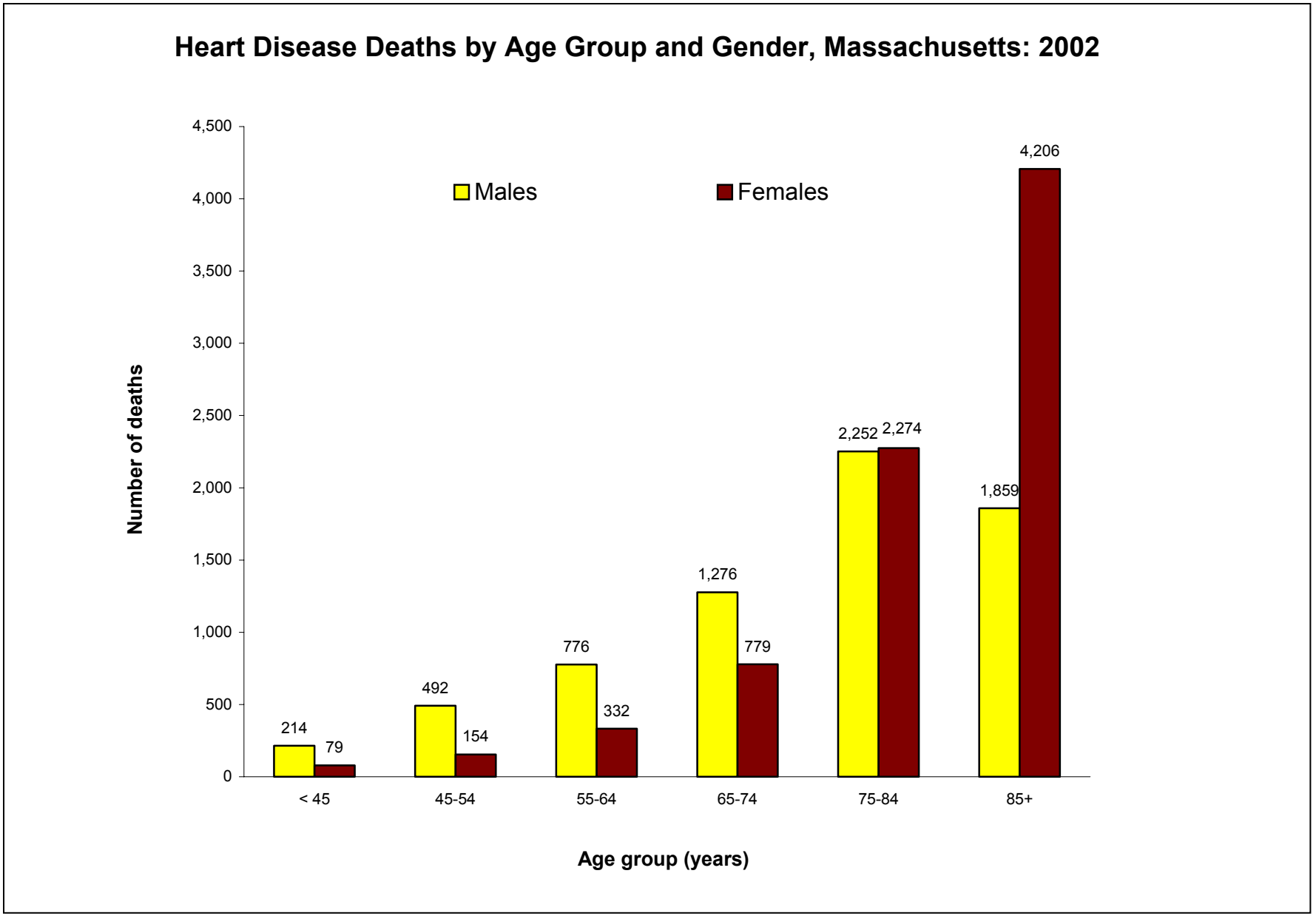

Heart Disease Deaths by Age Group and Gender, Massachusetts: 2002
Males
Females
Number of deaths
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
214
79
492
154
776
332
1,276
779
2,252
2,274
1,859
4,206
< 45
45-54
55-64
65-74
75-84
85+
Age group (years)

Figure 11b

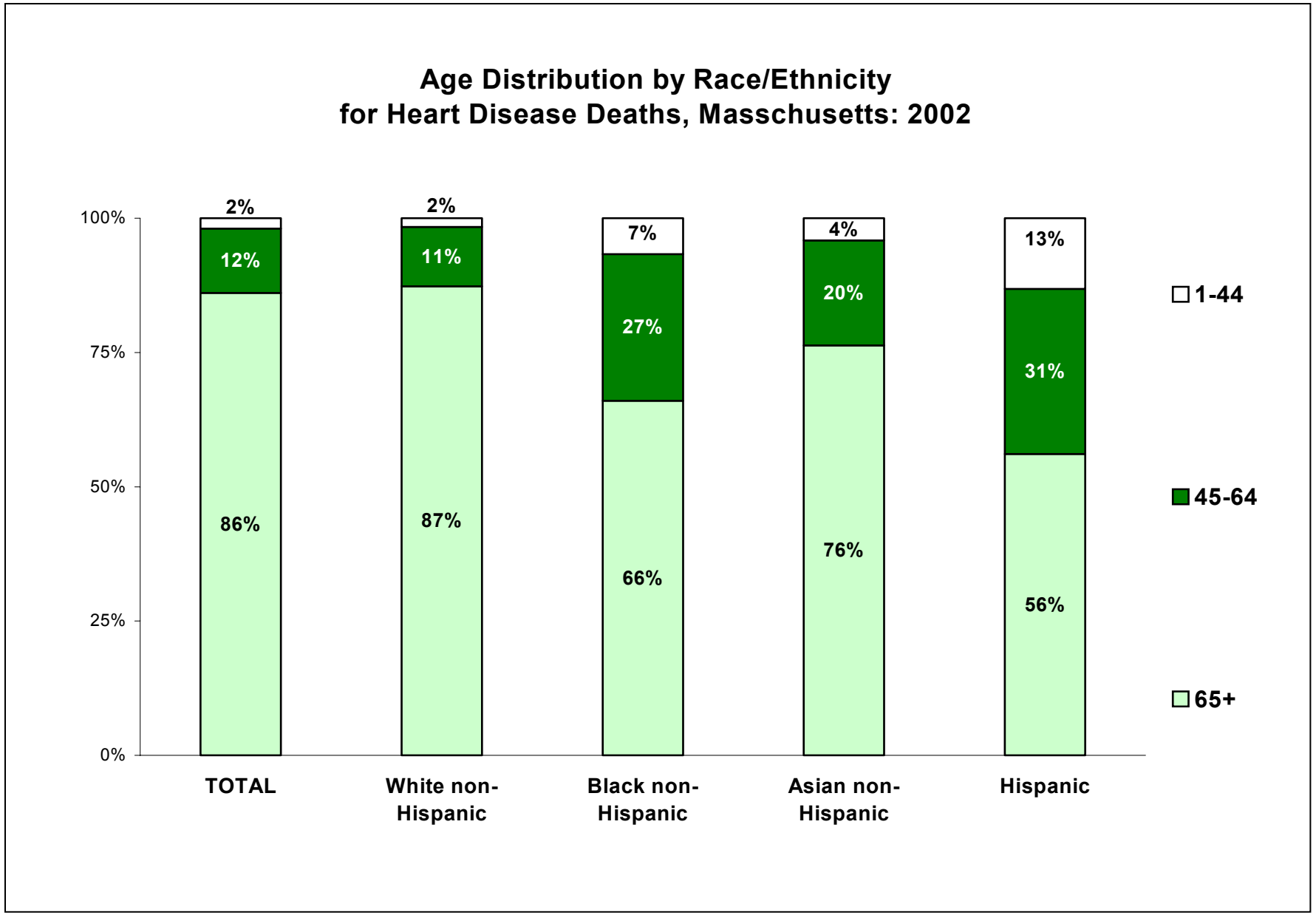

Age Distribution by Race/Ethnicity
for Heart Disease Deaths, Masschusetts: 2002
100%
75%
50%
25%
0%
2%
12%
86%
2%
11%
87%
7%
27%
66%
4%
20%
76%
13%
31%
56%
TOTAL
White non-Hispanic
Black non-Hispanic
Asian non-Hispanic
Hispanic
1-44
45-64
65+

Figure 11c. Heart Disease Death Rates by Race/Ethnicity and Gender, Massachusetts 1996-2002

(For 1996-1998 the comparability modified rates were used. Please see Table 11 footnotes for more details)

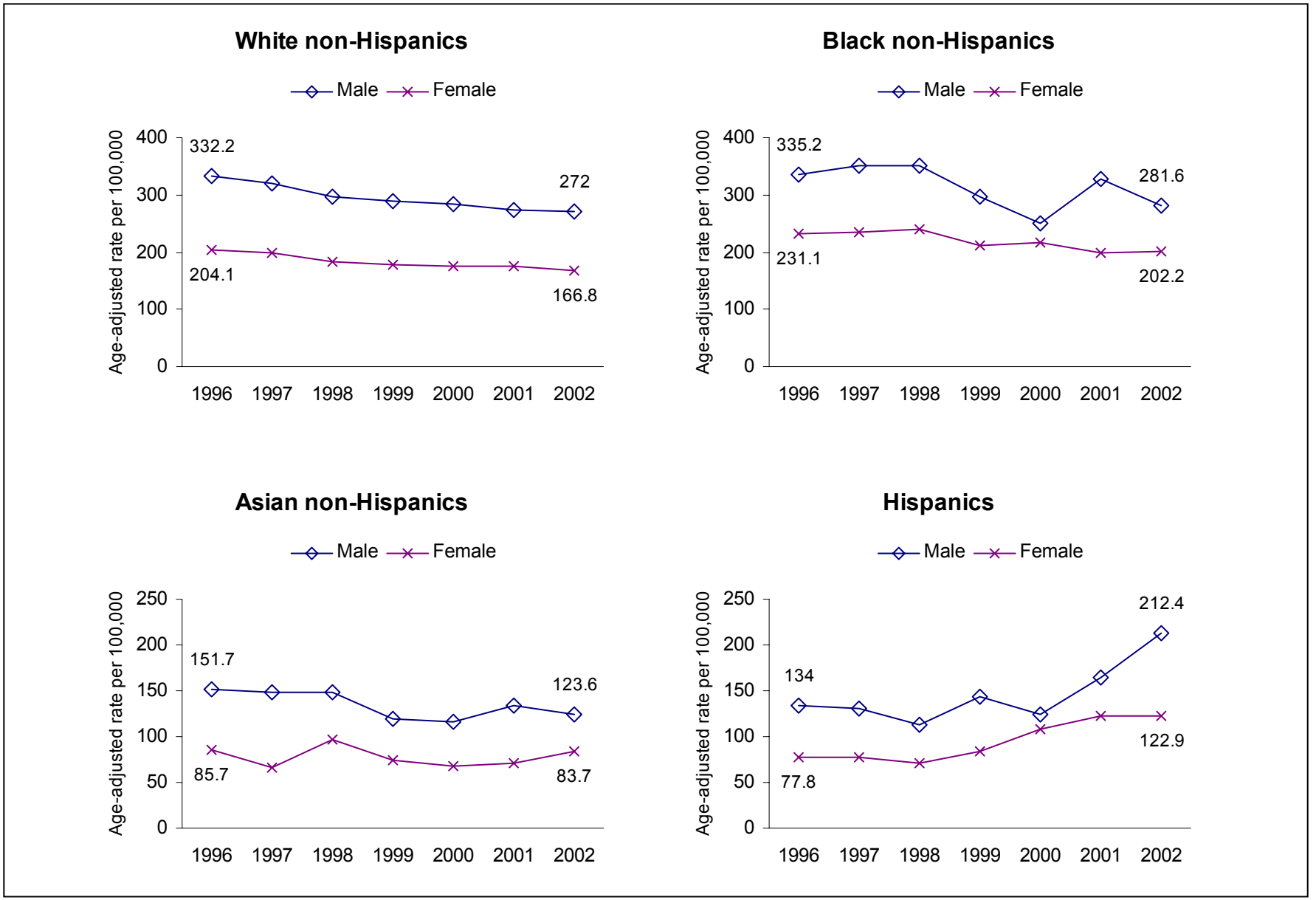


Figure 12a

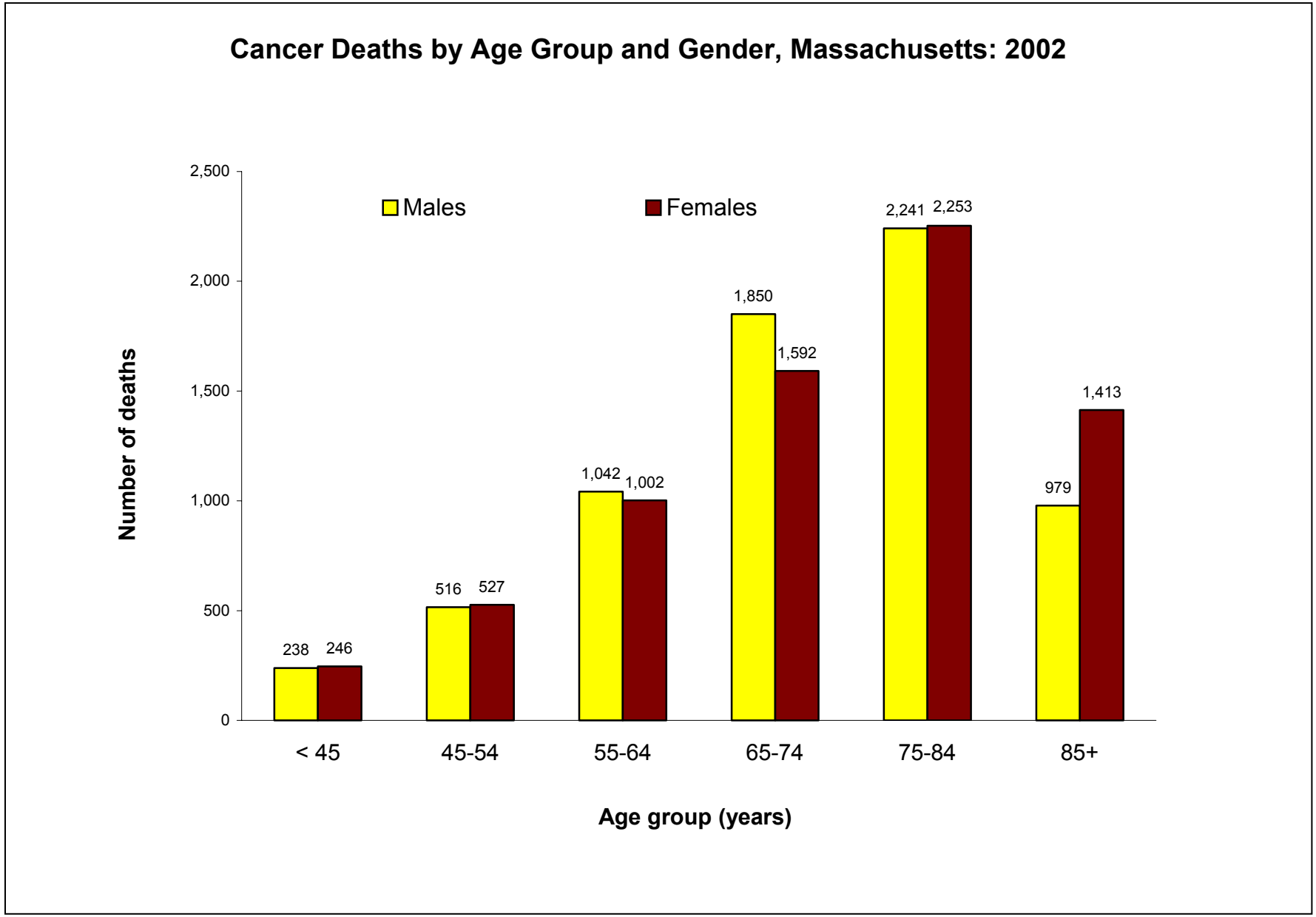

Cancer Deaths by Age Group and Gender, Massachusetts: 2002
Males
Females
Number of deaths
2,500
2,000
1,500
1,000
500
0
238
246
516
527
1,042
1,002
1,850
1,592
2,241
2,253
979
1,413
< 45
45-54
55-64
65-74
75-84
85+
Age group (years)

Figure 12b

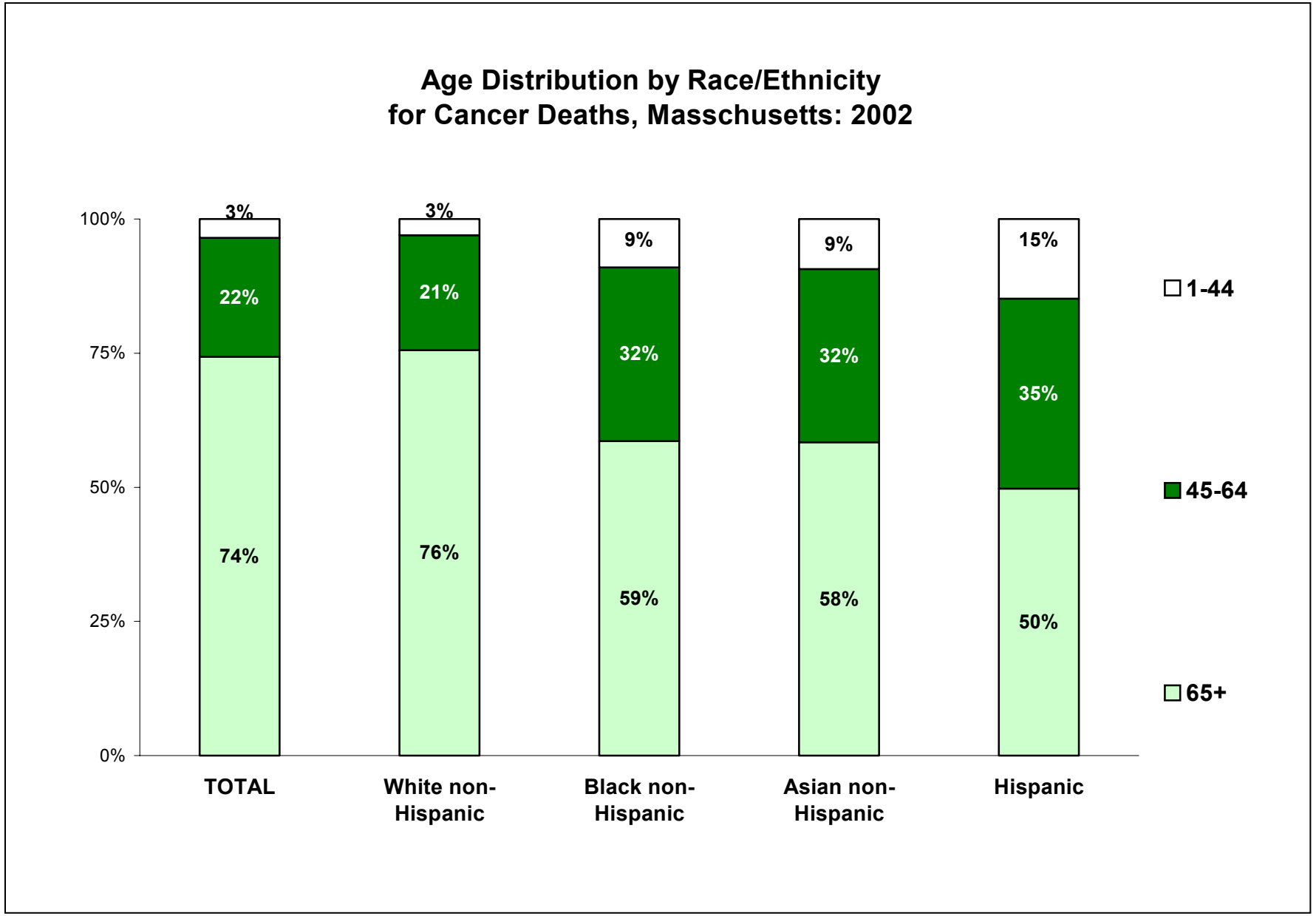

Age Distribution by Race/Ethnicity
for Cancer Deaths, Masschusetts: 2002
100%
75%
50%
25%
0%
3%
22%
74%
3%
21%
76%
9%
32%
59%
9%
32%
58%
15%
35%
50%
TOTAL
White non-Hispanic
Black non-Hispanic
Asian non-Hispanic
Hispanic
1-44
45-64
65+

Figure 12c. Cancer Death Rates by Race/Ethnicity and Gender, Massachusetts 1996-2002

(For 1996-1998 the comparability modified rates were used. Please see Table 11 footnotes for more details)

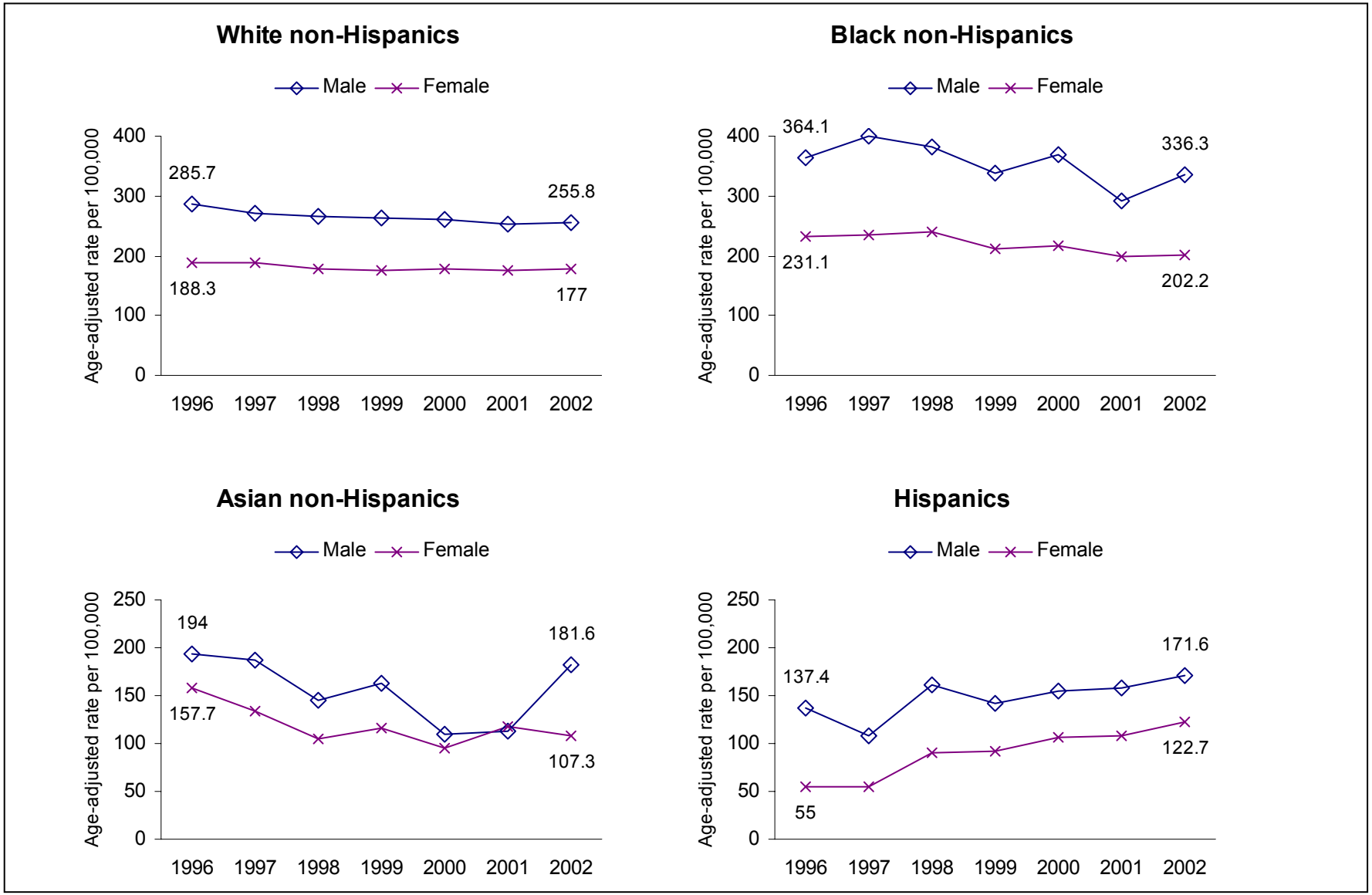


Table 11. Heart Disease and Cancer Deaths by Race and Gender, Comparability Unmodified and Comparability Modified Age-Adjusted Rates,[1] Massachusetts: 1996-2002

Heart Disease

White, non-Hispanic[2]

Year	Male		Female		Total	
	Comparability Unmodified[3]	Comparability Modified[4]	Comparability Unmodified	Comparability Modified	Comparability Unmodified	Comparability Modified
1996	337.0	332.2	207.0	204.1	260.5	256.8
1997	323.5	318.9	202.3	199.4	252.1	248.5
1998	300.0	295.7	186.6	184.0	233.2	229.9
1999[6]	289.8[7]		178.4[7]		224.3[7]	
2000[6]	284.1[7]		174.8[7]		220.0[7]	
2001[6]	273.7[7]		175.3[7]		216.4[7]	
2002[6]	272.0[7]		166.8[7]		209.5[7]	

Black, non-Hispanic[2]

Year	Male		Female		Total	
	Comparability Unmodified	Comparability Modified	Comparability Unmodified	Comparability Modified	Comparability Unmodified	Comparability Modified
1996	340.0	335.2	234.4	231.1	281.2	277.2
1997	356.3	351.2	238.5	235.1	291.3	287.2
1998	357.2	352.1	242.8	239.4	286.9	282.8
1999[6]	296.5[7]		211.5[7]		248.0[7]	
2000[6]	249.8[7]		215.6[7]		235.4[7]	
2001[6]	326.8[7]		198.9[7]		251.6[7]	
2002[6]	281.6[7]		202.2[7]		236.2[7]	

Asian, non-Hispanic[2]

Year	Male		Female		Total	
	Comparability Unmodified[3]	Comparability Modified[4]	Comparability Unmodified	Comparability Modified	Comparability Unmodified	Comparability Modified
1996	153.9	151.7	86.9	85.7	115.2	113.6
1997	150.4	148.3	67.7	66.7	105.1	103.6
1998	150.6	148.5	98.5	97.1	121.0	119.3
1999[6]	119.6[7]		73.7[7]		94.7[7]	
2000[6]	116.6[7]		68.0[7]		89.1[7]	
2001[6]	133.1[7]		70.3[7]		97.3[7]	
2002[6]	123.6[7]		83.7[7]		99.5[7]	

Hispanic

Year	Male		Female		Total	
	Comparability Unmodified	Comparability Modified	Comparability Unmodified	Comparability Modified	Comparability Unmodified	Comparability Modified
1996	135.9	134.0	78.9	77.8	102.6	101.1
1997	132.7	130.8	78.7	77.6	101.0	99.6
1998	114.0	112.4	71.3	70.3	91.3	90.0
1999[6]	143.4[7]		83.5[7]		108.2[7]	
2000[6]	124.4[7,8]		108.4[7,8]		117.8[7,8]	
2001[6]	164.4[7]		123.0[7]		141.2[7]	
2002[6]	212.4[7]		122.9[7]		160.1[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 refer to the Technical Notes in the Appendix for a more detailed explanation. 3. Comparability unmodified rate: this rate has not been modified. 4. Comparability modified rate: this rate has been adjusted using the preliminary comparability ratio (CR) provided by the NCHS (February 2001). Please refer to the Appendix for a more detailed explanation. 5. NA: comparability ratio is not applicable for years prior to 1994. 6. 1999 and 2000 are coded according to ICD-10. 7. When comparing data over time between 1994 through 2000, please use the comparability modified rate for years 1994-1998. 8. The Census 2000 count for Hispanics 65+ years is lower than the number previously estimated. Thus, the death rate (the number of deaths divided by the population) is increased relative to past calculations.

Table 11 (continued). Heart Disease and Cancer Deaths by Race and Gender, Comparability Unmodified and Comparability Modified Age-Adjusted Rates,[1] Massachusetts: 1996-2002

Cancer

White, non-Hispanic[2]

Year	Male		Female		Total	
	Comparability Unmodified[3]	Comparability Modified[4]	Comparability Unmodified	Comparability Modified	Comparability Unmodified	Comparability Modified
1996	283.8	285.7	187.0	188.3	222.5	224.0
1997	269.5	271.3	186.6	187.9	216.9	218.4
1998	264.1	265.9	177.8	179.0	210.0	211.4
1999[6]	263.4[7]		174.3[7]		207.7[7]	
2000[6]	259.5[7]		178.9[7]		209.1[7]	
2001[6]	254.0[7]		176.2[7]		204.9[7]	
2002[6]	255.8[7]		177.0[7]		205.8[7]	

Black, non-Hispanic[2]

Year	Male		Female		Total	
	Comparability Unmodified	Comparability Modified	Comparability Unmodified	Comparability Modified	Comparability Unmodified	Comparability Modified
1996	361.6	364.1	243.1	244.8	291.9	293.9
1997	396.2	398.9	235.5	237.1	297.1	299.1
1998	380.2	382.8	218.1	219.6	280.1	282.0
1999[6]	337.2[7]		195.7[7]		251.5[7]	
2000[6]	369.4[7]		177.7[7]		252.3[7]	
2001[6]	292.0[7]		193.5[7]		233.0[7]	
2002[6]	336.3[7]		203.2[7]		254.7[7]	

Asian, non-Hispanic[2]

Year	Male		Female		Total	
	Comparability Unmodified[3]	Comparability Modified[4]	Comparability Unmodified	Comparability Modified	Comparability Unmodified	Comparability Modified
1996	192.7	194.0	156.6	157.7	172.6	173.8
1997	185.1	186.4	133.0	133.9	156.7	157.8
1998	143.5	144.5	103.7	104.4	120.2	121.0
1999[6]	162.8[7]		116.9[7]		136.7[7]	
2000[6]	109.5[7]		95.7[7]		103.2[7]	
2001[6]	112.5[7]		118.4[7]		116.4[7]	
2002[6]	181.6[7]		107.3[7]		138.6[7]	

Hispanic

Year	Male		Female		Total	
	Comparability Unmodified	Comparability Modified	Comparability Unmodified	Comparability Modified	Comparability Unmodified	Comparability Modified
1996	136.5	137.4	54.6	55.0	90.0	90.6
1997	107.7	108.4	54.1	54.5	75.8	76.3
1998	160.2	161.3	89.5	90.1	117.2	118.0
1999[6]	141.8[7]		92.5[7]		113.8[7]	
2000[6]	155.0[7,8]		106.2[7,8]		126.0[7,8]	
2001[6]	157.8[7]		107.6[7]		128.5[7]	
2002[6]	171.6[7]		122.7[7]		143.2[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 refer to the Technical Notes in the Appendix for a more detailed explanation. 3. Comparability unmodified rate: this rate has not been modified. 4. Comparability modified rate: this rate has been adjusted using the preliminary comparability ratio (CR) provided by the NCHS (February 2001). Please refer to the Appendix for a more detailed explanation. 5. NA: comparability ratio is not applicable for years prior to 1994. 6. 1999 and 2000 are coded according to ICD-10. 7. When comparing data over time between 1994 through 2000, please use the comparability modified rate for years 1994-1998. The Census 2000 count for Hispanics 65+ years is lower than the number previously estimated. Thus, the death rate (the number of deaths divided by the population) is increased relative to past calculations.

Table 12. Number and Age-Adjusted Rates of Cancer Deaths by Selected Causes and Gender, Massachusetts: 2002

Cause of Death[1]	ICD-10 Code	Total		Female		Male	
		#	Rate[2,3]	#	Rate	#	Rate
Total Cancer Deaths	**C00-C97**	**13,899**	**204.9**	**7,033**	**175.4**	**6,866**	**255.6**
Bladder	C67	361	5.2	144	3.3	217	8.4
Brain and nervous system	C70-C72	288	4.4	123	3.4	165	5.7
Cervix	C53	56	1.6	56	1.6	0	0.0
Colorectal	C18-C21	1,513	22.1	811	19.2	702	26.1
Esophagus	C15	363	5.4	78	1.8	285	10.3
Female breast	C50[5]	1,054	27.0	1,054	27.0	0	0.0
Hodgkin's disease	C81	39	0.6	13	0.3	26	0.9
Kidney and other urinary organs	C64, C65	245	3.6	94	2.3	151	5.5
Leukemia	C91-C95	446	6.6	218	5.3	228	8.4
Lung	C33, C34	3,758	56.0	1,778	45.6	1,980	72.0
Melanoma of the skin	C43	184	2.7	69	1.8	115	4.2
Multiple myeloma	C88, C90	294	4.3	155	3.7	139	5.2
Non-Hodgkin's lymphoma	C82-C85	562	8.2	287	6.9	275	10.4
Ovary	C56	385	10.0	385	10.0	0	0.0
Pancreas	C25	799	11.8	419	10.2	380	14.0
Prostate	C61	721	29.5	0	0.0	721	29.5
Stomach	C16	350	5.1	166	3.9	184	6.8
Uterus	C54, C55	184	4.6	184	4.6	0	0.0
All other cancers	Residual	2,297	33.8	999	24.4	1,298	48.1

1. Common terms are used to describe the causes of cancer deaths. For detailed terminology of cancer sites, please refer to 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 C50, C53-C56, which are based on the total female population, and ICD-10 C61, which is based on the total male population. 4. Calculations based on fewer than five events are excluded. 5. Includes only female breast cancer.

Table 13. Selected Causes of Cancer Deaths by Age, Massachusetts: 2002

Age	Cause of death[1]	ICD-10 Code	Number	Age-specific rate[2]
1 – 14 years	**TOTAL**		**24**	**2.0**
	Brain and nervous system	C70-C72	9	0.8
	Leukemia	C91-C95	5	0.4
	Non-Hodgkin's lymphoma	C82-C85	3	--[3]
15 - 24 years	**TOTAL**		**33**	**4.0**
	Leukemia	C91-C95	8	**1.0**
	Non-Hodgkin's lymphoma	C82-C85	3	--[3]
	Stomach	C16	2	--[3]
	Colorectal	C18-C21	2	--[3]
25 – 44 years	**TOTAL**		**427**	**21.5**
	Female breast[4]	C50	74	7.3
	Lung	C33, C34	59	3.0
	Brain and nervous system	C70-C72	37	1.9
	Colorectal	C18-C21	32	1.6
45 – 64 years	**TOTAL**		**3,087**	**217.4**
	Lung	C33, C34	903	63.6
	Female breast[4]	C50	329	44.8
	Colorectal	C18-C21	292	20.6
	Pancreas	C25	165	11.6
65 + years	**TOTAL**		**10,328**	**1,200.7**
	Lung	C33, C34	2,796	325.1
	Colorectal	C18-C21	1,187	138.0
	Prostate[5]	C61	676	197.9
	Female breast[4]	C50	651	125.5
65-74 years	**TOTAL**		**3,442**	**804.5**
	Lung	C33, C34	1,172	273.9
	Colorectal	C18-C21	315	73.6
	Pancreas	C25	202	47.2
	Female Breast[4]	C50	189	79.6
75-84 years	**TOTAL**		**4,494**	**1,423.8**
	Lung	C33, C34	1,256	397.9
	Colorectal	C18-C21	527	167.0
	Prostate[5]	C61	299	248.6
	Pancreas	C25	270	85.5
85+ years	**TOTAL**		**2,392**	**2,049.8**
	Lung	C33, C34	368	315.4
	Colorectal	C18-C21	345	295.7
	Prostate[5]	C61	243	785.2
	Female Breast[4]	C50	210	244.9

1. Common terms are used to describe causes of cancer death. For detailed terminology, please refer to 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 14. Leading Causes of Cancer Deaths and Age-Adjusted Rates by Race & Hispanic Ethnicity, Massachusetts: 2002

White, non-Hispanic[1]			Black, non-Hispanic[1]			Asian, non-Hispanic[1]			Hispanic		
Cause[2]	**#**	**Rate[3]**	**Cause**	**#**	**Rate**	**Cause**	**#**	**Rate**	**Cause**	**#**	**Rate**
Lung	3,551	57.0	Lung	120	57.0	Lung	39	37.9	Lung	47	35.0
Colorectal	1,423	22.2	Colorectal	63	31.4	Colorectal	13	12.7	Female Breast	18	18.6
Female Breast	981	27.2	Female Breast	42	29.9	Female Breast	12	17.9	Pancreas	16	13.6
Pancreas	737	11.6	Prostate	35	56.6	Stomach	11	8.9	Leukemia	15	9.0
Prostate	674	29.2	Pancreas	34	16.1	Pancreas	9	7.2	Colorectal	13	10.9
Total Cancer	**12,983**	**205.8**	**Total Cancer**	**534**	**254.7**	**Total Cancer**	**161**	**138.6**	**Total Cancer**	**209**	143.2

1. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include persons of Hispanic ethnicity in a race category. Please refer to the Technical Notes in the Appendix for a more detailed explanation. 2. ICD-10 codes used. Please refer to 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.

INJURIES

Injuries

In 2002, 2,637 deaths were the result of injuries among Massachusetts residents. As seen on Table 15a, poisonings, which include drug overdoses, were the leading cause of injury death. Poisoning deaths continued to surpass motor vehicle-related deaths in the state, by 25% in 2002. Seventy-four percent of poisoning deaths were due to narcotics and other hallucinogens.

The leading causes of injury deaths in order of percentages were: poisonings (26%), motor vehicle-related deaths (21%), hanging, strangulation or suffocation (12%), falls (9%) and firearm-related deaths (8%) (Table 15). Poisoning deaths, were the leading cause of death for persons ages 15 to 44 (451 deaths). About 54% of all injury-related deaths were due to unintentional injuries; 22% were injuries of undetermined intent; and 23% were intentional injuries (suicide and homicide) (Figure 13).

For all types of injuries, age-adjusted death rates for males were higher than those of females, regardless of race and ethnicity. Males were almost 2.7 times more likely to die from an injury than females in Massachusetts (Table 15a and Table 15b). Injuries were also largely a problem of younger adults. They were the leading cause of death for persons ages 1 to 44 years, accounting for 40% of all deaths among Massachusetts residents in this group. Injuries in this age group accounted for a large percentage of overall deaths: 42% of all deaths among white non-Hispanics; 43% of deaths among black non-Hispanics, and 39% of deaths among Hispanics (data not shown).

Overall Age Patterns:
Different age groups showed different causes of injury deaths. Motor vehicle-related deaths accounted for the highest proportion of injury deaths among 15 to 24 year- olds (40% of injury deaths in this age group were motor vehicle crashes), while poisonings, (which include drug overdoses) accounted for 45% of injury deaths among 25 to 44 year-olds. Seventeen percent of injury deaths among persons ages 15 to 24 were due to firearms. Among persons 85 years and over, 22% of injury deaths were due to falls and 17% to hanging, strangulation or suffocation (Table 15a).

Over half of poisoning deaths (56%), 35% of firearm deaths, 32% of motor vehicle-related deaths, and 27% of hanging, strangulation or suffocation deaths occurred among 25 to 44 year-olds. Close to 30% of fall deaths occurred among persons age 85 and older (Table 15a).

Overall Race/Ethnic Patterns:
Hispanic males had the highest death rate of poisonings (including drug overdoses) among all racial/ethnic groups (20.9 deaths per 100,000). Black non-Hispanic males were 7.5 times more likely to be killed by firearms than their white counterparts in 2002 (30.7 vs. 4.1 deaths per 100,000) (Table 15a).

Overall Gender Patterns:
For all types of injuries, age-adjusted death rates for males were higher than for females, regardless of race and ethnicity. Males were almost three times more likely to die from an injury than females, and six times more likely to die from a firearm injury than females in Massachusetts (Table 15c). The poisoning death rate for males was more than twice the poisoning death rate for females, 14.4 per 100,000 males vs. 6.9 per 100,000 females (Table 15a). Among females, the leading cause of homicides were stabbings (44%); for males, the leading cause of self-inflicted injury death was firearms (58%) (Table 15c).

Firearm Injuries

In 2002, a total of 202 persons died from firearm injuries in Massachusetts. This number was 5% higher than the 193 deaths in 2001. The firearm death rate increased by 15% from 2001. Firearm suicide and homicide accounted for 49% and 46%, respectively, of all firearm deaths in 2002 (Table 15d). Unintentional firearm and firearm deaths of undetermined intent accounted for 3% (6 deaths) and 2% (4 deaths), respectively. Of the firearm injury deaths in 2002, 56% were among white non-Hispanics, 30% were black non-Hispanics and 9% were Hispanics (data not shown). The rate of all firearm-related deaths in Massachusetts was about one-third the rate of firearm injury deaths in the United States (3.2 deaths per 100,000 compared with 10.3 per 100,000).

Intentional injuries

In 2002, almost 7 out of 10 intentional injury deaths were suicides (70%) (Figure 13). There were 425 suicides in 2002, an increase of 1% from the previous year (not statistically significant). The increase was mostly observed among Asian males (4 deaths in 2001 compared with 15 in 2002). There were marked racial and ethnic variations: suicide accounted for 20% of the black non-Hispanic, 32% of the Hispanic, and 88% of the white non-Hispanic intentional injury deaths.

The suicide rate for males was more than five times the suicide rate for females: 11.5 deaths per 100,000 males compared with 2.2 for females. Asian non-Hispanic and white non-Hispanic males had the highest suicide rates among race-gender groups (18.5 and 12.0 deaths/100,000, respectively). Persons ages 45 to 64 had the highest suicide death rate among age groups (9.6 deaths/100,000) (Table 15b).

Among suicide deaths, the leading causes of death were hanging, strangulation, or suffocation (38%), followed by firearm (23%) and poisoning (21%). In 2002, males were 31 times as likely to die from self-inflicted firearm wounds than females. Among females, the leading causes of self-inflicted injury deaths were poisonings (46%) and hanging, strangulation, or suffocation (30%). For males, the leading causes of self-inflicted injury deaths were hanging, strangulation, or suffocation (39%) and firearms (26%) (Table 15c).

The number of homicides increased between 2001 and 2002 (153 compared with 185). This increase was due in part to an increase among black non-Hispanic and white non-Hispanic males who accounted for 34% and 27%, respectively of all homicides in 2002. The homicide death rate also increased 21% between 2001 and 2002 (not statistically significant). This increase was observed among firearm deaths (79 deaths in 2001 compared with 93 deaths in 2002). Out of the 185 homicides, half were a result of firearms while a quarter were the result of stabbings.

The homicide rate for males was five times the homicide rate for females, 4.9 per 100,000 males vs. 1.0 per 100,000 females (Table 15b). In addition, there were large differences in homicide rates by race and ethnicity: the rates for black non-Hispanics (18.7 per 100,000) and Hispanics (8.3 per 100,000) were substantially higher than for white non-Hispanics (1.3 per 100,000). The homicide rate among black non-Hispanic males (34.6 per 100,000) was over 7 times higher than the overall male homicide rate (Table 15b).

Unintentional injuries

In 2002, there were 1,411 unintentional injury deaths among Massachusetts residents. The death rate for these injuries decreased by 6% between 2001 and 2002. The leading causes of unintentional injury deaths were motor vehicle-related deaths (39%), falls

(16%), and hanging, strangulation, or suffocation (11%) (Table 15c). In 2002, there were 553 motor vehicle-related deaths, a decrease of 3% from 2001. The motor vehicle-related death rate also decreased 2% between 2001 and 2002, yet this was not statistically significant. The motor vehicle-related death rate varied by gender, with the male rate almost three times the female rate (12.5 vs. 5.1 deaths/100,000). Although the greatest number of motor vehicle-related deaths occurred to men ages 25 to 44 years (179 deaths), males ages 85 years and older had the highest rate for motor vehicle-related deaths (32.3 deaths/100,000) followed by males ages 75 to 84 (24.9 deaths/100,000) (Table 15a).

Injuries of Undetermined Intent

About 22% of all injury-related deaths in 2002 were of undetermined intent, where investigation has not determined whether the injuries were accidental or intentionally inflicted. Almost 95% of these deaths involved poisoning (545 deaths) which includes drug overdoses (Table 15d). The majority of poisoning deaths of undetermined intent was due to narcotics and other hallucinogens (85%).

In 2002, 79% of Massachusetts poisoning deaths were of undetermined intent (Table 15d). This proportion has increased since the 1990s. There are 19 instances in which a death is referred to the Medical Examiner's Office (not all occur under suspicious circumstances or as a result of violence). The assignment of the intent of poisoning deaths is a function of the Massachusetts Medical Examiner's Office. If an individual dies of a drug overdose, and there is no explicit suicide note or indication of self-intent to die, these deaths are often classified as "injuries of undetermined intent" and not as unintentional injuries.

Table 15a. Injury Deaths[1] by Leading Causes, Gender, Age, Race and Hispanic Ethnicity: Numbers, Age-Adjusted, and Age-Specific Rates, Massachusetts: 2002

	ALL		Poisoning[2]		Motor Vehicle-related [3]		Hanging, strangulation, or suffocation		Falls		Firearm		Other[4]	
	Number	Rate[5]	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Persons	**2,637**	**40.0**	**690**	**10.6**	**553**	**8.6**	**322**	**4.8**	**249**	**3.6**	**202**	**3.2**	**621**	**9.2**
<1	9	11.3	1	--[6]	0	0.0	2	--[6]	3	--[6]	0	0.0	3	--[6]
1-14	43	3.6	0	0.0	6	0.5	5	0.4	3	--[6]	3	--[6]	26	2.2
15-24	335	40.9	62	7.6	134	16.3	31	3.8	6	0.7	56	6.8	46	5.6
25-44	871	43.8	389	19.5	179	9.0	88	4.4	26	1.3	70	3.5	119	6.0
45-64	577	40.6	211	14.9	113	8.0	61	4.3	43	3.0	50	3.5	99	7.0
65-74	166	38.8	10	2.3	42	9.8	22	5.1	30	7.0	10	2.3	52	12.2
75-84	322	102.0	14	4.4	60	19.0	59	18.7	68	21.5	10	3.2	111	35.2
85+	314	269.1	3	--[6]	19	16.3	54	46.3	70	60.0	3	--[6]	165	141.4
All Females	**857**	**22.5**	**233**	**6.9**	**176**	**5.1**	**90**	**2.2**	**92**	**2.1**	**12**	**0.4**	**254**	**5.9**
<1	2	--[6]	0	0.0	0	0.0	1	--[6]	1	--[6]	0	0.0	0	0.0
1-14	15	2.6	0	0.0	2	--[6]	3	--[6]	1	--[6]	1	--[6]	8	1.4
15-24	70	17.0	19	4.6	37	9.0	3	--[6]	1	--[6]	0	0.0	10	2.4
25-44	223	22.0	119	11.8	55	5.4	15	1.5	6	0.6	6	0.6	22	2.2
45-64	149	20.3	80	10.9	28	3.8	10	1.4	7	1.0	4	--[6]	20	2.7
65-74	52	21.9	4	--[6]	15	6.3	6	2.5	9	3.8	0	0.0	18	7.6
75-84	154	78.8	9	4.6	30	15.4	23	11.8	29	14.8	1	--[6]	62	31.7
85+	192	223.9	2	--[6]	9	10.5	29	33.8	38	44.3	0	0.0	114	133.0
All Males	**1,780**	**60.1**	**457**	**14.4**	**377**	**12.5**	**232**	**8.1**	**157**	**5.9**	**190**	**6.2**	**367**	**13.0**
<1	7	17.3	1	--[6]	0	0.0	1	--[6]	2	--[6]	0	0.0	3	--[6]
1-14	28	4.6	0	0.0	4	--[6]	2	--[6]	2	--[6]	2	--[6]	18	3.0
15-24	265	64.8	43	10.5	97	23.7	28	6.8	5	1.2	56	13.7	36	8.8
25-44	648	66.3	270	27.6	124	12.7	73	7.5	20	2.0	64	6.5	97	9.9
45-64	428	62.5	131	19.1	85	12.4	51	7.4	36	5.3	46	6.7	79	11.5
65-74	114	59.9	6	3.2	27	14.2	16	8.4	21	11.0	10	5.3	34	17.9
75-84	168	139.7	5	4.2	30	24.9	36	29.9	39	32.4	9	7.5	49	40.7
85+	122	394.2	1	--[6]	10	32.3	25	80.8	32	103.4	3	--[6]	51	164.8

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. 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 fewer than five events are excluded.

Table 15a. (continued) Injury Deaths[1] by Leading Causes, Gender, Age, Race and Hispanic Ethnicity: Numbers, Age-Adjusted, and Age-Specific Rates, Massachusetts: 2002

	ALL		Poisoning[2]		Motor Vehicle-related[3]		Hanging, strangulation, or suffocation		Falls		Firearm		Other[4]	
	Number	Rate[5]	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
White, non- Hispanic	**2,227**	**38.6**	**602**	**10.9**	**478**	**8.7**	**288**	**4.9**	**226**	**3.6**	**114**	**2.0**	**519**	**8.4**
Females	764	22.5	211	7.4	153	5.1	81	2.2	85	2.0	8	0.3	226	5.5
Males	1,463	57.3	391	14.6	325	12.8	207	8.2	141	5.8	106	4.1	293	11.8
Black, non- Hispanic	**193**	**59.8**	**38**	**11.3**	**29**	**9.0**	**14**	**5.3**	**6**	**1.8**	**60**	**16.0**	**46**	**16.4**
Females	47	29.4	15	8.6	7	4.3	6	4.3	1	--[6]	4	--[6]	14	9.6
Males	146	94.1	23	14.3	22	14.4	8	6.7	5	3.2	56	30.7	32	24.8
Asian, non- Hispanic	**49**	**29.1**	**4**	**--[6]**	**14**	**7.7**	**10**	**6.9**	**6**	**5.8**	**9**	**3.3**	**6**	**3.6**
Females	13	16.5	0	0.0	7	5.7	2	4.5	2	--[6]	0	0.0	2	--[6]
Males	36	44.6	4	--[6]	7	10.4	8	9.5	4	--[6]	9	6.8	4	--[6]
Hispanic	**164**	**48.7**	**46**	**11.6**	**32**	**8.1**	**10**	**6.1**	**10**	**5.4**	**18**	**3.9**	**48**	**13.8**
Females	31	20.8	7	3.0	9	5.4	1	--[6]	4	--[6]	0	0.0	10	7.6
Males	133	82.1	39	20.9	23	10.6	9	14.6	6	7.0	18	8.0	38	21.0

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. 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 fewer than five events are excluded.

Table 15b. Intentional Injury Deaths[1] by Gender, Age, Race and Hispanic Ethnicity: Numbers, Age-Adjusted, and Age-Specific Rates, Massachusetts: 2002

	All Intentional		Suicide		Homicide	
	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]
All Persons	**610**	**9.5**	**425**	**6.5**	**185**	**2.9**
<1	2	--[6]	0	0.0	2	--[6]
1-14	11	0.9	0	0.0	11	0.9
15-24	116	14.1	53	6.5	63	7.7
25-44	247	12.4	173	8.7	74	3.7
45-64	162	11.4	136	9.6	26	1.8
65-74	33	7.7	28	6.5	5	1.2
75-84	29	9.2	26	8.2	3	--[6]
85+	10	8.6	9	7.7	1	--[6]
All Females	**108**	**3.2**	**74**	**2.2**	**34**	**1.0**
<1						
1-14	4	--[6]	0	0.0	4	--[6]
15-24	13	3.2	9	2.2	4	--[6]
25-44	42	4.2	28	2.8	14	1.4
45-64	37	5.0	27	3.7	10	1.4
65-74	6	2.5	5	2.1	1	--[6]
75-84	4	--[6]	4	--[6]	0	0.0
85+	2	--[6]	1	--[6]	1	--[6]
All Males	**502**	**16.4**	**351**	**11.5**	**151**	**4.9**
<1	2	--[6]	0	0.0	2	--[6]
1-14	7	1.2	0	0.0	7	1.2
15-24	103	25.2	44	10.8	59	14.4
25-44	205	21.0	145	14.8	60	6.1
45-64	125	18.3	109	15.9	16	2.3
65-74	27	14.2	23	12.1	4	--[6]
75-84	25	20.8	22	18.3	3	--[6]
85+	8	25.8	8	25.8	0	0.0

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 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 fewer than five events are excluded.

Table 15b. (continued) Intentional Injury Deaths[1] by Gender, Age, Race and Hispanic Ethnicity: Numbers, Age-Adjusted, and Age-Specific Rates, Massachusetts: 2002

	All Intentional		Suicide		Homicide	
	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]
White, non- Hispanic	**452**	**8.2**	**382**	**6.9**	**70**	**1.3**
Females	86	3.0	66	2.3	20	0.7
Males	366	14.0	316	12.0	50	2.0
Black, non- Hispanic	**86**	**23.3**	**16**	**4.5**	**70**	**18.7**
Females	13	6.9	6	3.3	7	3.6
Males	73	40.6	10	6.0	63	34.6
Asian, non- Hispanic	**21**	**10.4**	**15**	**8.2**	**6**	**2.2**
Females	1	--[6]	0	0.0	1	--[6]
Males	20	21.6	15	18.5	5	3.0
Hispanic	**48**	**12.5**	**11**	**4.1**	**37**	**8.3**
Females	6	2.7	1	--[6]	5	2.2
Males	42	24.2	10	8.9	32	15.3

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 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 fewer than five events are excluded.

Figure 13

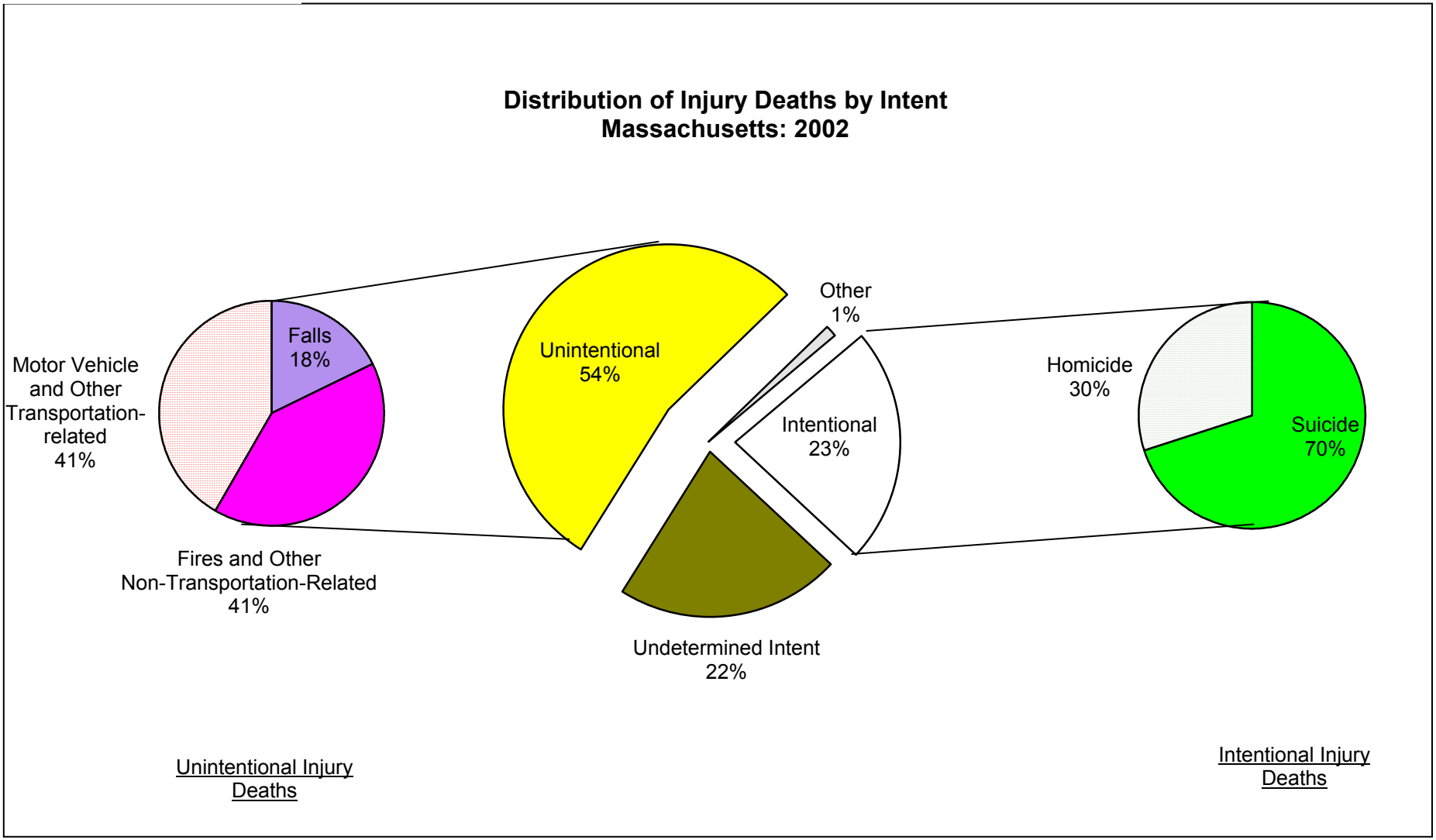

Distribution of Injury Deaths by Intent
Massachusetts: 2002
Motor Vehicle and Other Transportation-related 41%
Falls 18%
Fires and Other Non-Transportation-Related 41%
Unintentional 54%
Other 1%
Intentional 23%
Undetermined Intent 22%
Homicide 30%
Suicide 70%
Unintentional Injury Deaths
Intentional Injury Deaths

Table 15c. Injury[1] Deaths by Intent, Method and Gender: Number and Age-Adjusted Rates[2], Massachusetts: 2002

Type of Injury	All		Female		Male	
	Number	Rate	Number	Rate	Number	Rate
Suicide	**425**	**6.5**	**74**	**2.2**	**351**	**11.5**
Hanging, strangulation or suffocation	160	2.5	22	0.6	138	4.5
Firearm	98	1.5	5	0.1	93	3.1
Poisoning	88	1.4	34	1.0	54	1.7
Other and unspecified	79	1.2	13	0.4	66	2.2
Homicide*	**185**	**2.9**	**34**	**1.0**	**151**	**4.9**
Firearm	93	1.5	5	0.2	88	2.8
Cut or pierce	46	0.7	15	0.5	31	1.0
Other and unspecified	46	0.7	14	0.4	32	1.0
Unintentional Injuries (Accidents)	**1,411**	**21.0**	**544**	**13.2**	**867**	**30.8**
Falls	222	3.2	87	2.0	135	5.1
Hanging, strangulation or suffocation	150	2.2	62	1.4	88	3.4
Smoke, fire and flames	51	0.8	16	0.5	35	1.2
Poisoning	57	0.9	21	0.6	36	1.2
Drowning or submersion	47	0.7	6	0.2	41	1.3
Firearm	6	0.1	0	0.0	6	0.2
Motor Vehicle-related	553	8.6	176	5.1	377	12.5
Injury to pedestrian	71	1.1	19	0.5	52	1.8
Injury to pedal cyclist	2	--[3]	0	0.0	2	--[3]
Injury to motorcyclist	55	0.9	5	0.1	50	1.6
Injury to occupant	89	1.4	35	1.0	54	1.8
Other and unspecified	336	5.2	117	3.4	219	7.3
Other and unspecified	325	4.6	176	3.7	149	5.9
Injury Deaths of Undetermined Intent	**579**	**8.9**	**188**	**5.6**	**391**	**12.2**
Poisoning	545	8.4	178	5.3	367	11.5
Fall	9	0.1	2	--[3]	7	0.2
Drowning or submersion	5	0.1	2	--[3]	3	--[3]
Other and unspecified	20	0.3	6	0.2	14	0.4
Legal Intervention	**4**	--[3]	**1**	--[3]	**3**	--[3]
Firearm	4	--[3]	1	--[3]	3	--[3]
Adverse Effects	**33**	**0.5**	**16**	**0.4**	**17**	**0.6**
Drugs	3	--[3]	1	--[3]	2	--[3]
Medical Care	30	0.4	15	0.3	15	0.5
ALL INJURIES	**2,637**	**40.0**	**857**	**22.5**	**1,780**	**60.1**

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 persons; rates are adjusted to the 2000 US standard population. 3. Calculations based on fewer than five events are excluded. * Does not include terrorist-related deaths.

Table 15d. Type of Injury[1] Deaths by Method / Intent Categories: Number and Age-Adjusted Rates[2], Massachusetts: 2002

Manner	Intent											
	ALL		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	690	10.6	57	0.9	88	1.4	0	0.0	545	8.4	0	0.0
Transport Injuries	572	8.9	573	8.9	2	--[4]	0	0.0	0	0.0	0	0.0
Motor vehicle-related	553	8.6	553	8.6	0	0.0	0	0.0	0	0.0	0	0.0
Injury to pedestrian	71	1.1	71	1.1	0	0.0	0	0.0	0	0.0	0	0.0
Injury to pedal cyclist	2	--[4]	2	--[4]	0	0.0	0	0.0	0	0.0	0	0.0
Injury to motorcyclist	55	0.9	55	0.9	0	0.0	0	0.0	0	0.0	0	0.0
Injury to occupant	89	1.4	89	1.4	0	0.0	0	0.0	0	0.0	0	0.0
Other and unspecified	336	5.2	336	5.2	0	0.0	0	0.0	0	0.0	0	0.0
Other transport	20	4.6	20	0.3	0	0.0	0	0.0	0	0.0	0	0.0
Hanging, strangulation or suffocation	322	4.8	150	2.2	160	2.5	8	0.1	4	--[4]	0	0.0
Falls	249	3.6	222	3.2	18	0.3	0	0.0	9	0.1	0	0.0
Firearm	202	3.2	6	0.1	98	1.5	93	1.5	1	--	4	--[4]
Drowning and submersion	63	1.0	47	0.7	11	0.2	0	0.0	5	0.1	0	0.0
Smoke, fire and flames	58	0.9	51	0.8	4	--[4]	2	--[4]	1	--[4]	0	0.0
Cut or pierce	67	1.0	1	--[4]	20	0.3	46	0.7	0	0.0	0	0.0
Other and unspecified	381	5.5	304	4.3	24	0.4	36	0.6	14	0.2	0	0.0
Adverse Effects	33	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALL INJURIES	**2,637**	**40.0**	**1,411**	**21.0**	**425**	**6.5**	**185**	**2.9**	**579**	**8.9**	**4**	--[4]

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

Table 15e. Poisoning Deaths[1] of Undetermined Intent by Agent , Massachusetts: 2002

Poisoning Agent	Number	Percent
Narcotics and hallucinogens*	464	85.1
Other and unspecified drugs, medicaments, biological substances	42	7.7
Antiepileptic, sedative-hypnotic, antiparkinsonism & psychotropic	33	6.1
Nonopioid analgesics, antipyretics & antirheumatics	2	--[2]
Alcohol	2	--[2]
Gases and vapours	1	--[2]
Other drugs acting on autonomic nervous system	1	--[2]
TOTAL	**545**	**100%**

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. Calculations based on fewer than five events are excluded.

* Includes: cannabis, cocaine, codeine, heroin, lysergide (LSD), mescaline, methadone, morphine, and opium (alkaloids).

HIV/AIDS

HIV/AIDS

In 2002, 229 Massachusetts residents died from HIV/AIDS, a decrease of 8% from the previous year (Table 16a). The age-adjusted death rate from HIV/AIDS also decreased by 8% from 2001 (this decrease was not statistically significant).

In 2002, sixty-eight percent of all HIV/AIDS deaths occurred in the hospital, an increase of 3% from 2001, while 14% occurred at home (Table 16a).

Forty percent of HIV/AIDS deaths occurred among persons age 35 to 44 years. In 2002, 55% of HIV/AIDS deaths were among persons ages 45 and older. The proportion of HIV/AIDS deaths for persons age 45 and older has more than doubled since 1994 (55% vs. 20%) (Table 16b). The increase in this age group was observed among white non-Hispanics (55 deaths in 2001 compared with 66 deaths in 2002) and black non-Hispanics (37 deaths in 2001 compared with 43 deaths in 2002).

In 2002, the proportion of female HIV/AIDS deaths (29%) increased 7% from 2001(Table 16c). This increase in deaths occurred among Hispanic females (11 deaths in 2001 compared with 18 deaths in 2002).

Disparities exist in the HIV/AIDS death rate among racial and ethnic groups, with Hispanics dying at a rate eight times higher than white non-Hispanics (15.4 vs. 1.9 deaths per 100,000) (Table 16d). For black non-Hispanics, the rate is 12 times higher than white non-Hispanics (23.1 vs. 1.9 deaths per 100,000). The disproportionate impact of mortality from HIV/AIDS on Hispanics and Blacks mirrors disproportionate rates of HIV prevalence in these communities relative to Whites. The HIV/AIDS death rate for Hispanics increased from the previous year by 5%, while rates decreased for both white non-Hispanics and black non-Hispanics (by 14% and 1%, respectively) (Table 16d).

In 2002, HIV/AIDS was the 6th leading cause of death for Hispanics and the 8th leading cause of death for black non-Hispanics. It was the 25th leading cause of death for white non-Hispanics and the 23rd for the state overall. HIV/AIDS was the seventh leading cause of death for Massachusetts residents ages 25 to 44; just seven years ago, it was the leading cause of death in this age group. HIV/AIDS is the leading cause of death for Hispanics in this age group.

The 2002 age-specific HIV/AIDS death rate among 25 to 44 year-olds varied considerably by race, Hispanic ethnicity, and gender (Table 17). The death rate decreased for white non-Hispanics by 40% and for black non-Hispanics by 31% between 2001 and 2002. During the same time period, the death rate from HIV/AIDS for persons age 25 to 44 increased for all Hispanics (a 12% increase from 21.7 to 24.4 deaths/100,000). The highest death rates occurred among Hispanic and black non-Hispanic males (29.9 and 28.1 deaths per 100,000, respectively) while the lowest death rate occurred among white non-Hispanic females (1.6 deaths per 100,000). All race-gender death rates in this age group decreased from 2002, with the exception of the death rate for Hispanic females which increased by 75% (from 11.0 to 19.2 deaths per 100,000).

Table 16a. HIV/AIDS[1] Deaths by Place of Occurrence, Massachusetts: 1989-2002

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]
1990	#	447	NA	90	NA	284	NA	9	NA	64	NA
	%	100.0		20.1		63.5		2.1		14.3	
1991	#	632	NA	159	NA	338	NA	4	NA	131	NA
	%	100.0		25.2		53.5		-[5]		20.7	
1992	#	701	NA	171	NA	394	NA	14	NA	122	NA
	%	100.0		24.4		56.2		2.0		17.4	
1993	#	777	NA	218	NA	413	NA	14	NA	127	NA
	%	100.0		28.1		53.2		1.8		16.3	
1994	#	938	998	265	282	514	547	13	14	142	151
	%	100.0		28.3	28.3	54.8	54.8	1.4	1.4	15.1	15.1
1995	#	937	997	303	322	500	532	7	7	127	135
	%	100.0		32.3	32.3	53.4	53.4	0.7	0.7	13.6	13.5
1996	#	609	648	154	164	336	357	9	10	110	117
	%	100.0		25.3	25.3	55.2	55.1	1.5	1.5	18.1	18.1
1997	#	242	277	59	68	158	181	4	5	21	24
	%	100.0		24.4	24.5	65.3	65.3	-[5]	1.8	8.6	8.7
1998	#	213	244	46	53	130	149	2	2	35	40
	%	100.0		21.6	21.7	61.0	61.1	-[5]	-[5]	16.4	16.4
1999	#	242[4]		55[4]		142[4]		2[4]		43[4]	
	%	100.0		22.7		58.7		-[5]		17.8	
2000	#	226[4]		48[4]		145[4]		0[4]		33[4]	
	%	100.0		21.2		64.2		0.0		14.6	
2001	#	249[4]		47[4]		164[4]		4[4]		34[4]	
	%	100.0		18.9		65.9		-[5]		13.7	
2002	#	229[4]		33[4]		156[4]		4[4]		36[4]	
	%	100.0		14.4		68.1		-[5]		15.7	

**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 1987-1998 were coded according to the ICD-9 classification schedule, which began with 1987 death data (codes 042-044). Deaths for 1999-2002 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 between 1994 through 2002, please use the comparability modified number for years 1994-1998. Please see Appendix for a detailed explanation. 5. Calculations based on fewer than 5 events are excluded.

Table 16b. HIV/AIDS[1] Deaths by Age, Massachusetts: 1989-2002

		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]
Year											
1990	#	3	NA	4	NA	147	NA	197	NA	96	NA
	%	-[5]		-[5]		32.8		44.1		21.5	
1991	#	9	NA	19	NA	214	NA	298	NA	92	NA
	%	1.4		3.0		33.8		47.2		14.6	
1992	#	6	NA	5	NA	243	NA	304	NA	143	NA
	%	0.8		0.7		34.7		43.4		20.4	
1993	#	10	NA	5	NA	234	NA	359	NA	169	NA
	%	1.3		0.6		30.1		46.2		21.8	
1994	#	7	7	8	9	272	289	464	494	187	199
	%	0.7	0.7	0.9	0.9	29.0	29.0	49.5	49.5	19.9	19.9
1995	#	11	12	5	5	272	289	443	471	206	219
	%	1.2	1.2	0.5	0.5	29.0	29.0	47.3	47.2	22.0	22.0
1996	#	4	4	8	9	154	164	300	319	143	152
	%	0.7	0.6	1.3	1.4	25.3	25.3	49.3	49.2	23.5	23.5
1997	#	5	6	1	1	35	40	135	155	66	76
	%	2.1	2.2	-[5]	-[5]	14.5	14.4	55.8	56.0	27.3	27.4
1998	#	0	0	0	0	47	54	106	121	60	69
	%	0.0	0.0	0.0	0.0	22.1	22.1	49.8	50.0	28.2	28.3
1999	#	2[4]		9[4]		34[4]		112[4]		85[4]	
	%	-[5]		3.7		14.0		46.3		35.1	
2000	#	4[4]		0[4]		26[4]		104[4]		92[4]	
	%	-[5]		0.0[4]		11.5[4]		46.0[4]		40.7[4]	
2001	#	1[4]		2[4]		25[4]		111[4]		110[4]	
	%	-[5]		-[5]		10.0		44.6		44.2[4]	
2002	#	1[4]		1[4]		10[4]		91[4]		126[4]	
	%	-[5]		-[5]		4.4		39.7		55.0[4]	

**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 1987-1998 were coded according to the ICD-9 classification schedule, which began with 1987 death data (codes 042-044). Deaths for 1999-2001 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 between 1994 through 2002, please use the comparability modified number for years 1994-1998. Please see Appendix for a detailed explanation. 5. Calculations based on fewer than 5 events are excluded

Table 16c. HIV/AIDS[1] Deaths by Gender and Race and Hispanic ethnicity, Massachusetts: 1989-2002

Year		Gender: Male		Gender: Female		Race and Ethnicity: White, non-Hispanic[2]		Race and Ethnicity: Black, non-Hispanic[2]		Race and Ethnicity: Other[3]		Race and Ethnicity: 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]
1990	#	390	NA	57	NA	301	NA	94	NA	1	NA	50	NA
	%	87.2		12.8		67.5		21.1		-[5]		11.2	
1991	#	535	NA	97	NA	439	NA	118	NA	0	NA	74	NA
	%	84.6		15.4		69.5		18.7		0.0		11.7	
1992	#	605	NA	96	NA	463	NA	141	NA	2	NA	95	NA
	%	86.3		13.7		66.0		20.1		-[5]		13.6	
1993	#	663	NA	114	NA	518	NA	160	NA	5	NA	94	NA
	%	85.3		14.7		66.7		20.6		0.6		12.1	
1994	#	763	812	175	186	581	618	193	205	7	7	157	167
	%	81.3	81.4	18.7	18.6	61.9	61.9	20.6	20.5	0.7	0.7	16.7	16.7
1995	#	753	801	184	196	554	589	223	237	5	5	155	165
	%	80.4	80.3	19.6	19.7	59.1	59.1	23.8	23.8	0.5	0.5	16.5	16.5
1996	#	494	525	115	122	341	363	161	171	5	5	101	107
	%	81.1	81.0	18.9	18.8	56.0	56.0	26.4	26.4	0.8	0.8	16.6	16.5
1997	#	190	218	52	60	121	139	74	85	0	0	47	54
	%	78.5	78.7	21.5	21.7	50.0	50.2	30.6	30.7	0.0	0.0	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	0.0	0.0	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		51[6]	
	%	73.1		26.9		50.2		29.3		0.0		20.5	
2002	#	163[6]		66[6]		108[6]		68[6]		1		52[6]	
	%	71.2		28.8		47.1		29.7		-[5]		22.7	

**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 1987-1998 were coded according to the ICD-9 classification schedule, which began with 1987 death data (codes 042-044). Deaths for 1999-2001 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 refer to the Technical Notes in the Appendix for a more detailed explanation. 3. The "Other" category represents Asian, non-Hispanics, American Indian, non-Hispanics, and Cape Verdean, 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 fewer than 5 events are excluded. 6. When comparing data over time between 1994 through 2002, please use the comparability modified number for years 1994-1998. Please see Appendix for a detailed explanation.

Table 16d. HIV/AIDS[1] Deaths by Gender and Race and Hispanic ethnicity Numbers, Percent and Age-adjusted Rates, Massachusetts: 1999 – 2002

TOTAL	White, non-Hispanic[2]			Black, non-Hispanic[2]			Hispanic		
Year	**#**	**Percent**	**Rate[3]**	**#**	**Percent**	**Rate[3]**	**#**	**Percent**	**Rate[3]**
1999	126	52%	2.3	51	21%	17.0	63	27%	20.2
2000	104	46%	1.9	61	27%	19.5	59	26%	17.7
2001	125	50%	2.2	73	29%	23.4	51	20%	14.7
2002	108	47%	1.9	68	30%	23.1	52	23%	15.4
MALE									
1999	97	55%	3.6	33	19%	23.5	45	25%	31.3
2000	77	48%	2.8	40	25%	27.7	42	26%	28.1
2001	92	51%	3.4	50	27%	34.8	40	22%	24.5
2002	86	53%	3.1	43	26%	31.7	34	21%	21.4
FEMALE									
1999	29	45%	1.0	18	28%	11.0	18	28%	10.4
2000	27	42%	1.0	21	32%	12.3	17	26%	8.7
2001	33	49%	1.2	23	34%	13.5	11	16%	5.8
2002	22	33%	0.8	25	38%	15.6	18	27%	9.9

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 refer to 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 US standard population.

Table 17. HIV/AIDS[1] Deaths by Race, Hispanic Ethnicity, and Gender
Persons Ages 25-44, Massachusetts: 1991 – 2002

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]	
1992	362	20.5	NA	NA	105	111.0	NA	NA	79	78.3	NA	NA
1993	391	22.3	NA	NA	122	130.4	NA	NA	76	73.0	NA	NA
1994	451	25.6	480	27.2	152	162.0	162	172.3	127	118.3	135	125.8
1995	428	24.3	455	25.8	159	169.7	169	180.5	124	113.0	132	120.2
1996	251	14.2	267	15.1	113	121.1	120	128.8	85	75.4	90	80.2
1997	86	4.9	98	5.6	48	51.3	55	58.7	36	31.1	41	35.6
1998	68	3.9	78	4.5	38	40.7	44	46.6	47	39.8	54	45.6
1999			74[6]	4.4			32[6]	31.2			40[6]	30.5
2000			60[6]	3.7			28[6]	25.3			40[6]	27.9
2001			70[6]	4.3			35[6]	31.6			31[6]	21.7
2002			42[6]	2.6			24[6]	21.7			35[6]	24.4
MALE												
1992	328	37.6	NA	NA	79	170.0	NA	NA	64	127.7	NA	NA
1993	350	40.3	NA	NA	91	197.6	NA	NA	57	110.3	NA	NA
1994	388	44.5	413	47.3	113	244.3	120	259.9	93	174.2	99	185.3
1995	367	42.1	390	44.8	112	242.2	119	257.6	90	164.5	96	175.0
1996	221	25.3	235	26.9	73	158.1	78	168.2	61	108.5	65	115.4
1997	71	8.1	81	9.3	30	64.6	34	74.0	28	48.5	32	55.5
1998	57	6.6	65	7.6	27	58.2	31	66.6	34	57.7	39	66.1
1999			54[6]	6.5			20[6]	39.9			30[6]	46.2
2000			39[6]	4.8			17[6]	31.9			27[6]	28.4
2001			46[6]	5.7			19[6]	35.6			23[6]	32.7
2002			29[6]	3.6			15[6]	28.1			21[6]	29.9
FEMALE												
1992	34	3.8	NA	NA	26	54.0	NA	NA	15	29.5	NA	NA
1993	41	4.6	NA	NA	31	65.2	NA	NA	19	36.3	NA	NA
1994	63	7.1	67	7.6	39	82.0	41	87.2	34	63.0	36	67.0
1995	61	6.9	65	7.3	47	99.0	50	105.3	34	61.8	36	65.7
1996	30	3.4	32	3.6	40	84.9	43	90.3	24	42.4	26	45.1
1997	15	1.7	17	1.9	18	38.2	21	43.7	8	13.8	9	15.8
1998	11	1.3	13	1.5	11	23.4	13	26.8	13	22.0	15	25.2
1999			20[6]	2.3			12[6]	22.9			10[6]	15.1
2000			21[6]	2.5			11[6]	19.2			13[6]	17.8
2001			24[6]	2.9			16[6]	27.9			8[6]	11.0
2002			13[6]	1.6			9[6]	15.7			14[6]	19.2

1. AIDS and HIV disease deaths for years 1989-1998 coded using ICD-9: 042-044; 1999 –2002 deaths coded using ICD-10: B20-B24. Please refer to 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 refer to the Technical Notes in the Appendix for a more detailed explanation. 3. Number of deaths per 100,000 residents in the specified population group. 4. Comparability Modified (CM) number and rate based on preliminary comparability ratios (CR) from NCHS (June 2001). CM data for 1994-1996 use 1996 based CR; CM data for 1997-1998 use revised 1998 based CR. Please see Appendix for detailed explanation. 5. NA= not applicable. 6. When comparing data over time between 1994 through 2002, please use comparability modified data for years 1994-1998.

INFANT DEATHS

Causes of Infant Death

In 2002, there were a total of 397 infant deaths (deaths of infants less than one year of age) and 80,624 live births among Massachusetts residents for an infant mortality rate (IMR) of 4.9 per 1,000 live births, the second lowest rate since 1980 (Table 18). The infant mortality rate decreased by 2% from the 2001 rate of 5.0 and by 25% since 1992. Massachusetts infant mortality rate for 2002 was 30% lower than the preliminary infant mortality rate for the United States (7.0 deaths per 1,000 live births). White and Black infant mortality rates continue to be lower in Massachusetts compared with figures for the United States. (Please note: more information on 2002 births can be found in *Massachusetts Births: 2002*, published in January 2004, or online at http://www.state.ma.us/dph/bhsre/birth/02/births_a_02.doc.)

Infant mortality continued to vary by race and ethnicity. In 2002, the IMR for white non-Hispanics was 4.1 per 1,000 live births compared with 11.6 for black non-Hispanics, 7.0 for Hispanics, and 3.0 for Asian non-Hispanics (Table 18). In 2002, the IMR decreased for all race groups except for white non-Hispanics who remained the same, as compared with 2001. The IMR for black non-Hispanic and Hispanic infants decreased by 4%, and decreased by 3% for Asian non-Hispanic infants. These changes were not statistically significant.

In 2002, the overall leading causes of infant death were conditions arising in the perinatal period (249 deaths) and congenital malformations (65 deaths). Other causes of infant death were Sudden Infant Death Syndrome (SIDS) (17 deaths), diseases of the respiratory system (10 deaths), nervous system and ear (8 deaths), infectious and parasitic diseases (6 deaths), and unintentional injuries (4 deaths) (Table 19).

Three out of four infant deaths occurred in the neonatal period (birth to 27 days), although this proportion was even higher among Asian non-Hispanic infants (81%) (Table 18). Leading causes of infant death also varied by age of infant. Disorders relating to short gestation and low birthweight was the leading cause in the neonatal period (27.4%), while SIDS was the leading cause of death in the post neonatal period (28-365 days) (30.6%) (Table 19).

The distribution of the leading causes of infant death varied among race and ethnicity groups. Twenty one percent of all Hispanic infant deaths were due to congenital malformations compared with 17% of all white non-Hispanic infant deaths, and 10% of all black non-Hispanic infant deaths (Table 20).

Table 18. Trends in Infant, Neonatal, and Post Neonatal Mortality, by Race and Hispanic Ethnicity, Massachusetts: 1992-2002

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]**
1992	569	6.5	371	5.5	110	16.4	67	7.9	16	4.9	5	5.1
1993	523	6.2	346	5.3	84	13.1	77	9.3	13	3.9	3	--[4]
1994	499	6.0	343	5.3	79	12.6	64	7.6	8	2.4	5	5.3
1995	419	5.1	275	4.4	65	11.1	58	7.2	19	5.5	2	--[4]
1996	403	5.0	289	4.7	63	11.4	40	5.1	8	2.2	2	--[4]
1997	425	5.3	294	4.8	64	11.7	55	6.7	10	2.6	2	--[4]
1998	414	5.1	287	4.6	59	10.6	58	6.7	10	2.7	0	0.0
1999	418	5.2	285	4.7	72	12.3	49	5.5	8	1.9	4	--[4]
2000	377	4.6	232	3.8	74	12.8	48	5.2	19	4.1	4	--[4]
2001	407	5.0	245	4.1	71	12.1	69	7.3	15	3.1	7	4.1
2002	397	4.9	239	4.1	69	11.6	67	7.0	16	3.0	6	3.8

NEONATAL MORTALITY (birth to 27days)

	State Total[1]		White, non-Hispanic		Black, non-Hispanic		Hispanic		Asian, non-Hispanic		Other[2]	
Year	**#**	**Rate[3]**	**#**	**Rate[3]**	**#**	**Rate[3]**	**#**	**Rate[3]**	**#**	**Rate[3]**	**#**	**Rate[3]**
1992	415	4.8	274	4.0	76	11.4	51	6.0	10	3.0	4	--[4]
1993	375	4.4	245	3.7	64	10.0	55	6.7	9	2.7	2	--[4]
1994	349	4.2	240	3.7	58	9.3	40	4.7	7	2.1	4	--[4]
1995	298	3.6	198	3.1	50	8.5	39	4.8	10	2.9	1	--[4]
1996	290	3.6	222	3.6	34	6.2	27	3.5	5	1.4	1	--[4]
1997	323	4.0	228	3.7	44	8.0	43	5.2	7	1.8	1	--[4]
1998	315	3.9	218	3.5	47	8.5	43	5.0	7	1.9	0	0.0
1999	332	4.1	226	3.7	58	9.9	39	4.4	5	1.2	4	--[4]
2000	288	3.5	177	2.9	57	9.9	37	4.0	14	3.0	3	--[4]
2001	308	3.8	190	3.2	56	9.5	49	5.2	10	2.1	3	--[4]
2002	299	3.7	185	3.2	49	8.2	50	5.2	13	2.4	2	--[4]

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]**
1992	154	1.8	97	1.4	34	5.1	16	1.9	6	1.8	1	--[4]
1993	148	1.7	101	1.5	20	3.1	22	2.7	4	--[4]	1	--[4]
1994	150	1.8	103	1.6	21	3.3	24	2.8	1	--[4]	1	--[4]
1995	121	1.5	77	1.2	15	2.6	19	2.3	9	2.6	1	--[4]
1996	113	1.4	67	1.1	29	5.3	13	1.7	3	--[4]	1	--[4]
1997	102	1.3	66	1.1	20	3.7	12	1.5	3	--[4]	1	--[4]
1998	99	1.2	69	1.1	12	2.2	15	1.7	3	--[4]	0	0.0
1999	86	1.1	59	1.0	14	2.4	10	1.1	3	--[4]	0	0.0
2000	89	1.1	55	0.9	17	2.9	11	1.2	5	1.1	1	--[4]
2001	99	1.2	55	0.9	15	2.6	20	2.1	5	1.0	4	2.4
2002	98	1.2	54	0.9	20	3.4	17	1.8	3	--[4]	4	--[4]

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 fewer than five events are excluded.

Table 19. Infant, Neonatal, and Post Neonatal Deaths by Cause, Massachusetts: 2002

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		**397**	**100%**	**299**	**100%**	**98**	**100%**
Infectious and parasitic diseases	**A00-B99**	**6**	**1.5**	**0**	**0.0**	**6**	**6.1**
Cancer	**C00-C97**	**0**	**0.0**	**0**	0.0	**0**	**0.0**
Diseases of the blood and blood forming organs (anemia)	**D50-D89**	**1**	**--[3]**	**0**	0.0	**1**	**--[3]**
Diseases of nervous system and ear	**G00-G98, H60-H93**	**8**	**2.0**	**2**	**--[3]**	**6**	**6.1**
Diseases of the respiratory system	**J00-J98**	**10**	**2.5**	**0**	**0.0**	**10**	**10.2**
Diseases of digestive system	**K00-K92**	**3**	**--[3]**	**0**	0.0	**3**	**--[3]**
Congenital malformations	**Q00-Q99**	**65**	**16.4**	**46**	**15.4**	**19**	**19.4**
Congenital malformations of nervous system	Q00-Q07	8	2.0	6	2.0	2	--[3]
Anencephalus and similar malformations	Q00	2	--[3]	2	--[3]	0	0.0
Congenital malformations of eye, ear, face, and neck	Q10-Q18	**0**	0.0	**0**	0.0	**0**	**0.0**
Congenital malformations of heart	Q20-Q24	13	3.3	8	**2.7**	5	5.1
Other congenital malformations of circulatory system	Q25-Q28	2	--[3]	1	--[3]	1	--[3]
Congenital malformations of respiratory system	Q30-Q34	14	3.5	14	4.7	0	0.0
Cleft palate and other digestive tract malformations	Q35-Q45	1	--[3]	0	0.0	1	**--[3]**
Congenital malformations of genitourinary system	Q50-Q64	2	--[3]	2	--[3]	0	0.0
Congenital malformations of musculoskeletal system	Q65-Q85	5	1.3	3	--[3]	2	--[3]
Chromosomal abnormalities	Q90-Q99	15	3.8	9	3.0	6	6.1
Certain conditions originating in the perinatal period	**P00-P96**	**249**	**62.7**	**242**	**80.9**	**7**	**7.1**
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	30	7.6	30	10.0	0	0.0
Newborn affected by complications of placenta, cord and membrane	P02	20	5.0	20	6.7	0	0.0
Newborn affected by other complications of labor and delivery	P03	1	--[3]	1	--[3]	0	0.0
Disorders relating to short gestation and low birthweight	P07	83	20.9	82	27.4	1	**--[3]**
Birth trauma	P10-P15	7	1.8	7	2.3	0	0.0
Intrauterine hypoxia and birth asphyxia	P20-P21	13	3.3	13	4.3	0	0.0
Respiratory distress of newborn	P22	21	5.3	21	7.0	0	0.0
Other respiratory conditions of newborn	P23-P28	19	4.8	18	6.0	1	--[3]
Infections specific to the perinatal period	P35-P39	14	3.5	10	3.3	4	--[3]
Neonatal hemorrhage	P50-P52, P54	1	--[3]	1	--[3]	0	0.0
Other and ill-defined conditions originating in the perinatal period	P90-P96	3	--[3]	3	--[3]	0	0.0
Symptoms, signs, and ill-defined conditions	**R00-R99**	**33**	**8.3**	**3**	**--[3]**	**30**	**30.6**
Sudden Infant Death Syndrome (SIDS)	R95	17	4.3	1	**--[3]**	16	16.3
Unintentional Injuries	**V01-X59**	**4**	**--[3]**	**1**	**--[3]**	**3**	**--[3]**
Homicide	**X85-Y09**	**2**	**--[3]**	**0**	0.0	**2**	**--[3]**
All other causes	**Residual**	**16**	**4.0**	**5**	**1.7**	**11**	**11.2**

1. Please refer to the Technical Notes in the Appendix for an explanation of ICD-10 codes. 2. Percents not calculated for subcategories. 3. Calculations based on fewer than five events are excluded.

Table 20. Infant Deaths by Major Causes, Race and Hispanic Ethnicity, Massachusetts: 2002

Cause of Death[2]	ICD-10 Code	White, non-Hispanic[1]		Black, non-Hispanic[1]		Asian, non-Hispanic[1]		Hispanic	
		#	%	#	%	#	%	#	%
TOTAL		**239**	**100%**	**69**	**100%**	**16**	**100%**	**67**	**100%**
Congenital malformations	Q00-Q99	41	17.2	7	10.1	1	--[3]	14	20.9
Certain conditions originating in the perinatal period	P00-P96	153	64.0	42	60.9	11	68.8	42	62.7
Symptoms, signs, and ill-defined conditions	R00-R99	17	7.1	8	11.6	1	--[3]	6	9.0
Unintentional Injuries	V01-X59	2	--[3]	1	--[3]	0	0.0	1	--[3]
Homicide	X85-Y09	1	--[3]	0	0.0	0	0.0	1	--[3]
All other causes	Residual	25	10.5	11	15.9	3	--[3]	3	--[3]

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 refer to the Technical Notes in the Appendix for a more detailed explanation. 2. Deaths are coded according to ICD-10. Please refer to Appendix for comparability ratios. 3. Calculations based on fewer than five events are excluded.

HEALTHY PEOPLE 2010

Healthy People 2010 Objectives

In January 2000, the US 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. In its report, the US Department of Health and Human Services set mortality target objectives to be met by the year 2010. These objectives have two overarching goals: 1) to increase quality and years of healthy life, and 2) to eliminate health disparities.

Table 21 presents the two most recent Massachusetts data for selected HP2010 Mortality Objectives. This report only presents mortality objectives that use underlying cause of death data. Massachusetts either achieved or moved toward many of these targets. Out of 40 objectives presented, Massachusetts 2002 death data showed that the state had already met or exceeded many of the 2010 targets (17 total): Uterine cervix cancer deaths, coronary heart disease deaths, firearm deaths, motor vehicle crashes, homicide, maternal deaths, child and adolescent mortality death rates (1 to 4, 5 to 9, 10 to 14, and 15 to 19 years old), postneonatal deaths, deaths due to birth defects, congenital heart defects, SIDS, and asthma death rates for children under 5 years of age, 5 to 14 years of age and persons 65 years and older.

For nine objectives, the 2002 Massachusetts indicators were within 25% of the target goals. These objectives included: lung cancer deaths, female breast cancer deaths, oropharyngeal cancer deaths, prostate cancer deaths, malignant melanoma deaths, stroke deaths, drownings, infant mortality rate, and child and adolescent mortality death rates (20 to 24 years old).

The fourteen indicators for which Massachusetts was the furthest from the HP2010 targets were: overall cancer death rates, colorectal cancer deaths, cirrhosis deaths, HIV deaths, unintentional injuries, poisoning deaths, hanging/suffocation/strangulation deaths, fall deaths, fire deaths, suicide deaths, drug-induced deaths, neonatal deaths, and asthma death rates for person ages 15 to 34 and 35 to 64 years. Although these rates were over 25% from the target goals, most were still lower than the rates for the United States overall.

Table 21. Target Status for Selected Healthy People 2010 Mortality Objectives

Objective Number	HEALTHY PEOPLE 2010 OBJECTIVE	TARGET 2010[1]	MA 2001[2]	MA 2002[2]	US 2002[3]	TARGET STATUS
	Age-adjusted rates (per 100,000 population)					
3-1	Overall Cancer death rate	159.9	202.8	204.9	194.0	●
3-2	Lung Cancer	44.9	55.0	56.0	55.1	○
3-3	Female Breast Cancer (per 100,000 females)	22.3	26.9	27.0	14.5	○
3-4	Uterine Cervix (per 100,000 females)	2.0	1.6	1.6	1.4	✓
3-5	Colorectal Cancer	13.9	21.1	22.1	19.7	●
3-6	Oropharyngeal Cancer	2.7	2.7	2.9	2.7	○
3-7	Prostate Cancer (per 100,000 males)	28.8	30.5	29.5	10.6	○
3-8	Malignant Melanoma	2.5	2.9	2.7	2.6	○
12-1	Coronary Heart Disease	166.0	146.2	141.4	NA[5]	✓
12-7	Stroke	48.0	49.7	50.0	56.3	○
13-14	HIV/AIDS	0.7	3.8	3.5	4.9	●
26-2	Cirrhosis	3.0	5.6	6.1	NA[5]	●
26-3	Drug-induced deaths	1.0	10.6	10.5	7.7	●
	Injury Deaths					
15-3	Firearm- related	4.1	3.0	3.2	10.3	✓
15-8	Poisonings	1.5	11.0	10.6	NA[5]	●
15-9	Hanging, strangulation or suffocation	3.0	4.3	4.8	NA[5]	●
15-13	Unintentional injuries (Accidents)	17.5	22.3	21.0	35.3	●
15-15	Motor vehicle crashes	9.0	8.8	8.6	15.4	✓
15-25	Residential fire deaths	0.2	0.6	0.7	NA[5]	●
15-27	Falls	3.0	3.8	3.6	5.5	●
15-29	Drowning	0.9	1.1	1.0	1.2	○
15-32	Homicide	3.0	2.4	2.9	5.9	✓
18-1	Suicide	5.0	6.5	6.5	10.6	●
	Death Rates (per 1,000 live births)					
16-1c	Infant deaths	4.5	5.0	4.9	7.0	○
16-1d	Neonatal deaths	2.9	3.8	3.7	4.7	●
16-1e	Postneonatal deaths	1.2	1.2	1.2	2.3	✓
16-1f	Birth defects	1.1	0.8	0.8	1.4	✓
16-1g	Congenital heart defects	0.38	0.14	0.26	0.38	✓
16-1h	Sudden infant death syndrome (SIDS)	0.25	0.30	0.21	0.51	✓
16-4	Maternal deaths (per 100,000 live births)	3.3	4.9	2.5	NA[5]	✓
	Child/Adolescent/Young Adults Death Rates (per 100,000 pop)					
16-2a	1-4 years old	25.0	19.5	22.3	31.2	✓
16-2b	5-9 years old	14.3	7.9	10.0	NA[5]	✓
16-3a	10-14 years old	16.8	16.9	12.3	NA[5]	✓
16-3b	15-19 years old	43.2	42.8	41.1	NA[5]	✓
16-3c	20-24 years old	57.3	65.8	71.5	NA[5]	○
24-1	Asthma deaths (per million)					
24-1a	Children under age 5 years	1.0	--[4]	--[4]	NA[5]	✓
24-1b	Children aged 5-14 years	1.0	--[4]	--[4]	NA[5]	✓
24-1c	Ages 15-34 years	3.0	4.6	4.6	NA[5]	●
24-1d	Ages 35-64 years	9.0	13.3	13.7	NA[5]	●
24-1e	Ages 65+ years	60.0	45.3	48.8	NA[5]	✓

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

1. Data 2010 the Healthy People 2010 Database. CDC Wonder website. 2. 2001-2002 rates are calculated using 2000 population estimates. 3. US data for 2002 obtained from NCHS. Deaths: Preliminary Data for 2002. National Vital Statistics Report, Vol. 52, No. 13, February 11, 2004. 4. Calculations based on fewer than 5 events are excluded. 5. Not available at time of publication.

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

Premature Mortality Rate in the 30 Largest Massachusetts Communities

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

Though strictly a mortality measure, the premature mortality rate has been found to be highly correlated with morbidity indicators which measure the level of "sickness" rather than death for a given population. Therefore, it is expected that populations with high premature mortality rates 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[7]. PMR analyses make clear that community health status is related to many factors. Health care is certainly one of these factors, but not the only factor. PMR may be related to socioeconomic status and its correlates such as, higher rates of smoking, substance abuse, violence, obesity, stress, pollution, and lack of access to care. However, there are other possible reasons for high PMRs: specific sub-populations of younger persons at risk for motor vehicle deaths in rural areas and heart attack deaths in persons 45 to 64 in suburban areas.

In 2002, among the 30 largest communities in Massachusetts, the age-adjusted premature mortality rates (number of deaths before age 75 per 100,000 population (under 75 years) adjusted to the 2000 U.S. Standard Population) were significantly higher in Springfield (520.7), Brockton (486.7), New Bedford (472.3), Worcester (468.0), Lynn (454.4), Lowell (449.3), Fall River (448.4), Lawrence (447.4), Boston (430.1), Attleboro (420.9), and Malden (418.3) compared with the state overall (345.2 per 100,000). Age-adjusted death rates were significantly lower in Newton (211.2) and Brookline (193.5) (Table 22). Table 23a presents PMR for all cities/towns in the Commonwealth and Table 25 presents selected Causes of Death for all cities/towns.

[7] 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.

Table 22. Rank of Premature Mortality Rates for the Largest 30 Communities*, Massachusetts: 2002

(Sorted by PMR)

City/Town	Number of Deaths	PMR** (per 100,000 population)
SPRINGFIELD	666	520.7[1]
BROCKTON	402	486.7[1]
NEW BEDFORD	418	472.3[1]
WORCESTER	691	468.0[1]
LYNN	356	454.4[1]
LOWELL	378	449.3[1]
FALL RIVER	386	448.4[1]
LAWRENCE	234	447.4[1]
BOSTON	2,003	430.1[1]
ATTLEBORO	162	420.9[1]
MALDEN	221	418.3[1]
TAUNTON	204	399.9
METHUEN	166	396.5
HAVERHILL	200	387.1
PLYMOUTH	168	379.7
CHICOPEE	217	379.2
WEYMOUTH	213	374.7
PITTSFIELD	181	366.7
SOMERVILLE	212	365.3
REVERE	178	365.1
QUINCY	326	364.7
PEABODY	192	352.4
MEDFORD	191	332.4
WALTHAM	177	331.1
BARNSTABLE	183	329.8
CAMBRIDGE	239	324.1
FRAMINGHAM	201	321.5
ARLINGTON	124	283.2
NEWTON	176	211.2[1]
BROOKLINE	95	193.5[1]
STATE TOTAL	**20,780**	**345.2**

*Selected from among the 30 Massachusetts communities with the largest populations. Based on 2000 Census.

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

[1] PMR is statistically significantly different from State PMR.

Table 23a. Premature Mortality Rates by Community, Massachusetts: 2002

City/Town	Number of Deaths	PMR* (per 100,000 population)
STATE	**20,780**	**345.2**
Abington	48	365.3
Acton	36	217.4
Acushnet	29	267.2
Adams	40	407.8
Agawam	113	389.7
Alford	1	--[1]
Amesbury	54	360.1
Amherst	40	221.0
Andover	56	188.5
Arlington	124	283.2
Ashburnham	16	339.0
Ashby	5	241.5
Ashfield	4	--[1]
Ashland	34	250.3
Athol	47	423.1
Attleboro	162	420.9
Auburn	52	282.9
Avon	22	452.6
Ayer	20	305.3
Barnstable	183	329.8
Barre	16	370.2
Becket	12	638.6
Bedford	33	232.7
Belchertown	36	354.2
Bellingham	51	365.7
Belmont	51	195.0
Berkley	19	419.6
Berlin	14	543.7
Bernardston	9	347.9
Beverly	131	338.2
Billerica	116	355.0
Blackstone	21	281.0
Blandford	5	409.3
Bolton	15	404.0
Boston	2,003	430.1
Bourne	78	381.4
Boxborough	2	--[1]
Boxford	14	178.1
Boylston	10	273.3
Braintree	118	311.8
Brewster	40	295.0
Bridgewater	64	330.0
Brimfield	10	298.6
Brockton	402	486.7

Table 23a. Premature Mortality Rates by Community, Massachusetts: 2002 (continued)

City/Town	Number of Deaths	PMR* (per 100,000 population)
Brookfield	11	354.0
Brookline	95	193.5
Buckland	7	337.0
Burlington	62	227.1
Cambridge	239	324.1
Canton	56	264.8
Carlisle	7	147.0
Carver	33	313.0
Charlemont	3	--[1]
Charlton	33	386.9
Chatham	22	191.6
Chelmsford	104	295.9
Chelsea	128	470.0
Cheshire	13	343.1
Chester	2	--[1]
Chesterfield	5	476.1
Chicopee	217	379.2
Chilmark	0	0.0
Clarksburg	7	302.4
Clinton	59	465.9
Cohasset	20	267.1
Colrain	9	510.0
Concord	37	191.0
Conway	0	0.0
Cummington	5	548.3
Dalton	33	447.2
Danvers	86	309.5
Dartmouth	90	289.0
Dedham	73	278.9
Deerfield	15	316.3
Dennis	69	321.4
Dighton	19	321.3
Douglas	26	494.4
Dover	10	160.0
Dracut	97	363.2
Dudley	22	238.9
Dunstable	4	--[1]
Duxbury	29	227.4
East Bridgewater	36	333.9
East Brookfield	4	--[1]
East Longmeadow	58	376.7
Eastham	32	388.3
Easthampton	57	374.1
Easton	40	204.8
Edgartown	11	252.8
Egremont	2	--[1]
Erving	4	--[1]
Essex	7	201.6
Everett	150	413.1

Table 23a. Premature Mortality Rates by Community, Massachusetts: 2002 (continued)

City/Town	Number of Deaths	PMR* (per 100,000 population)
Fairhaven	58	328.6
Fall River	386	448.4
Falmouth	126	302.4
Fitchburg	151	437.7
Florida	0	0.0
Foxborough	35	224.4
Framingham	201	321.5
Franklin	55	245.7
Freetown	25	316.1
Gardner	66	333.8
Gay Head (Aquinnah)	1	--[1]
Georgetown	24	404.4
Gill	5	425.5
Gloucester	111	337.6
Goshen	2	--[1]
Gosnold	0	0.0
Grafton	41	304.9
Granby	20	335.2
Granville	1	--[1]
Great Barrington	29	380.7
Greenfield	63	372.8
Groton	24	348.3
Groveland	20	397.2
Hadley	15	305.2
Halifax	29	392.4
Hamilton	16	211.5
Hampden	15	281.8
Hancock	2	--[1]
Hanover	28	233.8
Hanson	31	357.6
Hardwick	7	310.4
Harvard	33	582.5
Harwich	47	249.3
Hatfield	11	286.3
Haverhill	200	387.1
Hawley	0	0.0
Heath	3	--[1]
Hingham	50	241.4
Hinsdale	10	567.5
Holbrook	54	426.7
Holden	39	242.8
Holland	8	405.1
Holliston	39	296.8
Holyoke	191	547.7
Hopedale	25	446.8
Hopkinton	24	235.2
Hubbardston	11	440.6
Hudson	52	288.6
Hull	34	309.1

Table 23a. Premature Mortality Rates by Community, Massachusetts: 2002 (continued)

City/Town	Number of Deaths	PMR* (per 100,000 population)
Huntington	6	320.9
Ipswich	39	265.9
Kingston	46	425.9
Lakeville	27	301.0
Lancaster	18	284.9
Lanesborough	8	262.8
Lawrence	234	447.4
Lee	18	300.9
Leicester	37	388.6
Lenox	18	303.1
Leominster	151	392.7
Leverett	2	--[1]
Lexington	57	170.6
Leyden	2	--[1]
Lincoln	9	123.9
Littleton	19	266.6
Longmeadow	33	181.5
Lowell	378	449.3
Ludlow	64	290.9
Lunenburg	20	212.6
Lynn	356	454.4
Lynnfield	25	184.7
Malden	221	418.3
Manchester	12	179.1
Mansfield	55	353.3
Marblehead	44	193.1
Marion	13	214.4
Marlborough	124	385.1
Marshfield	80	358.0
Mashpee	45	298.2
Mattapoisett	13	174.1
Maynard	34	347.5
Medfield	26	233.1
Medford	191	332.4
Medway	39	389.4
Melrose	92	327.2
Mendon	10	240.0
Merrimac	22	369.8
Methuen	166	396.5
Middleborough	72	436.2
Middlefield	1	--[1]
Middleton	30	446.2
Milford	72	295.0
Millbury	50	379.4
Millis	20	268.4
Millville	4	--[1]
Milton	53	208.1
Monroe	0	0.0
Monson	25	321.5

Table 23a. Premature Mortality Rates by Community, Massachusetts: 2002 (continued)

City/Town	Number of Deaths	PMR* (per 100,000 population)
Montague	30	331.2
Monterey	2	--[1]
Montgomery	8	1111.5
Mount Washington	0	0.0
Nahant	14	326.6
Nantucket	27	324.4
Natick	84	256.6
Needham	65	216.9
New Ashford	0	0.0
New Bedford	418	472.3
New Braintree	1	--[1]
New Marlborough	4	--[1]
New Salem	0	0.0
Newbury	14	213.8
Newburyport	45	269.7
Newton	176	211.2
Norfolk	18	225.6
North Adams	73	494.8
North Andover	56	234.7
North Attleboro	83	376.9
North Brookfield	14	334.2
North Reading	30	231.0
Northampton	93	353.5
Northborough	29	233.3
Northbridge	46	408.3
Northfield	5	170.2
Norton	60	464.8
Norwell	27	285.1
Norwood	89	283.7
Oak Bluffs	8	231.6
Oakham	4	--[1]
Orange	30	402.1
Orleans	20	169.6
Otis	5	307.1
Oxford	55	460.7
Palmer	55	457.7
Paxton	12	260.0
Peabody	192	352.4
Pelham	2	--[1]
Pembroke	53	356.3
Pepperell	24	296.3
Peru	2	--[1]
Petersham	5	369.4
Phillipston	4	--[1]
Pittsfield	181	366.7
Plainfield	3	--[1]
Plainville	32	429.2
Plymouth	168	379.7
Plympton	10	399.7

Table 23a. Premature Mortality Rates by Community, Massachusetts: 2002 (continued)

City/Town	Number of Deaths	PMR* (per 100,000 population)
Princeton	12	410.6
Provincetown	22	499.4
Quincy	326	364.7
Randolph	114	362.8
Raynham	48	418.6
Reading	60	247.8
Rehoboth	23	248.6
Revere	178	365.1
Richmond	3	--[1]
Rochester	16	433.7
Rockland	77	458.1
Rockport	13	146.5
Rowe	2	--[1]
Rowley	10	240.0
Royalston	1	--[1]
Russell	3	--[1]
Rutland	16	348.5
Salem	148	386.6
Salisbury	29	345.9
Sandisfield	9	791.5
Sandwich	52	259.9
Saugus	92	294.9
Savoy	0	0.0
Scituate	47	230.4
Seekonk	36	256.7
Sharon	46	304.0
Sheffield	10	262.5
Shelburne	9	342.6
Sherborn	4	--[1]
Shirley	20	363.0
Shrewsbury	77	256.6
Shutesbury	1	--[1]
Somerset	60	268.1
Somerville	212	365.3
South Hadley	59	336.8
Southampton	16	362.2
Southborough	19	271.2
Southbridge	66	423.3
Southwick	35	426.8
Spencer	37	329.3
Springfield	666	520.7
Sterling	25	388.9
Stockbridge	2	--[1]
Stoneham	64	258.4
Stoughton	103	352.0
Stow	15	263.4
Sturbridge	28	361.5
Sudbury	43	286.3
Sunderland	4	--[1]

Table 23a. Premature Mortality Rates by Community, Massachusetts: 2002 (continued)

City/Town	Number of Deaths	PMR* (per 100,000 population)
Sutton	27	412.0
Swampscott	41	275.8
Swansea	49	285.3
Taunton	204	399.9
Templeton	22	333.6
Tewksbury	90	312.4
Tisbury	19	447.6
Tolland	1	--[1]
Topsfield	17	245.3
Townsend	17	306.5
Truro	9	304.5
Tyngsborough	32	422.5
Tyringham	0	0.0
Upton	12	280.2
Uxbridge	39	430.0
Wakefield	69	281.3
Wales	5	260.9
Walpole	64	284.0
Waltham	177	331.1
Ware	45	486.7
Wareham	116	517.0
Warren	15	319.0
Warwick	5	615.3
Washington	1	--[1]
Watertown	114	348.4
Wayland	27	185.8
Webster	69	435.2
Wellesley	43	172.2
Wellfleet	11	253.8
Wendell	3	--[1]
Wenham	11	251.1
West Boylston	17	260.4
West Bridgewater	15	221.7
West Brookfield	18	470.0
West Newbury	5	134.1
West Springfield	118	418.3
West Stockbridge	2	--[1]
West Tisbury	6	235.1
Westborough	38	265.9
Westfield	149	401.5
Westford	34	192.7
Westhampton	3	--[1]
Westminster	18	294.9
Weston	18	140.1
Westport	62	389.6
Westwood	26	180.8
Weymouth	213	374.7
Whately	5	316.6
Whitman	59	493.2

Table 23a. Premature Mortality Rates by Community, Massachusetts: 2002 (continued)

City/Town	Number of Deaths	PMR* (per 100,000 population)
Wilbraham	41	276.4
Williamsburg	11	409.1
Williamstown	20	270.8
Wilmington	59	304.3
Winchendon	58	710.0
Winchester	63	280.3
Windsor	1	--[1]
Winthrop	66	340.4
Woburn	131	334.6
Worcester	691	468.0
Worthington	6	559.0
Wrentham	34	382.7
Yarmouth	102	324.8

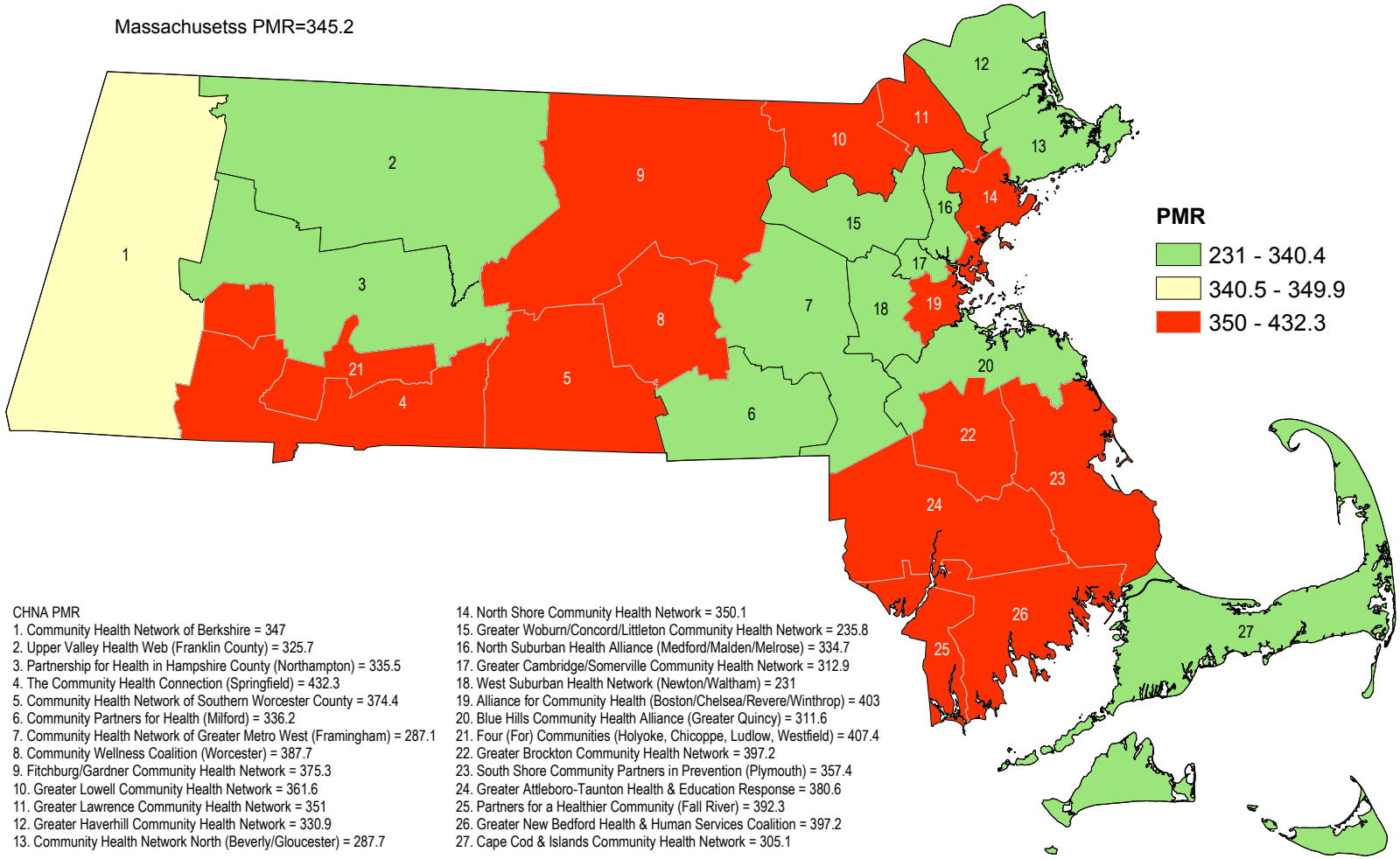
*Rates are age-adjusted to the 2000 US Standard Population for person ages 0-74 years.
[1] Age-adjusted rates based on fewer than five events are excluded.

Table 23b. Premature Mortality Rates by Community Health Network Area (CHNA), Massachusetts: 2002

CHNA (Name and Number)	Number of Deaths	PMR* (per 100,000 population)
Massachusetts	**20,780**	**345.2**
Community Health Network of Berkshire (1)	508	347.0
Upper Valley Health Web (Franklin County) (2)	277	325.7
Partnership for Health in Hampshire County (Northampton) (3)	430	335.5
The Community Health Connection (Springfield) (4)	1,177	432.3
Community Health Network of Southern Worcester County (5)	395	374.4
Community Partners for Health (Milford) (6)	427	336.2
Community Health Network of Greater Metro West (Framingham) (7)	996	287.1
Community Wellness Coalition (Worcester) (8)	1,026	387.7
Fitchburg/Gardner Community Health Network (9)	843	375.3
Greater Lowell Community Health Network (10)	855	361.6
Greater Lawrence Community Health Network (11)	542	351.0
Greater Haverhill Community Health Network (12)	437	330.9
Community Health Network North (Beverly/Gloucester) (13)	357	287.7
North Shore Community Health Network (14)	998	350.1
Greater Woburn/Concord/Littleton Community Health Network (15)	515	235.8
North Suburban Health Alliance (Medford/Malden/Melrose) (16)	877	334.7
Greater Cambridge/Somerville Community Health Network (17)	740	312.9
West Suburban Health Network (Newton/Waltham) (18)	588	231.0
Alliance for Community Health (Boston/Chelsea/Revere/Winthrop) (19)	2,470	403.0
Blue Hills Community Health Alliance (Greater Quincy) (20)	1,193	311.6
Four (For) Communities (Holyoke, Chicoppe, Ludlow, Westfield) (21)	629	407.4
Greater Brockton Community Health Network (22)	843	397.2
South Shore Community Partners in Prevention (Plymouth) (23)	584	357.4
Greater Attleboro-Taunton Health & Education Response (24)	808	380.6
Partners for a Healthier Community (Fall River) (25)	557	392.3
Greater New Bedford Health & Human Services Coalition (26)	778	397.2
Cape Cod & Islands Community Health Network (27)	929	305.1

*Rates are age-adjusted to the 2000 US Standard Population for person ages 0-74 years.
[1] Age-adjusted rates based on fewer than five events are excluded.

Map 1. Premature Mortality Rates* (PMR) by Community Health Network Area (CHNA) Massachusetts: 2002

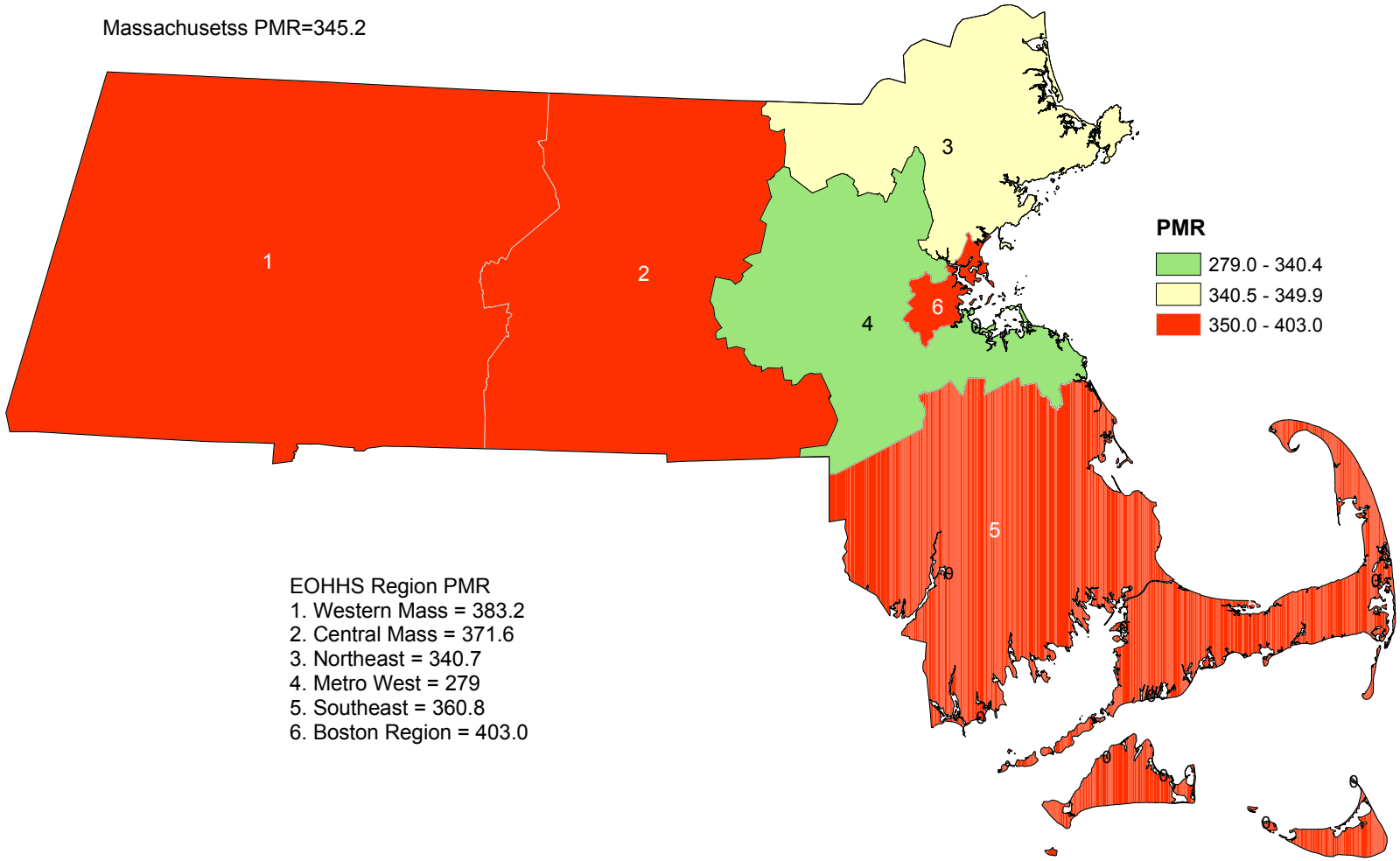


CHNA PMR
1. Community Health Network of Berkshire = 347
2. Upper Valley Health Web (Franklin County) = 325.7
3. Partnership for Health in Hampshire County (Northampton) = 335.5
4. The Community Health Connection (Springfield) = 432.3
5. Community Health Network of Southern Worcester County = 374.4
6. Community Partners for Health (Milford) = 336.2
7. Community Health Network of Greater Metro West (Framingham) = 287.1
8. Community Wellness Coalition (Worcester) = 387.7
9. Fitchburg/Gardner Community Health Network = 375.3
10. Greater Lowell Community Health Network = 361.6
11. Greater Lawrence Community Health Network = 351
12. Greater Haverhill Community Health Network = 330.9
13. Community Health Network North (Beverly/Gloucester) = 287.7
14. North Shore Community Health Network = 350.1
15. Greater Woburn/Concord/Littleton Community Health Network = 235.8
16. North Suburban Health Alliance (Medford/Malden/Melrose) = 334.7
17. Greater Cambridge/Somerville Community Health Network = 312.9
18. West Suburban Health Network (Newton/Waltham) = 231
19. Alliance for Community Health (Boston/Chelsea/Revere/Winthrop) = 403
20. Blue Hills Community Health Alliance (Greater Quincy) = 311.6
21. Four (For) Communities (Holyoke, Chicoppe, Ludlow, Westfield) = 407.4
22. Greater Brockton Community Health Network = 397.2
23. South Shore Community Partners in Prevention (Plymouth) = 357.4
24. Greater Attleboro-Taunton Health & Education Response = 380.6
25. Partners for a Healthier Community (Fall River) = 392.3
26. Greater New Bedford Health & Human Services Coalition = 397.2
27. Cape Cod & Islands Community Health Network = 305.1

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

State PMR: Confidence Interval 340.5-349.9 deaths per 100,000

Map 2. Premature Mortality Rates* (PMR) by EOHHS Region
Massachusetts: 2002



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

State PMR: Confidence Interval 340.5-349.9 deaths per 100,000

Table 23c. Premature Mortality Rates by County, Massachusetts: 2002

County	Number of Deaths	PMR* (per 100,000 population)
Massachusetts	**20,780**	**345.2**
Barnstable	858	307.4
Berkshire	508	347.0
Bristol	1,926	377.8
Dukes	44	278.1
Essex	2,334	335.8
Franklin	220	315.7
Hampden	1,823	422.5
Hampshire	436	335.1
Middlesex	4,149	301.4
Nantucket	27	324.4
Norfolk	1,900	292.9
Plymouth	1,623	371.2
Suffolk	2,375	422.2
Worcester	2,556	374.6

*Rates are age-adjusted to the 2000 US Standard Population for person ages 0-74 years.
[1] Age-adjusted rates based on fewer than five events are excluded.

Table 24. Selected Causes of Death by Community, Massachusetts: 2002

COMMUNITY	Total Deaths	Age- adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	Chronic Lower Respiratory Disease[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide
Massachusetts	**56,881**	**819.9**	**14,694**	**13,899**	**3,758**	**1,054**	**3,557**	**2,744**	**1,418**	**2,050**	**553**	**185**	**425**
Abington	143	962.5	31	36	14	1	8	8	3	3	3	0	4
Acton	102	759.9	24	30	2	3	10	3	4	5	0	0	2
Acushnet	84	775.9	26	18	3	1	8	6	3	1	0	0	2
Adams	119	885.5	28	30	10	0	10	7	2	5	4	0	1
Agawam	322	815.7	94	83	20	4	20	9	2	14	1	0	1
Alford	5	1,429.9	3	1	0	0	0	0	0	0	0	0	0
Amesbury	150	921.1	37	29	12	3	10	9	7	8	0	1	1
Amherst	120	586.1	38	24	4	1	6	8	5	4	4	0	2
Andover	247	771.0	75	54	9	6	14	15	6	4	1	0	1
Arlington	419	746.1	118	113	25	5	29	14	5	15	3	0	4
Ashburnham	28	704.0	5	7	2	1	1	1	2	3	2	0	0
Ashby	14	738.4	4	1	0	0	0	1	0	0	0	0	2
Ashfield	7	418.1	3	1	1	0	2	0	0	0	0	0	0
Ashland	73	708.2	16	22	3	3	6	5	3	2	1	0	0
Athol	144	910.0	34	37	14	3	11	6	5	5	0	0	1
Attleboro	384	877.7	108	90	24	7	23	21	10	15	4	0	7
Auburn	168	739.1	50	35	13	1	13	5	3	5	3	0	1
Avon	48	923.8	18	9	2	0	0	3	0	2	1	0	1
Ayer	53	737.0	15	15	3	2	2	6	1	1	1	0	0
Barnstable	532	780.7	113	148	44	9	30	31	10	12	7	1	7
Barre	37	742.3	8	12	3	0	4	1	0	3	0	0	1
Becket	18	1,093.1	2	8	3	1	2	1	1	0	0	0	1
Bedford	110	568.4	17	28	7	3	4	6	1	8	0	0	1
Belchertown	72	795.3	17	21	5	1	3	6	2	1	1	0	0
Bellingham	102	951.2	20	48	16	3	3	2	0	2	1	0	1
Belmont	222	631.7	46	65	15	9	13	6	2	13	3	0	1
Berkley	30	877.2	3	8	3	2	2	4	2	2	1	0	0
Berlin	23	984.1	7	7	1	2	0	0	4	0	0	0	2
Bernardston	26	933.5	9	6	1	2	1	2	0	0	0	0	0
Beverly	419	804.7	100	111	34	5	44	22	9	11	2	1	3
Billerica	235	909.0	51	60	17	5	12	17	8	6	3	2	5
Blackstone	49	697.5	15	12	2	0	5	2	0	0	0	0	1
Blandford	7	567.6	0	4	1	1	0	0	1	0	0	1	0
Bolton	21	844.4	7	5	0	1	0	0	0	1	1	0	0
Boston	4,416	872.9	981	1,073	298	97	228	156	140	160	37	68	22

Table 24. Selected Causes of Death by Community, Massachusetts: 2002 (continued)

COMMUNITY	Total Deaths	Age- adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	Chronic Lower Respiratory Disease[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide
Bourne	204	864.9	46	53	23	3	17	17	6	2	5	1	2
Boxborough	10	725.9	2	2	0	1	2	1	0	1	0	0	0
Boxford	31	537.4	3	18	4	0	0	1	0	2	0	0	1
Boylston	25	766.3	9	5	2	1	3	0	0	1	0	0	1
Braintree	372	781.9	109	87	21	8	25	23	4	14	1	2	1
Brewster	154	726.0	28	39	12	6	18	9	4	8	1	0	1
Bridgewater	157	918.7	42	32	11	3	8	15	4	12	2	0	2
Brimfield	30	985.3	10	7	3	1	1	1	2	0	0	0	0
Brockton	899	978.9	222	210	54	18	48	58	32	33	9	10	7
Brookfield	28	882.0	7	12	7	0	1	2	3	0	0	0	0
Brookline	370	573.0	105	91	16	6	28	12	5	17	2	2	1
Buckland	19	860.6	5	2	0	1	1	4	0	1	0	0	0
Burlington	143	692.5	30	44	14	1	8	7	6	9	2	0	1
Cambridge	584	752.3	145	161	50	16	33	20	9	19	2	2	4
Canton	233	784.9	55	52	11	4	7	17	5	9	2	0	1
Carlisle	14	498.8	0	4	1	1	1	0	1	0	0	0	2
Carver	98	819.9	25	28	4	2	4	6	1	5	2	0	0
Charlemont	10	846.3	3	4	0	1	1	0	0	0	0	0	0
Charlton	84	972.3	16	25	5	1	10	4	4	3	0	0	1
Chatham	116	620.5	37	26	6	2	9	5	3	1	1	0	0
Chelmsford	289	821.0	75	62	15	3	21	19	6	16	6	1	1
Chelsea	304	932.5	69	77	21	4	16	11	9	12	3	1	2
Cheshire	25	667.4	8	5	1	0	1	2	0	1	0	0	0
Chester	7	687.1	3	1	0	0	0	0	0	1	0	0	0
Chesterfield	10	1,125.0	3	2	0	1	0	1	2	0	0	0	0
Chicopee	635	901.2	167	177	44	12	38	23	12	26	5	0	5
Chilmark	4	--[4]	2	0	0	0	0	0	1	0	0	0	0
Clarksburg	14	678.2	5	2	1	1	1	0	0	0	0	0	0
Clinton	158	993.9	39	41	10	4	14	6	4	5	0	0	3
Cohasset	81	968.5	22	21	4	1	3	2	1	2	1	0	0
Colrain	13	756.0	3	5	1	2	0	1	0	0	1	0	1
Concord	190	781.4	36	50	9	2	21	4	0	12	1	0	2
Conway	8	630.5	2	1	0	0	2	0	1	1	0	0	0
Cummington	13	1,562.6	2	5	2	0	0	0	0	1	0	0	0
Dalton	85	958.3	22	20	8	2	3	3	4	7	2	0	0
Danvers	277	806.6	65	63	20	6	19	19	6	15	1	0	2
Dartmouth	287	762.4	96	62	14	7	24	13	6	3	4	1	3

Table 24. Selected Causes of Death by Community, Massachusetts: 2002 (continued)

COMMUNITY	Total Deaths	Age-adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	Chronic Lower Respiratory Disease[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide
Dedham	238	783.9	60	49	17	2	11	12	4	7	2	0	1
Deerfield	35	695.1	14	6	2	1	5	2	1	1	0	0	0
Dennis	225	772.1	55	72	14	7	19	11	1	2	3	0	2
Dighton	50	791.4	21	15	2	2	4	1	0	2	2	0	0
Douglas	45	907.6	12	8	3	1	1	0	1	2	2	0	0
Dover	25	553.5	5	8	1	1	2	1	0	3	0	0	0
Dracut	232	1,003.7	68	74	16	5	10	12	4	4	5	0	1
Dudley	67	691.3	20	16	6	1	1	1	0	0	0	0	0
Dunstable	7	443.1	2	4	1	0	1	0	0	0	0	0	0
Duxbury	113	720.5	24	26	5	2	7	5	1	2	2	0	2
East Bridgewater	112	1,039.2	35	24	4	2	9	6	5	10	0	0	0
East Brookfield	19	844.5	5	4	1	0	0	1	0	3	0	0	0
East Longmeadow	188	891.6	41	40	5	6	12	9	0	8	0	0	1
Eastham	76	865.6	18	15	3	1	5	3	2	0	0	0	1
Easthampton	151	837.1	48	39	8	2	11	5	1	9	3	0	1
Easton	147	921.7	35	29	7	2	13	5	4	7	2	1	1
Edgartown	30	896.8	9	10	2	1	1	0	0	1	0	0	1
Egremont	8	441.7	3	0	0	0	0	0	0	1	0	0	1
Erving	10	634.0	3	1	0	0	0	2	1	1	0	0	0
Essex	18	557.9	4	6	3	1	0	1	1	0	0	0	0
Everett	378	889.0	111	91	32	6	21	16	8	12	2	1	2
Fairhaven	229	855.0	81	47	11	5	9	11	6	5	1	0	0
Fall River	1,105	917.4	321	241	64	15	71	47	40	40	7	4	14
Falmouth	387	748.8	99	80	19	6	25	28	10	18	6	0	4
Fitchburg	418	915.6	93	82	12	2	55	23	13	10	1	1	1
Florida	1	--[4]	0	0	0	0	0	1	0	0	0	0	0
Foxborough	96	675.5	27	31	6	2	3	4	2	1	1	0	0
Framingham	621	846.1	164	146	34	26	38	22	16	33	6	0	4
Franklin	146	760.7	40	35	11	1	9	6	3	6	6	0	0
Freetown	48	730.5	10	14	6	1	2	1	0	2	2	0	0
Gardner	213	801.0	50	60	17	3	16	8	3	7	2	0	1
Gay Head (Aquinnah)	2	--[4]	0	1	0	0	0	0	0	0	0	0	0
Georgetown	46	830.4	10	17	4	2	4	2	0	1	2	0	0
Gill	12	828.3	1	3	1	0	2	2	0	0	1	0	0
Gloucester	312	848.7	72	81	22	7	22	18	10	8	2	0	1
Goshen	7	871.0	2	2	0	0	0	1	0	0	0	0	1

Table 24. Selected Causes of Death by Community, Massachusetts: 2002 (continued)

COMMUNITY	Total Deaths	Age- adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	Chronic Lower Respiratory Disease[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide
Gosnold	2	--[4]	1	0	0	0	0	1	0	0	0	0	0
Grafton	100	795.1	24	28	8	5	4	9	2	5	0	0	1
Granby	42	802.4	9	18	8	1	1	2	0	3	2	0	0
Granville	5	495.2	2	1	0	0	0	1	0	0	0	0	0
Great Barrington	93	788.9	31	20	4	0	5	5	0	3	0	0	0
Greenfield	219	808.2	52	48	11	8	21	15	5	11	1	0	0
Groton	55	973.1	13	13	4	1	4	4	1	3	1	0	0
Groveland	40	880.8	7	14	4	0	1	3	1	1	1	0	0
Hadley	62	785.0	20	11	2	2	4	4	2	1	1	0	1
Halifax	68	929.7	20	21	6	2	1	5	1	2	0	0	0
Hamilton	47	745.0	10	18	4	2	6	2	2	0	1	0	0
Hampden	38	693.2	9	14	6	0	1	3	0	3	0	0	0
Hancock	3	--[4]	0	1	0	0	0	0	0	1	0	0	0
Hanover	76	697.6	25	20	4	3	3	2	1	3	1	0	0
Hanson	68	1099.0	18	22	9	0	1	3	1	3	3	0	1
Hardwick	20	748.2	1	8	3	2	0	0	0	1	2	0	0
Harvard	47	997.9	11	10	3	0	5	0	3	1	0	0	0
Harwich	176	631.9	39	37	7	0	13	10	4	2	1	0	2
Hatfield	28	674.4	5	9	5	0	0	1	2	2	0	0	0
Haverhill	553	865.5	134	134	31	8	26	33	17	16	12	3	3
Hawley	3	--[4]	0	2	0	0	0	0	0	1	0	0	0
Heath	6	1,486.1	1	4	2	0	0	0	0	0	0	0	1
Hingham	188	799.4	52	45	12	6	17	8	3	4	1	0	1
Hinsdale	19	1,530.1	8	3	1	0	0	1	2	1	2	0	0
Holbrook	132	1,098.2	41	32	8	1	5	9	2	8	0	0	1
Holden	130	710.1	35	34	8	1	8	6	4	3	0	0	0
Holland	15	904.4	3	5	1	0	2	0	1	0	0	0	0
Holliston	89	977.8	27	21	5	2	5	7	1	3	0	0	1
Holyoke	514	1,038.0	147	103	26	9	39	18	19	20	3	3	4
Hopedale	58	803.0	13	16	3	0	7	2	2	2	1	0	1
Hopkinton	55	656.5	13	19	3	0	5	2	1	1	1	0	0
Hubbardston	19	866.0	5	7	3	0	1	1	0	1	0	0	1
Hudson	108	664.8	26	30	13	1	4	10	3	1	1	0	2
Hull	81	839.2	17	26	11	0	4	5	1	3	4	0	1

Table 24. Selected Causes of Death by Community, Massachusetts: 2002 (continued)

COMMUNITY	Total Deaths	Age- adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	Chronic Lower Respiratory Disease[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide
Huntington	15	885.6	4	5	2	0	2	1	0	0	0	0	1
Ipswich	100	605.2	27	29	5	2	6	5	1	1	0	0	1
Kingston	147	1,063.2	51	26	6	1	11	6	5	4	1	0	0
Lakeville	70	702.2	13	14	5	0	8	2	1	3	1	0	1
Lancaster	46	681.7	13	9	3	3	4	3	0	1	1	0	0
Lanesborough	18	656.5	3	5	2	1	2	1	1	2	0	0	0
Lawrence	538	870.5	144	110	36	7	36	23	22	19	3	3	6
Lee	66	934.8	12	13	4	2	4	1	3	5	0	0	0
Leicester	85	810.1	33	23	8	1	4	3	3	1	1	0	1
Lenox	99	872.7	26	25	5	1	9	6	1	2	2	0	0
Leominster	382	868.2	108	85	22	8	41	19	6	10	2	0	6
Leverett	10	713.2	3	3	2	1	1	1	0	1	0	0	0
Lexington	262	545.0	59	69	17	7	29	12	7	9	1	0	1
Leyden	4	--[4]	0	2	1	0	2	0	0	0	0	0	0
Lincoln	33	525.8	11	10	1	1	2	1	0	0	0	0	0
Littleton	73	884.6	16	21	6	1	10	1	3	6	1	0	1
Longmeadow	168	656.3	37	34	7	1	15	8	1	6	0	0	0
Lowell	863	940.9	240	174	54	14	49	40	19	22	12	4	9
Ludlow	179	782.8	55	35	8	1	10	5	2	7	2	0	0
Lunenburg	67	802.5	12	22	7	2	8	6	3	2	2	0	0
Lynn	838	930.3	220	213	63	16	48	41	12	39	10	6	5
Lynnfield	86	595.2	20	30	8	1	3	4	1	5	1	0	0
Malden	550	896.3	147	137	38	10	26	27	10	16	9	1	5
Manchester	38	568.3	5	9	2	2	4	1	1	1	0	0	1
Mansfield	116	890.5	25	29	4	3	5	7	2	2	2	0	1
Marblehead	171	675.6	51	46	15	3	10	7	2	6	1	0	0
Marion	72	934.1	26	14	5	0	3	6	0	6	0	0	0
Marlborough	335	942.5	88	80	16	12	17	14	11	16	4	1	3
Marshfield	165	895.2	42	46	18	1	11	10	3	5	3	0	1
Mashpee	115	746.2	18	30	10	1	12	6	0	7	5	0	1
Mattapoisett	52	654.6	17	17	1	1	3	3	0	0	0	0	0
Maynard	75	704.3	14	23	4	2	6	4	2	2	1	0	1
Medfield	79	884.5	20	25	8	1	7	0	2	2	0	0	0
Medford	602	790.7	163	152	44	13	24	29	15	26	5	1	3
Medway	90	966.1	26	19	5	1	5	5	1	5	0	0	1
Melrose	281	761.5	84	72	23	7	15	14	7	5	1	0	1
Mendon	23	606.2	7	5	3	0	0	1	1	0	0	0	0

Table 24. Selected Causes of Death by Community, Massachusetts: 2002 (continued)

COMMUNITY	Total Deaths	Age-adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	Chronic Lower Respiratory Disease[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide
Merrimac	42	782.2	7	17	2	3	1	3	1	1	0	0	1
Methuen	476	894.5	149	107	33	10	21	22	13	12	6	1	2
Middleborough	172	962.4	43	37	10	2	13	16	4	8	2	0	0
Middlefield	4	--[4]	1	0	0	0	0	0	2	0	0	0	0
Middleton	58	1,008.8	13	20	5	1	5	0	3	0	0	0	0
Milford	220	740.2	58	51	10	4	8	9	2	10	2	0	2
Millbury	151	906.0	40	31	8	8	11	9	4	5	3	0	0
Millis	42	739.2	7	18	9	2	4	0	2	3	1	0	0
Millville	9	487.6	1	4	2	1	0	1	0	0	0	0	0
Milton	246	676.8	59	74	16	2	20	12	6	11	0	0	0
Monroe	1	--[4]	0	0	0	0	0	0	0	0	0	0	0
Monson	71	993.0	17	13	5	2	8	3	0	3	0	0	0
Montague	84	796.5	19	23	8	1	5	5	2	7	0	0	0
Monterey	4	--[4]	1	2	2	0	0	0	0	0	0	0	0
Montgomery	10	1,611.5	3	2	0	1	0	2	0	0	0	0	0
Mount Washington	0	0.0	0	0	0	0	0	0	0	0	0	0	0
Nahant	55	908.0	14	11	3	1	6	3	0	2	0	0	0
Nantucket	64	801.6	17	13	5	1	7	3	4	2	0	0	0
Natick	295	794.0	98	67	17	2	23	8	8	7	1	0	1
Needham	308	645.1	77	70	10	7	26	16	4	13	0	0	3
New Ashford	0	0.0	0	0	0	0	0	0	0	0	0	0	0
New Bedford	1,166	972.7	340	247	55	17	67	64	33	36	13	8	7
New Braintree	7	1,127.1	2	2	0	0	1	0	0	0	0	0	0
New Marlborough	11	738.0	3	3	1	0	1	0	1	0	0	0	0
New Salem	2	--[4]	2	0	0	0	0	0	0	0	0	0	0
Newbury	40	720.4	16	5	3	0	2	1	0	1	3	0	1
Newburyport	188	922.9	49	46	11	7	18	11	4	4	1	0	0
Newton	667	608.0	176	180	35	12	46	29	7	21	1	1	6
Norfolk	38	775.0	6	11	3	4	3	1	2	2	0	0	2
North Adams	237	1,135.5	64	46	19	2	15	18	9	10	3	0	1
North Andover	253	742.8	71	62	10	5	16	8	5	8	2	0	0
North Attleboro	195	897.6	44	41	13	2	14	7	4	5	3	0	2
North Brookfield	35	737.2	10	8	4	1	1	2	2	4	1	0	1

Table 24. Selected Causes of Death by Community, Massachusetts: 2002 (continued)

COMMUNITY	Total Deaths	Age-adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	Chronic Lower Respiratory Disease[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide
North Reading	85	806.6	27	21	12	2	5	6	2	3	0	0	0
Northampton	289	824.0	77	82	32	3	20	8	7	5	1	0	1
Northborough	84	838.6	22	20	7	0	5	3	3	4	2	0	3
Northbridge	183	1,088.6	52	28	8	1	12	6	7	10	0	0	3
Northfield	23	737.5	3	5	2	0	3	0	1	2	0	0	0
Norton	129	1,023.2	32	25	5	4	7	10	4	5	5	0	0
Norwell	97	891.4	15	21	3	1	7	9	3	8	0	0	2
Norwood	324	791.9	67	80	22	7	27	20	7	20	0	0	3
Oak Bluffs	36	943.1	12	6	1	0	4	1	0	0	0	0	0
Oakham	9	882.7	1	1	0	0	0	2	0	0	1	0	0
Orange	75	933.6	18	21	5	1	9	5	0	3	0	0	0
Orleans	104	600.9	25	24	5	1	9	7	6	3	1	0	1
Otis	10	744.1	3	3	1	0	0	1	0	0	1	0	0
Oxford	111	970.9	21	38	11	0	3	5	2	4	3	0	1
Palmer	161	1,063.8	40	39	10	4	12	6	5	5	3	0	0
Paxton	35	758.5	13	7	2	2	1	1	1	0	0	0	1
Peabody	551	878.3	151	145	44	9	36	28	16	20	2	0	4
Pelham	8	850.9	1	1	1	0	0	1	2	0	0	0	0
Pembroke	98	826.0	23	33	8	3	4	3	1	3	1	0	3
Pepperell	60	909.5	22	14	3	2	3	1	3	0	1	0	1
Peru	3	--[4]	2	0	0	0	0	0	0	0	1	0	0
Petersham	8	528.8	4	0	0	0	1	0	0	0	1	0	0
Phillipston	9	804.2	2	2	1	1	1	1	0	0	0	0	0
Pittsfield	560	842.4	169	130	36	10	23	25	20	6	4	1	7
Plainfield	5	881.6	3	1	1	0	0	0	0	0	0	0	0
Plainville	68	958.1	19	22	10	1	2	3	3	1	0	0	1
Plymouth	428	829.1	119	98	22	4	24	25	9	20	3	1	4
Plympton	18	1,014.1	2	9	2	1	1	1	0	0	1	0	0
Princeton	24	1,030.4	9	4	0	0	0	0	0	1	0	0	0
Provincetown	55	1,117.0	10	17	6	2	3	3	3	2	0	0	0
Quincy	940	841.1	222	244	68	17	60	52	24	24	5	4	9
Randolph	293	839.5	77	83	30	7	16	12	6	11	1	0	0
Raynham	101	835.8	26	31	16	0	8	5	1	4	0	0	2
Reading	191	718.6	63	38	6	4	13	10	5	5	0	0	3
Rehoboth	51	655.5	15	11	3	1	5	4	1	0	1	0	1
Revere	485	814.9	119	124	33	4	20	26	14	17	5	1	6
Richmond	10	556.7	2	2	1	1	2	1	0	0	0	0	0
Rochester	26	774.4	7	6	4	0	2	0	1	1	2	0	1

Table 24. Selected Causes of Death by Community, Massachusetts: 2002 (continued)

COMMUNITY	Total Deaths	Age- adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	Chronic Lower Respiratory Disease[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide
Rockland	170	959.5	43	44	21	6	9	12	2	3	0	1	1
Rockport	83	588.2	22	20	4	2	3	7	2	5	1	0	0
Rowe	3	--[4]	0	2	0	0	1	0	0	0	0	0	0
Rowley	39	831.1	14	5	3	0	3	2	1	2	0	0	0
Royalston	4	--[4]	0	0	0	0	1	0	1	0	0	0	0
Russell	8	709.6	3	2	0	0	0	0	0	1	0	0	0
Rutland	32	732.8	4	12	5	1	0	3	3	0	0	0	1
Salem	374	831.5	105	92	29	5	24	20	8	7	4	2	2
Salisbury	57	784.9	19	14	4	1	1	3	2	1	0	0	0
Sandisfield	19	1,729.0	3	9	3	0	1	4	0	0	0	0	0
Sandwich	144	680.8	28	39	4	4	9	7	4	9	1	1	0
Saugus	267	772.6	74	71	19	7	23	16	3	5	1	0	5
Savoy	4	--[4]	1	1	1	0	0	1	0	0	0	0	0
Scituate	138	668.2	37	37	8	5	8	8	1	7	3	0	0
Seekonk	112	845.8	33	23	8	1	8	8	4	4	2	0	0
Sharon	107	707.7	25	34	12	4	2	8	2	5	1	0	2
Sheffield	28	753.7	10	9	2	1	2	1	0	0	1	0	0
Shelburne	30	866.4	5	13	2	1	2	1	1	2	0	1	1
Sherborn	14	385.3	1	8	0	2	1	0	0	0	1	0	0
Shirley	33	696.5	6	15	6	0	0	1	1	0	1	0	0
Shrewsbury	251	735.7	68	57	15	2	14	10	3	12	1	1	3
Shutesbury	2	--[4]	1	0	0	0	0	0	0	0	1	0	0
Somerset	228	789.6	79	43	12	5	15	9	8	5	0	0	1
Somerville	577	876.9	156	143	45	11	36	25	14	27	6	1	6
South Hadley	200	879.0	54	40	15	0	16	16	2	6	1	0	0
Southampton	41	936.7	10	9	2	1	3	0	1	3	0	0	0
Southborough	47	895.0	11	15	2	4	6	2	1	2	1	0	1
Southbridge	192	902.3	53	38	9	3	11	9	8	6	1	2	1
Southwick	78	953.1	20	20	7	1	4	4	1	2	0	0	1
Spencer	110	999.2	28	31	13	1	2	6	7	5	0	1	2
Springfield	1,397	955.3	337	318	97	15	49	71	51	59	22	12	13
Sterling	67	1,271.0	23	16	2	1	4	4	1	1	1	0	0
Stockbridge	17	444.4	5	3	1	0	1	0	1	0	0	0	0
Stoneham	239	720.3	73	62	17	3	15	8	9	7	0	0	0
Stoughton	248	773.6	56	60	24	1	18	15	6	10	2	1	2
Stow	30	715.2	5	13	5	2	0	0	1	1	0	0	3
Sturbridge	71	908.7	23	14	2	0	6	4	2	4	2	0	2
Sudbury	111	823.3	24	29	7	4	7	2	1	8	2	0	1

Table 24. Selected Causes of Death by Community, Massachusetts: 2002 (continued)

COMMUNITY	Total Deaths	Age- adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	Chronic Lower Respiratory Disease[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide
Sunderland	14	524.3	5	4	2	0	1	1	1	0	1	0	0
Sutton	51	926.0	15	12	4	0	4	4	0	1	1	0	0
Swampscott	155	671.6	34	39	9	4	12	8	0	4	1	0	2
Swansea	141	732.6	28	42	14	3	7	10	4	7	3	1	0
Taunton	521	901.5	152	126	28	9	34	23	9	32	9	0	0
Templeton	82	1,188.5	14	17	7	0	9	7	2	4	1	0	0
Tewksbury	233	940.5	53	64	22	7	8	13	3	8	2	0	0
Tisbury	41	789.0	11	17	4	1	1	2	0	1	1	0	1
Tolland	3	--[4]	0	2	0	0	0	0	0	0	0	0	0
Topsfield	59	827.5	16	18	3	1	1	5	0	1	0	0	0
Townsend	43	897.8	7	9	6	0	4	3	3	3	2	0	0
Truro	16	567.6	5	3	1	1	0	2	0	0	2	1	0
Tyngsborough	63	1,039.3	13	17	5	1	3	1	2	5	1	0	0
Tyringham	5	1,284.5	0	1	0	0	1	0	1	1	0	0	0
Upton	35	783.0	12	5	3	0	2	1	0	1	0	0	0
Uxbridge	93	1,041.3	27	27	8	1	7	5	2	4	0	0	1
Wakefield	253	814.3	62	67	16	3	23	13	6	8	1	0	2
Wales	11	973.5	4	1	1	0	0	1	0	0	1	0	0
Walpole	203	758.9	34	60	14	4	17	17	7	6	3	0	3
Waltham	481	781.2	103	114	25	8	41	18	7	22	3	1	2
Ware	122	1,052.7	31	33	8	2	9	2	3	5	2	0	0
Wareham	249	1,008.4	71	56	17	6	11	12	6	9	2	2	4
Warren	38	791.8	8	11	4	0	1	0	2	2	0	0	0
Warwick	11	2,385.2	5	0	0	0	2	0	0	0	1	0	0
Washington	2	--[4]	0	1	0	0	0	0	0	0	0	0	0
Watertown	303	710.9	62	74	14	7	23	9	6	18	3	0	2
Wayland	92	647.0	26	23	6	1	7	4	1	5	0	0	1
Webster	204	915.3	60	40	9	3	9	18	3	3	2	2	1
Wellesley	181	582.7	45	50	8	4	10	5	2	7	0	0	0
Wellfleet	22	490.0	6	6	1	0	2	3	0	0	0	0	0
Wendell	3	--[4]	0	0	0	0	0	0	0	1	0	0	2
Wenham	33	698.8	11	10	3	1	3	1	0	1	0	0	0
West Boylston	69	789.0	11	19	2	2	4	3	3	6	0	0	0
West Bridgewater	79	786.2	25	18	7	0	4	6	2	1	2	0	2
West Brookfield	39	694.1	13	7	2	0	1	2	1	2	0	0	2
West Newbury	18	628.0	6	3	1	1	0	0	2	1	0	0	0

Table 24. Selected Causes of Death by Community, Massachusetts: 2002 (continued)

COMMUNITY	Total Deaths	Age-adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	Chronic Lower Respiratory Disease[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide
West Springfield	301	901.8	86	72	26	5	17	16	5	5	3	0	1
West Stockbridge	10	551.8	2	4	1	1	0	0	0	1	0	0	0
West Tisbury	12	583.5	5	3	0	0	1	0	0	0	0	0	0
Westborough	147	726.1	38	29	5	1	14	3	6	8	1	0	1
Westfield	367	839.2	105	93	33	10	19	14	8	10	3	3	3
Westford	94	715.5	26	26	2	2	4	3	2	3	0	0	1
Westhampton	5	440.0	2	2	0	1	0	1	0	0	0	0	0
Westminster	55	964.7	20	14	2	1	2	2	0	3	1	0	1
Weston	90	515.8	23	16	6	1	7	0	4	6	1	0	0
Westport	130	828.0	31	38	10	0	6	12	3	5	1	0	1
Westwood	140	588.3	40	37	8	4	8	4	2	6	1	0	1
Weymouth	555	881.7	136	136	41	6	35	37	18	21	7	0	0
Whately	16	989.2	7	2	1	0	1	0	0	1	1	0	0
Whitman	102	903.1	21	33	6	7	6	4	2	5	1	0	3
Wilbraham	139	760.7	45	31	4	7	3	6	1	5	1	0	0
Williamsburg	27	1,036.5	5	5	1	0	0	2	3	2	0	0	1
Williamstown	95	647.4	24	21	4	2	12	2	4	4	1	0	1
Wilmington	151	815.3	37	38	7	5	4	11	7	1	1	0	3
Winchendon	105	1,291.7	29	29	4	0	7	5	4	2	5	0	0
Winchester	217	692.0	55	55	14	1	17	9	3	12	1	1	1
Windsor	3	--[4]	1	0	0	0	0	0	0	0	0	0	1
Winthrop	202	824.4	46	54	9	4	9	5	2	7	2	0	3
Woburn	350	849.8	90	91	28	9	27	19	14	11	3	0	3
Worcester	1,820	929.3	497	379	110	31	113	88	61	73	15	8	10
Worthington	13	1,146.9	4	2	0	0	0	1	2	0	2	0	0
Wrentham	89	762.8	24	17	3	1	5	3	2	4	4	0	1
Yarmouth	388	716.1	95	89	26	2	38	16	8	6	4	3	0

1. All rates are age adjusted using the 2000 US standard population. 2. Includes only female breast cancer. 3. The title of this cause of death changed between ICD-10 an ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title). 4. Age-adjusted rates based on fewer than five events are excluded.

Table 25. Selected Causes of Death by Community Health Network Area (CHNA), Massachusetts: 2002

CHNA (Name and Number)	Total Deaths	Age-adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Breast Cancer[2]	Stroke	Chronic Lower Respiratory Disease[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide
Massachusetts	**56,881**	**819.9**	**14,694**	**13,899**	**3,758**	**1,054**	**3,557**	**2,744**	**1,418**	**2,050**	**553**	**185**	**425**
Community Health Network of Berkshire (1)	1,591	833.2	441	368	111	25	95	81	50	50	21	1	13
Upper Valley Health Web (Franklin County) (2)	811	781.5	204	197	57	23	76	48	19	38	8	1	6
Partnership for Health in Hampshire County (Northampton) (3)	1,219	815.8	332	306	94	15	73	59	36	42	17	0	7
The Community Health Connection (Springfield) (4)	2,896	896.1	734	675	188	47	141	138	67	111	30	13	17
Community Health Network of Southern Worcester County (5)	1,054	858.8	281	257	78	11	49	56	37	36	10	5	11
Community Partners for Health (Milford) (6)	1,104	847.3	298	270	78	13	63	44	19	43	13	0	10
Community Health Network of Greater Metro West (Framingham) (7)	2,791	789.3	710	729	180	77	185	114	78	112	31	1	29
Community Wellness Coalition (Worcester) (8)	2,834	855.3	780	618	176	54	175	134	84	111	23	9	18
Fitchburg/Gardner Community Health Network (9)	2,118	881.4	528	517	128	36	185	107	57	63	28	1	20
Greater Lowell Community Health Network (10)	2,016	896.4	528	481	132	37	108	105	44	64	29	7	17
Greater Lawrence Community Health Network (11)	1,572	837.9	452	353	93	29	92	68	49	43	12	4	9
Greater Haverhill Community Health Network (12)	1,204	840.1	302	302	79	25	66	68	35	38	19	4	7
Community Health Network North (Beverly/Gloucester) (13)	1,109	749.3	267	302	80	23	89	62	26	28	6	1	6
North Shore Community Health Network (14)	2,774	826.8	734	710	210	52	181	146	48	103	21	8	20
Greater Woburn/Concord/Littleton Community Health Network (15)	1,655	695.4	377	442	106	35	135	74	46	74	10	1	17
North Suburban Health Alliance (Medford/Malden/Melrose) (16)	2,579	807.7	730	640	188	48	142	123	62	82	18	3	16
Greater Cambridge/Somerville Community Health Network (17)	2,105	758.3	527	556	149	48	134	74	36	92	17	3	17
West Suburban Health Network (Newton/Waltham) (18)	2,130	652.1	529	524	110	39	151	85	30	85	8	2	13
Alliance for Community Health (Boston/Chelsea/Revere/Winthrop) (19)	5,777	842.5	1,320	1,419	377	115	301	210	170	213	49	72	34
Blue Hills Community Health Alliance (Greater Quincy) (20)	3,655	804.2	893	940	259	68	231	213	81	139	26	6	20
Four (For) Communities (Holyoke, Chicoppe, Ludlow, Westfield) (21)	1,717	891.6	481	414	113	32	108	61	41	64	13	6	13
Greater Brockton Community Health Network (22)	2,067	926.3	526	483	137	35	119	129	60	91	22	12	23
South Shore Community Partners in Prevention (Plymouth) (23)	1,449	862.2	392	373	105	25	76	78	25	50	17	2	12
Greater Attleboro-Taunton Health & Education Response (24)	1,931	871.9	515	450	121	33	131	108	42	82	32	0	14
Partners for a Healthier Community (Fall River) (25)	1,604	865.3	459	364	100	23	99	78	55	57	11	5	16
Greater New Bedford Health & Human Services Coalition (26)	2,213	899.3	674	481	116	38	129	116	55	63	24	11	17
Cape Cod & Islands Community Health Network (27)	2,903	738.0	679	727	193	48	223	165	66	76	38	7	23

1. All rates are age adjusted using the 2000 US standard population. 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).

Table 26. Selected Causes of Death by County, Massachusetts: 2002

County	Total Deaths	Age- adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Breast Cancer[2]	Stroke	Chronic Lower Respiratory Disease[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide
Massachusetts	**56,881**	**819.9**	**14,694**	**13,899**	**3,758**	**1,054**	**3,557**	**2,744**	**1,418**	**2,050**	**553**	**185**	**425**
Barnstable	2,714	737.3	622	678	181	45	209	158	61	72	37	7	21
Berkshire	1,591	833.2	441	368	111	25	95	81	50	50	21	1	13
Bristol	5,254	872.1	1,506	1,180	302	87	332	268	144	182	62	15	42
Dukes	125	768.8	40	36	7	2	7	4	1	2	1	0	2
Essex	6,659	817.6	1,755	1,667	462	129	428	344	158	212	58	17	42
Franklin	646	773.1	164	158	42	19	62	41	13	33	7	1	5
Hampden	4,654	895.6	1,228	1,097	304	80	250	200	111	175	44	19	29
Hampshire	1,234	815.9	336	311	96	15	75	60	36	42	17	0	8
Middlesex	11,749	773.3	3,033	2,977	776	251	745	517	263	447	103	17	95
Nantucket	64	801.6	17	13	5	1	7	3	4	2	0	0	0
Norfolk	5,794	763.6	1,442	1,503	404	102	361	301	122	222	42	9	35
Plymouth	4,086	885.3	1,066	999	277	77	235	244	93	163	49	14	40
Suffolk	5,407	868.3	1,215	1,328	361	109	273	198	165	196	47	70	33
Worcester	6,901	857.6	1,828	1,583	430	112	478	325	197	252	65	15	60

1 All rates are age adjusted using the 2000 US standard population. 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).

APPENDIX

Table A1. Age-Adjusted Death Rates[1] for Selected Causes of Death by Race and Gender, Massachusetts: 2002

Cause	ICD-10 Code	White[2]			Black[2]		
		Total	Male	Female	Total	Male	Female
All Deaths		816.6	1,009.7	685.4	1,001.9	1,225.5	843.9
Heart Disease	I00-I09, I11, I13, I20-I51	209.5	271.9	166.8	222.9	263.4	192.1
Cancer	C00-C97	205.0	254.9	176.2	64.0	63.1	64.5
Stroke	I60-I69	49.6	53.9	46.4	238.6	316.2	189.9
Chronic Lower Respiratory Disease[3]	J40-J47	40.2	46.8	36.7	24.6	33.9	18.8
Influenza and Pneumonia	J10-J18	28.7	36.9	24.5	27.5	38.1	21.6
Diabetes	E10-E14	20.0	26.8	15.4	44.6	45.8	43.4
Alzheimer's Disease	G30	22.2	19.1	23.4	14.4	11.3	15.2
Nephritis	N00-N07, N17-N19, N25-N27	17.8	25.3	13.6	35.8	47.7	29.1
Septicemia	A40-A41	14.4	17.2	12.6	23.4	26.3	20.7
HIV Diseases	B20-B24	2.7	4.1	1.3	20.8	28.8	13.8
Perinatal Conditions	P00-P96	3.9	4.6	3.1	9.4	10.4	8.3
All Injuries	V01-Y98	39.3	58.9	22.5	55.8	88.6	26.9
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	8.7	12.8	5.1	8.5	13.5	4.2
Suicide	X60-X84, Y87.0	6.7	11.7	2.2	4.3	6.0	2.8
Homicide	X85-Y09, Y87.1	1.8	2.9	0.8	16.6	31.0	3.1

1. Age-adjusted to the 2000 US 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

Data Sources

Data for this document are derived from Massachusetts death certificates, Massachusetts birth certificates, the US Census, the Massachusetts Institute for Social and Economic Research (MISER), and the National Center for Health Statistics (NCHS).

Differences from Previously Published Data

Age-Adjusted Rates

A new standard population is used in the calculation of age-adjusted rates. The 2000 US projected population replaces the 1940 US projected population as the standard population for age-adjustment. All age-adjusted rates published in this report have been re-calculated with the new standard population. Age-adjusted rates can only be compared with age-adjusted rates that have been calculated using the same standard population. **Therefore, comparisons of age-adjusted rates published in this report using the 2000 US standard population to age-adjusted rates previously published using the 1940 standard population are not valid!**

Population Estimates

The source of the 2000 population estimates for Massachusetts is the Massachusetts Department of Public Health (DPH) Race-Allocated Census 2000 Estimates (MRACE) file. This file is based upon the U.S. Census 2000 SF1 file (released June, 2001) for Massachusetts, which contains data on population and housing for the 351 towns, 14 counties, and the state overall.

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

1999 rates in this publication are based on the DPH 1999 Population file, which is a linear interpolation between the preliminary draft Population 2000 file and the 1998 MISER population estimates.

2002 Death Rates

Death rates for 2002 are calculated using the **Race-Allocated Census 2000 Estimates (MRACE) file**.

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 with1999, 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 Appendix pages 134-135 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 US 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 the1999 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.

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 US 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 US standard population. These rates should NOT be compared with age-adjusted rates previously published which used the 1940 US 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. Community Health Network Areas 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, the table on pages 137-139 provides the appropriate CHNA code for each city and town based on the geographic definitions established in 1997.

Comparability Modified Rate

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

Please see page 122 for an example of how to calculate a comparability modified rate.
See also, comparability ratio.

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 (ie. ICD-10) by the number of deaths for a selected cause of death classified by the old revision (ie. ICD-9).

More specifically, the comparability ratios 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 doubled 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 comparability ratio 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.

Please see page 122 for an example of how to calculate a comparability ratio.
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 2002 is on page 142) In a properly completed death certificate, the immediate cause of death is recorded on line 29a. The other mentioned cause (s) 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 pages 129-130.

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 pages 129-130.

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.

MISER

MISER is the acronym for Massachusetts Institute for Social and Economic Research, which is the state data center. The 1991-1995 Massachusetts annual population estimates (released in September 1999), 1996-1997 population estimates (released in November 1999) and 1998 population estimates (released in September 2000) used in this publication are from this Institute.

NCHS

National Center for Health Statistics (US 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 their own residents.

Population

Population counts are based on US decennial census counts, and population estimates are calculated for intercensal years. For 1981-1989, population estimates are derived as linear interpolations from the 1980 and 1990 census. For 1991-1995, population estimates are based on MISER's annual estimates released in September 1999. Population estimates for 1996 and 1997 are based on MISER's annual estimates released in November 1999. Population estimates for 1998 population are based on MISER's annual estimates released in September 2000.

The source of the 2000 population estimates for Massachusetts is the Massachusetts Department of Public Health (DPH) Race-Allocated Census 2000 Estimates (MRACE) file. This file is based upon the U.S. Census 2000 SF1 file (released June, 2001) for Massachusetts,

which contains data on population and housing for the 351 towns, 14 counties, and the state overall.

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

1999 rates in this publication are based on the DPH 1999 Population file, which is a linear interpolation between the preliminary draft Population 2000 file and the 1998 MISER population estimates.

Potential Years of Life Lost

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. 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). For the purpose of calculating PYLL, this year we have adjusted the maximum age to be 75 years so that we do not include deaths beyond average life expectancy. This year's data 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 US 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 last year's 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 1989-2002 presented in this report have been re-tabulated to reflect this modification. Data presented by race in this report are not directly comparable to previously published data by race.

Resident Death

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

Total Rate of Change

The total rate of change is calculated as follows:

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

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

Underlying Cause of Death

The disease or injury that initiated the series of events leading to death, or the circumstances of the unintentional or intentional injury that resulted in the death. The underlying cause of death is used for all analyses published in this report.

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

(Sorted by ICD-10 Codes)

Cause of Death	ICD-10 Code	ICD-9 Code
Infectious and parasitic diseases	A00-B99	001-139
Septicemia	A40-A41	038
Human Immunodeficiency Virus (HIV) disease	B20-B24	042-044
Cancer (Malignant Neoplasms)	C00-C97	140-208
of esophagus	C15	150
of stomach	C16	151
of colon, rectum, rectum and anus	C18-C21	153-154, 159.9
of pancreas	C25	157
of trachea, bronchus and lung	C33-C34	162
of female breast	C50	174
of cervix uteri	C53	180
of corpus uteri and uterus, part unspecified	C54-C55	179,182
of ovary	C56	183.0
of prostate	C61	185
of kidney and renal pelvis	C64-C65	189.0-189.1
of bladder	C67	188
of meninges, brain & other parts of central nervous system	C70-C72	191-192
Hodgkin's Disease	C81	201
Non-Hodgkin's lymphoma	C82-C85	200, 202 (except 202.4)
Leukemia	C91-C95	202.4, 204-208
Multiple myeloma and immunoproliferative neoplasms	C88, C90	203
Diabetes Mellitus	E10-E14	250
Alzheimer's disease	G30	331.0
Heart Disease	I00-I09, I11, I13, I20-I51	390-398, 402, 404-429
Stroke (Cerebrovascular disease)	I60-I69	430-438
Influenza and pneumonia	J10-J18	480-487
Chronic lower respiratory diseases[1]	J40-J47	490-496
Chronic liver disease and cirrhosis	K70, K73-K74	571
Nephritis	N00-N07, N17-N19, N25-N27	580-589
Congenital malformations, deformations, and chromosomal abnormalities	Q00-Q99	740-759
Certain conditions originating in the perinatal period (Perinatal Conditions)	P00-P96	760-779
Signs and symptoms	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
Terrorism	U01-U02 (homicide), U03 (suicide)	—

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 Cause of Death)

Cause of Death	ICD-10 Code	ICD-9 Code
Alzheimer's Disease	G30	331.0
Cancer (Malignant Neoplasms)	C00-C97	140-208
of bladder	C67	188
of cervix uteri	C53	180
of colon, rectum, rectum and anus	C18-C21	153-154, 159.9
of corpus uteri and uterus, part unspecified	C54-C55	179,182
of esophagus	C15	150
of female breast	C50	174
Hodgkin's Disease	C81	201
of kidney and renal pelvis	C64-C65	189.0-189.1
Leukemia	C91-C95	202.4, 204-208
of meninges, brain & other parts of central nervous system	C70-C72	191-192
Multiple myeloma and immunoproliferative neoplasms	C88, C90	203
Non-Hodgkin's lymphoma	C82-C85	200, 202 (except 202.4)
of ovary	C56	183.0
of prostate	C61	185
of stomach	C16	151
of pancreas	C25	157
of trachea, bronchus and lung	C33-C34	162
Certain conditions originating in the perinatal period (Perinatal Conditions)	P00-P96	760-779
Chronic liver disease and cirrhosis	K70, K73-K74	571
Chronic lower respiratory diseases[1]	J40-J47	490-496
Congenital malformations, deformations, and chromosomal abnormalities	Q00-Q99	740-759
Diabetes Mellitus	E10-E14	250
External causes of injuries and poisonings (intentional, unintentional and of undetermined intent)	V01-Y98	E800-E999
Homicide	X85-Y09, Y87.1	E960-E969
Injuries of undetermined intent	Y10-Y34,Y87.2,Y89.9	E980-E989
Suicide	X60-X84, Y87.0	E950-E959
Accidents (Unintentional Injuries)	V01-X59	E800-E949
Motor Vehicle-related injuries	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2	E810-E825 E850-E869, E880-E928, E929.2-E929.9
Unintentional non-transport injuries	W00-X59, Y86	
Heart Disease	I00-I09, I11, I13, I20-I51	390-398, 402, 404-429
Infectious and parasitic diseases	A00-B99	001-139
Human Immunodeficiency Virus (HIV) disease (AIDS)	B20-B24	042-044
Septicemia	A40-A41	038
Influenza and pneumonia	J10-J18	480-487
Nephritis	N00-N07, N17-N19, N25-N27	580-589
Stroke (Cerebrovascular disease)	I60-I69	430-438
Signs and symptoms	R00-R99	780-797, 798.1-798.9, 799
Sudden infant death syndrome (SIDS)	R95	798.0
Terrorism	U01-U02 (homicide), U03 (suicide)	--

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	Y93-Y95
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	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
Terrorism	U01-U02 (homicide), U03 (suicide)

Table A5. ICD-10 Poisoning Codes Used in this Publication

Manner of Death	ICD-10 Code
All Poisoning Deaths	X40-X49, X60-X69, X85-X90, Y87.0, Y10-Y19, Y35.2
Narcotics and psychodysleptics	X42, X62, Y12
Other and unspecified drugs, medicaments, biological substances	X44, X64, X89, Y14
Antiepileptic, sedative-hypnotic, antiparkinsonism & psychotropic	X41, X61, Y11
Gases and vapours	X47, X67, X86, X88, Y17, Y35.2
Nonopioid analgesics, antipyretics & antirheumatics	X40, X60, Y10
Alcohol	X45, X65, Y15
Organic solvents and halogenated hydrocarbons	X46, X66, Y16
Other drugs acting on autonomic nervous system	X43, X63, Y13
Other and unspecified chemicals and noxious substances	Remaining causes

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, Y93-Y95
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
15-29	Drownings	W65-W74, X71, X92, Y21, V90, V92
15-32	Homicides	X85-Y09, Y87.1
16-1f	Birth defects	Q00-Q99
16-1g	Congenital heart and vascular defects	Q20-Q24
16-1h	Sudden infant death syndrome (SIDS)	R95
18-1	Suicide	X60-X84, Y87.0
24-1	Asthma	J45-J46
26-1	Motor-vehicle crash deaths	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2
26-2	Cirrhosis	K74
26-3	Drug induced deaths	F11.0-F11.5, F11.7-F11.9, F12.0-F12.5, F12.7-F12.9, F13.0-F13.5, F13.7-F13.9, F14.0-F14.5, F14.7-F14.9, F15.0-F15.5, F15.7-F15.9, F16.0-F16.5, F16.7-F16.9, F17.0, F17.3-F17.5, F17.7-F17.9, F18.0-F18.5, F18.7-F18.9, F19.0-F19.5, F19.7-F19.9,X40-X44,X60-64, X85,Y10-Y14

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

Table A7. Preliminary Comparability Ratios

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

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

Please refer to page 80 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 page 80 for an example of how to apply comparability ratios

Table A9. Population Estimates for Massachusetts Community Health Network Areas (CHNA) and Counties, 2000[1]

CHNA	POPULATION	COUNTY	POPULATION
1. Community Health Network of Berkshire	134,953	Barnstable	222,230
2. Upper Valley Health Web (Franklin County)	86,889	Berkshire	134,953
3. Partnership for Health in Hampshire County	150,077	Bristol	534,678
4. The Community Health Connection (Springfield)	291,665	Dukes	14,987
5. Community Health Network of Southern Worcester County	113,702	Essex	723,419
6. Community Partners for Health (Milford Area)	152,117	Franklin	71,535
7. Community Health Network of Greater Metro West	374,478	Hampden	456,228
8. Community Wellness Coalition (Worcester Area)	289,834	Hampshire	152,251
9. Fitchburg/Gardner Area Community Health Network	250,362	Middlesex	1,465,396
10. Greater Lowell Community Health Network	270,083	Nantucket	9,520
11. Greater Lawrence Community Health Network	182,025	Norfolk	650,308
12. Greater Haverhill Community Health Network	144,275	Plymouth	472,822
13. Community Health Network North (Beverly/Gloucester)	118,280	Suffolk	689,807
14. North Shore Community Health Network	278,839	Worcester	750,963
15. Greater Woburn/Concord/Littleton	208,406		
16. North Suburban Health Alliance (Medford/Malden/Melrose)	261,844	**STATE**	**6,349,097**
17. Greater Cambridge/Somerville Community Health Network	278,402		
18. West Suburban Health Network (Newton/Waltham)	253,187		
19. Alliance for Community Health (Boston/Chelsea/Revere/Winthrop)	746,914		
20. Blue Hills Community Health Alliance (Quincy Area)	365,457		
21. Four (For) Communities (Holyoke, Chicopee, Ludlow, Westfield)	159,254		
22. Greater Brockton Community Health Network	232,260		
23. South Shore Community Partners in Prevention (Greater Plymouth Area)	180,609		
24. Greater Attleboro-Taunton Health & Education Response	242,659		
25. Partners for a Healthier Community (Fall River Area)	140,256		
26. Greater New Bedford Health & Human Services Coalition	195,533		
27. Cape and Islands Community Health Network	246,737		

1. MDPH 2000 Preliminary Population Estimates (released January 2002).

Table A10. Population Estimates for Massachusetts Communities, 2000

TOWN NAME	COUNTY	CHNA	POPULATION
Abington	Plymouth	22	14,605
Acton	Middlesex	15	20,331
Acushnet	Bristol	26	10,161
Adams	Berkshire	1	8,809
Agawam	Hampden	4	28,144
Alford	Berkshire	1	399
Amesbury	Essex	12	16,450
Amherst	Hampshire	3	34,874
Andover	Essex	11	31,247
Arlington	Middlesex	17	42,389
Ashburnham	Worcester	9	5,546
Ashby	Middlesex	9	2,845
Ashfield	Franklin	2	1,800
Ashland	Middlesex	7	14,674
Athol	Worcester	2	11,299
Attleboro	Bristol	24	42,068
Auburn	Worcester	8	15,901
Avon	Norfolk	22	4,443
Ayer	Middlesex	9	7,287
Barnstable	Barnstable	27	47,821
Barre	Worcester	9	5,113
Becket	Berkshire	1	1,755
Bedford	Middlesex	15	12,595
Belchertown	Hampshire	3	12,968
Bellingham	Norfolk	6	15,314
Belmont	Middlesex	17	24,194
Berkley	Bristol	24	5,749
Berlin	Worcester	9	2,380
Bernardston	Franklin	2	2,155
Beverly	Essex	13	39,862
Billerica	Middlesex	10	38,981
Blackstone	Worcester	6	8,804
Blandford	Hampden	4	1,214
Bolton	Worcester	9	4,148
Boston	Suffolk	19	589,141
Bourne	Barnstable	27	18,721
Boxborough	Middlesex	15	4,868
Boxford	Essex	12	7,921
Boylston	Worcester	8	4,008
Braintree	Norfolk	20	33,828
Brewster	Barnstable	27	10,094
Bridgewater	Plymouth	22	25,185
Brimfield	Hampden	5	3,339
Brockton	Plymouth	22	94,304
Brookfield	Worcester	5	3,051
Brookline	Norfolk	19	57,107
Buckland	Franklin	2	1,991
Burlington	Middlesex	15	22,876
Cambridge	Middlesex	17	101,355
Canton	Norfolk	20	20,775
Carlisle	Middlesex	15	4,717
Carver	Plymouth	23	11,163
Charlemont	Franklin	2	1,358
Charlton	Worcester	5	11,263
Chatham	Barnstable	27	6,625
Chelmsford	Middlesex	10	33,858
Chelsea	Suffolk	19	35,080
Cheshire	Berkshire	1	3,401
Chester	Hampden	21	1,308
Chesterfield	Hampshire	3	1,201
Chicopee	Hampden	21	54,653
Chilmark	Dukes	27	843
Clarksburg	Berkshire	1	1,686
Clinton	Worcester	9	13,435
Cohasset	Norfolk	20	7,261
Colrain	Franklin	2	1,813
Concord	Middlesex	15	16,993
Conway	Franklin	2	1,809
Cummington	Hampshire	3	978
Dalton	Berkshire	1	6,892
Danvers	Essex	14	25,212
Dartmouth	Bristol	26	30,666
Dedham	Norfolk	18	23,464
Deerfield	Franklin	2	4,750
Dennis	Barnstable	27	15,973
Dighton	Bristol	24	6,175
Douglas	Worcester	6	7,045
Dover	Norfolk	18	5,558
Dracut	Middlesex	10	28,562
Dudley	Worcester	5	10,036
Dunstable	Middlesex	10	2,829
Duxbury	Plymouth	23	14,248
East Bridgewater	Plymouth	22	12,974
East Brookfield	Worcester	5	2,097
East Longmeadow	Hampden	4	14,100
Eastham	Barnstable	27	5,453
Easthampton	Hampshire	3	15,994
Easton	Bristol	22	22,299
Edgartown	Dukes	27	3,779
Egremont	Berkshire	1	1,345
Erving	Franklin	2	1,467
Essex	Essex	13	3,267
Everett	Middlesex	16	38,037
Fairhaven	Bristol	26	16,159
Fall River	Bristol	25	91,938
Falmouth	Barnstable	27	32,660
Fitchburg	Worcester	9	39,102
Florida	Berkshire	1	676
Foxborough	Norfolk	7	16,246
Framingham	Middlesex	7	66,910
Franklin	Norfolk	6	29,560
Freetown	Bristol	26	8,472
Gardner	Worcester	9	20,770
Gay Head (Aquinnah)	Dukes	27	344
Georgetown	Essex	12	7,377
Gill	Franklin	2	1,363
Gloucester	Essex	13	30,273
Goshen	Hampshire	3	921
Gosnold	Dukes	27	86
Grafton	Worcester	8	14,894
Granby	Hampshire	3	6,132
Granville	Hampden	4	1,521
Great Barrington	Berkshire	1	7,527
Greenfield	Franklin	2	18,168
Groton	Middlesex	9	9,547
Groveland	Essex	12	6,038
Hadley	Hampshire	3	4,793
Halifax	Plymouth	23	7,500
Hamilton	Essex	13	8,315
Hampden	Hampden	4	5,171
Hancock	Berkshire	1	721
Hanover	Plymouth	23	13,164
Hanson	Plymouth	23	9,495
Hardwick	Worcester	9	2,622
Harvard	Worcester	9	5,981
Harwich	Barnstable	27	12,386
Hatfield	Hampshire	3	3,249
Haverhill	Essex	12	58,969
Hawley	Franklin	2	336
Heath	Franklin	2	805
Hingham	Plymouth	20	19,882
Hinsdale	Berkshire	1	1,872
Holbrook	Norfolk	22	10,785
Holden	Worcester	8	15,621

Table A10. Population Estimates for Massachusetts Communities, 2000, continued

TOWN NAME	COUNTY	CHNA	POPULATION
Holland	Hampden	5	2,407
Holliston	Middlesex	7	13,801
Holyoke	Hampden	21	39,838
Hopedale	Worcester	6	5,907
Hopkinton	Middlesex	7	13,346
Hubbardston	Worcester	9	3,909
Hudson	Middlesex	7	18,113
Hull	Plymouth	20	11,050
Huntington	Hampshire	21	2,174
Ipswich	Essex	13	12,987
Kingston	Plymouth	23	11,780
Lakeville	Plymouth	24	9,821
Lancaster	Worcester	9	7,380
Lanesborough	Berkshire	1	2,990
Lawrence	Essex	11	72,043
Lee	Berkshire	1	5,985
Leicester	Worcester	8	10,471
Lenox	Berkshire	1	5,077
Leominster	Worcester	9	41,303
Leverett	Franklin	2	1,663
Lexington	Middlesex	15	30,355
Leyden	Franklin	2	772
Lincoln	Middlesex	15	8,056
Littleton	Middlesex	15	8,184
Longmeadow	Hampden	4	15,633
Lowell	Middlesex	10	105,167
Ludlow	Hampden	21	21,209
Lunenburg	Worcester	9	9,401
Lynn	Essex	14	89,050
Lynnfield	Essex	14	11,542
Malden	Middlesex	16	56,340
Manchester	Essex	13	5,228
Mansfield	Bristol	24	22,414
Marblehead	Essex	14	20,377
Marion	Plymouth	26	5,123
Marlborough	Middlesex	7	36,255
Marshfield	Plymouth	23	24,324
Mashpee	Barnstable	27	12,946
Mattapoisett	Plymouth	26	6,268
Maynard	Middlesex	7	10,433
Medfield	Norfolk	7	12,273
Medford	Middlesex	16	55,765
Medway	Norfolk	6	12,448
Melrose	Middlesex	16	27,134
Mendon	Worcester	6	5,286
Merrimac	Essex	12	6,138
Methuen	Essex	11	43,789
Middleborough	Plymouth	24	19,941
Middlefield	Hampshire	3	542
Middleton	Essex	11	7,744
Milford	Worcester	6	26,799
Millbury	Worcester	8	12,784
Millis	Norfolk	7	7,902
Millville	Worcester	6	2,724
Milton	Norfolk	20	26,062
Monroe	Franklin	2	93
Monson	Hampden	4	8,359
Montague	Franklin	2	8,489
Monterey	Berkshire	1	934
Montgomery	Hampden	4	654
Mt. Washington	Berkshire	1	130
Nahant	Essex	14	3,632
Nantucket	Nantucket	27	9,520
Natick	Middlesex	7	32,170
Needham	Norfolk	18	28,911
New Ashford	Berkshire	1	247
New Bedford	Bristol	26	93,768
New Braintree	Worcester	9	927
New Marlborough	Berkshire	1	1,494
New Salem	Franklin	2	929
Newbury	Essex	12	6,717
Newburyport	Essex	12	17,189
Newton	Middlesex	18	83,829
Norfolk	Norfolk	7	10,460
North Adams	Berkshire	1	14,681
North Andover	Essex	11	27,202
North Attleboro	Bristol	24	27,143
North Brookfield	Worcester	5	4,683
North Reading	Middlesex	16	13,837
Northampton	Hampshire	3	28,978
Northborough	Worcester	7	14,013
Northbridge	Worcester	6	13,182
Northfield	Franklin	2	2,951
Norton	Bristol	24	18,036
Norwell	Plymouth	20	9,765
Norwood	Norfolk	20	28,587
Oak Bluffs	Dukes	27	3,713
Oakham	Worcester	9	1,673
Orange	Franklin	2	7,518
Orleans	Barnstable	27	6,341
Otis	Berkshire	1	1,365
Oxford	Worcester	5	13,352
Palmer	Hampden	4	12,497
Paxton	Worcester	8	4,386
Peabody	Essex	14	48,129
Pelham	Hampshire	3	1,403
Pembroke	Plymouth	23	16,927
Pepperell	Middlesex	9	11,142
Peru	Berkshire	1	821
Petersham	Worcester	2	1,180
Phillipston	Worcester	2	1,621
Pittsfield	Berkshire	1	45,793
Plainfield	Hampshire	3	589
Plainville	Norfolk	7	7,683
Plymouth	Plymouth	23	51,701
Plympton	Plymouth	23	2,637
Princeton	Worcester	9	3,353
Provincetown	Barnstable	27	3,431
Quincy	Norfolk	20	88,025
Randolph	Norfolk	20	30,963
Raynham	Bristol	24	11,739
Reading	Middlesex	16	23,708
Rehoboth	Bristol	24	10,172
Revere	Suffolk	19	47,283
Richmond	Berkshire	1	1,604
Rochester	Plymouth	26	4,581
Rockland	Plymouth	23	17,670
Rockport	Essex	13	7,767
Rowe	Franklin	2	351
Rowley	Essex	12	5,500
Royalston	Worcester	2	1,254
Russell	Hampden	4	1,657
Rutland	Worcester	9	6,353
Salem	Essex	14	40,407
Salisbury	Essex	12	7,827
Sandisfield	Berkshire	1	824
Sandwich	Barnstable	27	20,136
Saugus	Essex	14	26,078
Savoy	Berkshire	1	705
Scituate	Plymouth	20	17,863
Seekonk	Bristol	24	13,425
Sharon	Norfolk	20	17,408
Sheffield	Berkshire	1	3,335
Shelburne	Franklin	2	2,058
Sherborn	Middlesex	7	4,200
Shirley	Middlesex	9	6,373

Table A10. Population Estimates for Massachusetts Communities, 2000, continued

TOWN NAME	COUNTY	CHNA	POPULATION	TOWN NAME	COUNTY	CHNA	POPULATION
Shrewsbury	Worcester	8	31,640	Warwick	Franklin	2	750
Shutesbury	Franklin	2	1,810	Washington	Berkshire	1	544
Somerset	Bristol	25	18,234	Watertown	Middlesex	17	32,986
Somerville	Middlesex	17	77,478	Wayland	Middlesex	7	13,100
South Hadley	Hampshire	3	17,196	Webster	Worcester	5	16,415
Southampton	Hampshire	3	5,387	Wellesley	Norfolk	18	26,613
Southborough	Worcester	7	8,781	Wellfleet	Barnstable	27	2,749
Southbridge	Worcester	5	17,214	Wendell	Franklin	2	986
Southwick	Hampden	4	8,835	Wenham	Essex	13	4,440
Spencer	Worcester	5	11,691	West Boylston	Worcester	8	7,481
Springfield	Hampden	4	152,082	West Bridgewater	Plymouth	22	6,634
Sterling	Worcester	9	7,257	West Brookfield	Worcester	5	3,804
Stockbridge	Berkshire	1	2,276	West Newbury	Essex	12	4,149
Stoneham	Middlesex	16	22,219	West Springfield	Hampden	4	27,899
Stoughton	Norfolk	22	27,149	West Stockbridge	Berkshire	1	1,416
Stow	Middlesex	7	5,902	West Tisbury	Dukes	27	2,467
Sturbridge	Worcester	5	7,837	Westborough	Worcester	7	17,997
Sudbury	Middlesex	7	16,841	Westfield	Hampden	21	40,072
Sunderland	Franklin	2	3,777	Westford	Middlesex	10	20,754
Sutton	Worcester	6	8,250	Westhampton	Hampshire	3	1,468
Swampscott	Essex	14	14,412	Westminster	Worcester	9	6,907
Swansea	Bristol	25	15,901	Weston	Middlesex	18	11,469
Taunton	Bristol	24	55,976	Westport	Bristol	25	14,183
Templeton	Worcester	9	6,799	Westwood	Norfolk	18	14,117
Tewksbury	Middlesex	10	28,851	Weymouth	Norfolk	20	53,988
Tisbury	Dukes	27	3,755	Whately	Franklin	2	1,573
Tolland	Hampden	4	426	Whitman	Plymouth	22	13,882
Topsfield	Essex	13	6,141	Wilbraham	Hampden	4	13,473
Townsend	Middlesex	9	9,198	Williamsburg	Hampshire	3	2,427
Truro	Barnstable	27	2,087	Williamstown	Berkshire	1	8,424
Tyngsborough	Middlesex	10	11,081	Wilmington	Middlesex	15	21,363
Tyringham	Berkshire	1	350	Winchendon	Worcester	9	9,611
Upton	Worcester	6	5,642	Winchester	Middlesex	15	20,810
Uxbridge	Worcester	6	11,156	Windsor	Berkshire	1	875
Wakefield	Middlesex	16	24,804	Winthrop	Suffolk	19	18,303
Wales	Hampden	5	1,737	Woburn	Middlesex	15	37,258
Walpole	Norfolk	7	22,824	Worcester	Worcester	8	172,648
Waltham	Middlesex	18	59,226	Worthington	Hampshire	3	1,270
Ware	Hampshire	3	9,707	Wrentham	Norfolk	7	10,554
Wareham	Plymouth	26	20,335	Yarmouth	Barnstable	27	24,807
Warren	Worcester	5	4,776				

1. MDPH 2000 Preliminary Population Estimates (released January 2002).

Table A11. 2000 Massachusetts Population Estimates[1] By Age Group, Gender, Race[2] and Hispanic Ethnicity[3] (mutually exclusive)

AGE	GENDER	TOTAL	Non-Hispanic WHITE	Non-Hispanic BLACK	Non-Hispanic ASIAN	HISPANIC
UNDER 1	MALE	40,562	31,453	2,688	1,786	4,576
	FEMALE	38,802	29,928	2,573	1,821	4,421
	TOTAL	79,380	61,383	5,272	3,622	8,997
1 TO 4	MALE	162,500	125,841	10,818	7,194	18,326
	FEMALE	155,404	119,721	10,352	7,327	17,689
	TOTAL	317,888	245,560	21,159	14,506	36,015
5 TO 14	MALE	442,313	346,975	31,244	17,177	45,943
	FEMALE	419,795	328,413	30,016	16,581	43,861
	TOTAL	862,108	675,388	61,260	33,758	89,804
15 TO 24	MALE	409,216	316,832	27,274	21,837	42,383
	FEMALE	410,800	317,555	27,300	24,041	41,028
	TOTAL	820,016	634,387	54,574	45,878	83,411
25 TO 34	MALE	455,762	361,176	26,273	27,673	39,796
	FEMALE	471,026	373,241	28,531	27,825	40,578
	TOTAL	926,788	734,417	54,804	55,498	80,374
35 TO 44	MALE	522,345	443,898	27,033	19,958	30,445
	FEMALE	540,650	458,600	28,814	19,825	32,368
	TOTAL	1,062,995	902,498	55,847	39,783	62,813
45 TO 54	MALE	424,234	376,230	17,982	12,471	16,738
	FEMALE	449,119	395,740	20,049	13,419	19,089
	TOTAL	873,353	771,970	38,031	25,890	35,827
55 TO 64	MALE	260,345	235,352	9,868	6,739	7,968
	FEMALE	286,062	256,633	12,339	6,963	9,717
	TOTAL	546,407	491,985	22,207	13,702	17,685
65 TO 74	MALE	190,298	176,813	5,695	3,892	3,654
	FEMALE	237,532	219,645	7,961	4,517	5,161
	TOTAL	427,830	396,458	13,656	8,409	8,815
75 TO 84	MALE	120,293	114,513	2,650	1,555	1,454
	FEMALE	195,347	185,929	4,769	2,142	2,343
	TOTAL	315,640	300,442	7,419	3,697	3,797
85 +	MALE	30,948	29,488	669	352	418
	FEMALE	85,744	82,609	1,656	644	773
	TOTAL	116,692	112,097	2,325	996	1,191
ALL AGES	MALE	3,058,816	2,558,571	162,194	120,634	211,701
	FEMALE	3,290,281	2,768,014	174,360	125,105	217,028
	TOTAL	6,349,097	5,326,585	336,554	245,739	428,729

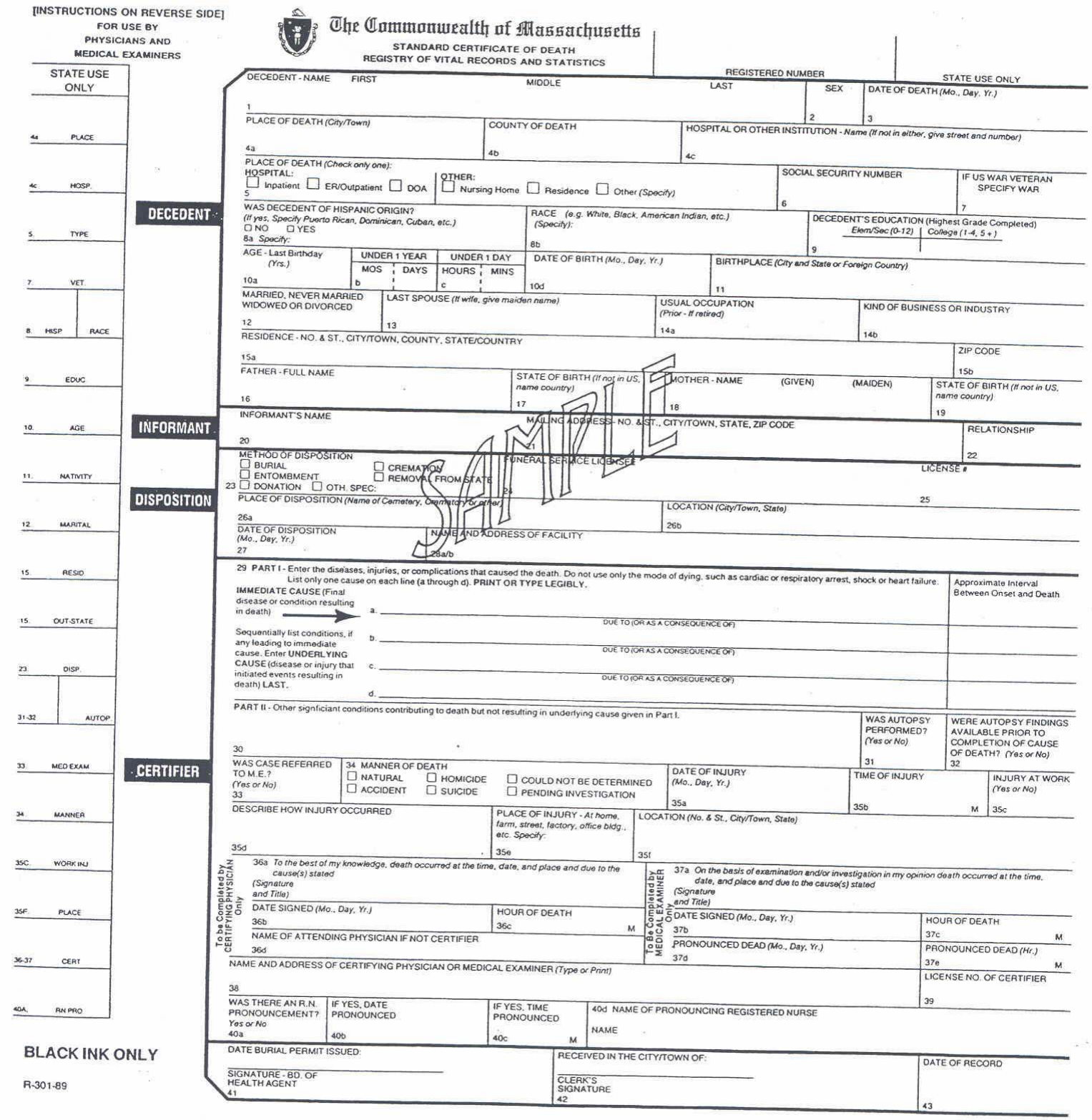
1. MDPH 2000 Preliminary Population Estimates (released January 2002). 2. The age-gender-race distributions from the 2000 US Census (MARS) file were applied to the1999 population estimates to separate Asians from the combined category of Asian and American Indian. 3. Persons of Hispanic ethnicity are NOT included in the race categories. These estimates are used to calculate population based rates in published in this report, except for Table A1.

Table A12. 2000 Massachusetts Population Estimates[1] By Age Group, Gender, Race[2] and Hispanic Ethnicity [3]

AGE	GENDER	TOTAL	WHITE	BLACK	ASIAN	HISPANIC ETHNICITY
UNDER 1	MALE	40,562	35,280	3,318	1,831	4,576
	FEMALE	38,802	33,621	3,169	1,861	4,421
	TOTAL	79,380	68,901	6,487	3,692	8,997
1 TO 4	MALE	162,500	141,131	13,332	7,373	18,326
	FEMALE	155,404	134,518	12,730	7,520	17,689
	TOTAL	317,888	275,649	26,062	14,893	36,015
5 TO 14	MALE	442,313	385,148	37,674	17,584	45,943
	FEMALE	419,795	364,731	36,206	17,023	43,861
	TOTAL	862,108	749,879	73,880	34,607	89,804
15 TO 24	MALE	409,216	352,490	32,755	22,266	42,383
	FEMALE	410,800	351,768	32,912	24,476	41,028
	TOTAL	820,016	704,258	65,667	46,742	83,411
25 TO 34	MALE	455,762	395,029	31,113	28,059	39,796
	FEMALE	471,026	407,402	33,858	28,197	40,578
	TOTAL	926,788	802,431	64,971	56,256	80,374
35 TO 44	MALE	522,345	469,686	30,889	20,213	30,445
	FEMALE	540,650	485,760	33,110	20,143	32,368
	TOTAL	1,062,995	955,446	63,999	40,356	62,813
45 TO 54	MALE	424,234	390,340	20,191	12,608	16,738
	FEMALE	449,119	411,880	22,503	13,582	19,089
	TOTAL	873,353	802,220	42,694	26,190	35,827
55 TO 64	MALE	260,345	242,128	10,862	6,800	7,968
	FEMALE	286,062	264,891	13,578	7,038	9,717
	TOTAL	546,407	507,019	24,440	13,838	17,685
65 TO 74	MALE	190,298	179,918	6,168	3,920	3,654
	FEMALE	237,532	224,004	8,647	4,562	5,161
	TOTAL	427,830	403,922	14,815	8,482	8,815
75 TO 84	MALE	120,293	115,787	2,798	1,569	1,454
	FEMALE	195,347	187,978	5,030	2,158	2,343
	TOTAL	315,640	303,765	7,828	3,727	3,797
85 +	MALE	30,948	29,856	705	359	418
	FEMALE	85,744	83,280	1,735	656	773
	TOTAL	116,692	113,136	2,440	1,015	1,191
ALL AGES	MALE	3,058,816	2,736,793	189,805	122,582	211,701
	FEMALE	3,290,281	2,949,833	203,478	127,216	217,028
	TOTAL	6,349,097	5,686,626	393,283	249,798	428,729

1. MDPH 2000 Preliminary Population Estimates (released January 2002). 2. The age-gender-race distributions from the 2000 US Census (MARS) file were applied to the1999 population estimates to separate Asians from the combined category of Asian and American Indian, and to add Hispanics back into the estimates of white, black, and Asian populations. 3. Persons of Hispanic ethnicity are also included in the race categories, consistent with NCHS and US Census population classification of race and ethnicity. These estimates are used to calculate population based rates in Table A1.

Massachusetts Death Certificate: 2002



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

The Commonwealth of Massachusetts
STANDARD CERTIFICATE OF DEATH
REGISTRY OF VITAL RECORDS AND STATISTICS

REGISTERED NUMBER

STATE USE ONLY

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

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

PLACE OF DEATH (Check only one): HOSPITAL: ☐ Inpatient ☐ ER/Outpatient ☐ DOA (5) OTHER: ☐ Nursing Home ☐ Residence ☐ Other (Specify)

SOCIAL SECURITY NUMBER (6) | IF US WAR VETERAN SPECIFY WAR (7)

DECEDENT

WAS DECEDENT OF HISPANIC ORIGIN? (If yes, Specify Puerto Rican, Dominican, Cuban, etc.) ☐ NO ☐ YES 8a Specify:

RACE (e.g. White, Black, American Indian, etc.) (Specify): (8b)

DECEDENT'S EDUCATION (Highest Grade Completed) Elem/Sec (0-12) | College (1-4, 5+) (9)

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

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

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

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

INFORMANT

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

DISPOSITION

METHOD OF DISPOSITION (23) ☐ BURIAL ☐ CREMATION ☐ ENTOMBMENT ☐ REMOVAL FROM STATE ☐ DONATION ☐ OTH. SPEC:

FUNERAL SERVICE LICENSEE (24) | LICENSE # (25)

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

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

CERTIFIER

29 PART I - Enter the diseases, injuries, or complications that caused the death. Do not use only the mode of dying, such as cardiac or respiratory arrest, shock or heart failure. List only one cause on each line (a through d). PRINT OR TYPE LEGIBLY.

IMMEDIATE CAUSE (Final disease or condition resulting in death) → a. _____ DUE TO (OR AS A CONSEQUENCE OF)

Sequentially list conditions, if any leading to immediate cause. Enter UNDERLYING CAUSE (disease or injury that initiated events resulting in death) LAST. b. _____ DUE TO (OR AS A CONSEQUENCE OF) c. _____ DUE TO (OR AS A CONSEQUENCE OF) d. _____

Approximate Interval Between Onset and Death

PART II - Other signficiant conditions contributing to death but not resulting in underlying cause given in Part I. (30)

WAS AUTOPSY PERFORMED? (Yes or No) (31) | WERE AUTOPSY FINDINGS AVAILABLE PRIOR TO COMPLETION OF CAUSE OF DEATH? (Yes or No) (32)

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

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

To be Completed by CERTIFYING PHYSICIAN Only

36a To the best of my knowledge, death occurred at the time, date, and place and due to the cause(s) stated (Signature and Title)

DATE SIGNED (Mo., Day, Yr.) (36b) | HOUR OF DEATH (36c) M

NAME OF ATTENDING PHYSICIAN IF NOT CERTIFIER (36d)

To Be Completed by MEDICAL EXAMINER Only

37a On the basis of examination and/or investigation in my opinion death occurred at the time, date, and place and due to the cause(s) stated (Signature and Title)

DATE SIGNED (Mo., Day, Yr.) (37b) | HOUR OF DEATH (37c) M

PRONOUNCED DEAD (Mo., Day, Yr.) (37d) | PRONOUNCED DEAD (Hr.) (37e) M

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

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

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

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

SAMPLE

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

BLACK INK ONLY

R-301-89

Massachusetts Deaths: 2002 Evaluation Form

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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.

What tables and charts do you find most useful?
What tables and charts do you find least useful?
Are there other tables and charts that you would like added to this publication? If yes, please describe them in detail.
Do you have other comments or suggestions?
Name (optional): **Address:** **(For those who received the publication by mail)** Is the mailing label address correct? If not, please correct the address. Thank you.

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Malena Orejuela, MPH
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