The Commonwealth of Massachusetts

Executive Office of Health and Human Services

Department of Public Health

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November 28, 2018

Steven T. James

House Clerk

State House Room 145

Boston, MA 02133

William F. Welch

Senate Clerk

State House Room 335

Boston, MA 02133

Dear Mr. Clerk,

Pursuant to Section 2 of Chapter 111 of the Massachusetts General Laws, the attached report summarizes mortality data and statistics for the 2016 calendar year.

Sincerely,

Monica Bharel, MD, MPH

Commissioner

Department of Public Health



**Massachusetts Deaths 2016**

**November 2018**

Massachusetts

Deaths 2016

###### Deaths from Selected Causes, Massachusetts: 1842-2016

2016

2016

2016

2016

Office of Population Health

Massachusetts Department of Public Health

November 2018

**Massachusetts Deaths 2016**



Charles D. Baker, Governor

Marylou Sudders, Secretary of Health and Human Services

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Registry of Vital Records and Statistics

Massachusetts Department of Public Health

November 2018

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To obtain more information on deaths in Massachusetts and other

Department of Public Health data please visit the Department’s free, Internet-based public health information reports at: <http://www.mass.gov/eohhs/researcher/community-health/masschip/>

or call 888-MAS-CHIP (toll free in MA) or 617-624-5629.

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# 2016 Massachusetts Deaths Highlights

* From 2015 to 2016, the age-adjusted mortality rate for Massachusetts residents significantly decreased from 684.6 deaths per 100,000 to 668.9 deaths per 100,000. The age-adjusted mortality rates for White non-Hispanic, Asian non-Hispanic, Hispanic, female, and male residents also significantly decreased, while the rate for Black non-Hispanic residents significantly increased (Table 1).
* The average life expectancy of Massachusetts residents was 80.7 years in 2016 (Figure 1). Since 2006, the Massachusetts life expectancy has remained close to 80 years, reaching 80.9 years at its highest in 2012/2013. Hispanic women had the highest life expectancy, living 89.0 years from birth, on average, while the life expectancies for White non-Hispanic women and Black non-Hispanic women were 82.9 and 83.6 years, respectively (Table 3).
* In 2016, the premature mortality rate (which only includes deaths that occur before age 75) remained higher for Black non-Hispanic residents (309.2 deaths per 100,000) than for White non-Hispanic (288.6), Hispanic (251.9), and Asian non-Hispanic (122.1) residents (Figure 6). However, the life expectancy of Black non-Hispanic residents who lived to age 75 was higher than that of White non-Hispanic residents (Table 3), which suggests that Black non-Hispanic residents live longer upon reaching old age.
* Among Massachusetts residents ages 25-64, the death rate for those who completed high school or less was more than three times higher than the corresponding rate among those who completed education above high school (Table 5).
* Every day in 2016, there were on average 156 deaths, which included 35 cancer deaths, 33 heart disease deaths, 14 respiratory condition deaths, and 13 injury deaths (Figure 7). Of the 13 injury deaths, 7 deaths were due to poisonings, which include opioid overdoses.
* Cancer was the leading cause of death for Massachusetts residents in 2016 (Table 6). The rate of cancer deaths was highest for White non-Hispanic residents (687.9 per 100,000) and lowest for Asian non-Hispanic residents (324.7 per 100,000) (Table 9). Lung cancer remained the leading cancerous cause of death (Table 11).
* In 2016, Black non-Hispanic and Hispanic residents died from cancer at younger ages when compared to White non-Hispanic and Asian non-Hispanic residents (Figure 9). Black non-Hispanic, Hispanic, and Asian non-Hispanic residents died from heart disease at younger ages when compared to White non-Hispanic residents (Figure 11).
* In 2016, the rate of heart disease deaths remained higher for White non-Hispanic men and women than for any other racial/ethnic group (Table 10).
* The percentage of deaths due to injuries continued to climb in 2016 (Figure 4). Deaths due to injury have steadily increased since 2012. Injury deaths include opioid overdoses.
* Poisonings, which include opioid overdoses, continued to be the largest cause of injury deaths in 2016, with the injury death rate increasing from 28.4 per 100,000 in 2015 to 35.4 per 100,000 in 2016 (Table 18). For all leading causes of injury death, rates were higher for men than for women, with the greatest disparity in poisoning deaths (52.6 per 100,000 for men and 18.7 per 100,000 for women).
* The rate of suicide deaths for White non-Hispanic residents (10.0 per 100,000) was almost double the corresponding rates for other groups (5.5 per 100,000 for Black non-Hispanics, 5.4 per 100,000 for Asian non-Hispanics, and 5.0 per 100,000 for Hispanics) (Table 23).
* In 2016, the rate of infant mortality for Black non-Hispanic residents (7.9 per 1,000 live births) was almost three times higher than the corresponding rate for White non-Hispanic residents (2.7 per 1,000 live births) (Table 29).
* The leading cause of infant deaths in 2016 was disorders relating to short gestation and low birthweight, representing 24.7% of all infant deaths (Table 30).

**Note to Readers**

Please review the information below before reading the report. As required by Chapter 111, Section 2 of the General Laws, this report satisfies the requirement of the annual report on statistics on deaths for calendar year 2016 (Annual Report Vital Statistics of Massachusetts-Deaths, Public Document #1 2016). Public Document #1 information on 2016 births, marriages, and divorces is covered in separate reports.

1. **Please Note:** Collection of vital records is a complex process. The National Center for Health Statistics (NCHS) deems an annual file closed when it has reached a certain level of completeness. In the past, the Massachusetts Department of Public Health has followed their definition to match the national numbers. Starting with the 2013 report, the department is closing our annual file later than the file sent to the NCHS to get more complete reporting of events[[1]](#footnote-1). While cause of death information will be more complete due to this change, it may also cause the appearance of an increase in the number of deaths when compared to previous years. Thus, comparisons between years should be interpreted with caution. This caution should be applied especially for causes of death that are often referred to the Office of the Chief Medical Examiner for determination of underlying causes of death. See Figure 5 for details. Accidental deaths, poisonings, and complex cases are most likely to be impacted by closure dates that differ from year to year.
2. **VIP System**

* The Vitals Information Partnership (VIP) is an electronic registration system designed to streamline and integrate vital event registration, securely, across the Commonwealth. The VIP death application was launched in September 2014, and a revised version of the death certificate was also introduced at that time. Therefore 2015 was the first full year of data using improved data collection methods and new data items. Changes in data fields promote accuracy and now align with national standards.
  + Changes in data fields impact figures and tables that report trends over time. The reader must use caution when comparing 2016 results to findings from years prior to 2015.
    - For example, families of decedents now report race separately from ethnicity and may choose more than one race from the standard checkbox lists. Previously, families wrote free-form responses in a single field that were often difficult to categorize and may have resulted in some misclassifications. (See Note to Readers.)
    - While the new method improves accuracy, an algorithm must still be used to analyze multiple race responses and choose the most appropriate standard race category as used in this report. (See Technical Notes.)

1. **2003 Revisions of the U.S. Standard Certificate of Death**

This report includes 2016 data on items that are collected on both the 1989 revision of the Standard Certificate of Death (unrevised) and the 2003 revision of the Standard Certificate of Death (revised).  In addition to the collection of new variables, the 2003 revision allows the reporting of more than one race in accordance with the revised standards issued by the Office of Management and Budget (OMB) in 1997.  See “Technical Notes” for detailed information on the 2016 multiple-race reporting area and methods used to bridge responses for those who report more than one race to a single race.

1. **Cabo Verdean Race Categorization**

Prior to launching the VIP death application in September 2014, “Cape Verdean” [[2]](#footnote-2) was an option that could be selected for a decedent’s race. Decedents of Cabo Verdean race were then reclassified as Non-Hispanic Black for Death Report analyses for consistency with NCHS standards. However, in the VIP death application “Cape Verdean”2 is considered an ethnicity, and is collected separately from race. For this reason, decedents of Cabo Verdean ethnicity are now classified according to their reported race and may be distributed to any one of the five MDPH race/ethnicity categories (Non-Hispanic White, Non-Hispanic Black, Non-Hispanic Asian and Pacific Islander, Non-Hispanic American Indian and Alaska Native, or Hispanic). This change in categorization may result in fewer Non-Hispanic Black deaths, and may particularly impact rates stratified by race/ethnicity that are based on smaller counts.

1. **Population Sources.**  Two sources of population estimates were used to calculate population-based rates in *Massachusetts Deaths 2016*:
2. State and County Death Rates: The 2016 Modified Age, Race/Ethnicity, and Sex file (MARS), which is a bridged population file produced by the National Center for Health Statistics (NCHS) and the Census Bureau Population Estimates Program was used to calculate state and county rates by race and Hispanic ethnicity, e.g., death rates. This file has data by single years of age, sex, race and Hispanic ethnicity in the five mutually exclusive categories used by the Department: Non-Hispanic White, Non-Hispanic Black, Non-Hispanic Asian and Pacific Islander, Non-Hispanic American Indian and Alaska Native, and Hispanic.
3. City and town death rates: The Massachusetts Department of Public Health Race Allocated Census 2010 Estimates (MRACE 2010), which are population estimates based upon the Census 2010 Summary File 1, was used to calculate city and town rates. In this estimates file, the Census 2010 race categories, “Two or more races” and “Some other race” are redistributed to the MDPH standard race categories: Non-Hispanic White, Non-Hispanic Black, Non-Hispanic Asian and Pacific Islander, and Non-Hispanic American Indian and Alaska Native. All persons in the Census 2010 Hispanic ethnicity category are counted as “Hispanic” race in the MDPH estimates. This kind of file is often referred to as a “bridged” file, that is, one that bridges the new race and ethnicity collections to the conventionally used categories.
4. **Resident deaths.** All data in this publication are resident data unless otherwise stated. Resident data include all events that occur to residents of the Commonwealth, wherever they occur.

**Suggested Citation**

*Massachusetts Deaths 2016*. Boston, MA: Office of Population Health, Registry of Vital Records and Statistics, Massachusetts Department of Public Health. November 2018.

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| Table 1. Trends in Mortality Characteristics, Massachusetts: 2006-2016   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Year** | |  | | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** | | **Resident deaths** | | Number | | 53,293 | 52,690 | 53,341 | 51,915 | 52,420 | 53,536 | 53,169 | 54,609 | 55,159 | 57,785 | 56,953 | |  | | Crude rate1,2,3 | | 827.9 | 816.9 | 820.9 | 787.4 | 800.6 | 812.7 | 807.1 | 815.9 | 817.7 | 850.5 | 836.1 | |  | | Age-adjusted rate4 | | 717.6 | 704.4 | 703.5 | 675.1 | 672.7 | 674.0 | 669.2 | 664.1 | 662.5 | 684.6 | 668.9 | | **Race/ethnicity of decedent 5,6** | | | | | | | | | | | | | | | | White non-Hispanic | | Number | | 49,132 | 48,518 | 49,059 | 47,520 | 48,010 | 48,844 | 48,430 | 49,486 | 49,621 | 51,688 | 50,654 | |  | | Percent7 | | 92.2 | 92.1 | 92.0 | 91.5 | 91.6 | 91.2 | 91.1 | 90.6 | 90.0 | 89.4 | 88.9 | |  | | Age-adjusted rate4 | | 723.3 | 711.1 | 710.7 | 682.8 | 684.4 | 686.9 | 681.0 | 680.9 | 679.5 | 703.3 | 687.9 | | Black non-Hispanic | | Number | | 2,233 | 2,211 | 2,222 | 2,288 | 2,278 | 2,333 | 2,318 | 2,446 | 2,390 | 2,349 | 2,504 | |  | | Percent7 | | 4.2 | 4.2 | 4.2 | 4.4 | 4.3 | 4.4 | 4.4 | 4.5 | 4.3 | 4.1 | 4.4 | |  | | Age-adjusted rate4 | | 838.4 | 820.5 | 805.8 | 812.2 | 702.6 | 707.6 | 701.8 | 675.5 | 630.4 | 589.5 | 612.4 | | Asian non-Hispanic | | Number | | 635 | 610 | 692 | 697 | 759 | 806 | 811 | 816 | 938 | 1,091 | 1,028 | | 8 | | Percent7 | | 1.2 | 1.2 | 1.3 | 1.3 | 1.4 | 1.5 | 1.5 | 1.5 | 1.7 | 1.9 | 1.8 | |  | | Age-adjusted rate4 | | 379.0 | 342.0 | 372.5 | 353.1 | 364.8 | 375.2 | 372.4 | 320.5 | 344.7 | 371.8 | 324.7 | | Hispanic  13 | | Number | | 1,194 | 1,264 | 1,275 | 1,337 | 1,308 | 1,477 | 1,487 | 1,548 | 1,702 | 2,037 | 2,126 | |  | | Percent7 | | 2.2 | 2.4 | 2.4 | 2.6 | 2.5 | 2.8 | 2.8 | 2.8 | 3.1 | 3.5 | 3.7 | |  | | Age-adjusted rate**4** | | 479.9 | 477.7 | 458.2 | 439.8 | 443.9 | 468.9 | 484.9 | 444.9 | 447.9 | 493.0 | 473.2 | | **Gender of decedent6** | | | | | | | | | | | | | | | | Female | | Number | | 28,508 | 27,851 | 28,246 | 27,356 | 27,368 | 27,983 | 27,883 | 28,558 | 28,289 | 29,880 | 28,952 | |  | | Age-adjusted rate4 | | 612.7 | 596.3 | 595.9 | 572.8 | 567.2 | 572.8 | 571.1 | 569.5 | 557.9 | 581.2 | 560.2 | | Male | | Number | | 24,785 | 24,838 | 25,095 | 24,557 | 25,051 | 25,553 | 25,280 | 26,051 | 26,867 | 27,905 | 28,000 | |  | | Age-adjusted rate4 | | 858.9 | 853.3 | 852.2 | 822.1 | 811.9 | 808.5 | 797.9 | 786.5 | 795.9 | 814.7 | 804.9 | | **Age of decedent**7 | |  | | <1 year | | Number | | 369 | 380 | 381 | 366 | 319 | 310 | 309 | 298 | 321 | 310 | 283 | | 1-14 years | | Number | | 124 | 128 | 119 | 118 | 113 | 114 | 99 | 118 | 129 | 119 | 115 | | 15-24 years | | Number | | 471 | 505 | 421 | 440 | 453 | 471 | 419 | 449 | 441 | 519 | 526 | | 25-44 years | | Number | | 1,953 | 2,023 | 1,906 | 1,974 | 1,823 | 1,870 | 1,880 | 1,993 | 2,234 | 2,475 | 2,742 | | 45-64 years | | Number | | 8,660 | 8,560 | 8,426 | 8,688 | 8,753 | 8,808 | 8,791 | 9,013 | 9,214 | 9,348 | 9,270 | | 65-74 years | | Number | | 7,572 | 7,494 | 7,425 | 7,380 | 7,423 | 7,616 | 7,891 | 8,259 | 8,678 | 9,038 | 9,332 | | 75-84 years | | Number | | 15,333 | 14,781 | 14,970 | 13,943 | 13,639 | 13,598 | 13,272 | 13,182 | 12,784 | 13,299 | 12,870 | | 85+ years | | Number | | 18,811 | 18,816 | 19,692 | 19,004 | 19,888 | 20,747 | 20,506 | 21,296 | 21,356 | 22,677 | 21,813 | |  | |

1. Deaths per 100,000 residents. 2. See Glossary for further definition of terms and rates. 3. Rate calculations are based on resident population estimates. 4. Rates are age-adjusted per 100,000 residents using the 2000 US standard population. 5. 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 the Technical Notes in the Appendix for a more detailed explanation. 6. Column sum may not equal total because the race, gender or age of some decedents was unknown. 7. Percent of all resident deaths in that year.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| Table 2. Selected Leading Causes of Death, Age-Adjusted Rates,  Massachusetts and United States: 2001-2016   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **Year** | **Age-Adjusted Rates1** | **Heart Disease** | | **Cancer** | | **Stroke** | | | **MA** | **US2** | **MA** | **US2** | **MA** | **US2** | | 2001 | Rate  % of Total | 211.0  26.7 | 247.7  28.9 | 200.0  24.2 | 195.8  22.9 | 46.7  6.2 | 57.9  6.8 | | 2002 | Rate  % of Total | 201.1  26.0 | 240.4  28.4 | 200.1  24.0 | 194.0  22.8 | 48.1  6.0 | 56.3  6.7 | | 2003 | Rate  % of Total | 196.6  26.0 | 232.3  28.0 | 193.0  24.1 | 190.1  22.7 | 45.0  6.0 | 53.5  6.5 | | 2004 | Rate  % of Total | 182.8  25.3 | 217.0 27.2 | 188.4  24.5 | 185.8 23.1 | 42.5  6.0 | 50.0  6.3 | | 2005 | Rate  % of Total | 172.2  24.6 | 211.0 26.6 | 184.9  24.5 | 183.8  22.8 | 38.1  5.5 | 46.6  5.9 | | 2006  14 | Rate  % of Total | 168.8  24.2 | 199.4 25.9 | 186.3  25.1 | 180.8  23.1 | 36.7  5.4 | 43.6  5.7 | | 2007 | Rate  % of Total | 165.7 24.2 | 190.9  25.9 | 179.2 24.6 | 178.4  23.1 | 35.0 5.1 | 42.2  5.7 | | 2008 | Rate  % of Total | 165.5 24.1 | 186.5 25.4 | 177.8 24.4 | 175.3  23.2 | 33.7 4.9 | 40.7  5.6 | | 2009 | Rate  % of Total | 155.2  23.6 | 179.8  24.6 | 174.0  25.1 | 173.6  23.3 | 32.2  4.9 | 38.9  5.3 | | 2010 | Rate  % of Total | 149.4  22.9 | 178.5  24.1 | 171.0  24.7 | 172.5  23.3 | 31.2  4.8 | 39.0  5.2 | | 2011 | Rate | 144.4 | 173.7 | 166.1 | 173.7 | 30.2 | 37.9 | | % of Total | 22.1 | 23.7 | 24.0 | 23.7 | 4.6 | 5.1 | | 2012 | Rate | 141.3 | 170.5 | 166.7 | 166.5 | 28.7 | 36.9 | |  | % of Total | 21.8 | 23.6 | 24.2 | 22.9 | 4.4 | 5.1 | | 2013 | Rate | 142.2 | 169.8 | 159.5 | 163.2 | 27.7 | 36.2 | |  | % of Total | 22.1 | 23.5 | 23.5 | 22.5 | 4.3 | 5.0 | | 2014 | Rate | 137.5 | 167.0 | 155.6 | 161.2 | 28.7 | 36.5 | |  | % of Total | 21.5 | 23.4 | 23.2 | 22.5 | 4.5 | 5.1 | | 2015 | Rate | 138.7 | 167.0 | 152.8 | 161.2 | 28.4 | 36.5 | |  | % of Total | 21.0 | 23.4 | 22.1 | 22.5 | 4.3 | 5.1 | | 2016 | Rate | 134.8 | 165.5 | 149.8 | 155.8 | 27.9 | 37.3 | |  | % of Total | 20.9 | 23.1 | 22.3 | 21.8 | 4.3 | 5.2 | |  | | | | | | | | | | |
| |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **Table 2 (continued). Selected Leading Causes of Death, Age-Adjusted Rates,  Massachusetts and United States: 2001-2016** | | | | | | | | | **Year** | **Age-Adjusted Rates1** | **Influenza/Pneumonia** | | **Unintentional Injuries** | | **All Causes** | | | **MA** | **US2** | **MA** | **US2** | **MA** | **US2** | | 2001 | Rate  % of Total | 24.0  3.1 | 21.8  2.6 | 21.9 2.6 | 34.3 4.0 | 803.5 | 855.0 | | 2002 | Rate  % of Total | 27.3  4.0 | 22.7  2.7 | 20.5  2.0 | 35.3  4.2 | 793.8 | 846.8 | | 2003 | Rate  % of Total | 26.0  3.6 | 22.0  2.7 | 20.1 2.5 | 37.3  4.3 | 772.6 | 832.7 | | 2004 | Rate  % of Total | 24.9  3.6 | 19.8  2.5 | 19.4  2.5 | 37.7  4.7 | 739.3 | 800.8 | | 2005 | Rate  % of Total | 24.2  3.6 | 20.3  2.6 | 27.4  3.5 | 39.1  4.8 | 720.6 | 798.8 | | 2006 | Rate  % of Total | 22.0  3.3 | 17.7  2.3 | 31.4  4.1 | 38.5  4.8 | 717.6 | 776.4 | | 2007 | Rate  % of Total | 19.4  2.9 | 16.2  2.3 | 30.5  4.0 | 40.0  4.9 | 704.4 | 760.2 | | 2008 | Rate  % of Total | 20.0  3.0 | 16.9  2.2 | 28.6  3.8 | 38.8  5.1 | 703.5 | 758.3 | | 2009 | Rate  % of Total | 16.8  2.6 | 16.2  2.2 | 28.5  3.9 | 37.0  4.8 | 675.1 | 741.0 | | 2010 | Rate  % of Total | 15.9  2.5 | 15.1  2.0 | 28.3  3.9 | 37.1  4.8 | 672.7 | 746.2 | | 2011 | Rate | 16.9 | 15.7 | 30.0 | 39.4 | 674.0 | 740.6 | | % of Total | 2.6 | 2.0 | 4.1 | 4.9 |  |  | | 2012 | Rate | 16.3 | 14.4 | 30.0 | 39.1 | 669.2 | 732.8 | | % of Total | 2.6 | 2.0 | 4.1 | 5.0 |  |  | | 2013 | Rate | 18.0 | 15.9 | 34.0 | 39.4 | 664.1 | 731.9 | | % of Total | 2.8 | 2.2 | 4.6 | 5.0 |  |  | | 2014 | Rate | 15.7 | 15.1 | 39.4 | 40.5 | 662.5 | 724.6 | | % of Total | 2.5 | 2.1 | 5.2 | 5.2 |  |  | | 2015 | Rate | 17.1 | 15.1 | 45.5 | 40.5 | 684.6 | 724.6 | | % of Total | 2.6 | 2.1 | 5.8 | 5.2 |  |  | | 2016 | Rate | 14.1 | 13.5 | 53.6 | 47.4 | 668.9 | 728.8 | |  | % of Total | 2.2 | 1.9 | 6.8 | 5.9 |  |  |   Note: 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. 1. Data coded according to ICD-10. ICD-10 codes used in this publication are listed in the Appendix. Rates are age-adjusted per 100,000 residents using the 2000 US standard population. 2. US data for 2016 obtained from NVSS: Deaths: Final Data for 2016. NVSS, Volume 67, Number 5. July 26, 2018.  15 |

Figure 1. Life Expectancy at Birth, Massachusetts: 1900-2016

Note:Life Expectancy at birth calculated using the Greville Abridged Life Table Method (source: Dublin LI. Length of Life - A Study of the Life Table. Ronald Press Co. New York. 1949).

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Figure 2. Expected Years of Life Remaining1 at Different Ages by Race and Hispanic Ethnicity2, Massachusetts: 2016

Table 3. Years of Life Remaining1 by Race and Hispanic Ethnicity2 and Gender, Massachusetts: 2016

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **At Age:** | All | All Females | White non-Hispanic  Females | Black non-Hispanic  Females | Hispanic  Females | All Males | White non-Hispanic  Males | Black non-Hispanic  Males | Hispanic  Males |
| Birth | 80.7 | 83.1 | 82.9 | 83.6 | 89.0 | 78.0 | 77.8 | 78.9 | 83.3 |
| 1 year old | 80.0 | 82.4 | 82.1 | 83.3 | 88.4 | 77.4 | 77.0 | 78.6 | 82.8 |
| 5 years old | 76.1 | 78.5 | 78.1 | 79.4 | 84.3 | 73.4 | 73.0 | 74.7 | 78.8 |
| 15 years old | 66.1 | 68.6 | 68.2 | 69.5 | 74.4 | 63.5 | 63.1 | 64.8 | 68.8 |
| 25 years old | 56.5 | 58.8 | 58.4 | 59.7 | 64.6 | 54.0 | 53.5 | 55.5 | 59.3 |
| 35 years old | 47.1 | 49.2 | 48.9 | 50.1 | 54.9 | 44.9 | 44.6 | 46.3 | 50.2 |
| 45 years old | 37.9 | 39.7 | 39.4 | 40.6 | 45.4 | 35.9 | 35.6 | 37.1 | 41.5 |
| 55 years old | 28.9 | 30.5 | 30.2 | 31.7 | 36.1 | 27.2 | 26.9 | 28.5 | 33.3 |
| 65 years old | 20.6 | 21.8 | 21.5 | 23.3 | 27.3 | 19.1 | 18.8 | 20.8 | 25.7 |
| 75 years old | 13.1 | 13.9 | 13.6 | 15.7 | 19.4 | 12.0 | 11.7 | 14.4 | 19.2 |
| 85 years old | 7.3 | 7.7 | 7.5 | 9.7 | 13.5 | 6.6 | 6.3 | 9.3 | 14.2 |

1. Years of Life Remaining calculated using the Greville Abridged Life Table Method (source: Dublin LI. Length of Life - A Study of the Life Table. Ronald Press Co. New York. 1949). 2. Population estimates are from 2016 bridged population file, MARS (Modified Age, Race/Ethnicity, and Sex) file. There are well-known difficulties in calculating accurate mortality rates for Massachusetts smaller populations such as Asians, Native Americans and Hispanics- please use caution when interpreting these numbers.

Figure 3. Changes in Age Composition of the Population, Massachusetts: 1900-2010

The age composition of the Massachusetts population is reflected in the changes in life expectancy and historical trends.  From 1900 to 2010, the proportion of Massachusetts residents ages 45 and older increased by 99%, from 21% to 42% of the population and the proportion of persons ages 85 and older increased from 0.2% to 2.2%

**Age Groups**

85+

18

15-44

65-84

45-64

Under 15

Source: US Census Bureau 1900-1999. Resident death data for 2000 are calculated using the Massachusetts (Department of Public Health) Modified Age, Race/Ethnicity, & Sex Estimates 2000 (MMARS00), released October 2006. Population estimates for 2010 are from the NCHS Modified Age, Race/Ethnicity, & Sex Estimates 2009, released July 2010.

Figure 4. Trends in Percentage of Deaths from Selected Causes, Massachusetts: 1842-2016

2016

**Year**

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Table 4. Distribution of Deaths by Place of Occurrence, Massachusetts: 2012-2016

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Type of Place where Death Occurred** | **2012** | | **2013** | | **2014** | | **2015** | | **2016** | |
| Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| Hospital (inpatient/outpatient) | 19,963 | 38% | 20,277 | 37% | 20,534 | 37% | 21,397 | 37% | 20,579 | 36% |
| Dead on Arrival | 623 | 1% | 617 | 1% | 641 | 1% | 602 | 1% | 732 | 1% |
| Nursing Home | 15,377 | 29% | 15,652 | 29% | 15,353 | 28% | 16,099 | 28% | 14,800 | 26% |
| Hospice | --1 | --1 | --1 | --1 | --1 | --1 | 2,628 | 5% | 3,137 | 6% |
| Assisted Living Facility or Rest Home | --1 | --1 | --1 | --1 | --1 | --1 | 1,251 | 2% | 1,332 | 2% |
| At Home | 14,553 | 27% | 15,117 | 28% | 15,096 | 27% | 14,419 | 25% | 14,925 | 26% |
| Other | 2,624 | 5% | 2,842 | 5% | 3,499 | 6% | 1,382 | 2% | 1,446 | 3% |
| Unknown | 29 | 0.05% | 104 | 0.19% | 36 | 0.07% | 7 | 0.01% | 2 | 0% |
| 1. Prior to 2015, these deaths were included in the “Other” category. | | | | | | | | | | |

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Figure 5. Proportion of Deaths Certified by Medical Examiner for Selected Causes of Death, Massachusetts: 2016

Note: See the Appendix section, “Circumstance for Referral to the Office of the Chief Medical Examiner (OCME)” for a list of circumstances requiring referral to the Medical Examiner’s Office.

Note: Other Injuries include motor vehicle-related, poisonings, falls, etc.

Figure 6. Premature Mortality Rate (PMR) by Race and Hispanic Ethnicity, Massachusetts: 2016

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Note: Premature Mortality Rate is defined as deaths that occur before the age of 75 years per 100,000, age-adjusted to the 2000 US standard population under 75 years of age.

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

Table 5. Age-Specific and Age-Adjusted Death Rates for Ages 25-64 Years by Educational Attainment, Massachusetts: 2016

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Age-Specific**  **Rates** | | | **Age-Adjusted Rates** |
| **Years of School Completed** | **25-34 years** | **35-44 years** | **45-64 years** | **25-64 years** |
|  |  |  |  |  |
| High School or Less | 322.9 | 368.3 | 884.3 | **576.7** |
| 13+ Education | 67.5 | 89.7 | 276.7 | **163.7** |
|  |  |  |  |  |

Source: C15001: SEX BY AGE BY EDUCATIONAL ATTAINMENT FOR THE POPULATION 18 YEARS AND OVER Universe: Population 18 Years And Over. 2009-2011 American Community Survey 3-Year Estimates.

Figure 7. Daily Mortality Statistics, Massachusetts: 2016

Every day in 2016, in Massachusetts there were on average:

1 Infant Death

4 Infectious Disease Deaths

14 Respiratory Deaths

5 Alzheimer’s Deaths

33 Heart Disease Deaths

3 Diabetes Deaths

7 Stroke Deaths

13 Injury Deaths

7 Poisoning Deaths

6 Other Intentional & Unintentional Injury Deaths

2 Suicide Deaths

35 Cancer Deaths

**156 deaths1**

2 Other Intentional & Unintentional Injury Deaths

2 Suicide Deaths

2 Falls Deaths

1. Includes 41 deaths due to other causes.

Table 6. Top Ten Leading Underlying Causes of Death by Age, Massachusetts: 2016

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Age Groups (number of deaths)** | | | | | | | | |
| **Rank**1 | **<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 and LBW1 (70) | Unintentional Injuries3 (27) | Unintentional Injuries3 (285) | Unintentional Injuries3 (1,409) | Cancer (2,984) | Cancer (3,316) | Cancer (3,411) | Heart Disease (5,797) | **Cancer (12,691)** |
| **2** | Congenital Malformations (50) | Cancer (20) | Suicide (83) | Cancer (261) | Heart Disease (1,559) | Heart Disease (1,736) | Heart Disease (2,657) | Cancer (2,674) | **Heart Disease (11,923)** |
| **3** | Pregnancy Complications (28) | Heart Disease (8) | Homicide (44) | Suicide (210) | Unintentional Injuries3 (1,097) | Chronic Lower Respiratory Disease5 (616) | Chronic Lower Respiratory Disease5 (838) | Stroke (1,325) | **Unintentional Injuries**3 **(3,887)** |
| **4** | SIDS2 (14) | Congenital Malformations (8) | Cancer (25) | Heart Disease (150) | Chronic Liver Disease (389) | Stroke (303) | Stroke (608) | Alzheimer’s Disease (1,234) | **Chronic Lower Respiratory Disease**5 **(2,676)** |
| 25  **5** | Complications of Placenta (11) | Ill-Defined Conditions4 (7) | Ill-Defined Conditions4 (16) | Ill-Defined Conditions4 (79) | Chronic Lower Respiratory Disease5 (300) | Diabetes (299) | Alzheimer’s Disease (371) | Chronic Lower Respiratory Disease5 (889) | **Stroke (2,468)** |
| **6** | Respiratory Distress (9) | Suicide (7) | Heart Disease (13) | Chronic Liver Disease (65) | Diabetes (254) | Unintentional Injuries3 (255) | Nephritis (320) | Influenza & Pneumonia (652) | **Alzheimer’s Disease (1,710)** |
| **7** | Necrotizing Entercolitis (8) | Other Infections (4) | Congenital Malformations (5) | Homicide (65) | Suicide (243) | Nephritis (207) | Diabetes (317) | Unintentional Injuries3 (508) | **Diabetes (1,267)** |
| **8** | Intrauterine Hypoxia (6) | In Situ Neoplasms (3) | Injuries of Undetermined Intent3 (4) | Chronic Lower Respiratory Disease5 (28) | Stroke (206) | Influenza & Pneumonia (172) | Unintentional Injuries3 (301) | Nephritis (502) | **Influenza & Pneumonia (1,243)** |
| **9** | Pulmonary Hemorrhage (4) | Homicide (3) | Diabetes (3) | Diabetes (27) | Septicemia (123) | Septicemia (167) | Influenza & Pneumonia (289) | Ill-Defined Conditions4 (449) | **Nephritis (1,140)** |
| **10** | Neonatal Hemorrhage (4) | Stroke (2) | Medical Complications (3) | Septicemia (24) | Hypertension (111) | Chronic Liver Disease (145) | Septicemia (258) | Diabetes (367) | **Ill-Defined Conditions**4 **(890)** |
| **All Causes** | **Total (283)** | **Total (115)** | **Total (526)** | **Total (2,742)** | **Total (9,270)** | **Total (9,332)** | **Total (12,870)** | **Total (21,813)** | **Total (56,953)** |

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

1. LBW: Low birthweight.

2. SIDS: Sudden Infant Death Syndrome

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

4. Ill-Defined Conditions: Includes ICD-10 codes R00-R99.

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).

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 7. Leading Underlying Causes of Death, Numbers and  Age-Specific Rates by Gender, Massachusetts: 2016 | | | | | | | | | | |
|  | |  | | **Total** | | | **Female** | | **Male** | |
| **Age** | | **Cause of Death1** | | **Number** | | **Rate2** | **Number** | **Rate2** | **Number** | **Rate2** |
| **1-14 years** | | **TOTAL** | **115** | **10.9** | | **53** | **10.3** | **62** | **11.5** |
|  | | Unintentional Injuries | 27 | 2.6 | | 9 | 1.7 | 18 | 3.3 |
|  | | Cancer | 20 | 1.9 | | 9 | 1.7 | 11 | 2.0 |
|  | | Heart Disease | 8 | 0.8 | | 4 | --4 | 4 | --4 |
|  | | Congenital Malformations | 8 | 0.8 | | 6 | 1.2 | 2 | --4 |
| **15-24 years** | | **TOTAL** | **526** | **55.0** | | **137** | **28.8** | **389** | **81.3** |
|  | | Unintentional Injuries | 285 | 29.8 | | 76 | 16.0 | 209 | 43.7 |
|  | | Suicide | 83 | 8.7 | | 18 | 3.8 | 65 | 13.6 |
|  | | Homicide | 44 | 4.6 | | 4 | --4 | 40 | 8.4 |
|  | | Cancer | 25 | 2.6 | | 11 | 2.3 | 14 | 2.9 |
| **25-44 years** | | **TOTAL** | **2,742** | **154.3** | | **830** | **92.6** | **1,912** | **217.1** |
|  | | Unintentional Injuries | 1,409 | 79.3 | | 345 | 38.5 | 1,064 | 120.8 |
|  | | Cancer | 261 | 14.7 | | 152 | 17.0 | 109 | 12.4 |
|  | | Suicide | 210 | 11.8 | | 48 | 5.4 | 162 | 18.4 |
|  | | Heart Disease | 150 | 8.4 | | 42 | 4.7 | 108 | 12.3 |
| **45-64 years** | | **TOTAL** | **9,270** | **493.6** | | **3,544** | **365.2** | **5,726** | **630.9** |
|  | | Cancer | 2,984 | 158.9 | | 1,404 | 144.7 | 1,580 | 174.1 |
|  | | Heart Disease | 1,559 | 83 | | 445 | 45.9 | 1,114 | 122.7 |
|  | | Unintentional Injuries | 1,097 | 58.4 | | 320 | 33.0 | 777 | 85.6 |
|  | | Chronic Liver Disease | 389 | 20.7 | | 132 | 13.6 | 257 | 28.3 |
| **65+ years3** | | **TOTAL** | **44,015** | **4,098.4** | | **24,261** | **3,972.7** | **19,753** | **4,263.8** |
|  | | Heart Disease | 10,190 | 948.8 | | 5,388 | 882.3 | 4,802 | 1,036.5 |
|  | | Cancer | 9,401 | 875.4 | | 4,589 | 751.4 | 4,812 | 1,038.7 |
|  | | Chronic Lower Respiratory Disease | 2,343 | 218.2 | | 1,335 | 218.6 | 1,008 | 217.6 |
|  | | Stroke | 2,236 | 208.2 | | 1,441 | 236.0 | 795 | 171.6 |

1. Cause of Death classified using ICD-10 ranked based on number of deaths for all persons at specific age group. See Appendix for a list of ICD-10 codes. 2. Number of deaths per 100,000 residents in each age group. 3. See Table 8 for leading causes of death for detailed age groups for persons ages 65+ years. 4. Calculations based on values 1-4 are excluded.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 8. Leading Underlying Causes of Death, Numbers and Age-Specific Rates  (Ages 65 and Older) by Gender, Massachusetts: 2016 | | | | | | | | |
|  |  |  | **Total** | | **Female** | | **Male** | |
| **Age** | **Cause of Death1** |  | **Number** | **Rate2** | **Number** | **Rate2** | **Number** | **Rate2** |
| **65-74** | **TOTAL** | | **9,332** | **1,523.5** | **3,982** | **1,210.2** | **5,350** | **1,887.1** |
|  | Cancer | | 3,316 | 541.4 | 1,519 | 461.7 | 1,797 | 633.9 |
|  | Heart Disease | | 1,736 | 283.4 | 602 | 183.0 | 1,134 | 400.0 |
|  | Chronic Lower Respiratory Disease | | 616 | 100.6 | 309 | 93.9 | 307 | 108.3 |
|  | Diabetes | | 303 | 49.5 | 143 | 43.5 | 160 | 56.4 |
| **75-84** | **TOTAL** | | **12,870** | **4,252.8** | **6,384** | **3,649.9** | **6,485** | **5,077.7** |
|  | Cancer | | 3,411 | 1,127.1 | 1,642 | 938.8 | 1,769 | 1,385.1 |
|  | Heart Disease | | 2,657 | 878.0 | 1,237 | 707.2 | 1,420 | 1,111.8 |
|  | Chronic Lower Respiratory Disease | | 838 | 276.9 | 470 | 268.7 | 368 | 288.1 |
|  | Stroke | | 608 | 200.9 | 338 | 193.2 | 270 | 211.4 |
| **85+** | **TOTAL** | | **21,813** | **13,735.6** | **13,895** | **13,017.0** | **7,918** | **15,209.1** |
|  | Heart Disease | | 5,797 | 3650.4 | 3,549 | 3,324.7 | 2,248 | 4,318.0 |
|  | Cancer | | 2,674 | 1683.8 | 1,428 | 1,337.8 | 1,246 | 2,393.3 |
|  | Stroke | | 1,325 | 834.4 | 960 | 899.3 | 365 | 701.1 |
|  | Alzheimer’s Disease | | 1,234 | 777 | 916 | 858.1 | 318 | 610.8 |

1. Cause of Death classified according to ICD-10 ranked based on number of deaths for all persons at specific age group. See Appendix for a list of ICD-10 codes. 2. Number of deaths per 100,000 residents in each age group.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 9. Leading Causes of Death1 and Age-Adjusted Rates by Race and Hispanic Ethnicity, Massachusetts: 2016   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **White non-Hispanic2** | | | **Black non-Hispanic2** | | | **Asian non-Hispanic2** | | | **Hispanic2** | | | | **Cause3** | **#** | **Rate4** | **Cause3** | **#** | **Rate4** | **Cause3** | **#** | **Rate4** | **Cause3** | **#** | **Rate4** | | **Total** | **50,654** | **687.9** | **Total** | **2,504** | **612.4** | **Total** | **1,028** | **324.7** | **Total** | **2,126** | **473.2** | | Cancer | 11,265 | 154.3 | Cancer | 566 | 133.7 | Cancer | 326 | 95.0 | Cancer | 403 | 91.7 | | Heart Disease | 10,871 | 139.2 | Heart Disease | 443 | 113.9 | Heart Disease | 166 | 55.3 | Unintentional Injuries5 | 370 | 53.7 | | Unintentional Injuries5 | 3,217 | 58.3 | Unintentional Injuries5 | 174 | 35.5 | Stroke | 76 | 26.4 | Heart Disease | 327 | 87.5 | | Chronic Lower Respiratory Disease | 2,521 | 33.8 | Diabetes | 132 | 32.9 | Unintentional Injuries5 | 58 | 14.8 | Stroke | 81 | 22.4 | | Stroke | 2,150 | 27.4 | Stroke | 123 | 32.8 | Hypertension | 34 | 12.8 | Diabetes | 79 | 21.8 | | Alzheimer’s Disease | 1,613 | 19.6 | Nephritis | 81 | 20.7 | Suicide | 25 | 5.4 | Chronic Liver Disease | 56 | 11.0 | | Influenza & Pneumonia | 1,140 | 14.6 | Chronic Lower Respiratory Disease | 64 | 16.3 | Diabetes | 24 | 8.4 | Perinatal Conditions | 49 | 4.4 | | Diabetes | 1,012 | 13.7 | Septicemia | 56 | 14.1 | Chronic Lower Respiratory Disease | 24 | 8.5 | Chronic Lower Respiratory Disease | 47 | 12.3 | | Nephritis | 990 | 12.9 | Homicide | 49 | 8.9 | Nephritis | 22 | 7.6 | Ill-Defined Conditions | 41 | 7.4 | | Ill-Defined Conditions | 785 | 10.8 | Alzheimer’s Disease | 47 | 13.8 | Septicemia | 18 | 5.8 | Suicide | 38 | 5.0 | | | |
| 28 |

|  |  |  |
| --- | --- | --- |
| **Total** | | |
| **Cause3** | **#** | **Rate4** |
| **Total** | **56,953** | **668.9** |
| Cancer | 12,691 | 149.8 |
| Heart Disease | 11,923 | 134.8 |
| Unintentional Injuries5 | 3,887 | 53.6 |
| Chronic Lower Respiratory Disease | 2,676 | 31.5 |
| Stroke | 2,468 | 27.9 |
| Alzheimer’s Disease | 1,710 | 18.7 |
| Diabetes | 1,267 | 14.9 |
| Influenza & Pneumonia | 1,243 | 14.1 |
| Nephritis | 1,140 | 13.2 |
| Ill-Defined Conditions | 890 | 10.6 |

1. Ranking based on number of deaths. 2. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Technical Notes in the Appendix for a more detailed explanation. 3. Underlying Cause of Death based on ICD-10. Please see Appendix for a list of ICD-10 codes used. 4. All rates are age-adjusted per 100,000 residents using the 2000 US standard population. 5. Unintentional injuries such as motor vehicle-related deaths, poisonings, falls, fires, and drownings that were not intended to occur.

# Figure 8. Number of Heart DiseaseDeathsby Age Group and Gender, Massachusetts: 2016

29

Note: The ICD-10 codes used for heart disease deaths were I00-I09, I11, I13, and I20-I51.

29

# Figure 9. Age Distribution by Race and Hispanic Ethnicity for Heart Disease Deaths, Massachusetts: 2016

30

Note: The ICD-10 codes used for heart disease deaths were I00-I09, I11, I13, and I20-I51.

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

30

# Figure 10. Number of Cancer Deaths by Age Group and Gender, Massachusetts: 2016

31

Note: The ICD-10 codes used for cancer deaths were C00-C97.

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

# Figure 11. Age Distribution by Race and Hispanic Ethnicity for Cancer Deaths, Massachusetts: 2016

32

Note: The ICD-10 codes used for cancer deaths were C00-C97.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 10. Heart Disease and Cancer Deaths by Race and Hispanic Ethnicity and Gender, Age-Adjusted Rates1,**  **Massachusetts: 2003-2016** | | | | | | | |
| **Heart Disease** | | | | | | | |
|  | **White non-Hispanic2** | | | | Black non-Hispanic2 | | |
| **Year** | **Male** | **Female** | **Total** | | **Male** | **Female** | **Total** |
| 2003 | 250.3 | 160.2 | 198.5 | | 272.1 | 188.5 | 223.9 |
| 2004 | 233.1 | 150.3 | 185.7 | | 268.1 | 148.3 | 198.8 |
| 2005 | 220.6 | 139.1 | 174.9 | | 233.7 | 174.5 | 199.8 |
| 2006 | 216.5 | 138.8 | 172.2 | | 222.3 | 127.6 | 165.3 |
| 2007 | 216.2 | 134.2 | 168.5 | | 233.5 | 142.7 | 180.8 |
| 2008 | 217.1 | 133.1 | 167.9 | | 226.7 | 151.7 | 181.7 |
| 2009 | 211.3 | 122.6 | 158.4 | | 217.3 | 157.3 | 181.6 |
| 2010 | 197.5 | 119.6 | 152.9 | | 222.3 | 119.4 | 159.7 |
| 2011 | 196.0 | 113.0 | 148.0 | | 185.6 | 114.1 | 143.7 |
| 2012  33 | 187.5 | 113.0 | 144.7 | | 167.3 | 125.2 | 144.3 |
| 2013 | 192.3 | 114.3 | 147.4 | | 164.6 | 99.1 | 128.3 |
| 2014 | 185.5 | 109.4 | 142.0 | | 168.3 | 98.0 | 127.9 |
| 2015 | 184.8 | 111.1 | 142.7 | | 156.6 | 85.6 | 114.3 |
| 2016 | 179.8 | 109.1 | 139.2 | | 147.5 | 90.8 | 113.9 |
|  | **Asian non-Hispanic2** | | | | **Hispanic2** | | |
| **Year** | **Male** | **Female** | | **Total** | **Male** | **Female** | **Total** |
| 2003 | 115.2 | 65.0 | | 87.6 | 124.8 | 96.2 | 109.7 |
| 2004 | 56.9 | 54.3 | | 56.1 | 129.9 | 77.4 | 100.3 |
| 2005 | 77.5 | 48.2 | | 61.3 | 118.5 | 83.7 | 99.2 |
| 2006 | 73.6 | 70.0 | | 72.8 | 124.2 | 84.9 | 102.3 |
| 2007 | 83.3 | 52.9 | | 67.4 | 124.9 | 61.8 | 88.3 |
| 2008 | 86.0 | 51.7 | | 66.3 | 93.2 | 66.1 | 78.3 |
| 2009 | 69.6 | 51.3 | | 60.1 | 111.6 | 62.7 | 83.8 |
| 2010 | 64.8 | 50.4 | | 57.1 | 90.8 | 66.8 | 76.9 |
| 2011 | 74.1 | 61.0 | | 67.5 | 114.9 | 72.0 | 89.7 |
| 2012 | 74.7 | 43.2 | | 57.1 | 106.8 | 70.5 | 85.8 |
| 2013 | 67.7 | 43.2 | | 54.4 | 81.3 | 56.4 | 67.7 |
| 2014 | 74.3 | 42.6 | | 57.5 | 83.4 | 65.4 | 72.9 |
| 2015 | 78.6 | 47.2 | | 60.6 | 104.6 | 77.6 | 90.0 |
| 2016 | 61.5 | 50.4 | | 55.3 | 103.7 | 73.2 | 87.5 |
| **Table 10 (continued). Heart Disease and Cancer Deaths by Race and Hispanic Ethnicity and Gender, Age-Adjusted Rates, Massachusetts: 2003-2016** | | | | | | | |
| **Cancer** | | | | | | | |
|  | **White non-Hispanic2** | | | | Black non-Hispanic2 | | |
| **Year** | **Male** | **Female** | **Total** | | **Male** | **Female** | **Total** |
| 2003 | 237.1 | 169.4 | 195.7 | | 304.5 | 199.0 | 238.7 |
| 2004 | 230.4 | 168.4 | 192.5 | | 277.6 | 155.7 | 200.1 |
| 2005 | 226.1 | 163.2 | 188.1 | | 264.2 | 168.1 | 204.1 |
| 2006 | 234.9 | 161.5 | 190.0 | | 265.6 | 180.9 | 212.4 |
| 2007 | 226.0 | 156.5 | 183.2 | | 270.7 | 159.7 | 201.7 |
| 2008 | 221.4 | 154.8 | 180.6 | | 255.0 | 163.7 | 197.9 |
| 2009 | 212.7 | 157.0 | 177.7 | | 244.7 | 164.7 | 193.1 |
| 2010 | 211.9 | 150.8 | 174.9 | | 244.0 | 131.3 | 174.3 |
| 2011  34 | 206.5 | 145.9 | 170.4 | | 209.9 | 162.3 | 178.0 |
| 2012 | 201.3 | 149.1 | 170.2 | | 229.4 | 150.7 | 180.6 |
| 2013 | 193.2 | 144.0 | 163.8 | | 207.0 | 141.7 | 166.3 |
| 2014 | 192.1 | 137.4 | 159.8 | | 194.0 | 114.1 | 145.0 |
| 2015 | 185.2 | 138.6 | 157.3 | | 161.8 | 116.3 | 133.2 |
| 2016 | 185.2 | 133.2 | 154.3 | | 165.3 | 113.6 | 133.7 |
|  | **Asian non-Hispanic2** | | | | **Hispanic2** | | |
| **Year** | **Male** | **Female** | | **Total** | **Male** | **Female** | **Total** |
| 2003 | 134.6 | 87.4 | | 109.3 | 110.0 | 76.6 | 90.0 |
| 2004 | 109.5 | 79.7 | | 93.1 | 125.6 | 82.5 | 100.4 |
| 2005 | 138.9 | 79.5 | | 106.1 | 118.2 | 97.3 | 105.7 |
| 2006 | 126.0 | 91.7 | | 107.2 | 119.9 | 74.3 | 93.7 |
| 2007 | 124.4 | 76.4 | | 98.4 | 125.0 | 90.0 | 104.7 |
| 2008 | 132.1 | 89.3 | | 109.0 | 141.2 | 83.1 | 107.8 |
| 2009 | 123.2 | 71.0 | | 94.3 | 129.9 | 98.2 | 111.8 |
| 2010 | 128.0 | 98.1 | | 111.8 | 129.9 | 87.2 | 103.9 |
| 2011 | 127.1 | 92.6 | | 107.3 | 125.6 | 84.0 | 101.1 |
| 2012 | 137.3 | 78.8 | | 104.6 | 150.5 | 94.4 | 117.7 |
| 2013 | 106.3 | 66.3 | | 84.4 | 122.6 | 91.7 | 105.1 |
| 2014 | 131.0 | 83.3 | | 104.7 | 115.9 | 89.3 | 100.2 |
| 2015 | 112.9 | 86.5 | | 97.9 | 114.3 | 83.3 | 95.6 |
| 2016 | 124.8 | 71.9 | | 95.0 | 109.2 | 80.3 | 91.7 |
| 1. Rates are per 100,000 age-adjusted to the 2000 US standard population. 2. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Technical Notes in the Appendix for a more detailed explanation. | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 11. Number and Age-Adjusted Rates of Cancer Deaths by Selected Causes  and Gender, Massachusetts: 2016 | | | | | | | | |
|  |  |  | | |  | |  | |
| **Cause of Death1** | **ICD-10**  **Code** | **Total** | | | **Female** | | **Male** | |
|  |  | **#** | **Rate2,3** | | **#** | **Rate2** | **#** | **Rate2** |
| **Total Cancer Deaths** | **C00-C97** | **12,691** | | **149.8** | **6,165** | **129.0** | **6,526** | **180.5** |
|  |  |  |  | |  |  |  |  | |  |
| Bladder | C67 | 430 | 5.0 | | 115 | 2.3 | 315 | 9.2 |
| Brain and nervous system | C70-C72 | 393 | 4.8 | | 171 | 3.9 | 222 | 5.9 |
| Cervix | C53 | 48 | 1.1 | | 48 | 1.1 | NA | NA |
| Colorectal | C18-C21 | 974 | 11.6 | | 516 | 10.9 | 458 | 12.8 |
| Esophageal | C15 | 372 | 4.3 | | 85 | 1.7 | 287 | 7.5 |
| Female breast4 | C504 | 775 | 16.8 | | 775 | 16.8 | NA | NA |
| Hodgkin’s disease | C81 | 20 | 0.2 | | 10 | 0.2 | 10 | 0.3 |
| Kidney and other urinary organs | C64, C65 | 263 | 3.1 | | 99 | 2.0 | 164 | 4.5 |
| Leukemia | C91-C95 | 477 | 5.7 | | 219 | 4.5 | 258 | 7.5 |
| Lung | C33, C34 | 3,168 | 37.3 | | 1,570 | 32.5 | 1,598 | 43.8 |
| Melanoma of the skin | C43 | 187 | 2.2 | | 69 | 1.4 | 118 | 3.3 |
| Multiple myeloma | C88, C90 | 269 | 3.1 | | 119 | 2.3 | 150 | 4.2 |
| Non-Hodgkin’s lymphoma | C82-C85 | 433 | 5.2 | | 204 | 4.2 | 229 | 6.5 |
| Ovarian | C56 | 313 | 6.6 | | 313 | 6.6 | NA | NA |
| Pancreatic | C25 | 985 | 11.6 | | 477 | 9.9 | 508 | 13.7 |
| Prostate | C61 | 633 | 18.6 | | NA | NA | 633 | 18.6 |
| Stomach | C16 | 250 | 2.9 | | 98 | 2.0 | 152 | 4.1 |
| Uterus | C54, C55 | 210 | 4.3 | | 210 | 4.3 | NA | NA |
| All other cancers | Residual | 2,491 | 29.2 | | 1,067 | 22.2 | 1,424 | 38.5 |
| 1. Common terms are used to describe the causes of cancer deaths. For detailed terminology of cancer sites, please see the ICD-10 code list in the Appendix. 2. Rates are per 100,000 age-adjusted to the 2000 US standard population. 3. The total resident population is used to calculate all "Total Rates" except for ICD-10 codes C50, C53-C56, which are based on the total female population, and ICD-10 C61, which is based on the total male population. 4. Includes only female breast cancer. | | | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Table** **12. Selected Causes of Cancer Deaths by Age, Massachusetts: 2016** | | | | |
| **Age** | **Cause of Death1** | **ICD-10 Code** | **Number** | **Age-Specific Rate2** |
| **1-14 years** | **Total** |  | **20** | **1.9** |
|  | Brain and nervous system | C70-C72 | 7 | 0.7 |
|  | Leukemia | C91-C95 | 2 | --3 |
|  | Non-Hodgkin’s lymphoma | C82-C85 | 1 | --3 |
|  |  |  |  |  |
| **15-24 years** | **Total** |  | **25** | **2.6** |
|  | Leukemia | C91-C95 | 6 | 0.6 |
|  | Brain and nervous system | C70-C72 | 5 | 0.5 |
|  | Colorectal | C18-C21 | 1 | --3 |
|  | Melanoma of the skin | C43 | 1 | --3 |
| 25-44 years | **Total** |  | **261** | **14.7** |
|  | Female breast4 | C50 | 48 | 5.4 |
|  | Colorectal | C18-C21 | 39 | 2.2 |
|  | Brain and nervous system | C70-C72 | 27 | 1.5 |
|  | Leukemia | C91-C95 | 20 | 1.1 |
| **45-64 years** | **Total** |  | **2,984** | **158.9** |
|  | Lung | C33, C34 | 723 | 38.5 |
|  | Colorectal | C18-C21 | 247 | 13.2 |
|  | Female breast4 | C50 | 243 | 25.0 |
|  | Pancreas | C25 | 240 | 12.8 |
| **65+ years** | **Total** |  | **9,401** | **875.4** |
|  | Lung | C33, C34 | 2,429 | 226.2 |
|  | Pancreas | C25 | 737 | 68.6 |
|  | Colorectal | C18-C21 | 687 | 64.0 |
|  | Prostate5 | C61 | 574 | 123.9 |
|  |  |  |  |  |
| **65-74 years** | **Total** |  | **3,316** | **541.4** |
|  | Lung | C33, C34 | 966 | 157.7 |
|  | Pancreas | C25 | 280 | 45.7 |
|  | Colorectal | C18-C21 | 203 | 33.1 |
|  | Female breast4 | C50 | 168 | 51.1 |
| **75-84 years** | **Total** |  | **3,411** | **1,127.1** |
|  | Lung | C33, C34 | 947 | 312.9 |
|  | Pancreas | C25 | 284 | 93.8 |
|  | Colorectal | C18-C21 | 244 | 80.6 |
|  | Prostate5 | C61 | 192 | 150.3 |
| **85+ years** | **Total** |  | **2,674** | **1,683.8** |
|  | Lung | C33, C34 | 516 | 324.9 |
|  | Prostate5 | C61 | 264 | 507.1 |
|  | Colorectal | C18-C21 | 240 | 151.1 |
|  | Pancreas | C25 | 173 | 108.9 |

1. Common terms are used to describe causes of cancer death. For detailed terminology, please see the ICD-10 codes listed in the Appendix. 2. Number of deaths per 100,000 residents in each age group. 3. Calculations based on values 1-4 are excluded. 4. Calculation based on female population in specified age group. 5. Calculation based on male population in specified age group.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 13. Leading Causes of Cancer Deaths and Age-Adjusted Rates by Race and Hispanic Ethnicity, Massachusetts: 2016   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **White non-Hispanic1** | | | **Black non-Hispanic1** | | | **Asian non-Hispanic1** | | | **Hispanic1** | | | | **Cause2** | **#** | **Rate3** | **Cause2** | **#** | **Rate3** | **Cause2** | **#** | **Rate3** | **Cause2** | **#** | **Rate3** |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Lung | 2,895 | 39.5 | Lung | 113 | 26.5 | Lung | 93 | 29.1 | Lung | 50 | 12.4 | | Pancreatic | 883 | 12.1 | Colorectal | 53 | 12.7 | Stomach | 25 | 6.9 | Colorectal | 33 | 6.7 | | Colorectal | 853 | 11.9 | Pancreatic | 52 | 12.2 | Colorectal | 24 | 6.8 | Female Breast4 | 29 | 9.8 | | Female Breast4 | 670 | 17.2 | Prostate5 | 50 | 37.3 | Female Breast4 | 23 | 10.3 | Pancreatic | 27 | 6.9 | | Prostate5 | 551 | 18.3 | Female Breast4 | 40 | 15.5 | Pancreatic | 13 | 4.1 | Non-Hodgkin’s Lymphoma | 20 | 4.6 | | **Total Cancer** | **11,265** | **154.3** | **Total Cancer** | **566** | **133.7** | **Total Cancer** | **326** | **95.0** | **Total Cancer** | **403** | **91.7** | |
| 1. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see the Technical Notes in the Appendix for a more detailed explanation. 2. ICD-10 codes used. Please see the ICD-10 codes listing in the Appendix for detailed terminology. 3. Rates are per 100,000 age-adjusted to the 2000 US standard population. 4. Calculation based on female population. 5. Calculation based on male population. |

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|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 14. Number, Percent, and Age-Adjusted Rates of Stroke Deaths by Typeand Gender, Massachusetts: 2016 | | | | | | | | | | |
| **Cause of Death** | **ICD-10 Code** | **Total** | | | **Female** | | | **Male** | | |
| **#** | **%** | **Rate1** | **#** | **%** | **Rate1** | **#** | **%** | **Rate1** |
| **Total Stroke Deaths** | **I60-I69** | **2,468** | **100%** | **27.9** | **1,542** | **100%** | **27.8** | **926** | **100%** | **27.3** |
| Subarachnoid hemorrhage | I60 | 105 | 4.3% | 1.3 | 65 | 4.2% | 1.4 | 40 | 4.3% | 1.1 |
|  |  |  |  |  |  |  |  |  |  |  |
| Intracerebral and other intracranial hemorrhage | I61-I62 | 517 | 20.9% | 6.0 | 281 | 18.2% | 5.4 | 236 | 25.5% | 6.9 |
|  |  |  |  |  |  |  |  |  |  |  |
| Cerebral infarction | I63 | 217 | 8.8% | 2.5 | 138 | 8.9% | 2.5 | 79 | 8.5% | 2.3 |
|  |  |  |  |  |  |  |  |  |  |  |
| Stroke, not specified | I64 | 1,129 | 45.7% | 12.5 | 743 | 48.2% | 12.8 | 386 | 41.7% | 11.5 |
|  |  |  |  |  |  |  |  |  |  |  |
| Other | I67, I69 | 500 | 20.3% | 5.6 | 315 | 20.4% | 5.6 | 185 | 20.0% | 5.6 |
|  |  |  |  |  |  |  |  |  |  |  |

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

# Figure 12. Number of StrokeDeathsby Age Group and Gender, Massachusetts: 2016

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Note: The ICD-10 codes used for stroke deaths were I60-I69.

1.**ICD-10:** I60-I69. **Please note that counts and rates may differ from other sources. Please see “Note to readers” (page 7) for details.**

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# Figure 13. Age Distribution by Race and Hispanic Ethnicity for Stroke Deaths, Massachusetts: 2016

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Note: The ICD-10 codes used for stroke deaths were I60-I69.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 15. Stroke Deaths by Race and Hispanic Ethnicity and Gender, Age-Adjusted Rates1, Massachusetts: 2003-2016** | | | | | | | |
|  | **White non-Hispanic2** | | | | Black non-Hispanic2 | | |
| **Year** | **Male** | **Female** | **Total** | | **Male** | **Female** | **Total** |
| 2003 | 44.7 | 43.9 | 44.7 | | 45.9 | 54.9 | 52.7 |
| 2004 | 42.8 | 40.4 | 41.9 | | 52.1 | 58.3 | 56.2 |
| 2005 | 37.7 | 37.3 | 37.9 | | 50.6 | 44.9 | 47.5 |
| 2006 | 37.5 | 35.6 | 36.7 | | 57.6 | 51.9 | 54.5 |
| 2007 | 35.4 | 34.0 | 34.8 | | 34.4 | 36.4 | 35.6 |
| 2008 | 33.1 | 33.4 | 33.6 | | 53.5 | 40.7 | 45.5 |
| 2009 | 31.7 | 31.7 | 32.0 | | 51.7 | 36.0 | 42.7 |
| 2010 | 30.5 | 30.1 | 30.5 | | 46.2 | 39.9 | 42.9 |
| 2011 | 30.4 | 29.6 | 30.2 | | 34.4 | 29.8 | 32.0 |
| 2012 | 27.6 | 28.0 | 28.1 | | 37.2 | 34.2 | 36.1 |
| 2013  41 | 26.4 | 27.9 | 27.7 | | 33.4 | 29.6 | 31.3 |
| 2014 | 26.8 | 28.8 | 28.4 | | 35.8 | 30.2 | 32.7 |
| 2015 | 27.4 | 28.0 | 28.0 | | 33.1 | 24.7 | 28.0 |
| 2016 | 26.8 | 27.2 | 27.4 | | 29.1 | 34.0 | 32.8 |
|  | **Asian non-Hispanic2** | | | | **Hispanic2** | | |
| **Year** | **Male** | **Female** | | **Total** | **Male** | **Female** | **Total** |
| 2003 | 39.3 | 28.7 | | 33.4 | 44.3 | 36.0 | 39.3 |
| 2004 | 35.2 | 32.7 | | 34.1 | 39.7 | 32.6 | 35.5 |
| 2005 | 28.2 | 27.5 | | 28.1 | 33.2 | 24.5 | 28.2 |
| 2006 | 34.5 | 41.9 | | 39.2 | 26.5 | 29.6 | 28.8 |
| 2007 | 26.7 | 29.5 | | 28.4 | 32.0 | 26.7 | 28.9 |
| 2008 | 23.4 | 27.1 | | 25.6 | 23.9 | 18.4 | 21.1 |
| 2009 | 38.1 | 22.0 | | 28.1 | 23.9 | 16.7 | 19.9 |
| 2010 | 35.2 | 27.0 | | 30.8 | 31.1 | 22.1 | 26.0 |
| 2011 | 21.3 | 25.5 | | 24.2 | 22.0 | 23.3 | 23.1 |
| 2012 | 31.0 | 24.4 | | 27.0 | 19.2 | 27.2 | 24.7 |
| 2013 | 16.0 | 25.6 | | 21.6 | 25.7 | 18.1 | 21.2 |
| 2014 | 19.1 | 20.8 | | 20.4 | 24.8 | 22.2 | 23.4 |
| 2015 | 28.6 | 26.4 | | 27.3 | 23.7 | 22.5 | 23.5 |
| 2016 | 24.9 | 26.7 | | 26.4 | 26.5 | 19.6 | 22.4 |
| 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 Technical Notes in the Appendix for a more detailed explanation. | | | | | | | |

# Figure 14. DiabetesDeaths, Massachusetts: 2002-2016

Note: The ICD-10 codes used for diabetes deaths were E10-E14.

Table 16. Diabetes Deaths by Gender, Massachusetts: 2016

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Proportion of all Deaths (%)1 | | | Number | | |
| Cause of Death | Males | Females | Total | Males | Females | Total |
| Underlying | 2.5% | 2.0% | 2.2% | 700 | 567 | 1,267 |
| Contributing/Associated | 5.0% | 4.1% | 4.5% | 1,390 | 1,199 | 2,589 |
| **Total Diabetes-Related** | **7.5%** | **6.1%** | **6.8%** | **2,090** | **1,766** | **3,856** |

Note: The ICD-10 codes used for diabetes deaths were E10-E14.

1. Proportions are out of total deaths due to all causes.

Table 17. Diabetes Deaths by Race and Hispanic Ethnicity, Massachusetts: 2016

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Race/Hispanic Ethnicity** | | | | |
| Cause of Death | White non-Hispanic | Black non-Hispanic | Hispanic | Asian non-Hispanic | Total |
|  | Number | | | | |
| Underlying | 1,012 | 132 | 79 | 24 | 1,267 |
| Contributing/Associated | 2,185 | 181 | 134 | 53 | 2,589 |
| *Total Diabetes-Related* | 3,197 | 313 | 213 | 77 | 3,856 |
| ***Total Deaths (All Causes)*** | ***50,654*** | ***2,504*** | ***2,126*** | ***1,028*** | ***56,953*** |
|  | Proportion of all deaths (%) | | | | |
| Underlying | 2.0 | 5.3 | 3.7 | 2.3 | 2.2 |
| Contributing/Associated | 4.3 | 7.2 | 6.3 | 5.2 | 4.5 |
| ***Total Diabetes-Related*** | ***6.3*** | ***12.5*** | ***10.0*** | ***7.5*** | ***6.8*** |
|  | Death Rates1 | | | | |
| Underlying | 13.7 | 32.9 | 21.8 | 8.4 | *14.9* |
| Contributing/Associated | 29.3 | 46.5 | 35.8 | 17.7 | *30.3* |
| ***Total Diabetes-Related*** | ***43.0*** | ***79.4*** | ***57.6*** | ***26.1*** | ***45.2*** |

Note: The ICD-10 codes used for diabetes deaths were E10-E14.

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

# Figure 15. Age Distribution of Diabetes Deaths, Massachusetts: 2016

Note: The ICD-10 codes used for diabetes deaths were E10-E14.

# Figure 16. DiabetesDeathRates, Massachusetts: 2001-2016

Note: The ICD-10 codes used for diabetes deaths were E10-E14.

Note: Rates are per 100,000 age-adjusted to the 2000 U.S. standard population.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 18. Injury Deaths by Leading Causes, Gender, Age: Numbers, Age-Adjusted, and Age-Specific Rates, Massachusetts: 2016 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **All Injury Deaths1** | | | | | **Poisoning2** | | | | | | | **Falls** | | | | | | | | **Hanging, Strangulation, or Suffocation** | | | | | | | **Motor Vehicle-Related3** | | | | | | | | **Firearm** | | | | | | | | | **Other4** | | | | | | | |
|  | Number | | | Rate5 | | Number | | | Rate5 | | | | Number | | | | Rate5 | | | | Number | | | Rate5 | | | | Number | | | | Rate5 | | | | Number | | | | Rate5 | | | | | Number | | | | Rate5 | | | |
| **All Persons** | **4,793** | | **66.2** | | | **2,396** | | **35.4** | | | | **735** | | | | **8.5** | | | | **441** | | | **5.9** | | | | **466** | | | | **6.3** | | | | **242** | | | | **3.4** | | | **513** | | | | **6.7** | | | |
| <1 | 4 | | --6 | | | 0 | | 0.0 | | | | 0 | | | | 0.0 | | | | 2 | | | --6 | | | | 1 | | | | --6 | | | | 0 | | | | 0.0 | | | 1 | | | | --6 | | | |
| 1-14 | 39 | | 3.7 | | | 2 | | --6 | | | | 1 | | | | --6 | | | | 8 | | | 0.8 | | | | 9 | | | | 0.9 | | | | 0 | | | | 0.0 | | | 19 | | | | 1.8 | | | |
| 15-24 | 419 | | 43.9 | | | 187 | | 19.6 | | | | 6 | | | | 0.6 | | | | 50 | | | 5.2 | | | | 91 | | | | 9.5 | | | | 49 | | | | 5.1 | | | 36 | | | | 3.8 | | | |
| 25-44 | 1,717 | | 96.6 | | | 1,277 | | 71.8 | | | | 19 | | | | 1.1 | | | | 113 | | | 6.4 | | | | 114 | | | | 6.4 | | | | 95 | | | | 5.3 | | | 99 | | | | 5.6 | | | |
| 45-64 | 1,392 | | 74.1 | | | 860 | | 45.8 | | | | 91 | | | | 4.8 | | | | 123 | | | 6.5 | | | | 121 | | | | 6.4 | | | | 59 | | | | 3.1 | | | 138 | | | | 7.3 | | | |
| 65-74 | 344 | | 56.2 | | | 52 | | 8.5 | | | | 93 | | | | 15.2 | | | | 43 | | | 7.0 | | | | 66 | | | | 10.8 | | | | 21 | | | | 3.4 | | | 69 | | | | 11.3 | | | |
| 75-84 | 341 | | 112.7 | | | 9 | | 3.0 | | | | 183 | | | | 60.5 | | | | 46 | | | 15.2 | | | | 37 | | | | 12.2 | | | | 12 | | | | 4.0 | | | 54 | | | | 17.8 | | | |
| 85+  45 | 535 | | 336.9 | | | 8 | | 5.0 | | | | 342 | | | | 215.4 | | | | 56 | | | 35.3 | | | | 27 | | | | 17.0 | | | | 6 | | | | 3.8 | | | 96 | | | | 60.5 | | | |
| **All Females** | **1,501** | | **37.0** | | | **657** | | **18.7** | | | | **360** | | | | **6.7** | | | | **142** | | | **3.4** | | | | **143** | | | | **3.7** | | | | **14** | | | | **0.4** | | | **185** | | | | **4.0** | | | |
| <1 | 2 | | --6 | | | 0 | | 0.0 | | | | 0 | | | | 0.0 | | | | 0 | | | 0.0 | | | | 1 | | | | --6 | | | | 0 | | | | 0.0 | | | 1 | | | | --6 | | | |
| 1-14 | 13 | | 2.5 | | | 1 | | --6 | | | | 0 | | | | 0.0 | | | | 3 | | | --6 | | | | 3 | | | | --6 | | | | 0 | | | | 0.0 | | | 6 | | | | 1.2 | | | |
| 15-24 | 99 | | 20.8 | | | 46 | | 9.7 | | | | 1 | | | | --6 | | | | 12 | | | 2.5 | | | | 31 | | | | 6.5 | | | | 2 | | | | --6 | | | 7 | | | | 1.5 | | | |
| 25-44 | 412 | | 45.9 | | | 320 | | 35.7 | | | | 4 | | | | --6 | | | | 32 | | | 3.6 | | | | 32 | | | | 3.6 | | | | 7 | | | | 0.8 | | | 17 | | | | 1.9 | | | |
| 45-64 | 407 | | 41.9 | | | 263 | | 27.1 | | | | 29 | | | | 3.0 | | | | 28 | | | 2.9 | | | | 39 | | | | 4.0 | | | | 5 | | | | 0.5 | | | 43 | | | | 4.4 | | | |
| 65-74 | 100 | | 30.4 | | | 17 | | 5.2 | | | | 35 | | | | 10.6 | | | | 14 | | | 4.3 | | | | 17 | | | | 5.2 | | | | 0 | | | | 0.0 | | | 17 | | | | 5.2 | | | |
| 75-84 | 146 | | 83.5 | | | 4 | | --6 | | | | 92 | | | | 52.6 | | | | 16 | | | 9.1 | | | | 9 | | | | 5.1 | | | | 0 | | | | 0.0 | | | 25 | | | | 14.3 | | | |
| 85+ | 322 | | 301.7 | | | 6 | | 5.6 | | | | 199 | | | | 186.4 | | | | 37 | | | 34.7 | | | | 11 | | | | 10.3 | | | | 0 | | | | 0.0 | | | 69 | | | | 64.6 | | | |
| **All Males** | **3,292** | | **97.6** | | | **1,739** | | **52.6** | | | | **375** | | | | **11.0** | | | | **299** | | | **8.7** | | | | **323** | | | | **9.2** | | | | **228** | | | | **6.7** | | | **328** | | | | **9.5** | | | |
| <1 | 2 | | --6 | | | 0 | | 0.0 | | | | 0 | | | | 0.0 | | | | 2 | | | --6 | | | | 0 | | | | 0.0 | | | | 0 | | | | 0.0 | | | 0 | | | | 0.0 | | | |
| 1-14 | 26 | | 4.8 | | | 1 | | --6 | | | | 1 | | | | --6 | | | | 5 | | | 0.9 | | | | 6 | | | | 1.1 | | | | 0 | | | | 0.0 | | | 13 | | | | 2.4 | | | |
| 15-24 | 320 | | 66.9 | | | 141 | | 29.5 | | | | 5 | | | | 1.0 | | | | 38 | | | 7.9 | | | | 60 | | | | 12.5 | | | | 47 | | | | 9.8 | | | 29 | | | | 6.1 | | | |
| 25-44 | 1,305 | | 148.2 | | | 957 | | 108.7 | | | | 15 | | | | 1.7 | | | | 81 | | | 9.2 | | | | 82 | | | | 9.3 | | | | 88 | | | | 10.0 | | | 82 | | | | 9.3 | | | |
| 45-64 | 985 | | 108.5 | | | 597 | | 65.8 | | | | 62 | | | | 6.8 | | | | 95 | | | 10.5 | | | | 82 | | | | 9.0 | | | | 54 | | | | 5.9 | | | 95 | | | | 10.5 | | | |
| 65-74 | 244 | | 86.1 | | | 35 | | 12.3 | | | | 58 | | | | 20.5 | | | | 29 | | | 10.2 | | | | 49 | | | | 17.3 | | | | 21 | | | | 7.4 | | | 52 | | | | 18.3 | | | |
| 75-84 | 195 | | 152.7 | | | 5 | | 3.9 | | | | 91 | | | | 71.3 | | | | 30 | | | 23.5 | | | | 28 | | | | 21.9 | | | | 12 | | | | 9.4 | | | 29 | | | | 22.7 | | | |
| 85+ | 213 | | 409.1 | | | 2 | | --6 | | | | 143 | | | | 274.7 | | | | 19 | | | 36.5 | | | | 16 | | | | 30.7 | | | | 6 | | | | 11.5 | | | 27 | | | | 51.9 | | | |
| 1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Includes drug overdoses, which account for the largest percentage. 3. Motor vehicle deaths to occupants, pedestrians, motorcyclists and bicyclists. 4. All remaining injury causes. 5. Number of deaths per 100,000 persons in each age group; rates for all rows except the age group rows are age-adjusted to the 2000 US standard population. 6. Calculations based on values 1-4 are excluded. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Table 19. Injury Deaths by Leading Causes, Gender and Race and Hispanic Ethnicity: Numbers and Age Adjusted Rates, Massachusetts: 2016 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | **All Injury Deaths**1 | | | | | **Poisoning2** | | | | | | | | **Falls** | | | | | | | **Hanging, Strangulation, or Suffocation** | | | | | | | | **Motor Vehicle-Related3** | | | | | | | | **Firearm** | | | | | | **Other4** | | | | | | | |
|  | | Number | | | Rate5 | | Number | | | | Rate5 | | | | Number | | | | Rate5 | | | Number | | | | Rate5 | | | | Number | | | | Rate5 | | | | Number | | | Rate5 | | | Number | | | | Rate5 | | | |
| **White non-Hispanic** | | **3,903** | | | **71.0** | | **1,968** | | | **40.4** | | | | **667** | | | | **8.8** | | | | **352** | | | **6.2** | | | | **359** | | | | **6.3** | | | | **150** | | | **2.7** | | | **407** | | | | **6.6** | | | |
| Females | | 1,277 | | | 40.7 | | 562 | | | 22.1 | | | | 332 | | | | 7.0 | | | | 109 | | | 3.4 | | | | 105 | | | | 3.6 | | | | 10 | | | 0.4 | | | 159 | | | | 4.2 | | | |
| Males | | 2,626 | | | 103.3 | | 1,406 | | | 59.2 | | | | 335 | | | | 11.3 | | | | 243 | | | 9.2 | | | | 254 | | | | 9.3 | | | | 140 | | | 5.3 | | | 248 | | | | 9.1 | | | |
|  | |  | | |  | |  | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | | |  | | | |  | | |  | | |  | | | |  | | | |
| **Black non-Hispanic** | | **262** | | | **52.0** | | **95** | | | **18.3** | | | | **20** | | | | **5.0** | | | | **20** | | | **4.2** | | | | **36** | | | | **6.9** | | | | **49** | | | **9.0** | | | **42** | | | | **8.7** | | | |
| Females | | 78 | | | 30.4 | | 34 | | | 13.0 | | | | 9 | | | | 3.8 | | | | 7 | | | 2.8 | | | | 15 | | | | 5.7 | | | | 1 | | | --6 | | | 12 | | | | 4.7 | | | |
| Males | | 184 | | | 75.5 | | 61 | | | 24.2 | | | | 11 | | | | 6.6 | | | | 13 | | | 5.8 | | | | 21 | | | | 7.9 | | | | 48 | | | 18.0 | | | 30 | | | | 12.8 | | | |
|  | |  | | |  | |  | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | | |  | | | |  | | |  | | |  | | | |  | | | |
| **Asian non-Hispanic**  46 | | **86** | | | **21.1** | | **22** | | | **4.0** | | | | **16** | | | | **5.4** | | | | **23** | | | **5.5** | | | | **12** | | | | **3.0** | | | | **1** | | | --6 | | | **12** | | | | **3.0** | | | |
| Females | | 23 | | | 11.1 | | 4 | | | --6 | | | | 4 | | | | --6 | | | | 8 | | | 3.0 | | | | 5 | | | | 2.4 | | | | 0 | | | 0.0 | | | 2 | | | | --6 | | | |
| Males | | 63 | | | 32.6 | | 18 | | | 6.7 | | | | 12 | | | | 8.4 | | | | 15 | | | 8.4 | | | | 7 | | | | 3.8 | | | | 1 | | | --6 | | | 10 | | | | 4.9 | | | |
|  | |  | | |  | |  | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | | |  | | | |  | | |  | | |  | | | |  | | | |
| **Hispanic** | | **451** | | | **63.8** | | **274** | | | **36.9** | | | | **22** | | | | **5.2** | | | | **31** | | | **5.3** | | | | **47** | | | | **6.2** | | | | **35** | | | **4.0** | | | **42** | | | | **6.3** | | | |
| Females | | 99 | | | 29.5 | | 49 | | | 12.5 | | | | 11 | | | | 4.8 | | | | 12 | | | 4.4 | | | | 15 | | | | 4.0 | | | | 3 | | | --6 | | | 9 | | | | 3.1 | | | |
| Males | | 352 | | | 99.4 | | 225 | | | 62.8 | | | | 11 | | | | 5.5 | | | | 19 | | | 6.0 | | | | 32 | | | | 8.4 | | | | 32 | | | 7.3 | | | 33 | | | | 9.3 | | | |
| 1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Includes drug overdoses, which account for the largest percentage. 3. Motor vehicle deaths to occupants, pedestrians, motorcyclists and bicyclists. 4. All remaining injury causes. 5. Number of deaths per 100,000 persons in each group; rates are age-adjusted to the 2000 US standard population. 6. Calculations based on values 1-4 are excluded. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table 20. Unintentional Injury Deaths by Gender, Age: Numbers, Age-Adjusted,

and Age-Specific Rates, Massachusetts: 2016

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **All Unintentional**1 | | **Poisonings** | | **Falls** | | | | | **Motor Vehicle-Related** | | | |
|  | Number | Rate2 | Number | Rate2 | Number | | | Rate2 | | Number | | | Rate2 |
| **All Persons** | **3,887** | **53.6** | **2,231** | **33.1** | **716** | | | **8.3** | | **466** | | | **6.3** |
| <1 | 4 | --3 | 0 | 0.0 | 0 | | | 0.0 | | 1 | | | --3 |
| 1-14 | 27 | 2.6 | 1 | --3 | 1 | | | --3 | | 9 | | | 0.9 |
| 15-24 | 285 | 29.8 | 176 | 18.4 | 3 | | | --3 | | 91 | | | 9.5 |
| 25-44 | 1,409 | 79.3 | 1,224 | 68.9 | 16 | | | 0.9 | | 114 | | | 6.4 |
| 45-64 | 1,097 | 58.4 | 783 | 41.7 | 82 | | | 4.4 | | 121 | | | 6.4 |
| 65-74 | 255 | 41.6 | 36 | 5.9 | 90 | | | 14.7 | | 66 | | | 10.8 |
| 75-84 | 301 | 99.5 | 6 | 2.0 | 182 | | | 60.1 | | 37 | | | 12.2 |
| 85+ | 508 | 319.9 | 4 | --3 | 342 | | | 215.4 | | 27 | | | 17.0 |
|  |  |  |  |  |  | | |  | |  | | |  |
| **All Females** | **1,278** | **31.0** | **578** | **16.6** | **353** | | | **6.6** | | **143** | | | **3.7** |
| <1 | 2 | --3 | 0 | 0.0 | 0 | | | 0.0 | | 1 | | | --3 |
| 1-14 | 9 | 1.7 | 0 | 0.0 | 0 | | | 0.0 | | 3 | | | --3 |
| 15-24 | 76 | 16.0 | 42 | 8.8 | 0 | | | 0.0 | | 31 | | | 6.5 |
| 25-44 | 345 | 38.5 | 300 | 33.5 | 3 | | | --3 | | 32 | | | 3.6 |
| 45-64 | 320 | 33.0 | 223 | 23.0 | 25 | | | 2.6 | | 39 | | | 4.0 |
| 65-74 | 81 | 24.6 | 9 | 2.7 | 34 | | | 10.3 | | 17 | | | 5.2 |
| 75-84 | 134 | 76.6 | 1 | --3 | 92 | | | 52.6 | | 9 | | | 5.1 |
| 85+ | 311 | 291.3 | 3 | --3 | 199 | | | 186.4 | | 11 | | | 10.3 |
|  |  |  |  |  |  | | |  | |  | | |  |
| **All Males** | **2,609** | **77.8** | **1,653** | **50.2** | **363** | | | **10.6** | | **323** | | | **9.2** |
| <1 | 2 | --3 | 0 | 0.0 | 0 | | | 0.0 | | 0 | | | 0.0 |
| 1-14 | 18 | 3.3 | 1 | --3 | 1 | | | --3 | | 6 | | | 1.1 |
| 15-24 | 209 | 43.7 | 134 | 28.0 | 3 | | | --3 | | 60 | | | 12.5 |
| 25-44 | 1,064 | 120.8 | 924 | 104.9 | 13 | | | 1.5 | | 82 | | | 9.3 |
| 45-64 | 777 | 85.6 | 560 | 61.7 | 57 | | | 6.3 | | 82 | | | 9.0 |
| 65-74 | 174 | 61.4 | 27 | 9.5 | 56 | | | 19.8 | | 49 | | | 17.3 |
| 75-84 | 167 | 130.8 | 5 | 3.9 | 90 | | | 70.5 | | 28 | | | 21.9 |
| 85+ | 197 | 378.4 | 1 | --3 | 143 | | | 274.7 | | 16 | | | 30.7 |
| 1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Number of deaths per 100,000 persons in each age group; rates for all rows except the age group rows are age-adjusted to the 2000 US standard population. 3. Calculations based on values 1-4 are excluded. | | | | | | | | | | | | | |
|  | | | | | |  |  | |  | |  |  | |

Table 21. Unintentional Injury Deaths by Gender and Race and Hispanic Ethnicity: Numbers and Age-Adjusted Rates, Massachusetts: 2016

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **All Unintentional**1 | | **Poisonings** | | | | **Falls** | | | | **Motor Vehicle-Related** | | | |
|  | Number | Rate2 | Number | | Rate2 | | Number | | Rate2 | | Number | | | Rate2 |
| **White non-Hispanic** | **3,217** | **58.3** | **1,816** | **37.7** | | **657** | | **8.6** | | **359** | | | **6.3** | |
| Females | 1,094 | 34.2 | 489 | 19.7 | | 329 | | 6.9 | | 105 | | | 3.6 | |
| Males | 2,123 | 83.9 | 1,327 | 56.2 | | 328 | | 11.1 | | 254 | | | 9.3 | |
|  |  |  |  |  | |  | |  | |  | | |  | |
| **Black non-Hispanic** | **174** | **35.5** | **89** | **17.1** | | **17** | | **4.4** | | **36** | | | **6.9** | |
| Females | 70 | 27.3 | 33 | 12.6 | | 7 | | 3.1 | | 15 | | | 5.7 | |
| Males | 104 | 44.7 | 56 | 22.1 | | 10 | | 6.3 | | 21 | | | 7.9 | |
|  |  |  |  |  | |  | |  | |  | | |  | |
| **Asian non-Hispanic** | **58** | **14.8** | **19** | **3.4** | | **14** | | **4.8** | | **12** | | | **3.0** | |
| Females | 12 | 6.5 | 2 | --3 | | 4 | | --3 | | 5 | | | 2.4 | |
| Males | 46 | 24.2 | 17 | 6.3 | | 10 | | 7.2 | | 7 | | | 3.8 | |
|  |  |  |  |  | |  | |  | |  | | |  | |
| **Hispanic** | **370** | **53.7** | **271** | **36.6** | | **19** | | **4.8** | | **47** | | | **6.2** | |
| Females | 82 | 25.3 | 47 | 12.0 | | 10 | | 4.5 | | 15 | | | 4.0 | |
| Males | 288 | 83.1 | 224 | 62.5 | | 9 | | 5.0 | | 32 | | | 8.4 | |
|  |  |  |  | |  | |  | |  | | |  | |  |
| 1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Number of deaths per 100,000 persons in each group; rates are age-adjusted to the 2000 US standard population. 3. Calculations based on values 1-4 are excluded. | | | | | | | | | | | | | | |

Table 22. Intentional Injury Deaths by Gender, Age: Numbers, Age-Adjusted, and Age-Specific Rates, Massachusetts: 2016

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **All Intentional**1 | | | **Suicide** | | | | **Homicide** | |
|  | Number | | Rate2 | Number | | Rate2 | | Number | Rate2 |
| **All Persons** | **776** | **10.9** | | **636** | **8.8** | | **140** | | **2.1** |
| <1 | 0 | 0.0 | | 0 | 0.0 | | 0 | | 0.0 |
| 1-14 | 10 | 0.9 | | 7 | 0.7 | | 3 | | --3 |
| 15-24 | 127 | 13.3 | | 83 | 8.7 | | 44 | | 4.6 |
| 25-44 | 275 | 15.5 | | 210 | 11.8 | | 65 | | 3.7 |
| 45-64 | 258 | 13.7 | | 243 | 12.9 | | 15 | | 0.8 |
| 65-74 | 65 | 10.6 | | 60 | 9.8 | | 5 | | 0.8 |
| 75-84 | 25 | 8.3 | | 19 | 6.3 | | 6 | | 2.0 |
| 85+ | 16 | 10.1 | | 14 | 8.8 | | 2 | | --3 |
|  |  |  | |  |  | |  | |  |
| **All Females** | **176** | **4.8** | | **149** | **4.0** | | **27** | | **0.8** |
| <1 | 0 | 0.0 | | 0 | 0.0 | | 0 | | 0.0 |
| 1-14 | 4 | --3 | | 3 | --3 | | 1 | | --3 |
| 15-24 | 22 | 4.6 | | 18 | 3.8 | | 4 | | --3 |
| 25-44 | 59 | 6.6 | | 48 | 5.4 | | 11 | | 1.2 |
| 45-64 | 71 | 7.3 | | 64 | 6.6 | | 7 | | 0.7 |
| 65-74 | 10 | 3.0 | | 10 | 3.0 | | 0 | | 0.0 |
| 75-84 | 7 | 4.0 | | 3 | --3 | | 4 | | --3 |
| 85+ | 3 | --3 | | 3 | --3 | | 0 | | 0.0 |
|  |  |  | |  |  | |  | |  |
| **All Males** | **600** | **17.4** | | **487** | **14.0** | | **113** | | **3.4** |
| <1 | 0 | 0.0 | | 0 | 0.0 | | 0 | | 0.0 |
| 1-14 | 6 | 1.1 | | 4 | --3 | | 2 | | --3 |
| 15-24 | 105 | 21.9 | | 65 | 13.6 | | 40 | | 8.4 |
| 25-44 | 216 | 24.5 | | 162 | 18.4 | | 54 | | 6.1 |
| 45-64 | 187 | 20.6 | | 179 | 19.7 | | 8 | | 0.9 |
| 65-74 | 55 | 19.4 | | 50 | 17.6 | | 5 | | 1.8 |
| 75-84 | 18 | 14.1 | | 16 | 12.5 | | 2 | | --3 |
| 85+ | 13 | 25.0 | | 11 | 21.1 | | 2 | | --3 |
| 1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Number of deaths per 100,000 persons in each age group; rates for all rows except the age group rows are age-adjusted to the 2000 US standard population. 3. Calculations based on values 1-4 are excluded. | | | | | | | | | |
|  | | | | | | | | | |

Table 23. Intentional Injury Deaths by Gender and Race and Hispanic Ethnicity: Numbers and Age-Adjusted Rates, Massachusetts: 2016

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **All Intentional**1 | | **Suicide** | | | **Homicide** | |
|  | Number | Rate2 | Number | Rate2 | | Number | Rate2 |
| **White non-Hispanic** | **580** | **10.9** | **533** | **10.0** | **47** | | **0.9** | |
| Females | 141 | 5.2 | 124 | 4.5 | 17 | | 0.7 | |
| Males | 439 | 16.9 | 409 | 15.7 | 30 | | 1.2 | |
|  |  |  |  |  |  | |  | |
| **Black non-Hispanic** | **77** | **14.5** | **28** | **5.5** | **49** | | **8.9** | |
| Females | 6 | 2.3 | 3 | --3 | 3 | | --3 | |
| Males | 71 | 27.2 | 25 | 10.5 | 46 | | 16.8 | |
|  |  |  |  |  |  | |  | |
| **Asian non-Hispanic** | **25** | **5.4** | **25** | **5.4** | **0** | | **0.0** | |
| Females | 10 | 3.9 | 10 | 3.9 | 0 | | 0.0 | |
| Males | 15 | 7.2 | 15 | 7.2 | 0 | | 0.0 | |
|  |  |  |  |  |  | |  | |
| **Hispanic** | **74** | **9.1** | **38** | **5.0** | **36** | | **4.1** | |
| Females | 15 | 3.7 | 10 | 2.5 | 5 | | 1.1 | |
| Males | 59 | 14.9 | 28 | 7.7 | 31 | | 7.2 | |
| 1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Number of deaths per 100,000 persons in each group; rates are age-adjusted to the 2000 US standard population. 3. Calculations based on values 1-4 are excluded. | | | | | | | |

Table 24. Injury Deaths by Intent, Method and Gender: Numbers and

Age-Adjusted Rates, Massachusetts: 2016

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Type of Injury1** | | **All Injury Deaths** | |  | **Female** | |  | **Male** | |
|  | | **Number** | **Rate2** |  | **Number** | **Rate2** |  | **Number** | **Rate2** |
| **Unintentional Injuries (Accidents)** | | **3,887** | **53.6** |  | **1,278** | **31.0** |  | **2,609** | **77.8** | |
| Motor vehicle-related | | 466 | 6.3 |  | 143 | 3.7 |  | 323 | 9.2 | |
| Injury to pedestrian | | 107 | 1.4 |  | 37 | 0.9 |  | 70 | 2 | |
| Injury to pedal cyclist | | 12 | 0.1 |  | 2 | --3 |  | 10 | 0.2 | |
| Injury to motorcyclist | | 43 | 0.6 |  | 6 | 0.2 |  | 37 | 1.1 | |
| Injury to occupant | | 53 | 0.8 |  | 8 | 0.2 |  | 45 | 1.3 | |
| Other and unspecified | | 251 | 3.4 |  | 90 | 2.4 |  | 161 | 4.6 | |
| Poisoning | | 2231 | 33.1 |  | 578 | 16.6 |  | 1653 | 50.2 | |
| Falls | | 716 | 8.3 |  | 353 | 6.6 |  | 363 | 10.6 | |
| Hanging, strangulation or suffocation | | 156 | 1.9 |  | 76 | 1.5 |  | 80 | 2.3 | |
| Cut or pierce | | 1 | --3 |  | 0 | 0.0 |  | 1 | --3 | |
| Firearm | | 1 | --3 |  | 0 | 0.0 |  | 1 | --3 | |
| Drowning and submersion | | 63 | 0.9 |  | 8 | 0.2 |  | 55 | 1.6 | |
| Smoke, fire and flames | | 41 | 0.5 |  | 22 | 0.5 |  | 19 | 0.5 | |
| Other and unspecified | | 197 | 2.4 |  | 97 | 1.8 |  | 100 | 2.9 | |
| **Suicide** | | **636** | **8.8** |  | **149** | **4.0** |  | **487** | **14.0** | |
| Poisoning | | 132 | 1.8 |  | 62 | 1.6 |  | 70 | 2.0 | |
| Hanging, strangulation or suffocation  51 | | 281 | 4.0 |  | 62 | 1.8 |  | 219 | 6.4 | |
| Firearm | | 141 | 1.9 |  | 7 | 0.2 |  | 134 | 3.8 | |
| Other and unspecified | | 82 | 1.1 |  | 18 | 0.4 |  | 64 | 1.8 | |
| **Homicide** | | **140** | **2.1** |  | **27** | **0.8** |  | **113** | **3.4** | |
| Firearm | | 88 | 1.3 |  | 7 | 0.2 |  | 81 | 2.4 | |
| Cut or pierce | | 24 | 0.4 |  | 10 | 0.3 |  | 14 | 0.4 | |
| Other and unspecified | | 28 | 0.4 |  | 10 | 0.3 |  | 18 | 0.5 | |
| **Injury Deaths of Undetermined Intent** | | **69** | **1.0** |  | **23** | **0.6** |  | **46** | **1.3** | |
| Poisoning | | 32 | 0.4 |  | 17 | 0.4 |  | 15 | 0.4 | |
| Other and unspecified | | 37 | 0.5 |  | 6 | 0.2 |  | 31 | 0.9 | |
| **Legal Intervention** | | **12** | **0.2** |  | **0.0** | **0.0** |  | **12** | **0.4** | |
| Firearm | | 11 | 0.2 |  | 0 | 0.0 |  | 11 | 0.3 | |
| Other and unspecified | | 1 | --3 |  | 0 | 0.0 |  | 1 | --3 | |
| **Adverse Effects** | | **49** | **0.6** |  | **24** | **0.5** |  | **25** | **0.7** | |
| Medical care | | 47 | 0.6 |  | 23 | 0.5 |  | 24 | 0.7 | |
| Drugs | | 2 | --3 |  | 1 | --3 |  | 1 | --3 | |
| **ALL INJURIES** | | **4,793** | **66.2** |  | **1,501** | **37.0** |  | **3,292** | **97.6** | |
| 1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Number of deaths per 100,000 persons; rates are adjusted to the 2000 US standard population. 3. Calculations based on values 1-4 are excluded. | | | | | | | | | |
| Table 25. HIV/AIDS Deaths by Place of Occurrence, Massachusetts: 2000-2016   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **Year** | | **Total**1 | **Place of Occurrence** | | | | | **At Home** | **Hospital** | **Out of State** | **Hospice/Nursing Home/Other** | | 2000 | #  % | 226  100.0 | 48  21.2 | 145  64.2 | 0  0.0 | 33  14.6 | | 2001 | #  % | 249  100.0 | 47  18.9 | 164  65.9 | 4  --2 | 34  13.7 | | 2002 | #  % | 229  100.0 | 33  14.4 | 156  68.1 | 4  --2 | 36  15.7 | | 2003 | #  % | 226  100.0 | 55  24.3 | 134  59.3 | 5  2.2 | 32  14.2 | | 2004  52 | #  % | 211  100.0 | 45  21.3 | 134  63.5 | 1  --2 | 31  14.7 | | 2005 | #  % | 180  100.0 | 28  15.6 | 122  67.8 | 1  --2 | 30  16.7 | | 2006 | #  % | 179  100.0 | 22  12.3 | 122  68.2 | 2  --2 | 33  18.4 | | 2007 | #  % | 143  100.0 | 15  10.5 | 98  68.5 | 2  --2 | 28  19.6 | | 2008 | #  % | 143 100.0 | 27  18.9 | 92  64.3 | 1  --2 | 23  16.1 | | 2009 | #  % | 124  100.0 | 25  20.2 | 76  61.3 | 1  --2 | 22  17.7 | | 2010 | #  % | 119  100.0 | 22  18.5 | 68  57.1 | 1  --2 | 28  23.5 | | 2011 | #  % | 91  100.0 | 14  15.4 | 58  63.7 | 0  0.0 | 19  20.9 | | 2012 | #  % | 100  100.0 | 24  24.0 | 56  56.0 | 0  0.0 | 20  20.0 | | 2013 | #  % | 86 100.00 | 13 15.1 | 53 61.6 | 0 0.0 | 20 23.3 | | 2014 | #  % | 80  100.00 | 13  16.3 | 50  62.5 | 0  0.0 | 17  21.3 | | 2015 | #  % | 92  100.00 | 26  28.3 | 42  45.7 | 0  0.0 | 24  26.1 | | 2016 | #  % | 75  100.00 | 11  14.7 | 44  58.7 | 0  0.0 | 20  26.7 | | 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 were coded according to ICD-10: B20-B24. 2. Calculations based on values 1-4 are excluded. | | | | | | | |  | | | | | | | |  | | | | | | | |  | | | | | | | |  | | | | | | | |  | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | |
| Table 26. HIV/AIDS1 Deaths by Age, Massachusetts: 2000-2016   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **Year** | | **Age (in years)** | | | | | | **<15** | **15-24** | **25-34** | **35-44** | **45+** | | 2000 | #  % | 4  --2 | 0  0.0 | 26  11.5 | 104  46.0 | 92  40.7 | | 2001 | #  % | 1  --2 | 2  --2 | 25  10.0 | 111  44.6 | 110  44.2 | | 2002 | #  % | 1  --2 | 1  --2 | 10  4.4 | 91  39.7 | 126  55.0 | | 2003 | #  % | 1  --2 | 3  --2 | 14  6.2 | 94  41.6 | 114  50.4 | | 2004 | #  % | 0  0.0 | 2  --2 | 9  4.3 | 79  37.4 | 121  57.4 | | 2005  53 | #  % | 0  0.0 | 1  --2 | 6  3.3 | 64  35.6 | 109  60.6 | | 2006 | #  % | 0  0.0 | 1  --2 | 6  3.4 | 71  39.7 | 101  56.4 | | 2007 | #  % | 0  0.0 | 0  0.0 | 5  3.5 | 34  32.7 | 104  72.7 | | 2008 | #  % | 0  0.0 | 1  --2 | 6  4.2 | 32  22.4 | 104  72.7 | | 2009 | #  % | 0  0.0 | 0  0.0 | 6  4.8 | 25  20.2 | 93  75.0 | | 2010 | #  % | 0  0.0 | 1  --2 | 4  --2 | 24  20.2 | 90  75.6 | | 2011 | #  % | 0  0.0 | 2  --2 | 1  --2 | 19  20.9 | 69  75.8 | | 2012 | #  % | 0  0.0 | 0  0.0 | 2  --2 | 16  16.0 | 82  82.0 | | 2013 | #  % | 0  0.0 | 2  --2 | 3  --2 | 3  --2 | 78  90.7 | | 2014 | #  % | 0  0.0 | 1  --2 | 6  7.5 | 9  11.3 | 64  80.0 | | 2015 | #  % | 0  0.0 | 0  0.0 | 4  --2 | 7  7.6 | 81  88.0 | | 2016 | #  % | 0  0.0 | 0  0.0 | 2  --2 | 5  6.7 | 68  90.7 | | 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 were coded according to ICD-10: B20-B24. 2. Calculations based on values 1-4 are excluded. | | | | | | | | | | | | | | | | | | | | |
| 54 |  | | Table 27. HIV/AIDS1 Deaths by Gender, Race and Hispanic Ethnicity, Massachusetts: 2000-2016   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **Year** | | **Gender** | | **Race and Ethnicity** | | | | | **Male** | **Female** | **White**  **non-Hispanic2** | **Black**  **non-Hispanic2** | **Other3** | **Hispanic2** | | 2000 | #  % | 161  71.2 | 65  28.8 | 104  46.0 | 61  27.0 | 2  --4 | 59  26.1 | | 2001 | #  % | 182  73.1 | 67  26.9 | 125  50.2 | 73  29.3 | 0  0.0 | 51  20.5 | | 2002 | #  % | 163  71.2 | 66  28.8 | 108  47.1 | 68  29.7 | 1  --4 | 52  22.7 | | 2003 | #  % | 150  66.4 | 76  33.6 | 113  50.0 | 58  25.7 | 2  --4 | 53  23.5 | | 2004 | #  % | 151  71.6 | 60  28.4 | 976  46.0 | 55  26.1 | 4  --4 | 55  26.1 | | 2005 | #  % | 122  67.8 | 58  32.2 | 75  41.7 | 56  31.1 | 4  --4 | 45  25.0 | | 2006 | #  % | 122  68.2 | 57  31.8 | 91  50.8 | 49  27.4 | 2  --4 | 37  20.7 | | 2007 | #  % | 96  67.4 | 47  32.9 | 58  40.6 | 48  33.6 | 0  0.0 | 37  25.9 | | 2008 | #  % | 101  70.6 | 42  29.4 | 69  48.6 | 37  26.1 | 5  3.5 | 31  21.8 | | 2009 | #  % | 89  71.8 | 35  28.2 | 48  38.7 | 37  29.8 | 6  4.8 | 33  26.6 | | 2010 | #  % | 80  67.2 | 39  32.8 | 58  48.7 | 34  28.6 | 1  --4 | 26  21.8 | | 2011 | #  % | 64  70.3 | 27  29.7 | 36  39.6 | 30  33.0 | 1  --4 | 24  26.4 | | 2012 | #  % | 62  62.0 | 38  38.0 | 50  50.0 | 26  26.0 | 1  --4 | 23  23.0 | | 2013 | #  % | 58  67.4 | 28  32.6 | 35  41.2 | 32  37.6 | 0  0.0 | 18  21.2 | | 2014 | #  % | 59  73.8 | 21  26.3 | 41  51.3 | 21  26.3 | 1  --4 | 16  20.0 | | 2015 | #  % | 74  80.4 | 18  19.6 | 41  44.6 | 28  30.4 | 2  --4 | 21  22.8 | | 2016 | #  % | 49  65.3 | 26  34.7 | 36  48.0 | 23  30.7 | 5  6.7 | 11  14.7 | | 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 were coded according to 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 Technical Notes in the Appendix for a more detailed explanation. 3. The “Other” category represents Asian non-Hispanics, American Indian non-Hispanics, and other non-Hispanics. 4. Calculations based on values 1-4 are excluded. | | | | | | | | | | | | | | | | | | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 28. HIV/AIDS1 Deaths by Gender, Race and Hispanic Ethnicity: Numbers, Percent and Age-Adjusted Rates, Massachusetts: 2003-2016 | | | | | | | | | | |
|  | **White non-Hispanic2** | | | **Black non-Hispanic2** | | | **Hispanic2** | | |
| **Year** | **#** | **Percent** | **Rate3** | **#** | **Percent** | **Rate3** | **#** | **Percent** | **Rate3** |
| 2003 | 113 | 50% | 2.0 | 58 | 26% | 17.2 | 53 | 23% | 14.9 |
| 2004 | 97 | 46% | 1.7 | 55 | 26% | 15.8 | 55 | 26% | 13.9 |
| 2005 | 75 | 42% | 1.3 | 56 | 31% | 16.0 | 45 | 25% | 11.5 |
| 2006 | 91 | 51% | 1.6 | 49 | 27% | 13.7 | 37 | 21% | 8.4 |
| 2007 | 58 | 41% | 1.0 | 48 | 34% | 13.0 | 37 | 26% | 8.9 |
| 2008 | 69 | 50% | 1.2 | 37 | 27% | 10.6 | 31 | 23% | 8.3 |
| 2009 | 48 | 41% | 0.5 | 37 | 31% | 15.2 | 33 | 28% | 11.6 |
| 2010 | 58 | 49% | 0.5 | 34 | 29% | 15.2 | 26 | 22% | 11.6 |
| 2011 | 36 | 40% | 0.6 | 30 | 33% | 6.9 | 24 | 27% | 4.7 |
| 2012 | 50 | 51% | 0.8 | 26 | 26% | 6.1 | 23 | 23% | 4.6 |
| 2013 | 35 | 41% | 0.5 | 32 | 38% | 6.7 | 18 | 21% | 3.2 |
| 2014 | 41 | 51% | 0.6 | 21 | 26% | 4.4 | 16 | 20% | 3.2 |
| 2015 | 41 | 46% | 0.6 | 28 | 31% | 5.9 | 21 | 23% | 3.6 |
| 2016 | 36 | 51% | 0.5 | 23 | 33% | 4.7 | 11 | 16% | 1.8 |
| **MALE** |  |  |  |  |  |  |  |  |  |
| 2003 | 74 | 49% | 2.7 | 36 | 24% | 23.4 | 39 | 26% | 23.8 |
| 2004 | 74 | 49% | 2.7 | 39 | 26% | 24.0 | 34 | 23% | 18.4 |
| 2005 | 52 | 43% | 1.9 | 34 | 28% | 20.9 | 33 | 27% | 18.4 |
| 2006 | 67 | 55% | 2.4 | 33 | 27% | 20.0 | 21 | 17% | 9.8 |
| 2007 | 48 | 50% | 1.7 | 23 | 24% | 13.4 | 25 | 26% | 13.3 |
| 2008 | 55 | 56% | 1.9 | 25 | 26% | 16.0 | 18 | 18% | 11.0 |
| 2009 | 32 | 38% | 1.1 | 29 | 34% | 15.6 | 24 | 28% | 12.4 |
| 2010 | 40 | 51% | 1.1 | 20 | 25% | 15.6 | 19 | 24% | 12.4 |
| 2011 | 30 | 48% | 1.1 | 14 | 22% | 6.6 | 19 | 30% | 8.2 |
| 2012 | 35 | 57% | 1.2 | 14 | 23% | 7.8 | 12 | 20% | 5.6 |
| 2013 | 24 | 69% | 0.7 | 21 | 21% | 9.8 | 12 | 12% | 4.3 |
| 2014 | 34 | 59% | 1.0 | 14 | 24% | 6.5 | 10 | 17% | 4.7 |
| 2015 | 33 | 45% | 1.0 | 23 | 32% | 10.3 | 17 | 23% | 6.4 |
| 2016 | 28 | 61% | 0.9 | 12 | 26% | 5.7 | 6 | 13% | 2.2 |
| **FEMALE** |  |  |  |  |  |  |  |  |  |
| 2003 | 39 | 51% | 1.4 | 22 | 29% | 12.0 | 14 | 18% | 7.1 |
| 2004 | 23 | 38% | 0.8 | 16 | 27% | 8.7 | 21 | 35% | 10.0 |
| 2005 | 23 | 40% | 0.8 | 22 | 38% | 11.8 | 12 | 21% | 5.4 |
| 2006 | 24 | 42% | 0.9 | 16 | 28% | 8.3 | 16 | 28% | 7.1 |
| 2007 | 10 | 21% | 0.3 | 25 | 53% | 12.8 | 12 | 26% | 5.2 |
| 2008 | 14 | 36% | 0.5 | 12 | 31% | 6.4 | 13 | 33% | 6.4 |
| 2009 | 16 | 48% | 0.5 | 8 | 24% | 3.8 | 9 | 27% | 3.8 |
| 2010 | 18 | 46% | 0.5 | 14 | 36% | 3.8 | 7 | 18% | 3.8 |
| 2011 | 6 | 22% | 0.2 | 16 | 59% | 7.1 | 5 | 19% | 1.6 |
| 2012 | 15 | 39% | 0.4 | 12 | 32% | 4.9 | 11 | 29% | 3.9 |
| 2013 | 11 | 11% | 0.3 | 11 | 11% | 4.4 | 6 | 6% | 2.1 |
| 2014 | 7 | 35% | 0.2 | 7 | 35% | 2.7 | 6 | 30% | 2.0 |
| 2015 | 8 | 47% | 0.3 | 5 | 29% | 2.1 | 4 | --4 | --4 |
| 2016 | 8 | 33% | 0.2 | 11 | 46% | 4.0 | 5 | 21% | 1.5 |
| 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 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. 4. Calculations based on values 1-4 are excluded | | | | | | | | | | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 29. HIV/AIDS1 Deaths by Race, Hispanic Ethnicity, and Gender of Persons Ages 25-44, Massachusetts: 2003-2016   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  | **White non-Hispanic2** | | **Black non-Hispanic2** | | **Hispanic2** | | | **Year** | **#** | **Rate3** | **#** | **Rate3** | **#** | **Rate3** | | 2003 | 63 | 4.1 | 19 | 15.8 | 25 | 15.1 | | 2004 | 38 | 2.6 | 17 | 14.0 | 31 | 18.0 | | 2005 | 29 | 2.0 | 22 | 18.2 | 19 | 10.7 | | 2006 | 35 | 2.5 | 17 | 14.2 | 23 | 12.9 | | 2007 | 16 | 1.2 | 11 | 9.1 | 12 | 6.6 | | 2008 | 19 | 1.4 | 9 | 7.4 | 8 | 4.3 | | 2009 | 11 | 0.8 | 7 | 5.7 | 12 | 6.3 | | 2010 | 9 | 0.7 | 6 | 4.7 | 12 | 6.1 | | 2011 | 6 | 0.5 | 7 | 5.4 | 7 | 3.4 | | 2012 | 6 | 0.5 | 3 | --4 | 9 | 4.4 | | 2013 | 1 | --4 | 3 | --4 | 2 | --4 | | 2014 | 1 | --4 | 9 | 6.4 | 5 | 2.2 | | 2015 | 2 | --4 | 6 | 4.2 | 3 | --4 | | 2016 | 2 | --4 | 2 | --4 | 2 | --4 | | **MALE** |  |  |  |  |  |  | | 2003 | 42 | 5.6 | 10 | 17.3 | 19 | 23.1 | | 2004 | 30 | 4.1 | 11 | 18.9 | 19 | 22.1 | | 2005 | 21 | 2.9 | 12 | 20.4 | 11 | 12.3 | | 2006 | 22 | 3.2 | 12 | 20.5 | 12 | 13.3 | | 2007 | 16 | 2.4 | 5 | 8.5 | 9 | 9.7 | | 2008 | 13 | 2.0 | 3 | --4 | 6 | 6.2 | | 2009 | 8 | 1.2 | 4 | --4 | 5 | 5.5 | | 2010 | 3 | --4 | 3 | --4 | 3 | --4 | | 2011 | 4 | --4 | 4 | --4 | 3 | --4 | | 2012 | 5 | 0.8 | 1 | --4 | 5 | 4.8 | | 2013 | 1 | --4 | 2 | --4 | 1 | --4 | | 2014 | 1 | --4 | 6 | 8.8 | 3 | --4 | | 2015 | 1 | --4 | 4 | --4 | 1 | --4 | | 2016 | 1 | --4 | 2 | --4 | 2 | --4 | | **FEMALE** |  |  |  |  |  |  | | 2003 | 21 | 2.7 | 9 | 14.4 | 6 | 7.2 | | 2004 | 8 | 1.1 | 6 | 9.6 | 12 | 13.9 | | 2005 | 8 | 1.1 | 10 | 16.0 | 8 | 9.0 | | 2006 | 13 | 1.8 | 5 | 8.2 | 11 | 12.5 | | 2007 | 0 | 0.0 | 6 | 9.8 | 3 | --4 | | 2008 | 6 | 0.9 | 6 | 9.8 | 2 | --4 | | 2009 | 3 | --4 | 3 | --4 | 7 | 7.0 | | 2010 | 6 | 0.9 | 3 | --4 | 9 | 9.3 | | 2011 | 2 | --4 | 3 | --4 | 4 | --4 | | 2012 | 1 | --4 | 2 | --4 | 4 | --4 | | 2013 | 0 | 0.0 | 1 | --4 | 1 | --4 | | 2014 | 0 | 0.0 | 3 | --4 | 2 | --4 | | 2015 | 1 | --4 | 2 | --4 | 2 | --4 | | 2016 | 1 | --4 | 0 | 0.0 | 0 | 0.0 | | 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 Technical Notes in the Appendix for a more detailed explanation. 3. Number of deaths per 100,000 residents in the specified population group. 4. Calculations based on values 1-4 are excluded. | | | | | | |   Table 30. Trends in Infant, Neonatal, and Post Neonatal Mortality, by Race and Hispanic  Ethnicity, Massachusetts: 2006-2016 | | | | | | | | | | | | | | | | | | | | | | |
| **INFANT MORTALITY** **(less than one year of age)** | | | | | | | | | | | | | | | | | | | | | | |
|  | **State Total1** | | |  | | **White**  **non-Hispanic** | | |  | **Black**  **non-Hispanic** | |  | **Hispanic** | |  | **Asian**  **non-Hispanic** | | |  | | **Other2** | |
| **Year** | **#** | | **Rate3** |  | | **#** | | **Rate3** |  | **#** | **Rate3** |  | **#** | **Rate3** |  | | **#** | **Rate3** |  | **#** | | **Rate3** | |
| 2006 | 369 | | 4.8 |  | | 220 | | 4.1 |  | 72 | 11.1 |  | 63 | 5.9 |  | | 10 | 1.8 |  | 3 | | --4 | |
| 2007 | 380 | | 4.9 |  | | 206 | | 3.9 |  | 66 | 10.2 |  | 81 | 7.4 |  | | 18 | 3.1 |  | 4 | | --4 | |
| 2008 | 381 | | 5.0 |  | | 192 | | 3.7 |  | 79 | 11.9 |  | 86 | 7.9 |  | | 16 | 2.7 |  | 8 | | 5.1 | |
| 2009 | 366 | | 4.9 |  | | 205 | | 4.1 |  | 54 | 7.8 |  | 78 | 7.1 |  | | 20 | 3.4 |  | 9 | | 7.8 | |
| 2010 | 319 | | 4.4 |  | | 163 | | 3.4 |  | 56 | 8.2 |  | 65 | 6.1 |  | | 25 | 4.3 |  | 7 | | 4.4 | |
| 2011 | 310 | | 4.2 |  | | 158 | | 3.4 |  | 47 | 6.7 |  | 75 | 5.8 |  | | 22 | 3.6 |  | 6 | | 4.2 | |
| 2012 | 309 | | 4.3 |  | | 158 | | 3.5 |  | 57 | 8.2 |  | 71 | 5.4 |  | | 17 | 2.6 |  | 4 | | --4 | |
| 2013 | 298 | | 4.2 |  | | 161 | | 3.6 |  | 63 | 8.9 |  | 49 | 3.9 |  | | 15 | 2.4 |  | 3 | | --4 | |
| 2014 | 321 | | 4.5 |  | | 169 | | 3.8 |  | 54 | 7.6 |  | 62 | 5.0 |  | | 20 | 3.2 |  | 8 | | 10.5 | |
| 2015 | 310 | | 4.3 |  | | 146 | | 3.3 |  | 59 | 8.3 |  | 75 | 5.7 |  | | 15 | 2.3 |  | 14 | | 21.8 | |
| 2016 | 283 | | 4.0 |  | | 119 | | 2.8 |  | 56 | 7.7 |  | 78 | 5.8 |  | | 18 | 2.7 |  | 10 | | 13.7 | |
| **NEONATAL MORTALITY (birth to 27 days)** | | | | | | | | | | | | | | | | | | | | | | |
|  | | **State Total1** | | |  | **White**  **non-Hispanic** | | |  | **Black**  **non-Hispanic** | |  | **Hispanic** | |  | | **Asian, non-Hispanic** | |  | **Other2** | | | | |
| **Year** | | **#** | **Rate3** | |  | **#** | | **Rate3** |  | **#** | **Rate3** |  | **#** | **Rate3** |  | | **#** | **Rate3** |  | **#** | | **Rate3** | | |
| 2006 | | 279 | 3.6 | |  | 173 | | 3.3 |  | 53 | 8.2 |  | 42 | 3.9 |  | | 7 | 1.3 |  | 3 | | --4 | | |
| 2007 | | 263 | 3.4 | |  | 141 | | 2.7 |  | 48 | 7.4 |  | 53 | 4.9 |  | | 15 | 2.6 |  | 4 | | --4 | | |
| 2008 | | 290 | 3.8 | |  | 152 | | 2.9 |  | 57 | 8.6 |  | 65 | 6.0 |  | | 10 | 1.7 |  | 6 | | 3.8 | | |
| 2009 | | 276 | 3.7 | |  | 162 | | 3.2 |  | 36 | 5.2 |  | 54 | 4.9 |  | | 17 | 2.9 |  | 7 | | 6.0 | | |
| 2010 | | 238 | 3.3 | |  | 121 | | 2.5 |  | 43 | 6.3 |  | 47 | 4.4 |  | | 20 | 3.4 |  | 5 | | 4.6 | | |
| 2011 | | 230 | 3.1 | |  | 111 | | 2.4 |  | 33 | 4.7 |  | 60 | 4.7 |  | | 19 | 3.1 |  | 3 | | --4 | | |
| 2012 | | 216 | 3.0 | |  | 111 | | 2.5 |  | 41 | 5.9 |  | 46 | 3.5 |  | | 13 | 2.0 |  | 3 | | --4 | | |
| 2013 | | 221 | 3.1 | |  | 119 | | 2.6 |  | 45 | 6.3 |  | 39 | 3.1 |  | | 10 | 1.6 |  | 0 | | 0.0 | | |
| 2014 | | 236 | 3.3 | |  | 122 | | 2.7 |  | 38 | 5.3 |  | 50 | 3.9 |  | | 15 | 2.3 |  | 6 | | 9.5 | | |
| 2015 | | 237 | 3.3 | |  | 106 | | 2.4 |  | 45 | 6.4 |  | 59 | 4.5 |  | | 15 | 2.3 |  | 11 | | 17.1 | | |
| 2016 | | 214 | 3.0 | |  | 87 | | 2.0 |  | 47 | 6.5 |  | 64 | 4.8 |  | | 9 | 1.3 |  | 5 | | 6.8 | | |
| **POST NEONATAL MORTALITY** **(28-365 days)** | | | | | | | | | | | | | | | | | | | | | | |
|  | | **State Total1** | | |  | **White**  **non-Hispanic** | | |  | **Black**  **non-Hispanic** | |  | **Hispanic** | |  | | **Asian non-Hispanic** | |  | **Other2** | | | | |
| **Year** | | **#** | **Rate3** | |  | **#** | **Rate3** | |  | **#** | **Rate3** |  | **#** | **Rate3** |  | | **#** | **Rate3** |  | **#** | | **Rate3** | | |
| 2006 | | 90 | 1.2 | |  | 47 | 0.9 | |  | 19 | 2.9 |  | 21 | 2.0 |  | | 3 | --4 |  | 0 | | 0.0 | | |
| 2007 | | 117 | 1.5 | |  | 65 | 1.2 | |  | 18 | 2.8 |  | 28 | 2.6 |  | | 3 | --4 |  | 0 | | 0.0 | | |
| 2008 | | 91 | 1.2 | |  | 40 | 0.8 | |  | 22 | 3.3 |  | 21 | 1.9 |  | | 6 | 1.0 |  | 2 | | --4 | | |
| 2009 | | 90 | 1.2 | |  | 43 | 0.9 | |  | 18 | 2.6 |  | 24 | 2.2 |  | | 3 | --4 |  | 2 | | --4 | | |
| 2010 | | 81 | 1.1 | |  | 42 | 0.9 | |  | 13 | 1.9 |  | 18 | 1.7 |  | | 5 | 0.9 |  | 2 | | --4 | | |
| 2011 | | 80 | 1.1 | |  | 47 | 1.0 | |  | 14 | 2.0 |  | 15 | 1.2 |  | | 3 | --4 |  | 3 | | --4 | | |
| 2012 | | 93 | 1.3 | |  | 47 | 1.0 | |  | 16 | 2.3 |  | 25 | 1.9 |  | | 4 | --4 |  | 1 | | --4 | | |
| 2013 | | 77 | 1.1 | |  | 42 | 0.9 | |  | 18 | 2.5 |  | 10 | 0.8 |  | | 5 | 0.8 |  | 1 | | --4 | | |
| 2014 | | 85 | 1.2 | |  | 47 | 1.1 | |  | 16 | 2.2 |  | 12 | 0.9 |  | | 5 | 0.8 |  | 2 | | --4 | | |
| 2015 | | 73 | 1.0 | |  | 40 | 0.9 | |  | 14 | 2.0 |  | 16 | 1.2 |  | | 0 | 0.0 |  | 3 | | --4 | | |
| 2016 | | 69 | 1.0 | |  | 32 | 0.7 | |  | 9 | 1.2 |  | 14 | 1.0 |  | | 9 | 1.3 |  | 5 | | 6.8 | | |
| 1. Deaths of infants of unknown race are included in the total calculation. For rate computations, births of infants of unknown race are allocated into the race categories according to the distribution of births of known race. 2. Other: American Indian and Other races. 3. Rates are expressed per 1,000 live births. 4. Calculations based on values 1-4 are excluded. | | | | | | | | | | | | | | | | | | | | | | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Table 31. Infant, Neonatal, and Post Neonatal Deaths by Cause, Massachusetts: 2016 | | | | | | | |
|  |  |  | |  | |  | |
|  |  | **Infant**  (<1 year) | | **Neonatal**  (<28 days) | | **Post Neonatal**  (28-365 days) | |
| **Cause of Death1** | **ICD-10 Code** | **#** | **%** | **#** | **%** | **#** | **%** |
| **TOTAL** |  | **283** | **100.0** | **214** | **100.0** | **69** | **100.0** |
| **Infectious and parasitic diseases** | **A00-B99** | **5** | **1.8** | **0** | **0.0** | **5** | **7.2** |
| **Cancer** | **C00-C97** | **0** | **0.0** | **0** | **0.0** | **0** | **0.0** |
| **Diseases of the blood and blood forming organs (anemia)** | **D50-D89** | **0** | **0.0** | **0** | **0.0** | **0** | **0.0** |
| **Diseases of nervous system and ear** | **G00-G98, H60-H93** | **4** | --2 | **3** | --2 | **1** | --2 |
| **Diseases of the respiratory system** | **J00-J98** | **7** | **2.5** | **1** | --2 | **6** | **8.7** |
| **Diseases of digestive system** | **K00-K92** | **2** | --2 | **2** | --2 | **0** | **0.0** |
| **Congenital malformations** | **Q00-Q99** | **50** | **17.7** | **34** | **15.9** | **16** | **23.2** |
| Congenital malformations of nervous system | Q00-Q07 | 11 | 3.9 | 7 | 3.3 | 4 | --2 |
| Anencephalus and similar malformations | Q00 | 4 | --2 | 4 | --2 | 0 | 0.0 |
| Congenital malformations of heart | Q20-Q24 | 9 | 3.2 | 6 | 2.8 | 3 | --2 |
| Other congenital malformations of circulatory system | Q25-Q28 | 5 | 1.8 | 2 | --2 | 3 | --2 |
| Congenital malformations of respiratory system | Q30-Q34 | 9 | 3.2 | 7 | 3.3 | 2 | --2 |
| Congenital malformations of genitourinary system | Q50-Q64 | 3 | --2 | 3 | --2 | 0 | 0.0 |
| Congenital malformations of musculoskeletal system | Q65-Q85 | 3 | --2 | 3 | --2 | 0 | 0.0 |
| Chromosomal abnormalities  58 | Q90-Q99 | 7 | 2.5 | 6 | 2.8 | 1 | --2 |
| **Certain conditions originating in the perinatal period** | **P00-P96** | **180** | **63.6** | **170** | **79.4** | **10** | **14.5** |
| Newborn affected by maternal conditions which may be unrelated to present pregnancy | P00 | 1 | --2 | 1 | --2 | 0 | 0.0 |
| Newborn affected by maternal complications of pregnancy | P01 | 28 | 9.9 | 28 | 13.1 | 0 | 0.0 |
| Newborn affected by complications of placenta, cord and membrane | P02 | 11 | 3.9 | 10 | 4.7 | 1 | --2 |
| Newborn affected by other complications of labor and delivery | P03 | 2 | --2 | 2 | --2 | 0 | 0.0 |
| Disorders relating to short gestation and low birthweight | P07 | 70 | 24.7 | 69 | 32.2 | 1 | --2 |
| Intrauterine hypoxia and birth asphyxia | P20-P21 | 6 | 2.1 | 6 | 2.8 | 0 | 0.0 |
| Respiratory distress of newborn | P22 | 9 | 3.2 | 8 | 3.7 | 1 | --2 |
| Other respiratory conditions of newborn | P23-P28 | 13 | 4.6 | 10 | 4.7 | 3 | --2 |
| Infections specific to the perinatal period | P35-P39 | 5 | 1.8 | 3 | --2 | 2 | --2 |
| Neonatal hemorrhage | P50-P52, P54 | 4 | --2 | 4 | --2 | 0 | 0.0 |
| Other and ill-defined conditions originating in the perinatal period | P90-P96 | 5 | 1.8 | 5 | 2.3 | 0 | 0.0 |
| **Symptoms, signs, and ill-defined conditions** | **R00-R99** | **26** | **9.2** | **2** | --2 | **24** | **34.8** |
| Sudden Infant Death Syndrome (SIDS) | R95 | 14 | 4.9 | 0 | 0.0 | 14 | 20.3 |
| **Unintentional injuries** | **V01-X59** | **4** | --2 | **1** | --2 | **3** | --2 |
| **Homicide** | **X85-Y09** | **0** | **0.0** | **0** | **0.0** | **0** | **0.0** |
| **All other causes** | **Residual** | **5** | **1.8** | **1** | --2 | **4** | --2 |
| 1. Please see Technical Notes in the Appendix for an explanation of ICD-10 codes. 2. Calculations based on values 1-4 are excluded. | | | | | | | |
|  | | | | | | | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 32. Infant Deaths by Major Causes, Race and Hispanic Ethnicity1, Massachusetts: 2016 | | | | | | | | | |
|  |  | **White non-Hispanic** | | **Black non-Hispanic** | | **Asian non-Hispanic** | | **Hispanic** | |
| **Cause of Death1** | **ICD-10 Code** | **#** | **%** | **#** | **%** | **#** | **%** | **#** | **%** |
| **TOTAL** |  | **119** | **100.0%** | **56** | **100.0%** | **18** | **100.0%** | **78** | **100.0%** |
| Certain conditions originating in the perinatal period | P00- P96 | 76 | 63.9% | 38 | 67.9% | 11 | 61.1% | 49 | 62.8% |
| Congenital malformations  59 | Q00-Q99 | 22 | 18.5% | 9 | 16.1% | 1 | --2 | 16 | 20.5% |
| Symptoms, signs, and  ill-defined conditions | R00-R99 | 14 | 11.8% | 4 | --2 | 2 | --2 | 5 | 6.4% |
| SIDS | R95 | 8 | 6.7% | 2 | --2 | 1 | --2 | 3 | --2 |
| Unintentional Injuries | V01-X59 | 1 | --2 | 2 | --2 | 0 | 0.0% | 1 | --2 |
| Homicide | X85-Y09 | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| All other causes | Residual | 6 | 5.0% | 3 | --2 | 4 | --2 | 7 | 9.0% |
| 1. Deaths are coded according to ICD-10. Please see Appendix for comparability ratios. 2. Calculations based on values 1-4 are excluded. | | | | | | | | | |

Table 33. Target Status for Selected Healthy People 2020 Mortality Objectives (underlying cause of death only)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **HEALTHY PEOPLE 2020 OBJECTIVE** | **TARGET 20201** | **MA**  **20102** | **MA**  **20132** | **MA**  **20142** | **MA 20152** | **MA 20162** | **TARGET STATUS** |
| **Overall Cancer** | 161.4 | 171.0 | 159.5 | 155.6 | 152.8 | 149.8 | **√** |
| Lung Cancer | 45.5 | 47.3 | 41.4 | 40.7 | 39.0 | 37.3 | **√** |
| Female Breast Cancer (per 100,000 females) | 20.7 | 19.1 | 18.4 | 18.0 | 17.7 | 16.8 | **√** |
| Uterine Cervical Cancer (per 100,000 females) | 2.2 | 4.3 | 1.0 | 1.3 | 1.1 | 1.1 | **√** |
| Colorectal Cancer | 14.5 | 14.9 | 13.0 | 12.6 | 12.0 | 11.6 | **√** |
| Oropharyngeal Cancer | 2.3 | 3.0 | 2.4 | 2.3 | 2.4 | 2.1 | **√** |
| Prostate Cancer (per 100,000 males) | 21.8 | 21.2 | 18.5 | 18.8 | 17.9 | 18.6 | **√** |
| Malignant Melanoma | 2.4 | 3.1 | 3.2 | 3.6 | 3.1 | 3.1 | **●** |
| **COPD, Ages 45+** | 102.6 | 84.4 | 86.8 | 85.8 | 90.9 | 86.2 | **√** |
| **Coronary Heart Disease** | 103.4 | 96.5 | 87.6 | 82.4 | 80.8 | 76.9 | **√** |
| **Stroke** | 34.8 | 31.2 | 31.8 | 39.4 | 45.5 | 53.6 | **●** |
| **Cirrhosis** | 8.2 | 5.4 | 4.6 | 5.5 | 4.1 | 4.3 | **√** |
| **Drug-Induced Deaths** | 11.3 | 12.5 | 19.0 | 23.5 | 29.0 | 35.8 | **●** |
| **HIV/AIDS** | 3.3 | 1.6 | 1.0 | 0.7 | 1.1 | 0.9 | **√** |
| **Injury Deaths** | 53.7 | 43.3 | 46.7 | 51.6 | 58.0 | 66.2 | **O** |
| Residential Fire Deaths | 0.9 | 0.2 | 0.2 | 0.4 | 0.5 | 0.5 | **√** |
| Falls | 7.2 | 6.9 | 7.8 | 7.9 | 8.7 | 8.5 | **O** |
| Falls, Ages 65+ | 47.0 | 48.1 | 55.4 | 52.2 | 59.4 | 57.5 | **O** |
| Firearm-Related | 9.3 | 4.0 | 3.2 | 3.1 | 3.0 | 3.4 | **√** |
| Poisonings | 13.2 | 12.5 | 18.4 | 23.6 | 28.4 | 35.4 | **●** |
| Poisonings, Ages 35-54 | 25.6 | 22.8 | 30.5 | 30.5 | 46.5 | 58.1 | **●** |
| Unintentional or Undetermined Intent Injuries | 11.1 | 10.9 | 16.5 | 16.5 | 26.3 | 33.1 | **●** |
| Unintentional or Undetermined Intent Injuries, Ages 35-54 | 21.6 | 20.0 | 30.5 | 30.7 | 46.5 | 58.1 | **●** |
| Unintentional Injuries | 36.4 | 28.3 | 33.9 | 39.4 | 45.5 | 53.6 | **●** |
| Motor Vehicle Crashes | 12.4 | 5.4 | 5.2 | 5.7 | 5.4 | 6.3 | **√** |
| Drowning | 1.1 | 1.2 | 1.3 | 1.0 | 1.0 | 1.2 | **O** |
| Hanging, Strangulation or Suffocation | 1.8 | 5.8 | 5.4 | 3.8 | 6.3 | 5.9 | **●** |
| Homicide | 5.5 | 3.2 | 2.3 | 2.3 | 2.2 | 2.1 | **√** |
| Suicide | 10.2 | 8.7 | 8.5 | 8.5 | 9.0 | 8.8 | **√** |
| **Infant and Child Health** |  |  |  |  |  |  |  |
| Infant Deaths (per 1,000 live births) | 6.0 | 4.4 | 4.2 | 4.5 | 4.3 | 4.0 | **√** |
| Neonatal Deaths (per 1,000 live births) | 4.1 | 3.3 | 3.1 | 3.3 | 3.3 | 3.0 | **√** |
| Post Neonatal Deaths (per 1,000 live births) | 2.0 | 1.1 | 1.1 | 1.2 | 1.0 | 1.0 | **√** |
| Birth Defects (per 1,000 live births) | 1.3 | 0.7 | 0.8 | 0.7 | 0.5 | 0.7 | **√** |
| Congenital Heart Defects (per 1,000 live births) | 0.3 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | **√** |
| Sudden Infant Death Syndrome (SIDS) (per 1,000 live births) | 0.5 | 0.5 | 0.2 | 0.3 | 0.3 | 0.2 | **√** |
| Child/Adolescent/Young Adults Death Rates |  |  |  |  |  |  |  |
| 1-4 years old | 26.5 | 13.6 | 15.4 | 14.7 | 16.7 | 14.2 | **√** |
| 5-9 years old | 12.4 | 7.3 | 8.4 | 5.3 | 9.1 | 8.8 | **√** |
| 10-14 years old | 14.8 | 8.6 | 10.3 | 6.8 | 9.1 | 10.4 | **√** |
| 15-19 years old | 54.3 | 30.9 | 27.8 | 19.5 | 31.1 | 30.4 | **√** |
| 20-24 years old | 88.3 | 65.2 | 66.6 | 40.9 | 76.1 | 77.7 | **√** |
| **Asthma Deaths (per million)** |  |  |  |  |  |  |  |
| Ages 35-64 Years | 4.9 | 6.3 | 10.3 | 11.4 | 10.3 | 12.6 | **●** |
| Ages 65+ Years | 21.5 | 29.9 | 31.3 | 35.4 | 45.9 | 36.3 | **●** |

1. Data 2020 the Healthy People 2020 Database. (Source: https://www.healthypeople.gov).

2. Death rates are per 100,000 and age adjusted to the 2010 US Population except when noted.

**⚫** = NO, > 25% from target

**✓** = YES, met target

**⭘**= NO, but within 25% of target

Table 34. Rank of Premature Mortality Rates for the Largest 30 Communities, Massachusetts: 2016 (Sorted by PMR)

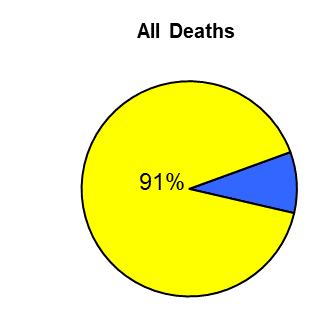
|  |  |  |
| --- | --- | --- |
| **Largest 30 Communities1** | **Number of Premature Deaths** | **PMR2**  **(per 100,000)** |
| Fall River | 467 | 517.7\* |
| New Bedford | 469 | 502.8\* |
| Pittsfield | 250 | 500.0\* |
| Lowell | 450 | 485.7\* |
| Worcester | 771 | 477.2\* |
| Brockton | 429 | 467.6\* |
| Haverhill | 279 | 462.0\* |
| Springfield | 612 | 441.0\* |
| Taunton | 246 | 428.2\* |
| Chicopee | 251 | 417.3\* |
| Weymouth | 244 | 405.9\* |
| Lawrence | 256 | 403.1\* |
| Attleboro | 177 | 399.2\* |
| Revere | 207 | 389.9\* |
| Lynn | 331 | 383.4\* |
| Methuen | 180 | 375.5\* |
| Quincy | 348 | 350.1\* |
| Barnstable | 187 | 349.5\* |
| Boston | 1816 | 345.4\* |
| Malden | 196 | 340.5\* |
| Somerville | 187 | 326.6 |
| Plymouth | 216 | 324.9 |
| Peabody | 187 | 317.1 |
| Medford | 179 | 311.3 |
| Framingham | 178 | 261.8 |
| Waltham | 151 | 261.5 |
| Cambridge | 217 | 250.7 |
| Arlington | 90 | 193.3\* |
| Newton | 148 | 166.8\* |
| Brookline | 81 | 149.8\* |
| **STATE** | **22,268** | **282.2** |

1. These communities had the largest populations in Massachusetts, based on 2010 Census. Rates for cities and towns were calculated using MDPH population estimates for 2010, which are the most up-to-date information available on the number of persons by age, race, and sex at the sub-state level. 2. Rates are age-adjusted to the 2000 US Standard Population for person ages 0-74 years.

**\*Significantly different from State PMR.**

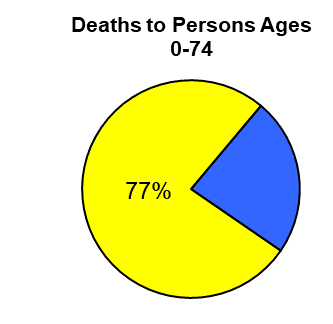
|  |  |  |
| --- | --- | --- |
| Table 35. Premature Mortality Rates by Community, Massachusetts: 2016 | | |
| **City/Town** | **Premature Deaths (#)** | **PMR**1  (per 100,000 population) |
|  |  |  |
| **STATE** | **22,268** | **282.2** |
| Abington | 56 | 338.8 |
| Acton | 62 | 288.6 |
| Acushnet | 44 | 384.8 |
| Adams | 42 | 438.6 |
| Agawam | 110 | 321.2 |
| Alford | 1 | --2 |
| Amesbury | 59 | 357.4 |
| Amherst | 38 | 202.9 |
| Andover | 75 | 208.3 |
| Aquinnah | 2 | --2 |
| Arlington | 90 | 193.3 |
| Ashburnham | 23 | 383.7 |
| Ashby | 10 | 276.2 |
| Ashfield | 3 | --2 |
| Ashland | 45 | 276.2 |
| Athol | 65 | 542.2 |
| Attleboro | 177 | 399.2 |
| Auburn | 54 | 277.7 |
| Avon | 23 | 466.7 |
| Ayer | 48 | 661.3 |
| Barnstable | 187 | 349.5 |
| Barre | 22 | 386.6 |
| Becket | 8 | 320.5 |
| Bedford | 37 | 245.5 |
| Belchertown | 46 | 338.5 |
| Bellingham | 66 | 393.9 |
| Belmont | 47 | 171.0 |
| Berkley | 18 | 320.4 |
| Berlin | 10 | 231.7 |
| Bernardston | 6 | 196.5 |
| Beverly | 150 | 366.4 |
| Billerica | 141 | 329.7 |
| Blackstone | 41 | 480.3 |
| Blandford | 2 | --2 |
| Bolton | 8 | 150.8 |
| Boston | 1,816 | 345.4 |
| Bourne | 86 | 367.7 |
| Boxborough | 11 | 252.8 |
| Boxford | 19 | 185.8 |
| Boylston | 9 | 177.9 |
| Braintree | 135 | 337.0 |
| Brewster | 24 | 183.3 |
| Bridgewater | 85 | 339.5 |
| Brimfield | 16 | 354.8 |
| Brockton | 429 | 467.6 |
| Brookfield | 15 | 329.2 |
| **Table 34 (continued). Premature Mortality Rates by Community,**  **Table 35 (continued). Premature Mortality Rates by Community,**  **Massachusetts: 2016**  **Massachusetts: 2015** | | |
| **City/Town** | **Premature Deaths (#)** | **PMR**1  (per 100,000 population) |
| Brookline | 81 | 149.8 |
| Buckland | 10 | 537.8 |
| Burlington | 60 | 214.2 |
| Cambridge | 217 | 250.7 |
| Canton | 70 | 299.4 |
| Carlisle | 7 | 103.6 |
| Carver | 66 | 539.9 |
| Charlemont | 3 | --2 |
| Charlton | 44 | 367.5 |
| Chatham | 21 | 242.7 |
| Chelmsford | 97 | 248.9 |
| Chelsea | 129 | 471.5 |
| Cheshire | 10 | 258.4 |
| Chester | 2 | --2 |
| Chesterfield | 7 | 404.3 |
| Chicopee | 251 | 417.3 |
| Chilmark | 2 | --2 |
| Clarksburg | 2 | --2 |
| Clinton | 58 | 419.9 |
| Cohasset | 17 | 258.0 |
| Colrain | 9 | 348.2 |
| Concord | 35 | 154.5 |
| Conway | 4 | --2 |
| Cummington | 2 | --2 |
| Dalton | 18 | 223.0 |
| Danvers | 124 | 407.3 |
| Dartmouth | 111 | 308.5 |
| Dedham | 97 | 353.6 |
| Deerfield | 13 | 179.2 |
| Dennis | 82 | 373.0 |
| Dighton | 23 | 288.4 |
| Douglas | 22 | 288.1 |
| Dover | 8 | 180.5 |
| Dracut | 116 | 374.2 |
| Dudley | 40 | 356.1 |
| Dunstable | 8 | 242.2 |
| Duxbury | 42 | 248.5 |
| East Bridgewater | 55 | 354.9 |
| East Brookfield | 12 | 466.8 |
| East Longmeadow | 39 | 222.8 |
| Eastham | 14 | 175.4 |
| Easthampton | 60 | 341.6 |
| Easton | 68 | 290.3 |
| Edgartown | 13 | 253.9 |
| Egremont | 5 | 220.9 |
| Erving | 8 | 355.2 |
| Essex | 13 | 397.6 |
| Everett | 151 | 387.7 |
| Fairhaven | 53 | 261.6 |
| **Table 294 (continued). Premature Mortality Rates by Community,**  **Table 35 (continued). Premature Mortality Rates by Community,**  **Massachusetts: 2016**  **Massachusetts: 2015** | | |
| **City/Town** | **Premature Deaths (#)** | **PMR**1  (per 100,000 population) |
| Fall River | 467 | 517.7 |
| Falmouth | 127 | 338.4 |
| Fitchburg | 198 | 522.2 |
| Florida | 4 | --2 |
| Foxborough | 60 | 312.8 |
| Framingham | 178 | 261.8 |
| Franklin | 65 | 247.7 |
| Freetown | 29 | 303.4 |
| Gardner | 92 | 446.4 |
| Georgetown | 18 | 229.4 |
| Gill | 1 | --2 |
| Gloucester | 117 | 307.9 |
| Goshen | 5 | 396.9 |
| Gosnold | 0 | 0.0 |
| Grafton | 41 | 223.9 |
| Granby | 20 | 297.2 |
| Granville | 3 | --2 |
| Great Barrington | 34 | 404.9 |
| Greenfield | 83 | 401.1 |
| Groton | 28 | 283.5 |
| Groveland | 15 | 205.0 |
| Hadley | 19 | 339.3 |
| Halifax | 30 | 375.4 |
| Hamilton | 28 | 353.0 |
| Hampden | 18 | 329.5 |
| Hancock | 4 | --2 |
| Hanover | 45 | 338.4 |
| Hanson | 36 | 331.9 |
| Hardwick | 14 | 492.3 |
| Harvard | 10 | 139.1 |
| Harwich | 69 | 431.9 |
| Hatfield | 22 | 494.1 |
| Haverhill | 279 | 462.0 |
| Hawley | 1 | --2 |
| Heath | 3 | --2 |
| Hingham | 60 | 232.3 |
| Hinsdale | 5 | 244.4 |
| Holbrook | 52 | 444.6 |
| Holden | 63 | 337.6 |
| Holland | 5 | 141.7 |
| Holliston | 35 | 202.0 |
| Holyoke | 161 | 424.9 |
| Hopedale | 21 | 407.6 |
| Hopkinton | 23 | 163.9 |
| Hubbardston | 21 | 500.4 |
| Hudson | 57 | 262.6 |
| Hull | 48 | 353.9 |
| Huntington | 6 | 245.0 |
|  |  |  |
| **Table 30 (continued). Premature Mortality Rates by Community,**  **Table 35 (continued). Premature Mortality Rates by Community,**  **Massachusetts: 2016**  **Massachusetts: 2015** | | |
| **City/Town** | **Premature Deaths (#)** | **PMR**1  (per 100,000 population) |
| Ipswich | 38 | 247.0 |
| Kingston | 34 | 236.5 |
| Lakeville | 36 | 292.1 |
| Lancaster | 26 | 315.9 |
| Lanesborough | 12 | 295.7 |
| Lawrence | 256 | 403.1 |
| Lee | 18 | 245.0 |
| Leicester | 52 | 428.8 |
| Lenox | 12 | 220.1 |
| Leominster | 171 | 403.8 |
| Leverett | 4 | --2 |
| Lexington | 48 | 144.7 |
| Leyden | 2 | --2 |
| Lincoln | 18 | 248.7 |
| Littleton | 27 | 289.1 |
| Longmeadow | 28 | 160.7 |
| Lowell | 450 | 485.7 |
| Ludlow | 71 | 304.7 |
| Lunenburg | 44 | 374.6 |
| Lynn | 331 | 383.4 |
| Lynnfield | 23 | 195.0 |
| Malden | 196 | 340.5 |
| Manchester | 17 | 306.4 |
| Mansfield | 60 | 307.7 |
| Marblehead | 47 | 214.8 |
| Marion | 21 | 351.4 |
| Marlborough | 116 | 304.6 |
| Marshfield | 109 | 363.5 |
| Mashpee | 62 | 333.8 |
| Mattapoisett | 21 | 242.7 |
| Maynard | 31 | 259.6 |
| Medfield | 17 | 130.3 |
| Medford | 179 | 311.3 |
| Medway | 37 | 294.0 |
| Melrose | 76 | 257.9 |
| Mendon | 15 | 234.5 |
| Merrimac | 24 | 336.7 |
| Methuen | 180 | 375.5 |
| Middleborough | 110 | 424.2 |
| Middlefield | 2 | --2 |
| Middleton | 23 | 243.4 |
| Milford | 89 | 318.9 |
| Millbury | 48 | 314.6 |
| Millis | 32 | 379.7 |
| Millville | 7 | 244.3 |
| Milton | 77 | 283.4 |
| Monroe | 1 | --2 |
| Monson | 30 | 298.3 |
| Montague | 47 | 492.2 |
| **Table 31 (continued). Premature Mortality Rates by Community,**  **Table 35 (continued). Premature Mortality Rates by Community,**  **Massachusetts: 2016**  **Massachusetts: 2015** | | |
| **City/Town** | **Premature Deaths (#)** | **PMR**1  (per 100,000 population) |
| Monterey | 0 | 0.0 |
| Montgomery | 5 | 612.5 |
| Mount Washington | 0 | 0.0 |
| Nahant | 15 | 301.4 |
| Nantucket | 33 | 294.8 |
| Natick | 87 | 250.9 |
| Needham | 47 | 158.2 |
| New Ashford | 3 | --2 |
| New Bedford | 469 | 502.8 |
| New Braintree | 2 | --2 |
| New Marlborough | 3 | --2 |
| New Salem | 4 | --2 |
| Newbury | 17 | 232.0 |
| Newburyport | 51 | 232.5 |
| Newton | 148 | 166.8 |
| Norfolk | 20 | 182.3 |
| North Adams | 67 | 448.1 |
| North Andover | 55 | 204.9 |
| North Attleboro | 87 | 314.1 |
| North Brookfield | 18 | 358.5 |
| North Reading | 33 | 200.1 |
| Northampton | 84 | 281.7 |
| Northborough | 42 | 289.9 |
| Northbridge | 56 | 377.3 |
| Northfield | 9 | 292.5 |
| Norton | 60 | 337.3 |
| Norwell | 27 | 207.1 |
| Norwood | 83 | 264.2 |
| Oak Bluffs | 27 | 480.6 |
| Oakham | 4 | --2 |
| Orange | 53 | 621.5 |
| Orleans | 28 | 356.6 |
| Otis | 8 | 384.7 |
| Oxford | 48 | 326.1 |
| Palmer | 62 | 474.1 |
| Paxton | 10 | 207.2 |
| Peabody | 187 | 317.1 |
| Pelham | 4 | --2 |
| Pembroke | 66 | 365.1 |
| Pepperell | 36 | 310.4 |
| Peru | 2 | --2 |
| Petersham | 5 | 241.4 |
| Phillipston | 7 | 452.3 |
| Pittsfield | 250 | 500.0 |
| Plainfield | 3 | --2 |
| Plainville | 38 | 409.0 |
| Plymouth | 216 | 324.9 |
| Plympton | 8 | 255.9 |
| Princeton | 11 | 274.8 |
| **Table 32 (continued). Premature Mortality Rates by Community,**  **Table 35 (continued). Premature Mortality Rates by Community,**  **Massachusetts: 2016**  **Massachusetts: 2015** | | |
| **City/Town** | **Premature Deaths (#)** | **PMR**1  (per 100,000 population) |
| Provincetown | 12 | 214.2 |
| Quincy | 348 | 350.1 |
| Randolph | 116 | 349.0 |
| Raynham | 53 | 359.2 |
| Reading | 54 | 207.9 |
| Rehoboth | 31 | 249.0 |
| Revere | 207 | 389.9 |
| Richmond | 2 | --2 |
| Rochester | 16 | 297.2 |
| Rockland | 108 | 601.6 |
| Rockport | 19 | 176.8 |
| Rowe | 1 | --2 |
| Rowley | 9 | 135.5 |
| Royalston | 3 | --2 |
| Russell | 8 | 437.5 |
| Rutland | 26 | 354.6 |
| Salem | 139 | 331.7 |
| Salisbury | 51 | 533.2 |
| Sandisfield | 7 | 406.5 |
| Sandwich | 60 | 239.9 |
| Saugus | 93 | 304.9 |
| Savoy | 4 | --2 |
| Scituate | 59 | 273.3 |
| Seekonk | 49 | 322.1 |
| Sharon | 26 | 124.7 |
| Sheffield | 13 | 289.3 |
| Shelburne | 13 | 621.1 |
| Sherborn | 9 | 281.9 |
| Shirley | 24 | 342.8 |
| Shrewsbury | 69 | 201.8 |
| Shutesbury | 3 | --2 |
| Somerset | 70 | 325.0 |
| Somerville | 187 | 326.6 |
| South Hadley | 50 | 270.7 |
| Southampton | 14 | 204.0 |
| Southborough | 14 | 125.8 |
| Southbridge | 85 | 509.2 |
| Southwick | 29 | 269.0 |
| Spencer | 51 | 398.7 |
| Springfield | 612 | 441.0 |
| Sterling | 17 | 195.7 |
| Stockbridge | 6 | 214.2 |
| Stoneham | 71 | 302.2 |
| Stoughton | 103 | 350.7 |
| Stow | 12 | 177.5 |
| Sturbridge | 34 | 304.3 |
| Sudbury | 34 | 195.4 |
| Sunderland | 10 | 311.9 |
| Sutton | 19 | 194.6 |
| **Table 33 (continued). Premature Mortality Rates by Community,**  **Table 35 (continued). Premature Mortality Rates by Community,**  **Massachusetts: 2016**  **Massachusetts: 2015** | | |
| **City/Town** | **Premature Deaths (#)** | **PMR**1  (per 100,000 population) |
| Swampscott | 46 | 302.8 |
| Swansea | 37 | 196.3 |
| Taunton | 246 | 428.2 |
| Templeton | 27 | 322.7 |
| Tewksbury | 110 | 333.2 |
| Tisbury | 18 | 360.3 |
| Tolland | 3 | --2 |
| Topsfield | 15 | 222.0 |
| Townsend | 32 | 363.5 |
| Truro | 8 | 277.4 |
| Tyngsborough | 33 | 347.7 |
| Tyringham | 0 | 0.0 |
| Upton | 22 | 258.5 |
| Uxbridge | 35 | 239.7 |
| Wakefield | 98 | 357.2 |
| Wales | 9 | 409.8 |
| Walpole | 61 | 244.6 |
| Waltham | 151 | 261.5 |
| Ware | 39 | 381.0 |
| Wareham | 138 | 526.1 |
| Warren | 11 | 196.3 |
| Warwick | 4 | --2 |
| Washington | 1 | --2 |
| Watertown | 86 | 259.3 |
| Wayland | 22 | 159.5 |
| Webster | 72 | 402.4 |
| Wellesley | 35 | 119.7 |
| Wellfleet | 14 | 237.1 |
| Wendell | 4 | --2 |
| Wenham | 8 | 185.3 |
| West Boylston | 14 | 151.9 |
| West Bridgewater | 26 | 324.4 |
| West Brookfield | 25 | 555.1 |
| West Newbury | 9 | 191.9 |
| West Springfield | 122 | 394.7 |
| West Stockbridge | 5 | 234.9 |
| West Tisbury | 8 | 288.5 |
| Westborough | 41 | 234.4 |
| Westfield | 155 | 370.0 |
| Westford | 48 | 212.7 |
| Westhampton | 8 | 415.9 |
| Westminster | 24 | 287.6 |
| Weston | 17 | 121.7 |
| Westport | 57 | 266.5 |
| Westwood | 34 | 272.5 |
| Weymouth | 244 | 405.9 |
| Whately | 3 | --2 |
| Whitman | 61 | 409.3 |
| Wilbraham | 33 | 193.3 |
| **Table 34 (continued). Premature Mortality Rates by Community,**  **Table 35 (continued). Premature Mortality Rates by Community,**  **Massachusetts: 2016**  **Massachusetts: 2015** | | |
| **City/Town** | **Premature Deaths (#)** | **PMR**1  (per 100,000 population) |
| Williamsburg | 10 | 347.5 |
| Williamstown | 18 | 239.1 |
| Wilmington | 67 | 302.8 |
| Winchendon | 32 | 306.5 |
| Winchester | 34 | 173.4 |
| Windsor | 6 | 414.3 |
| Winthrop | 93 | 425.5 |
| Woburn | 147 | 353.4 |
| Worcester | 771 | 477.2 |
| Worthington | 5 | 260.8 |
| Wrentham | 42 | 404.1 |
| Yarmouth | 120 | 346.6 |
| 1. Premature mortality rates (PMR) are age-adjusted to the 2000 US Standard Population for persons ages 0-74 years. 2. Age-adjusted rates based on values 1-4 are excluded. | | |

# Figure 17. Percent of Deaths Amenable to Health Care1, Massachusetts: 2016



Deaths Amenable to Health Care

9%



Deaths Amenable to Health Care

23%

1. Deaths amenable to health care are deaths that should be preventable with timely and effective health care. See Table A6 for a complete list of ICD codes included in this category.

# Figure 18. Amenable Mortality1 by Race and Hispanic Ethnicity2,

# Massachusetts: 2002-2016

1. Deaths amenable to health care are deaths that should be preventable with timely and effective health care. See Table A6 for a complete list of ICD codes included in this category.

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 Technical Notes in the Appendix for a more detailed explanation.

**APPENDIX**

Additional Tables & Figures

Technical Notes

Glossary

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# 

# Figure 19. Percent Distribution of Leading Underlying Causes of Death,

# Massachusetts: 2016

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1 Total Number of Deaths = 56,733

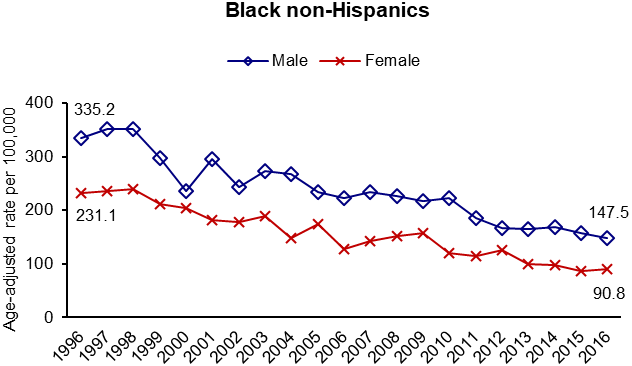
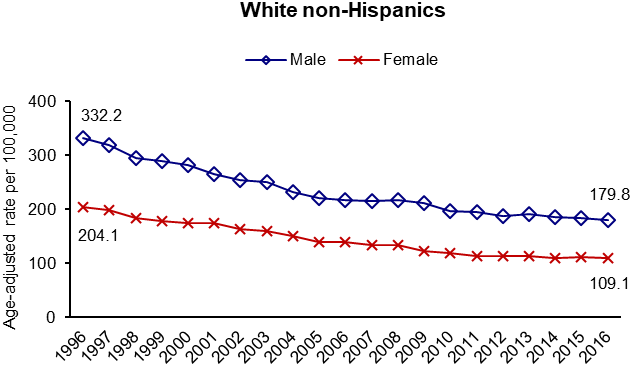
Causes of Death are classified according to ICD-10

Note: Total Number of Deaths = 56,953

Note: Causes of Death are classified according to ICD-10

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 36. Number and Age-Specific Rates for Leading Underlying Causes of Death by Race and Hispanic Ethnicity, Massachusetts: 2016 | | | | | | | | | | | | | | | | | | | | | |
|  | | **Total** | | | | **White non-Hispanic1** | | | | **Black non-Hispanic1** | | | | **Asian non-Hispanic1** | | | | | **Hispanic1** | | |
| **Selected Causes2** | | **#** | | **Rate3** | | **#** | | **Rate3** | | **#** | | **Rate3** | | **#** | **Rate3** | | **#** | | | **Rate3** | |
| **Age: 1-14, TOTAL** | | **115** | | **10.9** | | **68** | | **10.0** | | **17** | | **16.6** | **7** | | **8.8** | | **16** | | | **8.4** | |
| Unintentional Injuries4 | | 27 | | 2.6 | | 16 | | 2.4 | | 5 | | 4.9 | 1 | | --6 | | 3 | | | --6 | |
| Cancer | | 20 | | 1.9 | | 9 | | 1.3 | | 2 | | --6 | 3 | | --6 | | 6 | | | 3.1 | |
| Heart Disease | | 8 | | 0.8 | | 6 | | 0.9 | | 1 | | --6 | 1 | | --6 | | 0 | | | 0.0 | |
| Congenital malformations | | 8 | | 0.8 | | 4 | | --6 | | 1 | | --6 | 1 | | --6 | | 1 | | | --6 | |
| **Age: 15-24, TOTAL** | | **526** | | **55.1** | | **346** | | **53.3** | | **58** | | **67.6** | **25** | | **33.3** | | **82** | | | **57.6** | |
| Unintentional Injuries4 | | 285 | | 29.8 | | 203 | | 31.3 | | 22 | | 25.6 | 8 | | 10.7 | | 44 | | | 30.9 | |
| Suicide | | 83 | | 8.7 | | 62 | | 9.5 | | 4 | | --6 | 8 | | 10.7 | | 9 | | | 6.3 | |
| Homicide | | 44 | | 4.6 | | 10 | | 1.5 | | 19 | | 22.2 | 0 | | 0.0 | | 15 | | | 10.5 | |
| Cancer | | 25 | | 2.6 | | 15 | | 2.3 | | 1 | | --6 | 4 | | --6 | | 3 | | | --6 | |
| **Age: 25-44, TOTAL** | | **2,742** | | **154.3** | | **2,054** | | **169.5** | | **201** | | **135.7** | **58** | | **34.4** | | **359** | | | **146.7** | |
| Unintentional Injuries4  73 | | 1,409 | | 79.3 | | 1,135 | | 93.7 | | 50 | | 33.8 | 13 | | 7.7 | | 185 | | | 75.6 | |
| Cancer | | 261 | | 14.7 | | 174 | | 14.4 | | 23 | | 15.5 | 14 | | 8.3 | | 41 | | | 16.7 | |
| Suicide | | 210 | | 11.8 | | 172 | | 14.2 | | 12 | | 8.1 | 6 | | 3.6 | | 15 | | | 6.1 | |
| Heart Disease | | 150 | | 8.4 | | 98 | | 8.1 | | 20 | | 13.5 | 9 | | 5.3 | | 20 | | | 8.2 | |
| **Age: 45-64, TOTAL** | | **9,270** | | **493.6** | | **7,674** | | **507.8** | | **655** | | **545.5** | **209** | | **208.4** | | **603** | | | **424.4** | |
| Cancer | | 2,984 | | 158.9 | | 2,470 | | 163.4 | | 201 | | 167.4 | 118 | | 117.6 | | 148 | | | 104.2 | |
| Heart Disease | | 1,559 | | 83.0 | | 1,320 | | 87.3 | | 114 | | 94.9 | 25 | | 24.9 | | 91 | | | 64.0 | |
| Unintentional Injuries4 | | 1,097 | | 58.4 | | 902 | | 59.7 | | 61 | | 50.8 | 13 | | 13.0 | | 105 | | | 73.9 | |
| Chronic Liver Disease | | 389 | | 20.7 | | 329 | | 21.8 | | 17 | | 14.2 | 1 | | --6 | | 35 | | | 24.6 | |
| **Age: 65+, TOTAL** | | **44,015** | | **4,098.4** | | **40,392** | | **4,297.4** | | **1,517** | | **3,148.0** | **711** | | **1,815.5** | | **987** | | | **2,203.6** | |
| Heart Disease | | 10,190 | | 948.8 | | 9,438 | | 1,004.1 | | 307 | | 637.1 | 129 | | 329.4 | | 215 | | | 480.0 | |
| Cancer | | 9,401 | | 875.4 | | 8,597 | | 914.7 | | 339 | | 703.5 | 187 | | 477.5 | | 205 | | | 457.7 | |
| Chronic Lower Respiratory Disease | | 2,343 | | 218.2 | | 2,232 | | 237.5 | | 44 | | 91.3 | 21 | | 53.6 | | 29 | | | 64.7 | |
| Stroke | | 2,236 | | 208.2 | | 1,982 | | 210.9 | | 98 | | 203.4 | 65 | | 166.0 | | 58 | | | 129.5 | |
|  | | | | | | | | | | | | | | | | | | | | | |
| **Table 36 (continued). Number and Age-Specific Rates for Leading Underlying Causes of Death by Race and Hispanic**  **Ethnicity, Massachusetts: 2016** | | | | | | | | | | | | | | | | | | | | | |
|  | | **Total** | | | | **White non-Hispanic1** | | | | **Black non-Hispanic1** | | | | **Asian non- Hispanic1** | | | | | **Hispanic1** | | |
| **Selected Causes2** | | **#** | | **Rate3** | | **#** | | **Rate3** | | **#** | | **Rate3** | | **#** | **Rate3** | | **#** | | | **Rate3** | |
| **Age: 65-74, TOTAL** | | **9,332** | | **1,523.5** | | **8,240** | | **1,554.8** | | **478** | | **1,630.8** | **169** | | **716.8** | | **344** | | | **1,205.6** | |
| Cancer | | 3,316 | | 541.4 | | 2,969 | | 560.2 | | 151 | | 515.2 | 70 | | 296.9 | | 98 | | | 343.4 | |
| Heart Disease | | 1,736 | | 283.4 | | 1,543 | | 291.1 | | 80 | | 272.9 | 24 | | 101.8 | | 64 | | | 224.3 | |
| Chronic Lower Respiratory Disease5 | | 616 | | 100.6 | | 587 | | 110.8 | | 15 | | 51.2 | 2 | | --6 | | 8 | | | 28.0 | |
| Stroke | | 303 | | 49.5 | | 248 | | 46.8 | | 18 | | 61.4 | 11 | | 46.7 | | 17 | | | 59.6 | |
| **Age: 75-84, TOTAL** | | **12,870** | | **4,252.8** | | **11,679** | | **4,407.3** | | **484** | | **3,568.8** | **252** | | **2,175.2** | | **329** | | | **2,753.6** | |
| Cancer | | 3,411 | | 1,127.1 | | 3,149 | | 1,188.3 | | 102 | | 752.1 | 72 | | 621.5 | | 61 | | | 510.5 | |
| Heart Disease | | 2,657 | | 878.0 | | 2,399 | | 905.3 | | 110 | | 811.1 | 39 | | 336.6 | | 78 | | | 652.8 | |
| Chronic Lower Respiratory Disease5 | | 838 | | 276.9 | | 793 | | 299.3 | | 19 | | 140.1 | 7 | | 60.4 | | 14 | | | 117.2 | |
| Stroke | | 608 | | 200.9 | | 532 | | 200.8 | | 24 | | 177.0 | 24 | | 207.2 | | 17 | | | 142.3 | |
| **Age: 85+, TOTAL** | | **21,813** | | **13,735.6** | | **20,473** | | **14,124.4** | | **555** | | **10,438.2** | **290** | | **7,250.0** | | **314** | | | **7,288.8** | |
| Heart Disease  74 | | 5,797 | | 3,650.4 | | 5,496 | | 3,791.7 | | 117 | | 2,200.5 | 66 | | 1,650.0 | | 73 | | | 1,694.5 | |
| Cancer | | 2,674 | | 1,683.8 | | 2,479 | | 1,710.3 | | 86 | | 1,617.5 | 45 | | 1,125.0 | | 46 | | | 1,067.8 | |
| Stroke | | 1,325 | | 834.4 | | 1,202 | | 829.3 | | 56 | | 1,053.2 | 30 | | 750.0 | | 24 | | | 557.1 | |
| Alzheimer’s Disease | | 1,234 | | 777.0 | | 1,171 | | 807.9 | | 28 | | 526.6 | 12 | | 300.0 | | 14 | | | 325.0 | |
| 1. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include persons of Hispanic ethnicity in a race category. Please see 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. 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. Calculations based on values 1-4 are excluded. | | | | | | | | | | | | | | | | | | | | | |

# Figure 20. Heart Disease Death Rates1 by Race and Hispanic Ethnicity and Gender, Massachusetts: 1996-20162



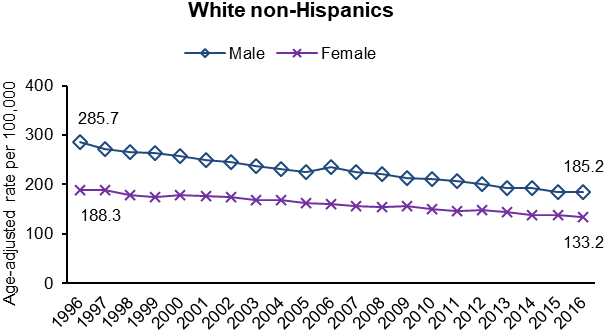
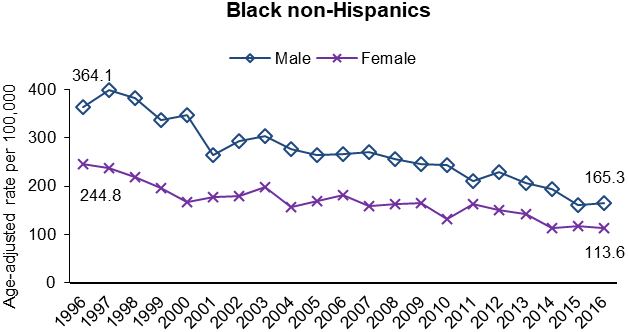
1. Rates are per 100,000 population, age-adjusted to the 2010 U.S. Standard Population. 2. For 1996-1998 the comparability-modified rates were used.

75

61.5

50.4

# Figure 21. Cancer Death Rates1 by Race and Hispanic Ethnicity and Gender, Massachusetts: 1996-20162



76

1. Rates are per 100,000 population, age-adjusted to the 2010 U.S. Standard Population. 2. For 1996-1998 the comparability-modified rates were used.

|  |
| --- |
|  |

|  |  |  |  |
| --- | --- | --- | --- |
| Table 37. Premature Mortality Rates by Community Health Network Area (CHNA),  Massachusetts: 2016 | | | |
| **CHNA (Name and Number)** | **Number of Deaths** | | **PMR1**  (per 100,000 population) |
| **Massachusetts** | **22,268** | | **282.2** |
| 1. Community Health Network of Berkshire | 570 | 363.1 | |
| 2. Upper Valley Health Web (Franklin County) | 382 | 376.5 | |
| 3. Partnership for Health in Hampshire County (Northampton) | 438 | 292.3 | |
| 4. The Community Health Connection (Springfield) | 1,104 | 363.5 | |
| 5. Community Health Network of Southern Worcester County | 485 | 380.2 | |
| 6. Community Partners for Health (Milford) | 495 | 308.4 | |
| 7. Community Health Network of Greater Metro West (Framingham) | 1,016 | 249.5 | |
| 8. Common Pathways (Worcester) | 1,131 | 377.1 | |
| 9. Community Health Network of North Central Massachusetts | 1,018 | 375.4 | |
| 10. Greater Lowell Community Health Network | 1,003 | 362.7 | |
| 11. Greater Lawrence Community Health Network | 589 | 321.4 | |
| 12. Greater Haverhill Community Health Network | 551 | 347.5 | |
| 13. Community Health Network North (Beverly/Gloucester) | 405 | 305.2 | |
| 14. North Shore Community Health Network | 1,005 | 328.6 | |
| 15. Northwest Suburban Health Alliance | 553 | 236.5 | |
| 16. North Suburban Health Alliance (Medford/Malden/Melrose) | 858 | 307.0 | |
| 17. Greater Cambridge/Somerville Community Health Network | 627 | 246.6 | |
| 18. West Suburban Health Network (Newton/Waltham) | 537 | 199.4 | |
| 19. Alliance for Community Health (Boston/Chelsea/Revere/Winthrop) | 2,326 | 340.3 | |
| 20. Blue Hills Community Health Alliance (Greater Quincy) | 1,310 | 313.8 | |
| 21. Community Health Network of Chicopee, Holyoke, Ludlow, Westfield | 646 | 382.9 | |
| 22. Greater Brockton Community Health Network | 958 | 395.1 | |
| 23. South Shore Community Health Network | 760 | 361.3 | |
| 24. Greater Attleboro-Taunton Health & Education Response | 950 | 361.9 | |
| 25. Partners for Healthier Communities (Fall River) | 631 | 419.9 | |
| 26. Greater New Bedford Community Health Network | 902 | 414.0 | |
| 27. Cape Cod and Islands Health Network | 1,017 | 318.9 | |
| 1. Rates are per 100,000 population age-adjusted to the 2000 US Standard Population for persons ages 0-74 years. | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Table 38. Premature Mortality Rates by County, Massachusetts: 2016 | | | | | |
| **County** | **Number of Deaths** | | | **PMR1**  (per 100,000 population) | |
| **Massachusetts** | **22,2682** | | | **282.2** | |
|  |  | |  | | |
| Barnstable | 914 | 305.1 | | |
| Berkshire | 570 | 339.3 | | |
| Bristol | 2,209 | 341.0 | | |
| Dukes | 70 | 279.8 | | |
| Essex | 2,550 | 280.2 | | |
| Franklin | 302 | 305.3 | | |
| Hampden | 1,774 | 329.3 | | |
| Hampshire | 444 | 247.6 | | |
| Middlesex | 4,184 | 234.2 | | |
| Nantucket | 33 | 244.1 | | |
| Norfolk | 2,034 | 248.8 | | |
| Plymouth | 2,008 | 319.7 | | |
| Suffolk | 2,245 | 301.1 | | |
| Worcester | 2,930 | 311.0 | | |
| 1. Rates are per 100,000 population age-adjusted to the 2000 US Standard Population for persons ages 0-74 years.  2. Includes one death with an unknown county of residence. | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 39. Selected Causes of Death by Community, Massachusetts: 2016 | | | | | | | | | | | | | | |
| **CITY/TOWN** | **Total Deaths** | **Age-Adjusted Death Rate1** | **Heart Disease** | **Total Cancer** | **Lung Cancer** | **Female Breast Cancer2** | **Stroke** | **CLRD3** | **Diabetes** | **Influenza & Pneumonia** | **Motor Vehicle** | **Homicide** | **Suicide** | **Opioid- related5** |
| **Massachusetts** | **56,953** | **668.9** | **11,923** | **12,691** | **3,168** | **775** | **2,468** | **2,676** | **1,267** | **1,243** | **466** | **140** | **636** | **2,034** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Abington** | 127 | 803.5 | 34 | 26 | 7 | 4 | 5 | 7 | 3 | 5 | 0 | 0 | 2 | 2 |
| **Acton** | 144 | 725.4 | 24 | 44 | 11 | 2 | 4 | 7 | 5 | 1 | 2 | 0 | 5 | 7 |
| **Acushnet** | 101 | 798.1 | 22 | 28 | 9 | 1 | 7 | 4 | 1 | 0 | 4 | 0 | 1 | 4 |
| **Adams** | 103 | 769.0 | 26 | 19 | 6 | 1 | 8 | 5 | 1 | 0 | 0 | 0 | 1 | 1 |
| **Agawam** | 339 | 714.7 | 83 | 67 | 15 | 3 | 17 | 19 | 10 | 7 | 3 | 0 | 1 | 3 |
| **Alford** | 2 | --4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Amesbury** | 146 | 818.5 | 35 | 25 | 5 | 3 | 9 | 7 | 5 | 3 | 0 | 0 | 1 | 7 |
| **Amherst** | 132 | 515.3 | 26 | 29 | 7 | 2 | 4 | 6 | 0 | 4 | 1 | 0 | 1 | 2 |
| **Andover** | 223 | 559.1 | 56 | 48 | 13 | 1 | 7 | 12 | 4 | 2 | 2 | 0 | 2 | 3 |
| **Aquinnah**  79 | 3 | --4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| **Arlington** | 345 | 560.3 | 63 | 77 | 19 | 5 | 8 | 13 | 10 | 6 | 5 | 0 | 2 | 5 |
| **Ashburnham** | 40 | 787.3 | 5 | 14 | 0 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| **Ashby** | 27 | 1,129.9 | 8 | 3 | 0 | 1 | 4 | 1 | 1 | 1 | 0 | 0 | 2 | 0 |
| **Ashfield** | 10 | 490.9 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| **Ashland** | 93 | 618.8 | 20 | 28 | 3 | 1 | 5 | 4 | 1 | 1 | 1 | 0 | 2 | 4 |
| **Athol** | 147 | 964.4 | 35 | 32 | 10 | 2 | 8 | 6 | 2 | 2 | 1 | 0 | 1 | 3 |
| **Attleboro** | 389 | 789.1 | 84 | 73 | 20 | 4 | 17 | 22 | 13 | 16 | 2 | 0 | 5 | 18 |
| **Auburn** | 180 | 684.6 | 46 | 38 | 7 | 3 | 7 | 11 | 1 | 8 | 0 | 0 | 2 | 2 |
| **Avon** | 51 | 880.3 | 16 | 9 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 1 | 3 |
| **Ayer** | 105 | 1,434.6 | 22 | 20 | 8 | 1 | 7 | 2 | 1 | 3 | 0 | 0 | 3 | 6 |
| **Barnstable** | 514 | 721.3 | 116 | 107 | 30 | 7 | 35 | 29 | 9 | 13 | 9 | 1 | 3 | 21 |
| **Barre** | 48 | 799.8 | 11 | 10 | 5 | 1 | 5 | 4 | 2 | 1 | 1 | 0 | 0 | 0 |
| **Becket** | 19 | 1,085.4 | 5 | 3 | 1 | 0 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |
| **Bedford** | 142 | 629.0 | 24 | 33 | 6 | 3 | 3 | 3 | 4 | 1 | 1 | 0 | 0 | 6 |
| **Belchertown** | 98 | 796.1 | 17 | 19 | 5 | 0 | 8 | 6 | 2 | 2 | 0 | 1 | 0 | 2 |
| **Bellingham** | 126 | 826.9 | 35 | 28 | 6 | 3 | 4 | 8 | 3 | 2 | 3 | 0 | 1 | 5 |
| **Belmont** | 167 | 485.3 | 28 | 32 | 4 | 3 | 4 | 6 | 2 | 0 | 0 | 1 | 3 | 4 |
| **Berkley** | 36 | 881.3 | 6 | 6 | 1 | 1 | 2 | 4 | 2 | 1 | 2 | 0 | 0 | 5 |
| **Berlin** | 22 | 558.7 | 8 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| **Bernardston** | 19 | 597.0 | 3 | 5 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| **Table 39 (continued). Selected Causes of Death by Community, Massachusetts: 2016** | | | | | | | | | | | | | | |
| **CITY/TOWN** | **Total Deaths** | **Age-Adjusted Death Rate1** | **Heart Disease** | **Total Cancer** | **Lung Cancer** | **Female Breast Cancer2** | **Stroke** | **CLRD3** | **Diabetes** | **Influenza & Pneumonia** | **Motor Vehicle** | **Homicide** | **Suicide** | **Opioid- related5** |
| **Beverly** | 416 | 810.4 | 107 | 69 | 16 | 4 | 14 | 27 | 6 | 7 | 1 | 1 | 5 | 16 |
| **Billerica** | 317 | 877.8 | 67 | 79 | 28 | 2 | 8 | 13 | 2 | 6 | 3 | 0 | 3 | 15 |
| **Blackstone** | 80 | 914.8 | 12 | 16 | 3 | 0 | 2 | 5 | 1 | 0 | 0 | 0 | 1 | 7 |
| **Blandford** | 7 | 554.7 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Bolton** | 23 | 711.5 | 7 | 7 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| **Boston** | 3,799 | 702.56 | 707 | 910 | 226 | 57 | 154 | 133 | 123 | 58 | 45 | 35 | 44 | 189 |
| **Bourne** | 267 | 901.9 | 55 | 54 | 12 | 1 | 11 | 18 | 3 | 6 | 2 | 0 | 2 | 9 |
| **Boxborough** | 21 | 603.7 | 6 | 4 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 2 | 1 |
| **Boxford** | 48 | 576.8 | 13 | 15 | 5 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 |
| **Boylston** | 30 | 625.4 | 12 | 9 | 3 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| **Braintree** | 411 | 786.2 | 79 | 90 | 22 | 8 | 23 | 19 | 7 | 10 | 3 | 0 | 2 | 8 |
| **Brewster** | 151 | 583.2 | 45 | 26 | 5 | 3 | 4 | 9 | 7 | 4 | 0 | 0 | 2 | 3 |
| **Bridgewater** | 191 | 835.6 | 40 | 48 | 15 | 4 | 1 | 11 | 3 | 4 | 2 | 0 | 2 | 10 |
| **Brimfield**  80 | 34 | 857.3 | 9 | 5 | 2 | 0 | 1 | 2 | 0 | 2 | 0 | 0 | 1 | 1 |
| **Brockton** | 830 | 870.5 | 177 | 175 | 44 | 11 | 38 | 26 | 24 | 24 | 7 | 4 | 6 | 41 |
| **Brookfield** | 37 | 974.8 | 6 | 11 | 4 | 0 | 4 | 2 | 2 | 1 | 0 | 0 | 0 | 1 |
| **Brookline** | 305 | 457.9 | 64 | 84 | 13 | 5 | 16 | 6 | 9 | 8 | 1 | 0 | 4 | 2 |
| **Buckland** | 21 | 999.0 | 5 | 5 | 1 | 1 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 |
| **Burlington** | 246 | 786.3 | 54 | 54 | 12 | 2 | 9 | 11 | 5 | 4 | 1 | 1 | 2 | 7 |
| **Cambridge** | 477 | 554.7 | 97 | 128 | 32 | 5 | 16 | 13 | 10 | 7 | 3 | 0 | 6 | 27 |
| **Canton** | 234 | 684.1 | 51 | 29 | 8 | 1 | 10 | 9 | 6 | 6 | 2 | 0 | 1 | 6 |
| **Carlisle** | 29 | 910.6 | 4 | 10 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| **Carver** | 132 | 1,002.7 | 21 | 37 | 14 | 2 | 6 | 12 | 2 | 2 | 4 | 0 | 3 | 8 |
| **Charlemont** | 4 | --4 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Charlton** | 127 | 878.8 | 30 | 23 | 5 | 1 | 5 | 4 | 3 | 0 | 4 | 0 | 4 | 4 |
| **Chatham** | 108 | 601.0 | 25 | 15 | 5 | 1 | 2 | 8 | 2 | 3 | 2 | 0 | 1 | 1 |
| **Chelmsford** | 322 | 719.9 | 76 | 64 | 14 | 6 | 16 | 18 | 6 | 9 | 0 | 0 | 7 | 6 |
| **Chelsea** | 280 | 963.8 | 47 | 54 | 6 | 6 | 9 | 14 | 5 | 2 | 2 | 4 | 4 | 13 |
| **Cheshire** | 29 | 737.6 | 6 | 9 | 3 | 3 | 1 | 3 | 0 | 0 | 1 | 0 | 0 | 1 |
| **Chester** | 6 | 404.4 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Chesterfield** | 14 | 922.6 | 5 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Chicopee** | 604 | 819.4 | 132 | 122 | 40 | 8 | 20 | 38 | 11 | 14 | 9 | 1 | 6 | 26 |
| **Chilmark** | 5 | 288.7 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Clarksburg** | 15 | 741.6 | 3 | 5 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Table 39 (continued). Selected Causes of Death by Community, Massachusetts: 2016** | | | | | | | | | | | | | | |
| **CITY/TOWN** | **Total Deaths** | **Age-Adjusted Death Rate1** | **Heart Disease** | **Total Cancer** | **Lung Cancer** | **Female Breast Cancer2** | **Stroke** | **CLRD3** | **Diabetes** | **Influenza & Pneumonia** | **Motor Vehicle** | **Homicide** | **Suicide** | **Opioid- related5** |
| **Clinton** | 139 | 908.1 | 30 | 38 | 11 | 1 | 6 | 8 | 4 | 5 | 0 | 0 | 0 | 6 |
| **Cohasset** | 69 | 680.4 | 13 | 11 | 4 | 1 | 4 | 3 | 0 | 4 | 1 | 0 | 0 | 2 |
| **Colrain** | 15 | 640.8 | 3 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Concord** | 172 | 480.8 | 32 | 38 | 9 | 4 | 7 | 6 | 5 | 5 | 1 | 0 | 1 | 1 |
| **Conway** | 14 | 979.0 | 2 | 5 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Cummington** | 7 | 607.3 | 3 | 2 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| **Dalton** | 71 | 638.8 | 18 | 12 | 3 | 0 | 3 | 5 | 1 | 1 | 1 | 0 | 0 | 1 |
| **Danvers** | 370 | 886.9 | 66 | 73 | 17 | 4 | 14 | 21 | 5 | 12 | 3 | 0 | 2 | 4 |
| **Dartmouth** | 323 | 702.7 | 70 | 65 | 12 | 4 | 18 | 11 | 4 | 5 | 5 | 0 | 5 | 9 |
| **Dedham** | 345 | 807.7 | 74 | 64 | 17 | 2 | 16 | 21 | 8 | 4 | 1 | 3 | 2 | 11 |
| **Deerfield** | 37 | 567.7 | 11 | 10 | 2 | 0 | 5 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| **Dennis** | 242 | 757.4 | 62 | 66 | 16 | 6 | 12 | 15 | 4 | 4 | 0 | 0 | 2 | 5 |
| **Dighton** | 70 | 919.5 | 15 | 14 | 2 | 2 | 2 | 6 | 3 | 2 | 1 | 0 | 1 | 3 |
| **Douglas**  81 | 43 | 740.2 | 9 | 14 | 5 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| **Dover** | 26 | 599.0 | 3 | 7 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| **Dracut** | 261 | 846.3 | 58 | 66 | 26 | 1 | 11 | 20 | 6 | 8 | 1 | 1 | 3 | 6 |
| **Dudley** | 101 | 850.7 | 34 | 17 | 3 | 0 | 3 | 5 | 2 | 2 | 1 | 0 | 0 | 0 |
| **Dunstable** | 17 | 752.8 | 3 | 3 | 0 | 1 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| **Duxbury** | 142 | 662.6 | 30 | 27 | 8 | 1 | 5 | 8 | 2 | 2 | 3 | 0 | 1 | 3 |
| **East Bridgewater** | 121 | 855.8 | 44 | 27 | 4 | 1 | 4 | 10 | 1 | 3 | 3 | 1 | 0 | 1 |
| **East Brookfield** | 16 | 604.9 | 3 | 6 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| **East Longmeadow** | 187 | 577.4 | 50 | 29 | 4 | 4 | 7 | 12 | 0 | 2 | 1 | 0 | 1 | 2 |
| **Eastham** | 63 | 525.0 | 18 | 13 | 4 | 0 | 5 | 2 | 2 | 1 | 1 | 0 | 0 | 0 |
| **Easthampton** | 152 | 728.2 | 39 | 37 | 5 | 3 | 8 | 5 | 3 | 2 | 0 | 0 | 1 | 5 |
| **Easton** | 187 | 864.6 | 40 | 40 | 11 | 0 | 3 | 10 | 2 | 7 | 2 | 0 | 2 | 8 |
| **Edgartown** | 38 | 854.7 | 10 | 10 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 |
| **Egremont** | 13 | 605.0 | 5 | 4 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Erving** | 19 | 818.0 | 3 | 7 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Essex** | 27 | 711.5 | 5 | 5 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 |
| **Everett** | 324 | 771.8 | 63 | 84 | 19 | 4 | 12 | 18 | 14 | 5 | 0 | 1 | 3 | 22 |
| **Fairhaven** | 213 | 735.4 | 40 | 39 | 8 | 0 | 11 | 13 | 4 | 7 | 0 | 0 | 4 | 4 |
| **Fall River** | 996 | 880.1 | 219 | 177 | 59 | 10 | 38 | 54 | 31 | 26 | 15 | 1 | 7 | 63 |
| **Falmouth** | 422 | 724.9 | 76 | 100 | 22 | 6 | 24 | 22 | 7 | 7 | 7 | 0 | 2 | 14 |
| **Fitchburg** | 423 | 953.0 | 91 | 88 | 22 | 6 | 22 | 24 | 10 | 9 | 3 | 1 | 3 | 22 |
| **Table 39 (continued). Selected Causes of Death by Community, Massachusetts: 2016** | | | | | | | | | | | | | | |
| **CITY/TOWN** | **Total Deaths** | **Age-Adjusted Death Rate1** | **Heart Disease** | **Total Cancer** | **Lung Cancer** | **Female Breast Cancer2** | **Stroke** | **CLRD3** | **Diabetes** | **Influenza & Pneumonia** | **Motor Vehicle** | **Homicide** | **Suicide** | **Opioid- related5** |
| **Florida** | 7 | 822.2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| **Foxborough** | 139 | 768.4 | 33 | 36 | 7 | 2 | 2 | 8 | 0 | 0 | 2 | 0 | 0 | 6 |
| **Framingham** | 542 | 628.26 | 139 | 112 | 27 | 8 | 18 | 32 | 9 | 12 | 6 | 2 | 6 | 18 |
| **Franklin** | 186 | 729.9 | 32 | 48 | 11 | 5 | 8 | 7 | 7 | 5 | 0 | 0 | 3 | 7 |
| **Freetown** | 62 | 789.8 | 11 | 13 | 3 | 1 | 4 | 6 | 1 | 1 | 2 | 0 | 2 | 3 |
| **Gardner** | 215 | 805.9 | 42 | 51 | 9 | 4 | 34 | 10 | 4 | 3 | 1 | 0 | 3 | 8 |
| **Georgetown** | 46 | 705.7 | 10 | 10 | 2 | 0 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 1 |
| **Gill** | 5 | 309.9 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Gloucester** | 295 | 701.5 | 54 | 74 | 13 | 3 | 15 | 19 | 3 | 6 | 1 | 0 | 2 | 8 |
| **Goshen** | 8 | 734.6 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Gosnold** | 0 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Grafton** | 100 | 599.7 | 21 | 20 | 5 | 3 | 5 | 4 | 1 | 2 | 1 | 2 | 1 | 1 |
| **Granby**  82 | 53 | 843.3 | 10 | 17 | 6 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 1 |
| **Granville** | 11 | 681.2 | 2 | 6 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Great Barrington** | 84 | 770.1 | 11 | 19 | 2 | 1 | 2 | 2 | 4 | 2 | 2 | 0 | 1 | 1 |
| **Greenfield** | 226 | 861.6 | 48 | 48 | 7 | 3 | 15 | 12 | 1 | 8 | 0 | 0 | 2 | 6 |
| **Groton** | 68 | 723.4 | 15 | 14 | 1 | 0 | 4 | 0 | 0 | 2 | 1 | 1 | 3 | 0 |
| **Groveland** | 54 | 696.6 | 13 | 13 | 3 | 5 | 2 | 4 | 0 | 1 | 0 | 0 | 0 | 1 |
| **Hadley** | 69 | 743.6 | 19 | 8 | 0 | 1 | 3 | 1 | 0 | 3 | 0 | 0 | 1 | 2 |
| **Halifax** | 76 | 940.1 | 21 | 15 | 3 | 1 | 3 | 5 | 1 | 1 | 2 | 0 | 2 | 2 |
| **Hamilton** | 48 | 600.8 | 15 | 8 | 3 | 2 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 3 |
| **Hampden** | 59 | 853.2 | 8 | 9 | 0 | 2 | 1 | 4 | 2 | 1 | 0 | 0 | 3 | 1 |
| **Hancock** | 9 | 878.8 | 1 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| **Hanover** | 110 | 816.0 | 21 | 38 | 10 | 4 | 6 | 1 | 0 | 2 | 1 | 0 | 0 | 6 |
| **Hanson** | 82 | 953.4 | 23 | 19 | 7 | 2 | 1 | 5 | 4 | 1 | 1 | 0 | 4 | 2 |
| **Hardwick** | 25 | 827.7 | 2 | 10 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| **Harvard** | 31 | 693.0 | 4 | 10 | 0 | 1 | 1 | 0 | 1 | 2 | 1 | 0 | 0 | 0 |
| **Harwich** | 206 | 814.6 | 45 | 42 | 9 | 4 | 11 | 7 | 1 | 0 | 1 | 0 | 2 | 3 |
| **Hatfield** | 44 | 922.2 | 9 | 16 | 4 | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 3 | 1 |
| **Haverhill** | 593 | 889.1 | 115 | 114 | 33 | 7 | 23 | 32 | 13 | 14 | 2 | 1 | 13 | 35 |
| **Hawley** | 2 | --4 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Heath** | 5 | 472.2 | 0 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Hingham** | 295 | 704.2 | 69 | 60 | 8 | 3 | 11 | 18 | 6 | 7 | 1 | 0 | 2 | 1 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Table 39 (continued). Selected Causes of Death by Community, Massachusetts: 2016** | | | | | | | | | | | | | | |
| **CITY/TOWN** | **Total Deaths** | **Age-Adjusted Death Rate1** | **Heart Disease** | **Total Cancer** | **Lung Cancer** | **Female Breast Cancer2** | **Stroke** | **CLRD3** | **Diabetes** | **Influenza & Pneumonia** | **Motor Vehicle** | **Homicide** | **Suicide** | **Opioid- related5** |
| **Hinsdale** | 11 | 484.7 | 1 | 4 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| **Holbrook** | 105 | 821.2 | 22 | 27 | 7 | 2 | 4 | 7 | 1 | 0 | 1 | 0 | 1 | 7 |
| **Holden** | 163 | 776.9 | 32 | 40 | 5 | 2 | 8 | 7 | 4 | 4 | 1 | 0 | 2 | 5 |
| **Holland** | 11 | 484.2 | 5 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| **Holliston** | 96 | 728.2 | 17 | 28 | 6 | 2 | 2 | 3 | 4 | 3 | 1 | 0 | 2 | 1 |
| **Holyoke** | 468 | 902.8 | 112 | 85 | 21 | 4 | 18 | 27 | 7 | 11 | 5 | 3 | 2 | 10 |
| **Hopedale** | 49 | 666.9 | 9 | 11 | 5 | 1 | 0 | 5 | 2 | 2 | 0 | 0 | 0 | 0 |
| **Hopkinton** | 73 | 748.8 | 20 | 18 | 4 | 1 | 0 | 3 | 1 | 2 | 2 | 0 | 2 | 0 |
| **Hubbardston** | 37 | 1,084.0 | 6 | 13 | 3 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 0 | 1 |
| **Hudson** | 153 | 744.1 | 41 | 31 | 5 | 5 | 7 | 6 | 3 | 0 | 1 | 0 | 2 | 2 |
| **Hull** | 117 | 1,007.7 | 28 | 30 | 9 | 1 | 4 | 3 | 1 | 3 | 0 | 0 | 1 | 5 |
| **Huntington** | 15 | 776.2 | 4 | 4 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| **Ipswich**  83 | 103 | 537.8 | 25 | 20 | 5 | 3 | 1 | 3 | 3 | 1 | 0 | 0 | 1 | 3 |
| **Kingston** | 127 | 711.0 | 20 | 36 | 8 | 1 | 6 | 9 | 0 | 1 | 1 | 1 | 0 | 1 |
| **Lakeville** | 113 | 1,066.9 | 20 | 26 | 10 | 1 | 7 | 8 | 4 | 2 | 0 | 0 | 1 | 1 |
| **Lancaster** | 69 | 868.5 | 11 | 15 | 2 | 1 | 9 | 2 | 1 | 2 | 2 | 0 | 2 | 1 |
| **Lanesborough** | 18 | 457.3 | 5 | 3 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |
| **Lawrence** | 477 | 769.4 | 96 | 90 | 20 | 3 | 15 | 18 | 21 | 5 | 6 | 4 | 4 | 44 |
| **Lee** | 55 | 584.7 | 11 | 12 | 5 | 1 | 3 | 1 | 0 | 1 | 2 | 0 | 0 | 1 |
| **Leicester** | 117 | 969.5 | 25 | 34 | 11 | 2 | 2 | 8 | 2 | 2 | 0 | 1 | 1 | 1 |
| **Lenox** | 89 | 591.7 | 23 | 18 | 2 | 2 | 5 | 3 | 2 | 0 | 1 | 0 | 0 | 0 |
| **Leominster** | 406 | 805.4 | 77 | 97 | 25 | 3 | 35 | 13 | 9 | 5 | 0 | 0 | 4 | 13 |
| **Leverett** | 9 | 522.4 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Lexington** | 222 | 423.4 | 42 | 51 | 12 | 4 | 10 | 3 | 3 | 5 | 2 | 0 | 2 | 2 |
| **Leyden** | 5 | 1,177.1 | 1 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| **Lincoln** | 49 | 591.5 | 12 | 9 | 1 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Littleton** | 65 | 596.2 | 10 | 17 | 2 | 0 | 3 | 2 | 0 | 1 | 0 | 0 | 2 | 2 |
| **Longmeadow** | 176 | 576.8 | 42 | 26 | 8 | 0 | 6 | 7 | 0 | 2 | 0 | 0 | 2 | 3 |
| **Lowell** | 893 | 939.1 | 165 | 198 | 57 | 13 | 28 | 29 | 22 | 25 | 4 | 1 | 12 | 67 |
| **Ludlow** | 217 | 740.8 | 48 | 37 | 11 | 3 | 16 | 4 | 4 | 6 | 4 | 2 | 1 | 6 |
| **Lunenburg** | 82 | 732.8 | 15 | 22 | 6 | 3 | 5 | 1 | 0 | 2 | 3 | 0 | 2 | 1 |
| **Lynn** | 708 | 784.5 | 147 | 166 | 38 | 17 | 26 | 36 | 25 | 13 | 3 | 3 | 5 | 43 |
| **Lynnfield** | 105 | 622.6 | 20 | 16 | 5 | 1 | 11 | 8 | 1 | 4 | 0 | 0 | 1 | 1 |
| **Malden** | 411 | 675.3 | 85 | 104 | 29 | 4 | 16 | 13 | 14 | 9 | 5 | 1 | 3 | 15 |
| **Table 39 (continued). Selected Causes of Death by Community, Massachusetts: 2016** | | | | | | | | | | | | | | |
| **CITY/TOWN** | **Total Deaths** | **Age-Adjusted Death Rate1** | **Heart Disease** | **Total Cancer** | **Lung Cancer** | **Female Breast Cancer2** | **Stroke** | **CLRD3** | **Diabetes** | **Influenza & Pneumonia** | **Motor Vehicle** | **Homicide** | **Suicide** | **Opioid- related5** |
| **Manchester** | 52 | 764.5 | 7 | 15 | 2 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 1 | 2 |
| **Mansfield** | 151 | 875.9 | 31 | 29 | 8 | 1 | 3 | 11 | 2 | 5 | 0 | 0 | 4 | 8 |
| **Marblehead** | 160 | 597.2 | 36 | 36 | 10 | 2 | 9 | 6 | 1 | 3 | 0 | 0 | 5 | 4 |
| **Marion** | 73 | 842.2 | 14 | 6 | 3 | 1 | 6 | 6 | 2 | 3 | 0 | 0 | 2 | 1 |
| **Marlborough** | 336 | 771.9 | 75 | 68 | 15 | 1 | 20 | 23 | 6 | 4 | 3 | 0 | 3 | 4 |
| **Marshfield** | 236 | 942.7 | 50 | 56 | 9 | 7 | 11 | 15 | 8 | 10 | 1 | 0 | 1 | 9 |
| **Mashpee** | 200 | 855.9 | 32 | 47 | 18 | 1 | 8 | 17 | 7 | 8 | 1 | 0 | 2 | 8 |
| **Mattapoisett** | 56 | 612.9 | 9 | 15 | 4 | 0 | 3 | 3 | 1 | 1 | 1 | 0 | 0 | 2 |
| **Maynard** | 77 | 702.9 | 15 | 25 | 6 | 3 | 1 | 5 | 3 | 0 | 2 | 0 | 2 | 0 |
| **Medfield** | 61 | 521.6 | 13 | 14 | 3 | 2 | 1 | 2 | 4 | 0 | 0 | 0 | 0 | 1 |
| **Medford** | 496 | 653.9 | 99 | 123 | 26 | 7 | 19 | 18 | 15 | 8 | 1 | 0 | 9 | 17 |
| **Medway** | 101 | 826.2 | 16 | 26 | 3 | 0 | 3 | 5 | 2 | 2 | 1 | 0 | 3 | 2 |
| **Melrose** | 240 | 651.1 | 46 | 50 | 11 | 2 | 8 | 19 | 4 | 2 | 1 | 1 | 5 | 10 |
| **Mendon**  84 | 45 | 987.6 | 11 | 15 | 5 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 |
| **Merrimac** | 45 | 669.9 | 12 | 12 | 3 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| **Methuen** | 424 | 734.7 | 96 | 94 | 22 | 5 | 18 | 17 | 9 | 6 | 3 | 2 | 6 | 14 |
| **Middleborough** | 239 | 911.1 | 47 | 55 | 18 | 5 | 11 | 8 | 2 | 6 | 2 | 0 | 7 | 11 |
| **Middlefield** | 3 | --4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Middleton** | 64 | 703.4 | 12 | 21 | 3 | 0 | 2 | 4 | 2 | 2 | 0 | 0 | 1 | 2 |
| **Milford** | 256 | 783.4 | 67 | 58 | 6 | 3 | 8 | 11 | 3 | 7 | 5 | 0 | 3 | 10 |
| **Millbury** | 135 | 798.2 | 26 | 36 | 11 | 1 | 3 | 8 | 5 | 1 | 0 | 0 | 3 | 4 |
| **Millis** | 67 | 942.0 | 11 | 19 | 8 | 1 | 4 | 4 | 0 | 0 | 1 | 0 | 1 | 3 |
| **Millville** | 15 | 631.5 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Milton** | 244 | 651.8 | 59 | 46 | 11 | 0 | 14 | 7 | 7 | 2 | 1 | 0 | 2 | 6 |
| **Monroe** | 2 | --4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Monson** | 60 | 649.0 | 17 | 9 | 3 | 1 | 1 | 3 | 3 | 1 | 0 | 0 | 1 | 3 |
| **Montague** | 95 | 843.6 | 22 | 27 | 5 | 1 | 2 | 3 | 3 | 3 | 2 | 0 | 1 | 3 |
| **Monterey** | 7 | 597.8 | 0 | 3 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Montgomery** | 12 | 1,629.7 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| **Mount Washington** | 1 | --4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Nahant** | 39 | 612.7 | 7 | 12 | 2 | 0 | 1 | 4 | 1 | 0 | 0 | 0 | 0 | 2 |
| **Nantucket** | 71 | 677.6 | 21 | 17 | 5 | 0 | 6 | 6 | 2 | 2 | 0 | 0 | 1 | 2 |
| **Natick** | 249 | 631.5 | 48 | 53 | 19 | 3 | 10 | 10 | 7 | 6 | 1 | 0 | 4 | 3 |
| **Needham** | 284 | 583.8 | 60 | 72 | 10 | 2 | 7 | 9 | 4 | 6 | 1 | 0 | 1 | 1 |
| **Table 39 (continued). Selected Causes of Death by Community, Massachusetts: 2016** | | | | | | | | | | | | | | |
| **CITY/TOWN** | **Total Deaths** | **Age-Adjusted Death Rate1** | **Heart Disease** | **Total Cancer** | **Lung Cancer** | **Female Breast Cancer2** | **Stroke** | **CLRD3** | **Diabetes** | **Influenza & Pneumonia** | **Motor Vehicle** | **Homicide** | **Suicide** | **Opioid- related5** |
| **New Ashford** | 5 | 1,380.2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **New Bedford** | 1,084 | 909.1 | 210 | 222 | 67 | 10 | 47 | 53 | 27 | 29 | 11 | 3 | 7 | 56 |
| **New Braintree** | 10 | 1,525.5 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| **New Marlborough** | 7 | 314.5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **New Salem** | 8 | 933.3 | 1 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| **Newbury** | 51 | 782.2 | 9 | 12 | 3 | 1 | 3 | 3 | 1 | 1 | 1 | 0 | 0 | 1 |
| **Newburyport** | 182 | 711.6 | 48 | 34 | 7 | 1 | 4 | 7 | 6 | 1 | 3 | 0 | 2 | 4 |
| **Newton** | 565 | 467.2 | 122 | 120 | 19 | 9 | 29 | 13 | 8 | 12 | 1 | 0 | 7 | 16 |
| **Norfolk** | 58 | 906.5 | 15 | 13 | 4 | 1 | 2 | 3 | 1 | 2 | 0 | 0 | 2 | 3 |
| **North Adams** | 151 | 798.9 | 35 | 33 | 14 | 1 | 6 | 9 | 4 | 4 | 1 | 0 | 2 | 6 |
| **North Andover** | 243 | 611.0 | 45 | 37 | 3 | 1 | 15 | 10 | 2 | 6 | 1 | 0 | 3 | 3 |
| **North Attleboro** | 221 | 859.8 | 60 | 46 | 17 | 6 | 10 | 17 | 9 | 6 | 1 | 0 | 2 | 7 |
| **North Brookfield** | 40 | 734.5 | 5 | 11 | 1 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 3 |
| **North Reading** | 101 | 678.1 | 20 | 19 | 5 | 4 | 6 | 6 | 3 | 3 | 0 | 0 | 3 | 2 |
| **Northampton**  85 | 264 | 728.2 | 58 | 57 | 12 | 6 | 12 | 11 | 4 | 10 | 3 | 0 | 5 | 8 |
| **Northborough** | 129 | 820.5 | 25 | 26 | 4 | 2 | 6 | 4 | 3 | 5 | 0 | 0 | 2 | 3 |
| **Northbridge** | 159 | 827.5 | 27 | 32 | 15 | 0 | 9 | 6 | 3 | 3 | 3 | 0 | 2 | 2 |
| **Northfield** | 30 | 821.1 | 7 | 7 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| **Norton** | 127 | 772.5 | 26 | 28 | 11 | 0 | 9 | 6 | 1 | 1 | 1 | 1 | 4 | 7 |
| **Norwell** | 86 | 582.7 | 13 | 13 | 2 | 0 | 3 | 6 | 0 | 1 | 0 | 0 | 1 | 1 |
| **Norwood** | 305 | 675.3 | 62 | 65 | 14 | 3 | 21 | 15 | 2 | 5 | 2 | 1 | 3 | 6 |
| **Oak Bluffs** | 58 | 904.0 | 7 | 18 | 7 | 0 | 3 | 4 | 2 | 3 | 0 | 0 | 0 | 1 |
| **Oakham** | 10 | 725.4 | 2 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| **Orange** | 98 | 1,082.1 | 15 | 24 | 9 | 4 | 5 | 13 | 4 | 0 | 0 | 2 | 2 | 1 |
| **Orleans** | 112 | 708.2 | 30 | 32 | 7 | 1 | 4 | 7 | 4 | 3 | 1 | 0 | 1 | 2 |
| **Otis** | 15 | 751.3 | 4 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| **Oxford** | 113 | 862.6 | 24 | 27 | 3 | 1 | 5 | 10 | 5 | 2 | 1 | 0 | 1 | 7 |
| **Palmer** | 134 | 859.6 | 31 | 34 | 9 | 2 | 2 | 6 | 3 | 2 | 1 | 0 | 0 | 4 |
| **Paxton** | 30 | 571.8 | 7 | 13 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Peabody** | 729 | 754.6 | 134 | 154 | 45 | 9 | 41 | 34 | 20 | 12 | 3 | 3 | 4 | 11 |
| **Pelham** | 9 | 530.6 | 4 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Pembroke** | 143 | 984.1 | 29 | 37 | 13 | 0 | 6 | 11 | 2 | 1 | 1 | 0 | 4 | 8 |
| **Pepperell** | 79 | 839.7 | 13 | 24 | 7 | 1 | 1 | 3 | 2 | 0 | 0 | 0 | 0 | 1 |
| **Peru** | 7 | 1,453.1 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| **Table 39 (continued). Selected Causes of Death by Community, Massachusetts: 2016** | | | | | | | | | | | | | | |
| **CITY/TOWN** | **Total Deaths** | **Age-Adjusted Death Rate1** | **Heart Disease** | **Total Cancer** | **Lung Cancer** | **Female Breast Cancer2** | **Stroke** | **CLRD3** | **Diabetes** | **Influenza & Pneumonia** | **Motor Vehicle** | **Homicide** | **Suicide** | **Opioid- related5** |
| **Petersham** | 13 | 924.4 | 4 | 4 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| **Phillipston** | 9 | 652.2 | 3 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| **Pittsfield** | 550 | 855.2 | 126 | 105 | 38 | 6 | 26 | 29 | 15 | 10 | 4 | 2 | 5 | 18 |
| **Plainfield** | 7 | 1,091.6 | 1 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| **Plainville** | 74 | 851.9 | 15 | 19 | 5 | 2 | 2 | 3 | 4 | 2 | 1 | 0 | 0 | 3 |
| **Plymouth** | 519 | 787.6 | 99 | 134 | 29 | 10 | 22 | 17 | 6 | 14 | 6 | 1 | 5 | 25 |
| **Plympton** | 17 | 693.4 | 3 | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| **Princeton** | 28 | 955.6 | 5 | 10 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| **Provincetown** | 35 | 637.7 | 3 | 9 | 1 | 0 | 3 | 5 | 1 | 2 | 0 | 0 | 0 | 0 |
| **Quincy** | 839 | 691.4 | 181 | 211 | 61 | 12 | 27 | 36 | 16 | 18 | 9 | 3 | 11 | 44 |
| **Randolph** | 252 | 686.7 | 50 | 49 | 12 | 1 | 9 | 6 | 2 | 7 | 1 | 1 | 3 | 11 |
| **Raynham** | 136 | 875.4 | 36 | 36 | 9 | 2 | 5 | 6 | 4 | 2 | 0 | 0 | 2 | 2 |
| **Reading**  86 | 193 | 607.2 | 53 | 42 | 6 | 1 | 4 | 7 | 3 | 8 | 2 | 0 | 1 | 4 |
| **Rehoboth** | 77 | 739.5 | 12 | 25 | 6 | 2 | 2 | 7 | 1 | 4 | 1 | 0 | 1 | 0 |
| **Revere** | 469 | 734.0 | 93 | 121 | 41 | 8 | 12 | 26 | 9 | 7 | 2 | 1 | 2 | 26 |
| **Richmond** | 11 | 584.7 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| **Rochester** | 32 | 706.3 | 10 | 11 | 3 | 1 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| **Rockland** | 224 | 1,118.2 | 47 | 41 | 12 | 0 | 6 | 13 | 0 | 11 | 3 | 0 | 0 | 22 |
| **Rockport** | 59 | 428.2 | 9 | 14 | 4 | 0 | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 1 |
| **Rowe** | 4 | --4 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Rowley** | 33 | 583.9 | 9 | 7 | 1 | 0 | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 0 |
| **Royalston** | 6 | 620.1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| **Russell** | 21 | 1,324.8 | 5 | 6 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Rutland** | 49 | 811.0 | 10 | 12 | 4 | 0 | 4 | 2 | 3 | 0 | 2 | 0 | 0 | 2 |
| **Salem** | 335 | 714.5 | 68 | 62 | 16 | 2 | 22 | 19 | 8 | 13 | 0 | 2 | 5 | 18 |
| **Salisbury** | 95 | 1,048.5 | 20 | 19 | 7 | 0 | 4 | 6 | 1 | 2 | 1 | 0 | 1 | 12 |
| **Sandisfield** | 9 | 561.5 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| **Sandwich** | 164 | 639.3 | 33 | 34 | 14 | 3 | 8 | 11 | 3 | 3 | 1 | 0 | 3 | 4 |
| **Saugus** | 285 | 774.2 | 60 | 72 | 19 | 2 | 9 | 18 | 8 | 5 | 2 | 2 | 2 | 13 |
| **Savoy** | 6 | 945.6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| **Scituate** | 165 | 660.8 | 39 | 36 | 6 | 1 | 8 | 8 | 3 | 3 | 1 | 0 | 2 | 3 |
| **Seekonk** | 108 | 681.4 | 18 | 31 | 8 | 4 | 3 | 9 | 2 | 3 | 2 | 0 | 1 | 4 |
| **Sharon** | 102 | 550.7 | 19 | 28 | 9 | 0 | 6 | 5 | 3 | 3 | 0 | 0 | 1 | 1 |
| **Sheffield** | 26 | 533.8 | 7 | 5 | 2 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 |
| **Table 39 (continued). Selected Causes of Death by Community, Massachusetts: 2016** | | | | | | | | | | | | | | |
| **CITY/TOWN** | **Total Deaths** | **Age-Adjusted Death Rate1** | **Heart Disease** | **Total Cancer** | **Lung Cancer** | **Female Breast Cancer2** | **Stroke** | **CLRD3** | **Diabetes** | **Influenza & Pneumonia** | **Motor Vehicle** | **Homicide** | **Suicide** | **Opioid- related5** |
| **Shelburne** | 31 | 1,127.8 | 7 | 5 | 1 | 0 | 3 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| **Sherborn** | 30 | 782.0 | 4 | 10 | 2 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| **Shirley** | 39 | 604.8 | 10 | 12 | 3 | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 2 | 0 |
| **Shrewsbury** | 253 | 594.4 | 53 | 63 | 20 | 5 | 13 | 10 | 4 | 7 | 1 | 0 | 0 | 7 |
| **Shutesbury** | 9 | 748.8 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Somerset** | 219 | 673.6 | 41 | 53 | 13 | 1 | 19 | 7 | 3 | 9 | 1 | 0 | 0 | 5 |
| **Somerville** | 401 | 659.2 | 78 | 88 | 19 | 11 | 13 | 24 | 16 | 11 | 0 | 0 | 10 | 21 |
| **South Hadley** | 161 | 614.3 | 33 | 41 | 9 | 4 | 6 | 6 | 2 | 5 | 3 | 0 | 1 | 4 |
| **Southampton** | 41 | 758.1 | 12 | 11 | 4 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| **Southborough** | 47 | 579.9 | 14 | 10 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| **Southbridge** | 177 | 861.8 | 46 | 29 | 11 | 0 | 2 | 17 | 4 | 6 | 1 | 0 | 2 | 12 |
| **Southwick** | 82 | 673.5 | 15 | 24 | 4 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 3 | 2 |
| **Spencer** | 130 | 988.8 | 22 | 21 | 6 | 0 | 5 | 7 | 2 | 5 | 3 | 0 | 3 | 3 |
| **Springfield**  87 | 1,210 | 825.8 | 253 | 265 | 66 | 19 | 59 | 51 | 38 | 26 | 15 | 12 | 9 | 40 |
| **Sterling** | 57 | 574.0 | 14 | 9 | 0 | 1 | 3 | 4 | 2 | 0 | 0 | 0 | 1 | 1 |
| **Stockbridge** | 17 | 467.3 | 3 | 7 | 2 | 1 | 0 | 2 | 1 | 1 | 1 | 0 | 1 | 0 |
| **Stoneham** | 247 | 736.2 | 54 | 61 | 14 | 6 | 15 | 11 | 4 | 9 | 2 | 2 | 0 | 8 |
| **Stoughton** | 259 | 732.9 | 58 | 51 | 16 | 6 | 8 | 12 | 3 | 5 | 0 | 1 | 2 | 10 |
| **Stow** | 45 | 741.5 | 10 | 12 | 4 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 1 |
| **Sturbridge** | 76 | 697.2 | 11 | 22 | 7 | 1 | 3 | 5 | 1 | 3 | 0 | 0 | 1 | 2 |
| **Sudbury** | 105 | 601.1 | 24 | 25 | 3 | 2 | 5 | 5 | 2 | 2 | 1 | 0 | 3 | 0 |
| **Sunderland** | 28 | 812.2 | 8 | 8 | 1 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 1 | 1 |
| **Sutton** | 48 | 690.6 | 7 | 13 | 4 | 1 | 2 | 3 | 2 | 3 | 1 | 0 | 0 | 0 |
| **Swampscott** | 128 | 609.0 | 31 | 34 | 11 | 4 | 7 | 7 | 2 | 2 | 3 | 0 | 1 | 4 |
| **Swansea** | 139 | 604.4 | 26 | 27 | 5 | 3 | 10 | 8 | 3 | 5 | 2 | 0 | 5 | 1 |
| **Taunton** | 534 | 830.3 | 105 | 109 | 27 | 5 | 12 | 33 | 14 | 18 | 3 | 5 | 5 | 28 |
| **Templeton** | 71 | 806.2 | 6 | 18 | 4 | 3 | 5 | 2 | 2 | 0 | 0 | 0 | 0 | 5 |
| **Tewksbury** | 300 | 888.7 | 60 | 72 | 17 | 1 | 10 | 13 | 6 | 11 | 1 | 1 | 0 | 12 |
| **Tisbury** | 36 | 655.3 | 6 | 8 | 0 | 0 | 1 | 3 | 1 | 2 | 0 | 0 | 3 | 1 |
| **Tolland** | 6 | 965.0 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Topsfield** | 56 | 591.5 | 13 | 13 | 0 | 0 | 2 | 0 | 1 | 2 | 0 | 0 | 2 | 1 |
| **Townsend** | 64 | 927.3 | 13 | 15 | 4 | 1 | 3 | 1 | 2 | 3 | 1 | 0 | 1 | 1 |
| **Truro** | 21 | 675.1 | 2 | 4 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 |
| **Tyngsborough** | 70 | 869.0 | 12 | 23 | 6 | 0 | 3 | 2 | 2 | 1 | 1 | 0 | 2 | 1 |
| **Table 39 (continued). Selected Causes of Death by Community, Massachusetts: 2016** | | | | | | | | | | | | | | |
| **CITY/TOWN** | **Total Deaths** | **Age-Adjusted Death Rate1** | **Heart Disease** | **Total Cancer** | **Lung Cancer** | **Female Breast Cancer2** | **Stroke** | **CLRD3** | **Diabetes** | **Influenza & Pneumonia** | **Motor Vehicle** | **Homicide** | **Suicide** | **Opioid- related5** |
| **Tyringham** | 3 | --4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Upton** | 49 | 739.2 | 9 | 13 | 2 | 0 | 4 | 1 | 2 | 1 | 0 | 0 | 1 | 2 |
| **Uxbridge** | 89 | 638.9 | 20 | 15 | 6 | 0 | 4 | 5 | 3 | 2 | 1 | 0 | 0 | 0 |
| **Wakefield** | 266 | 831.4 | 56 | 58 | 13 | 2 | 9 | 11 | 7 | 8 | 1 | 0 | 2 | 9 |
| **Wales** | 19 | 1,234.0 | 5 | 3 | 1 | 0 | 1 | 2 | 0 | 2 | 1 | 0 | 0 | 0 |
| **Walpole** | 211 | 655.1 | 55 | 40 | 12 | 4 | 8 | 9 | 3 | 6 | 1 | 0 | 2 | 7 |
| **Waltham** | 391 | 588.5 | 86 | 85 | 20 | 7 | 19 | 13 | 17 | 5 | 3 | 1 | 5 | 15 |
| **Ware** | 97 | 816.7 | 22 | 17 | 7 | 0 | 5 | 3 | 4 | 2 | 1 | 0 | 2 | 7 |
| **Wareham** | 288 | 1,014.8 | 47 | 74 | 19 | 4 | 11 | 24 | 2 | 9 | 2 | 1 | 4 | 15 |
| **Warren** | 44 | 864.9 | 11 | 9 | 1 | 2 | 2 | 4 | 1 | 3 | 0 | 0 | 1 | 0 |
| **Warwick** | 10 | 1,109.1 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Washington** | 6 | 1,517.5 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| **Watertown** | 269 | 654.8 | 55 | 68 | 10 | 8 | 9 | 12 | 8 | 4 | 4 | 1 | 4 | 10 |
| **Wayland**  88 | 107 | 564.8 | 30 | 27 | 3 | 3 | 4 | 4 | 1 | 3 | 1 | 0 | 0 | 2 |
| **Webster** | 197 | 853.4 | 39 | 47 | 16 | 3 | 17 | 10 | 2 | 6 | 2 | 0 | 3 | 5 |
| **Wellesley** | 175 | 497.9 | 34 | 41 | 9 | 2 | 5 | 4 | 6 | 1 | 0 | 0 | 4 | 1 |
| **Wellfleet** | 39 | 684.2 | 7 | 11 | 2 | 2 | 2 | 5 | 1 | 0 | 0 | 0 | 0 | 0 |
| **Wendell** | 6 | 889.6 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Wenham** | 36 | 607.4 | 10 | 6 | 1 | 0 | 1 | 2 | 2 | 1 | 0 | 0 | 0 | 0 |
| **West Boylston** | 82 | 585.9 | 9 | 13 | 4 | 1 | 2 | 6 | 2 | 3 | 0 | 0 | 0 | 1 |
| **West Bridgewater** | 77 | 711.0 | 17 | 16 | 3 | 1 | 5 | 5 | 0 | 1 | 1 | 0 | 3 | 3 |
| **West Brookfield** | 45 | 790.3 | 13 | 9 | 4 | 0 | 6 | 2 | 1 | 1 | 0 | 0 | 1 | 1 |
| **West Newbury** | 24 | 641.3 | 3 | 6 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| **West Springfield** | 283 | 774.9 | 72 | 63 | 18 | 4 | 13 | 20 | 6 | 4 | 2 | 2 | 2 | 9 |
| **West Stockbridge** | 17 | 809.7 | 3 | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| **West Tisbury** | 18 | 662.8 | 3 | 4 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| **Westborough** | 128 | 580.3 | 18 | 28 | 4 | 4 | 7 | 6 | 1 | 4 | 1 | 0 | 1 | 4 |
| **Westfield** | 368 | 764.1 | 86 | 81 | 18 | 6 | 17 | 20 | 6 | 6 | 5 | 0 | 4 | 15 |
| **Westford** | 141 | 918.9 | 29 | 34 | 8 | 1 | 2 | 4 | 2 | 5 | 1 | 0 | 5 | 3 |
| **Westhampton** | 17 | 1,026.9 | 3 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| **Westminster** | 58 | 788.0 | 9 | 16 | 3 | 2 | 3 | 3 | 0 | 2 | 0 | 0 | 1 | 0 |
| **Weston** | 92 | 472.6 | 14 | 24 | 7 | 1 | 7 | 2 | 3 | 1 | 0 | 0 | 0 | 0 |
| **Westport** | 151 | 686.6 | 40 | 31 | 5 | 1 | 2 | 5 | 4 | 1 | 2 | 0 | 3 | 4 |
| **Westwood** | 128 | 555.5 | 29 | 28 | 8 | 1 | 8 | 5 | 2 | 2 | 1 | 1 | 1 | 5 |
| **Table 39 (continued). Selected Causes of Death by Community, Massachusetts: 2016** | | | | | | | | | | | | | | |
| **CITY/TOWN** | **Total Deaths** | **Age-Adjusted Death Rate1** | **Heart Disease** | **Total Cancer** | **Lung Cancer** | **Female Breast Cancer2** | **Stroke** | **CLRD3** | **Diabetes** | **Influenza & Pneumonia** | **Motor Vehicle** | **Homicide** | **Suicide** | **Opioid- related5** |
| **Weymouth** | 599 | 883.9 | 131 | 139 | 39 | 13 | 24 | 24 | 7 | 19 | 1 | 1 | 4 | 38 |
| **Whately** | 7 | 286.7 | 2 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Whitman** | 117 | 907.1 | 21 | 34 | 11 | 2 | 3 | 8 | 1 | 2 | 3 | 0 | 1 | 1 |
| **Wilbraham** | 130 | 528.5 | 37 | 27 | 6 | 2 | 4 | 5 | 5 | 6 | 0 | 0 | 1 | 1 |
| **Williamsburg** | 20 | 633.9 | 3 | 6 | 4 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| **Williamstown** | 72 | 530.2 | 11 | 18 | 4 | 0 | 1 | 1 | 5 | 2 | 1 | 0 | 0 | 1 |
| **Wilmington** | 184 | 759.0 | 46 | 39 | 9 | 5 | 8 | 8 | 4 | 7 | 4 | 0 | 4 | 3 |
| **Winchendon** | 78 | 825.2 | 20 | 17 | 5 | 0 | 8 | 3 | 2 | 2 | 1 | 0 | 1 | 1 |
| **Winchester** | 184 | 575.0 | 43 | 42 | 8 | 3 | 11 | 6 | 4 | 3 | 2 | 0 | 4 | 3 |
| **Windsor** | 9 | 731.9 | 2 | 3 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Winthrop** | 222 | 928.7 | 36 | 59 | 19 | 6 | 8 | 12 | 7 | 6 | 0 | 0 | 0 | 3 |
| **Woburn** | 418 | 788.2 | 96 | 86 | 28 | 4 | 22 | 13 | 11 | 5 | 3 | 1 | 3 | 17 |
| **Worcester** | 1,662 | 859.8 | 299 | 333 | 88 | 20 | 65 | 75 | 42 | 45 | 11 | 6 | 19 | 74 |
| **Worthington** | 13 | 953.1 | 2 | 5 | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| **Wrentham** | 109 | 826.3 | 17 | 20 | 2 | 0 | 5 | 2 | 3 | 1 | 1 | 0 | 1 | 5 |
| **Yarmouth**  89 | 396 | 717.4 | 79 | 104 | 14 | 5 | 20 | 22 | 5 | 18 | 3 | 0 | 5 | 7 |
| **Unknown** | 2 | --4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1. Rates are per 100,000 population age-adjusted to the 2000 US Standard Population and calculated using MDPH population estimates for 2010, which are the most up-to-date information available on the number of persons by age, race, and sex at the sub-state level. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Includes only female breast cancer. 3.The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title). 4. Rates based on 1 to 4 deaths are not calculated. 5. The term opioid designates a class of drugs derived naturally from the opium poppy (opium, morphine, codeine), synthesized or derived from a natural opiate (heroin, oxycodone, hydrocodone), or manufactured synthetically with a chemical structure similar to opium (fentanyl, methadone). (Opioid Overdose Response Strategies in Massachusetts, MDPH, 2014). This report combines all opioid overdoses since classification of specific drugs can be difficult. For example, many deaths related to heroin cannot be specifically coded as such due to the fast metabolism of heroin into morphine, as well as, the possible interaction of multiple drugs. 6. Age-adjusted death rate does not include one death missing age. | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 40. Selected Causes of Death by Community Health Network Area (CHNA), Massachusetts: 2016 | | | | | | | | | | | | | | |
| **CHNA Name** | **Total Deaths** | **Age-Adjusted Death Rate1** | **Heart Disease** | **Total Cancer** | **Lung Cancer** | **Female Breast Cancer2** | **Stroke** | **CLRD3** | **Diabetes** | **Influenza & Pneumonia** | **Motor Vehicle** | **Homicide** | **Suicide** | **Opioid-related4** |
| **Massachusetts** | **56,953** | **668.9** | **11,923** | **12,691** | **3,168** | **775** | **2,468** | **2,676** | **1,267** | **1,243** | **466** | **140** | **636** | **2,034** |
| **1. Community Health Network of Berkshire** | 1,444 | 717.3 | 319 | 299 | 93 | 16 | 72 | 71 | 36 | 24 | 18 | 2 | 15 | 35 |
| **2. Upper Valley Health Web (Franklin County)** | 894 | 793.3 | 201 | 217 | 53 | 13 | 49 | 49 | 13 | 18 | 10 | 2 | 9 | 17 |
| **3. Partnership for Health in Hampshire County (Northampton)** | 1,209 | 695.5 | 270 | 283 | 71 | 22 | 51 | 43 | 20 | 31 | 9 | 1 | 16 | 34 |
| **4. The Community Health Connection (Springfield)** | 2,717 | 753.1 | 621 | 571 | 137 | 39 | 114 | 130 | 67 | 51 | 23 | 14 | 23 | 69 |
| **5. Community Health Network of Southern Worcester County** | 1,167 | 831.1 | 263 | 243 | 65 | 10 | 57 | 73 | 25 | 34 | 13 | 0 | 17 | 39 |
| **6. Community Partners for Health (Milford)** | 1,246 | 764.8 | 260 | 292 | 71 | 14 | 46 | 57 | 30 | 27 | 14 | 0 | 15 | 36 |
| **7. Community Health Network of Greater Metro West (Framingham)** | 2,928 | 672.6 | 659 | 662 | 147 | 50 | 115 | 138 | 57 | 54 | 26 | 2 | 36 | 71 |
| **8. Common Pathways (Worcester)** | 2,752 | 778.0 | 530 | 599 | 155 | 37 | 106 | 130 | 62 | 72 | 14 | 9 | 28 | 95 |
| **9. Community Health Network of North Central Massachusetts** | 2,303 | 822.7 | 458 | 554 | 127 | 32 | 170 | 89 | 48 | 44 | 20 | 3 | 31 | 74 |
| **10. Greater Lowell Community Health Network** | 2,321 | 861.6 | 470 | 539 | 156 | 25 | 81 | 100 | 47 | 66 | 11 | 3 | 32 | 110 |
| **11. Greater Lawrence Community Health Network** | 1,431 | 693.4 | 305 | 290 | 61 | 10 | 57 | 61 | 38 | 21 | 12 | 6 | 16 | 66 |
| **12. Greater Haverhill Community Health Network** | 1,317 | 794.1 | 287 | 267 | 71 | 20 | 51 | 65 | 28 | 26 | 7 | 1 | 19 | 62 |
| **13. Community Health Network North (Beverly/Gloucester)** | 1,092 | 686.1 | 245 | 224 | 44 | 13 | 39 | 58 | 17 | 19 | 3 | 1 | 13 | 34 |
| **14. North Shore Community Health Network** | 2,859 | 745.1 | 569 | 625 | 163 | 41 | 140 | 153 | 71 | 64 | 14 | 10 | 25 | 100 |
| **15. Northwest Suburban Health Alliance** | 1,876 | 632.0 | 393 | 427 | 100 | 28 | 83 | 60 | 42 | 33 | 16 | 2 | 26 | 49 |
| **16. North Suburban Health Alliance (Medford/Malden/Melrose)** | 2,278 | 692.6 | 476 | 541 | 123 | 30 | 89 | 103 | 64 | 52 | 12 | 5 | 26 | 87 |
| **17. Greater Cambridge/Somerville Community Health Network** | 1,659 | 586.4 | 321 | 393 | 84 | 32 | 50 | 68 | 46 | 28 | 12 | 2 | 25 | 67 |
| **18. West Suburban Health Network (Newton/Waltham)** | 2,006 | 549.6 | 422 | 441 | 92 | 25 | 92 | 67 | 48 | 32 | 7 | 5 | 21 | 49 |
| **19. Alliance for Community Health (Boston/Chelsea/Revere/Winthrop)** | 5,074 | 701.4 | 947 | 1,228 | 305 | 82 | 199 | 191 | 153 | 81 | 50 | 40 | 54 | 233 |
| **20. Blue Hills Community Health Alliance (Greater Quincy)** | 3,718 | 719.2 | 794 | 807 | 205 | 44 | 164 | 159 | 60 | 88 | 22 | 6 | 33 | 132 |
| **21. Community Health Network of Chicopee, Holyoke, Ludlow, Westfield** | 1,678 | 807.1 | 383 | 330 | 91 | 21 | 72 | 90 | 29 | 38 | 23 | 6 | 13 | 57 |
| **22. Greater Brockton Community Health Network** | 2,065 | 828.2 | 469 | 453 | 119 | 31 | 73 | 100 | 38 | 51 | 19 | 6 | 20 | 86 |
| **23. South Shore Community Health Network** | 1,808 | 857.0 | 364 | 443 | 114 | 28 | 72 | 97 | 25 | 45 | 23 | 2 | 20 | 88 |
| **24. Greater Attleboro-Taunton Health & Education Response** | 2,201 | 824.1 | 460 | 478 | 137 | 33 | 83 | 137 | 57 | 66 | 15 | 6 | 33 | 94 |
| **25. Partners for Healthier Communities** | 1,505 | 790.9 | 326 | 288 | 82 | 15 | 69 | 74 | 41 | 41 | 20 | 1 | 15 | 73 |
| **26. Greater New Bedford Community Health Network** | 2,232 | 838.8 | 433 | 473 | 128 | 22 | 111 | 120 | 42 | 56 | 25 | 4 | 25 | 94 |
| **27. Cape Cod and Islands Health Network** | 3,169 | 715.1 | 678 | 723 | 174 | 42 | 163 | 193 | 63 | 81 | 28 | 1 | 30 | 83 |

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1. Rates are per 100,000 population age-adjusted to the 2000 US Standard Population. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Includes only female breast cancer. 3. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title). 4. The term opioid designates a class of drugs derived naturally from the opium poppy (opium, morphine, codeine), synthesized or derived from a natural opiate (heroin, oxycodone, hydrocodone), or manufactured synthetically with a chemical structure similar to opium (fentanyl, methadone). (Opioid Overdose Response Strategies in Massachusetts, MDPH, 2014). This report combines all opioid overdoses since classification of specific drugs can be difficult. For example, many deaths related to heroin cannot be specifically coded as such due to the fast metabolism of heroin into morphine, as well as, the possible interaction of multiple drugs.

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 41. Selected Causes of Death by County, Massachusetts: 2016 | | | | | | | | | | | | | | |
| **County** | **Total Deaths** | **Age-Adjusted Death Rate1** | **Heart Disease** | **Total Cancer** | **Lung Cancer** | **Female Breast Cancer2** | **Stroke** | **CLRD3** | **Diabetes** | **Influenza & Pneumonia** | **Motor Vehicle** | **Homicide** | **Suicide** | **Opioids-related4** |
| **Massachusetts** | **56,953** | **668.9** | **11,923** | **12,691** | **3,168** | **775** | **2,468** | **2,676** | **1,267** | **1,243** | **466** | **140** | **636** | **2,034** |
| Barnstable | 2,940 | 694.2 | 628 | 664 | 159 | 40 | 151 | 178 | 57 | 72 | 28 | 1 | 25 | 78 |
| Berkshire | 1,444 | 695.3 | 319 | 299 | 93 | 16 | 72 | 71 | 36 | 24 | 18 | 2 | 15 | 35 |
| Bristol | 5,324 | 748.5 | 1,112 | 1,092 | 301 | 58 | 224 | 292 | 131 | 148 | 57 | 10 | 61 | 239 |
| Dukes | 158 | 627.3 | 29 | 42 | 10 | 2 | 6 | 9 | 4 | 7 | 0 | 0 | 4 | 3 |
| Essex  91 | 6,699 | 666.0 | 1,406 | 1,406 | 339 | 84 | 287 | 337 | 154 | 130 | 36 | 18 | 73 | 262 |
| Franklin | 719 | 732.1 | 156 | 179 | 40 | 11 | 40 | 43 | 10 | 15 | 8 | 2 | 8 | 13 |
| Hampden | 4,444 | 747.7 | 1,019 | 908 | 232 | 60 | 188 | 224 | 96 | 92 | 47 | 20 | 37 | 127 |
| Hampshire | 1,224 | 632.7 | 274 | 287 | 71 | 22 | 51 | 43 | 21 | 32 | 9 | 1 | 16 | 34 |
| Middlesex | 11,469 | 605.1 | 2,406 | 2,654 | 629 | 167 | 454 | 465 | 272 | 240 | 76 | 16 | 159 | 387 |
| Nantucket | 71 | 558.9 | 21 | 17 | 5 | 0 | 6 | 6 | 2 | 2 | 0 | 0 | 1 | 2 |
| Norfolk | 5,865 | 623.3 | 1,247 | 1,314 | 324 | 80 | 244 | 243 | 110 | 121 | 35 | 11 | 57 | 204 |
| Plymouth | 4,735 | 726.8 | 993 | 1,095 | 280 | 68 | 196 | 248 | 78 | 120 | 46 | 8 | 54 | 186 |
| Suffolk | 4,769 | 645.7 | 883 | 1,144 | 292 | 77 | 183 | 185 | 144 | 73 | 49 | 40 | 50 | 231 |
| Worcester | 7,088 | 725.9 | 1,430 | 1,589 | 393 | 90 | 366 | 332 | 152 | 167 | 57 | 11 | 76 | 233 |

1. Rates are per 100,000 population age-adjusted to the 2000 US Standard Population. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Includes only female breast cancer. 3. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title). 4. The term opioid designates a class of drugs derived naturally from the opium poppy (opium, morphine, codeine), synthesized or derived from a natural opiate (heroin, oxycodone, hydrocodone), or manufactured synthetically with a chemical structure similar to opium (fentanyl, methadone). (Opioid Overdose Response Strategies in Massachusetts, MDPH, 2014). This report combines all opioid overdoses since classification of specific drugs can be difficult. For example, many deaths related to heroin cannot be specifically coded as such due to the fast metabolism of heroin into morphine, as well as, the possible interaction of multiple drugs.

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## TECHNICAL NOTES

## DATA SOURCES

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

CHANGES TO MORTALITY DATA, EFFECTIVE 1999

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

## CHANGES TO THE PRESENTATION OF RACE AND ETHNICITY DATA

The 2003 revision of the Standard Certificate of Death allows the reporting of more than one race in accordance with the revised standards issued by the Office of Management and Budget (OMB) in 1997. The revised standards require federal data collection programs to allow respondents to select *one or more race categories*. In order to provide uniformity and comparability of the data during the transition period, before multiple-race data are available for all reporting areas, it is necessary to “bridge” the responses of those who reported more than one race to a single-race. The method used to bridge responses for those who report more than one race to a single race is based on a procedure whereby multiple races are assigned to the smallest minority group first (i.e. Asian and White becomes Asian or Black and Native American becomes Native American). All multiple races that include Hispanic will be assigned as Hispanic and this group also includes all respondents who reported Hispanic ethnicities as well.

**Decedent Race**

|  |  |
| --- | --- |
| American Indian/Alaska Native (specify tribal nation): \_\_\_\_\_\_\_\_\_\_  Asian  Black  Guamanian or Chamorro  Hispanic/Latino/Black  Hispanic/Latino/White  Hispanic/Latino/Other(specify): \_\_\_\_\_\_\_\_\_\_ | Native Hawaiian  Samoan  White  Other Pacific Islander (specify):\_\_\_\_\_\_\_\_\_\_  Other race not listed (specify): \_\_\_\_\_\_\_\_\_\_  Refused  Not obtainable  Unknown |

**Decedent Race**

Enter race to appear on death certificate: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Decedent Ethnicity**

|  |  |
| --- | --- |
| African (specify): \_\_\_\_\_\_\_\_\_\_  African-American  American  Asian Indian  Brazilian  Cambodian    Cape Verdean  Caribbean Islander (specify): \_\_\_\_\_\_\_\_\_\_  Chinese  Colombian  Cuban  Dominican  European (specify): \_\_\_\_\_\_\_\_\_\_  Filipino  Guatemalan  Haitian  Honduran  Japanese  Korean | Laotian  Mexican, Mexican American, Chicano  Middle Eastern (specify): \_\_\_\_\_\_\_\_\_\_  Native American (specify tribal nation(s)): \_\_\_\_\_\_\_\_\_\_  Portuguese  Puerto Rican  Russian  Salvadoran  Vietnamese    Other Asian (specify): \_\_\_\_\_\_\_\_\_\_  Other Central American (specify): \_\_\_\_\_\_\_\_\_\_  Other Pacific Islander (specify): \_\_\_\_\_\_\_\_\_\_  Other Portuguese (specify): \_\_\_\_\_\_\_\_\_\_  Other South American (specify): \_\_\_\_\_\_\_\_\_\_  Other ethnicity (ies) not listed (specify): \_\_\_\_\_\_\_\_\_\_  Refused  Not obtainable  Unknown |

## POPULATION ESTIMATES

Two sources of population estimates were used to calculate population-based rates in *Massachusetts Deaths 2016*:

* 1. State and County Death Rates: The 2016 Modified Age, Race/Ethnicity, and Sex file (MARS), which is a bridged population file produced by the National Center for Health Statistics (NCHS) and the Census Bureau Population Estimates Program was used to calculate state rates by race and Hispanic ethnicity, e.g., death rates. This file has data by single years of age, sex, race and Hispanic ethnicity in the five mutually exclusive categories used by the Department: White Non-Hispanic, Black Non-Hispanic, Asian Non-Hispanic, American Indian/Alaska Native Non-Hispanic, and Hispanic. Available from: <http://www.cdc.gov/nchs/nvss/bridged_race.htm> as of June 27, 2017.
  2. City and town death rates: The Massachusetts Department of Public Health Race Allocated Census 2010 Estimates (MRACE 2010), which are population estimates based upon the Census 2010 Summary File 1, was used to calculate city and town rates. In this estimates file, the Census 2010 race categories, “Two or more races” and “Some other race” are redistributed to the MDPH standard race categories: White Non-Hispanic, Black Non-Hispanic, Asian Non-Hispanic, American Indian/Alaska Native Non-Hispanic, and Hispanic. All persons in the Census 2010 Hispanic ethnicity category are counted as “Hispanic” race in the MDPH estimates. This kind of file is often referred to as a “bridged” file, that is, one that bridges the new race and ethnicity collections to the conventionally used categories. These population estimates are available from MassCHIP (<http://masschip.state.ma.us>).

**LIMITATIONS OF SMALL NUMBERS**

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

**APPLYING COMPARABILITY RATIOS TO EXAMINE TRENDS IN MORTALITY**

Beginning with 1999, mortality data are coded according to the International Classification of Diseases Tenth Revision (ICD-10). Due to the changes in coding rules, comparison of mortality trends over time using different revisions of ICD is challenging. A method was devised to assess if changes in causes of death are “real” changes, or due to the new classification system. Using this method, death data for 1996 were coded twice; once according to ICD-9 and again according to ICD-10. A comparability ratio (CR) was then calculated by dividing the number of deaths coded according to ICD-10 by the number of deaths coded according to the most similar codes in ICD-9 (please refer to Table A4. Preliminary Comparability Ratios for a list of codes and CR used in this publication).

A CR of 1.00 indicates that the same number of deaths was assigned to a cause of death whether ICD-9 or ICD-10 was used. A CR of less than 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 Pneumonia1 Deaths: Massachusetts, 1996-2000**

|  |  |  |  |
| --- | --- | --- | --- |
| **Year** | **Age-adjusted rate2** | **Comparability Ratio** | **Comparability Modified Rate**  (=Age-Adjusted Rate\*Comparability Ratio) |
| 1996 | 41.5 | 0.6982 | 29.0 |
| 1997 | 39.1 | 0.6982 | 27.3 |
| 1998 | 40.2 | 0.6982 | 28.1 |
| 1999 | 30.3 |  |  |
| 2000 | 29.3 |  |  |

1. Influenza and pneumonia defined as ICD-9: 480-487 for years 1996-1998 and ICD-10: J10-J18 for year 1999 and 2000.

2. Age-adjusted to the 2000 US standard population, per 100,000.

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

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

**TESTS OF STATISTICAL SIGNIFICANCE**

Beginning with *Massachusetts Deaths 2004,* statistics presented in the text section have been tested to determine whether they differ significantly from a target statistic. For example, the number of deaths in 2008 was compared with the number of deaths in 2007 to determine whether their difference was unlikely to have occurred by chance. When a difference is unlikely to have occurred by chance, it is referred to as “significant.”

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

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

National Vital Statistics Reports, Volume 52, Number 10

Births: Final Data for 2002

by Joyce A. Martin, M.P.H.; Brady E. Hamilton, Ph.D.; Paul D. Sutton, Ph.D.; Stephanie J. Ventura, M.A.; Fay Menacker, Dr. P.H.; and Martha L. Munson, M.S.;

From the Division of Vital Statistics, NCHS. (Technical Notes, “Significance testing” section begins on page 110).

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

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

When two statistics are determined to differ significantly, they are referred to in the text as being “significantly” different, either lower or higher than the statistic of comparison.

**CONFIDENCE INTERVALS**

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

**Comparison of Infant Mortality Rates and Confidence Intervals for Selected Years**

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

**(1989)** 7.0 **7.6** 8.2

**(1993)** 5.7 **6.2** 6.7

**(1996)** 4.5  **5.0**  5.5

**(2000)**

4.2 **4.6** 5.1

**4.5 5.0 6.0 7.0 8.0 8.5**

**Infant Deaths per 1,000 Live Births**

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

GLOSSARY

**Age-Adjusted Rate**

A summary rate designed to minimize the distortions created by differences in age distribution when comparing rates for populations with different age compositions. Age-adjusted rates are useful when comparing death rates from different populations or in the same population over time. For example, if one wished to compare the 1998 death rates between Barnstable County and Hampshire County, the age-adjusted formula would account for the fact that 24% of the Barnstable County residents were 65 years of age or older, whereas only 11% of the Hampshire County residents were in this age group.

Age-adjusted rates are calculated by weighting the age-specific rates for a given year by the age distribution of a standard population. The weighted age-specific rates are then added to produce the adjusted rate for all ages combined. (Please see example below).

The 2000 US projected population is used as the standard population in this document for consistency with data published by the National Center for Health Statistics (NCHS). **Only rates using the same standard population can be compared**. All age-adjusted rates published in this report have been re-calculated using the 2000 US standard population. These rates should NOT be compared with age-adjusted rates previously published that used the 1940 US standard population.

**Example: Calculation of 1999 Age-Adjusted Mortality Rate**

**Massachusetts:** **All Causes of Death**

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

**Age-Specific Rate**

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

Number of deaths among residents

ages 25-34 in a given year

Age-specific death = X 100,000

rate (ages 25-34) population

ages 25-34 in that year

**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. CHNAs mobilize around key health issues impacting the community, promote prevention efforts, enhance access to care, provide opportunities for more collaboration among agencies, and create a client-centered, outcome-oriented health service delivery system. CHNAs also promote efficiency in service delivery by working to reduce duplication and overlap, and by identifying gaps in service. These community coalitions participate in monitoring outcomes and progress of strategies and responses to those health needs. To determine which cities and towns make up a particular CHNA, please see Table A8, which provides the CHNA code for each city and town based on the geographic definitions established in 1997.

**Comparability Modified Rate**

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

**Comparability Ratio (CR)**

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

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

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

A CR of less than 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 A4 and A5).

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:

Number of resident deaths in a year

Crude death rate = X 100,000

Number of residents

**Death Certificate**

A vital record can be signed by a licensed physician doctor (which includes ME’s) or a Nurse Practitioner. Starting in 2016 Physician Assistants (PA) could also sign. Some of the data elements found on the death certificate are cause of death, decedent's name, gender, birth date, place of residence, and place of occurrence. (A copy of the Massachusetts death certificate used is in the Appendix). In a properly completed death certificate, the immediate cause of death is recorded on line 29a. The other mentioned causes are written on lines 29 b-d. The underlying cause of death is the disease or injury that initiated the events leading to the death. All causes of death are data entered and processed by a software program supplied by NCHS. This software assigns the appropriate ICD-10 codes. Trained nosologists review the ICD-10 codes assigned.

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

The International Classification of Diseases (ICD) classifies mortality information for statistical purposes. The ICD was first used in 1900 and has since been revised about every 10 years, with the exception of the ICD-9, which was in use between 1979-1998. Mortality data in this report was coded using ICD-10 codes, though a comparison between these ICD-10 codes and their corresponding ICD-9 codes is presented in Tables A1-A6.

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

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

Since 1999, the tenth revision of the International Classification of Diseases has been used to code mortality data. For a list of ICD-10 codes used in the publication, please see Tables A1, A4, and A5.

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 (US Department of Health and Human Services, Centers for Disease Control and Prevention).

**Occurrence Death**

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

**Opioid**

The term opioid designates a class of drugs derived naturally from the opium poppy (opium, morphine, codeine), synthesized or derived from a natural opiate (heroin, oxycodone, hydrocodone), or manufactured synthetically with a chemical structure similar to opium (fentanyl, methadone). (Opioid Overdose Response Strategies in Massachusetts, MDPH, 2014)

This report combines all opioid overdoses since classification of specific drugs can be difficult. For example, many deaths related to heroin cannot be specifically coded as such due to the fast metabolism of heroin into morphine, as well as, the possible interaction of multiple drugs.

**Other and Unspecified Narcotics (T40.6)**

The Injury Surveillance Workgroup (ISW7) Consensus Recommendations for national and state poisoning surveillance (Safe States Alliance, 2012) states that this category is intended for other and unspecified drugs classified pharmacologically as narcotics (opioids/opiates).  However, in practice it may also be used for drugs classified legally as narcotics such as cocaine. The proportion of this category made up by opioids/opiates varies by jurisdiction, so inclusion of this code depends on more detailed analysis of death certificate text and/or medical examiner records. Reviews in Massachusetts indicate that most deaths classified as T40.6 were opioid-related overdose deaths. For that reason, we include T40.6 in our opioid-related definition.

**Premature Mortality Rate**

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

**Resident Death**

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

**Underlying Cause of Death**

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

**Table A1. ICD-10 and ICD-9 Codes Used in this Publication**

(Sorted by ICD-10 Codes)

|  |  |  |
| --- | --- | --- |
| **Cause of Death** | **ICD-10 Code** | **ICD-9 Code** |
| **Infectious and Parasitic Diseases** | A00-B99 | 001-139 |
| Septicemia | A40-A41 | 038 |
| Human Immunodeficiency Virus (HIV) disease | B20-B24 | 042-044 |
| **Cancer (Malignant Neoplasms)** | C00-C97 | 140-208 |
| of esophagus | C15 | 150 |
| of stomach | C16 | 151 |
| of colon, rectum, rectum and anus | C18-C21 | 153-154, 159.9 |
| of pancreas | C25 | 157 |
| of trachea, bronchus and lung | C33-C34 | 162 |
| of female breast | C50 | 174 |
| of cervix uteri | C53 | 180 |
| of corpus uteri and uterus, part unspecified | C54-C55 | 179,182 |
| of ovary | C56 | 183.0 |
| of prostate | C61 | 185 |
| of kidney and renal pelvis | C64-C65 | 189.0-189.1 |
| of bladder | C67 | 188 |
| of meninges, brain & other parts of central nervous system | C70-C72 | 191-192 |
| Hodgkin Disease | C81 | 201 |
| Non-Hodgkin lymphoma | C82-C85 | 200, 202 (except 202.4) |
| Leukemia | C91-C95 | 202.4, 204-208 |
| Multiple myeloma and immunoproliferative neoplasms | C88, C90 | 203 |
| **Diabetes Mellitus** | E10-E14 | 250 |
| **Alzheimer’s Disease** | G30 | 331.0 |
| **Heart Disease** | I00-I09, I11, I13, I20-I51 | 390-398, 402, 404--29 |
| **Stroke (Cerebrovascular Disease)** | I60-I69 | 430-38 |
| **Influenza and Pneumonia** | J10-J18 | 480--87 |
| **Chronic Lower Respiratory Diseases1** | J40-J47 | 490--96 |
| **Chronic Liver Disease and Cirrhosis** | K70, K73-K74 | 571 |
| **Nephritis** | N00-N07, N17-N19, N25-N27 | 580-589 |
| **Congenital Malformations, Deformations, and**  **Chromosomal Abnormalities** | Q00-Q99 | 740-759 |
| **Certain Conditions Originating in the Perinatal Period**  **(Perinatal Conditions)** | P00-P96 | 760-779 |
| **Ill-defined Conditions** | R00-R99 | 780-797, 798.1-798.9, 799 |
| Sudden infant death syndrome (SIDS) | R95 | 798.0 |
| **External Causes of Injuries and Poisonings**  **(intentional, unintentional and of undetermined**  **intent)** | V01-Y89 | E800-E999 |
| Accidents (Unintentional Injuries) | V01-X59, Y85-Y86 | E800-E949 |
| Motor Vehicle-related injuries | V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2 | E810-E825 |
| Unintentional non-transport injuries | W00-X59, Y86 | E850-E869, E880-E928, E929.2-E929.9 |
| Suicide | X60-X84, Y87.0 | E950-E959 |
| Homicide | X85-Y09, Y87.1 | E960-E969 |
| Injuries of undetermined intent | Y10-Y34,Y87.2,Y89.9 | E980-E989 |
| 1. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title). | | |

**Table A2. ICD-10 Injury Codes Used in this Publication**

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

**Table A3. ICD-10 Codes for Selected Healthy People 2020 Mortality Objectives****1**

**Used in this Publication**

(Sorted by Objective Number)

| **Cause of Death** | **ICD-10 Code** |
| --- | --- |
| **Cancer (All Sites)** | C00-C97 |
| Lung cancer | C33-C34 |
| Female breast cancer | C50 |
| Uterine Cervix cancer | C53 |
| Colorectal cancer | C18-C21 |
| Oropharyngeal cancer | C00-C14 |
| Prostate cancer | C61 |
| Malignant melanoma | C43 |
| **Coronary Heart Disease** | I11, I20-I25 |
| **COPD** | J40-J44 |
| **Stroke** | I60-I69 |
| **HIV Infection** | B20-B24 |
| **Firearm-related Deaths** | W32-W34, X72-X74, Y22-Y24, Y35.0, X93-X95 |
| **Poisoning** | X40-X49, X60-X69, X85-X90, Y10-Y19, Y35.2 |
| **Hanging, Strangulation or Suffocation** | W75-W84, X70, X91, Y20 |
| **Unintentional Injuries (Accidents)** | V01-X59, Y85-Y86 |
| **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 |
| **Residential Fire Deaths** | X00, X02 |
| **Falls** | W00-W19, X80, Y01, Y30 |
| **Drownings** | W65-W74, X71, X92, Y21 |
| **Homicides** | X85-Y09, Y87.1 |
| **Birth Defects** | Q00-Q99 |
| **Congenital Heart and Vascular Defects** | Q20-Q24 |
| **Sudden Infant Death Syndrome (SIDS)** | R95 |
| **Suicide** | X60-X84, Y87.0 |
| **Asthma** | J45-J46 |
| 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 |
| **Cirrhosis** | K74 |
| **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 |

1. These Healthy People 2020 objectives use underlying cause of death data.

Table A4. 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 | 1.06371 and 1.14482 |
| **Cancer (Malignant Neoplasms)** | C00-C97 | 140-208 | 1.0068 |
| of esophagus | C15 | 150 | 0.9965 |
| of stomach | C16 | 151 | 1.0063 |
| of colon, rectum, rectum and anus | C18-C21 | 153-154 | 0.9993 |
| of pancreas | C25 | 157 | 0.9980 |
| of trachea, bronchus and lung | C33-C34 | 162 | 0.9837 |
| of breast | C50 | 174-175 | 1.0056 |
| of cervix uteri | C53 | 180 | 0.9871 |
| of corpus uteri and uterus, part unspecified | C54-C55 | 179,182 | 1.0260 |
| of ovary | C56 | 183.0 | 0.9954 |
| of prostate | C61 | 185 | 1.0134 |
| of kidney and renal pelvis | C64-C65 | 189.0-189.1 | 1.0000 |
| of bladder | C67 | 188 | 0.9968 |
| of meninges, brain & other parts of central nervous system | C70-C72 | 191-192 | 0.9691 |
| Hodgkin Disease | C81 | 201 | 0.9855 |
| Non-Hodgkin lymphoma | C82-C85 | 200, 202 | 0.9781 |
| Leukemia | C91-C95 | 204-208 | 1.0119 |
| Multiple myeloma and immunoproliferative neoplasms | C88, C90 | 203 | 1.0383 |
| **Diabetes Mellitus** | E10-E14 | 250 | 1.0082 |
| **Alzheimer’s Disease** | G30 | 331.0 | 1.5536 |
| **Heart Disease** | I00-I09, I11, I13, I20-I51 | 390-398, 402, 404, 410-429 | 0.9858 |
| **Stroke (Cerebrovascular Disease)** | I60-I69 | 430-434, 436-438 | 1.0588 |
| **Influenza and Pneumonia** | J10-J18 | 480-487 | 0.6982 |
| **Chronic Lower Respiratory Diseases** | J40-J47 | 490-494,496 | 1.0478 |
| **Chronic Liver Disease and Cirrhosis** | K70, K73-K74 | 571 | 1.0367 |
| **Nephritis** | N00-N07, N17-N19, N25-N27 | 580-589 | 1.2320 |
| **Congenital Malformations, Deformations, and**  **Chromosomal Abnormalities** | Q00-Q99 | 740-759 | 0.8470 |
| **Certain Conditions Originating in the Perinatal Period**  **(Perinatal Conditions)** | P00-P96 | 760-771.2, 771.4-779 | 1.0658 |
| **External Causes of Injuries and Poisonings**  **(intentional, unintentional and of undetermined**  **intent)** | V01-Y89 | E800-E999 | NA |
| Accidents (Unintentional Injuries) | V01-X59, Y85-Y86 | E800-E869, E880-E929 | 1.0305 |
| Motor Vehicle-related injuries | V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2 | E810-E825 | 0.97543 |
| 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  Note. Please refer to Appendix for an example of how to apply comparability ratios.  1. Comparability Modified number and rate based on preliminary comparability ratios (CR) from NCHS based on 1996 data (February 2001). 2. Comparability Modified number and rate based on preliminary comparability ratios (CR) from NCHS based on 1998 data (revised June 2001). 3. This is the revised comparability ratio for motor vehicle-related injuries, effective May 2001. | | | |

Table A5. 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 | |
| Anencephaly 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  Note: Please refer to Appendix for an example of how to apply comparability ratios. | | | | | | | |

**Table A6. Causes of Death Considered Amenable to Health Care**

|  |  |  |
| --- | --- | --- |
| **Cause of Death Considered Amenable to Health Care** | **Age** | **ICD-10 Code** |
| Intestinal infections | 0-14 | A00-A09 |
| Tuberculosis | 0-74 | A15-A19, B90 |
| Other infectious (Diphtheria, Tetanus, Poliomyelitis) | 0-74 | A36, A35,A80, A40-A41 |
| Whooping cough | 0-14 | A37 |
| Measles | 1 to 14 | B05 |
| Malignant neoplasm of colon and rectum | 0-74 | C18-C21 |
| Malignant neoplasm of skin, | 0-74 | C44 |
| Malignant neoplasm of breast, | 0-74 | C50 |
| Malignant neoplasm of cervix uteri | 0-74 | C53 |
| Malignant neoplasm of cervix uteri and body of the uterus | 0-44 | C54, C55 |
| Malignant neoplasm of testis | 0-74 | C62 |
| Hodgkin’s disease | 0-74 | C81 |
| Leukemia | 0-44 | C91-C95 |
| Diseases of the thyroid | 0-74 | E00-E07 |
| Diabetes mellitus | 0-49 | E10-E14 |
| Epilepsy | 0-74 | G40-G41 |
| Chronic rheumatic heart disease | 0-74 | I05-I09 |
| Hypertensive disease | 0-74 | I10-I13, I15 |
| Ischemic heart disease | 0-74 | I20-I25 |
| Cerebrovascular disease | 0-74 | I60-I69 |
| All respiratory diseases (excl. pneumonia/influenza) | 1 to 14 | J00-J09, J20-J99 |
| Influenza | 0-74 | J10-J11 |
| Pneumonia | 0-74 | J12-J18 |
| Peptic ulcer | 0-74 | K25-K27 |
| Appendicitis | 0-74 | K35-K38 |
| Abdominal hernia | 0-74 | K40-K46 |
| Cholelithiasis & cholecystitis | 0-74 | K80-K81 |
| Nephritis and nephrosis | 0-74 | N00-N07, N17-N19, N25-N27 |
| Benign prostatic hyperplasia | 0-74 | N40 |
| Misadventures to patients during surgical and medical care | All | Y60-Y69, Y83-Y84 |
| Maternal deaths | All | O00-O99 |
| Congenital cardiovascular anomalies | 0-74 | Q20-Q28 |
| Perinatal deaths, all causes excluding stillbirths | All | P00-P96 |

Note: Amenable causes are from E. Nolte and M. McKee, *Does Healthcare Save Lives*? *Avoidable Mortality Revisited* (London: Nuffield Trust, 2004). Available at <http://researchonline.lshtm.ac.uk/15535/1/does-healthcare-save-lives-mar04.pdf> and E. Nolte and M. McKee, In Amenable Mortality—Deaths Avoidable Through Health Care—Progress In The US Lags That of Three European Countries, *Health Affairs 31*(9), 2114-2122. Available at <https://www.healthaffairs.org/doi/pdf/10.1377/hlthaff.2011.0851>

Table A7. Population Estimates for Massachusetts Community Health Network Areas (CHNA) and Counties: 2010 and 2016

|  |  |  |  |
| --- | --- | --- | --- |
|  | | | |
| **CHNA** | **POPULATION**1 | **COUNTY** | **POPULATION**2 |
|  |  |  |  |
| 1. Community Health Network of Berkshire County | 131,219 | Barnstable | 214,276 |
| 2. Upper Valley Health Web (Franklin County) | 87,130 | Berkshire | 126,903 |
| 3. Partnership for Health in Hampshire County (Northampton) | 155,900 | Bristol | 558,324 |
| 4. The Community Health Connection (Springfield) | 296,850 | Dukes | 17,246 |
| 5. Community Health Network of Southern Worcester County | 119,539 | Essex | 779,018 |
| 6. Community Partners for Health (Milford) | 166,824 | Franklin | 70,382 |
| 7. Community Health Network of Greater Metro West (Framingham) | 388,909 | Hampden | 468,467 |
| 8. Common Pathways (Worcester) | 309,013 | Hampshire | 161,816 |
| 9. Community Health Network of North Central Massachusetts | 262,652 | Middlesex | 1,589,774 |
| 10. Greater Lowell Community Health Network | 275,404 | Nantucket | 11,008 |
| 11. Greater Lawrence Community Health Network | 194,172 | Norfolk | 697,181 |
| 12. Greater Haverhill Community Health Network | 148,563 | Plymouth | 513,565 |
| 13. Community Health Network North (Beverly/Gloucester) | 115,782 | Suffolk | 784,230 |
| 14. North Shore Community Health Network | 284,642 | Worcester | 819,589 |
| 15. Northwest Suburban Health Alliance | 215,757 |  |  |
| 16. North Suburban Health Alliance (Medford/Malden/Melrose) | 270,281 | **STATE** | **6,811,779** |
| 17. Greater Cambridge/Somerville Community Health Network | 280,404 |  |  |
| 18. West Suburban Health Network (Newton/Waltham) | 258,843 |  |  |
| 19. Alliance for Community Health (Boston/Chelsea/Revere/Winthrop) | 780,755 |  |  |
| 20. Blue Hills Community Health Alliance (Greater Quincy) | 377,279 |  |  |
| 21. Community Health Network of Chicopee, Holyoke, Ludlow, Westfield | 160,892 |  |  |
| 22. Greater Brockton Community Health Network | 236,778 |  |  |
| 23. South Shore Community Health Network (Plymouth) | 190,549 |  |  |
| 24. Greater Attleboro-Taunton Health & Education Response | 256,322 |  |  |
| 25. Partners for Healthier Communities (Fall River) | 138,419 |  |  |
| 26. Greater New Bedford Community Health Network | 202,156 |  |  |
| 27. Cape Cod and Islands Health Network | 242,595 |  |  |

1. The Massachusetts Department of Public Health Race Allocated Census 2010 Estimates (MRACE 2010), which are population estimates based upon the Census 2010 Summary File 1, was used to calculate city and town rates.

2. National Center for Health Statistics. Postcensal estimates of the resident population of the United States for April 1, 2010-July 1, 2016, by year, county, single-year of age (0, 1, 2, .., 85 years and over), bridged race, Hispanic origin, and sex (Vintage 2016). Prepared under a collaborative arrangement with the U.S. Census Bureau. Available from: <http://www.cdc.gov/nchs/nvss/bridged_race.htm> as of June 27, 2017.

**Table A8. Population Estimates for Massachusetts Communities, 2010**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TOWN NAME** | **COUNTY** | **CHNA** | **POPULATION** |  | **TOWN NAME** | **COUNTY** | **CHNA** | **POPULATION** |
| Abington | Plymouth | 22 | 15,985 |  | Concord | Middlesex | 15 | 17,668 |
| Acton | Middlesex | 15 | 21,924 |  | Conway | Franklin | 2 | 1,897 |
| Acushnet | Bristol | 26 | 10,303 |  | Cummington | Hampshire | 3 | 872 |
| Adams | Berkshire | 1 | 8,485 |  | Dalton | Berkshire | 1 | 6,756 |
| Agawam | Hampden | 4 | 28,438 |  | Danvers | Essex | 14 | 26,493 |
| Alford | Berkshire | 1 | 494 |  | Dartmouth | Bristol | 26 | 34,032 |
| Amesbury | Essex | 12 | 16,283 |  | Dedham | Norfolk | 18 | 24,729 |
| Amherst | Hampshire | 3 | 37,819 |  | Deerfield | Franklin | 2 | 5,125 |
| Andover | Essex | 11 | 33,201 |  | Dennis | Barnstable | 27 | 14,207 |
| Aquinnah (Gay Head) | Dukes | 27 | 311 |  | Dighton | Bristol | 24 | 7,086 |
| Arlington | Middlesex | 17 | 42,844 |  | Douglas | Worcester | 6 | 8,471 |
| Ashburnham | Worcester | 9 | 6,081 |  | Dover | Norfolk | 18 | 5,589 |
| Ashby | Middlesex | 9 | 3,074 |  | Dracut | Middlesex | 10 | 29,457 |
| Ashfield | Franklin | 2 | 1,737 |  | Dudley | Worcester | 5 | 11,390 |
| Ashland | Middlesex | 7 | 16,593 |  | Dunstable | Middlesex | 10 | 3,179 |
| Athol | Worcester | 2 | 11,584 |  | Duxbury | Plymouth | 23 | 15,059 |
| Attleboro | Bristol | 24 | 43,593 |  | East Bridgewater | Plymouth | 22 | 13,794 |
| Auburn | Worcester | 8 | 16,188 |  | East Brookfield | Worcester | 5 | 2,183 |
| Avon | Norfolk | 22 | 4,356 |  | East Longmeadow | Hampden | 4 | 15,720 |
| Ayer | Middlesex | 9 | 7,427 |  | Eastham | Barnstable | 27 | 4,956 |
| Barnstable | Barnstable | 27 | 45,193 |  | Easthampton | Hampshire | 3 | 16,053 |
| Barre | Worcester | 9 | 5,398 |  | Easton | Bristol | 22 | 23,112 |
| Becket | Berkshire | 1 | 1,779 |  | Edgartown | Dukes | 27 | 4,067 |
| Bedford | Middlesex | 15 | 13,320 |  | Egremont | Berkshire | 1 | 1,225 |
| Belchertown | Hampshire | 3 | 14,649 |  | Erving | Franklin | 2 | 1,800 |
| Bellingham | Norfolk | 6 | 16,332 |  | Essex | Essex | 13 | 3,504 |
| Belmont | Middlesex | 17 | 24,729 |  | Everett | Middlesex | 16 | 41,667 |
| Berkley | Bristol | 24 | 6,411 |  | Fairhaven | Bristol | 26 | 15,873 |
| Berlin | Worcester | 9 | 2,866 |  | Fall River | Bristol | 25 | 88,857 |
| Bernardston | Franklin | 2 | 2,129 |  | Falmouth | Barnstable | 27 | 31,531 |
| Beverly | Essex | 13 | 39,502 |  | Fitchburg | Worcester | 9 | 40,318 |
| Billerica | Middlesex | 10 | 40,243 |  | Florida | Berkshire | 1 | 752 |
| Blackstone | Worcester | 6 | 9,026 |  | Foxborough | Norfolk | 7 | 16,865 |
| Blandford | Hampden | 4 | 1,233 |  | Framingham | Middlesex | 7 | 68,318 |
| Bolton | Worcester | 9 | 4,897 |  | Franklin | Norfolk | 6 | 31,635 |
| Boston | Suffolk | 19 | 617,594 |  | Freetown | Bristol | 26 | 8,870 |
| Bourne | Barnstable | 27 | 19,754 |  | Gardner | Worcester | 9 | 20,228 |
| Boxborough | Middlesex | 15 | 4,996 |  | Georgetown | Essex | 12 | 8,183 |
| Boxford | Essex | 12 | 7,965 |  | Gill | Franklin | 2 | 1,500 |
| Boylston | Worcester | 8 | 4,355 |  | Gloucester | Essex | 13 | 28,789 |
| Braintree | Norfolk | 20 | 35,744 |  | Goshen | Hampshire | 3 | 1,054 |
| Brewster | Barnstable | 27 | 9,820 |  | Gosnold | Dukes | 27 | 75 |
| Bridgewater | Plymouth | 22 | 26,563 |  | Grafton | Worcester | 8 | 17,765 |
| Brimfield | Hampden | 5 | 3,609 |  | Granby | Hampshire | 3 | 6,240 |
| Brockton | Plymouth | 22 | 93,810 |  | Granville | Hampden | 4 | 1,566 |
| Brookfield | Worcester | 5 | 3,390 |  | Great Barrington | Berkshire | 1 | 7,104 |
| Brookline | Norfolk | 19 | 58,732 |  | Greenfield | Franklin | 2 | 17,456 |
| Buckland | Franklin | 2 | 1,902 |  | Groton | Middlesex | 9 | 10,646 |
| Burlington | Middlesex | 15 | 24,498 |  | Groveland | Essex | 12 | 6,459 |
| Cambridge | Middlesex | 17 | 105,162 |  | Hadley | Hampshire | 3 | 5,250 |
| Canton | Norfolk | 20 | 21,561 |  | Halifax | Plymouth | 23 | 7,518 |
| Carlisle | Middlesex | 15 | 4,852 |  | Hamilton | Essex | 13 | 7,764 |
| Carver | Plymouth | 23 | 11,509 |  | Hampden | Hampden | 4 | 5,139 |
| Charlemont | Franklin | 2 | 1,266 |  | Hancock | Berkshire | 1 | 717 |
| Charlton | Worcester | 5 | 12,981 |  | Hanover | Plymouth | 23 | 13,879 |
| Chatham | Barnstable | 27 | 6,125 |  | Hanson | Plymouth | 23 | 10,209 |
| Chelmsford | Middlesex | 10 | 33,802 |  | Hardwick | Worcester | 9 | 2,990 |
| Chelsea | Suffolk | 19 | 35,177 |  | Harvard | Worcester | 9 | 6,520 |
| Cheshire | Berkshire | 1 | 3,235 |  | Harwich | Barnstable | 27 | 12,243 |
| Chester | Hampden | 21 | 1,337 |  | Hatfield | Hampshire | 3 | 3,279 |
| Chesterfield | Hampshire | 3 | 1,222 |  | Haverhill | Essex | 12 | 60,879 |
| Chicopee | Hampden | 21 | 55,298 |  | Hawley | Franklin | 2 | 337 |
| Chilmark | Dukes | 27 | 866 |  | Heath | Franklin | 2 | 706 |
| Clarksburg | Berkshire | 1 | 1,702 |  | Hingham | Plymouth | 20 | 22,157 |
| Clinton | Worcester | 9 | 13,606 |  | Hinsdale | Berkshire | 1 | 2,032 |
| Cohasset | Norfolk | 20 | 7,542 |  | Holbrook | Norfolk | 22 | 10,791 |
| Colrain | Franklin | 2 | 1,671 |  | Holden | Worcester | 8 | 17,346 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table A8 (continued). Population Estimates for Massachusetts Communities, 2010** | | | | | | | | |
| **TOWN NAME** | **COUNTY** | **CHNA** | **POPULATION** |  | **TOWN NAME** | **COUNTY** | **CHNA** | **POPULATION** |
| Holland | Hampden | 5 | 2,481 |  | New Marlborough | Berkshire | 1 | 1,509 |
| Holliston | Middlesex | 7 | 13,547 |  | New Salem | Franklin | 2 | 990 |
| Holyoke | Hampden | 21 | 39,880 |  | Newbury | Essex | 12 | 6,666 |
| Hopedale | Worcester | 6 | 5,911 |  | Newburyport | Essex | 12 | 17,416 |
| Hopkinton | Middlesex | 7 | 14,925 |  | Newton | Middlesex | 18 | 85,146 |
| Hubbardston | Worcester | 9 | 4,382 |  | Norfolk | Norfolk | 7 | 11,227 |
| Hudson | Middlesex | 7 | 19,063 |  | North Adams | Berkshire | 1 | 13,708 |
| Hull | Plymouth | 20 | 10,293 |  | North Andover | Essex | 11 | 28,352 |
| Huntington | Hampshire | 21 | 2,180 |  | North Attleboro | Bristol | 24 | 28,712 |
| Ipswich | Essex | 13 | 13,175 |  | North Brookfield | Worcester | 5 | 4,680 |
| Kingston | Plymouth | 23 | 12,629 |  | North Reading | Middlesex | 16 | 14,892 |
| Lakeville | Plymouth | 24 | 10,602 |  | Northampton | Hampshire | 3 | 28,549 |
| Lancaster | Worcester | 9 | 8,055 |  | Northborough | Worcester | 7 | 14,155 |
| Lanesborough | Berkshire | 1 | 3,091 |  | Northbridge | Worcester | 6 | 15,707 |
| Lawrence | Essex | 11 | 76,377 |  | Northfield | Franklin | 2 | 3,032 |
| Lee | Berkshire | 1 | 5,943 |  | Norton | Bristol | 24 | 19,031 |
| Leicester | Worcester | 8 | 10,970 |  | Norwell | Plymouth | 20 | 10,506 |
| Lenox | Berkshire | 1 | 5,025 |  | Norwood | Norfolk | 20 | 28,602 |
| Leominster | Worcester | 9 | 40,759 |  | Oak Bluffs | Dukes | 27 | 4,527 |
| Leverett | Franklin | 2 | 1,851 |  | Oakham | Worcester | 9 | 1,902 |
| Lexington | Middlesex | 15 | 31,394 |  | Orange | Franklin | 2 | 7,839 |
| Leyden | Franklin | 2 | 711 |  | Orleans | Barnstable | 27 | 5,890 |
| Lincoln | Middlesex | 15 | 6,362 |  | Otis | Berkshire | 1 | 1,612 |
| Littleton | Middlesex | 15 | 8,924 |  | Oxford | Worcester | 5 | 13,709 |
| Longmeadow | Hampden | 4 | 15,784 |  | Palmer | Hampden | 4 | 12,140 |
| Lowell | Middlesex | 10 | 106,519 |  | Paxton | Worcester | 8 | 4,806 |
| Ludlow | Hampden | 21 | 21,103 |  | Peabody | Essex | 14 | 51,251 |
| Lunenburg | Worcester | 9 | 10,086 |  | Pelham | Hampshire | 3 | 1,321 |
| Lynn | Essex | 14 | 90,329 |  | Pembroke | Plymouth | 23 | 17,837 |
| Lynnfield | Essex | 14 | 11,596 |  | Pepperell | Middlesex | 9 | 11,497 |
| Malden | Middlesex | 16 | 59,450 |  | Peru | Berkshire | 1 | 847 |
| Manchester | Essex | 13 | 5,136 |  | Petersham | Worcester | 2 | 1,234 |
| Mansfield | Bristol | 24 | 23,184 |  | Phillipston | Worcester | 2 | 1,682 |
| Marblehead | Essex | 14 | 19,808 |  | Pittsfield | Berkshire | 1 | 44,737 |
| Marion | Plymouth | 26 | 4,907 |  | Plainfield | Hampshire | 3 | 648 |
| Marlborough | Middlesex | 7 | 38,499 |  | Plainville | Norfolk | 7 | 8,264 |
| Marshfield | Plymouth | 23 | 25,132 |  | Plymouth | Plymouth | 23 | 56,468 |
| Mashpee | Barnstable | 27 | 14,006 |  | Plympton | Plymouth | 23 | 2,820 |
| Mattapoisett | Plymouth | 26 | 6,045 |  | Princeton | Worcester | 9 | 3,413 |
| Maynard | Middlesex | 7 | 10,106 |  | Provincetown | Barnstable | 27 | 2,942 |
| Medfield | Norfolk | 7 | 12,024 |  | Quincy | Norfolk | 20 | 92,271 |
| Medford | Middlesex | 16 | 56,173 |  | Randolph | Norfolk | 20 | 32,112 |
| Medway | Norfolk | 6 | 12,752 |  | Raynham | Bristol | 24 | 13,383 |
| Melrose | Middlesex | 16 | 26,983 |  | Reading | Middlesex | 16 | 24,747 |
| Mendon | Worcester | 6 | 5,839 |  | Rehoboth | Bristol | 24 | 11,608 |
| Merrimac | Essex | 12 | 6,338 |  | Revere | Suffolk | 19 | 51,755 |
| Methuen | Essex | 11 | 47,255 |  | Richmond | Berkshire | 1 | 1,475 |
| Middleborough | Plymouth | 24 | 23,116 |  | Rochester | Plymouth | 26 | 5,232 |
| Middlefield | Hampshire | 3 | 521 |  | Rockland | Plymouth | 23 | 17,489 |
| Middleton | Essex | 11 | 8,987 |  | Rockport | Essex | 13 | 6,952 |
| Milford | Worcester | 6 | 27,999 |  | Rowe | Franklin | 2 | 393 |
| Millbury | Worcester | 8 | 13,261 |  | Rowley | Essex | 12 | 5,856 |
| Millis | Norfolk | 7 | 7,891 |  | Royalston | Worcester | 2 | 1,258 |
| Millville | Worcester | 6 | 3,190 |  | Russell | Hampden | 4 | 1,775 |
| Milton | Norfolk | 20 | 27,003 |  | Rutland | Worcester | 9 | 7,973 |
| Monroe | Franklin | 2 | 121 |  | Salem | Essex | 14 | 41,340 |
| Monson | Hampden | 4 | 8,560 |  | Salisbury | Essex | 12 | 8,283 |
| Montague | Franklin | 2 | 8,437 |  | Sandisfield | Berkshire | 1 | 915 |
| Monterey | Berkshire | 1 | 961 |  | Sandwich | Barnstable | 27 | 20,675 |
| Montgomery | Hampden | 4 | 838 |  | Saugus | Essex | 14 | 26,628 |
| Mt. Washington | Berkshire | 1 | 167 |  | Savoy | Berkshire | 1 | 692 |
| Nahant | Essex | 14 | 3,410 |  | Scituate | Plymouth | 20 | 18,133 |
| Nantucket | Nantucket | 27 | 10,172 |  | Seekonk | Bristol | 24 | 13,722 |
| Natick | Middlesex | 7 | 33,006 |  | Sharon | Norfolk | 20 | 17,612 |
| Needham | Norfolk | 18 | 28,886 |  | Sheffield | Berkshire | 1 | 3,257 |
| New Ashford | Berkshire | 1 | 228 |  | Shelburne | Franklin | 2 | 1,893 |
| New Bedford | Bristol | 26 | 95,072 |  | Sherborn | Middlesex | 7 | 4,119 |
| New Braintree | Worcester | 9 | 999 |  | Shirley | Middlesex | 9 | 7,211 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table A8 (continued). Population Estimates for Massachusetts Communities, 2010** | | | | | | | | |
| **TOWN NAME** | **COUNTY** | **CHNA** | **POPULATION** |  | **TOWN NAME** | **COUNTY** | **CHNA** | **POPULATION** |
| Shrewsbury | Worcester | 8 | 35,608 |  | Warwick | Franklin | 2 | 780 |
| Shutesbury | Franklin | 2 | 1,771 |  | Washington | Berkshire | 1 | 538 |
| Somerset | Bristol | 25 | 18,165 |  | Watertown | Middlesex | 17 | 31,915 |
| Somerville | Middlesex | 17 | 75,754 |  | Wayland | Middlesex | 7 | 12,994 |
| South Hadley | Hampshire | 3 | 17,514 |  | Webster | Worcester | 5 | 16,767 |
| Southampton | Hampshire | 3 | 5,792 |  | Wellesley | Norfolk | 18 | 27,982 |
| Southborough | Worcester | 7 | 9,767 |  | Wellfleet | Barnstable | 27 | 2,750 |
| Southbridge | Worcester | 5 | 16,719 |  | Wendell | Franklin | 2 | 848 |
| Southwick | Hampden | 4 | 9,502 |  | Wenham | Essex | 13 | 4,875 |
| Spencer | Worcester | 5 | 11,688 |  | West Boylston | Worcester | 8 | 7,669 |
| Springfield | Hampden | 4 | 153,060 |  | West Bridgewater | Plymouth | 22 | 6,916 |
| Sterling | Worcester | 9 | 7,808 |  | West Brookfield | Worcester | 5 | 3,701 |
| Stockbridge | Berkshire | 1 | 1,947 |  | West Newbury | Essex | 12 | 4,235 |
| Stoneham | Middlesex | 16 | 21,437 |  | West Springfield | Hampden | 4 | 28,391 |
| Stoughton | Norfolk | 22 | 26,962 |  | West Stockbridge | Berkshire | 1 | 1,306 |
| Stow | Middlesex | 7 | 6,590 |  | West Tisbury | Dukes | 27 | 2,740 |
| Sturbridge | Worcester | 5 | 9,268 |  | Westborough | Worcester | 7 | 18,272 |
| Sudbury | Middlesex | 7 | 17,659 |  | Westfield | Hampden | 21 | 41,094 |
| Sunderland | Franklin | 2 | 3,684 |  | Westford | Middlesex | 10 | 21,951 |
| Sutton | Worcester | 6 | 8,963 |  | Westhampton | Hampshire | 3 | 1,607 |
| Swampscott | Essex | 14 | 13,787 |  | Westminster | Worcester | 9 | 7,277 |
| Swansea | Bristol | 25 | 15,865 |  | Weston | Middlesex | 18 | 11,261 |
| Taunton | Bristol | 24 | 55,874 |  | Westport | Bristol | 25 | 15,532 |
| Templeton | Worcester | 9 | 8,013 |  | Westwood | Norfolk | 18 | 14,618 |
| Tewksbury | Middlesex | 10 | 28,961 |  | Weymouth | Norfolk | 20 | 53,743 |
| Tisbury | Dukes | 27 | 3,949 |  | Whately | Franklin | 2 | 1,496 |
| Tolland | Hampden | 4 | 485 |  | Whitman | Plymouth | 22 | 14,489 |
| Topsfield | Essex | 13 | 6,085 |  | Wilbraham | Hampden | 4 | 14,219 |
| Townsend | Middlesex | 9 | 8,926 |  | Williamsburg | Hampshire | 3 | 2,482 |
| Truro | Barnstable | 27 | 2,003 |  | Williamstown | Berkshire | 1 | 7,754 |
| Tyngsborough | Middlesex | 10 | 11,292 |  | Wilmington | Middlesex | 15 | 22,325 |
| Tyringham | Berkshire | 1 | 327 |  | Winchendon | Worcester | 9 | 10,300 |
| Upton | Worcester | 6 | 7,542 |  | Winchester | Middlesex | 15 | 21,374 |
| Uxbridge | Worcester | 6 | 13,457 |  | Windsor | Berkshire | 1 | 899 |
| Wakefield | Middlesex | 16 | 24,932 |  | Winthrop | Suffolk | 19 | 17,497 |
| Wales | Hampden | 5 | 1,838 |  | Woburn | Middlesex | 15 | 38,120 |
| Walpole | Norfolk | 7 | 24,070 |  | Worcester | Worcester | 8 | 181,045 |
| Waltham | Middlesex | 18 | 60,632 |  | Worthington | Hampshire | 3 | 1,156 |
| Ware | Hampshire | 3 | 9,872 |  | Wrentham | Norfolk | 7 | 10,955 |
| Wareham | Plymouth | 26 | 21,822 |  | Yarmouth | Barnstable | 27 | 23,793 |
| Warren | Worcester | 5 | 5,135 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

1. The Massachusetts Department of Public Health Race Allocated Census 2010 Estimates (MRACE 2010), which are population estimates based upon the Census 2010 Summary File 1, was used to calculate city and town rates.

**Table A9. 2016 Massachusetts Population Estimates1 By Age Group, Gender, Race and Hispanic Ethnicity(mutually exclusive)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **AGE** | **GENDER** | **TOTAL** | **WHITE Non-Hispanic2** | **BLACK Non-Hispanic2** | **ASIAN Non-Hispanic2** | **HISPANIC2** |
| Under 1 | Male | 36,748 | 22,794 | 3,262 | 2,847 | 7,765 |
|  | Female | 35,109 | 21,725 | 3,100 | 2,637 | 7,566 |
|  | Total | 71,857 | 44,519 | 6,362 | 5,484 | 15,331 |
| 1 TO 4 | Male | 147,501 | 90,701 | 15,358 | 11,463 | 29,613 |
|  | Female | 142,018 | 87,165 | 14,456 | 11,185 | 28,850 |
|  | Total | 289,519 | 177,866 | 29,814 | 22,648 | 58,463 |
| 5 TO 14 | Male | 391,327 | 256,692 | 37,707 | 28,426 | 67,571 |
|  | Female | 374,712 | 245,262 | 35,084 | 28,066 | 65,375 |
|  | Total | 766,039 | 501,954 | 72,791 | 56,492 | 132,946 |
| 15 TO 24 | Male | 478,607 | 325,150 | 43,137 | 35,631 | 73,454 |
|  | Female | 476,331 | 324,347 | 42,635 | 39,382 | 68,812 |
|  | Total | 954,938 | 649,497 | 85,772 | 75,013 | 142,266 |
| 25 TO 34 | Male | 476,869 | 321,805 | 40,713 | 43,894 | 69,287 |
|  | Female | 475,460 | 321,196 | 40,502 | 48,109 | 64,577 |
|  | Total | 952,329 | 643,001 | 81,215 | 92,003 | 133,864 |
| 35 TO 44 | Male | 403,734 | 279,908 | 32,366 | 36,125 | 54,517 |
|  | Female | 421,279 | 288,984 | 34,534 | 40,525 | 56,397 |
|  | Total | 825,013 | 568,892 | 66,900 | 76,650 | 110,914 |
| 45 TO 54 | Male | 466,997 | 364,454 | 31,464 | 28,631 | 41,349 |
|  | Female | 494,119 | 381,736 | 34,758 | 30,960 | 45,510 |
|  | Total | 961,116 | 746,190 | 66,222 | 59,591 | 86,859 |
| 55 TO 64 | Male | 440,593 | 369,865 | 25,285 | 18,938 | 25,513 |
|  | Female | 476,411 | 395,220 | 28,576 | 21,769 | 29,715 |
|  | Total | 917,004 | 765,085 | 53,861 | 40,707 | 55,228 |
| 65 TO 74 | Male | 283,498 | 247,039 | 12,718 | 10,816 | 12,356 |
|  | Female | 329,033 | 282,938 | 16,592 | 12,762 | 16,178 |
|  | Total | 612,531 | 529,977 | 29,310 | 23,578 | 28,534 |
| 75 TO 84 | Male | 127,716 | 112,326 | 5,106 | 5,242 | 4,783 |
|  | Female | 174,911 | 152,668 | 8,456 | 6,343 | 7,165 |
|  | Total | 302,627 | 264,994 | 13,562 | 11,585 | 11,948 |
| 85 + | Male | 52,061 | 47,218 | 1,617 | 1,618 | 1,505 |
|  | Female | 106,745 | 97,730 | 3700 | 2,382 | 2,803 |
|  | Total | 158,806 | 144,948 | 5,317 | 4,000 | 4,308 |
| **ALL AGES** | **Male** | **3,305,651** | **2,437,952** | **248,733** | **223,631** | **387,713** |
|  | **Female** | **3,506,128** | **2,598,971** | **262,393** | **244,120** | **392,948** |
|  | **Total** | **6,811,779** | **5,036,923** | **511,126** | **467,751** | **780,661** |

1. National Center for Health Statistics. Postcensal estimates of the resident population of the United States for April 1, 2010-July 1, 2016, by year, county, single-year of age (0, 1, 2, .., 85 years and over), bridged race, Hispanic origin, and sex (Vintage 2016). Prepared under a collaborative arrangement with the U.S. Census Bureau. Available from: <http://www.cdc.gov/nchs/nvss/bridged_race.htm> as of June 27, 2017.

2. Persons of Hispanic ethnicity are NOT included in the race categories. These estimates are used to calculate population based rates published in this report.

**Massachusetts Death Certificate: 2016**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | seal2 | | | *Commonwealth of Massachusetts*  *Registry of Vital Records and Statistics*  Certificate of DEATH | | | | | | | |  | | | | | | | | |
| *State File #* | | | |  | | | | |
| *Registered #* | | | |  | | | | |
| Form R-301 08012015 | | | | | | |  | | | | | | | |  | | | | | | | | |
| **D E C E D E N T** | *Place of Death* | | |  | | | | | | | | | | | | | | | | | | | | | | |
| *Date of Death* | | |  | | | | | | | | | | | *Age* |  | | | | | | | | | *Sex* |  |
| *Current Name* | | |  | | | | | | | | | | | | | | | | | | | | | | |
| *Surname at Birth or Adoption* | | | | |  | | | | | | | | | | | | | | *SSN* | | | |  | | |
| *AKA* |  | | | | | | | | | | | | | | | | | | | | | | | | |
| *Date of Birth* | |  | | | | | | | | *Birthplace* |  | | | | | | | | | | | | | | |
| *Residence* | |  | | | | | | | | | | | | | | | | | | | | | | | |
| *Race* | | | | | | | | | | | | | *Education* | | | | | | | | | | | | |
| *Marital Status* | | | | | | | | *Occupation/Industry* | | | | | | | | | | | | | | | | | |
| *Last Spouse – Last, First, Middle (Surname at Birth or Adoption)* | | | | | | | | | | | | | | | | *Decedent: U.S. Veteran (Most Recent)* | | | | | | | | | |
| *Mother/Parent Name – Last, First Middle (Surname at Birth or Adoption)* | | | | | | | | | | | | | | | | *Birthplace* | | | | | | | | | |
| *Father/Parent Name – Last, First Middle (Surname at Birth or Adoption)* | | | | | | | | | | | | | | | | *Birthplace* | | | | | | | | | |
| **M E D I C A L C E R T I F I E R** | *Part I. Cause of Death – Sequentially list immediate cause then antecedent causes then underlying cause* | | | | | | | | | | | | | | | | | | | | | | *Interval between onset and death* | | | |
| a. Immediate Cause (Final condition resulting in death) | | | | | | | | | | | | | | | | | | | | | |  | | | |
| b. Due to or as a consequence of:. | | | | | | | | | | | | | | | | | | | | | |  | | | |
| c. Due to or as a consequence of: | | | | | | | | | | | | | | | | | | | | | |  | | | |
| d. Due to or as a consequence of: | | | | | | | | | | | | | | | | | | | | | |  | | | |
| *Part II.* *Other significant conditions contributing to death but not resulting in underlying cause* | | | | | | | | | | | | | | | | | | *Manner of Death:* | | | | | | | |
|  | | | | | | | |
| *Time of Death:* | | | |  | | | |
| *Result of Injury:* | | | |  | | | |
| *Certifier* | | | | | | | | | | | | | | | | | | | | *Lic #* | | | | | |
| *Addr.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| **D I S P O S I T I O N** | *Funeral Licensee/ Designee* | | | | | | | | | | | | | | | | | | | | *Lic #* | | | | | |
| *Facility/Addr.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Immediate Disposition* | | | | | | |  | | | | |  | | | | | | | | | | | | | |
| *Date of Immediate Disposition* | | | | | | |  | | | | |
| *Place/Address* | | | | | | | | | | | |
| *Date of Record* | | | | |  | | | | | | | |
| *Date of Amendment* | | | | |  | | | | | | | |  | | | | | | | | | | | | | |

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| --- | --- | --- | --- | --- |
|  | | |  | |
| *If U.S. war veteran, specify war/conflict(s)* | | | | |
| *Branch of military (most recent)* | | *Rank/organization/outfit(most recent)* | | |
| *Date entered(most recent)* | *Date Discharged (most recent)* | | | *Service Number(most recent)* |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *Place of Death Type* | | *Date of Pronouncement* | *Time of Pronouncement* | |
| *RN/NP/PA Pronouncement?* | *Name of RN/NP/PA Pronouncing Death* | | | *Lic #* |
| *RN/NP/PA Employing Agency or Institution* | | *Name of Physician or Medical Examiner notified* | | |

|  |  |  |  |
| --- | --- | --- | --- |
| *Was M.E. Notified?* | *Provider in charge of patient’s care, if not certifier* | | |
| *Autopsy Performed?* | *Findings available for Cause?* | *Tobacco contribute to death?* | *Pregnancy Status, if female* |

|  |  |  |  |
| --- | --- | --- | --- |
| *Date of Injury* | *Time of Injury* | *Injury at Work?* | *If Transportation Injury, specify:* |
| *Place of Injury* | | *Location/Address of Injury:* | |
| *Describe How Injury Occurred* | | | |

|  |
| --- |
| *Expanded Race:* |
| *Ethnicity:* |

|  |  |
| --- | --- |
| *Informant Name* | *Relationship* |
| *Addr.* | |

|  |  |  |  |
| --- | --- | --- | --- |
| *Date Disposition Permit Issued:* |  | *Board of Health Agent* |  |
| *State Tracking No.* |  | *Local Permit No.* |  |
|  | | | |

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

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

**CHAPTER 38. MEDICAL EXAMINERS AND INQUESTS**

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

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

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

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

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

(4) death under suspicious or unusual circumstances;

(5) death following an unlawful abortion;

(6) death related to occupational illness or injury;

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

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

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

(10) skeletal remains;

(11) death associated with diagnostic or therapeutic procedures;

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

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

(14) death in any public or private conveyance;

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

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

(17) any person found dead;

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

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

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

**Massachusetts Deaths: 2016 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:**

Massachusetts Department of Public Health

Registry of Vital Records and Statistics

150 Mt. Vernon Street 1st Floor

Dorchester, MA 02125

1. This report uses death record data prepared on 10/3/2017. In a very small number of cases, additional data will be obtained at a later date. Therefore, the statistics presented in this report could change slightly based on any information received after 10/3/2017. [↑](#footnote-ref-1)
2. The U.S. Board on Geographic Names approved the change of the country name from “Cape Verde” to “Cabo Verde” on December 9, 2013. However, in earlier years and in 2016 the death worksheet still used the name “Cape Verdean”. [↑](#footnote-ref-2)