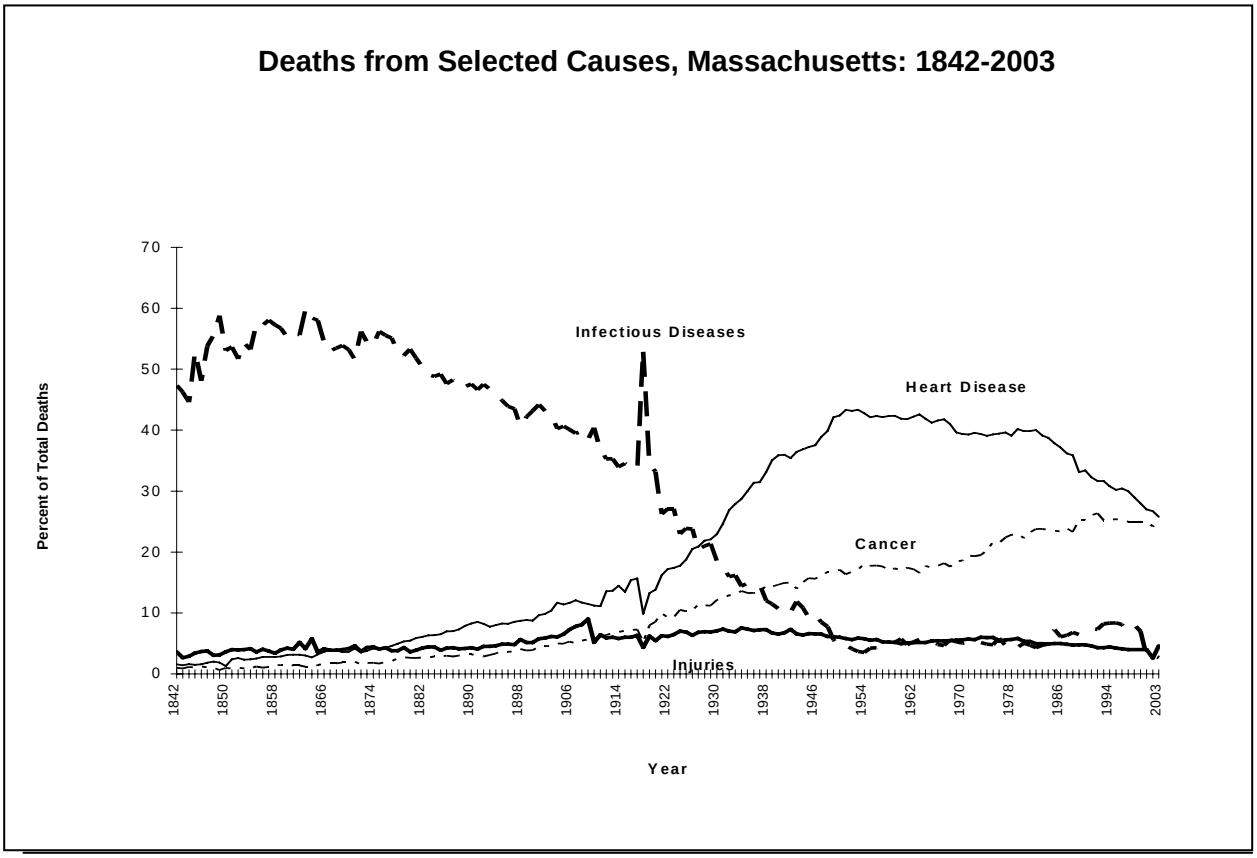
Massachusetts Deaths 2003



Center for Health Information, Statistics, Research and Evaluation

Massachusetts Department of Public Health

June 2005

Massachusetts Deaths 2003

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EXECUTIVE SUMMARY

2003 Highlights

- In 2003, there was a continued reduction in death rates for seven of the 10 leading causes of death. Declines were seen for heart disease, cancer, stroke, influenza and pneumonia, unintentional injuries, nephritis and septicemia. The reductions ranged from 0.4% to as much as 5% from 2002 rates. There was also a large decline of 24% in the homicide rate and a decline of 12% in the colorectal cancer death rate.

- In 2003, for the first time since 1997, there was a decline in the number of resident deaths of 1% (687 deaths) from the previous year. This decrease was observed primarily among ages 65 and older, which had 811 fewer deaths.

- In 2003, there were 226 Massachusetts residents who died from HIV/AIDS, the lowest number in MA (same as in 2000). However, the proportion of HIV/AIDS deaths among women has tripled since 1989 (34% vs. 11%), and the proportion of HIV/AIDS deaths for persons ages 45 and older has more than doubled since 1994 (50% vs. 20%).

- The infant mortality rate (IMR) was the second lowest in Massachusetts history. The IMR was 4.8 infant deaths per 1,000 live births, compared with 4.9 in 2002.

- Injuries were the leading cause of death for Massachusetts residents between the ages of 1 and 44 years.

- Life expectancy reached an all-time high. In 2003, a woman born in Massachusetts could expect to live to be 81, and a man, 76

- Most cause-specific mortality rates are lower in Massachusetts than in the U.S., ranging from 8% lower for chronic lower respiratory disease (CLRD) to 69% lower for firearm deaths.

- There was an increase of 25% in the death rate from injuries of undetermined intent. The increase in this death rate was highest for black non-Hispanics (up 50%) and Hispanics (up 35%) since 2002.

- Deaths by poisoning, including drug overdoses, increased by 21% since 2002. The majority of poisoning deaths were due to narcotics and “other hallucinogens”. This is consistent with national trends.

- As expected, most deaths occurred at older ages, but for Massachusetts, the largest number of deaths continues to be among the “oldest old” (people aged 85 and over). About 1 out of 3 deaths is to a person ages 85 or older (33%); almost 2 out of 3 deaths is to a person ages 75 and older (63%).

- Disparities by race, ethnicity, education and community persist:
    - The overall death rate for black non-Hispanics is 40% higher than the death rate for white non-Hispanics.
    - The death rate for those with a high school education or less was 3 times higher than the rate for those with 13 years of education or more.

- New Bedford, Brockton, Springfield, Fall River and Lynn had the highest premature mortality rates[1] among the state's 30 largest communities.

- Massachusetts either achieved or moved closer to most of the Healthy People 2010 mortality objectives[2]. Out of 40 HP2010 mortality objectives examined, Massachusetts has achieved 16 targets and is within 25% of achieving targets for 8 indicators.

Data Sources

Data on mortality are based on information on death certificates filed with the Massachusetts Registry of Vital Records and Statistics. Physicians and medical examiners assign 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 death occurring in or out-of-state.

The data in this publication refer to the underlying cause of death as generated by the Mortality Medical Indexing, Classification, and Retrieval system (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 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 toward these groups. It is important to note that variation in death rates among demographic groups, such as racial and ethnic groups, may reflect group differences such as socio-economic status, access to health care, and the prevalence of specific risk factors.

Throughout this report, both the number of deaths and age-adjusted rates will be presented. The number of deaths is presented to highlight the overall public health burden of disease in the state. Disease rates are presented to allow for comparisons across groups so that we can better target our programs. Rates are age-adjusted to the 2000 U.S. Standard Population and are per 100,000 population. Death rates for 2003 are calculated using the Race-Allocated Census 2000 Population Estimates (MRACE) file.

[1] The premature mortality rate (PMR) measures the rate of premature death, that is, deaths that occur before the age of 75 years per 100,000, and is age-adjusted to the 2000 U.S. Standard Population.
[2] In January 2000, the U.S. Department of Health and Human Services launched Healthy People 2010 (HP2010), a comprehensive, nationwide health promotion and disease prevention agenda. Healthy People 2010 contains 467 objectives designed to serve as a road map for improving the health of all people in the United States.

Leading Causes of Death

The age-adjusted death rate in 2003 for Massachusetts was the second lowest rate at 810.2 deaths per 100,000 persons, which is a 9% decline since 1993 and a 1% decline from the previous year.

Heart disease and cancer continued to be the leading causes of death among Massachusetts residents, accounting for half of all deaths. In 2003, 14,622 Massachusetts residents died of heart disease, which resulted in an age-adjusted death rate of 207.9 deaths per 100,000 persons. Cancer was the second leading cause of death, with 13,524 deaths, and an age-adjusted death rate of 199.6 per 100,000.

The ten leading causes of death accounted for 77% of all deaths in 2003. The top 10 causes of death remained the same as they were in 2002, and in the same order (1-heart disease, 2-cancer, 3-stroke, etc. see Table 8 for complete listing). 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.

In 2003, seven death rates among the 10 leading causes of death decreased from 2002, except for Alzheimer's disease, chronic lower respiratory disease, and diabetes. The death rate for diabetes remained the same as in 2002 (20.7 deaths per 100,000), while the death rate for Alzheimer's disease and chronic lower respiratory disease increased slightly (less than 1%, 21.8 to 22.0 and 39.5 to 39.6 deaths per 100,000, respectively).

HIV mortality has decreased by 84% since 1995, but remained among the 3 leading causes of death for Hispanics ages 25-44. It was the leading cause of death for Hispanics in 2002, and is now the 3rd leading cause of death for Hispanics ages 25-44.

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 ages 75 and older, while cancer was the leading cause of death for persons ages 45 to 74 years.

Patterns by Race and Ethnicity

Age-adjusted mortality rates continued to vary markedly by race and Hispanic ethnicity in Massachusetts in 2003. The overall age-adjusted death rate for black non-Hispanics was 40% higher than that of white non-Hispanics (1,119.9 vs. 801.9), continuing a trend towards widening the gap between black and white non-Hispanics. In 2002, the death rate for black non-Hispanics exceeded that of white non-Hispanics by 31%, increasing from 25% in 2001.

In 2003, the death rate for white non-Hispanics decreased by 2% and the death rate for Hispanics declined by 6% from the previous year. Death rates for Asian non-Hispanics and black non-Hispanics increased by 5% and 12%, respectively. The number of deaths to black non-Hispanics and Asian non-Hispanics increased by 5% and 9%, respectively from 2002 to 2003. These increases occurred primarily among older persons, ages 65 and older.

Premature mortality rates (PMR, deaths before age 75) 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 (592.3 vs. 331.7 deaths per 100,000).

Hispanics had the next highest PMR (356.0 deaths per 100,000), while Asian non-Hispanics had the lowest PMR, 201.2 deaths per 100,000.

The leading causes of death varied by race and ethnicity in 2003 as they have in previous years. Cancer was the number one cause of death among Asian non-Hispanics and black non-Hispanics in 2003, followed by heart disease and stroke. Heart disease was also the leading cause of death for Hispanics, followed by cancer, injuries of undetermined intent, and stroke.

HIV/AIDS was the 6th leading cause of death for Hispanics and the 9th leading cause of death for black non-Hispanics. It was the 25th leading cause of death for white non-Hispanics and the 22nd leading cause for the state overall.

Heart Disease

Heart disease accounted for 26% of all deaths in Massachusetts in 2003. While more women, in terms of absolute numbers, die from heart disease each year, men have a 63% higher risk of dying from heart disease according to 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 in the older age group.

Heart disease deaths occur predominantly among the older population, and in 2003, 86% of all heart disease deaths occurred among people 65 years and older. Heart disease percentages varied by race and ethnicity in this age group: 87% among white non-Hispanics, 80% among Asian non-Hispanics, 63% among black non-Hispanics, and 56% among Hispanics.

Cancer

Cancer accounted for 24% of all deaths in Massachusetts in 2003. The overall leading cause of cancer death was lung cancer (27% of cancer deaths) followed by colorectal cancer (10% of cancer deaths). Lung cancer was the leading cause of cancer death for both men and women. Among women, the lung cancer mortality rate was 83% 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 largely a disease of older adults, except for Hispanics. In 2003, approximately 3 out of 4 cancer deaths in Massachusetts occurred in persons age 65 and older. This age group accounted for 75% of all cancer deaths among white non-Hispanics, 57% of cancer deaths among black non-Hispanics, 58% of cancer deaths among Asian non-Hispanics, and 41% of cancer deaths among Hispanics.

HIV/AIDS

There were 226 Massachusetts residents who died from HIV/AIDS in 2003, a decrease of 3 deaths from 2002. The age-adjusted death rate from HIV/AIDS was the same as in 2002.

The proportion of all HIV/AIDS deaths for persons age 45 and older has more than doubled since 1994 (50% vs. 20%) and the proportion of HIV/AIDS deaths among women has tripled since 1989 (34% vs. 11%).

Hispanics died at a rate almost six times higher than that of white non-Hispanics (12.4 vs. 2.1 deaths per 100,000). For black non-Hispanics, the rate was eight times higher than that of white non-Hispanics (17.2 vs. 2.1 deaths per 100,000).

Injuries

In 2003, 5% of all deaths to Massachusetts residents were the result of injuries (2,726 deaths). Injuries were the leading cause of death among persons ages 1-44, accounting for 40% of deaths. Poisonings, which include drug overdoses, were the leading cause of injury death. Seventy-three percent of poisoning deaths were due to narcotics and "other hallucinogens."

When combining all injuries (unintentional, suicide, homicide and injuries of undetermined intent) to capture the total burden of injury deaths among Massachusetts residents, injuries were the 5th leading cause of death in 2003. Over half of all injury-related deaths were due to unintentional injuries, 27% were injuries of undetermined intent, and 21% were intentional injuries (suicide and homicide). Among unintentional injuries, the leading causes of death included motor vehicle-related deaths (37%), falls (18%), and hanging, strangulation or suffocation (10%). The vast majority of intentional injuries were suicides (75%). Almost 94% of injuries of undetermined intent involved poisonings, which includes drug overdoses. Ninety percent of these deaths involved narcotics and "other hallucinogens."

Approximately 13% of all injury-related deaths overall occurred among persons ages 15 to 24 years. However, in this age group, all injuries accounted for close to three-fourths of deaths. Injury-related death rates were highest among persons ages 85 years and older (279.4 deaths per 100,000 population compared with 95.4 deaths per 100,000 among persons ages 75 to 84 who had the second highest injury-related death rate).

In 2003, there were 521 motor vehicle-related deaths, a decrease of 6% from 2002. Although the greatest *number* of motor vehicle-related deaths occurred to men ages 25 to 44 years (119 deaths), males ages 85 years and older had the highest *rate* for motor vehicle-related deaths (38.8 deaths/100,000) followed by males ages 75-84 (29.9 deaths/100,000).

The homicide death rate decreased by 24% in 2003, while the suicide death rate remained unchanged from 2002. Out of the 139 homicides, over half were a result of firearms while a quarter was the result of stabbings.

In 2003, a total of 202 persons died from firearm-related injuries in Massachusetts, which was the same as in 2002. Death rates from firearms decreased for all race and ethnic groups, except for Hispanics, for whom the death rate increased by 13%. Black non-Hispanic males were 4.3 times more likely to be killed by firearms than their white counterparts in 2003 (19.4 vs. 4.5 deaths per 100,000).

Causes of Infant Death

In 2003, there were 383 infant deaths (deaths of infants less than one year of age) and 80,167 live births among Massachusetts residents, for an infant mortality rate (IMR) of 4.8 deaths per 1,000 live births. While the infant mortality rate increased nationwide,

Massachusetts had its second lowest IMR in its recorded history. The 2003 infant mortality rate was slightly lower than the 2002 rate of 4.9, and a 31% decrease since 1990. Black non-Hispanic infants died at more than 3 times the rate of white non-Hispanic infants, and Hispanic infants died at about 1.4 times the rate of white non-Hispanic infants. The white non-Hispanic IMR remained unchanged since 2002 at 4.1 deaths. The IMR decreased by 20% for Hispanics (7.0 to 5.6) and by 10% for Asians (3.0 to 2.7). The IMR for Black non-Hispanics increased 9%, from 11.6 in 2002 to 12.7 deaths per 1000 live births in 2003.

The leading causes of infant death were conditions arising in the perinatal period (60% 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 74% 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 2003, Massachusetts either achieved or moved toward achieving many of the Healthy People 2010 mortality objectives. Out of 40 objectives presented, Massachusetts' 2002 death data indicated that the state has already met 16 of the 2010 target goals.

For eight objectives, the 2003 Massachusetts indicators were within 25% of the target goals. These objectives included: lung cancer deaths, female breast cancer deaths, prostate cancer deaths, malignant melanoma deaths, deaths due to drowning, infant mortality rate, and child and adolescent mortality death rates (15-19 and 20 to 24 years old).

However, Massachusetts still needs to improve 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, SIDS, maternal deaths, and asthma death rates for person ages 15 to 34, and 35 to 64 years. Although these rates were more than 25% away from the target goals, most were still lower than the U.S. rates.

Deaths in the 30 Largest Massachusetts Cities and Towns

In 2003, among the 30 largest communities in Massachusetts, premature mortality rates (PMR) were significantly higher in New Bedford (503.2), Brockton (498.8), Springfield (492.5), Fall River (475.7), Lynn (462.9), Taunton (443.7), Worcester (442.8), Lowell (433.8), Boston (416.5), Chicopee (410.5), Pittsfield (410.1), Lawrence (409.2), and Quincy (391.3) compared with the state PMR (342.1 deaths per 100,000 persons ages 0-74). PMRs were significantly lower in Framingham (282.0), Cambridge (272.2), Arlington (258.7), Medford (244.9), Newton (209.6), and Brookline (194.2).

A Comparison of Massachusetts and U.S. Indicators

Most Massachusetts mortality indicators in 2003 were better than those for the U.S. in 2003. According to preliminary U.S. death statistics for 2003:

- The overall death rate in Massachusetts is 3% below the national average (810.2 vs. 831.2).

- Life expectancy at birth continued to be higher in Massachusetts when compared with the U.S. (78.5 years compared with 77.6 years).

- The top 10 causes of death in Massachusetts are the same as in the U.S., but not in the same order. The top 4 are the same (1-heart disease, 2-cancer, 3-stroke, 4-chronic lower respiratory disease). Influenza and pneumonia is the 5th leading cause of death followed by Alzheimer's disease in Massachusetts. For the U.S., unintentional injuries and diabetes are the 5th and 6th leading causes of death, respectively. Nephritis and septicemia are the 9th and 10th leading causes of death, respectively, in the state and the U.S. overall.

- The heart disease death rate in Massachusetts (207.9) was 10% lower than that of the U.S. (232.1), and the diabetes death rate in the state (20.7) was 18% lower than that of the U.S. (25.2).

- The homicide rate in Massachusetts (2.2) was 62% lower than the U.S. homicide rate (5.8), and the Massachusetts rate for suicides (6.5) was 38% below the U.S. rate (10.5).

- The rate of all firearm-related deaths in Massachusetts was about one-third the rate of firearm-related deaths in the United States (3.1 deaths per 100,000 compared with 10.1 per 100,000).

- The Massachusetts HIV/AIDS death rate was 26% lower than the U.S. (3.5 vs. 4.7).

- The infant mortality rate (IMR) in Massachusetts (4.8) was 30% lower than that of the U.S. (6.9).

- Massachusetts death rates are higher than U.S. figures for Alzheimer's disease (3% higher), cancer (5% higher), septicemia (21% higher), nephritis (26% higher), and influenza & pneumonia (27% higher).

Death Data Availability

Detailed information on 2003 deaths in Massachusetts is available on the Department's free, Internet-based public health information service, **MassCHIP**. To register as a user, visit the MassCHIP website at http://masschip.state.ma.us or call 1-888-MASCHIP (within MA only) or (617) 624-5629.

This report is also available on the DPH website at: http://www.mass.gov/dph/pubstats.htm.

TRENDS

Trends[3]

In 2003, 56,194 Massachusetts residents died (Table 1). For the first time since 1997, the *number* of resident deaths in 2003 decreased (687 deaths) from the previous year (1%). This decrease occurred primarily in the older age groups, ages 65 and older, which had 811 fewer deaths. The age-adjusted death rate in 2003 was 810.2 deaths per 100,000 persons, a 9% decline since 1993 and a 1% decline from the previous year. (Please note: rates are age-adjusted to the 2000 U.S. standard population). In 2003, there were 383 infant deaths (deaths of children less than one year of age) among Massachusetts residents, 14 fewer infant deaths than in 2002, and the second lowest number of infant deaths in Massachusetts' history.

Age-adjusted death rates varied greatly by race and Hispanic ethnicity in Massachusetts in 2003, 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 2003, the age-adjusted death rate for Asian non-Hispanics was 546.1 deaths per 100,000 persons, less than half the black non-Hispanic rate of 1,119.9 deaths per 100,000. In 2003, death rates for white non-Hispanics and Hispanics decreased by 2% and 6%, respectively. Death rates for Asian and black non-Hispanics increased by 5% and 12%, respectively from the previous year. The actual number of deaths to black non-Hispanics and Asian non-Hispanics increased by 5% and 9%, respectively from 2002 to 2003. These increases occurred primarily among persons ages 65 and older.

The age-adjusted death rate for women continued to be substantially lower than that for men: 681.2 compared with 1,001.4 deaths per 100,000 population. However, men have experienced a larger decline in their age-adjusted rate since 1993 (11%) than women (6%).

The 2003 Massachusetts overall age-adjusted death rate was 3% lower than the preliminary 2003 United States rate (810.2 vs. 831.2 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 ways of expressing the concept of 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[4]. "Future life expectancy" increases as one gets older; for example, someone who has lived to be age 65 can expect to live 18.4 more years.

In 2003, life expectancy at birth continues to be higher in Massachusetts than in the United States (78.5 years compared with 77.6). In 2003, a woman born in Massachusetts could expect to live, on average, until the age of 81, and a man could expect to live until the age of 76. This difference in life expectancy between the sexes is because men tend to die younger from 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).

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[3] 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.

[4] Dalington, RB. Are we measuring "Life Expectancy" the Best Way? http://comp9.psych.cornell.edu/Darlington/lifespan.htm.

Life expectancy varied by race as well (Figure 1). At birth, white non-Hispanic women could expect to live 81years; black non-Hispanic women, 76 years; Hispanic women, 84 years; white non-Hispanic men, 76 years; black non-Hispanic men 69 years; and Hispanic men, 77 years.

In 2003, life expectancy at birth increased slightly from 2002 to a high of 78.5 years, which was also achieved in 2000. Figure 2 shows 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 ages 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 2003.

Massachusetts has a rich history of collecting and reporting vital statistics, as demonstrated by Figure 4, which presents historical mortality trend data from 1842 to the present. In 1842, infectious diseases were the leading causes of death in Massachusetts, accounting for 47% of all deaths; 4% were due to intentional and unintentional injuries, 2% were attributed to heart disease, and 1% of all deaths were due to cancer. In 2003, in almost a 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: 1993 - 2003

Year		1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Resident deaths[1]												
	Number	55,557	54,914	55,296	55,187	54,634	55,204	55,763	56,591	56,733	56,881	56,194
	Crude rate[2,3,4]	916.2	899.2	900.2	892.4	877.3	877.5	881.9	891.3	893.6	895.9	885.1
	Age-adjusted rate[5]	885.7	868.2	866.2	853.0	834.8	808.8	808.8	816.5	818.2	819.9	810.2
Race/ethnicity of decedent [6,7]												
White, non-Hispanic	Number	52,371	51,600	51,785	51,917	51,398	51,829	52,282	52,959	52,792	52,839	52,050
	Percent[8]	94.3	94.0	93.7	94.1	94.1	93.9	93.8	93.6	93.1	92.9	92.6
	Age-adjusted rate	882.8	864.2	860.1	852.2	835.1	808.5	808.7	816.2	813.5	813.7	801.9
Black, non-Hispanic	Number	1,969	2,079	2,136	2,025	2,033	1,969	2,018	2,109	2,226	2,275	2,378
	Percent	3.5	3.8	3.9	3.7	3.7	3.6	3.6	3.7	3.9	4.0	4.2
	Age-adjusted rate	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	1,119.9
Asian, non-Hispanic	Number	360	335	403	398	403	413	449	467	510	531	579
	Percent	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.9	0.9	1.0
	Age-adjusted rate	613.4	521.2	565.2	534.5	512.0	500.7	422.4	418.5	452.4	487.2	546.1
Hispanic	Number	813	865	936	803	749	924	975	1,014	1,059	1,166	1,121
	Percent	1.5	1.6	1.7	1.5	1.4	1.7	1.7	1.8	1.9	2.0	2.0
	Age-adjusted rate	488.5	482.7	504.7	430.0	391.0	463.8	507.8	596.0[9]	616.2	708.4	665.9
Gender of decedent [7]												
Female	Number	29,109	28,733	29,262	29,152	29,261	29,568	29,786	30,465	30,780	30,427	30,053
	Age-adjusted rate	724.5	712.6	717.6	702.7	699.0	678.0	676.9	691.6	697.8	688.5	681.2
Male	Number	26,448	26,181	26,034	26,035	25,373	25,635	25,977	26,126	25,953	26,454	26,141
	Age-adjusted rate	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	1,001.4
Age of decedent [7]												
<1 year	Number	523	499	419	403	425	414	418	377	407	397	383
1-14 years	Number	239	192	204	197	174	128	165	181	169	167	149
15-24 years	Number	464	473	452	434	422	413	407	403	444	460	490
25-44 years	Number	3,055	3,210	3,196	2,720	2,348	2,373	2,397	2,375	2,571	2,490	2,484
45-64 years	Number	7,920	7,766	7,611	7,477	7,416	7,501	7,431	7,841	8,004	8,344	8,476
65-74 years	Number	11,509	11,394	10,858	10,711	10,286	10,216	9,782	9,746	9,323	8,922	8,611
75-84 years	Number	16,346	16,092	16,497	16,839	16,884	16,946	17,397	17,554	17,416	17,262	16,973
85+ years	Number	15,494	15,283	16,054	16,400	16,677	17,213	17,765	18,113	18,395	18,838	18,627

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). Resident deaths rates for 1999 have been recalculated using 1999 population estimates. 2000 –2003 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: 1993-2003

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]
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		205.0[7]		194.0		50.0[7]		56.3	
	% of Total	26.0		28.4		24.0		22.8		6.0		6.7	
2003	Rate	207.9[7]		232.1[8]		199.6[7]		189.3[8]		47.7[7]		53.6[8]	
	% of Total	26.0		28.0		24.1		22.7		6.0		6.5	

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. 1999-2003 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 2003, please use the comparability modified rates for years 1994-1998. 8. US data for 2001 obtained from NCHS. Deaths: Preliminary Data for 2003. National Vital Statistics Report, Vol. 53, No. 15, February 28, 2005.

Table 2a (continued). Five Leading Causes of Death[1] Comparability Unmodified and Comparability Modified Age-Adjusted Rates, Massachusetts and United States: 1993-2003

Year[2]		Influenza/Pneumonia MA		Influenza/Pneumonia US		Unintentional Injuries MA		Unintentional Injuries US		All Causes MA	All Causes 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]		
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		21.0		35.3		819.9	846.8
	% of Total	4.0		2.7		2.0		4.2			
2003	Rate	27.9[7]		21.9[8]		20.8[7]		36.1[8]		810.2	831.2
	% of Total	3.6		2.7		2.5		4.3			

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. 1999-2003 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 2003, please use the comparability modified rate for years 1994-1998. 8. US data for 2003 obtained from NCHS. Deaths: Preliminary Data for 2003. National Vital Statistics Report, Vol. 53, No. 15, February 28, 2005.

Figure 1

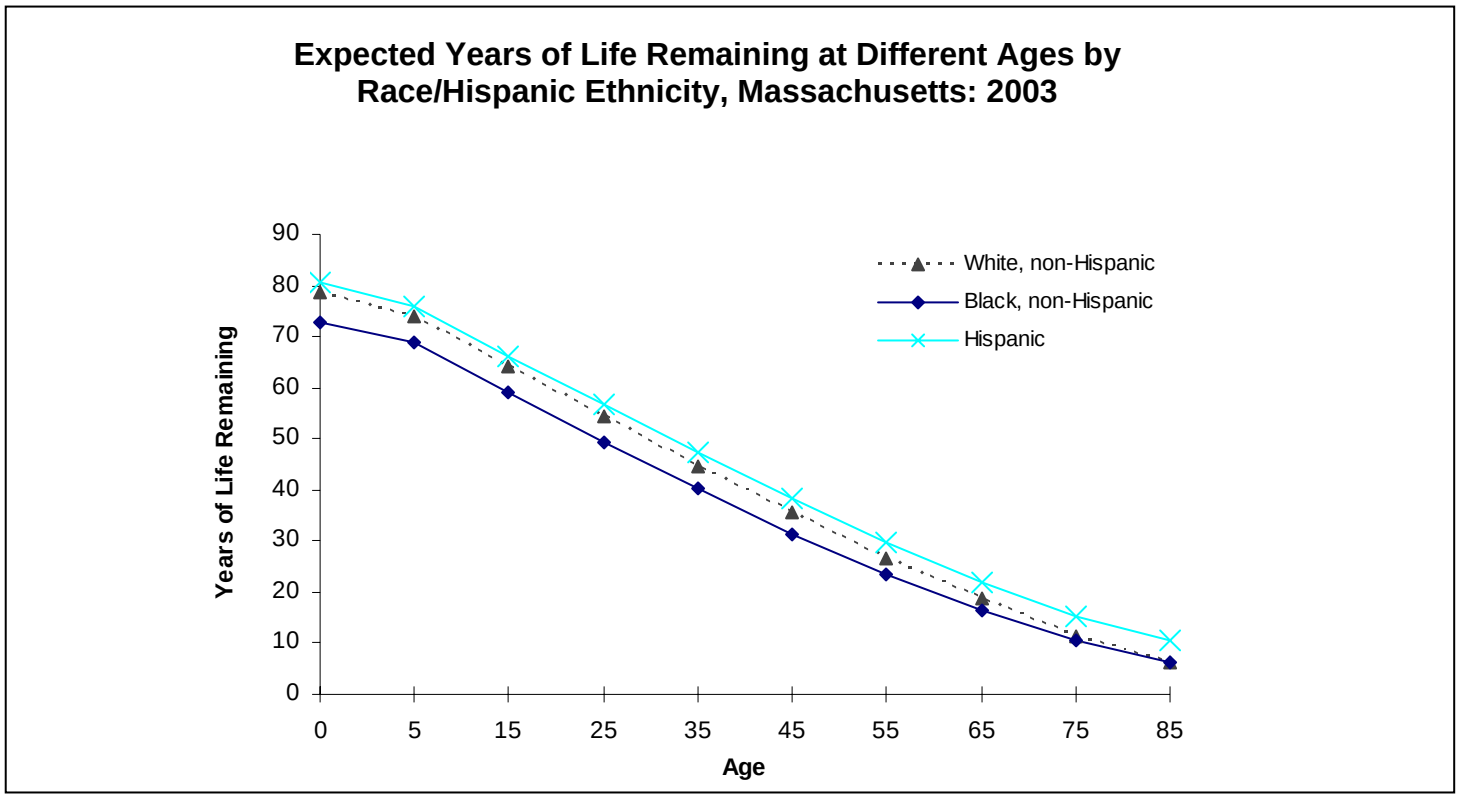


Table 2b. Years of Life Remaining[1], Massachusetts: 2003

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	78.5	80.9	81.1	75.6	84.0	75.8	76.2	69.3	76.8
1 year old	77.9	80.3	80.4	75.8	83.4	75.2	75.5	69.3	76.4
5 years old	74.0	76.3	76.4	71.9	79.5	71.2	71.5	65.4	72.5
15 years old	64.0	66.4	66.5	62.0	69.6	61.3	61.6	55.6	62.6
25 years old	54.3	56.6	56.7	52.2	59.8	51.8	52.0	46.4	53.3
35 years old	44.7	46.8	46.9	42.6	50.1	42.3	42.5	37.4	44.1
45 years old	35.4	37.3	37.4	33.5	40.7	33.1	33.2	28.6	35.3
55 years old	26.5	28.2	28.2	25.5	31.5	24.5	24.6	21.2	27.6
65 years old	18.6	19.9	19.9	18.0	23.2	16.8	16.9	14.4	20.3
75 years old	11.6	12.5	12.4	11.5	16.0	10.1	10.1	8.8	14.3
85 years old	6.3	6.7	6.7	6.2	11.7	5.3	5.2	6.0	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

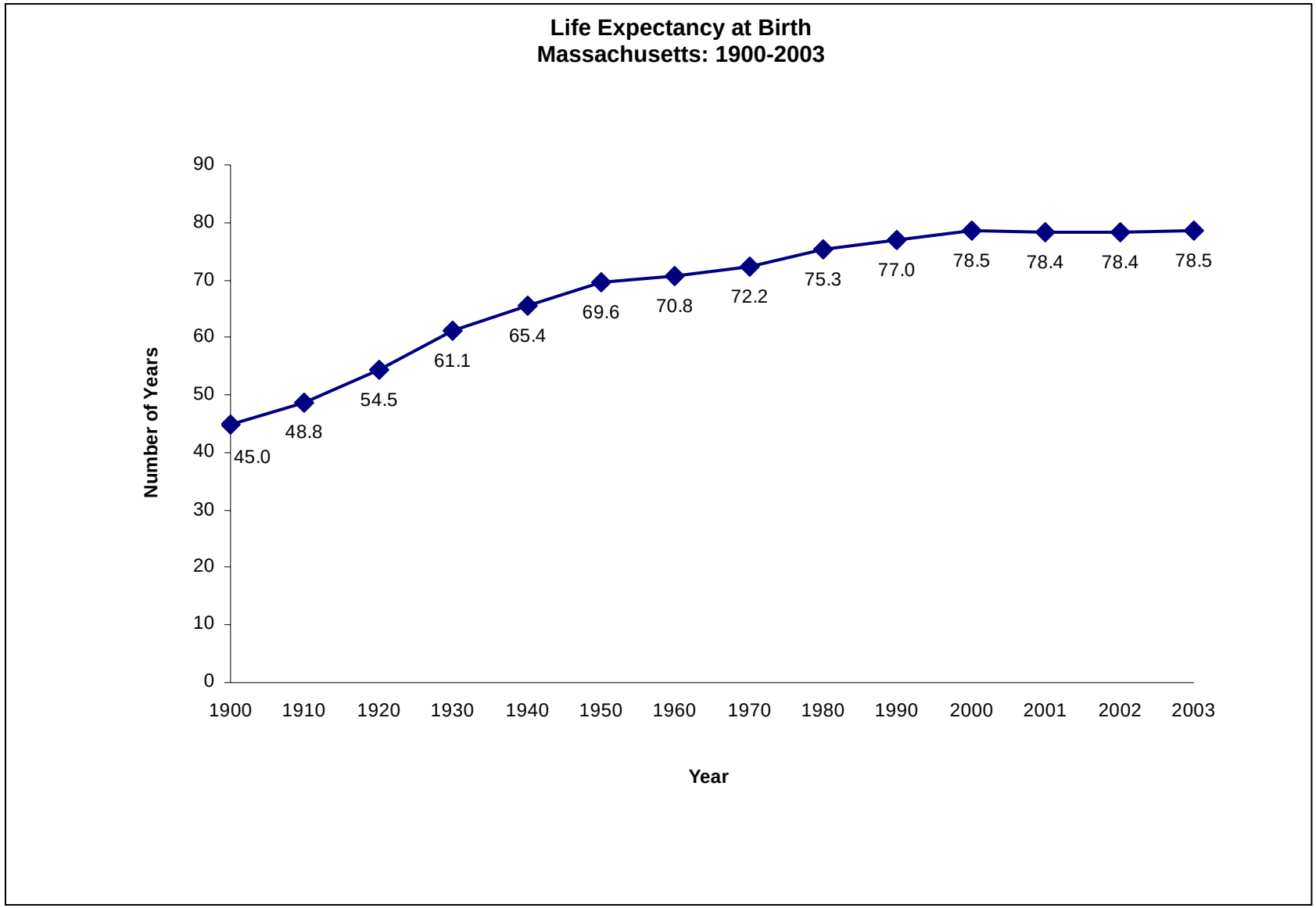
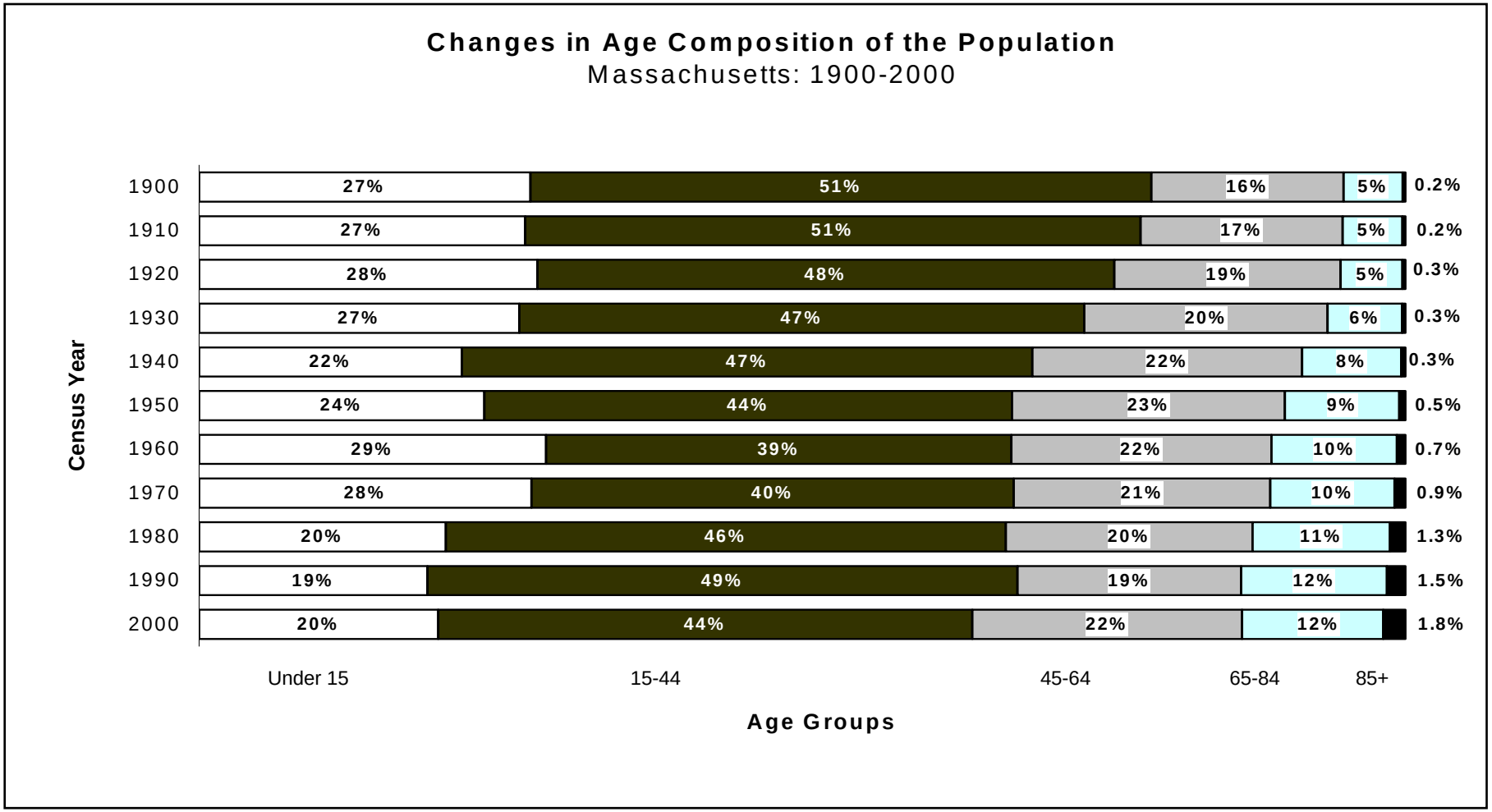

Life Expectancy at Birth
Massachusetts: 1900-2003
Number of Years
Year
90
80
70
60
50
40
30
20
10
0
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2001
2002
2003
45.0
48.8
54.5
61.1
65.4
69.6
70.8
72.2
75.3
77.0
78.5
78.4
78.4
78.5

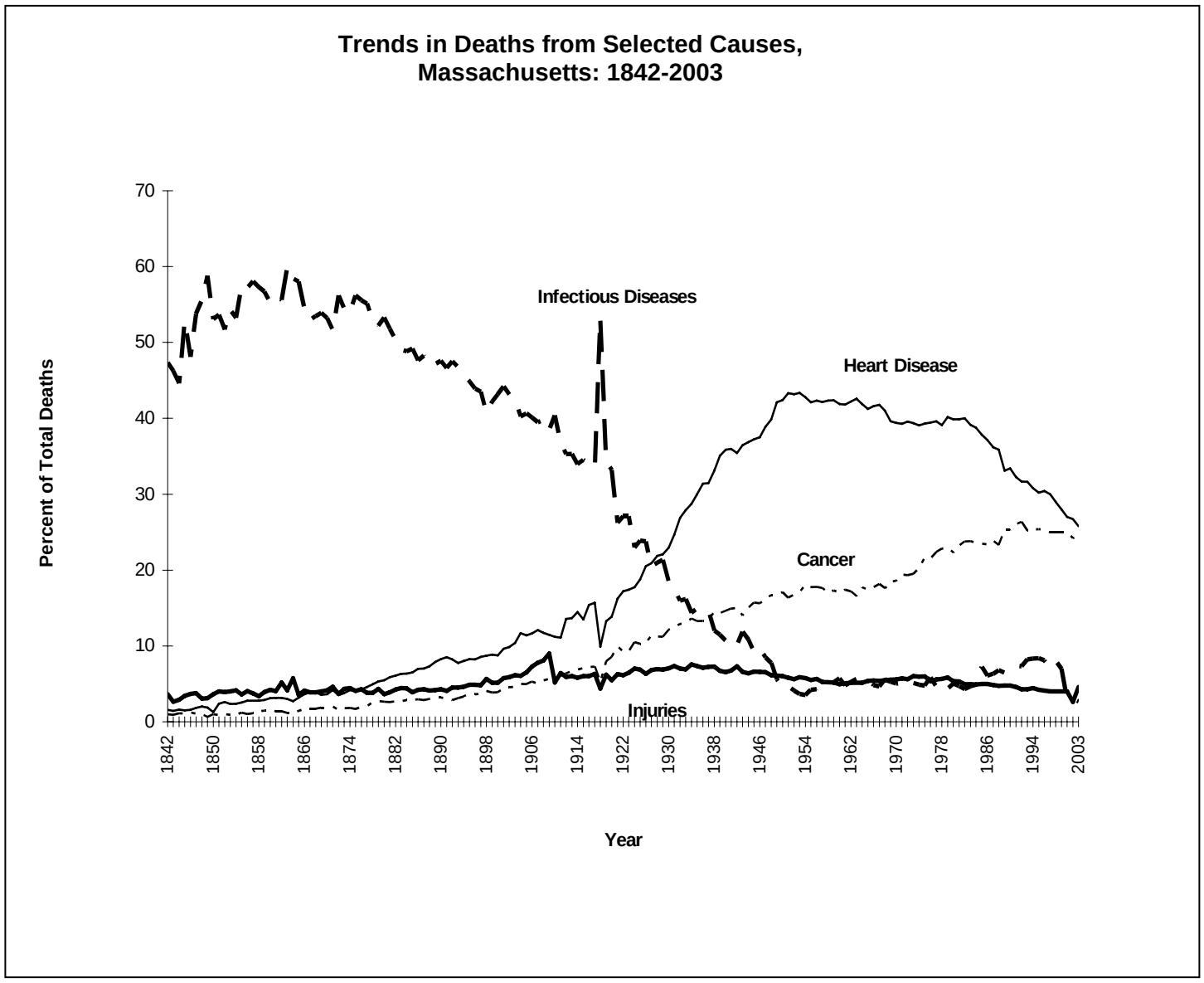
Figure 3



Source: US Census Bureau 1900-2000.

Note: Percentages based on counts with known age.

Figure 4


Trends in Deaths from Selected Causes,
Massachusetts: 1842-2003
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
2003
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 56,194 deaths in 2003, 24,936 (44%) occurred in hospitals – 37% of persons who died were inpatients at hospitals, and 7% died in emergency departments; 16,888 (30%) died in nursing homes, 12,439 (22%) died at home, and 905 (2%) were pronounced dead on arrival at emergency departments. These percentages have been consistent for the last 4 years (Table 3).

Medical Examiner Certified Deaths [5]

There are 19 circumstances in which a death is referred to the Medical Examiner's Office (not all deaths occur under suspicious circumstances or as a result of violence). The total number of deaths certified by medical examiners increased from 4,081 in 2002 to 4,151 in 2003. Of those deaths certified by medical examiners, 44% were reported as a result of natural causes (non-injury related). All homicide and suicide deaths were certified by medical examiners in 2003 compared with only 7% of heart disease deaths and less than 1% of cancer deaths (Figure 5).

Premature Mortality

A good summary measure of the impact of death on different groups in the population is premature mortality. The 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 U.S. standard population under 75 years of age. PMR is considered an excellent, single measure that reflects the health status of a population [6,5].

The reason that PMR is an excellent measure is that the vast majority of deaths to persons ages 75 and older are due to chronic conditions associated with aging. By examining deaths to persons younger than 75, it is possible to identify many issues that are amenable to systematic public health approaches to health promotion and disease prevention. An attractive feature of PMR analyses is that it moves away from considering single causes or single risk factors of death to a taking a broader community perspective. PMR may be related to socioeconomic status and its correlates such as: 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 2003. Black non-Hispanics had the highest PMR, experiencing over one and a half the rate of premature deaths as white non-Hispanics (592.3 vs. 331.7 deaths per 100,000). Hispanics had the next highest PMR (356.0 deaths per 100,000) while Asian non-Hispanics had the lowest PMR in the state, 201.2 deaths per 100,000 (Figure 6).

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[5] Massachusetts General Laws, Chapter 38, Section 3. http://www.mass.gov/legis/laws/mgl/38-3.htm.
[6] Carstairs V, Morris R. *Deprivation and Health in Scotland*. Aberdeen, Scotland: Aberdeen University Press, 1991.
[5] http://www.umanitoba.ca/centres/mchp/reports/reports_02/rfn.htm. Patricia Martens, et al. *The Health and Health Care Use of Registered First Nations People Living in Manitoba: A Population-Based Study*:

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 for each specific cause of death 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 PYLL for each specific cause of death for all age groups[6]. 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, starting with *Massachusetts Deaths 2002*, we have adjusted the maximum age to be 75 years so that we do not include deaths beyond average life expectancy. Data after 2002 are not comparable with previous publications, which used a different maximum age cutoff. See Glossary for further explanation.

For all premature deaths (death before age 75) among Massachusetts residents in 2003, 380,747 potential years of life were lost (Table 4). Heart disease and cancer ranked high on both the number of premature 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 premature death in 2003, 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 for older persons. Consequently, causes of death from which more young people die rank higher on PYLL than the number of deaths. In 2003, premature deaths due to perinatal conditions, homicide, unintentional injuries, suicide, and HIV/AIDS continue to have, on average, the highest number of PYLL (Table 4).

There were gender differences between the PYLL and the number of deaths. For instance, when examining heart disease deaths, we can see that there were 845 more deaths for females than for males; however, males had over 22,000 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 27,041 PYLL. Heart disease and perinatal conditions were the second and third leading cause of PYLL for both genders. Diabetes was the third leading cause of PYLL for males, while unintentional injuries was the 3rd leading cause for females. Males experienced substantially more PYLL due to injuries than females did; whereas, females had 120 more years of life lost due to Alzheimer's disease than did males.

Educational Attainment

Mortality is inversely associated with educational attainment, that is, the average risk of death decreases markedly with increasing educational attainment. The age-adjusted death rate for those with a high school education or less was 548.7 per 100,000 population-- 3 times higher than the rate of 173.3 for those with 13 years of education or more (Table 5). This disparity increased from 2002, when the death rate for those with less education was 539.4 compared with 174.4 for those with 13 years of education or more. Rates are shown only for ages 25-64 years because persons under age 25 may not have completed their education.

[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: 2000-2003

Type of Place where death occurred	2000		2001		2002		2003	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Hospital (inpatient/outpatient)	25,246	45%	25,393	45%	25,403	45%	24,936	44%
Dead on Arrival	1,001	2%	923	2%	927	2%	905	2%
Nursing Home	17,355	31%	17,265	30%	17,232	30%	16,888	30%
At Home	11,744	21%	11,952	21%	12,296	22%	12,439	22%
Other	892	2%	1,085	2%	956	2%	968	2%
Unknown	353	1%	115	0.2%	67	0.1%	58	0.1%

Figure 5

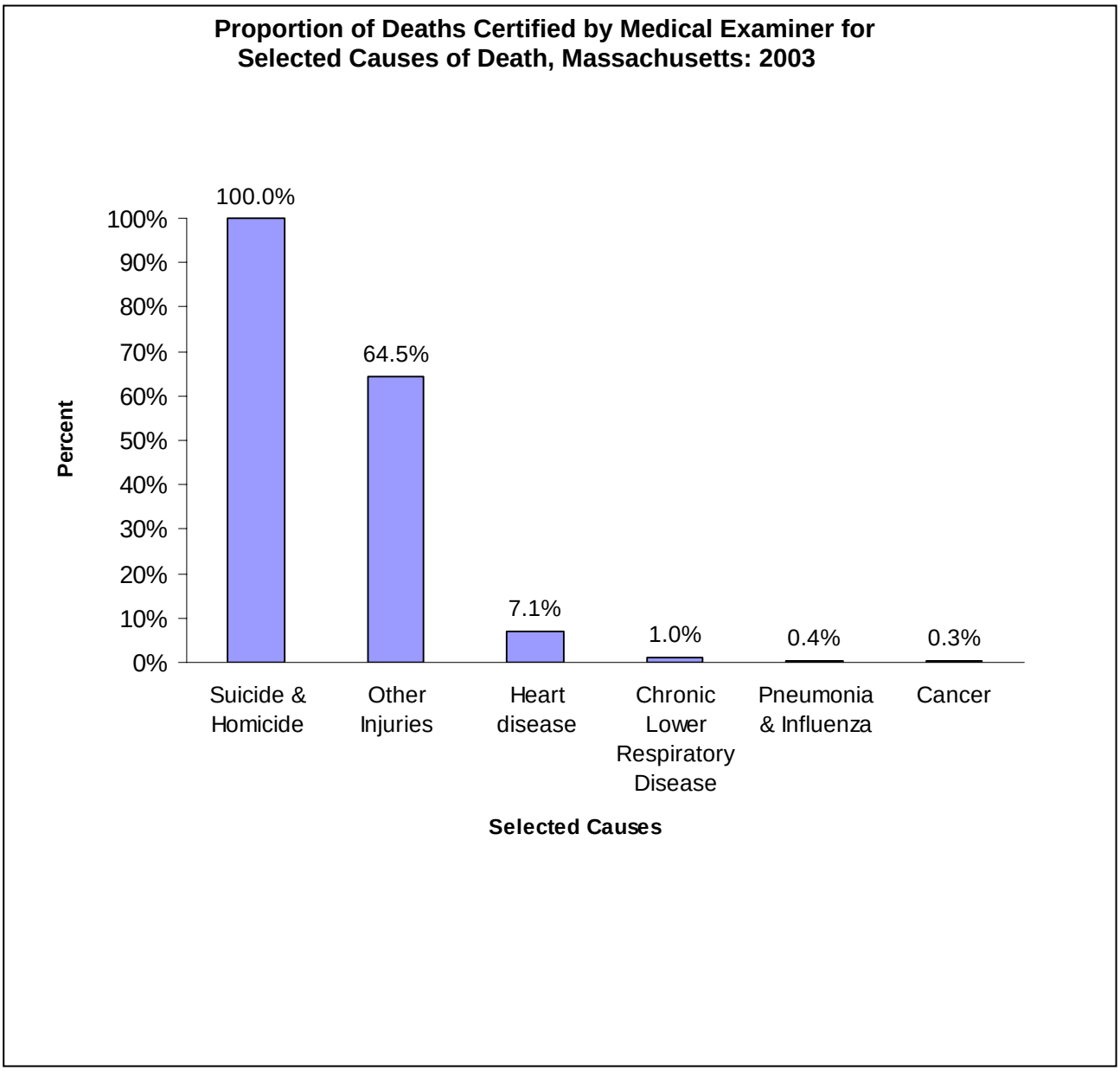
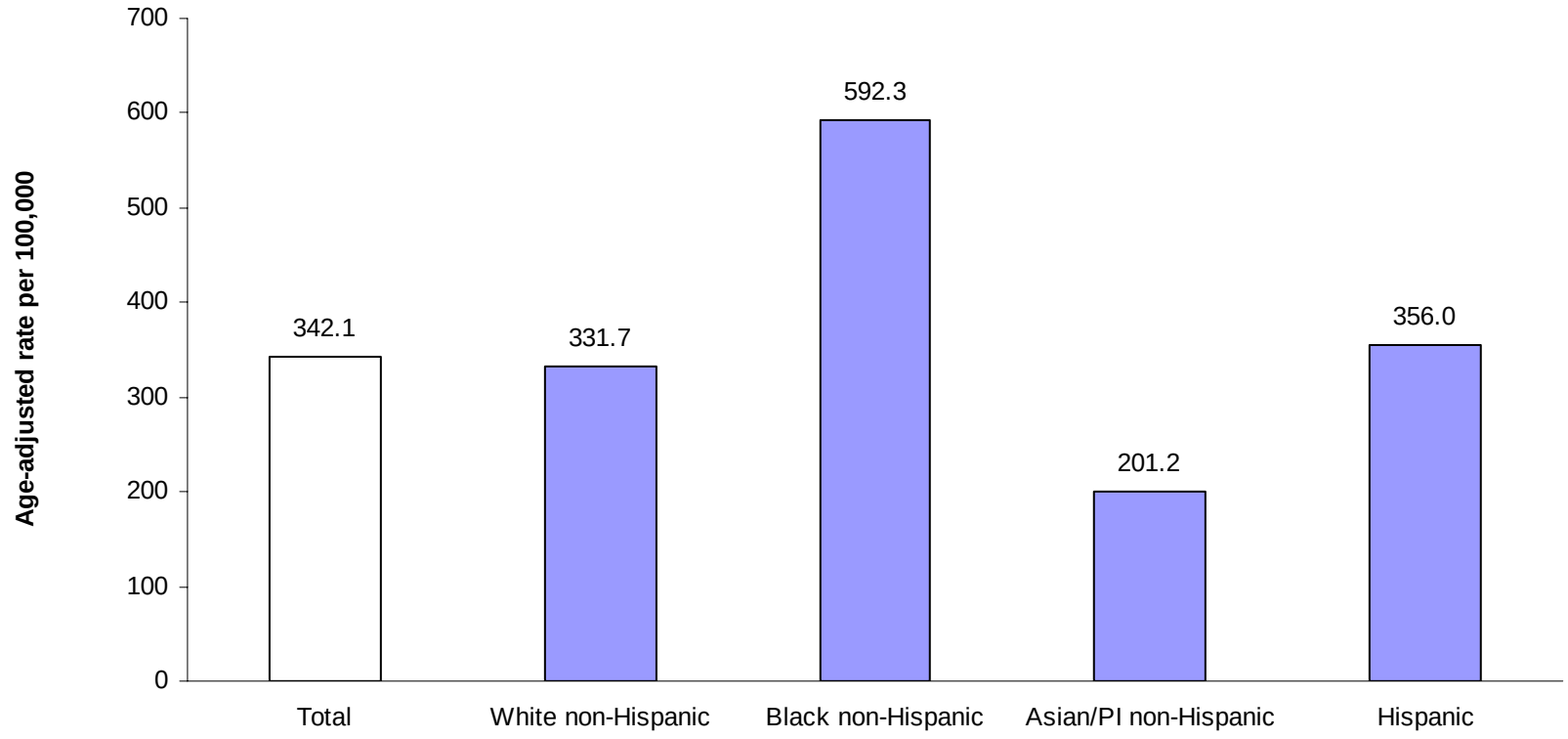

Proportion of Deaths Certified by Medical Examiner for Selected Causes of Death, Massachusetts: 2003
Percent
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
100.0%
64.5%
7.1%
1.0%
0.4%
0.3%
Suicide & Homicide
Other Injuries
Heart disease
Chronic Lower Respiratory Disease
Pneumonia & Influenza
Cancer
Selected Causes

Figure 6

Premature Mortality Rate[1] (PMR) by Race and Hispanic Ethnicity, Massachusetts: 2003



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

Table 4. Rank by Potential Years of Life Lost (PYLL), Massachusetts: 2003

Cause	PYLL	Rank on PYLL	Average PYLL	# of Deaths before 75 years	Rank on # of Deaths
All Causes	*373,487*		*18.1*	*20,593*	
Cancer	97,048	1	14.1	6,895	2
Heart Disease	56,619	2	13.8	4,103	1
Unintentional injuries	29,005	3	34.5	841	8
Perinatal Conditions	17,445	4	73.9	236	21
Suicide	13,031	5	33.3	391	16
Stroke	8,601	6	13.1	657	3
Diabetes	8,519	7	14.2	598	7
HIV/AIDS	6,702	8	29.9	224	22
Homicide	6,134	9	45.8	134	26
Alzheimer's Disease	795	10	8.0	99	6

Figure 7

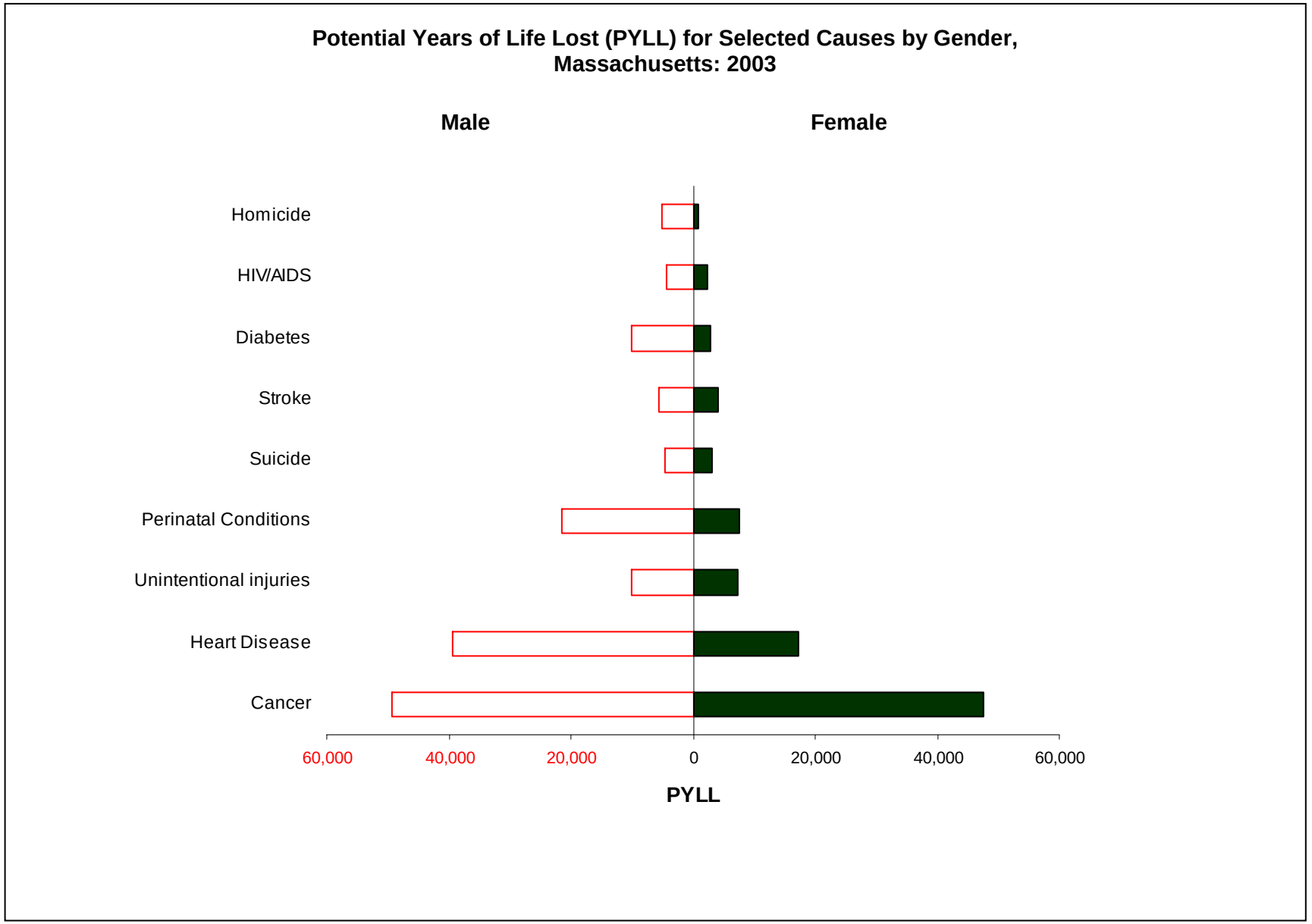
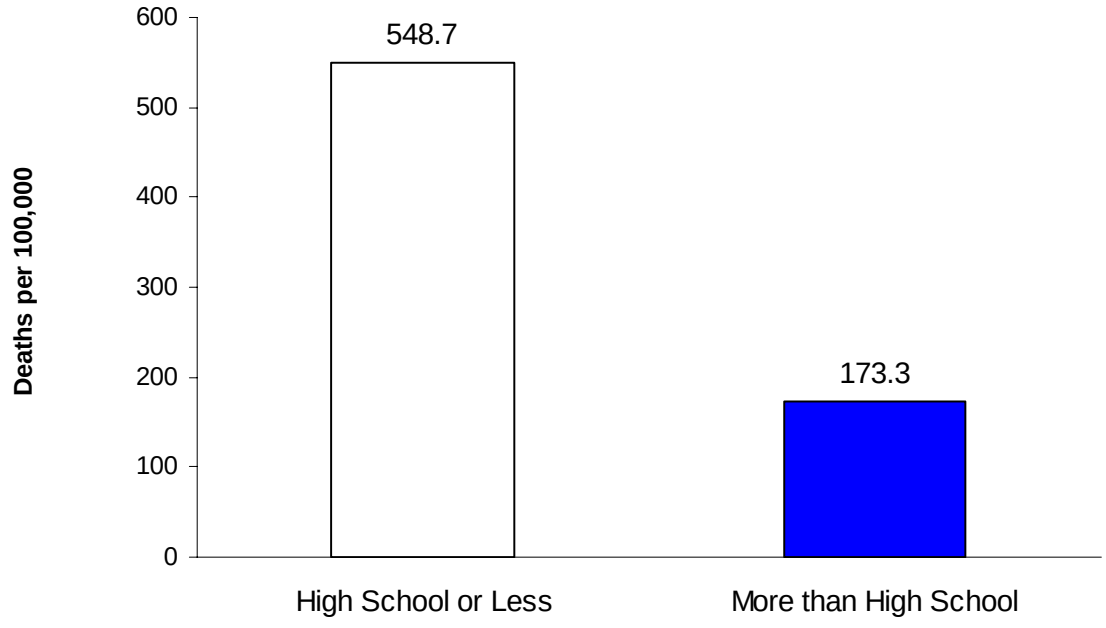

Potential Years of Life Lost (PYLL) for Selected Causes by Gender, Massachusetts: 2003
Male
Female
Homicide
HIV/AIDS
Diabetes
Stroke
Suicide
Perinatal Conditions
Unintentional injuries
Heart Disease
Cancer
60,000
40,000
20,000
0
20,000
40,000
60,000
PYLL

Table 5. Age-Adjusted Death Rates for Ages 25-64 Years by Educational Attainment, Massachusetts: 2003

	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	149.1	317.1	962.2	**548.7**
13+ education	34.4	70.5	333.3	**173.3**

Age-Adjusted Death Rates by Education for Adults
Ages 25-64
Massachusetts: 2003



LEADING CAUSES

Leading Causes

Assigning ranks to causes of death is a way to give an overview of the major forces of mortality. Causes are ranked according to the number of deaths among the 113 causes specified by the Center for Disease Control and Prevention's National Center for Health Statistics (NCHS)[7].

Heart disease and cancer continued to be the leading causes of death among Massachusetts residents, accounting for half of all deaths (Figure 8). In 2003, 14,622 Massachusetts residents died of heart disease, which resulted in an age-adjusted death rate of 207.9 deaths per 100,000 persons. Cancer continues as the second leading cause of death, with 13,524 deaths, and an age-adjusted death rate of 199.6 deaths per 100,000 (Table 8). (Please note: rates are age-adjusted to the 2000 U.S. Standard Population).

As mentioned in a previous section, for the first time since 1997, the total *number* of resident deaths in 2003 decreased (by 1%, 687 deaths) from the previous year. In 2003, there were 73 fewer heart disease deaths, 158 fewer stroke deaths, and 373 fewer cancer deaths than in the previous year. Close to half (48%) of the decrease in cancer deaths was due to colorectal cancer.

On an average day in 2003, 154 Massachusetts residents died (Figure 9). Approximately 40 of these deaths were due to heart disease, 37 to cancer, 17 to respiratory diseases, 9 to stroke, 8 to injuries, and 4 to diabetes and Alzheimer's disease. One was an infant death, 1 was an HIV/AIDS death, and 33 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 (149) 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 (32), cancer (23), congenital malformations (14), and signs and symptoms (8).

For persons ages 15 to 24, there were a total of 490 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 (34%), followed by injuries of undetermined intent (18%), homicide (10%) and suicide (9%) (Table 7a). The number of injuries of undetermined intent[8] increased from last year for this age group, from 53 deaths to 89 deaths in 2003.

In 2003, cancer remained the number one cause of death for Massachusetts residents ages 25 to 74 (38%). Heart disease, chronic lower respiratory disease, and stroke were other leading causes.

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[7] The rankings do not necessarily denote the causes of death of greatest public health importance or the largest number among all causes of death. See Deaths: Leading Causes of 2002. National Vital Statistics Report, Vol. 53, No. 17, March 7, 2005, page 3.

[8] Deaths for which the medical examiner lacked sufficient evidence to classify the death as homicide, suicide, or accidental.

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 3 times higher than the rate for persons age 45 to 64 (469.6 vs. 126.9 deaths per 100,000).

Death rates for children and young adults (ages 1 to 24) were much lower than those for older persons. Sixty-one 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 30% for children 1 to 14 years old to 71% for young persons, ages 15 to 24 years. However, injury deaths accounted only for 7% and 2% of deaths to persons ages 45 to 64 and persons age 65 and older, respectively.

Tables 7a and 7b compare the 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 injuries of undetermined intent was second for both males and females ages 15-24. Homicide ranked third for males and ninth for females. After combining all type of injuries (intentional, unintentional, and of undetermined intention) the next three leading causes of death were also the same, with cancer ranking second among young females and males. Heart disease ranked third for young males followed by signs and symptoms, whereas for females, the order of these causes was reversed.

The four leading causes of death among persons ages 25 to 44 were also the same for males and females, but the order varied by sex. Injuries of undetermined intent ranked first for males and second for females while cancer ranked first among females and fourth 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 in cause and rank for both females and males (heart disease, cancer, and stroke).

The ten leading causes of death accounted for 77% of all deaths in 2003 (Table 8). The 10 leading causes of death remained the same and in the same ranking order as in 2002. All death rates for the 10 leading causes of death, except for Alzheimer's disease and diabetes decreased in 2003 from the previous year. The death rate for diabetes remained the same as in 2002 (20.7 deaths per 100,000) while the death rate for Alzheimer's disease increased by less than 1% in 2003 (21.8 to 22.0 deaths per 100,000).

The leading causes of death varied markedly by race and Hispanic ethnicity in Massachusetts in 2003 as in previous years (Table 8). The overall age-adjusted death rate for black non-Hispanics exceeded that of white non-Hispanics by 40%. This excess increased from 31% in 2002 and 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 disease remained in the top ten for white non-Hispanics only.

The four major race and ethnic groups share six of the 10 leading causes of death. Cancer was the number one cause of death among Asian non-Hispanics and black non-Hispanics in 2003, followed by heart disease and stroke. Heart disease was the leading cause of death for Hispanics, followed by cancer, injuries of undetermined intent, and stroke. 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 2003, cancer and heart disease were the leading causes of death among Cape Verdean non-Hispanics in Massachusetts, followed by stroke, influenza and pneumonia, and, nephritis (Table 9) (see Technical Notes for a discussion of Cape Verdeans non-Hispanics).

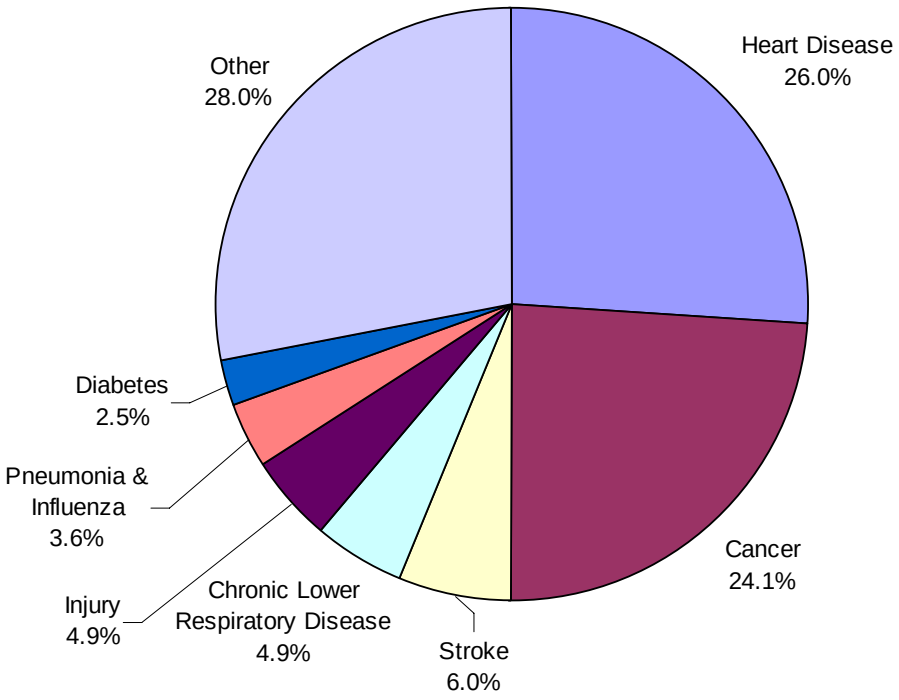
In 2003, the leading causes of death for white non-Hispanics remained the same as in 2002, with diabetes and unintentional injuries switching places. The death rate for cancer among white non-Hispanics decreased by 3% in 2003 from 2002 (199.6 vs. 205.8 deaths per 100,000) and the death rate for stoke went down by 5%. The 35% decrease in the homicide rate among black non-Hispanics resulted in homicide exiting the 10 leading causes in 2003. The death rate for diabetes for black non-Hispanics increased 11% from 2002 (47.5 vs. 52.9) and chronic lower respiratory disease death rate went up by 17% in 2003 (26.5 vs. 31.1). In 2003, the death rate for HIV/AIDS for black non-Hispanics decreased by 13% from 2002 (23.1 vs. 20.0). Homicide and nephritis entered the list of 10 leading causes of death for Hispanics in 2003. The death rate for injuries of undetermined intent for Hispanics increased by 35% from 2002 (11.6 vs. 15.7) and the HIV/AIDS death rate went up by 16% in 2003 (15.4 vs. 17.9).

The differences in the 10 leading causes of death by race and ethnicity result from a combination of factors, including age. 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 homicide as compared with white non-Hispanics among the 15 to 24 age group. Among this age group, Hispanics have a higher age-specific death rate for unintentional injury 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 (69%), 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, Dominicans and Cubans, while cancer was the leading cause for all other groups. Injuries of undetermined intent was the third leading cause of death among Puerto Ricans followed by HIV/AIDS disease, diabetes and stroke (Table 10c).

Figure 8

Percent Distribution of Leading Causes of Death[1]
Massachusetts: 2003

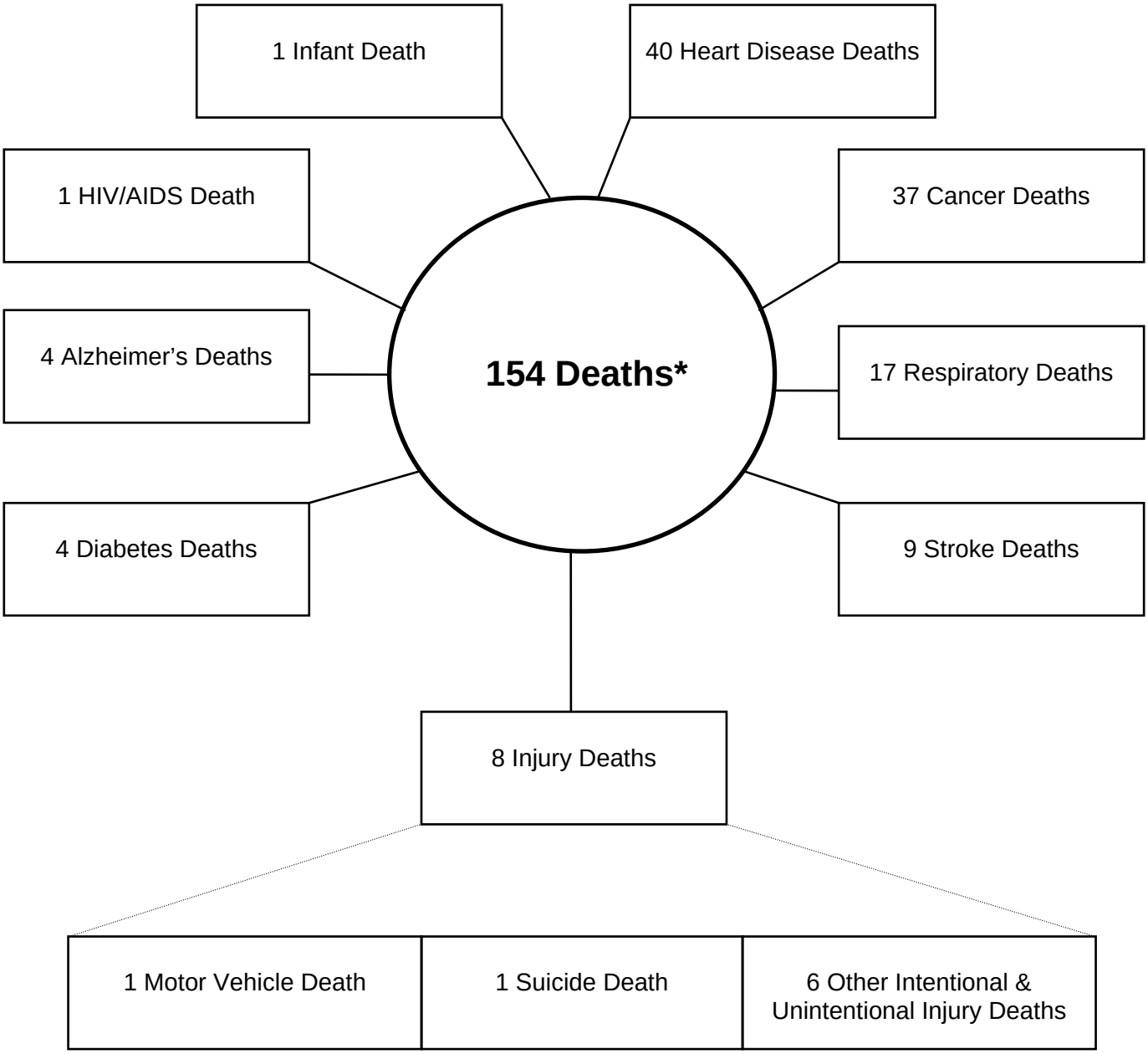


[1]Total Number of Deaths = 56,194
Causes of Death are classified according to ICD-10

Figure 9

Daily Death Statistics
Massachusetts: 2003

Every day in 2003, residents of Massachusetts experienced on average:



*includes 33 deaths due to other causes

Table 6. Top Ten Leading Causes of Death* by Age, Massachusetts 2003

	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 (94)	Unintentional injuries (32)	Unintentional injuries (165)	Injuries of undetermined intent (426)	Cancer (3,171)	Cancer (3,256)	Heart Disease (4,537)	Heart Disease (5,981)	Heart Disease (14,622)
2	Congenital malformations (61)	Cancer (23)	Injuries of undetermined intent (89)	Cancer (413)	Heart Disease (1,802)	Heart Disease (2,009)	Cancer (4,370)	Cancer (2,259)	Cancer (13,525)
3	Maternal Pregnancy Comp. (33)	Congenital malformations (14)	Homicide (47)	Unintentional injuries (289)	Chronic Lower Respiratory Disease (290)	Chronic Lower Respiratory Disease (566)	Stroke (1,174)	Stroke (1,568)	Stroke (3,399)
4	SIDS (29)	Signs and symptoms (8)	Suicide (46)	Heart Disease (268)	Diabetes (248)	Stroke (372)	Chronic Lower Respiratory Disease (1,084)	Influenza & Pneumonia (1,169)	Chronic Lower Respiratory Disease (2,753)
5	Complications of placenta, cord/membranes (13)	Homicide (8)	Cancer (29)	Suicide (177)	Unintentional injuries (246)	Diabetes (295)	Influenza & Pneumonia (583)	Alzheimer's Disease (1,031)	Influenza & Pneumonia (2,016)
6	Intrauterine Hypoxia (12)	Septicemia (7)	Signs and symptoms (21)	Signs and symptoms (110)	Chronic Liver Disease (241)	Nephritis (185)	Diabetes (479)	Chronic Lower Respiratory Disease (785)	Alzheimer's Disease (1,608)
7	Neonatal Hemorrhage (11)	Suicide (5)	Heart Disease (15)	HIV/AIDS (108)	Stroke (231)	Septicemia (152)	Alzheimer's Disease (478)	Nephritis (479)	Diabetes (1,420)
8	Respiratory Distress (10)	Heart Disease (4)	Congenital malformations (11)	Chronic Liver Disease (52)	Injuries of undetermined intent (192)	Influenza & Pneumonia (149)	Nephritis (459)	Diabetes (343)	Unintentional injuries (1,397)
9	Circulatory system (8)	Perinatal conditions (3)	Chronic Lower Respiratory Disease (6)	Homicide (52)	Nephritis (136)	Chronic Liver Disease (134)	Septicemia (357)	Septicemia (315)	Nephritis (1,284)
10	Bacterial sepsis (6)	Diabetes (2)	Influenza & Pneumonia (5)	Diabetes (50)	Suicide (135)	Unintentional injuries (104)	Unintentional injuries (258)	Pneumonitis (298)	Septicemia (988)
All Causes	**384**	**149**	**490**	**2,484**	**8,476**	**8,611**	**16,973**	**18,627**	**56,194**

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

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: 2003

		Total		Female		Male	
Age	**Cause of death[1]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**
1 – 14 years	**TOTAL**	**149**	**12.6**	**64**	**11.1**	**85**	**14.1**
	Unintentional Injuries	32	2.7	12	2.1	20	3.3
	Cancer	23	1.9	9	1.6	14	2.3
	Congenital Malformations	14	1.2	5	0.9	9	1.5
	Signs and Symptoms	8	0.7	6	1.0	2	--[5]
15 – 24 years	**TOTAL**	**490**	**59.8**	**132**	**32.1**	**358**	**87.5**
	Unintentional Injuries	165	20.1	42	10.2	123	30.1
	Injuries of Undetermined Intent	89	10.9	21	5.1	68	16.6
	Homicide	47	5.7	3	--[5]	44	10.8
	Suicide	46	5.6	5	1.2	41	10.0
25 – 44 years	**TOTAL**	**2,484**	**124.8**	**868**	**85.8**	**1,616**	**165.2**
	Injuries of Undetermined Intent	426	21.4	116	11.5	310	31.7
	Cancer	413	20.8	228	22.5	185	18.9
	Unintentional Injuries	289	14.5	64	6.3	225	23.0
	Heart Disease	268	13.5	79	7.8	189	19.3
45 – 64 years	**TOTAL**	**8,476**	**597.0**	**3,364**	**457.6**	**5,112**	**746.7**
	Cancer	3,171	223.3	1,557	211.8	1,614	235.8
	Heart Disease	1,802	126.9	516	70.2	1,286	187.9
	Chronic Lower Respiratory Disease[3]	290	20.4	151	20.5	139	20.3
	Diabetes	248	17.5	82	11.2	166	24.2
65 + years[4]	**TOTAL**	**44,211**	**5,139.8**	**25,461**	**4,909.3**	**18,750**	**5,489.9**
	Heart Disease	12,527	1,456.4	7,130	1,374.8	5,397	1,580.2
	Cancer	9,885	1,149.2	4,998	963.7	4,887	1,430.9
	Stroke	3,114	362.0	2,040	393.3	1,074	314.5
	Chronic Lower Respiratory Disease[3]	2,435	283.1	1,386	267.2	1,049	307.1

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: 2003

		Total		Female		Male	
Age	**Cause of death[1]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**
65-74 years	**TOTAL**	**8,611**	**2,012.7**	**3,827**	**1,611.2**	**4,784**	**2,514.0**
	Cancer	3,256	761.0	1,480	623.1	1,776	933.3
	Heart Disease	2,009	469.6	794	334.3	1,215	638.5
	Chronic Lower Respiratory Disease[3]	566	132.3	293	123.4	273	143.5
	Stroke	372	87.0	175	73.7	197	103.5
75-84 years	**TOTAL**	**16,973**	**5,377.3**	**8,859**	**4,535.0**	**8,114**	**6,745.2**
	Heart Disease	4,537	1,437.4	2,233	1,143.1	2,304	1,915.3
	Cancer	4,370	1,384.5	2,201	1,126.7	2,169	1,803.1
	Stroke	1,174	371.9	695	355.8	1,174	371.9
	Chronic Lower Respiratory Disease[3]	1,084	343.4	601	307.7	483	401.5
85+ years	**TOTAL**	**18,627**	**15,962.5**	**12,775**	**14,899.0**	**5,852**	**18,909.1**
	Heart Disease	5,981	5,125.5	4,103	4,785.2	1,878	6,068.2
	Cancer	2,259	1,935.9	1,317	1,536.0	942	3,043.8
	Stroke	1,568	1,343.7	1,170	1,364.5	398	1,286.0
	Influenza and Pneumonia	1,169	1,001.8	779	**908.5**	390	1,260.2

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: 2003

White, non-Hispanic[2]

Cause[3]	#	Rate[4]
Total	**52,050**	**801.9**
Heart disease	13,775	207.4
Cancer	12,576	199.6
Stroke	3,170	46.9
Chronic Lower Resp. Disease[5]	2,650	40.5
Influenza and Pneumonia	1,930	28.1
Alzheimer's Disease	1,571	22.5
Diabetes	1,236	19.2
Unintentional injuries[6]	1,228	20.6
Nephritis	1,141	17.1
Septicemia	895	13.6

Black, non-Hispanic[2]

Cause	#	Rate
Total	**2,378**	**1,119.9**
Cancer	588	278.7
Heart Disease	529	264.9
Stroke	119	63.0
Diabetes	107	52.9
Nephritis	90	44.6
Unintentional injuries[6]	74	26.7
Septicemia	62	28.3
Chronic Lower Resp. Disease[5]	62	31.1
HIV/AIDS	58	20.0
Influenza and Pneumonia	55	31.7

Asian, non-Hispanic[2]

Cause	#	Rate
Total	**579**	**546.1**
Cancer	167	141.7
Heart Disease	111	117.2
Stroke	44	44.5
Unintentional injuries[6]	29	16.7
Diabetes	24	26.7
Chronic Lower Resp. Disease[5]	21	23.1
Nephritis	20	24.3
Suicide	14	7.4
Influenza and Pneumonia	10	14.1
Perinatal Conditions	10	3.8

Hispanic

Cause	#	Rate
Total	**1,121**	**665.9**
Heart Disease	189	141.0
Cancer	181	114.5
Injuries of Undetermined Intent	65	15.7
Stroke	62	51.8
Unintentional injuries[6]	60	18.5
HIV/AIDS	53	17.9
Diabetes	51	38.1
Homicide	38	8.6
Nephritis	33	26.5
Perinatal Conditions	32	4.9

Total

Cause	#	Rate
Total	**56,194**	**810.2**
Heart disease	14,622	207.9
Cancer	13,524	199.6
Stroke	3,399	47.7
Chronic Lower Respiratory Disease[5]	2,753	39.6
Influenza and Pneumonia	2,016	27.9
Alzheimer's Disease	1,608	22.0
Diabetes	1,420	20.7
Unintentional injuries[6]	1,397	20.8
Nephritis	1,284	18.3
Septicemia	988	14.2

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.

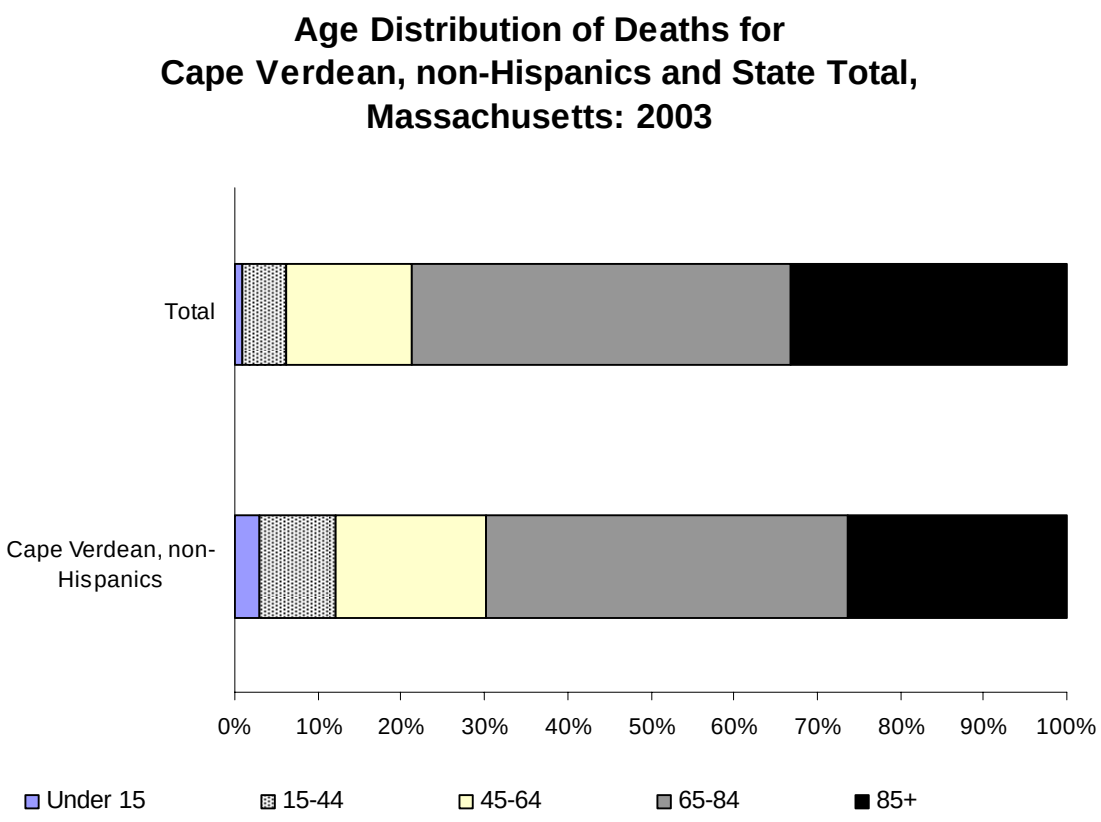
Table 9. Leading Causes of Death[1] for Cape Verdean, non-Hispanics*, Massachusetts: 2003

	Number	Percent
Cancer	51	25.8%
Heart Disease	48	24.2%
Stroke	9	4.5%
Influenza and pneumonia	8	4.0%
Nephritis	8	4.0%
Homicide	6	3.0%
Unintentional injuries	6	3.0%
Chronic Lower Respiratory Disease	4	2.0%
Diabetes	4	2.0%
Other Causes	54	27.3%
All Deaths	**198**	**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



* 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: 2003

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	**149**	**12.6**	**91**	**9.9**	**23**	**27.9**	**12**	**24.9**	**22**	**17.5**
Unintentional Injuries[4]	32	2.7	19	2.1	4	--[5]	6	12.4	3	--[5]
Cancer	23	1.9	17	1.8	2	--[5]	1	--[5]	3	--[5]
Congenital malformations	14	1.2	9	1.0	1	--[5]	2	--[5]	2	--[5]
Signs and symptoms	8	0.7	6	0.7	2	--[5]	0	--[5]	0	--[5]
Age: 15-24, TOTAL	**490**	**59.8**	**349**	**55.0**	**55**	**100.8**	**16**	**34.9**	**68**	**81.5**
Unintentional Injuries[4]	165	20.1	132	20.8	8	14.7	5	10.9	20	24.0
Injuries of Undetermined Intent[6]	89	10.9	78	12.3	2	3.7	1	--[5]	8	9.6
Homicide	47	5.7	8	1.3	20	36.6	5	10.9	14	16.8
Suicide	46	5.6	36	5.7	5	9.2	1	--[5]	4	--[5]
Age: 25-44, TOTAL	**2,484**	**124.8**	**1,948**	**119.0**	**259**	**234.1**	**42**	**44.1**	**220**	**153.6**
Injuries of Undetermined Intent[6]	426	21.4	352	21.5	28	25.3	3	--[5]	41	28.6
Cancer	413	20.8	337	20.6	40	36.1	9	9.4	26	18.2
Unintentional Injuries[4]	289	14.5	231	14.1	31	28.0	6	6.3	18	12.6
Heart Disease	268	13.5	198	12.1	38	34.3	6	6.3	24	16.8
Age: 45-64, TOTAL	**8,476**	**597.0**	**7,367**	**582.9**	**657**	**1,090.7**	**110**	**277.8**	**324**	**605.5**
Cancer	3,171	223.3	2,834	224.2	202	335.3	58	146.5	74	138.3
Heart Disease	1,802	126.9	1,572	124.4	154	255.7	15	37.9	56	104.6
Chronic Lower Respiratory Disease[7]	290	20.4	274	21.7	15	24.9	0	--[5]	1	--[5]
Diabetes	248	17.5	200	15.8	29	48.1	2	--[5]	16	29.9
Age: 65+, TOTAL[8]	**44,211**	**5,139.8**	**42,060**	**5,199.0**	**1,305**	**5,576.9**	**385**	**2,938.5**	**432**	**3,129.8**
Heart Disease	12,527	1,456.4	11,993	1,482.5	331	1,414.5	89	679.3	105	760.7
Cancer	9,885	1,149.2	9,367	1,157.9	338	1,444.4	97	740.3	75	543.4
Stroke	3,114	362.0	2,959	365.8	83	354.7	33	251.9	38	275.3
Chronic Lower Respiratory Disease[7]	2,435	283.1	2,358	291.5	42	179.5	18	137.4	16	115.9

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 Ages 65+ by Race and Hispanic Ethnicity, Massachusetts: 2003

	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	**8,611**	**2,012.7**	**7,900**	**1,992.6**	412	**3,017.0**	**123**	**1,462.7**	**163**	**1,849.1**
Cancer	3,256	761.0	3,025	763.0	147	1,076.4	42	499.5	37	419.7
Heart Disease	2,009	469.6	1,837	463.4	98	717.6	30	356.8	39	442.4
Chronic Lower Respiratory Disease[4]	566	132.3	542	136.7	15	109.8	3	--[5]	5	56.7
Stroke	372	87.0	336	84.8	18	131.8	9	107.0	9	102.1
Age: 75-84, TOTAL	**16,973**	**5,377.3**	**16,144**	**5,373.4**	**516**	**6,955.1**	**148**	**4,003.2**	**156**	**4,108.5**
Heart Disease	4,537	1,437.4	4,334	1,442.5	133	1,792.7	27	730.3	42	1,106.1
Cancer	4,370	1,384.5	4,166	1,386.6	139	1,873.6	42	1,136.1	21	553.1
Stroke	1,174	371.9	1,111	369.8	31	417.8	16	432.8	16	421.4
Chronic Lower Respiratory Disease[4]	1,084	343.4	1,051	349.8	19	256.1	10	270.5	4	--[5]
Age: 85+, TOTAL	**18,627**	**15,962.5**	**18,016**	**16,071.8**	**377**	**16,215.1**	**114**	**11,445.8**	**113**	**9,487.8**
Heart Disease	5,981	5,125.5	5,822	5,193.7	100	4,301.1	32	3,212.9	24	2,015.1
Cancer	2,259	1,935.9	2,176	1,941.2	52	2,236.6	13	1,305.2	17	1,427.4
Stroke	1,568	1,343.7	1,512	1,348.8	34	1,462.4	8	803.2	13	1,091.5
Influenza and Pneumonia	1,169	1,001.8	1,134	1,011.6	22	946.2	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: 2003

Ethnicity	Heart Disease	Cancer	Unintentional Injuries	Diabetes	Stroke	HIV/ AIDS	Injuries of Undetermined Intent	Perinatal Conditions	Chronic Lower Respiratory Disease[2]	Homicide	ALL DEATHS
Puerto Rican	127	118	31	44	43	48	52	16	16	25	**770**
Dominican	18	16	8	2	4	1	11	10	0	11	**120**
Central American	14	16	8	2	2	2	1	4	1	0	**78**
South American	13	14	6	2	6	1	1	1	1	0	**60**
Cuban	9	6	2	1	4	1	0	0	1	0	**48**
Mexican	2	4	4	0	2	0	0	1	0	2	**24**
Other/Unknown	6	7	1	0	1	0	0	0	0	0	**20**
All Hispanics	**189**	**181**	**60**	**51**	**62**	**53**	**65**	**32**	**19**	**38**	**1,120**

[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 continued to be the first and second leading causes of death among Massachusetts residents in 2003: There were 14,622 heart disease deaths and 13,524 cancer deaths, yielding age-adjusted rates of 207.9 and 199.6 deaths per 100,000 persons respectively (Table 8). The proportion of all deaths due to heart disease and cancer continued to decline: from 54% in 1998 to 50% in 2003. While heart disease deaths have declined continually since 1998, cancer deaths have gone up and down since then. In 2003, cancer deaths declined 3% and heart disease deaths declined less than 1% from the previous year. The overall leading cause of cancer death was lung cancer (27%) followed by colorectal cancer (10%) (Table 12).

The introduction of a new revision of the ICD has created 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 die of heart disease than men (in terms of overall absolute numbers), men have a 63% higher risk of dying from heart disease than women, as measured by their death rate of heart disease (270.8 for men vs. 165.9 deaths for women, per 100,000). This was true for each race and ethnic group, although the extent of risk varied by race and ethnicity in 2003: Asian men had 82% higher risk, followed by white non-Hispanic men (65%), black non-Hispanic men (50%) and Hispanic men (30%), than their female counterparts (Figure 11c). This excess of risk in men compared with women also varied by age. It was highest at ages 45 to 64 (Table 7a); at this age group men die at 2.7 times the rate of women (187.9 vs. 70.2).

In 2003, there were 13,525 cancer deaths – 6,721 men and 6,804 women (Table 12). The overall cancer death rate for men was 47% higher than the rate for women (249.7 vs. 170.2 per 100,000). Men's excess risk of dying from cancer, increased with age starting at age 45 (Tables 7a and 7b). In 2003, this excess risk in men was highest among black non-Hispanics and Asian non-Hispanics, who had a 56% higher risk of dying of cancer than their female counterparts; followed by white non-Hispanics (46%) and Hispanics (44%) (Figure 12c).

For women, lung cancer (27%), breast cancer (15%), and colon cancer (10%) were the most common causes of cancer death –accounting for 51% of all women's cancer deaths. For men, lung cancer (29%), prostate cancer (11%), and colon cancer (10%) accounted for 49% of all men's cancer deaths. In 2003, men had higher death rates than women for all of the most common site-specific cancers including: bladder (9.4 vs. 2.7), colorectal (24.8 vs. 16.2), esophagus (11.7 vs. 2.1), leukemia (10.0 vs. 5.8), lung (69.9 vs. 46.5), non-Hodgkin's lymphoma (10.0 vs. 6.2), pancreas (14.8 vs. 9.9), and stomach (6.1 vs. 3.1) among others (Table 12).

Age Patterns

Heart disease was the leading cause of death for Massachusetts residents ages 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. In 2003, 86% of all

heart disease deaths occurred among people ages 65 and older (Figure 11b). This was true for each race and ethnic group, although the percentage varied by race and ethnicity: 87% among white non-Hispanics; 63% among black non-Hispanics; 80% among Asian non-Hispanics; and 55% among Hispanics (Figure 11b).

Cancer, like heart disease, is largely a disease of older adults. In 2003, approximately 3 out of 4 (73%) cancer deaths in Massachusetts occurred in persons 65 years and older. This age group accounted for 75% of all cancer deaths among white non-Hispanics, 57% among black non-Hispanics, 58% among Asian non-Hispanics, and 41% among Hispanics (Figure 12b).

In 2003, the smallest number of cancer deaths was seen among persons under the age of 45 (465 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 cancer was the leading cause of cancer death for all persons, ages 25 and older. Female breast cancer was the second leading cause of cancer death (375 deaths) among persons, ages 25-64 years. Colorectal cancer was the second leading cause of cancer death among persons ages 65 and older.

Race/Ethnicity and Gender Patterns

In Massachusetts, during the past 7 years the age-adjusted death rate for heart disease has continually decreased for white non-Hispanics (Table 11); similar patterns were seen for both males and females (Figure 11c). For black non-Hispanics, the age-adjusted death rate for heart disease has fluctuated in the past 5 years with a 12% increase in 2003 from 2002 (9% increase for women and 16% increase for men). The Asian non-Hispanic death rate for heart disease has been increasing for the past 3 years and had an 18% increase from 2002 (a 3% increase for women, and a 27% increase for men). In 2003, for the first time, heart disease was the leading cause of death among Hispanics. In the same year, the death rate for heart disease declined by 13% for Hispanics from the previous year (Table 11). This represents a change in the trend in heart disease for Hispanics, which had increased between 1998 and 2002. This pattern varied by gender for Hispanics. In 2003, the heart disease death rate for Hispanic women reached its highest level (125.3 deaths per 100,000); this rate had been increasing since 1999. For Hispanic men, this rate declined by 24% in 2003 after increasing since 2000 (Figure 11c).

In 2003, 56% of all cancer-related deaths in Massachusetts were associated with five sites: lung, colorectal, female breast, pancreas and prostate (Table 12). In 2003, while the overall number of cancer deaths declined 3% from 2002, it increased by 10% for black non-Hispanics. Black non-Hispanics continued to have the highest cancer death rate of all race and ethnic groups (278.7); for both men (361.2) and women (230.9). In 2003, black non-Hispanics had a 40% excess of risk of dying from cancer, compared with white non-Hispanics (278.7 vs. 199.6). Hispanics and Asian non-Hispanics had the lowest cancer death rates, overall and for both men and women (Figure 11c).

Lung and colorectal cancer were the leading causes of cancer death for all race and ethnic groups in 2003. Female breast cancer was the third leading cause of cancer death for white non-Hispanics and black non-Hispanics and the fourth leading cause of cancer death among Hispanics. Pancreatic cancer was among the five leading causes of cancer death for all race and ethnic groups with the highest ranking among Hispanics. Prostate cancer was among the top 5 cancers only for white non-Hispanics and black non-Hispanics. Brain and stomach

cancers were the fourth and fifth leading causes of cancer death only for Asian non-Hispanics, while cancer of the esophagus was the fifth leading cause of cancer death only for Hispanics (Table 14).

Cancer-related deaths affect race and ethnic groups differentially. Data for 2003 continues to indicate that death rates for many cancer types were higher for black non-Hispanics than for other race and ethnic groups in the state. In 2003, the age-adjusted prostate cancer death rate for black non-Hispanics was 2.8 times the rate for white non-Hispanics (1.9 times in 2002 and 1.8 times in 2001). Similarly, the death rate for female breast cancer for black non-Hispanic women was 1.7 times the rate for white non-Hispanics women (1.1 times in 2002), and colorectal cancer was 1.4 times the rate for white non-Hispanics (1.4 in 2002, Table 14).

Compared with 2002, 2003 cancer–specific death rates have not decreased equally for all populations. For example, lung cancer death rates decreased by 55% for Hispanics and by less than 1% for white non-Hispanics, while lung cancer increased by 25% for Asian non-Hispanics and by 17% for black non-Hispanics. Death rates for female breast cancer decreased for white non-Hispanics (7%) and Hispanics (14%), while female breast cancer increased for black non-Hispanics (42%). The death rate for colorectal cancer decreased for white non-Hispanics (13%) and black non-Hispanics (11%), while colorectal cancer increased for Asian non-Hispanics (3%) and Hispanics (22%). In 2003, cancer of the pancreas was the third leading cause of cancer deaths among Hispanics. Even though the *number* of Hispanic deaths due to cancer of the pancreas increased in the past 4 years, the Hispanic age-adjusted death rate for this cause decreased in 2003. This might be explained by the shift in the age distribution among Hispanic deaths due to this cause toward the younger age groups (persons ages under 65 years old accounted for 25% of Hispanic deaths due to cancer of the pancreas in 2002, compared with 61% in 2003).

Trends in cancer death rates may reflect differences in cancer risk behaviors, changes in screening modalities, aging of the population, 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 race and ethnic groups in Massachusetts.

Figure 11a

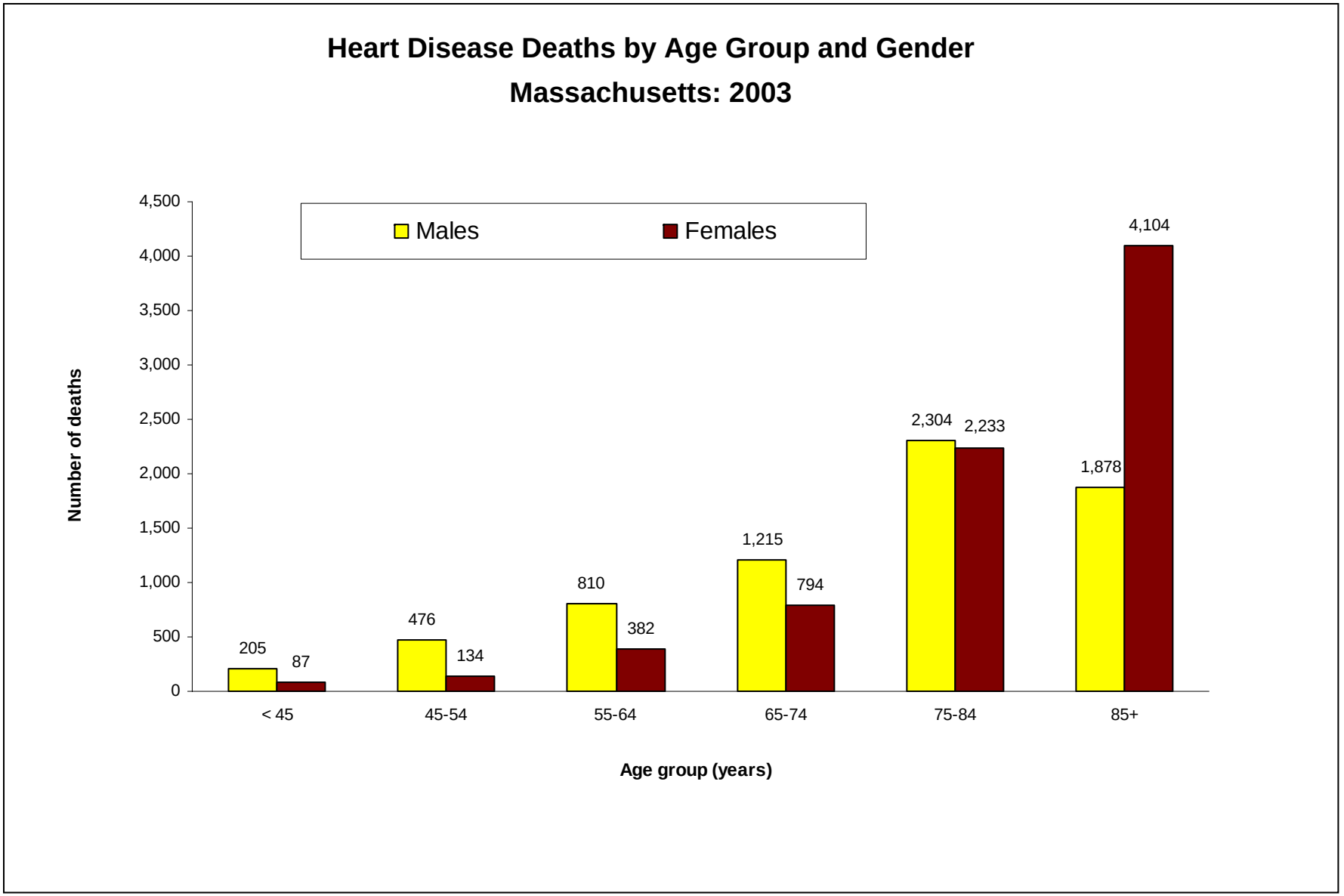

Heart Disease Deaths by Age Group and Gender
Massachusetts: 2003
Males
Females
Number of deaths
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
205
87
476
134
810
382
1,215
794
2,304
2,233
1,878
4,104
< 45
45-54
55-64
65-74
75-84
85+
Age group (years)

Figure 11b

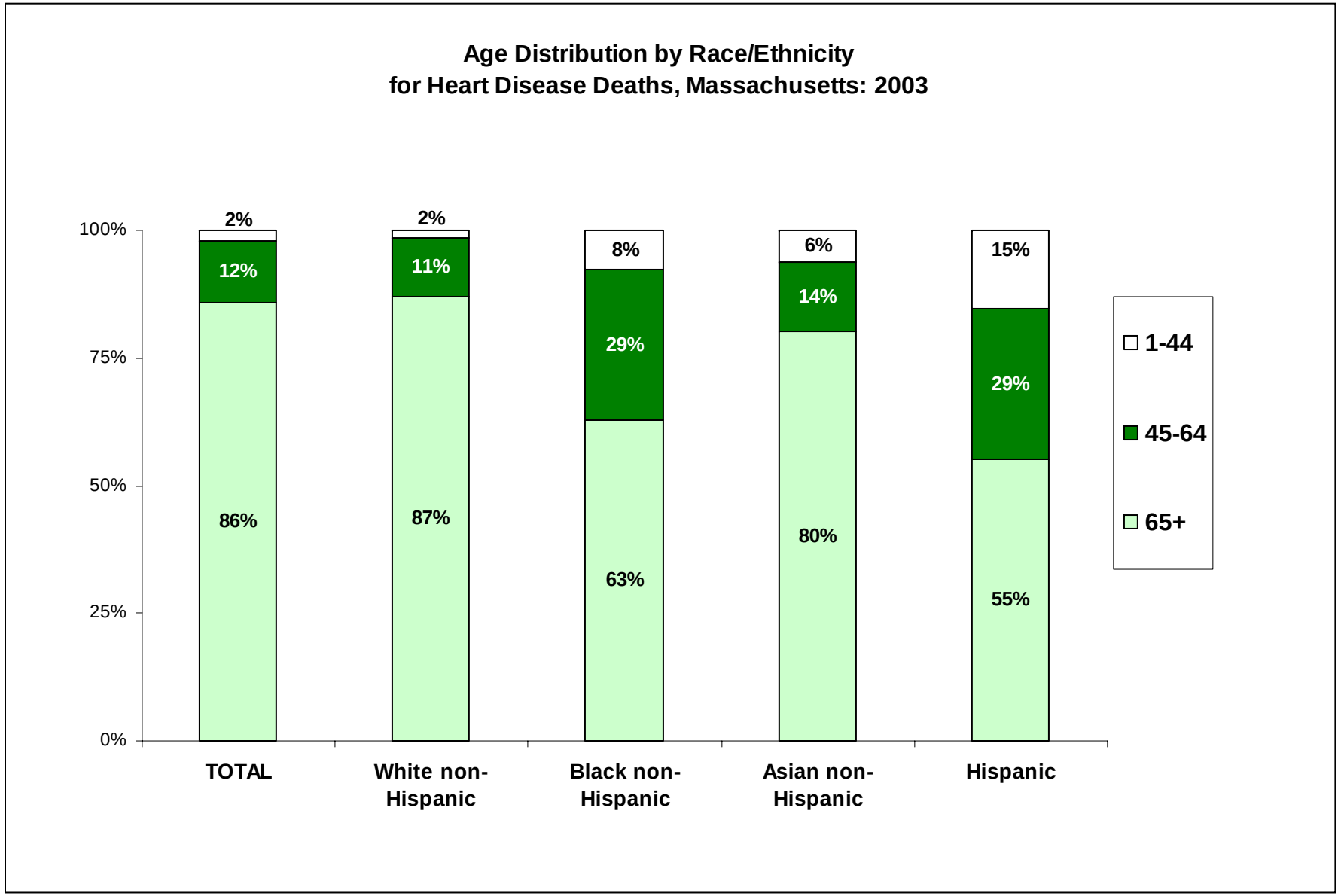

Age Distribution by Race/Ethnicity
for Heart Disease Deaths, Massachusetts: 2003
100%
75%
50%
25%
0%
2%
12%
86%
2%
11%
87%
8%
29%
63%
6%
14%
80%
15%
29%
55%
1-44
45-64
65+
TOTAL
White non-Hispanic
Black non-Hispanic
Asian non-Hispanic
Hispanic

Figure 11c. Heart Disease Death Rates by Race/Ethnicity and Gender, Massachusetts: 1996-2003

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

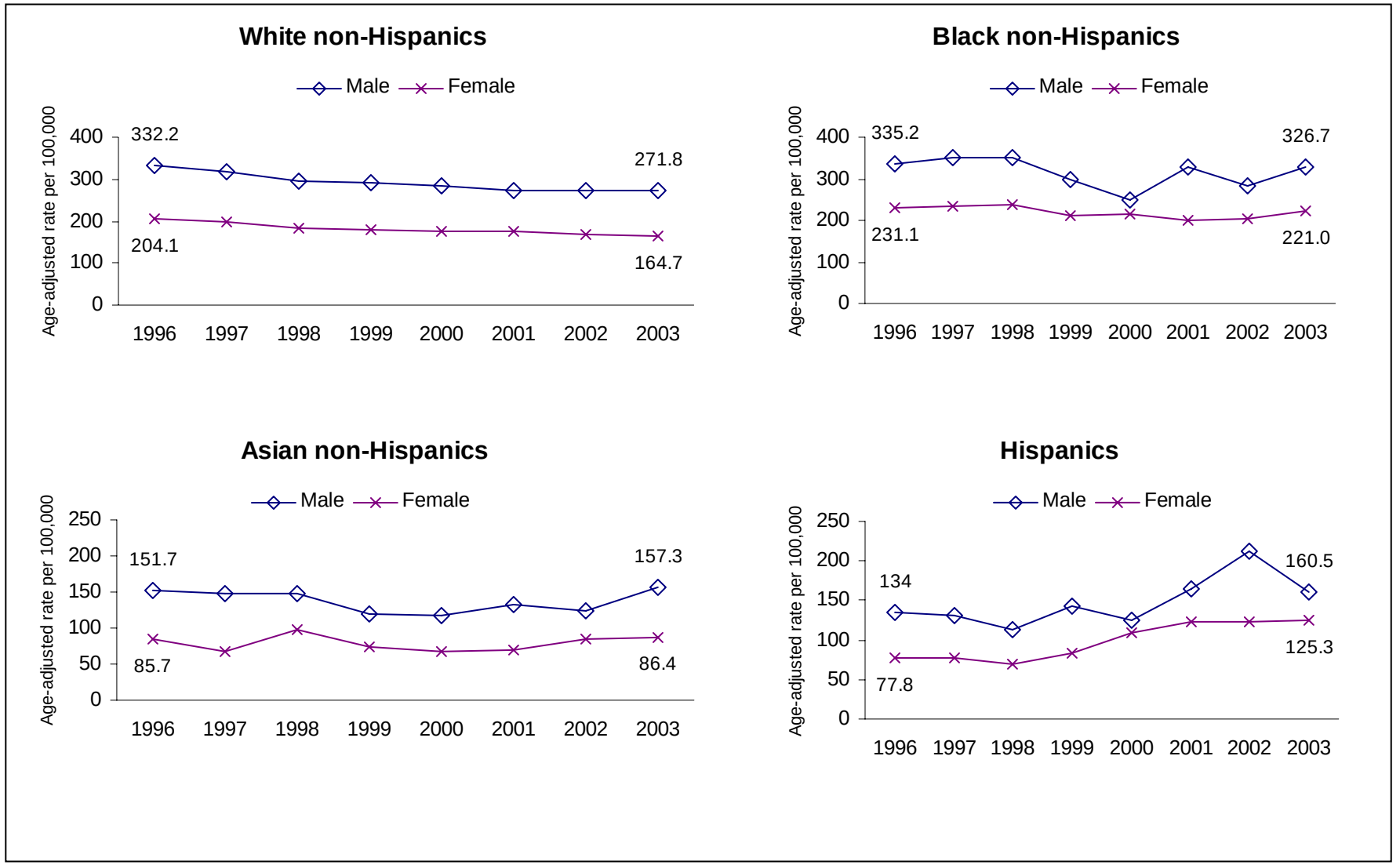


Figure 12a

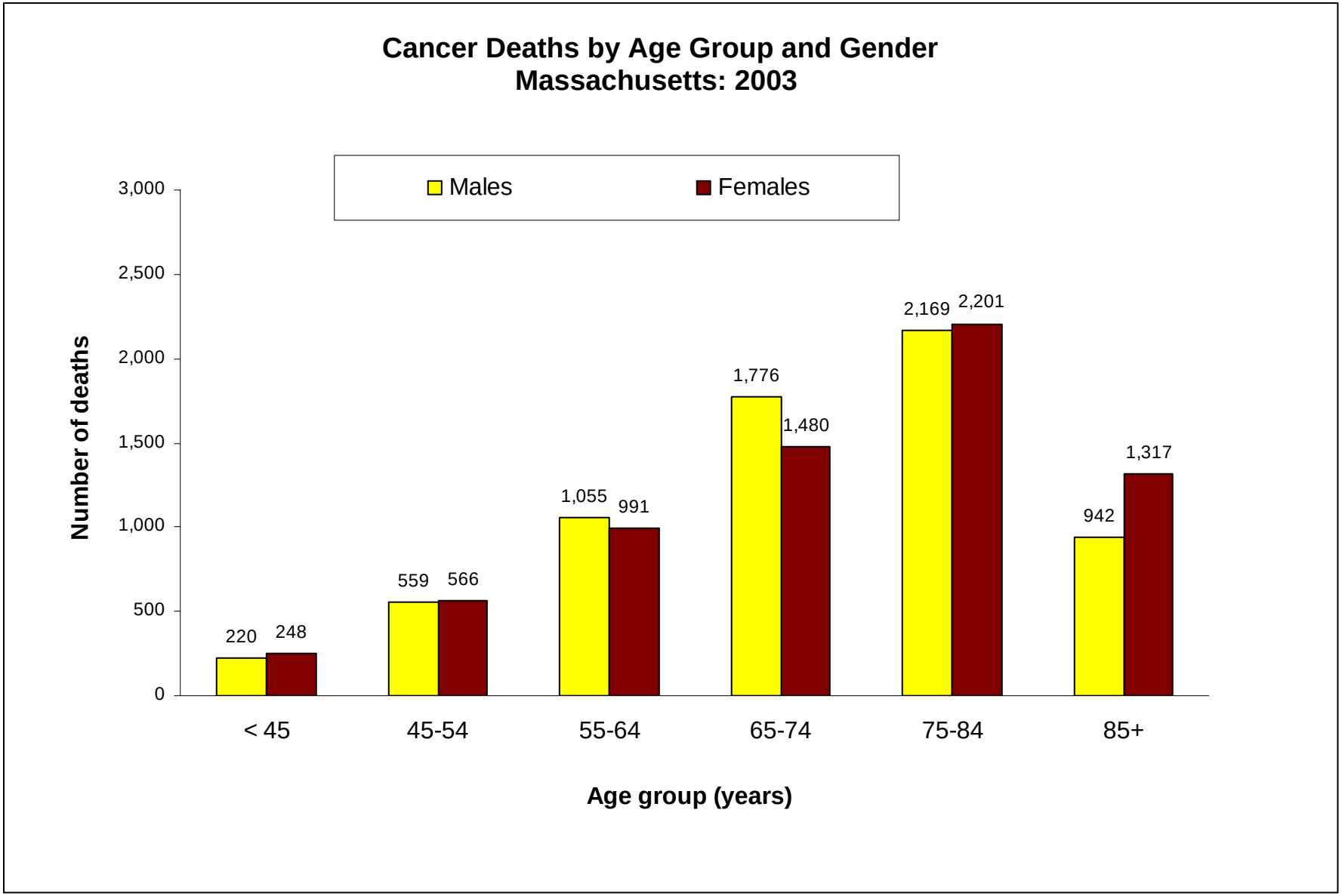

Cancer Deaths by Age Group and Gender
Massachusetts: 2003
Males
Females
Number of deaths
3,000
2,500
2,000
1,500
1,000
500
0
220
248
559
566
1,055
991
1,776
1,480
2,169
2,201
942
1,317
< 45
45-54
55-64
65-74
75-84
85+
Age group (years)

Figure 12b

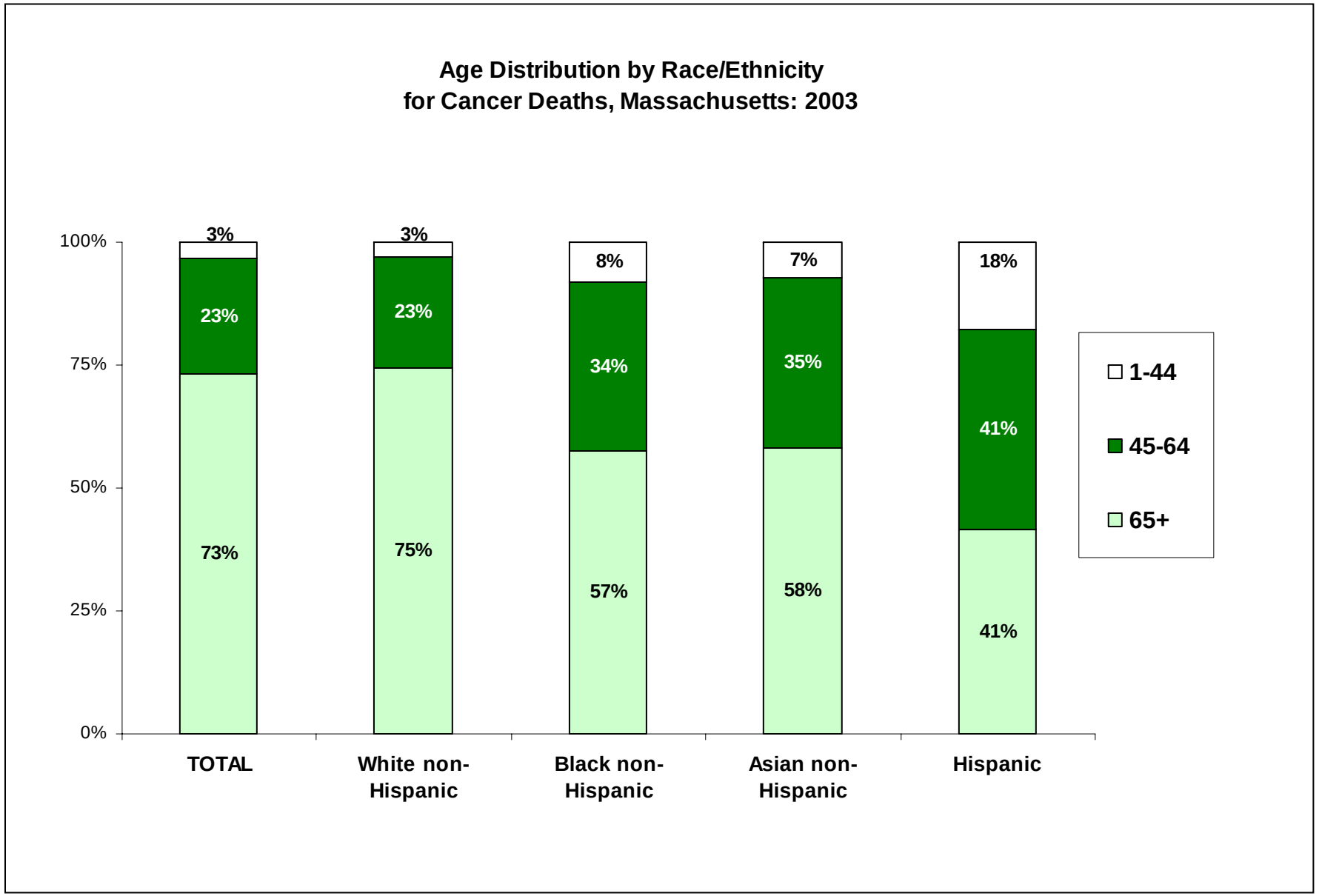

Age Distribution by Race/Ethnicity
for Cancer Deaths, Massachusetts: 2003
100%
75%
50%
25%
0%
3%
23%
73%
3%
23%
75%
8%
34%
57%
7%
35%
58%
18%
41%
41%
1-44
45-64
65+
TOTAL
White non-Hispanic
Black non-Hispanic
Asian non-Hispanic
Hispanic

Figure 12c. Cancer Death Rates by Race/Ethnicity and Gender, Massachusetts 1996-2003

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

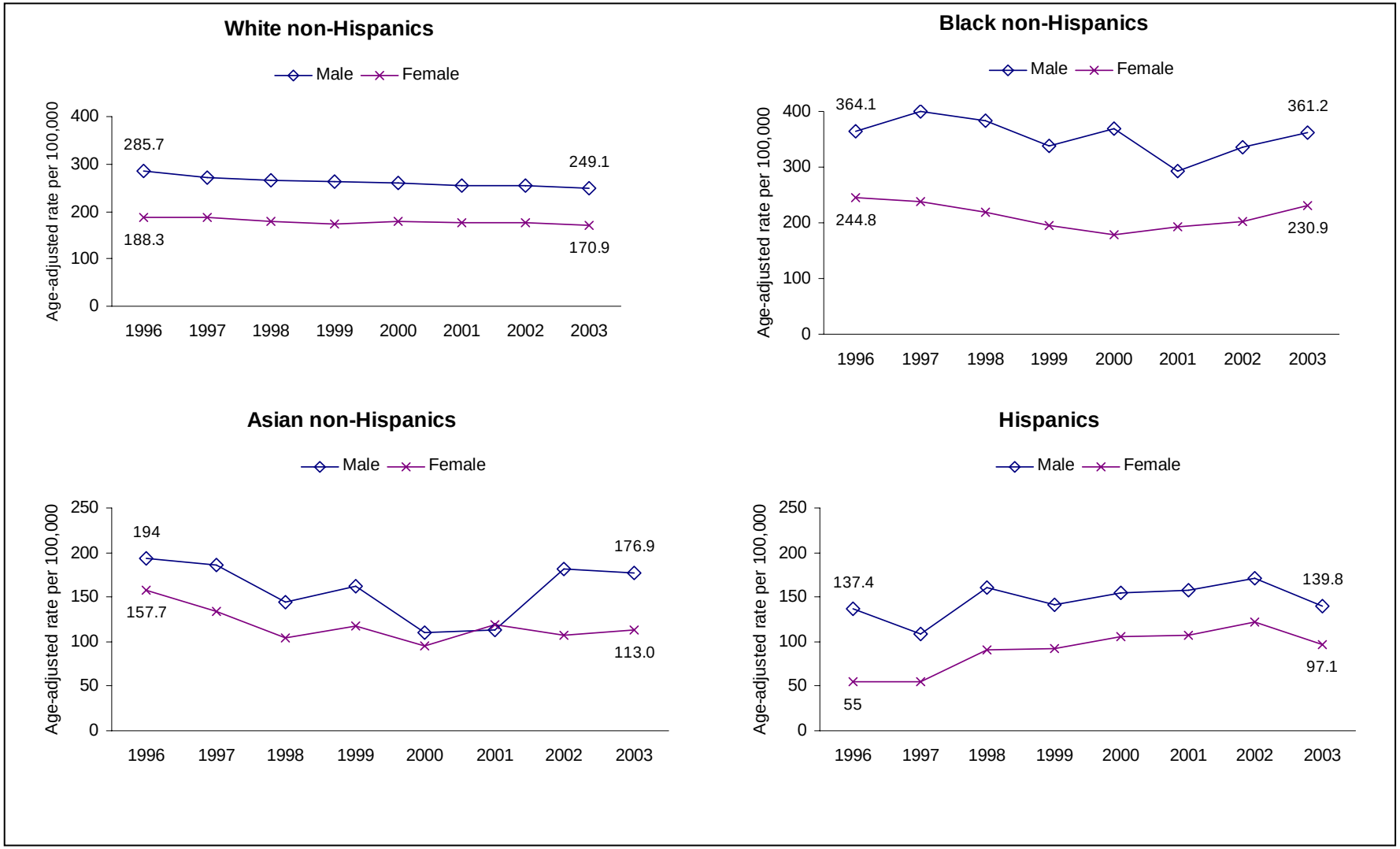


Table 11. Heart Disease and Cancer Deaths by Race and Gender, Comparability Unmodified and Comparability Modified Age-Adjusted Rates[1], Massachusetts: 1997-2003

Heart Disease

Year	White, non-Hispanic[2]						Black, non-Hispanic[2]					
	Male		Female		Total		Male		Female		Total	
	Comparability Unmodified[3]	Comparability Modified[4,5]	Comparability Unmodified	Comparability Modified[4,5]	Comparability Unmodified	Comparability Modified[4,5]	Comparability Unmodified	Comparability Modified[4,5]	Comparability Unmodified	Comparability Modified[4,5]d	Comparability Unmodified	Comparability Modified[4,5]
1997	323.5	318.9	202.3	199.4	252.1	248.5	356.3	351.2	238.5	235.1	291.3	287.2
1998	300.0	295.7	186.6	184.0	233.2	229.9	357.2	352.1	242.8	239.4	286.9	282.8
1999	289.8		178.4		224.3		296.5		211.5		248.0	
2000	284.1		174.8		220.0		249.8		215.6		235.4	
2001	273.7		175.3		216.4		326.8		198.9		251.6	
2002	272.0		166.8		209.5		281.6		202.2		236.2	
2003	271.8		164.7		207.4		326.7		221.0		264.9	

Year	Asian, non-Hispanic[2]						Hispanic					
	Male		Female		Total		Male		Female		Total	
	Comparability Unmodified[3]	Comparability Modified[4,5]	Comparability Unmodified	Comparability Modified[4,5]	Comparability Unmodified	Comparability Modified[4,5]	Comparability Unmodified	Comparability Modified[4,5]	Comparability Unmodified	Comparability Modified[4,5]	Comparability Unmodified	Comparability Modified[4,5]
1997	150.4	148.3	67.7	66.7	105.1	103.6	132.7	130.8	78.7	77.6	101.0	99.6
1998	150.6	148.5	98.5	97.1	121.0	119.3	114.0	112.4	71.3	70.3	91.3	90.0
1999	119.6		73.7		94.7		143.4		83.5		108.2	
2000	116.6		68.0		89.1		124.4[6]		108.4[6]		117.8[6]	
2001	133.1		70.3		97.3		164.4		123.0		141.2	
2002	123.6		83.7		99.5		212.4		122.9		160.1	
2003	157.3		86.4		117.2		160.5		125.3		141.5	

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. 1999-2003 are coded according to ICD-10. When comparing data over time between 1994 through 2003, please use the comparability modified rate for years 1994-1998. 6. 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: 1997-2003

Cancer

White, non-Hispanic[2]

Year	Male		Female		Total	
	Comparability Unmodified[3]	Comparability Modified[4,5]	Comparability Unmodified	Comparability Modified[4,5]	Comparability Unmodified	Comparability Modified[4,5]
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	263.4		174.3		207.7	
2000	259.5		178.9		209.1	
2001	254.0		176.2		204.9	
2002	255.8		177.0		205.8	
2003	249.1		170.9		199.6	

Black, non-Hispanic[2]

Year	Male		Female		Total	
	Comparability Unmodified	Comparability Modified[4,5]	Comparability Unmodified	Comparability Modified[4,5]	Comparability Unmodified	Comparability Modified[4,5]
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	337.2		195.7		251.5	
2000	369.4		177.7		252.3	
2001	292.0		193.5		233.0	
2002	336.3		203.2		254.7	
2003	361.2		230.9		278.7	

Asian, non-Hispanic[2]

Year	Male		Female		Total	
	Comparability Unmodified[3]	Comparability Modified[4,5]	Comparability Unmodified	Comparability Modified[4,5]	Comparability Unmodified	Comparability Modified[4,5]
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	162.8		116.9		136.7	
2000	109.5		95.7		103.2	
2001	112.5		118.4		116.4	
2002	181.6		107.3		138.6	
2003	176.9		113.0		141.7	

Hispanic

Year	Male		Female		Total	
	Comparability Unmodified	Comparability Modified[4,5]	Comparability Unmodified	Comparability Modified[4,5]	Comparability Unmodified	Comparability Modified[4,5]
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	141.8		92.5		113.8	
2000	155.0[6]		106.2[6]		126.0[6]	
2001	157.8		107.6		128.5	
2002	171.6		122.7		143.2	
2003	139.8		97.1		114.5	

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. 1999-2003 are coded according to ICD-10. When comparing data over time between 1994 through 2003, please use the comparability modified rate for years 1994-1998. 6. 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: 2003

Cause of Death[1]	ICD-10 Code	Total		Female		Male	
		#	Rate[2,3]	#	Rate	#	Rate
Total Cancer Deaths	**C00-C97**	**13,524**	**199.6**	**6,803**	**170.2**	**6,721**	**249.7**
Bladder	C67	355	5.1	114	2.7	241	9.4
Brain and nervous system	C70-C72	292	4.4	144	3.9	148	5.0
Cervix	C53	47	1.3	47	1.3	NA	NA
Colorectal	C18-C21	1,335	19.5	677	16.2	658	24.8
Esophagus	C15	409	6.1	88	2.1	321	11.7
Female breast	C50[4]	996	25.4	996	25.4	NA	NA
Hodgkin's disease	C81	32	0.5	14	0.3	18	0.6
Kidney and other urinary organs	C64, C65	262	3.9	93	2.3	169	6.2
Leukemia	C91-C95	506	7.4	238	5.8	268	10.0
Lung	C33, C34	3,749	55.9	1,818	46.5	1,931	69.9
Melanoma of the skin	C43	214	3.2	80	2.1	134	4.8
Multiple myeloma	C88, C90	276	4.0	142	3.4	134	5.0
Non-Hodgkin's lymphoma	C82-C85	524	7.6	258	6.2	266	10.0
Ovary	C56	347	9.1	347	9.1	NA	NA
Pancreas	C25	804	11.9	399	9.9	405	14.8
Prostate	C61	706	29.1	NA	NA	706	29.1
Stomach	C16	299	4.4	134	3.1	165	6.1
Uterus	C54, C55	177	4.5	177	4.5	NA	NA
All other cancers	Residual	2,194	32.4	1,036	25.3	1,157	42.2

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. Includes only female breast cancer.

Table 13. Selected Causes of Cancer Deaths by Age, Massachusetts: 2003

Age	Cause of death[1]	ICD-10 Code	Number	Age-specific rate[2]
1 – 14 years	**TOTAL**		**23**	**1.9**
	Brain and nervous system	C70-C72	5	0.4
	Leukemia	C91-C95	4	--[3]
	Colorectal	C18-C21	1	--[3]
	Kidney and other urinary organs	C64, C65	1	--[3]
15 - 24 years	**TOTAL**		**29**	**3.5**
	Leukemia	C91-C95	8	1.0
	Brain and nervous system	C70-C72	4	--[3]
	Non-Hodgkin's lymphoma	C82-C85	4	--[3]
	Hodgkin's disease	C81	2	--[3]
25 – 44 years	**TOTAL**		**413**	**20.8**
	Lung	C33, C34	76	3.8
	Female breast[4]	C50	63	6.2
	Brain and nervous system	C70-C72	35	1.8
	Leukemia	C91-C95	30	1.5
45 – 64 years	**TOTAL**		**3,171**	**223.3**
	Lung	C33, C34	956	67.3
	Female breast[4]	C50	312	42.4
	Colorectal	C18-C21	274	19.3
	Pancreas	C25	198	13.9
65 + years	**TOTAL**		**9,885**	**1,149.2**
	Lung	C33, C34	2,717	315.9
	Colorectal	C18-C21	1,030	119.7
	Prostate[5]	C61	655	191.8
	Female breast[4]	C50	621	119.7
65-74 years	**TOTAL**		**3,256**	**761.0**
	Lung	C33, C34	1,130	264.1
	Colorectal	C18-C21	282	65.9
	Pancreas	C25	208	48.6
	Female Breast[4]	C50	167	70.3
75-84 years	**TOTAL**		**4,370**	**1,384.5**
	Lung	C33, C34	1,195	378.6
	Colorectal	C18-C21	451	142.9
	Prostate[5]	C61	307	255.2
	Pancreas	C25	263	83.3
85+ years	**TOTAL**		**2,259**	**1,935.9**
	Lung	C33, C34	392	335.9
	Colorectal	C18-C21	297	254.5
	Prostate[5]	C61	250	807.8
	Female Breast[4]	C50	213	248.4

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: 2003

White, non-Hispanic[1]			Black, non-Hispanic[1]			Asian, non-Hispanic[1]			Hispanic		
Cause[2]	**#**	**Rate[3]**	**Cause**	**#**	**Rate**	**Cause**	**#**	**Rate**	**Cause**	**#**	**Rate**
Lung	3,527	56.7	Lung	139	66.5	Lung	51	47.5	Lung	27	15.8
Colorectal	1,242	19.4	Colorectal	58	28.0	Colorectal	14	13.1	Colorectal	18	13.3
Female Breast	920	25.3	Female Breast	56	42.5	Brain and nervous system	8	4.9	Pancreas	18	10.9
Pancreas	747	11.9	Prostate	52	79.9	Stomach	7	4.8	Female Breast	16	16.0
Prostate	645	28.2	Pancreas	31	14.6	Pancreas	7	6.9	Esophagus	11	6.2
Total Cancer	**12,576**	**199.6**	**Total Cancer**	**588**	**278.7**	**Total Cancer**	**167**	**141.7**	**Total Cancer**	**181**	114.5

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 2003, 2,726 deaths were the result of injuries among Massachusetts residents. This number was 3% higher than the 2002 figure. Injuries is the 5th leading cause of death for the overall Massachusetts population. As seen in Table 15a, poisonings, which include drug overdoses, was the leading cause of injury death, accounting for 31% of all injury deaths. This proportion continued to increase since 1999.

Injuries can be accidentally or intentionally inflicted. The assignment of the intent in an injury death is the responsibility of the Massachusetts Medical Examiner's Office. 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). For example, if an individual dies of a drug overdose poisoning, and there is no explicit suicide note or indication of self-intent to die, this type of death is often classified as "injury of undetermined intent" rather than unintentional injuries.

Overall Age Patterns

Injuries are a major public health concern among children and younger adults. Injuries were the leading cause of death for persons ages 1 to 44 years, accounting for 43% of all deaths among Massachusetts residents in this age group (data not shown) and also were responsible for 71% of all deaths among youth ages 15 to 24.

Different age groups had different leading causes of injury deaths. Motor vehicle-related deaths accounted for the highest proportion of injury deaths among 15 to 24 year-olds (37% of injury deaths in this age group were motor vehicle crashes), while poisonings, (which include drug overdoses) accounted for half of injury deaths among 25 to 44 year-olds. Fourteen percent of injury deaths among persons ages 15 to 24 were due to firearms. Among persons 85 years and over, 30% of injury deaths were due to falls and 12% to "hanging, strangulation or suffocation" (Table 15a).

Over half of poisoning deaths (57%), 36% of firearm deaths, 29% of motor vehicle-related deaths, and 28% of hanging, strangulation or suffocation deaths occurred among 25 to 44 year-olds. Close to 36% of fall deaths occurred among persons age 85 and older (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 15a).

Overall Race/Ethnic Patterns

Black non-Hispanics (60.5) and Hispanics (46.8) had age-adjusted injury death rates higher than white non-Hispanics (39.8) and Asian non-Hispanics (29.6). These differences were accentuated among males overall and for specific causes of injury. Black non-Hispanic and Hispanic males had the highest death rate of poisonings (including drug overdoses) among all race and ethnic groups (28.1 and 27.3 deaths per 100,000). Black non-Hispanic males were 4.3 times more likely to be killed by firearms than their white counterparts in 2003 (19.4 vs. 4.5 deaths per 100,000) (Table 15a).

In addition, there were large differences in homicide rates by race and ethnicity: the rates for black non-Hispanics (12.2 per 100,000) and Hispanics (8.6 per 100,000) were

substantially higher than for white non-Hispanics (0.9 per 100,000). The homicide rate among black non-Hispanic males (21.5 per 100,000) was over 5 times higher than the overall male homicide rate (Table 15b).

Injuries by Cause

The leading causes of injury deaths in order of percentages were: poisonings (31%), motor vehicle-related deaths (19%), "hanging, strangulation or suffocation" (11%), falls (10%) and firearm-related deaths (7%) (Table 15a). Poisonings was the leading cause of death for persons ages 25 to 44 (476 deaths).

Poisoning Injuries

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

Poisoning deaths have increased by 21% from 2002 and by 57% since 1999 (from 533 in 1999 to 836 in 2003). The increase from 2002 was observed primarily among persons ages 15-24 (7.6 in 2002 compared with 11.3 deaths per 100,000 population in 2003). Increases in the death rates for poisonings were seen for all race and ethnic groups in 2003. Seventy-three percent of poisoning deaths were due to narcotics and "other hallucinogens" and the majority of poisoning deaths (81%) were of undetermined intent. Injury death of undetermined intent means that the medical examiner lacked sufficient evidence to classify the deaths as homicide, suicide, or accidental.

Fall Injuries

Death rates for falls increased in 2003 by 8%, from the previous year (Table 15a). This increase was observed among persons ages 85 and older (60.0 in 2002 compared with 83.1 deaths per 100,000 population in 2003).

Firearm Injuries

In 2003, a total of 202 persons died from firearm injuries in Massachusetts. This number was the same as in 2002, while the death rate due to firearms decreased slightly by 3% from the previous year, from 3.2 to 3.1deaths per 100,000. Firearm suicide and firearm homicide accounted for 60% and 38%, respectively, of all firearm deaths in 2003 (Table 15d). There were marked race and ethnic variations: firearm suicide accounted for 83% of the white non-Hispanic firearm deaths while firearm homicide accounted for 83% and 81% for Hispanic and black non-Hispanic firearm deaths. Of the firearm injury deaths in 2003, 65% were among white non-Hispanics, 20% were black non-Hispanics and 11% 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 (3.1 deaths per 100,000 compared with 10.1 deaths per 100,000).

Injuries by Intent

About 51% of all injury-related deaths were due to unintentional injuries and 21% were intentional injuries (suicide and homicide) (Figure 13). Twenty-seven percent of all injury deaths were injuries of undetermined intent (mostly poisoning). This proportion has increased by 18% from 2002. The distribution of injury deaths by intention varies markedly by race and ethnicity. Injuries of undetermined intent (the third leading cause of death overall causes, among Hispanics) account for 36% of all injury deaths among Hispanics, compared with 9% among Asian non-Hispanics.

Intentional injuries

Injury deaths classified as intentional can be either one of the two subtypes: suicide or homicide. In 2003, almost 8 out of 10 intentional injury deaths were suicides (75%) (Figure 13). There were 2 fewer suicides in 2003, compared with 2002 figure (423 vs. 425). The distribution of these subtypes varied markedly by race and ethnicity: suicide accounted for 89% of white non-Hispanic intentional injury deaths, whereas, homicide accounted for 70% of the black non-Hispanic and Hispanic intentional injury deaths.

Black non-Hispanic and white non-Hispanic males had the highest suicide rates among race-gender groups (10.8 and 10.6 deaths per 100,000, respectively). Persons ages 85 and older and persons ages 45-64 had the highest suicide death rates among age groups (10.3 and 9.5 deaths per 100,000 population, respectively) (Table 15b).

Among suicide deaths, the leading causes of death were hanging, strangulation, or suffocation (38%), followed by firearm (27%) and poisoning (21%). In 2003, males were 3 times more likely to die from self-inflicted firearm wounds than females. Among females, the leading causes of suicide injury deaths were poisonings (45%) and hanging, strangulation, or suffocation (26%). For males, the leading causes of suicide injury deaths were hanging, strangulation, or suffocation (42%) and firearms (34%) (Table 15c).

The number of homicides decreased between 2002 and 2003 (185 compared with 139 deaths). This decrease was due in part to a decrease among black non-Hispanic and white non-Hispanic males who accounted for 30% and 25%, respectively of all homicides in 2003. The homicide death rate also decreased by 24% between 2002 and 2003. This decrease was observed among firearm deaths (77 deaths in 2003 compared with 93 deaths in 2002). Out of the 139 homicides, over half were a result of firearms, while a quarter was the result of stabbings.

Unintentional injuries

In 2003, there were 1,397 unintentional injury deaths among Massachusetts residents. The death rate for these injuries decreased slightly by 1% from 2002 and 2003. The leading causes of unintentional injury deaths were motor vehicle-related deaths (37%), falls (18%), and hanging, strangulation, or suffocation (10%) (Table 15c). In 2003, there were 521 motor vehicle-related deaths, a decrease of 6% from 2002. The motor vehicle-related death rate decreased slightly by 1% from 2002 and 2003. The motor vehicle-related death rate varied by gender. The male rate was almost three times the female rate (12.0 vs. 4.7 deaths per 100,000). Although the greatest number of motor vehicle-related deaths occurred to men ages 25 to 44 years (151 deaths), males ages 85 years and older had the highest rate for motor vehicle-related deaths (38.8 deaths/100,000) followed by males ages 75 to 84 (29.9 deaths per 100,000) (Table 15a).

Injuries of Undetermined Intent

About 27% of all injury-related deaths in 2003 were of undetermined intent, where investigation has not determined whether the injuries were accidental or intentional. Almost 94% of these deaths involved poisoning (674 deaths), which includes drug overdoses (Table 15c). The majority of poisoning deaths of undetermined intent was due to narcotics and “other hallucinogens” (90%) (Table 15e).

In 2003, 81% of Massachusetts poisoning deaths were of undetermined intent (Table 15d). This proportion has increased since the 1990s. Poisoning deaths are often classified as “injuries of undetermined intent” rather than unintentional injuries, due to the lack of evidence for the Medical Examiner to determine the intent.

Table 15a. Injury Deaths[1] by Leading Causes, Gender, Age, Race and Hispanic Ethnicity: Numbers, Age-Adjusted, and Age-Specific Rates, Massachusetts: 2003

	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	**2,726**	**41.3**	**836**	**12.8**	**521**	**8.1**	**305**	**4.6**	**272**	**3.9**	**202**	**3.1**	**590**	**8.7**
<1	12	15.1	2	--[6]	0	--[6]	5	6.3	0	--[6]	1	--[6]	4	--[6]
1-14	45	3.8	1	--[6]	19	1.6	6	0.5	2	--[6]	3	--[6]	14	1.2
15-24	347	42.3	93	11.3	128	15.6	29	3.5	7	0.9	49	6.0	41	5.0
25-44	946	47.5	476	23.9	151	7.6	86	4.3	31	1.6	73	3.7	129	6.5
45-64	599	42.2	228	16.1	99	7.0	72	5.1	42	3.0	47	3.3	111	7.8
65-74	150	35.1	16	3.7	42	9.8	19	4.4	21	4.9	10	2.3	42	9.8
75-84	301	95.4	10	3.2	62	19.6	50	15.8	72	22.8	11	3.5	96	30.4
85+	326	279.4	10	8.6	20	17.1	38	32.6	97	83.1	8	6.9	153	131.1
All Females	**883**	**23.3**	**256**	**7.6**	**163**	**4.7**	**82**	**2.1**	**117**	**2.6**	**22**	**0.7**	**243**	**5.7**
<1	6	15.5	1	--[6]	0	--[6]	2	--[6]	0	--[6]	0	--[6]	3	--[6]
1-14	15	2.6	1	--[6]	8	1.4	2	--[6]	1	--[6]	1	--[6]	2	--[6]
15-24	71	17.3	24	5.8	32	7.8	6	1.5	1	--[6]	2	--[6]	6	1.5
25-44	233	23.0	142	14.0	32	3.2	18	1.8	6	0.6	7	0.7	28	2.8
45-64	163	22.2	67	9.1	36	4.9	11	1.5	11	1.5	7	1.0	31	4.2
65-74	60	25.3	7	2.9	21	8.8	5	2.1	9	3.8	4	--[6]	14	5.9
75-84	138	70.6	8	4.1	26	13.3	22	11.3	29	14.8	1	--[6]	52	26.6
85+	197	229.8	6	7.0	8	9.3	16	18.7	60	70.0	0	--[6]	107	124.8
All Males	**1,843**	**62.1**	**580**	**18.3**	**358**	**12.0**	**223**	**7.7**	**155**	**5.9**	**180**	**6.0**	**347**	**12.2**
<1	6	14.8	1	--[6]	0	--[6]	3	--[6]	0	--[6]	1	--[6]	1	--[6]
1-14	30	5.0	0	--[6]	11	1.8	4	--[6]	1	--[6]	2	--[6]	12	2.0
15-24	276	67.4	69	16.9	96	23.5	23	5.6	6	1.5	47	11.5	35	8.6
25-44	713	72.9	334	34.1	119	12.2	68	7.0	25	2.6	66	6.7	101	10.3
45-64	436	63.7	161	23.5	63	9.2	61	8.9	31	4.5	40	5.8	80	11.7
65-74	90	47.3	9	4.7	21	11.0	14	7.4	12	6.3	6	3.2	28	14.7
75-84	163	135.5	2	--[6]	36	29.9	28	23.3	43	35.7	10	8.3	44	36.6
85+	129	416.8	4	--[6]	12	38.8	22	71.1	37	119.6	8	25.8	46	148.6

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: 2003

	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	**2,288**	**39.8**	**706**	**12.9**	**429**	**7.8**	**268**	**4.6**	**246**	**3.8**	**131**	**2.3**	**508**	**8.3**
Females	789	23.5	226	7.9	144	4.8	72	2.1	108	2.5	15	0.5	224	5.6
Males	1,499	58.9	480	18.1	285	11.3	196	7.8	138	5.8	116	4.5	284	11.4
Black, non- Hispanic	**191**	**60.5**	**54**	**17.0**	**34**	**10.6**	**15**	**4.8**	**11**	**5.6**	**41**	**11.0**	**36**	**11.5**
Females	34	22.0	13	7.3	5	3.1	2	--[6]	3	--[6]	4	--[6]	7	4.7
Males	157	105.0	41	28.1	29	19.8	13	8.1	8	10.6	37	19.4	29	18.9
Asian, non- Hispanic	**56**	**29.6**	**6**	**2.1**	**16**	**7.4**	**10**	**5.7**	**5**	**4.7**	**6**	**2.0**	**13**	**7.7**
Females	23	25.0	3	--[6]	4	--[6]	6	7.3	3	--[6]	2	--[6]	5	5.4
Males	33	34.4	3	--[6]	12	12.0	4	--[6]	2	--[6]	4	--[6]	8	11.5
Hispanic	**179**	**46.8**	**64**	**15.4**	**40**	**10.7**	**11**	**4.1**	**8**	**3.3**	**23**	**4.4**	**33**	**8.9**
Females	31	18.3	10	4.4	9	5.1	2	--[6]	2	--[6]	1	--[6]	7	3.1
Males	148	77.6	54	27.3	31	16.9	9	5.6	6	3.4	22	8.0	26	16.3

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. 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: 2003

	All Intentional		Suicide		Homicide	
	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]
All Persons	**562**	**8.7**	**423**	**6.5**	**139**	**2.2**
<1	4	--[6]	0	--[6]	4	--[6]
1-14	13	1.1	5	0.4	8	0.7
15-24	93	11.3	46	5.6	47	5.7
25-44	229	11.5	177	8.9	52	2.6
45-64	154	10.8	135	9.5	19	1.3
65-74	32	7.5	28	6.5	4	--[6]
75-84	23	7.3	20	6.3	3	--[6]
85+	14	12	12	10.3	2	--[6]
All Females	**129**	**3.8**	**104**	**3.1**	**25**	**0.7**
<1	2	--[6]	0	--[6]	2	--[6]
1-14	3	--[6]	2	--[6]	1	--[6]
15-24	8	1.9	5	1.2	3	--[6]
25-44	52	5.1	43	4.3	9	0.9
45-64	46	6.3	40	5.4	6	0.8
65-74	7	2.9	6	2.5	1	--[6]
75-84	9	4.6	6	3.1	3	--[6]
85+	2	--[6]	2	--[6]	0	--[6]
All Males	**433**	**14.2**	**319**	**10.4**	**114**	**3.7**
<1	2	--[6]	0	--[6]	2	--[6]
1-14	10	1.7	3	--[6]	7	1.2
15-24	85	20.8	41	10	44	10.8
25-44	177	18.1	134	13.7	43	4.4
45-64	108	15.8	95	13.9	13	1.9
65-74	25	13.1	22	11.6	3	--[6]
75-84	14	11.6	14	11.6	0	--[6]
85+	12	38.8	10	32.3	2	--[6]

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: 2003

	All Intentional		Suicide		Homicide	
	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]
White, non- Hispanic	**417**	**7.5**	**371**	**6.7**	**46**	**0.9**
Females	105	3.6	93	3.2	12	0.4
Males	312	12.0	278	10.6	34	1.4
Black, non- Hispanic	**66**	**17.8**	**20**	**5.7**	**46**	**12.2**
Females	6	3.9	1	--[3]	5	3.0
Males	60	32.3	19	10.8	41	21.5
Asian, non- Hispanic	**22**	**10.7**	**14**	**7.4**	**8**	**3.3**
Females	10	10.6	7	8.0	3	--[3]
Males	12	10.5	7	6.3	5	4.2
Hispanic	**54**	**12.6**	**16**	**3.9**	**38**	**8.6**
Females	7	3.5	2	--[3]	5	2.8
Males	47	22.3	14	7.5	33	14.9

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

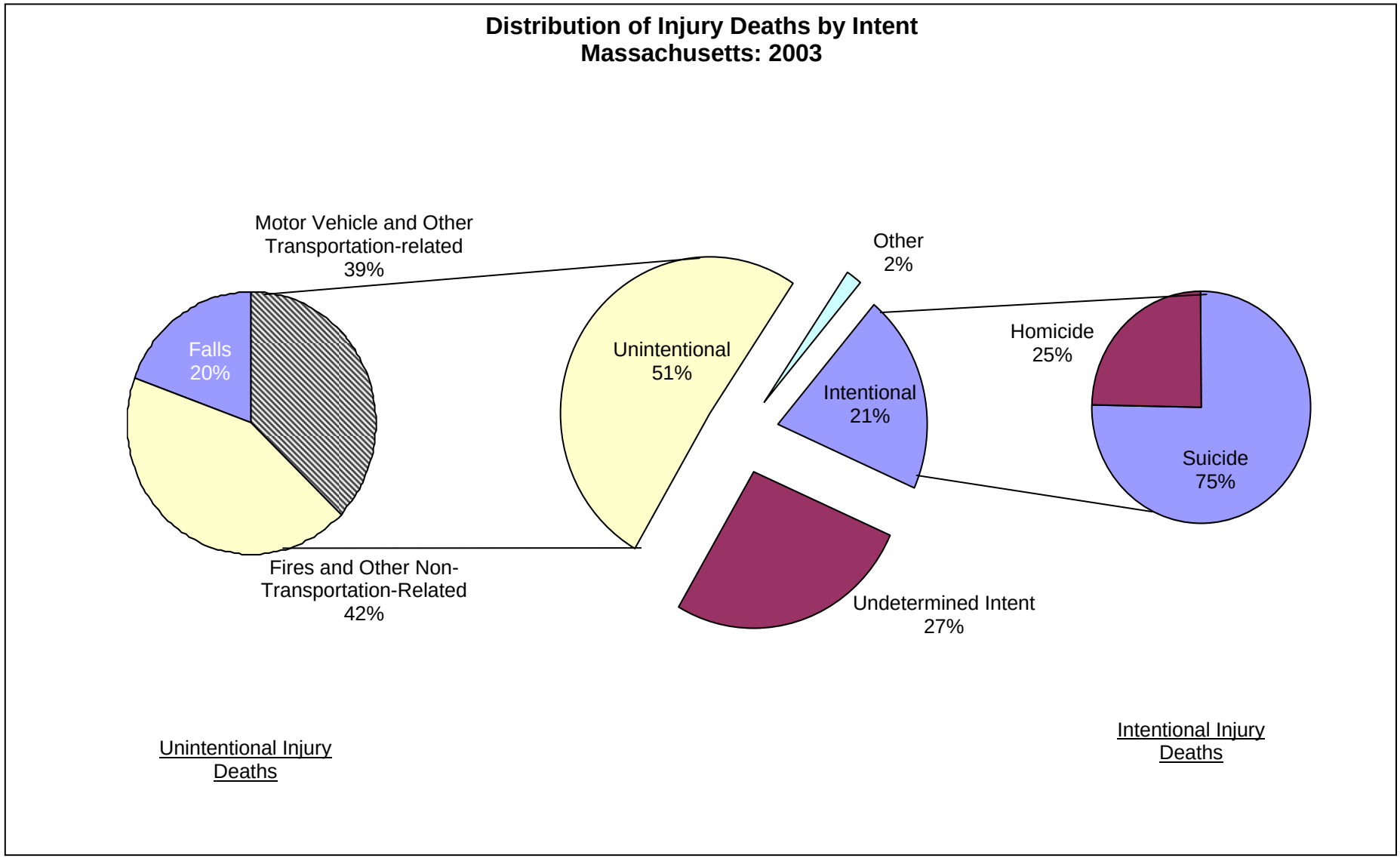

Distribution of Injury Deaths by Intent
Massachusetts: 2003
Motor Vehicle and Other Transportation-related 39%
Falls 20%
Fires and Other Non-Transportation-Related 42%
Unintentional 51%
Other 2%
Intentional 21%
Undetermined Intent 27%
Homicide 25%
Suicide 75%
Unintentional Injury Deaths
Intentional Injury Deaths

Table 15c. Injury[1] Deaths by Intent, Method and Gender: Number and Age-Adjusted Rates[2], Massachusetts: 2003

Type of Injury	All		Female		Male	
	Number	Rate	Number	Rate	Number	Rate
Suicide	**423**	**6.5**	**104**	**3.1**	**319**	**10.4**
Hanging, strangulation or suffocation	160	2.5	27	0.8	133	4.3
Firearm	121	1.9	14	0.4	107	3.6
Poisoning	87	1.3	47	1.4	40	1.3
Other and unspecified	55	0.8	16	0.5	39	1.2
Homicide*	**139**	**2.2**	**25**	**0.7**	**114**	**3.7**
Firearm	77	1.2	8	0.2	69	2.2
Cut or pierce	35	0.6	10	0.3	25	0.8
Other and unspecified	27	0.4	7	0.2	20	0.7
Unintentional Injuries (Accidents)	**1,397**	**20.8**	**538**	**13.2**	**859**	**30.4**
Motor Vehicle-related	521	8.1	163	4.7	358	12.0
Injury to pedestrian	79	1.2	28	0.8	51	1.7
Injury to pedal cyclist	7	0.1	0	--[3]	7	0.2
Injury to motorcyclist	40	0.6	3	--[3]	37	1.2
Injury to occupant	100	1.6	24	0.7	76	2.5
Other and unspecified	295	4.6	108	3.2	187	6.3
Falls	248	3.5	108	2.3	140	5.4
Hanging, strangulation or suffocation	137	2	51	1.2	86	3.3
Smoke, fire and flames	79	1.2	24	0.6	55	1.8
Poisoning	75	1.1	29	0.8	46	1.5
Drowning or submersion	45	0.7	9	0.3	36	1.2
Firearm	1	--[3]	0	--[3]	1	--[3]
Other and unspecified	291	4.1	154	3.3	137	5.3
Injury Deaths of Undetermined Intent	**723**	**11.1**	**194**	**5.8**	**529**	**16.7**
Poisoning	674	10.4	180	5.4	494	15.5
Drowning or submersion	17	0.3	5	0.1	12	0.4
Fall	4	--[3]	1	--[3]	3	--[3]
Other and unspecified	28	0.4	8	0.2	20	0.7
Legal Intervention	**1**	--[3]	**0**	--[3]	**1**	--[3]
Firearm	1	--[3]	**0**	--[3]	**1**	--[3]
Adverse Effects	**43**	**0.6**	**22**	**0.5**	**21**	**0.8**
Drugs	3	--[3]	1	--[3]	2	--[3]
Medical Care	40	0.6	21	0.5	19	0.7
ALL INJURIES	**2,726**	**41.3**	**883**	**23.3**	**1,843**	**62.1**

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: 2003

Method	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	836	12.8	75	1.1	87	1.3	0	--[3]	674	10.4	0	--[3]
Transport Injuries	544	8.5	544	8.5	0	--[3]	0	--[3]	0	--[3]	0	--[3]
Motor vehicle-related	521	8.1	521	8.1	0	--[3]	0	--[3]	0	--[3]	0	--[3]
Injury to pedestrian	79	1.2	79	1.2	0	--[3]	0	--[3]	0	--[3]	0	--[3]
Injury to pedal cyclist	7	0.1	7	0.1	0	--[3]	0	--[3]	0	--[3]	0	--[3]
Injury to motorcyclist	40	0.6	40	0.6	0	--[3]	0	--[3]	0	--[3]	0	--[3]
Injury to occupant	100	1.6	100	1.6	0	--[3]	0	--[3]	0	--[3]	0	--[3]
Other and unspecified	295	4.6	295	4.6	0	--[3]	0	--[3]	0	--[3]	0	--[3]
Other transport	23	0.4	23	0.4	0	--[3]	0	--[3]	0	--[3]	0	--[3]
Hanging, strangulation or suffocation	305	4.6	137	2.0	160	2.5	7	0.1	1	--[4]	0	--[3]
Falls	272	3.9	248	3.5	20	0.3	0	--[3]	4	--[4]	0	--[3]
Firearm	202	3.1	1	--[4]	121	1.9	77	1.2	2	--[4]	1	--[4]
Drowning and submersion	67	1.1	45	0.7	5	0.1	0	--[3]	17	0.3	0	--[3]
Smoke, fire and flames	91	1.4	79	1.2	5	0.1	0	--[3]	7	0.1	0	--[3]
Cut or pierce	50	0.8	1	--[4]	13	0.2	35	0.6	1	--[4]	0	--[3]
Other and unspecified	316	4.5	251	3.5	10	0.2	20	0.3	17	0.3	0	--[3]
Adverse Effects	**43**	**0.6**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALL INJURIES	**2,726**	**41.3**	**1,397**	**20.8**	**423**	**6.5**	**139**	**2.2**	**723**	**11.1**	**1**	**--[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; 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: 2003

Poisoning Agent	Number	Percent
Narcotics and hallucinogens*	607	90.1
Other and unspecified drugs, medicaments, biological substances	32	4.8
Antiepileptic, sedative-hypnotic, antiparkinsonism & psychotropic	21	3.1
Gases and vapours	4	--[2]
Alcohol	2	--[2]
Nonopioid analgesics, antipyretics & antirheumatics	2	--[2]
Other and unspecified chemicals and noxious substances	2	--[2]
Other drugs acting on autonomic nervous system	2	--[2]
Organic solvents and halogenated hydrocarbons and their vapors	1	--[2]
Pesticides	1	--[2]
TOTAL	**674**	**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 2003, 226 Massachusetts residents died from HIV/AIDS, a decrease of 1% from the previous year (Table 16a). The overall age-adjusted death rate from HIV/AIDS was 3.5 deaths per 100,000, which was the same rate as in 2002.

In 2003, 59% of all HIV/AIDS deaths occurred in the hospital, a decrease of 13% from 2002 (68% hospital HIV/AIDS deaths in 2002), while 24% occurred at home, an increase of 69% from 2002 (14% home HIV/AIDS deaths in 2002) (Table 16a).

Forty-two percent of HIV/AIDS deaths occurred among persons ages 35 to 44 years. In 2003, 114 persons ages 45 and older died from HIV/AIDS, accounting for half of all HIV deaths, an 8% decline from 2002 (55%). For the first time since 1994, the proportion of HIV/AIDS deaths for persons age 45 and older declined in 2003 (Table 16b). The decline in this age group was observed among white non-Hispanics (66 deaths in 2002 compared with 49 deaths in 2003) and black non-Hispanics (43 deaths in 2002 compared with 37 deaths in 2003).

In 2003, 34% of HIV/AIDS deaths were females. The proportion of HIV/AIDS deaths among women has tripled since 1989 (11% vs. 34%) and increased 17% from the previous year (29% vs. 34%). There was also an increase in HIV/AIDS deaths in women from 2002, which occurred among white non-Hispanics (22 deaths in 2002 compared with 39 deaths in 2003). In 2003, women accounted for 35% of all HIV deaths among white non-Hispanics, 38% among black non-Hispanics, and 26% among Hispanics (Table 16d).

Disparities continue in the HIV/AIDS death rate among race and ethnic groups, with Hispanics dying at a rate six times that of white non-Hispanics (12.4 vs. 2.1 deaths per 100,000) (Table 16d). For black non-Hispanics, the HIV/AIDS rate is 8 times higher than that of white non-Hispanics (17.2.1 vs. 2.1 deaths per 100,000). The disproportionate impact of mortality from HIV/AIDS on Hispanics and black non-Hispanics mirrors disproportionate rates of HIV diagnosis in these communities relative to white non-Hispanics. The HIV/AIDS death rate decreased from the previous year for both Hispanics (by 19%) and black-non-Hispanics (by 26%), while it increased by 11% for white non-Hispanics. This recent increase among white non-Hispanics is due to a 75% increase in the female HIV/AIDS rate (0.8 in 2002 compared to 1.4 in 2003) (Table 16d).

In 2003, HIV/AIDS was the 6th leading cause of death for Hispanics and the 9th leading cause of death for black non-Hispanics. It was the 25th leading cause of death for white non-Hispanics and the 22nd for the state overall. HIV/AIDS was the seventh leading cause of death for Massachusetts residents ages 25 to 44. Only eight years ago, it was the leading cause of death in this age group overall. In 2003, HIV/AIDS was the 3rd leading cause of death for Hispanics ages 25 to 64.

The 2003 age-specific HIV/AIDS death rate among 25 to 44 year-olds varied considerably by race, Hispanic ethnicity, and gender (Table 17). The highest death rates occurred among Hispanic and black non-Hispanic males (27.0 and 18.8 deaths per 100,000, respectively) while the lowest death rate occurred among white non-Hispanic females (2.5 deaths per 100,000). Between 2002 and 2003, the HIV/AIDS death rate increased for white non-Hispanics by 46%, while it decreased for both black non-Hispanics (by 21%) and Hispanics (by 28%). All race-gender death rates in this age group decreased from 2002, with the exception of white non-Hispanic males and females (in which it increased by 44% for men and by 56% for women) and of black non-Hispanics females rate (which remained the same as in 2002 at 15.7) (Table 17).

Table 16a. HIV/AIDS[1] Deaths by Place of Occurrence, Massachusetts: 1991-2003

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]
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		-[5]		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	
2003	#	226[4]		55[4]		134[4]		5[4]		32[4]	
	%	100.0		24.3		59.3		2.2		14.2	

**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 1999-2003 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 2003, 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: 1991-2003

Year		Age (in years) <15		15-24		25-34		35-44		45+	
		Comparability Unmodified	Comparability Modified[2]	Comparability Unmodified	Comparability Modified[2]	Comparability Unmodified	Comparability Modified[2]	Comparability Unmodified	Comparability Modified[2]	Comparability Unmodified	Comparability Modified[2]
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
	%	-[5]	-[5]	-[5]	-[5]	22.1	22.1	49.8	50.0	28.2	28.3
1999	#	2[4]		9[4]		34[4]		112[4]		85[4]	
	%	-[5]		3.7		14.0		46.3		35.1	
2000	#	4[4]		0[4]		26[4]		104[4]		92[4]	
	%	-[5]		0.0[4]		11.5[4]		46.0[4]		40.7[4]	
2001	#	1[4]		2[4]		25[4]		111[4]		110[4]	
	%	-[5]		-[5]		10.0		44.6		44.2[4]	
2002	#	1[4]		1[4]		10[4]		91[4]		126[4]	
	%	-[5]		-[5]		4.4		39.7		55.0[4]	
2003	#	1[4]		3[4]		14[4]		94[4]		114[4]	
	%	-[5]		-[5]		6.2		41.6		50.4	

**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 1999-2003 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 2003, 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, Race and Hispanic Ethnicity, Massachusetts: 1991-2003

		Gender				Race and Ethnicity							
		Male		Female		White, non-Hispanic[2]		Black, non-Hispanic[2]		Other[3]		Hispanic[2]	
		Comparability Unmodified	Comparability Modified[4]	Comparability Unmodified	Comparability Modified[4]	Comparability Unmodified	Comparability Modified[4]	Comparability Unmodified	Comparability Modified[4]	Comparability Unmodified	Comparability Modified[4]	Comparability Unmodified	Comparability Modified[4]
Year													
1991	#	535	NA	97	NA	439	NA	118		0	NA	74	NA
	%	84.6		15.4		69.5		18.7	NA	-[5]		11.7	
1992	#	605	NA	96	NA	463	NA	141		2	NA	95	NA
	%	86.3		13.7		66.0		20.1	NA	-[5]		13.6	
1993	#	663	NA	114	NA	518	NA	160		5	NA	94	NA
	%	85.3		14.7		66.7		20.6	NA	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	-[5]	-[5]	19.4	19.5
1998	#	169	193	44	50	104	119	51	58	0	0	58	66
	%	79.3	79.1	20.7	20.5	48.8	48.8	23.9	23.8	-[5]	-[5]	27.2	27.0
1999	#	177[6]		65[6]		126[6]		51[6]		2[6]		63[6]	
	%	73.1		26.9		52.1		21.1		-[5]		26.0	
2000	#	161[6]		65[6]		104[6]		61[6]		2[6]		59[6]	
	%	71.2		28.8		46.0		27.0		-[5]		26.1	
2001	#	182[6]		67[6]		125[6]		73[6]		0		51[6]	
	%	73.1		26.9		50.2		29.3		-[5]		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	
2003	#	150[6]		76[6]		113[6]		58[6]		2		53[6]	
	%	66.4		33.6		50.0		25.7		-[5]		23.5	

**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 1999-2003 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 2003, 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, Race and Hispanic Ethnicity
Numbers, Percent and Age-adjusted Rates, Massachusetts: 1999-2003

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
2003	113	50%	2.1	58	26%	17.2	53	23%	12.4
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
2003	74	49%	2.9	36	24%	22.2	39	26%	18.4
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
2003	39	51%	1.4	22	29%	12.6	14	18%	6.5

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: 1993 – 2003

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]	
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		
2003	63[6]	3.8			19[6]	17.2			25[6]	17.5		
MALE												
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		
2003	42[6]	5.2			10[6]	18.8			19[6]	27.0		
FEMALE												
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		
2003	21[6]	2.5			9[6]	15.7			6[6]	8.2		

1. AIDS and HIV disease deaths for years 1989-1998 coded using ICD-9: 042-044; 1999–2003 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 2003, please use comparability modified data for years 1994-1998.

INFANT DEATHS

Causes of Infant Death

In 2003, there were a total of 383 infant deaths (deaths of infants less than one year of age) and 80,167 live births among Massachusetts residents, which means an infant mortality rate (IMR) of 4.8 per 1,000 live births, the second lowest rate since 1980 (Table 18). The infant mortality rate decreased by 2% from the 2002 rate of 4.9 and by 23% since 1993. Massachusetts infant mortality rate for 2003 was 30% lower than the preliminary infant mortality rate for the United States (7.0 deaths per 1,000 live births). White non-Hispanic and black non-Hispanic infant mortality rates continued to be lower in Massachusetts when compared with figures for the United States (National Vital Statistics Report, Vol. 53, No. 15, February 28, 2005, p. 3). (Please note: more information on 2003 births can be found in Massachusetts Births: 2003, published in April 2005, or online at http://www.mass.gov/dph/bhsre/resep/resep.htm#birth).

The IMR varies by race and ethnicity. In 2003, the IMR for white non-Hispanics was 4.1 per 1,000 live births (the same IMR since 2001) compared with 12.7 for black non-Hispanics, 5.6 for Hispanics, and 2.7 for Asian non-Hispanics (Table 18). In 2003, the IMR increased only for black non-Hispanics (by 10%), while it decreased for both Hispanics (by 2%) and Asians (by 10%), and remained the same for white non-Hispanics as in 2002.

Infant deaths occurring within the first 27 days of an infant's life, which are referred as neonatal mortality, accounted for 74% of all infant deaths. This proportion has been declining during the past 4 years (79% in 1999 compared with 74% in 2003) (Table 18). The neonatal race-specific IMR in 2003, compared with previous year, had similar changes to those seen in the overall race-specific IMR (Table 18).

In 2003, the overall leading causes of infant death were conditions arising in the perinatal period (230 deaths) and congenital malformations (61 deaths). Other causes of infant death were Sudden Infant Death Syndrome (SIDS) (29 deaths, which had a 71% increase from 2002), diseases of the digestive system (8 deaths), nervous system and ear (7 deaths), infectious and parasitic diseases (6 deaths), and unintentional injuries (5 deaths) (Table 19).

The leading causes of infant death varied by the age of the infant (Table 19). Disorders relating to short gestation and low birthweight continue to be the leading cause of death in the neonatal period (33%), while SIDS continues as the leading cause of death in the post neonatal period (28-365 days) (29%).

The distribution of the leading causes of infant death varied among race and ethnicity groups. Twenty four percent of all Hispanic infant deaths were due to congenital malformations compared with 17% of all white non-Hispanic infant deaths, and 13% 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: 1993-2003

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]**
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	--[4]
1999	418	5.2	285	4.7	72	12.3	49	5.5	8	1.9	4	--[4]
2000	377	4.6	232	3.8	74	12.8	48	5.2	19	4.1	4	--[4]
2001	407	5.0	245	4.1	71	12.1	69	7.3	15	3.1	7	4.1
2002	397	4.9	239	4.1	69	11.6	67	7.0	16	3.0	6	3.8
2003	383	4.8	235	4.1	75	12.7	55	5.6	14	2.7	4	--[4]

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]**
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	--[4]
1999	332	4.1	226	3.7	58	9.9	39	4.4	5	1.2	4	--[4]
2000	288	3.5	177	2.9	57	9.9	37	4.0	14	3.0	3	--[4]
2001	308	3.8	190	3.2	56	9.5	49	5.2	10	2.1	3	--[4]
2002	299	3.7	185	3.2	49	8.2	50	5.2	13	2.4	2	--[4]
2003	285	3.6	179	3.1	56	9.5	38	3.9	10	1.9	2	--[4]

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]**
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	--[4]
1999	86	1.1	59	1.0	14	2.4	10	1.1	3	--[4]	0	--[4]
2000	89	1.1	55	0.9	17	2.9	11	1.2	5	1.1	1	--[4]
2001	99	1.2	55	0.9	15	2.6	20	2.1	5	1.0	4	--[4]
2002	98	1.2	54	0.9	20	3.4	17	1.8	3	--[4]	4	--[4]
2003	98	1.2	56	1.0	19	3.2	17	1.7	4	--[4]	2	--[4]

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: 2003

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		**383**	**100.0**	**285**	**100.0**	**98**	**100.0**
Infectious and parasitic diseases	**A00-B99**	**6**	**1.6**	**0**	--[3]	**6**	**6.1**
Cancer	**C00-C97**	**3**	--[3]	**0**	--[3]	**3**	--[3]
Diseases of the blood and blood forming organs (anemia)	**D50-D89**	**0**	--[3]	**0**	--[3]	**0**	--[3]
Diseases of nervous system and ear	**G00-G98, H60-H93**	**7**	**1.8**	**4**	--[3]	**3**	--[3]
Diseases of the respiratory system	**J00-J98**	**2**	--[3]	**1**	--[3]	**1**	--[3]
Diseases of digestive system	**K00-K92**	**8**	**2.1**	**2**	--[3]	**6**	**6.1**
Congenital malformations	**Q00-Q99**	**61**	**15.9**	**40**	**14.0**	**21**	**21.4**
Congenital malformations of nervous system	Q00-Q07	5	1.3	5	1.8	0	--[3]
Anencephalus and similar malformations	Q00	0	--[3]	0	--[3]	0	--[3]
Congenital malformations of eye, ear, face, and neck	Q10-Q18	0	--[3]	0	--[3]	0	--[3]
Congenital malformations of heart	Q20-Q24	15	3.9	5	1.8	10	10.2
Other congenital malformations of circulatory system	Q25-Q28	3	--[3]	2	--[3]	1	--[3]
Congenital malformations of respiratory system	Q30-Q34	9	2.3	8	2.8	1	--[3]
Cleft palate and other digestive tract malformations	Q35-Q45	1	--[3]	0	--[3]	1	--[3]
Congenital malformations of genitourinary system	Q50-Q64	2	--[3]	2	--[3]	0	--[3]
Congenital malformations of musculoskeletal system	Q65-Q85	5	1.3	4	--[3]	1	--[3]
Chromosomal abnormalities	Q90-Q99	15	3.9	10	3.5	5	5.1
Certain conditions originating in the perinatal period	**P00-P96**	**230**	**60.1**	**224**	**78.6**	**6**	**6.1**
Newborn affected by maternal conditions which may be unrelated to present pregnancy	P00	1	--[3]	1	--[3]	0	--[3]
Newborn affected by maternal complications of pregnancy	P01	33	8.6	33	11.6	0	--[3]
Newborn affected by complications of placenta, cord and membrane	P02	13	3.4	13	4.6	0	--[3]
Newborn affected by other complications of labor and delivery	P03	2	--[3]	2	--[3]	0	--[3]
Disorders relating to short gestation and low birthweight	P07	94	24.5	93	32.6	1	--[3]
Birth trauma	P10-P15	1	--[3]	1	--[3]	0	--[3]
Intrauterine hypoxia and birth asphyxia	P20-P21	12	3.1	12	4.2	0	--[3]
Respiratory distress of newborn	P22	10	2.6	9	3.2	1	--[3]
Other respiratory conditions of newborn	P23-P28	10	2.6	7	2.5	3	--[3]
Infections specific to the perinatal period	P35-P39	9	2.3	9	3.2	0	--[3]
Neonatal hemorrhage	P50-P52, P54	11	2.9	11	3.9	0	--[3]
Other and ill-defined conditions originating in the perinatal period	P90-P96	1	--[3]	1	--[3]	0	--[3]
Symptoms, signs, and ill-defined conditions	**R00-R99**	**40**	**10.4**	**4**	--[3]	**36**	**36.7**
Sudden Infant Death Syndrome (SIDS)	R95	29	7.6	1	--[3]	28	28.6
Unintentional Injuries	**V01-X59**	**5**	**1.3**	**0**	--[3]	**5**	**5.1**
Homicide	**X85-Y09**	**4**	--[3]	**2**	--[3]	**2**	--[3]
All other causes	**Residual**	**17**	**4.4**	**8**	**2.8**	**9**	**9.2**

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: 2003

Cause of Death[2]	ICD-10 Code	White, non-Hispanic[1] #	White, non-Hispanic[1] %	Black, non-Hispanic[1] #	Black, non-Hispanic[1] %	Asian, non-Hispanic[1] #	Asian, non-Hispanic[1] %	Hispanic #	Hispanic %
TOTAL		**235**	**100.0%**	**75**	**100.0%**	**14**	**100.0%**	**55**	**100.0%**
Congenital malformations	Q00-Q99	36	15.3%	9	12.0%	2	--[3]	13	23.6%
Certain conditions originating in the perinatal period	P00-P96	141	60.0%	47	62.7%	10	71.4%	30	54.5%
Symptoms, signs, and ill-defined conditions	R00-R99	24	10.2%	9	12.0%	0	--[3]	6	10.9%
Unintentional Injuries	V01-X59	3	--[3]	0	--[3]	0	--[3]	2	--[3]
Homicide	X85-Y09	3	--[3]	1	--[3]	0	--[3]	0	--[3]
All other causes	Residual	28	11.9%	9	12.0%	2	--[3]	4	--[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 U.S. Department of Health and Human Services launched Healthy People 2010 (HP2010), a comprehensive, nationwide health promotion and disease prevention agenda. Healthy People 2010 contains 467 objectives designed to serve as a road map for improving the health of all people in the United States. In its report, the U.S. 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 presents only 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 2003 death data showed that the state had already met or exceeded 16 of the 2010 targets: Uterine cervix cancer deaths, oropharyngeal cancer deaths, coronary heart disease deaths, stroke, firearm deaths, motor vehicle crashes, homicide, child and adolescent mortality death rates (1 to 4, 5 to 9, and 10 to 14 years old), postneonatal deaths, deaths due to birth defects, deaths due to congenital heart defects, and asthma death rates for children under 5 years of age, 5 to 14 years of age, and persons 65 years and older.

For eight objectives, the 2003 Massachusetts indicators were within 25% of the target goals. These objectives included: lung cancer deaths, female breast cancer deaths, prostate cancer deaths, malignant melanoma deaths, deaths due to drowning, infant mortality rate, and child and adolescent mortality death rates (15-19 and 20 to 24 years old).

The sixteen 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, SIDS, maternal deaths, and asthma death rates for person ages 15 to 34 and 35 to 64 years. Although these rates were greater than 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 2002[2]	MA 2003[2]	US 2003[3]	TARGET STATUS
	Age-adjusted rates (per 100,000 population)					
3-1	Overall Cancer death rate	159.9	204.9	199.6	189.3	●
3-2	Lung Cancer	44.9	56.0	55.9	53.9	○
3-3	Female Breast Cancer (per 100,000 females)	22.3	27.0	25.4	NA[5]	○
3-4	Uterine Cervix (per 100,000 females)	2.0	1.6	1.3	1.3	✓
3-5	Colorectal Cancer	13.9	22.1	19.5	18.9	●
3-6	Oropharyngeal Cancer	2.7	2.9	2.6	2.6	✓
3-7	Prostate Cancer (per 100,000 males)	28.8	29.5	29.1	10.1	○
3-8	Malignant Melanoma	2.5	2.7	3.2	3.9	○
12-1	Coronary Heart Disease	166.0	141.4	138.6	NA[5]	✓
12-7	Stroke	48.0	50.0	47.7	53.6	✓
13-14	HIV/AIDS	0.7	3.5	3.5	4.7	●
26-2	Cirrhosis	3.0	6.1	5.9	NA	●
26-3	Drug-induced deaths	1.0	10.5	13.0	6.6	●
	Injury Deaths					
15-3	Firearm- related	4.1	3.2	3.1	10.1	✓
15-8	Poisonings	1.5	10.6	12.8	NA[5]	●
15-9	Hanging, strangulation or suffocation	3.0	4.8	4.6	NA[5]	●
15-13	Unintentional injuries (Accidents)	17.5	21.0	20.8	36.1	●
15-15	Motor vehicle crashes	9.0	8.6	8.5	15.0	✓
15-25	Residential fire deaths	0.2	0.7	1.2	NA[5]	●
15-27	Falls	3.0	3.6	3.9	NA[5]	●
15-29	Drowning	0.9	1.0	1.1	NA[5]	○
15-32	Homicide	3.0	2.9	2.2	5.8	✓
18-1	Suicide	5.0	6.5	6.5	10.5	●
	Death Rates (per 1,000 live births)					
16-1c	Infant deaths	4.5	4.9	4.8	6.9	○
16-1d	Neonatal deaths	2.9	3.7	3.6	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	0.16	0.19	0.37	✓
16-1h	Sudden infant death syndrome (SIDS)	0.25	0.21	0.36	0.49	●
16-4	Maternal deaths (per 100,000 live births)	3.3	2.4	4.9	NA[5]	●
	Child/Adolescent/Young Adults Death Rates (per 100,000 pop)					
16-2a	1-4 years old	25.0	22.3	17.0	31.1	✓
16-2b	5-9 years old	14.3	10.0	10.9	NA[5]	✓
16-3a	10-14 years old	16.8	12.3	11.1	NA[5]	✓
16-3b	15-19 years old	43.2	41.1	50.3	NA[5]	○
16-3c	20-24 years old	57.3	71.5	69.5	NA[5]	○
24-1	Asthma deaths (per million)					
24-1a	Children under age 5 years	1.0	--[4]	0.0	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	13.7	13.7	NA[5]	●
24-1e	Ages 65+ years	60.0	48.8	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. Massachusetts 2002-2003 rates are calculated using 2000 population estimates. 3. US data for 2003 obtained from NCHS. Deaths: Preliminary Data for 2003. National Vital Statistics Report, Vol. 53, No. 15, February 28, 2005. 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), COUNTY, AND EOHHS REGIONS

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[9]. PMR analyses make it clear that community health status is related to many factors. Health care is certainly one of these factors, but not the only factor. PMR may be related to socioeconomic status and its correlates such as, higher rates of smoking, substance abuse, violence, obesity, stress, pollution, and lack of access to care. However, there are other possible reasons for high PMRs: specific sub-populations of younger persons at risk for motor vehicle deaths in rural areas and heart attack deaths in persons 45 to 64 in suburban areas.

In 2003, 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 for this age group) were significantly higher in New Bedford (503.2), Brockton (498.8), Springfield (492.5), Fall River (475.7), Lynn (462.9), Taunton (443.7), Worcester (442.8), Lowell (433.8), Boston (416.5), Chicopee (410.5), Pittsfield (410.1), Lawrence (409.2), and Quincy (391.3) when compared with the state overall (342.1 deaths per 100,000 persons under 75 years). Age-adjusted death rates were significantly lower in Framingham (282.0), Cambridge (272.2), Arlington (258.7), Medford (244.9), Newton (209.6), and Brookline (194.2) (Table 22). [Please note that Table 23a presents PMR for all cities/towns in the Commonwealth and Table 25 presents selected Causes of Death for all cities/towns].

In 2003, the communities with the highest premature mortality rates were the same as those in 2002. In 2003, New Bedford and Springfield switched rankings, with New Bedford having the highest PMR. The rates for both New Bedford and Brockton increased in 2003 from the previous year, by 7%, and 3%, respectively. Among these communities, the largest increases in premature mortality rates were seen for Taunton (up 11%) and Pittsfield (up 12%), while the largest decreases were for Medford (down 26%) and Methuen (down 21%) from the previous year.

[9] 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: 2003

(Sorted by PMR)

City/Town	Number of Deaths	PMR** (per 100,000 population)
New Bedford	445	503.2
Brockton	411	498.8
Springfield	631	492.5
Fall River	407	475.7
Lynn	362	462.9
Taunton	228	443.7
Worcester	651	442.8
Lowell	366	433.8
Boston	1,924	416.3
Chicopee	230	410.5
Pittsfield	200	410.1
Lawrence	217	409.2
Haverhill	204	401.5
Plymouth	178	399.0
Weymouth	225	398.1
Quincy	351	391.3
Revere	185	376.4
Somerville	217	372.4
Attleboro	140	362.3
Malden	186	351.5
Peabody	187	345.4
Methuen	131	314.6
Waltham	161	303.3
Barnstable	168	302.2
Framingham	177	282.0
Cambridge	200	272.2
Arlington	115	258.7
Medford	140	244.9
Newton	174	209.6
Brookline	96	194.2
STATE TOTAL	**20,593**	**342.1**

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

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

PMR is statistically significantly differently from State PMR.

Table 23a. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2003

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
STATE	**20,593**	**342.1**
	WESTERN REGION	
Adams	41	430.6
Agawam	112	394.2
Alford	1	--[1]
Amherst	38	185.9
Ashfield	5	245.2
Athol	33	307.2
Becket	8	382.7
Belchertown	36	368.6
Bernardston	10	397.7
Blandford	1	--[1]
Buckland	11	563.6
Charlemont	1	--[1]
Cheshire	10	254.1
Chester	2	--[1]
Chesterfield	0	--[1]
Chicopee	230	410.5
Clarksburg	10	467.7
Colrain	4	--[1]
Conway	3	--[1]
Cummington	2	--[1]
Dalton	18	255.2
Deerfield	10	213.8
East Longmeadow	50	329.8
Easthampton	62	405.9
Egremont	5	280.6
Erving	4	--[1]
Florida	11	1,434.6
Gill	2	--[1]
Goshen	0	--[1]
Granby	17	280.8
Granville	5	363.4
Great Barrington	22	272.0
Greenfield	55	326.3
Hadley	17	326.1
Hampden	9	173.8
Hancock	1	--[1]
Hatfield	6	157.1
Hawley	2	--[1]
Heath	1	--[1]
Hinsdale	7	373.6
Holyoke	160	457.1
Huntington	7	310.2
Lanesborough	8	249.9
Lee	24	371.4

Table 23a. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2003

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Lenox	20	311.8
Leverett	2	--[1]
Leyden	2	--[1]
Longmeadow	31	187.5
Ludlow	72	328.3
Middlefield	0	--[1]
Monroe	0	--[1]
Monson	21	276.4
Montague	48	554.7
Monterey	3	--[1]
Montgomery	2	--[1]
Mount Washington	1	--[1]
New Ashford	2	--[1]
New Marlborough	4	--[1]
New Salem	2	--[1]
North Adams	76	504.6
Northampton	85	327.5
Northfield	6	205.0
Orange	22	292.8
Otis	6	415.0
Palmer	53	447.7
Pelham	5	327.3
Peru	4	--[1]
Petersham	7	580.6
Phillipston	6	480.7
Pittsfield	200	410.1
Plainfield	2	--[1]
Richmond	5	225.7
Rowe	4	--[1]
Royalston	5	540.5
Russell	3	--[1]
Sandisfield	1	--[1]
Savoy	3	--[1]
Sheffield	14	344.9
Shelburne	6	240.1
Shutesbury	1	--[1]
South Hadley	57	302.9
Southampton	10	223.2
Southwick	26	331.2
Springfield	631	492.5
Stockbridge	12	347.8
Sunderland	3	--[1]
Tolland	0	--[1]
Tyringham	3	--[1]
Ware	38	411.4
Warwick	1	--[1]
Washington	1	--[1]
Wendell	0	--[1]
West Springfield	109	384.6
West Stockbridge	3	--[1]

Table 23a. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2003

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Westfield	134	360.6
Westhampton	0	--[1]
Whately	6	360.9
Wilbraham	27	169.5
Williamsburg	11	390.8
Williamstown	18	226.7
Windsor	3	--[1]
Worthington	0	--[1]
CENTRAL REGION		
Ashburnham	13	276.1
Ashby	10	400.2
Auburn	54	309.6
Ayer	16	239.1
Barre	13	277.7
Bellingham	44	313.7
Berlin	8	306.6
Blackstone	36	485.3
Bolton	12	370.2
Boylston	5	116.0
Brimfield	16	522.0
Brookfield	17	579.4
Charlton	34	412.9
Clinton	54	432.0
Douglas	20	397.2
Dudley	27	293.5
East Brookfield	4	--[1]
Fitchburg	167	483.2
Franklin	79	353.1
Gardner	96	488.0
Grafton	32	245.2
Groton	17	240.7
Hardwick	10	413.5
Harvard	34	583.7
Holden	46	295.0
Holland	5	247.9
Hopedale	15	263.0
Hubbardston	19	641.8
Lancaster	12	203.1
Leicester	35	366.9
Leominster	157	405.5
Lunenburg	43	457.1
Medway	28	266.0
Mendon	21	496.5
Milford	63	265.7
Millbury	42	313.7
Millville	8	418.9
New Braintree	4	--[1]
North Brookfield	16	379.2

Table 23a. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2003

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Northbridge	45	400.1
Oakham	5	340.0
Oxford	44	364.5
Paxton	12	266.9
Pepperell	28	317.6
Princeton	8	313.3
Rutland	14	332.3
Shirley	24	439.4
Shrewsbury	77	262.5
Southbridge	82	525.9
Spencer	39	343.0
Sterling	18	283.3
Sturbridge	29	368.4
Sutton	23	343.2
Templeton	29	436.5
Townsend	24	362.8
Upton	16	340.9
Uxbridge	29	322.0
Wales	6	364.6
Warren	23	499.8
Webster	66	418.9
West Boylston	12	172.5
West Brookfield	21	571.1
Westminster	18	282.0
Winchendon	37	442.8
Worcester	651	442.8
NORTHEAST REGION		
Amesbury	49	329.3
Andover	53	177.9
Beverly	116	298.9
Billerica	136	410.2
Boxford	14	204.6
Chelmsford	87	253.5
Danvers	113	406.8
Dracut	102	381.1
Dunstable	6	269.7
Essex	14	421.3
Everett	140	386.5
Georgetown	18	274.7
Gloucester	114	341.8
Groveland	23	424.1
Hamilton	12	161.7
Haverhill	204	401.5
Ipswich	51	380.6
Lawrence	217	409.2
Lowell	366	433.8
Lynn	362	462.9
Lynnfield	30	263.5

Table 23a. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2003

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Malden	186	351.5
Manchester	10	177.9
Marblehead	54	234.9
Medford	140	244.9
Melrose	89	321.3
Merrimac	11	182.2
Methuen	131	314.6
Middleton	20	290.5
Nahant	9	203.9
Newbury	15	227.3
Newburyport	63	365.9
North Andover	56	234.3
North Reading	32	236.6
Peabody	187	345.4
Reading	46	187.4
Rockport	20	203.3
Rowley	18	374.6
Salem	155	403.7
Salisbury	38	470.7
Saugus	96	314.1
Stoneham	81	329.5
Swampscott	24	161.6
Tewksbury	98	341.9
Topsfield	11	155.5
Tyngsborough	40	504.3
Wakefield	72	291.0
Wenham	6	132.2
West Newbury	5	146.0
Westford	45	281.2
	METROWEST REGION	
Acton	53	316.2
Arlington	115	258.7
Ashland	46	335.9
Bedford	40	272.1
Belmont	51	195.6
Boxborough	5	163.9
Braintree	114	291.7
Burlington	83	308.8
Cambridge	200	272.2
Canton	86	407.0
Carlisle	9	190.1
Cohasset	20	240.4
Concord	30	158.1
Dedham	84	329.4
Dover	9	140.3
Foxborough	48	296.0
Framingham	177	282.0
Hingham	42	198.8

Table 23a. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2003

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Holliston	34	265.9
Hopkinton	41	413.7
Hudson	56	311.6
Hull	51	455.2
Lexington	70	199.0
Lincoln	15	198.1
Littleton	20	281.7
Marlborough	106	329.6
Maynard	28	287.9
Medfield	23	214.6
Millis	13	173.4
Milton	71	269.6
Natick	79	247.3
Needham	64	214.2
Newton	174	209.6
Norfolk	21	288.6
Northborough	32	253.5
Norwell	18	203.0
Norwood	112	367.7
Plainville	22	299.2
Quincy	351	391.3
Randolph	105	334.4
Scituate	66	345.1
Sharon	37	234.3
Sherborn	5	114.5
Somerville	217	372.4
Southborough	14	181.9
Stow	9	179.2
Sudbury	38	259.1
Walpole	59	254.7
Waltham	161	303.3
Watertown	72	214.7
Wayland	29	190.4
Wellesley	36	141.8
Westborough	40	280.5
Weston	23	180.6
Westwood	36	234.8
Weymouth	225	398.1
Wilmington	55	284.8
Winchester	39	186.7
Woburn	133	336.5
Wrentham	44	479.1
	SOUTHEAST REGION	
Abington	66	493.9
Acushnet	29	265.1
Aquinnah	6	1,802.2

Table 23a. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2003

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Attleboro	140	362.3
Avon	20	375.5
Barnstable	168	302.2
Berkley	20	506.3
Bourne	75	352.9
Brewster	32	234.0
Bridgewater	61	319.0
Brockton	411	498.8
Carver	44	409.6
Chatham	27	229.9
Chilmark	0	--[1]
Dartmouth	94	311.5
Dennis	56	248.2
Dighton	24	413.7
Duxbury	37	270.9
East Bridgewater	37	324.2
Eastham	23	266.2
Easton	61	301.6
Edgartown	13	323.1
Fairhaven	67	395.3
Fall River	407	475.7
Falmouth	144	353.3
Freetown	21	269.4
Gosnold	1	--[1]
Halifax	27	377.5
Hanover	28	238.3
Hanson	27	317.9
Harwich	48	273.5
Holbrook	56	466.2
Kingston	33	310.0
Lakeville	21	239.3
Mansfield	47	320.7
Marion	20	334.5
Marshfield	68	309.7
Mashpee	60	404.4
Mattapoisett	16	198.7
Middleborough	77	473.6
Nantucket	20	219.2
New Bedford	445	503.2
North Attleboro	69	299.1
Norton	57	425.9
Oak Bluffs	15	395.1
Orleans	24	237.9
Pembroke	48	328.2
Plymouth	178	399.0
Plympton	7	392.0
Provincetown	15	324.8
Raynham	47	407.9
Rehoboth	29	298.6
Rochester	12	294.0

Table 23a. Premature Mortality Rates by Community Within EOHHS Region, Massachusetts: 2003

City/Town	Premature Deaths (#)	PMR* (per 100,000 population)
Rockland	70	416.5
Sandwich	52	260.4
Seekonk	43	302.6
Somerset	68	315.3
Stoughton	93	324.7
Swansea	56	323.4
Taunton	228	443.7
Tisbury	12	287.1
Truro	12	425.6
Wareham	128	570.9
Wellfleet	11	280.5
West Bridgewater	23	313.9
West Tisbury	5	278.9
Westport	53	342.4
Whitman	46	384.4
Yarmouth	92	296.5
BOSTON REGION		
Boston	1,924	416.3
Brookline	96	194.2
Chelsea	122	443.2
Revere	185	376.4
Winthrop	65	344.1

*Rates are age-adjusted to the 2000 U.S. 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: 2003

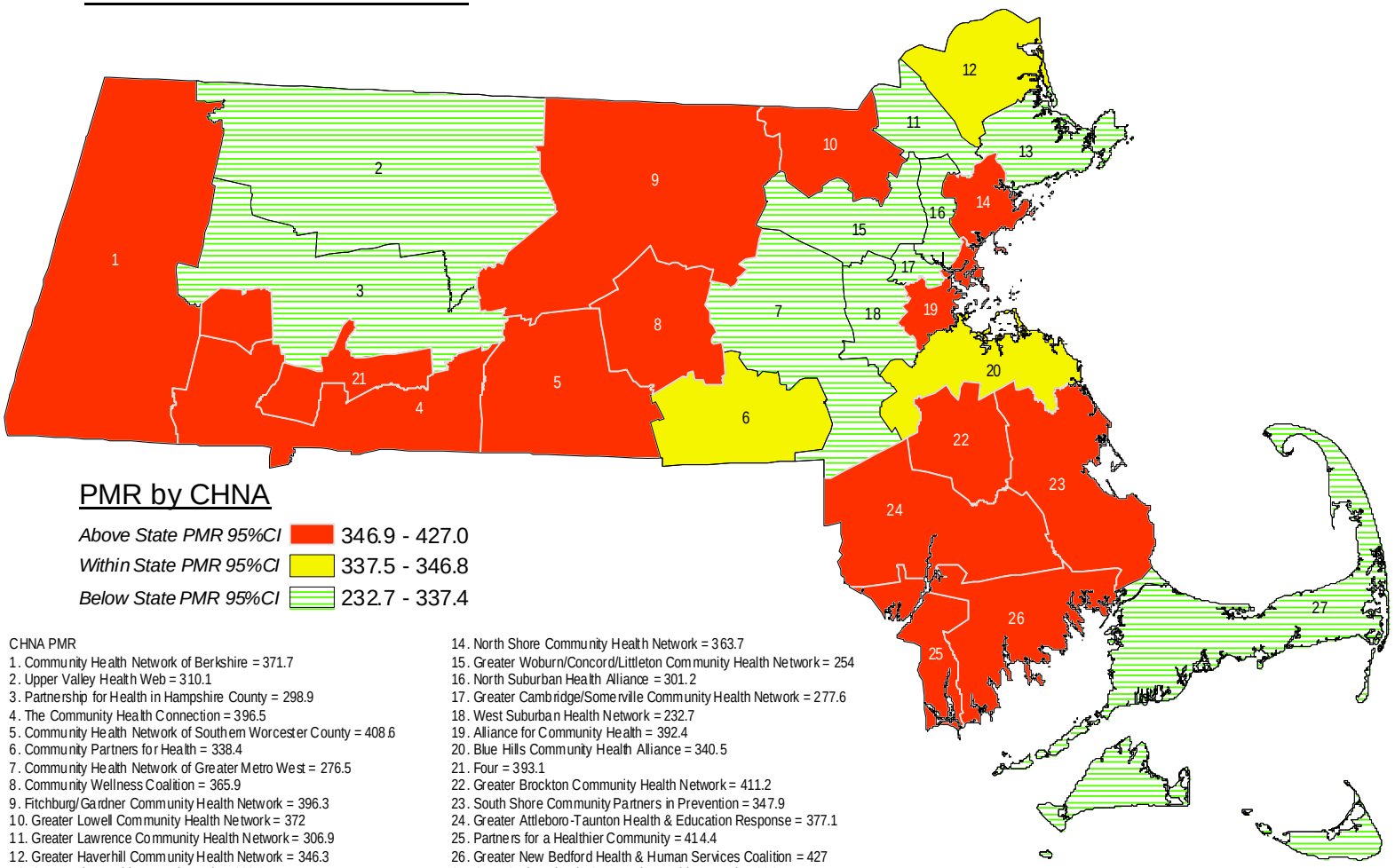
CHNA (Name and Number)	Number of Deaths	PMR* (per 100,000 population)
Massachusetts	**20,593**	**342.1**
Community Health Network of Berkshire (1)	545	371.7
Upper Valley Health Web (Franklin County) (2)	262	310.1
Partnership for Health in Hampshire County (Northampton) (3)	386	298.9
The Community Health Connection (Springfield) (4)	1,080	396.5
Community Health Network of Southern Worcester County (5)	429	408.6
Community Partners for Health (Milford) (6)	427	338.4
Community Health Network of Greater Metro West (Framingham) (7)	964	276.5
Community Wellness Coalition (Worcester) (8)	966	365.9
Fitchburg/Gardner Community Health Network (9)	890	396.3
Greater Lowell Community Health Network (10)	880	372.0
Greater Lawrence Community Health Network (11)	477	306.9
Greater Haverhill Community Health Network (12)	458	346.3
Community Health Network North (Beverly/Gloucester) (13)	354	286.9
North Shore Community Health Network (14)	1,030	363.7
Greater Woburn/Concord/Littleton Community Health Network (15)	552	254.0
North Suburban Health Alliance (Medford/Malden/Melrose) (16)	786	301.2
Greater Cambridge/Somerville Community Health Network (17)	655	277.6
West Suburban Health Network (Newton/Waltham) (18)	587	232.7
Alliance for Community Health (Boston/Chelsea/Revere/Winthrop) (19)	2,392	392.4
Blue Hills Community Health Alliance (Greater Quincy) (20)	1,298	340.5
Four (For) Communities (Holyoke, Chicopee, Ludlow, Westfield) (21)	605	393.1
Greater Brockton Community Health Network (22)	874	411.2
South Shore Community Partners in Prevention (Plymouth) (23)	567	347.9
Greater Attleboro-Taunton Health & Education Response (24)	802	377.1
Partners for a Healthier Community (Fall River) (25)	584	414.4
Greater New Bedford Health & Human Services Coalition (26)	832	427.0
Cape Cod & Islands Community Health Network (27)	911	300.2

*Rates are age-adjusted to the 2000 U.S. 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: 2003

Massachusetts PMR= 342.1



PMR by CHNA

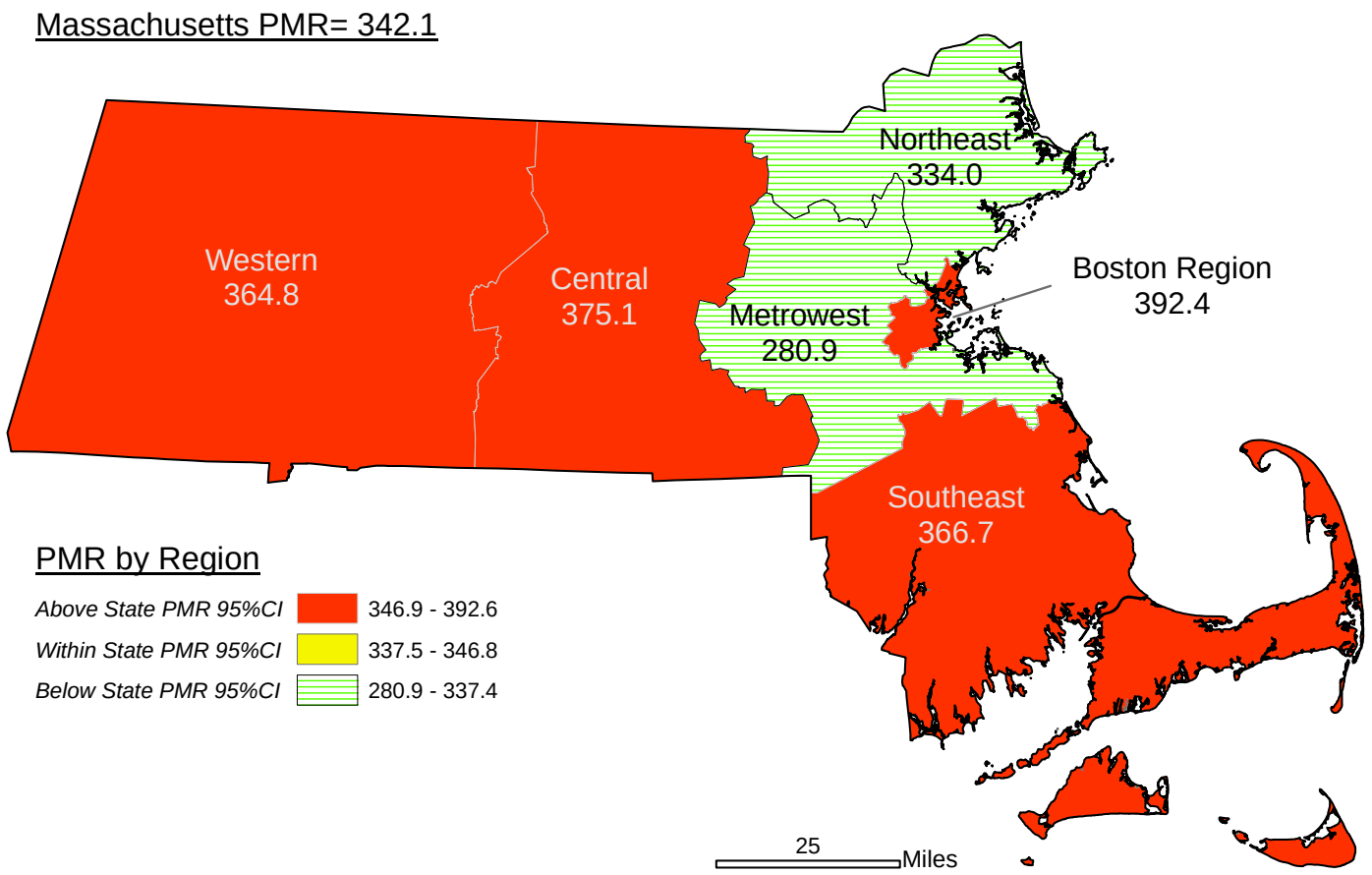
Above State PMR 95%CI	346.9 - 427.0
Within State PMR 95%CI	337.5 - 346.8
Below State PMR 95%CI	232.7 - 337.4

CHNA PMR

1. Community Health Network of Berkshire = 371.7
2. Upper Valley Health Web = 310.1
3. Partnership for Health in Hampshire County = 298.9
4. The Community Health Connection = 396.5
5. Community Health Network of Southern Worcester County = 408.6
6. Community Partners for Health = 338.4
7. Community Health Network of Greater Metro West = 276.5
8. Community Wellness Coalition = 365.9
9. Fitchburg/Gardner Community Health Network = 396.3
10. Greater Lowell Community Health Network = 372
11. Greater Lawrence Community Health Network = 306.9
12. Greater Haverhill Community Health Network = 346.3
13. Community Health Network North = 286.9
14. North Shore Community Health Network = 363.7
15. Greater Woburn/Concord/Littleton Community Health Network = 254
16. North Suburban Health Alliance = 301.2
17. Greater Cambridge/Somerville Community Health Network = 277.6
18. West Suburban Health Network = 232.7
19. Alliance for Community Health = 392.4
20. Blue Hills Community Health Alliance = 340.5
21. Four = 393.1
22. Greater Brockton Community Health Network = 411.2
23. South Shore Community Partners in Prevention = 347.9
24. Greater Attleboro-Taunton Health & Education Response = 377.1
25. Partners for a Healthier Community = 414.4
26. Greater New Bedford Health & Human Services Coalition = 427
27. Cape Cod & Islands Community Health Network = 300

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

Map 2. Premature Mortality Rate (PMR) by Region
Massachusetts: 2003

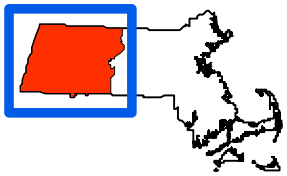


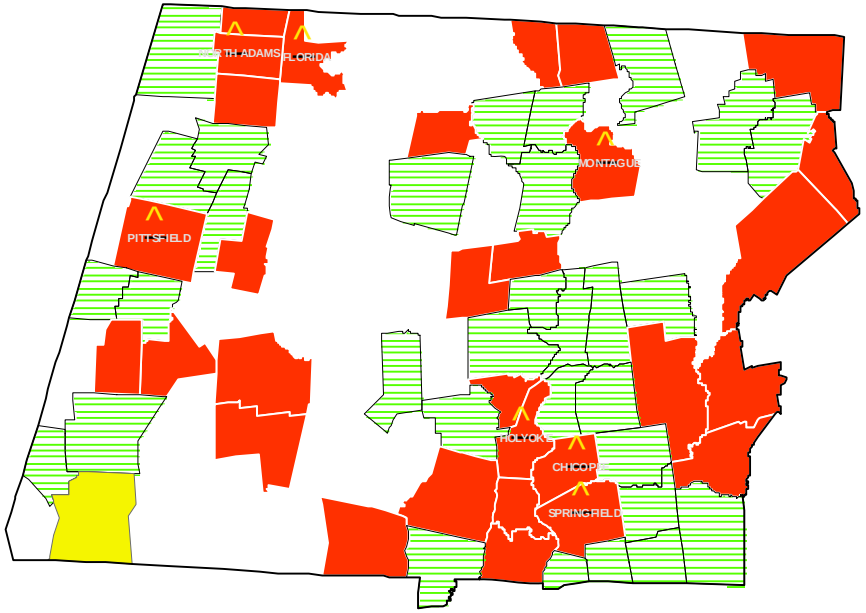
Rates are per 100,000 persons under 75 years of age, age-adjusted to the 2000 US standard population under 75 years of age.

Map 3. Premature Mortality Rates (PMR)
Massachusetts Western Region by City/Town: 2003

Massachusetts PMR= 342.1

Western Region PMR= 364.8





PMR by City/Town

Above State PMR 95% CI	346.9 - 1434.6
Within State PMR 95% CI	337.5 - 346.8
Below State PMR 95% CI	157.1 - 337.4
Less than 5 premature deaths.	

Towns witn PMR significantly higher than state PMR

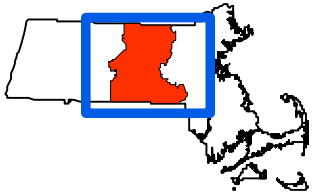
10 Miles

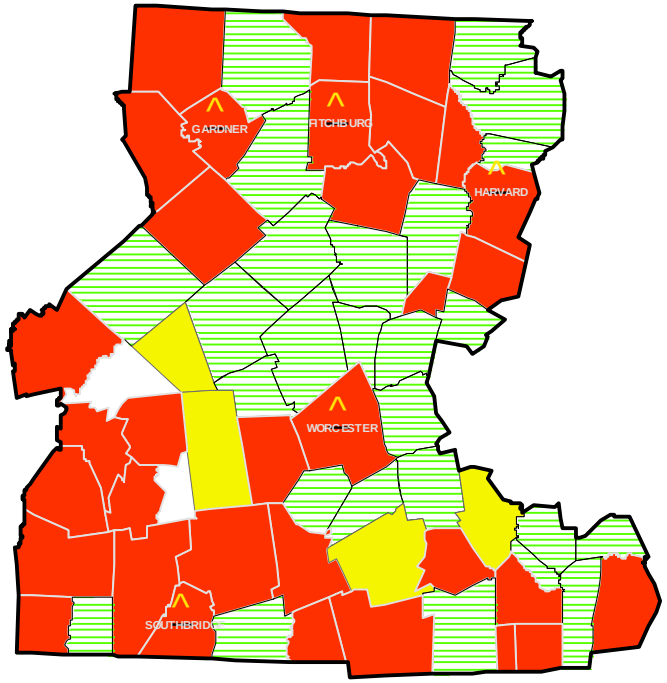
Rates are per 100,000 persons under 75 years of age, age-adjusted to the 2000 US standard population under 75 years of age.

Map 4. Premature Mortality Rates (PMR)
Massachusetts Central Region by City/Town: 2003

Massachusetts PMR= 342.1

Central Region PMR= 375.1





PMR by Town

Above State PMR		346.9 - 641.8
Within State PMR 95% CI		337.6 - 346.8
Below State PMR		116.0 - 337.5
	Less than 5 premature deaths.	

^ **Towns witn PMR significantly higher than state PMR**

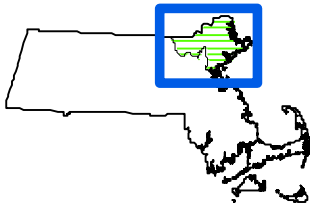
10 Miles

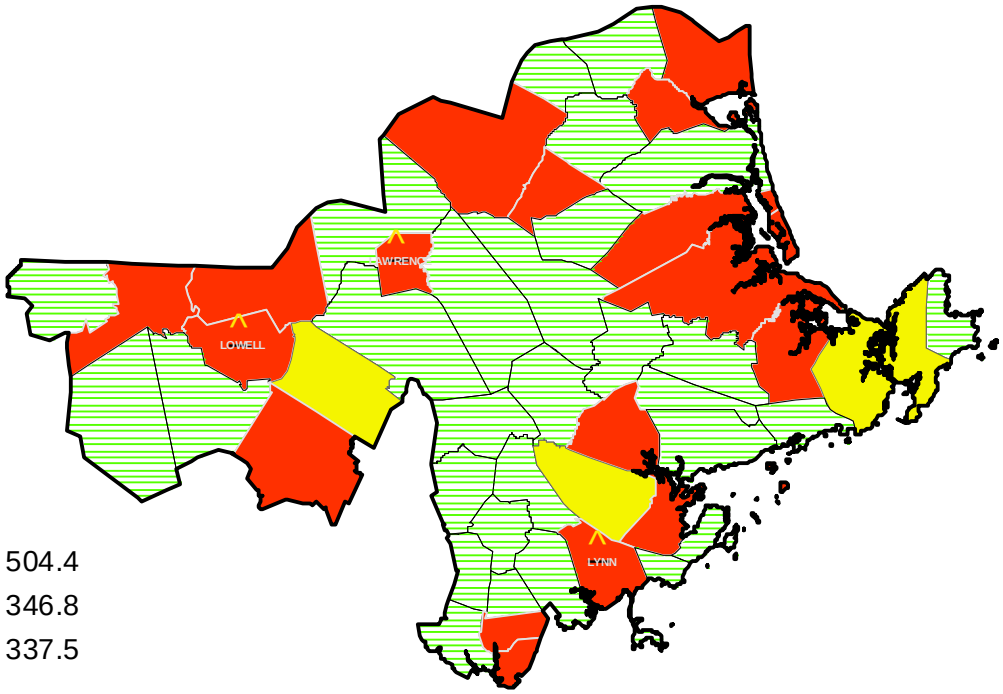
Rates are per 100,000 persons under 75 years of age, age-adjusted to the 2000 US standard population under 75 years of age.

Map 5. Premature Mortality Rates (PMR)
Massachusetts Northeast Region by City/Town: 2003

Massachusetts PMR= 342.1

Northeast Region PMR= 334.0





PMR by Town

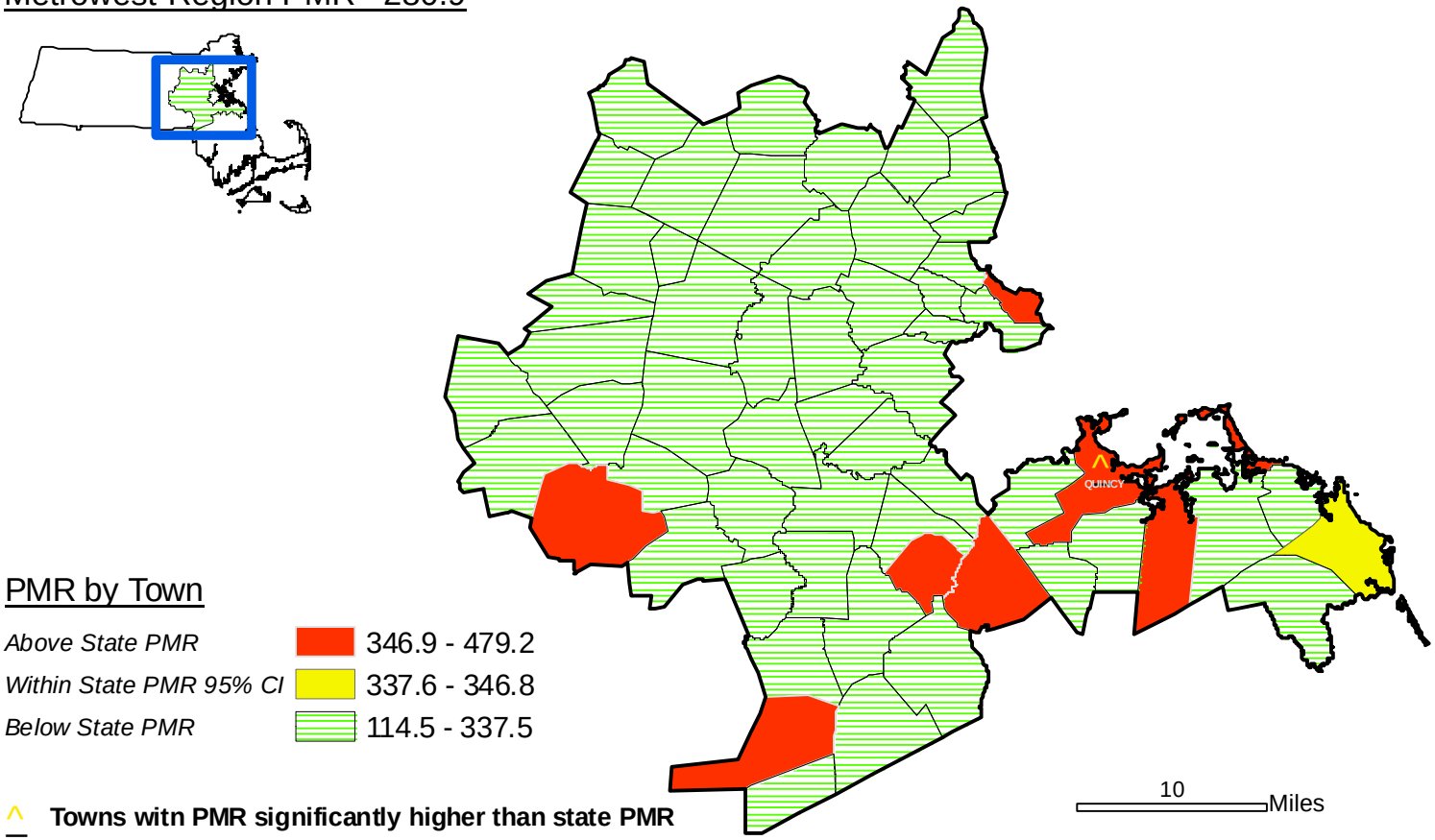
Above State PMR	346.9 - 504.4
Within State PMR 95% CI	337.6 - 346.8
Below State PMR	132.2 - 337.5

^ **Towns witn PMR significantly higher than state PMR**

10 Miles

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

Map 6. Premature Mortality Rates (PMR)
Massachusetts Metrowest Region by City/Town: 2003

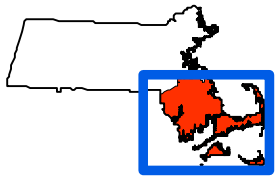


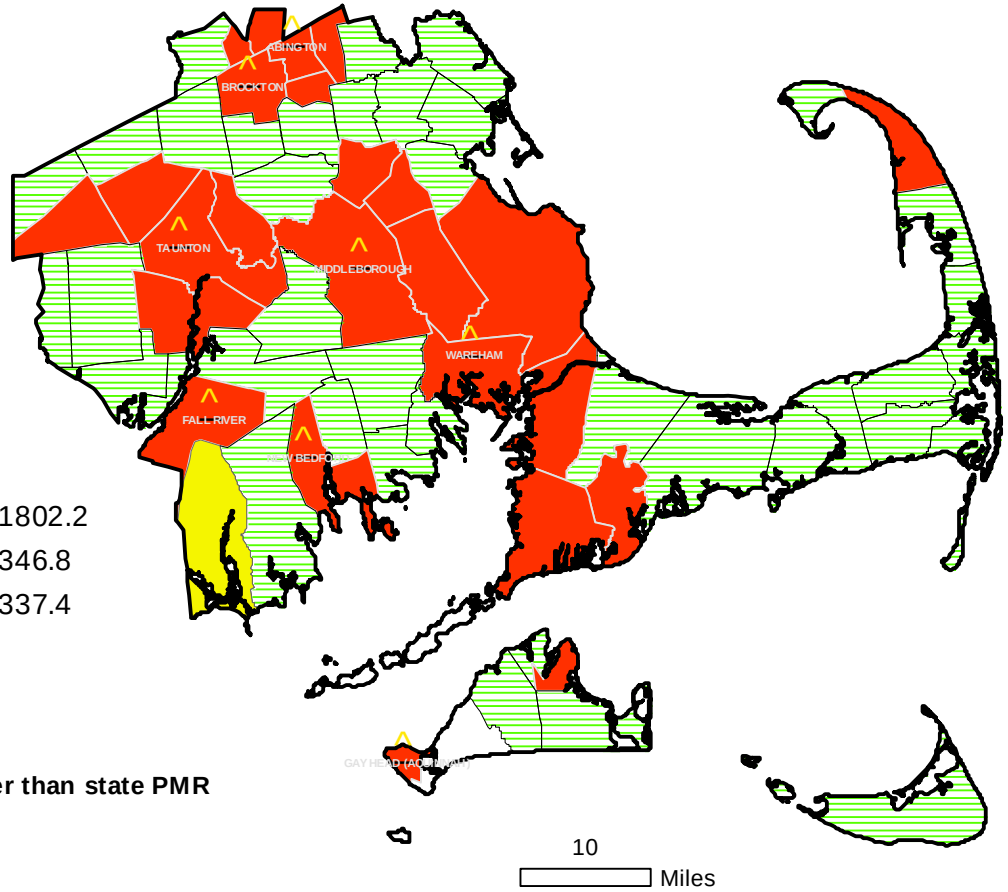
Rates are per 100,000 persons under 75 years of age, age-adjusted to the 2000 US standard population under 75 years of age.

Map 7. Premature Mortality Rate (PMR)
Massachusetts Southeast Region by City/Town: 2003

Massachusetts PMR= 342.1

Southeast Region PMR= 366.7





PMR by Town

Above State PMR	346.9 - 1802.2
Within State PMR 95% CI	337.5 - 346.8
Below State PMR	198.7 - 337.4

Less than five premature deaths

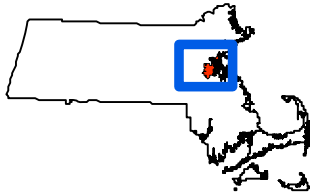
^ **Towns witn PMR significantly higher than state PMR**

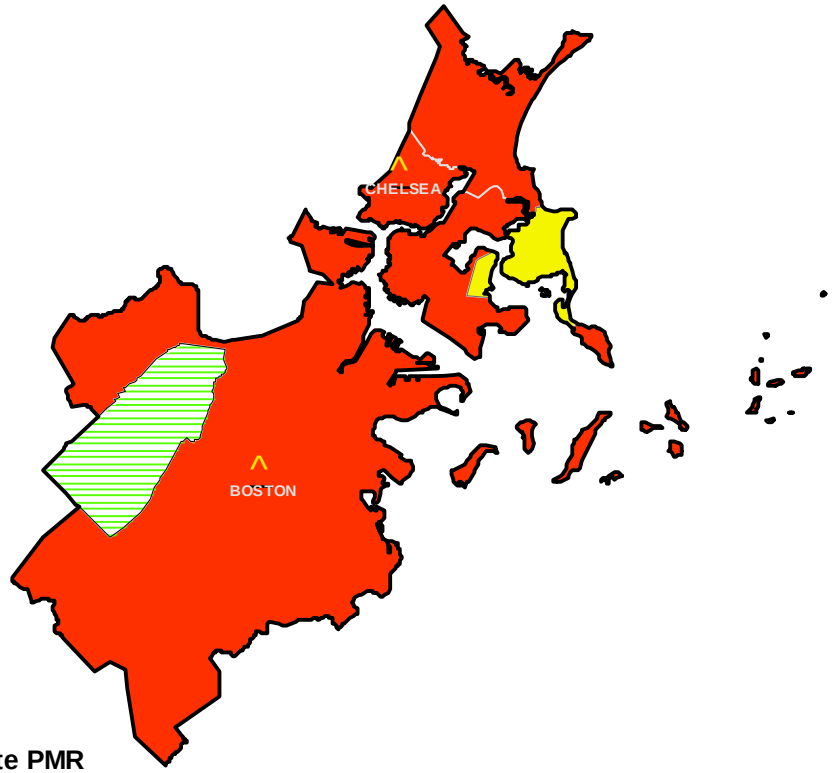
Rates are per 100,000 persons under 75 years of age, age-adjusted to the 2000 US standard population under 75 years of age.

Map 8. Premature Mortality Rate (PMR)
Massachusetts Boston Region by City/Town: 2003

Massachusetts PMR= 342.1

Boston Region PMR= 392.4





PMR by Town

Above State PMR	346.9 - 443.3
Within State PMR 95% CI	337.5 - 346.8
Below State PMR	114.5 - 337.4

^ **Towns witn PMR significantly higher than state PMR**

5 Miles

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

Table 23c. Premature Mortality Rates by County, Massachusetts: 2003

County	Number of Deaths	PMR* (per 100,000 population)
Massachusetts	**20,593**	**342.1**
Barnstable	839	301.4
Berkshire	545	371.7
Bristol	2,005	393.4
Dukes	52	335.7
Essex	2,319	334.0
Franklin	211	301.5
Hampden	1,705	395.4
Hampshire	393	299.3
Middlesex	3,998	290.6
Nantucket	20	219.2
Norfolk	1,996	307.0
Plymouth	1,662	379.3
Suffolk	2,296	410.6
Worcester	2,552	375.0

*Rates are age-adjusted to the 2000 U.S. 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: 2003

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	**56,194**	**810.2**	**14,622**	**13,524**	**3,749**	**996**	**3,399**	**2,753**	**1,420**	**2,016**	**521**	**139**	**423**
Abington	155	1,046.2	46	43	13	2	10	9	2	3	2	0	1
Acton	117	836.3	16	37	9	7	6	8	3	3	6	0	2
Acushnet	71	639.4	25	16	4	2	7	6	0	2	1	0	3
Adams	123	928.8	29	41	7	4	8	7	2	4	1	0	2
Agawam	343	874.7	88	74	23	10	19	16	6	16	4	1	5
Alford	7	1,693.3	0	1	1	0	1	0	1	0	0	0	0
Amesbury	144	885.3	41	28	9	3	11	16	3	9	0	0	2
Amherst	128	589.1	34	29	7	1	15	5	3	6	2	0	2
Andover	211	653.1	55	47	13	3	18	10	3	5	0	0	1
Arlington	406	714.6	108	94	24	1	27	16	7	18	0	0	4
Ashburnham	27	711.7	7	7	2	0	0	1	0	1	2	0	0
Ashby	19	887.6	3	4	1	1	3	0	1	0	0	0	0
Ashfield	15	831.7	3	3	0	1	1	0	1	0	0	0	1
Ashland	97	936.9	23	26	6	3	7	4	1	9	1	0	0
Athol	116	720.7	33	21	6	1	8	6	3	4	2	0	0
Attleboro	342	777.4	96	72	24	9	22	20	7	24	2	1	0
Auburn	177	791.9	48	51	15	6	12	14	3	8	2	0	2
Avon	41	759.5	16	12	7	0	2	3	0	1	0	1	0
Ayer	57	742.3	19	11	2	0	2	2	0	1	2	0	0
Barnstable	483	707.7	105	124	32	7	31	25	14	22	8	0	8
Barre	30	585.9	7	5	1	0	3	1	0	1	1	1	1
Becket	15	938.8	1	6	1	2	2	1	0	0	0	0	0
Bedford	117	622.2	20	33	8	3	3	8	1	7	0	0	0
Belchertown	89	983.2	20	19	4	2	8	4	7	2	2	0	1
Bellingham	80	702.7	26	21	8	1	3	5	3	2	2	0	0
Belmont	215	611.9	51	52	10	3	19	5	4	11	2	0	1
Berkley	32	1,008.7	9	8	3	0	4	2	0	0	0	0	0
Berlin	18	816.2	3	5	3	1	0	0	0	2	0	0	0
Bernardston	22	802.8	6	5	1	0	2	2	1	0	0	0	0
Beverly	377	720.5	88	85	27	9	41	15	6	12	0	1	2
Billerica	261	985.8	67	68	29	4	14	16	9	10	4	1	4
Blackstone	72	998.8	19	22	6	2	2	3	2	2	1	0	2
Blandford	2	--[4]	1	1	1	0	0	0	0	0	0	0	0
Bolton	23	1,122.2	6	11	3	1	0	0	0	1	1	1	0
Boston	4,283	850.7	1,006	1,036	292	100	222	203	120	151	31	42	38

Table 24. Selected Causes of Death by Community, Massachusetts: 2003 (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	206	858.4	49	62	12	6	13	14	6	4	3	0	0
Boxborough	9	454.8	4	2	0	1	0	0	0	0	0	0	1
Boxford	30	604.5	6	11	2	2	2	2	1	1	0	1	1
Boylston	23	675.7	5	7	1	0	1	1	1	0	0	0	0
Braintree	386	796.9	95	99	27	7	32	17	7	18	1	0	4
Brewster	179	798.4	40	45	17	3	11	6	7	5	1	0	0
Bridgewater	138	791.4	32	45	14	2	4	10	3	5	2	0	1
Brimfield	38	1,256.5	8	8	0	1	4	3	0	2	1	0	1
Brockton	901	983.9	215	220	62	18	48	42	25	33	11	7	7
Brookfield	32	1,100.2	12	7	2	1	0	1	1	2	2	0	2
Brookline	347	534.0	96	84	22	5	26	14	7	19	2	1	4
Buckland	15	717.8	5	6	3	0	2	0	0	0	1	0	0
Burlington	182	876.0	44	53	16	3	11	14	7	3	2	0	2
Cambridge	556	716.1	150	128	29	9	43	19	11	23	3	3	2
Canton	279	934.9	81	61	10	4	18	10	8	10	2	0	2
Carlisle	17	567.7	3	7	1	3	1	0	0	0	0	0	0
Carver	106	883.4	27	30	10	2	8	5	1	5	1	0	0
Charlemont	4	--[4]	2	0	0	0	0	0	0	0	0	0	0
Charlton	80	872.0	21	22	10	1	5	3	2	6	2	0	0
Chatham	137	738.0	35	28	2	3	15	8	2	3	0	0	0
Chelmsford	283	812.4	92	54	15	5	13	17	4	20	4	0	0
Chelsea	303	924.3	75	59	22	5	14	11	10	5	2	0	1
Cheshire	20	532.7	5	9	4	0	2	0	0	1	0	0	0
Chester	8	659.1	1	1	0	0	3	0	0	1	0	0	0
Chesterfield	3	--[4]	1	1	0	0	0	0	0	0	0	0	0
Chicopee	654	941.4	189	142	35	8	30	39	14	25	6	1	6
Chilmark	6	461.3	1	1	0	0	0	0	0	0	0	0	0
Clarksburg	30	1,767.2	7	7	4	0	0	1	2	2	0	0	0
Clinton	137	873.5	41	27	10	0	6	11	6	10	3	0	0
Cohasset	71	824.8	18	11	1	0	4	2	3	3	0	0	0
Colrain	11	670.4	1	6	3	0	0	0	0	0	0	0	2
Concord	143	606.4	28	28	3	4	16	7	1	11	1	0	3
Conway	8	570.9	2	2	0	0	0	1	1	0	0	0	0
Cummington	2	--[4]	0	2	1	1	0	0	0	0	0	0	0
Dalton	65	726.5	17	15	4	1	0	5	5	3	0	0	0
Danvers	341	991.3	86	91	28	4	25	18	6	14	1	0	2
Dartmouth	300	808.1	93	73	16	2	16	14	8	10	4	1	1

Table 24. Selected Causes of Death by Community, Massachusetts: 2003 (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	244	815.4	65	61	18	6	12	12	5	5	3	0	2
Deerfield	31	636.7	11	7	2	0	4	1	0	0	0	0	0
Dennis	197	661.0	46	55	12	3	14	8	4	4	0	0	1
Dighton	59	925.6	20	19	4	2	3	3	0	1	0	0	0
Douglas	41	859.0	14	9	3	1	3	2	2	1	3	0	0
Dover	25	579.7	7	10	3	1	2	1	0	1	0	0	0
Dracut	237	995.7	51	71	22	3	7	17	9	7	4	1	2
Dudley	73	739.7	19	18	9	0	6	0	3	0	0	0	2
Dunstable	15	1116.5	4	3	0	0	2	0	1	1	0	0	0
Duxbury	113	713.5	31	25	8	0	7	4	3	4	0	0	3
East Bridgewater	87	779.9	21	21	5	4	2	3	4	4	1	0	1
East Brookfield	13	593.9	4	6	1	2	0	2	0	0	0	0	0
East Longmeadow	221	1017.6	60	35	7	5	14	5	1	10	4	0	3
Eastham	65	727.6	13	19	6	2	1	3	3	3	0	0	1
Easthampton	158	872.7	48	39	13	2	7	7	8	9	1	1	0
Easton	145	858.6	38	41	11	5	5	5	4	6	3	0	2
Edgartown	34	1046.6	9	12	4	0	1	1	1	0	0	0	0
Egremont	17	960.7	5	6	1	1	2	1	0	0	0	0	0
Erving	10	611.3	3	3	1	0	1	0	0	0	0	0	0
Essex	26	791.6	8	10	3	0	2	0	0	1	0	0	1
Everett	352	828.8	87	84	29	8	17	18	8	9	2	0	3
Fairhaven	241	930.2	70	49	12	5	11	15	6	6	5	0	1
Fall River	1,073	905.3	323	201	48	16	71	55	35	38	9	6	7
Falmouth	451	878.4	91	115	27	7	49	33	14	10	2	1	3
Fitchburg	425	945.4	112	82	22	9	37	23	16	14	4	1	5
Florida	16	2276.7	4	5	0	1	1	2	0	0	0	0	1
Foxborough	127	872.1	34	35	11	5	7	10	3	0	1	0	1
Framingham	552	746.3	148	110	24	11	35	29	11	20	3	0	6
Franklin	160	799.8	36	39	8	3	12	9	3	5	3	0	5
Freetown	51	855.8	15	15	3	2	5	1	2	0	3	0	0
Gardner	243	942.6	64	55	19	3	10	16	13	9	2	0	4
Gay Head (Aquinnah)	9	2762.2	3	2	1	0	1	0	1	0	0	0	0
Georgetown	44	775.0	13	16	3	2	3	4	0	2	0	0	0
Gill	6	410.3	1	1	0	0	1	1	0	0	0	0	0
Gloucester	339	920.0	75	86	25	4	20	14	11	9	1	0	1
Goshen	3	--[4]	2	0	0	0	0	0	0	0	0	0	0

Table 24. Selected Causes of Death by Community, Massachusetts: 2003 (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	1	--[4]	0	0	0	0	0	0	0	0	0	1	0
Grafton	87	708.1	32	17	8	0	5	4	1	2	0	0	0
Granby	42	829.7	15	10	5	1	1	3	0	1	1	0	1
Granville	7	592.0	0	3	0	1	0	1	0	0	0	0	0
Great Barrington	78	630.1	30	14	5	0	5	5	2	1	0	0	0
Greenfield	188	698.5	44	46	22	3	13	14	4	10	1	0	1
Groton	40	697.9	4	10	2	3	1	2	2	0	1	0	0
Groveland	47	1,012.2	14	13	5	1	2	2	0	2	1	0	1
Hadley	78	952.7	21	24	7	0	7	6	0	3	0	0	1
Halifax	68	940.6	17	19	4	1	4	4	1	2	1	1	0
Hamilton	47	768.8	13	10	1	0	3	3	0	2	1	0	1
Hampden	42	763.5	14	7	1	0	4	0	1	2	1	0	0
Hancock	2	--[4]	1	0	0	0	0	0	0	1	0	0	0
Hanover	75	694.1	17	20	6	2	5	3	3	1	1	0	0
Hanson	59	1,000.1	18	18	11	0	3	4	0	2	1	0	0
Hardwick	23	855.2	6	3	0	0	1	3	0	0	0	0	1
Harvard	52	1,126.5	7	12	0	1	2	2	4	2	0	0	0
Harwich	198	713.4	51	44	14	1	11	11	5	7	2	0	1
Hatfield	30	711.0	9	6	1	1	3	2	2	1	0	0	0
Haverhill	562	888.9	172	127	35	12	41	30	11	18	4	0	8
Hawley	3	--[4]	1	1	0	0	0	0	0	0	0	0	0
Heath	3	--[4]	1	0	0	0	0	0	0	1	0	0	0
Hingham	152	646.3	32	41	12	5	7	7	7	6	0	0	1
Hinsdale	12	827.3	4	6	2	0	1	0	0	0	0	0	0
Holbrook	102	858.6	25	21	7	2	7	7	1	4	2	0	0
Holden	135	751.0	32	36	6	1	8	10	4	6	1	1	1
Holland	18	1,477.0	7	5	2	0	1	1	0	0	0	0	0
Holliston	70	749.0	18	22	4	3	2	5	0	1	2	0	0
Holyoke	473	926.9	128	87	26	11	29	27	14	17	5	3	4
Hopedale	51	668.2	11	9	1	1	1	7	3	2	0	0	0
Hopkinton	75	865.8	20	22	7	1	6	4	2	1	0	0	1
Hubbardston	31	1,247.8	6	9	0	2	3	2	0	1	1	0	0
Hudson	118	726.9	23	43	15	2	9	4	6	3	0	0	1
Hull	87	866.4	16	23	8	3	5	4	4	2	3	0	0

Table 24. Selected Causes of Death by Community, Massachusetts: 2003 (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	17	897.5	1	3	0	1	3	2	0	0	0	0	0
Ipswich	120	756.0	20	32	15	3	10	3	2	8	4	0	1
Kingston	107	777.1	28	23	11	2	4	4	2	7	2	1	0
Lakeville	73	716.7	19	17	7	3	4	3	0	3	1	0	0
Lancaster	41	617.5	10	13	4	0	1	1	0	0	0	0	2
Lanesborough	20	666.2	5	1	0	0	1	0	0	1	0	0	0
Lawrence	502	813.0	154	93	22	9	28	23	20	7	4	6	8
Lee	77	1,061.6	22	17	3	2	4	3	2	2	1	0	0
Leicester	99	934.7	33	20	7	2	8	8	3	1	1	0	2
Lenox	97	828.0	21	21	3	1	4	4	1	1	1	0	1
Leominster	408	922.6	78	105	30	10	48	21	13	13	6	3	2
Leverett	11	757.8	1	7	1	1	0	1	0	0	0	0	0
Lexington	272	557.7	53	68	10	6	27	10	6	14	1	0	1
Leyden	3	--[4]	0	0	0	0	0	0	0	0	0	0	0
Lincoln	41	696.6	4	16	3	0	6	1	1	2	0	0	0
Littleton	59	738.2	17	16	2	1	3	7	0	7	0	0	0
Longmeadow	144	579.1	37	28	7	0	11	7	0	8	0	0	2
Lowell	851	926.4	197	219	62	16	52	40	16	34	4	1	7
Ludlow	194	871.3	53	43	10	3	14	5	2	4	5	0	1
Lunenburg	74	832.3	16	24	6	3	4	3	4	1	2	0	1
Lynn	808	900.7	181	216	72	12	53	36	19	18	6	1	8
Lynnfield	97	706.2	22	20	3	0	10	5	1	3	2	0	1
Malden	465	757.1	137	115	38	4	16	22	15	14	4	0	3
Manchester	43	675.6	7	8	0	2	2	1	1	2	0	0	0
Mansfield	114	915.6	26	29	7	1	14	4	2	3	1	0	0
Marblehead	189	746.6	48	57	13	6	13	5	2	9	0	0	1
Marion	81	1,084.2	26	19	8	1	2	5	0	2	1	0	0
Marlborough	267	751.6	68	67	22	3	11	12	4	17	2	0	3
Marshfield	157	877.3	45	35	10	4	6	9	2	6	1	0	2
Mashpee	141	929.1	21	47	14	7	10	5	4	3	4	0	1
Mattapoisett	51	627.8	18	11	8	1	2	0	0	6	0	0	1
Maynard	75	698.6	19	23	8	1	4	6	3	1	1	0	0
Medfield	54	594.1	14	15	6	0	3	4	1	2	0	0	0
Medford	531	683.8	148	131	38	11	41	17	10	12	3	0	1
Medway	72	764.1	13	21	4	4	3	3	2	0	1	0	0
Melrose	279	763.2	84	68	17	6	23	12	4	8	0	0	0
Mendon	40	1,031.6	13	11	5	1	4	1	1	0	0	0	0

Table 24. Selected Causes of Death by Community, Massachusetts: 2003 (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	33	653.6	9	7	2	0	2	1	2	2	0	0	0
Methuen	427	793.1	135	94	30	4	16	18	13	10	3	2	4
Middleborough	194	1,085.8	46	48	11	5	11	12	3	6	4	1	2
Middlefield	1	--[4]	1	0	0	0	0	0	0	0	0	0	0
Middleton	46	768.9	11	10	2	1	4	5	1	0	0	0	1
Milford	216	732.6	61	46	13	3	18	9	7	5	1	0	0
Millbury	154	918.5	50	19	6	1	10	6	4	8	1	0	1
Millis	36	670.2	12	8	2	0	0	0	1	3	0	0	0
Millville	12	665.1	1	4	1	0	0	1	0	0	0	0	0
Milton	253	710.4	61	54	12	2	16	12	6	15	1	0	0
Monroe	0	--[4]	0	0	0	0	0	0	0	0	0	0	0
Monson	56	775.3	8	12	4	1	5	2	2	1	4	0	0
Montague	106	1,052.9	25	23	7	1	6	4	7	9	1	0	0
Monterey	4	--[4]	1	3	1	0	0	0	0	0	0	0	0
Montgomery	5	1,165.0	1	3	2	0	0	0	0	0	0	0	0
Mount Washington	3	--[4]	0	3	0	0	0	0	0	0	0	0	0
Nahant	34	555.5	9	7	1	1	2	4	1	1	0	0	0
Nantucket	69	861.2	23	20	5	1	5	1	0	5	0	0	1
Natick	259	706.3	73	57	14	3	15	11	6	12	2	0	3
Needham	309	652.7	79	73	20	8	26	13	4	13	1	0	1
New Ashford	2	--[4]	0	0	0	0	1	0	0	0	0	0	0
New Bedford	1,114	946.7	348	259	53	21	46	61	22	25	18	9	6
New Braintree	6	1,012.3	2	2	0	0	0	0	0	0	1	0	0
New Marlborough	9	545.4	3	3	0	0	2	0	0	0	0	0	0
New Salem	6	708.0	2	1	0	0	0	0	0	0	0	0	0
Newbury	37	651.2	12	10	4	0	2	2	1	2	1	1	0
Newburyport	169	829.6	43	34	10	2	10	8	6	3	2	0	3
Newton	632	579.7	164	161	33	16	61	24	9	21	2	0	6
Norfolk	43	920.9	11	8	2	0	4	3	3	0	0	0	0
North Adams	216	1,049.2	56	51	17	1	17	14	9	15	1	0	1
North Andover	250	718.2	67	67	21	2	9	11	9	6	2	0	1
North Attleboro	184	838.0	46	50	19	3	9	5	5	4	0	0	3
North Brookfield	44	917.3	12	9	1	1	1	3	0	2	0	0	1

Table 24. Selected Causes of Death by Community, Massachusetts: 2003 (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	89	816.6	21	18	7	2	7	4	3	2	0	0	0
Northampton	279	799.4	73	55	14	5	15	20	4	17	2	0	2
Northborough	86	846.2	25	17	6	2	6	5	3	7	2	0	0
Northbridge	155	949.6	45	31	11	1	12	7	7	8	2	0	0
Northfield	25	806.5	8	7	1	0	2	2	0	0	0	0	0
Norton	131	1,032.7	37	35	7	3	13	5	4	5	1	0	0
Norwell	74	638.2	18	13	4	0	8	1	1	3	0	0	1
Norwood	324	819.5	81	69	19	2	20	16	13	9	1	0	0
Oak Bluffs	49	1,221.9	18	14	2	1	2	1	0	2	0	0	1
Oakham	8	643.7	3	3	1	0	1	0	0	0	0	0	0
Orange	61	753.1	13	20	2	2	5	2	0	1	0	0	1
Orleans	90	569.8	29	23	9	0	4	6	2	2	0	0	1
Otis	10	773.2	0	4	1	1	1	2	0	0	1	0	0
Oxford	110	965.0	30	33	6	2	4	4	4	3	1	0	2
Palmer	123	839.8	34	31	11	2	10	7	3	2	1	0	1
Paxton	38	859.9	10	15	4	0	0	2	1	2	0	0	1
Peabody	582	925.4	169	146	44	8	34	23	15	18	4	0	3
Pelham	8	624.5	1	4	0	1	0	1	1	0	0	0	0
Pembroke	105	945.9	25	28	9	2	3	9	2	6	3	0	1
Pepperell	47	625.4	10	17	7	0	2	2	1	2	1	0	1
Peru	7	1,113.1	0	4	0	0	0	0	0	0	0	0	1
Petersham	18	1,201.4	2	6	1	1	1	2	1	0	0	0	2
Phillipston	10	1,070.2	1	1	1	0	0	3	0	0	0	0	1
Pittsfield	568	869.1	149	132	36	5	32	33	26	23	6	4	2
Plainfield	4	--[4]	0	2	1	0	0	0	0	0	0	0	0
Plainville	63	923.7	16	14	3	0	4	6	5	2	2	0	0
Plymouth	478	912.0	125	106	30	6	23	23	10	26	1	0	2
Plympton	20	1,457.9	5	4	2	0	0	1	0	0	0	0	0
Princeton	18	823.3	8	4	0	0	0	2	0	0	0	0	0
Provincetown	51	950.5	7	14	6	1	2	1	1	4	0	1	0
Quincy	957	858.2	252	223	64	11	48	45	18	43	7	1	9
Randolph	289	826.9	83	70	16	2	14	16	9	11	3	0	2
Raynham	120	988.9	31	29	5	1	10	5	5	3	0	0	1
Reading	190	709.4	56	40	11	3	11	11	1	5	3	0	1
Rehoboth	60	746.4	24	16	5	0	2	0	1	3	3	0	0
Revere	492	825.6	130	126	33	10	26	21	13	14	2	1	6
Richmond	12	660.0	3	4	2	0	0	2	0	0	0	0	0
Rochester	26	796.1	3	7	3	0	0	2	0	1	2	0	0

Table 24. Selected Causes of Death by Community, Massachusetts: 2003 (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	160	910.9	46	35	17	1	12	9	8	3	0	1	2
Rockport	76	563.3	18	21	7	2	8	3	2	2	0	0	1
Rowe	7	1,728.5	1	2	2	0	2	0	1	0	0	0	0
Rowley	50	1,054.4	14	10	2	2	3	2	1	1	1	0	0
Royalston	6	605.4	1	1	0	1	0	1	1	0	0	0	0
Russell	6	530.9	0	1	0	0	1	1	0	0	0	0	0
Rutland	35	841.6	4	18	6	0	5	0	1	0	0	1	0
Salem	414	916.0	108	123	30	8	19	13	7	13	2	0	3
Salisbury	69	957.5	16	25	10	1	2	5	1	3	0	0	2
Sandisfield	4	--[4]	2	1	1	0	0	0	0	0	0	0	0
Sandwich	159	755.1	49	40	9	4	8	6	3	7	4	0	0
Saugus	265	773.9	75	79	32	4	10	15	5	5	2	0	2
Savoy	4	--[4]	2	2	2	0	0	0	0	0	0	0	0
Scituate	180	890.3	43	51	17	3	6	12	3	11	4	0	2
Seekonk	92	677.9	24	39	10	4	3	3	1	1	1	0	1
Sharon	116	759.0	21	36	5	1	5	8	3	3	0	0	2
Sheffield	31	806.5	9	8	3	0	2	4	2	0	1	0	1
Shelburne	28	748.6	9	7	1	0	1	1	0	3	0	0	0
Sherborn	22	629.3	7	6	0	0	1	0	1	0	0	0	0
Shirley	40	825.9	12	13	4	2	3	1	1	0	0	0	0
Shrewsbury	241	713.2	65	59	17	5	18	20	7	10	3	0	1
Shutesbury	4	--[4]	2	0	0	0	0	0	0	1	0	0	0
Somerset	201	721.4	57	53	12	6	10	6	3	11	1	1	1
Somerville	507	772.7	139	115	30	7	24	11	19	20	5	0	2
South Hadley	178	770.9	54	39	4	3	6	19	1	7	1	0	0
Southampton	44	1,026.7	9	10	2	0	6	4	2	0	2	0	0
Southborough	40	734.6	9	13	1	3	2	2	0	1	0	0	0
Southbridge	182	894.9	43	40	13	5	10	12	6	6	4	0	3
Southwick	74	913.0	22	14	3	3	4	3	2	2	3	0	1
Spencer	91	818.5	23	24	6	3	4	3	5	3	3	0	2
Springfield	1,414	960.7	374	307	86	11	72	45	44	42	17	13	9
Sterling	57	1,174.5	18	13	2	1	3	4	1	2	1	0	0
Stockbridge	24	614.4	9	4	0	1	1	2	0	0	0	0	1
Stoneham	237	737.2	58	68	22	7	20	11	5	6	0	1	4
Stoughton	266	836.7	77	54	18	4	18	16	5	10	1	0	2
Stow	26	698.3	5	6	1	1	2	1	0	1	1	0	1
Sturbridge	72	880.4	14	22	8	0	5	2	3	5	1	0	0
Sudbury	126	977.1	33	27	11	3	9	6	2	4	4	0	0

Table 24. Selected Causes of Death by Community, Massachusetts: 2003 (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	19	650.8	3	4	0	1	4	0	1	0	1	0	0
Sutton	48	873.0	10	20	2	0	4	5	1	2	0	0	0
Swampscott	148	590.1	45	32	9	2	8	5	0	3	1	0	0
Swansea	155	807.0	46	44	14	4	6	11	4	4	1	0	0
Taunton	573	990.2	179	131	44	4	31	27	22	24	8	0	2
Templeton	75	1,082.4	17	17	5	0	8	6	2	4	0	0	0
Tewksbury	233	929.6	55	66	17	7	16	16	8	4	1	0	0
Tisbury	39	716.7	8	15	8	0	1	1	0	2	0	0	1
Tolland	1	--[4]	1	0	0	0	0	0	0	0	0	0	0
Topsfield	51	719.3	12	9	4	0	7	4	0	1	0	0	0
Townsend	44	814.1	12	10	3	0	3	0	4	2	1	0	1
Truro	26	953.4	5	9	2	0	1	0	0	1	0	0	0
Tyngsborough	69	1,072.6	13	23	2	2	4	6	2	0	1	0	0
Tyringham	3	--[4]	1	0	0	0	0	2	0	0	0	0	0
Upton	47	1,024.5	13	13	3	0	5	1	1	0	0	0	0
Uxbridge	87	985.2	21	19	2	3	5	10	2	2	1	0	2
Wakefield	224	730.1	57	59	11	7	15	5	7	7	0	0	1
Wales	15	1,466.6	3	4	2	0	0	0	2	0	0	0	0
Walpole	186	688.5	42	50	14	6	10	13	4	10	1	0	0
Waltham	467	759.2	124	107	29	7	43	15	13	19	3	1	2
Ware	100	865.6	25	30	7	3	7	2	0	6	3	0	0
Wareham	281	1,137.6	79	76	26	2	11	16	12	9	4	0	1
Warren	49	1,026.6	17	11	2	2	1	2	2	2	0	0	0
Warwick	7	1,404.2	1	4	1	1	0	0	0	1	0	0	0
Washington	4	--[4]	2	1	0	0	0	0	0	1	0	0	0
Watertown	277	614.1	73	58	18	5	20	12	3	12	0	0	1
Wayland	107	745.7	22	31	6	6	7	4	3	7	1	0	0
Webster	222	979.1	63	50	16	6	17	6	7	2	3	0	3
Wellesley	155	496.0	32	45	8	8	11	4	0	4	1	0	0
Wellfleet	40	927.4	14	15	4	1	1	1	0	3	1	0	0
Wendell	1	--[4]	1	0	0	0	0	0	0	0	0	0	0
Wenham	28	592.2	7	7	2	0	2	3	2	1	0	0	0
West Boylston	62	689.1	19	18	4	2	5	2	2	3	2	0	0
West Bridgewater	84	861.8	25	18	3	0	6	2	2	4	1	0	0
West Brookfield	55	851.0	16	16	4	1	5	2	2	2	2	0	1
West Newbury	17	606.5	4	5	1	0	2	1	0	2	0	0	0

Table 24. Selected Causes of Death by Community, Massachusetts: 2003 (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	317	944.9	97	55	15	4	10	16	9	11	1	1	2
West Stockbridge	8	441.2	2	1	0	0	1	1	0	1	0	0	0
West Tisbury	16	977.1	5	3	2	0	1	0	0	0	0	0	1
Westborough	154	746.4	45	24	4	3	9	10	7	13	0	0	0
Westfield	353	803.1	106	89	28	5	10	16	4	12	4	1	4
Westford	103	782.9	22	24	11	1	5	2	4	5	0	0	1
Westhampton	1	--[4]	0	1	0	0	0	0	0	0	0	0	0
Westminster	51	877.3	13	12	3	0	4	4	1	1	1	0	0
Weston	104	572.7	18	17	0	0	9	5	1	8	1	0	0
Westport	142	932.9	47	30	6	3	6	5	1	2	3	0	1
Westwood	147	614.8	37	33	9	2	6	9	2	3	0	0	0
Weymouth	551	881.1	122	153	44	11	22	39	13	14	4	0	5
Whately	15	911.1	3	5	1	0	3	0	0	0	0	0	0
Whitman	91	818.2	20	31	10	2	1	2	2	3	2	0	0
Wilbraham	147	774.9	45	30	10	1	9	11	3	3	0	1	1
Williamsburg	27	1,044.6	7	5	2	1	3	1	0	2	0	0	0
Williamstown	93	620.5	23	15	3	0	8	11	1	8	2	0	0
Wilmington	133	717.3	30	43	17	2	4	4	2	8	2	0	1
Winchendon	81	991.6	32	19	9	0	3	4	1	2	2	0	1
Winchester	173	572.2	34	45	10	4	17	4	5	9	2	0	3
Windsor	4	--[4]	1	1	1	0	0	0	0	1	0	0	0
Winthrop	203	836.1	47	50	18	4	10	8	6	15	0	0	3
Woburn	356	860.3	89	87	27	6	21	32	9	11	1	0	6
Worcester	1,760	894.5	434	365	98	27	95	90	52	76	26	7	8
Worthington	5	477.0	2	1	1	0	0	0	0	0	0	0	0
Wrentham	95	875.1	21	24	8	1	4	2	3	1	2	0	0
Yarmouth	412	736.4	129	103	22	4	27	17	12	8	1	0	1

1. All rates are age adjusted using the 2000 U.S. 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: 2003

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	**56,194**	**810.2**	**14,622**	**13,524**	**3,749**	**996**	**3,399**	**2,753**	**1,420**	**2,016**	**521**	**139**	**423**
Community Health Network of Berkshire (1)	1,585	836.5	414	386	102	20	96	100	53	65	14	4	10
Upper Valley Health Web (Franklin County) (2)	759	733.9	186	189	56	13	56	41	21	30	6	0	8
Partnership for Health in Hampshire County (Northampton) (3)	1,180	784.5	322	277	69	21	78	74	28	54	14	1	7
The Community Health Connection (Springfield) (4)	2,902	891.9	782	601	170	38	159	114	71	97	35	16	24
Community Health Network of Southern Worcester County (5)	1,094	895.4	292	275	82	25	63	44	37	35	19	0	17
Community Partners for Health (Milford) (6)	1,081	831.8	283	265	67	20	72	63	34	29	14	0	9
Community Health Network of Greater Metro West (Framingham) (7)	2,678	756.6	688	648	175	57	157	141	69	115	25	0	16
Community Wellness Coalition (Worcester) (8)	2,776	834.9	728	607	166	44	162	157	78	116	36	8	16
Fitchburg/Gardner Community Health Network (9)	2,110	878.3	520	511	145	37	153	111	71	69	32	7	19
Greater Lowell Community Health Network (10)	2,052	911.0	501	528	158	38	113	114	53	81	18	3	14
Greater Lawrence Community Health Network (11)	1,436	762.6	422	311	88	19	75	67	46	28	9	8	15
Greater Haverhill Community Health Network (12)	1,202	838.7	344	286	83	25	80	73	26	45	9	2	17
Community Health Network North (Beverly/Gloucester) (13)	1,107	749.7	248	268	84	20	95	46	24	38	6	1	7
North Shore Community Health Network (14)	2,878	859.7	743	771	232	45	174	124	56	84	18	1	20
Greater Woburn/Concord/Littleton Community Health Network (15)	1,619	684.8	342	435	106	40	115	95	35	75	15	0	19
North Suburban Health Alliance (Medford/Malden/Melrose) (16)	2,367	741.4	648	583	173	48	150	100	53	63	12	1	13
Greater Cambridge/Somerville Community Health Network (17)	1,961	702.9	521	447	111	25	133	63	44	84	10	3	10
West Suburban Health Network (Newton/Waltham) (18)	2,083	640.9	526	507	120	48	170	83	34	74	11	1	11
Alliance for Community Health (Boston/Chelsea/Revere/Winthrop) (19)	5,628	823.8	1,354	1,355	387	124	298	257	156	204	37	44	52
Blue Hills Community Health Alliance (Greater Quincy) (20)	3,719	822.0	923	904	239	51	205	189	95	148	26	1	28
Four (For) Communities (Holyoke, Chicopee, Ludlow, Westfield) (21)	1,699	881.6	478	365	99	28	89	89	34	59	20	5	15
Greater Brockton Community Health Network (22)	2,010	899.8	515	506	150	39	103	99	48	73	25	8	14
South Shore Community Partners in Prevention (Plymouth) (23)	1,448	861.7	384	343	118	20	75	75	32	62	11	3	10
Greater Attleboro-Taunton Health & Education Response (24)	1,974	890.9	557	493	146	35	126	89	50	77	21	2	9
Partners for a Healthier Community (Fall River) (25)	1,571	857.6	473	328	80	29	93	77	43	55	14	7	9
Greater New Bedford Health & Human Services Coalition (26)	2,216	908.7	677	525	133	36	100	120	50	61	38	10	13
Cape Cod & Islands Community Health Network (27)	3,058	772.6	751	810	210	51	209	148	79	95	26	3	21

1. All rates are age adjusted using the 2000 U.S. 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: 2003

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	**56,194**	**810.2**	**14,622**	**13,524**	**3,749**	**996**	**3,399**	**2,753**	**1,420**	**2,016**	**521**	**139**	**423**
Barnstable	2,835	765.4	684	743	188	49	198	144	77	86	26	2	17
Berkshire	1,585	836.5	414	386	102	20	96	100	53	65	14	4	10
Bristol	5,200	866.0	1,554	1,209	307	93	294	253	132	172	64	18	29
Dukes	154	946.2	44	47	17	1	6	3	2	4	0	1	3
Essex	6,623	813.4	1,757	1,636	487	109	424	310	152	195	42	12	59
Franklin	609	728.4	149	160	48	10	47	29	16	26	4	0	5
Hampden	4,655	891.0	1,277	980	273	66	250	205	107	158	56	21	40
Hampshire	1,197	786.0	323	280	69	22	81	76	28	54	14	1	7
Middlesex	11,243	740.4	2,837	2,783	747	217	746	509	256	432	83	8	81
Nantucket	69	861.2	23	20	5	1	5	1	0	5	0	0	1
Norfolk	5,778	761.8	1,473	1,404	376	96	339	299	132	211	41	3	39
Plymouth	4,103	887.6	1,043	1,027	329	71	202	205	100	163	49	11	28
Suffolk	5,281	851.3	1,258	1,271	365	119	272	243	149	185	35	43	48
Worcester	6,861	853.9	1,786	1,578	436	122	439	376	216	260	93	15	56

1 All rates are age adjusted using the 2000 U.S. 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: 2003

Cause	ICD-10 Code	White[2]			Black[2]		
		Total	Male	Female	Total	Male	Female
All Deaths		**804.6**	**995.8**	**676.1**	**1,046.3**	**1,301.9**	**870.9**
Heart Disease	I00-I09, I11, I13, I20-I51	207.3	271.0	164.8	247.9	305.9	207.0
Cancer	C00-C97	198.4	247.9	169.6	262.4	338.3	218.9
Stroke	I60-I69	47.2	49.4	45.3	59.5	50.9	62.0
Chronic Lower Respiratory Disease[3]	J40-J47	40.1	47.6	36.6	29.5	38.2	24.0
Influenza and Pneumonia	J10-J18	28.0	36.2	23.8	30.5	42.6	23.2
Diabetes	E10-E14	19.7	25.4	15.7	49.6	58.3	43.1
Alzheimer's Disease	G30	22.4	19.4	23.5	13.8	11.0	14.7
Nephritis	N00-N07, N17-N19, N25-N27	17.4	24.2	13.8	41.5	48.3	38.3
Septicemia	A40-A41	13.7	16.5	12.1	26.0	29.5	23.9
HIV Diseases	B20-B24	2.8	3.9	1.7	18.4	25.2	12.8
Perinatal Conditions	P00-P96	3.5	4.2	2.8	10.9	10.0	11.8
All Injuries	V01-Y98	40.9	61.1	23.5	54.4	94.9	19.7
Motor Vehicle-Related Injuries	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2	8.1	11.8	4.9	9.3	17.5	2.8
Suicide	X60-X84, Y87.0	6.6	10.6	3.1	4.9	9.3	0.8
Homicide	X85-Y09, Y87.1	1.4	2.4	0.6	10.9	19.4	2.7

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

Technical Notes

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

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

Data Sources

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

CHANGES TO MORTALITY DATA, EFFECTIVE 1999

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

CHANGES TO THE PRESENTATION OF RACE AND ETHNICITY DATA

In response to readers' feedback, the presentation of race and ethnicity data 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 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 U.S. Federal Census and the National Center for Health Statistics (NCHS) places persons who are Cape Verdean in the race category "Black". Historically, we have followed this federal definition in order to be consistent with the National Center for Health Statistics. Beginning with 1999 data, we have separated the concept of "Race" from "Ethnic group" for reporting 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.

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.

2003 Death Rates

Death rates for 2003 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 148-149 for a list of codes and CR used in this publication).

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

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

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

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

If you look only at the age-adjusted rate over time, not taking the ICD coding changes into account, it appears that deaths from influenza and pneumonia have decreased between 1996-1999. However, because the coding rules changed between ICD-9 and ICD-10 revisions, we need to apply the comparability ratio to the rates for 1996-1998. (This is done by multiplying the age-adjusted rate by the comparability ratio). Now we can make a fairer comparison and examine the changes between the comparability modified rate and 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 U.S. projected population is used as the standard population in this document for consistency with data published by the National Center for Health Statistics (NCHS). **ONLY RATES USING THE SAME STANDARD POPULATION CAN BE COMPARED**. All age-adjusted rates published in this report have been re-calculated using the 2000 U.S. standard population. These rates should NOT be compared with age-adjusted rates previously published which used the 1940 U.S. standard population.

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

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

Age-Specific Rate

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

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

Community Health Network Areas (CHNA)

The Department of Public Health, in collaboration with health service providers, coalition members, and interested citizens, has designated 27 areas for community health planning. It is the Department's intention to foster in each of these areas the development of Community Health Networks -- consortia of health care providers, human service agencies, schools, churches, youth, parents, elders, advocacy groups, and individual consumers -- to address the health needs of the community. The Community Health Network Area (CHNA) mobilize around key health issues impacting the community, promote prevention efforts, enhance access to care, provide opportunities for more collaboration among agencies, and create a client-centered, outcome-oriented health service delivery system. 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 150-153 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 136 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 (i.e. ICD-10) by the number of deaths for a selected cause of death classified by the old revision (i.e. ICD-9).

More specifically, the 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 (see Table A7 and A8 on pages 148-149).

Please see page 136 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 2003 is on page 156) In a properly completed death certificate, the immediate cause of death is recorded on line 29a. The other mentioned causes are written on lines 29 b-d. The underlying cause of death is the disease or injury that initiated the events leading to the death. All causes of death are data entered and processed by a software program supplied by NCHS. This software assigns the appropriate ICD-10 codes. Trained nosologists review the ICD-10 codes assigned.

International Classification of Diseases, Ninth Revision (ICD-9)

The International Classification of Diseases (ICD) classifies mortality information for statistical purposes. The ICD was first used in 1900 and has since been revised about every 10 years, with the exception of the ICD-9, which was in use between 1979-1998. ICD-9 codes used in this publication are listed on pages 143-147.

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 143-147.

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

Life expectancy at birth

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

NCHS

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

Occurrence Death

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

Population

Population counts are based on U.S. decennial census counts, and population estimates are calculated for intercensal years. For 1981-1989, population estimates are derived as linear interpolations from the 1980 and 1990 census. For 1991-1995, population estimates are based on MISER's annual estimates released in September 1999. Population estimates for 1996 and 1997 are based on MISER's annual estimates released in November 1999. 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, since *Massachusetts Deaths 2002*, we have adjusted the maximum age to be 75 years so that we do not include deaths beyond average life expectancy. Data after 2002 are not comparable with previous publications because we used a different maximum age cutoff

Premature Mortality Rate

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

Race and Hispanic Ethnicity

For death records, race and Hispanic ethnicity are specified by the death record informant (for example, spouse or next of kin). Prior to 1989, death certificates included a question on race, but a separate question on Hispanic origin was added to the death record beginning on January 1, 1989.

Beginning with the 1999 report, race and ethnicity categories are presented as mutually exclusive categories, except for Table A1 which provides race and ethnicity data consistent with federal guidelines so that national comparisons can be made. All trend data from 1989-2003 presented in this report have been re-tabulated to reflect this modification. Data presented by race in this report are not directly comparable to previously published data by race.

Resident Death

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

Total Rate of Change

The total rate of change is calculated as follows:

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

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

Underlying Cause of Death

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

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

(Sorted by ICD-10 Codes)

Cause of Death	ICD-10 Code	ICD-9 Code
Infectious and parasitic diseases	A00-B99	001-139
Septicemia	A40-A41	038
Human Immunodeficiency Virus (HIV) disease	B20-B24	042-044
Cancer (Malignant Neoplasms)	C00-C97	140-208
of esophagus	C15	150
of stomach	C16	151
of colon, rectum, rectum and anus	C18-C21	153-154, 159.9
of pancreas	C25	157
of trachea, bronchus and lung	C33-C34	162
of female breast	C50	174
of cervix uteri	C53	180
of corpus uteri and uterus, part unspecified	C54-C55	179,182
of ovary	C56	183.0
of prostate	C61	185
of kidney and renal pelvis	C64-C65	189.0-189.1
of bladder	C67	188
of meninges, brain & other parts of central nervous system	C70-C72	191-192
Hodgkin's Disease	C81	201
Non-Hodgkin's lymphoma	C82-C85	200, 202 (except 202.4)
Leukemia	C91-C95	202.4, 204-208
Multiple myeloma and immunoproliferative neoplasms	C88, C90	203
Diabetes Mellitus	E10-E14	250
Alzheimer's disease	G30	331.0
Heart Disease	I00-I09, I11, I13, I20-I51	390-398, 402, 404-429
Stroke (Cerebrovascular disease)	I60-I69	430-438
Influenza and pneumonia	J10-J18	480-487
Chronic lower respiratory diseases[1]	J40-J47	490-496
Chronic liver disease and cirrhosis	K70, K73-K74	571
Nephritis	N00-N07, N17-N19, N25-N27	580-589
Congenital malformations, deformations, and chromosomal abnormalities	Q00-Q99	740-759
Certain conditions originating in the perinatal period (Perinatal Conditions)	P00-P96	760-779
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. Massachusetts Department of Public Health (DPH) Race-Allocated Census 2000 Estimates (MRACE) 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. Massachusetts Department of Public Health (DPH) Race-Allocated Census 2000 Estimates (MRACE) 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

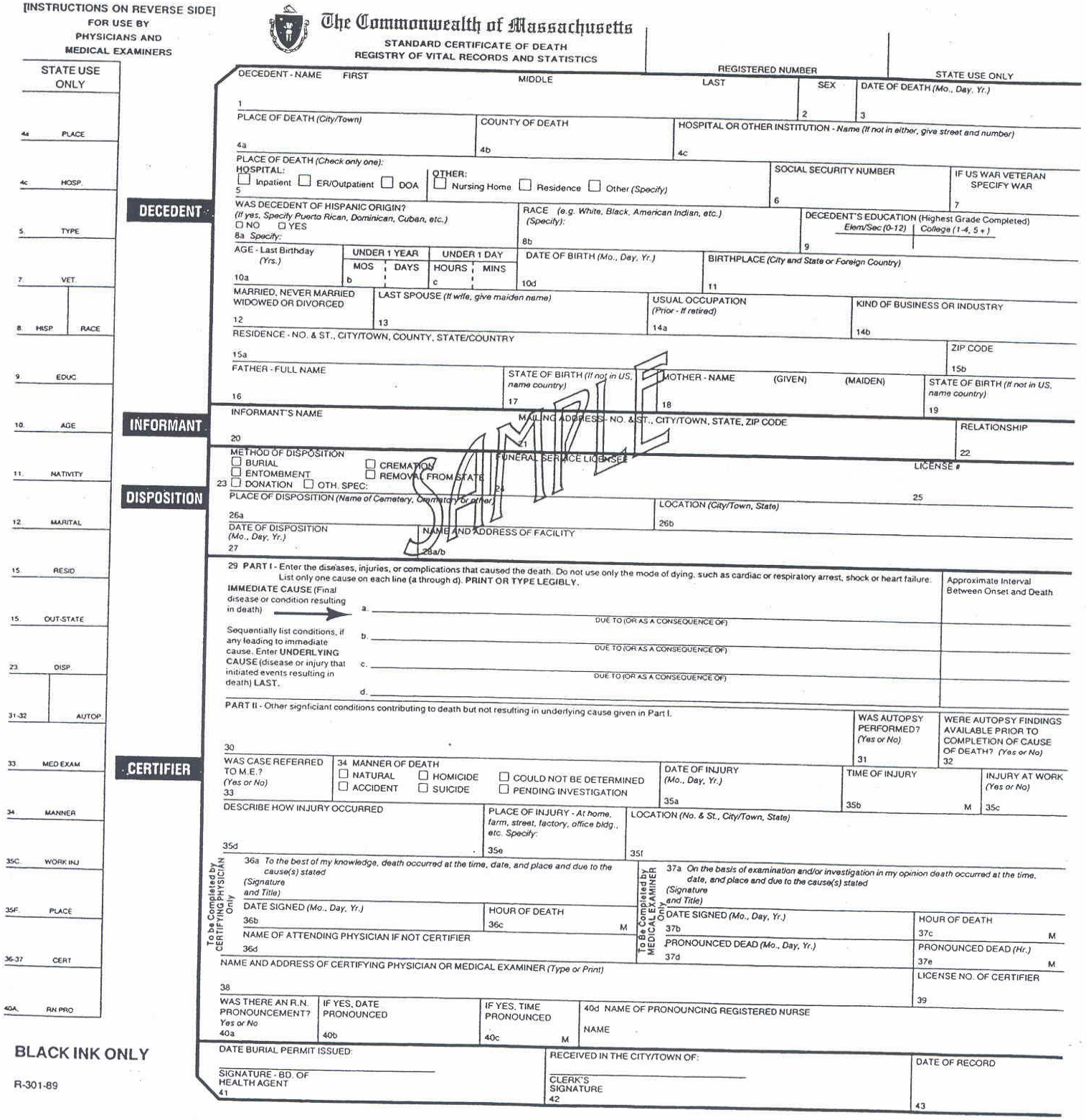
1. Massachusetts Department of Public Health (DPH) Race-Allocated Census 2000 Estimates (MRACE) released January, 2002.
2. The age-gender-race distributions from the 2000 U.S. Census (MARS) file were applied to the1999 population estimates to separate Asians from the combined category of Asian and American 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 Massachusetts Department of Public Health (DPH) Race-Allocated Census 2000 Estimates (MRACE) released January, 2002. 2. The age-gender-race distributions from the 2000 U.S. 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 U.S. Census population classification of race and ethnicity. These estimates are used to calculate population based rates in Table A1.

Massachusetts Death Certificate: 2003



[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

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

DECEDENT
1 DECEDENT - NAME FIRST MIDDLE LAST
2 SEX
3 DATE OF DEATH (Mo., Day, Yr.)
4a PLACE OF DEATH (City/Town)
4b COUNTY OF DEATH
4c HOSPITAL OR OTHER INSTITUTION - Name (If not in either, give street and number)
5 PLACE OF DEATH (Check only one): HOSPITAL: ☐ Inpatient ☐ ER/Outpatient ☐ DOA OTHER: ☐ Nursing Home ☐ Residence ☐ Other (Specify)
6 SOCIAL SECURITY NUMBER
7 IF US WAR VETERAN SPECIFY WAR
8a WAS DECEDENT OF HISPANIC ORIGIN? (If yes, Specify Puerto Rican, Dominican, Cuban, etc.) ☐ NO ☐ YES Specify:
8b RACE (e.g. White, Black, American Indian, etc.) (Specify):
9 DECEDENT'S EDUCATION (Highest Grade Completed) Elem/Sec (0-12) College (1-4, 5+)
10a AGE - Last Birthday (Yrs.)
b UNDER 1 YEAR MOS / DAYS
c UNDER 1 DAY HOURS / MINS
10d DATE OF BIRTH (Mo., Day, Yr.)
11 BIRTHPLACE (City and State or Foreign Country)
12 MARRIED, NEVER MARRIED WIDOWED OR DIVORCED
13 LAST SPOUSE (If wife, give maiden name)
14a USUAL OCCUPATION (Prior - If retired)
14b KIND OF BUSINESS OR INDUSTRY
15a RESIDENCE - NO. & ST., CITY/TOWN, COUNTY, STATE/COUNTRY
15b ZIP CODE
16 FATHER - FULL NAME
17 STATE OF BIRTH (If not in US, name country)
18 MOTHER - NAME (GIVEN) (MAIDEN)
19 STATE OF BIRTH (If not in US, name country)

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

DISPOSITION
23 METHOD OF DISPOSITION ☐ BURIAL ☐ CREMATION ☐ ENTOMBMENT ☐ REMOVAL FROM STATE ☐ DONATION ☐ OTH. SPEC:
24 FUNERAL SERVICE LICENSEE
25 LICENSE #
26a PLACE OF DISPOSITION (Name of Cemetery, Crematory, or other)
26b LOCATION (City/Town, State)
27 DATE OF DISPOSITION (Mo., Day, Yr.)
28a/b NAME AND ADDRESS OF FACILITY

SAMPLE

CERTIFIER
29 PART I - Enter the diseases, injuries, or complications that caused the death. Do not use only the mode of dying, such as cardiac or respiratory arrest, shock or heart failure. List only one cause on each line (a through d). PRINT OR TYPE LEGIBLY.
Approximate Interval Between Onset and Death
IMMEDIATE CAUSE (Final disease or condition resulting in death) a.
Sequentially list conditions, if any leading to immediate cause. Enter UNDERLYING CAUSE (disease or injury that initiated events resulting in death) LAST.
b. DUE TO (OR AS A CONSEQUENCE OF)
c. DUE TO (OR AS A CONSEQUENCE OF)
d. DUE TO (OR AS A CONSEQUENCE OF)
30 PART II - Other signficiant conditions contributing to death but not resulting in underlying cause given in Part I.
31 WAS AUTOPSY PERFORMED? (Yes or No)
32 WERE AUTOPSY FINDINGS AVAILABLE PRIOR TO COMPLETION OF CAUSE OF DEATH? (Yes or No)
33 WAS CASE REFERRED TO M.E.? (Yes or No)
34 MANNER OF DEATH ☐ NATURAL ☐ HOMICIDE ☐ COULD NOT BE DETERMINED ☐ ACCIDENT ☐ SUICIDE ☐ PENDING INVESTIGATION
35a DATE OF INJURY (Mo., Day, Yr.)
35b TIME OF INJURY M
35c INJURY AT WORK (Yes or No)
35d DESCRIBE HOW INJURY OCCURRED
35e PLACE OF INJURY - At home, farm, street, factory, office bldg., etc. Specify:
35f LOCATION (No. & St., City/Town, State)

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)
36b DATE SIGNED (Mo., Day, Yr.)
36c HOUR OF DEATH M
36d NAME OF ATTENDING PHYSICIAN IF NOT CERTIFIER

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)
37b DATE SIGNED (Mo., Day, Yr.)
37c HOUR OF DEATH M
37d PRONOUNCED DEAD (Mo., Day, Yr.)
37e PRONOUNCED DEAD (Hr.) M

38 NAME AND ADDRESS OF CERTIFYING PHYSICIAN OR MEDICAL EXAMINER (Type or Print)
39 LICENSE NO. OF CERTIFIER
40a WAS THERE AN R.N. PRONOUNCEMENT? Yes or No
40b IF YES, DATE PRONOUNCED
40c IF YES, TIME PRONOUNCED M
40d NAME OF PRONOUNCING REGISTERED NURSE
NAME

41 DATE BURIAL PERMIT ISSUED:
SIGNATURE - BD. OF HEALTH AGENT
42 RECEIVED IN THE CITY/TOWN OF:
CLERK'S SIGNATURE
43 DATE OF RECORD

BLACK INK ONLY

R-301-89

Massachusetts Deaths: 2003 Evaluation Form

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

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.

Please return your comments to:

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