# The Commonwealth of Massachusetts
Executive Office of Health and Human Services
Department of Public Health
Registry of Vital Records and Statistics
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November 3, 2023

Steven T. James
House Clerk
State House Room 145
Boston, MA 02133

Michael D. Hurley
Senate Clerk
State House Room 335
Boston, MA 02133

Dear Mr. Clerk,

Pursuant to Section 2 of Chapter 111 of the Massachusetts General Laws, please find enclosed a report from the Department of Public Health entitled Massachusetts Deaths 2021.

Sincerely,

Robert Goldstein
Commissioner
Department of Public Health

# Massachusetts Deaths 2021

## October 2023

## Article I. Legislative Mandate

The following report is hereby issued pursuant to Section 2 of Chapter 111 of the Massachusetts General Laws as follows:

***Chapter 111: Section 2. Annual report (specific text bolded below)***

*The commissioner shall administer the laws relative to health and sanitation and the regulations of the department, and shall prepare rules and regulations for the consideration of the council. The secretary of elder affairs and the commissioner shall jointly develop and submit to the council rules and regulations governing the licensure and operation of convalescent or nursing homes, rest homes, infirmaries maintained in a town and charitable homes for the aged. He may direct any executive officer or employee of the department to assist in the study, suppression or prevention of disease in any part of the commonwealth. He shall submit annually to the council a report containing recommendations in regard to health legislation.*

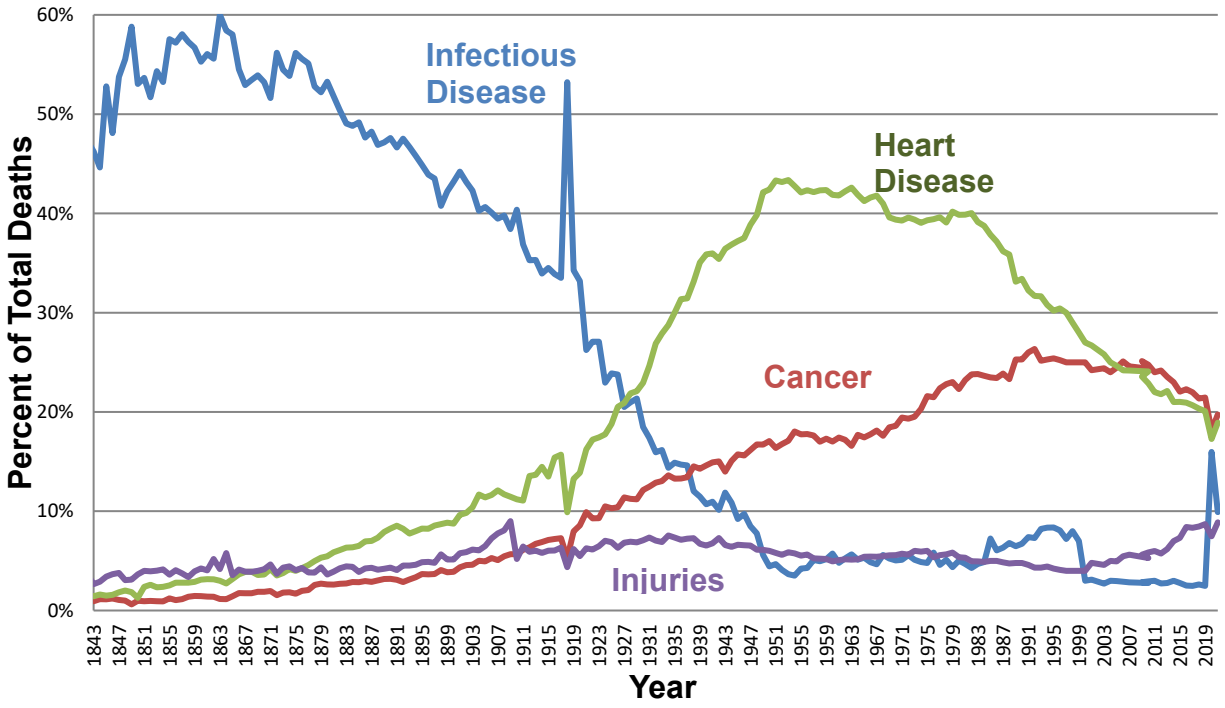
***The commissioner shall prepare from the** birth, marriage and **death records received by him under the provisions of chapter forty-six**, and from the divorce returns received by him under the provisions of section forty-six of chapter two hundred and eight, **such statistical tables as he deems useful, and shall make annual report thereof to the general court**. The commissioner may transmit such information to the appropriate agency of the federal government to participate in the development of a cooperative system for producing uniform statistical information at the federal, state and local level. The commissioner may make further use of such records as he deems useful for administrative and research purposes connected with health programs and population studies. He shall, as soon as is reasonably practicable, cause the birth, marriage and death records to be bound with indexes thereto and shall retain their custody. He shall prepare an alphabetical index of such divorce returns showing the names of the parties, year and number of the judgment and the county in which the divorce occurred.*

*Prior to undertaking any activity or implementing any policy which would affect expenditures for medical assistance under chapter one hundred and eighteen E, including but not limited to the certification and licensure of providers of services under said chapter, the commissioner shall assure that such activity is reviewed by the commissioner of medical assistance.*

*The commissioner shall consult with the commissioner of mental health prior to taking an action substantially affecting the design and implementation of behavioral health services for children under guidelines established by the secretary of health and human services under section 16S of chapter 6A.*

*The commissioner, subject to the approval of the governor, may make such rules and regulations governing the conduct of written and oral examinations by the several boards of registration and examination under the department as shall be necessary to standardize procedures and protect the commonwealth and applicants for registration against fraud. Nothing in this section shall prevent a board from adopting, under authority of other provisions of law, specific rules and regulations that are not in conflict with the rules and regulations authorized by this section.*

# Massachusetts Deaths 2021




**Acknowledgments**

This report was prepared by Darien Mather, Registry of Vital Records and Statistics.

Special thanks go to: Karin Barrett, Registrar; Dean DiMartino, Deputy Registrar; Sharon Pagnano, Director of Statistics; Maria Vu, and Marsha Grabau; Registry of Vital Records and Statistics.

Data in this report have been collected through the efforts of the Registry of Vital Records and Statistics staff, including: Michael Baker, Pamela Corbin, Alex Forman, Denise O'Gara, Margaret Riley, Jennifer Smith, and Monica Smith.

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: https://www.mass.gov/info-details/deaths-of-massachusetts-residents.

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## Executive Summary

At the Registry of Vital Records and Statistics, we touch the lives of Commonwealth residents at key moments: when they're born, when they get married or divorced, and when they die. Public health is all about protecting and promoting the health of the public, and while some may argue that death is too late of an endpoint for intervention, information about mortality is vital to our health promotion and protection efforts. It is our hope that the information in this report helps inform our successes to date in those efforts and maps out where additional efforts are needed.

As the Commonwealth continues to recover from the COVID-19 pandemic, we acknowledge that COVID-19 has become endemic and will require sustained effort to reduce mortality of this vaccine-preventable disease. With that lens, the populations impacted may shift year-to-year and the Commonwealth's prevention and recovery efforts should address these changes and remain vigilant in public health surveillance efforts to detect changes and adapt our response when necessary. In 2020, we saw older adults and communities of color disproportionately impacted by COVID-19, and the Commonwealth responded with various health promotion efforts, including the Vaccine Equity Initiative and rural vaccine clinics. The mortality report for 2021 indicates these efforts have been successful as deaths and mortality due to COVID-19 were less than in 2020. However, the report also shows higher COVID-19 mortality rates among working-age adults compared to 2020 and persistent racial/ethnic inequities, suggesting additional work is needed to address inequities.

There is also some evidence of a survivor effect or bias, in which the older population who survived the first year of the pandemic were overall healthier: the age-specific mortality rate for residents ages 85 and above was the lowest it's been in at least the past decade. We should be cautious of any reductions in aging-related diseases such as Alzheimer's over the coming years – it may reflect advances in treatment options, but it also may be driven by the survivor bias from the pandemic. We will need further investigation to disentangle these effects.

Of course, health in the Commonwealth goes beyond the impact of COVID-19. The number of unintentional injury deaths increased 13.0% compared to 2020, after being fairly stable for the previous five years. This includes increased numbers of pedestrian and motorcyclist deaths, poisoning deaths, and drownings. There have also been increases in specific causes of mortality for some groups, despite decreases for those causes for Massachusetts overall. For example, while there has been an overall decrease in suicide, it is on the rise for Asian/Pacific Islander non-Hispanic residents; similarly, homicides for Black non-Hispanic women have increased.

## Selected Takeaways

- In 2021, Massachusetts residents continued to feel the impacts of the COVID-19 pandemic and its aftereffects, with nearly 5,000 more deaths (all cause) compared to 2019, despite a decrease of over 5,000 deaths compared to 2020. While the all-cause age-adjusted mortality rate (hereafter: mortality rate) decreased substantially from 2020 to 2021 for Asian/Pacific Islander non-Hispanic (12.7%), Black non-Hispanic (12.9%), and for White non-Hispanic (7.5%) residents, the mortality rate barely budged for American Indian/Alaksa Native non-Hispanic (1,052.3 and 1048.1 deaths per 100,000 residents, respectively) and for Hispanic residents (689.3 and 667.0 deaths per 100,000 residents, respectively), highlighting the inequities of the pandemic recovery (Table 1).
  - From 2020 to 2021, the mortality rate for Massachusetts residents decreased 8.9%, from 756.3 deaths per 100,000 to 689.0 deaths per 100,000. Despite the decrease in the mortality for Black non-Hispanic residents, their mortality rate remains higher than the rate for White non-Hispanic residents; and the mortality rate for American Indian/Alaska Native non-Hispanic residents is nearly 2.5 times the rate for White non-Hispanic residents. The mortality rate decreased 10.7% for women, returning to roughly pre-pandemic levels, but only decreased 7.1% for men and remained elevated over pre-pandemic levels. Among residents ages less than 1, 65-74, 75-84, and 85 plus years, the mortality rate decreased from 2020 and was similar to or less than the pre-pandemic mortality rate. The mortality rate for residents ages 15-24, 25-44, and 45-64 years was similar to 2020, and for residents ages 25-44 and 45-64 it remained elevated above pre-pandemic levels. The mortality rate for residents ages 1-14 years increased from 2020 back to pre-pandemic levels (Table 1).
  - The average life expectancy of Massachusetts residents rebounded nearly a year to 80.1 years in 2021 from 79.2 years in 2020, but was still a full year less than the 81.1-year life expectancy in 2019 (Figure 2). The group closest to returning to their pre-pandemic life expectancies was White non-Hispanic women (a loss of 1.8 years from 2019 to 2020, followed by a gain of 0.9 years from 2020 to 2021), followed by Black non-Hispanic men (5.1-year loss and 1.4-year gain) and Black non-Hispanic women (5.0-year loss and 1.2-year gain). Overall, men recovered about half a year of life expectancy while women recovered just over a year of life expectancy that had been lost in 2020. However, Hispanic and White non-Hispanic men saw little improvement in life expectancy: Hispanic men lost an additional 0.1 years of life expectancy in 2021 (on top of the 5.5 years lost in 2020) and White non-Hispanic men only saw a 0.1-year gain in life expectancy (after a 1.1-year loss in 2020); Table 2.
  - In 2021, the mortality and premature mortality rates for COVID-19 were highest for Hispanic residents at 103.2 deaths per 100,000 residents and 52.1 deaths per 100,000 residents, respectively, in 2021 (Figures 5 and 6). For American Indian/Alaska Native non-Hispanic and Black non-Hispanic residents, mortality and premature mortality due to any cause was higher compared to the respective rates for White non-Hispanic residents. (Premature mortality due to COVID-19 for American Indian/Alaska Native non-Hispanic residents was not presented due to small numbers; Figures 5 and 6.)
  - Although there were about half as many COVID-19 deaths in 2021 compared to 2020 (4,888 and 9,455 residents, respectively), COVID-19 remained the third leading cause of death overall and was in the top five causes of death for every age group, except those

less than one year (Table 4). Additionally, the COVID-19 age-specific mortality rates for ages 25-44 and 45-54 years were higher in 2021 compared to 2020 for Asian/Pacific Islander non-Hispanic, Hispanic, and White non-Hispanic residents, despite decreasing for other age groups and for Black non-Hispanic residents of the same ages. (Note: rate for Asian/Pacific Islander non-Hispanic residents age 25-44 years not presented due to small numbers; Figure 13.)

- In 2021, the rate of infant mortality for Black non-Hispanic residents (7.4 per 1,000 live births) was over two times higher than the corresponding rate for White non-Hispanic residents (2.4). While there was a decrease in neonatal mortality for Black non-Hispanic residents compared to 2020 (5.6 to 5.1), there was an increase in post-neonatal mortality for Black residents (1.7 to 2.3). There was also an increase in neonatal mortality for Asian/Pacific Islander non-Hispanic residents compared to 2020 (1.5 to 2.1; Table 5).
- Cancer remained the leading cause of death overall and was the leading cause of death for all racial/ethnic groups, except for Hispanic residents, for whom unintentional injuries was the leading cause of death in 2021 (Table 4 and Table 9). Lung cancer was the leading cause of cancer deaths, across all racial/ethnic groups (Table 10 and Table 12).
- Deaths due to unintentional injuries increased 13.0% over 2020, deaths due to cancer and heart disease increased slightly, and deaths due to Alzheimer's and Chronic Lower Respiratory Diseases decreased slightly in 2021 (Table 4). Deaths due to diabetes remained higher than pre-pandemic levels, as did deaths with diabetes as a contributing factor, and the mortality rates also increased sharply (Table 6, Figure 10, and Figure 12).
- Poisonings, which include opioid overdoses, continued to be the largest cause of injury deaths in 2021 and remained stable at 35.2 per 100,000 in 2021 compared to 2020 (Table 17). For all leading causes of injury death, most rates were more than twice as high for men than for women; firearm deaths which were 11.7 times higher for men than for women (7.0 per 100,000 and 0.6 per 100,000, respectively; Table 17). The firearm mortality rate was 4.3 times higher for Black non-Hispanic residents than for White non-Hispanic residents (11.3 per 100,000 and 2.6 per 100,000, respectively; Table 18). Overall, injury mortality rates were lowest for Asian/Pacific Islander non-Hispanic residents and highest for American Indian/Alaska Native non-Hispanic residents, the latter being driven primarily by poisoning deaths (Table 18).
- While suicides have decreased in recent years, the rate of suicide for men was still more than three times the rate for women (12.7 and 3.5 deaths per 100,000 residents, respectively, in 2021: Table 19). The rate of suicide for White non-Hispanic residents remained the highest, at 9.2 deaths per 100,000 residents; however, suicides among Asian/Pacific Islander non-Hispanic residents has increased in recent years from 3.4 deaths per 100,000 residents in 2019 to 4.6 in 2020, to 5.1 in 2021 (Table 20).
- The rate of homicide for men decreased from 4.7 homicides per 100,000 in 2020 to 3.5 homicides per 100,000 in 2021 (Table 19). The homicide rate also decreased for Black non-Hispanic and Hispanic men after having increased in 2020 compared to 2019 (Table 20). However, homicides among Black non-Hispanic women have increased, from a rate of 2.4 in 2020 to 3.9 in 2021 (Table 20).
- Deaths due to legal intervention increased from two instances total (one firearm, one "other" or "unspecified") in 2020 to 11 total (nine firearm, two "other" or "unspecified") in 2021 (Table 21).

## Note to Readers

This report has been streamlined to remove duplicative statistics available in the Massachusetts Population Health Information Tool Death Dashboard (PHIT; available at https://www.mass.gov/info-details/deaths-of-massachusetts-residents ), with the goal of providing high-level population health trends in a more digestible format. The PHIT Death Dashboard provides more detailed breakdowns by city/town and detailed causes of death for users to explore, and allows for downloading of the statistics and chart images.

**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. 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 4 for details. Accidental deaths, poisonings, and complex cases are most likely to be impacted by closure dates that differ from year to year.

**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 2021 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.
- 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.)

**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.

**Gender**
Data presented by gender are collected as female and male on the death record, but in practice, gender is often what informants report.

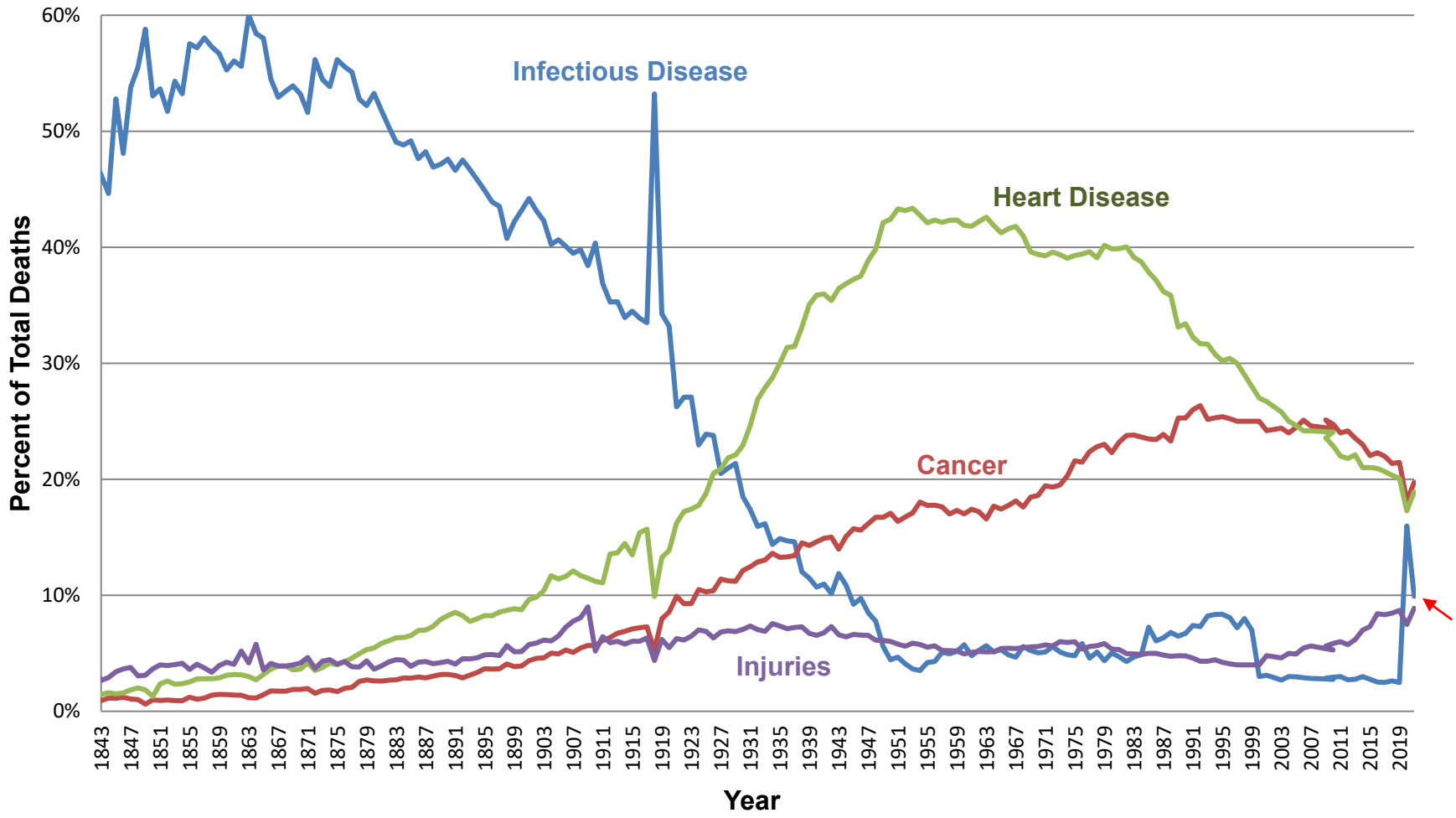
**Suggested Citation**
*Massachusetts Deaths 2021*. Boston, MA: Office of Population Health, Registry of Vital Records and Statistics, Massachusetts Department of Public Health. October 2023.

## Table 1. Trends in Mortality Characteristics, Massachusetts: 2011-2021

| Year | | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Resident deaths** | Number | 53,536 | 53,169 | 54,609 | 55,159 | 57,785 | 56,953 | 58,844 | 59,169 | 58,660 | 68,269 | 63,158 |
| | Crude rate[1,2,3] | 812.7 | 807.1 | 815.9 | 817.7 | 850.5 | 836.1 | 849.7 | 848.1 | 840.9 | 978.7 | 898.4 |
| | Age-adjusted rate[4] | 674.0 | 669.2 | 664.1 | 662.5 | 684.6 | 668.9 | 675.7 | 662.8 | 654.0 | 756.3 | 689.0 |
| **Race/ethnicity of decedent[5,6]** | | | | | | | | | | | | |
| American Indian/ Alaska Native non-Hispanic | Number | 47 | 59 | 68 | 71 | 104 | 131 | 135 | 112 | 94 | 124 | 128 |
| | Age-adjusted rate[4] | 424.0 | 539.8 | 587.4 | 610.5 | 876.2 | 1,056.1 | 1,070.7 | 873.0 | 715.1 | 1,052.3 | 1048.1 |
| Asian/PI non-Hispanic | Number | 806 | 811 | 816 | 938 | 1,091 | 1,028 | 1,165 | 1,222 | 1,270 | 1,759 | 1,716 |
| | Age-adjusted rate[4] | 375.2 | 372.4 | 320.5 | 344.7 | 371.8 | 324.7 | 361.1 | 351.8 | 351.4 | 490.0 | 427.6 |
| Black non-Hispanic | Number | 2,333 | 2,318 | 2,446 | 2,390 | 2,349 | 2,504 | 2,636 | 2,717 | 2,760 | 3,925 | 3,419 |
| | Age-adjusted rate[4] | 707.6 | 701.8 | 675.5 | 630.4 | 589.5 | 612.4 | 641.6 | 625.4 | 626.7 | 894.3 | 779.2 |
| Hispanic | Number | 1,477 | 1,487 | 1,548 | 1,702 | 2,037 | 2,126 | 2,372 | 2,377 | 2,544 | 3,451 | 3,379 |
| | Age-adjusted rate[4] | 468.9 | 484.9 | 444.9 | 447.9 | 493.0 | 473.2 | 505.7 | 480.4 | 506.3 | 689.3 | 667.0 |
| White non-Hispanic | Number | 48,844 | 48,430 | 49,486 | 49,621 | 51,688 | 50,654 | 52,038 | 52,196 | 51,456 | 58,356 | 53,869 |
| | Age-adjusted rate[4] | 686.9 | 681.0 | 680.9 | 679.5 | 703.3 | 687.9 | 697.1 | 686.8 | 676.3 | 761.6 | 704.7 |
| **Gender of decedent[6]** | | | | | | | | | | | | |
| Women | Number | 27,983 | 27,883 | 28,558 | 28,289 | 29,880 | 28,952 | 29,665 | 29,891 | 29,481 | 34,320 | 30,757 |
| | Age-adjusted rate[4] | 572.8 | 571.1 | 569.5 | 557.9 | 581.2 | 560.2 | 563.2 | 555.1 | 546.9 | 631.6 | 563.9 |
| Men | Number | 25,553 | 25,280 | 26,051 | 26,867 | 27,905 | 28,000 | 29,178 | 29,276 | 29,177 | 33,949 | 32,401 |
| | Age-adjusted rate[4] | 808.5 | 797.9 | 786.5 | 795.9 | 814.7 | 804.9 | 817.9 | 798.3 | 789.2 | 911.9 | 846.9 |
| **Age of decedent[6]** | | | | | | | | | | | | |
| <1 year | Number | 310 | 309 | 298 | 321 | 310 | 283 | 263 | 291 | 255 | 263 | 228 |
| | Age-specific rate[7] | 423.7 | 426.5 | 416.1 | 446.7 | 433.7 | 396.8 | 372.0 | 421.1 | 368.9 | 395.8 | 329.8 |
| 1-14 years | Number | 114 | 99 | 118 | 129 | 119 | 115 | 122 | 111 | 106 | 69 | 108 |
| | Age-specific rate[7] | 10.6 | 9.1 | 11.0 | 12.1 | 11.2 | 10.9 | 11.4 | 10.3 | 9.9 | 6.5 | 10.4 |
| 15-24 years | Number | 471 | 419 | 449 | 441 | 519 | 526 | 501 | 416 | 389 | 437 | 429 |
| | Age-specific rate[7] | 50.4 | 43.9 | 48.0 | 47.0 | 55.0 | 55.0 | 51.0 | 42.0 | 40.0 | 45.0 | 45.1 |
| 25-44 years | Number | 1,870 | 1,880 | 1,993 | 2,234 | 2,475 | 2,742 | 2,788 | 2,751 | 2,646 | 3,019 | 3,086 |
| | Age-specific rate[7] | 107.9 | 107.6 | 113.5 | 126.3 | 139.2 | 154.3 | 154.8 | 150.4 | 144.0 | 164.3 | 163.8 |
| 45-64 years | Number | 8,808 | 8,791 | 9,013 | 9,214 | 9,348 | 9,270 | 9,516 | 9,350 | 9,417 | 10,359 | 10,550 |
| | Age-specific rate[7] | 476.8 | 472.9 | 483.8 | 492.2 | 496.4 | 493.6 | 504.3 | 499.3 | 508.9 | 559.8 | 559.9 |
| 65-74 years | Number | 7,616 | 7,891 | 8,259 | 8,678 | 9,038 | 9,332 | 9,719 | 9,918 | 9,974 | 11,945 | 11,775 |
| | Age-specific rate[7] | 1,608.5 | 1,541.9 | 1,536.7 | 1,541.9 | 1,535.5 | 1,523.5 | 1,509.3 | 1,497.7 | 1,460.7 | 1,749.4 | 1,702.1 |
| 75-84 years | Number | 13,598 | 13,272 | 13,182 | 12,784 | 13,299 | 12,870 | 13,272 | 13,806 | 13,570 | 16,385 | 15,318 |
| | Age-specific rate[7] | 4,558.1 | 4,487.4 | 4,453.8 | 4,315.3 | 4,461.8 | 4,252.8 | 4,306.3 | 4,294.6 | 4,089.2 | 4,937.4 | 4,432.8 |
| 85+ years | Number | 20,747 | 20,506 | 21,296 | 21,356 | 22,677 | 21,813 | 22,663 | 22,526 | 22,303 | 25,788 | 21,660 |
| | Age-specific rate[7] | 13,824.1 | 13,341.5 | 13,661.7 | 13,858.8 | 14,302.0 | 13,735.6 | 13,995.1 | 13,952.1 | 13,817.8 | 15,977.0 | 13,230.2 |

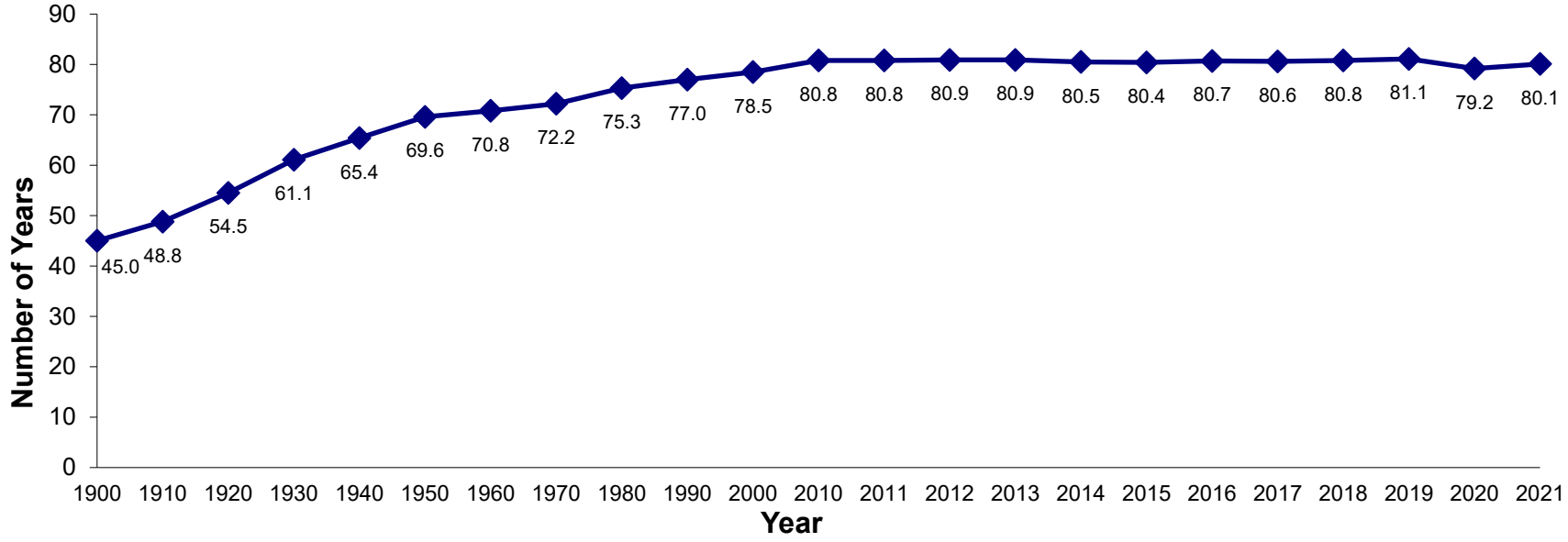
1. Deaths per 100,000 residents. 2. See Glossary for further definition of terms and rates. 3. Rate calculations are based on resident population estimates. 4. Rates are age-adjusted per 100,000 residents using the 2000 US standard population. 5. See the Technical Notes in the Appendix for a detailed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

**Figure 1. Trends in Percentage of Deaths from Selected Causes, Massachusetts: 1843-2021**




1. 78.0% of all Infectious Disease deaths in 2021 (indicated by the red arrow) were due to COVID-19.

## Figure 2. Life Expectancy at Birth[1], Massachusetts: 1900-2021

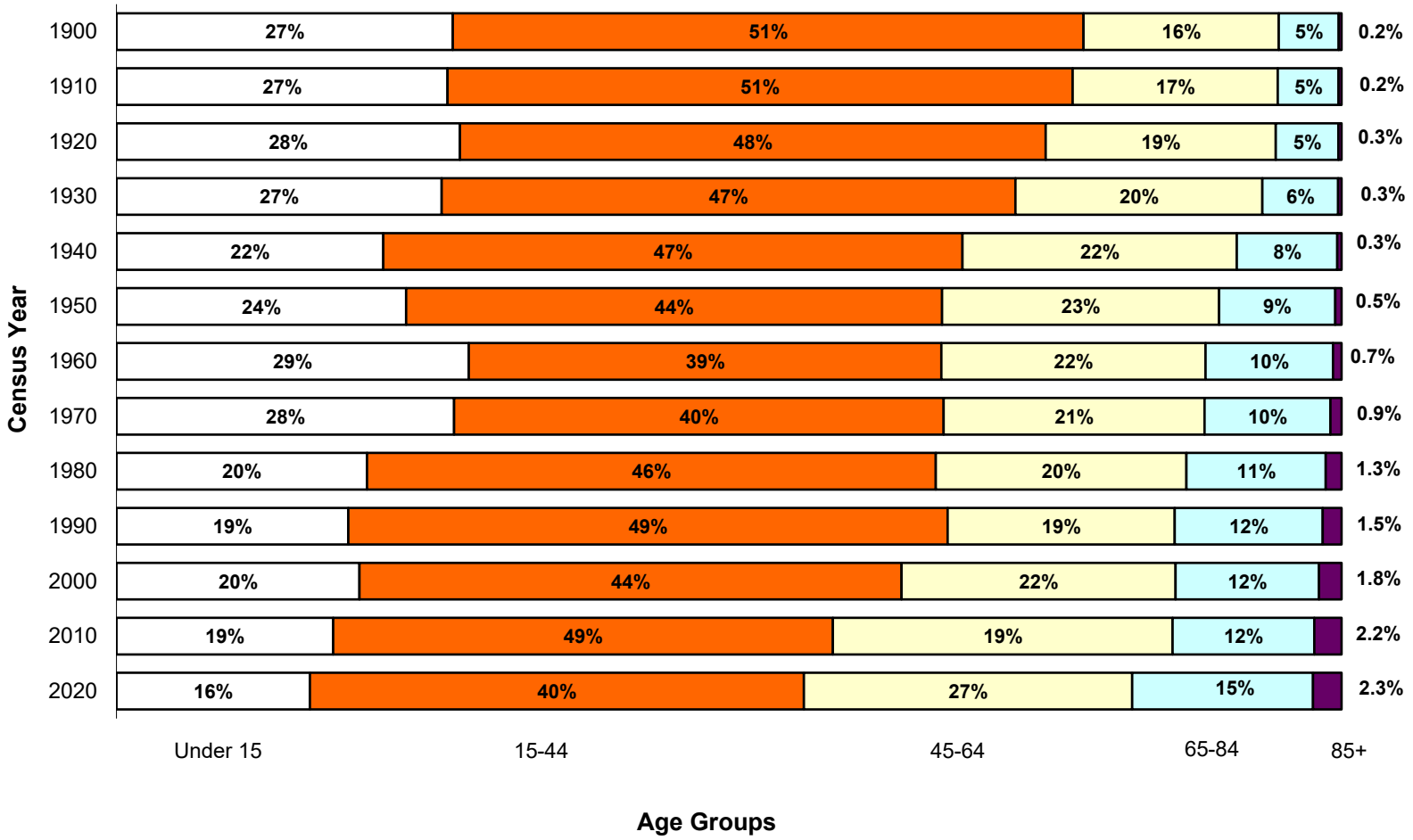



## Table 2. Life Expectancy at Birth[1] by Race and Hispanic Ethnicity[2] and Gender, Massachusetts: 2011 – 2021

| Year | All | All Women | American Indian/ Alaska Native non-Hispanic Women | Asian/PI non-Hispanic Women | Black non-Hispanic Women | Hispanic Women | White non-Hispanic Women | All Men | American Indian/ Alaska Native non-Hispanic Men | Asian/PI non-Hispanic Men | Black non-Hispanic Men | Hispanic Men | White non-Hispanic Men |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2011 | 80.8 | 83.1 | --[3] | 89.0 | 81.6 | 89.6 | 82.9 | 78.4 | --[3] | --[3] | 76.9 | 83.9 | 78.2 |
| 2012 | 80.9 | 83.0 | --[3] | 91.6 | 82.3 | 88.8 | 82.9 | 78.6 | --[3] | 86.5 | 76.5 | 82.3 | 78.6 |
| 2013 | 80.9 | 83.1 | --[3] | 91.8 | 83.0 | 90.7 | 82.7 | 78.8 | --[3] | 87.5 | 76.6 | 83.7 | 78.5 |
| 2014 | 80.8 | 83.4 | --[3] | 90.7 | 84.3 | 89.6 | 83.0 | 78.3 | --[3] | 87.8 | 77.5 | 84.3 | 78.1 |
| 2015 | 80.4 | 82.8 | --[3] | 89.6 | 85.1 | 87.9 | 82.6 | 78.1 | --[3] | 86.8 | 78.7 | 83.0 | 77.8 |
| 2016 | 80.7 | 83.1 | --[3] | 92.7 | 83.6 | 89.0 | 82.9 | 78.0 | --[3] | --[3] | 78.9 | 83.3 | 77.8 |
| 2017 | 80.6 | 83.1 | --[3] | 90.5 | 83.6 | 89.1 | 82.9 | 77.9 | --[3] | 87.9 | 77.7 | 81.7 | 77.6 |
| 2018 | 80.8 | 83.2 | --[3] | --[3] | 84.0 | 88.8 | 82.7 | 78.2 | --[3] | 87.9 | 77.4 | 83.1 | 77.8 |
| 2019 | 81.1 | 83.5 | --[3] | 92.2 | 84.4 | 88.2 | 83.2 | 78.5 | --[3] | --[3] | 77.9 | 81.5 | 78.1 |
| 2020 | 79.2 | 81.9 | --[3] | --[3] | 79.4 | 84.1 | 81.8 | 76.7 | --[3] | --[3] | 72.8 | 76.0 | 77.0 |
| 2021 | 80.1 | 83.0 | 75.1 | 88.3 | 80.6 | 84.6 | 82.7 | 77.2 | 72.1 | 84.1 | 74.2 | 75.9 | 77.1 |

1. Note: Life Expectancy at birth calculated prior to 2021 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); starting in 2021, life expectancy was calculated using the Chiang II method (source: Chiang, Chin Long & World Health Organization. (1979). Life table and mortality analysis / Chin Long Chiang. World Health Organization). 2. Population estimates are from 2019 bridged population file, MARS (Modified Age, Race/Ethnicity, and Sex) file. Please see the technical notes for more information on race and ethnicity. 3. Calculation not presented due to small numbers.

## Figure 3. Changes in Age Composition of the Population, Massachusetts: 1900-2020

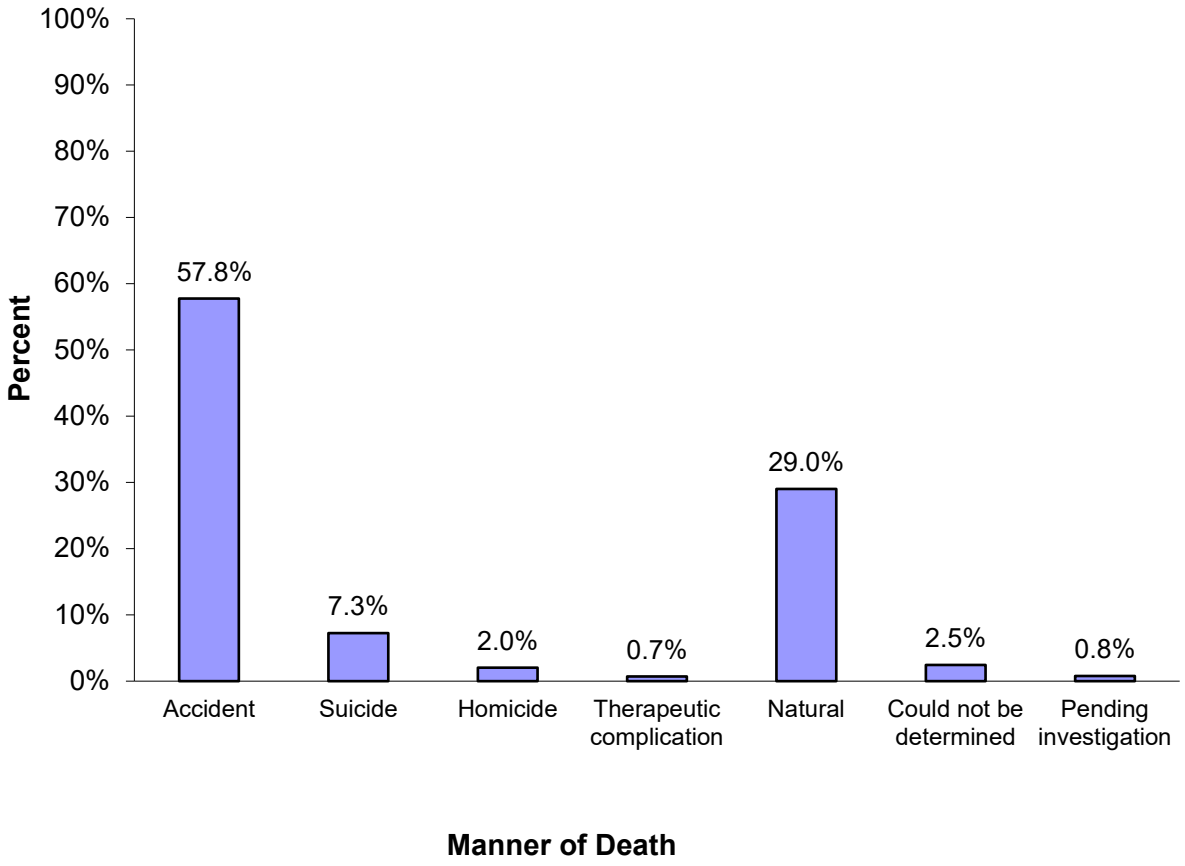



Source: US Census Bureau 1900-1999. Resident death data for 2000 are calculated using the Massachusetts (Department of Public Health) Modified Age, Race/Ethnicity, & Sex Estimates 2000 (MMARS00), released October 2006. Population estimates for 2010 are from the NCHS Modified Age, Race/Ethnicity, & Sex Estimates 2009, released July 2010. 2020 Population estimates were generated by the University of Massachusetts Donhaue Institute.

## Table 3. Distribution of Deaths by Place of Occurrence, Massachusetts: 2017-2021

| Type of Place Where Death Occurred | 2017 | | 2018 | | 2019 | | 2020 | | 2021 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| Hospital (inpatient/outpatient) | 21,343 | 36% | 21,502 | 36% | 21,267 | 36% | 25,742 | 38 | 25,089 | 40% |
| Dead on Arrival | 644 | 1% | 681 | 1% | 515 | 1% | 547 | 1 | 592 | 1% |
| Nursing Home | 15,003 | 26% | 14,606 | 25% | 13,830 | 24% | 15,168 | 22 | 10,471 | 17% |
| Hospice | 3,321 | 6% | 3,525 | 6% | 3,656 | 6% | 3,090 | 5 | 3,107 | 5% |
| Assisted Living Facility or Rest Home | 1,646 | 3% | 1,864 | 3% | 1,963 | 3% | 2,360 | 3 | 2,072 | 3% |
| At Home | 15,361 | 26% | 15,552 | 26% | 15,888 | 27% | 19,531 | 29 | 19,984 | 32% |
| Other | 1,520 | 3% | 1,438 | 2% | 1,535 | 3% | 1,822 | 3 | 1,837 | 3% |
| Unknown | 6 | 0% | 1 | 0% | 6 | 0% | 9 | 0 | 6 | 0% |

**Figure 4. Manner of Death Among Massachusetts Occurrence Deaths Certified by the Medical Examiner, 2021**




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: 7,700 total cases investigated by the Medical Examiner in 2021.

**Figure 5. Age-Adjusted Mortality Rate for COVID-19 and All Other Causes by Race and Hispanic Ethnicity[1], Massachusetts: 2021**

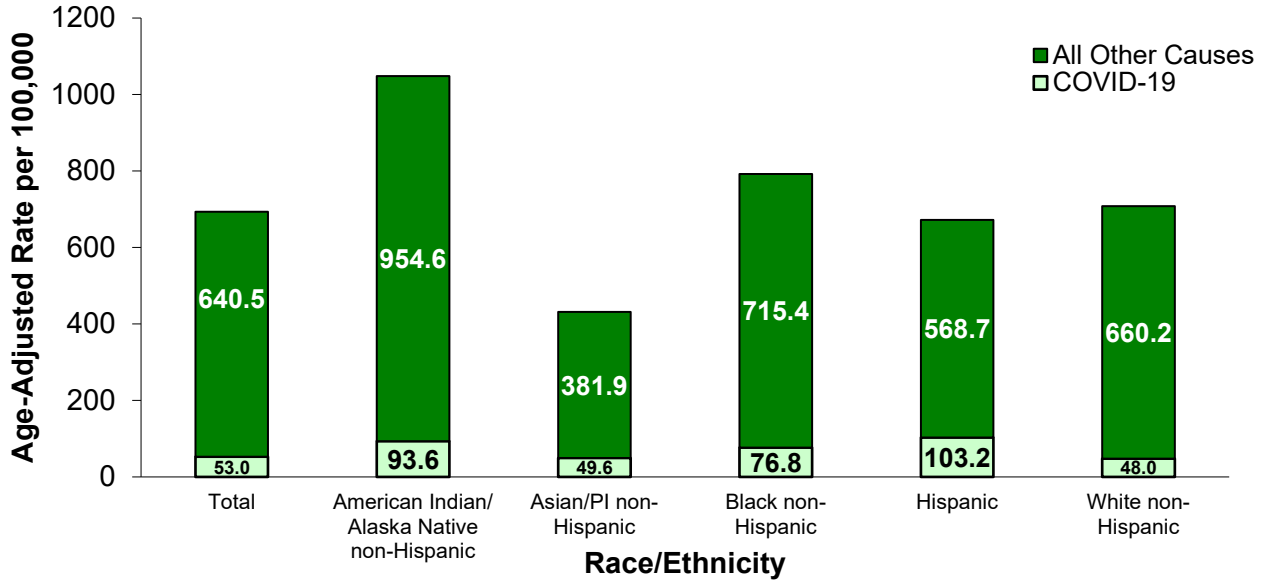
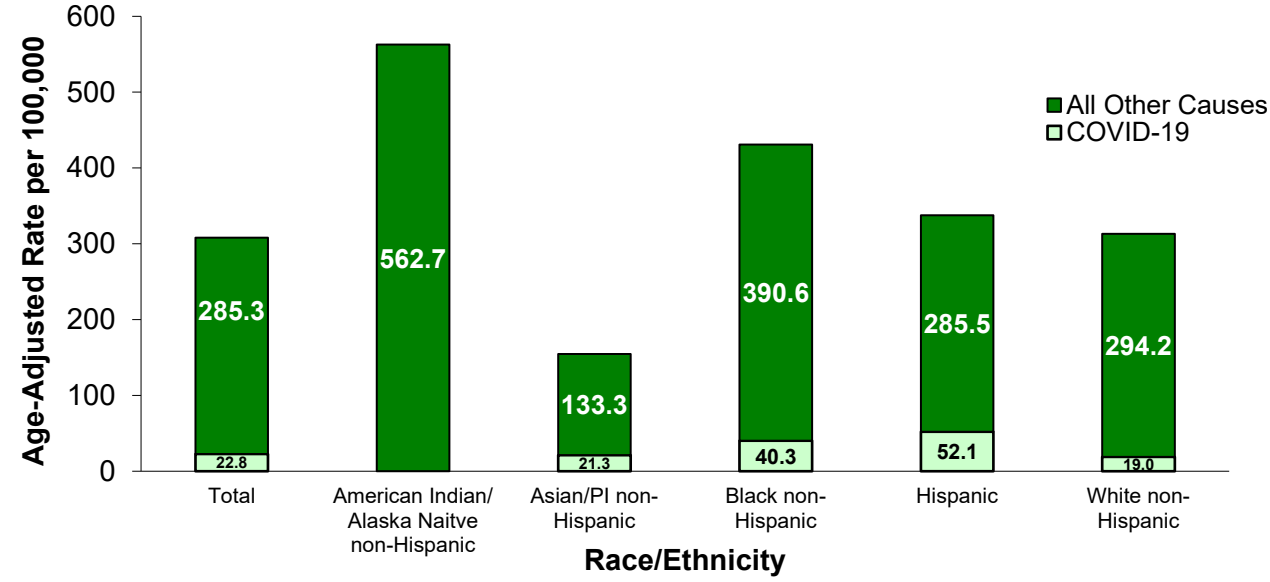


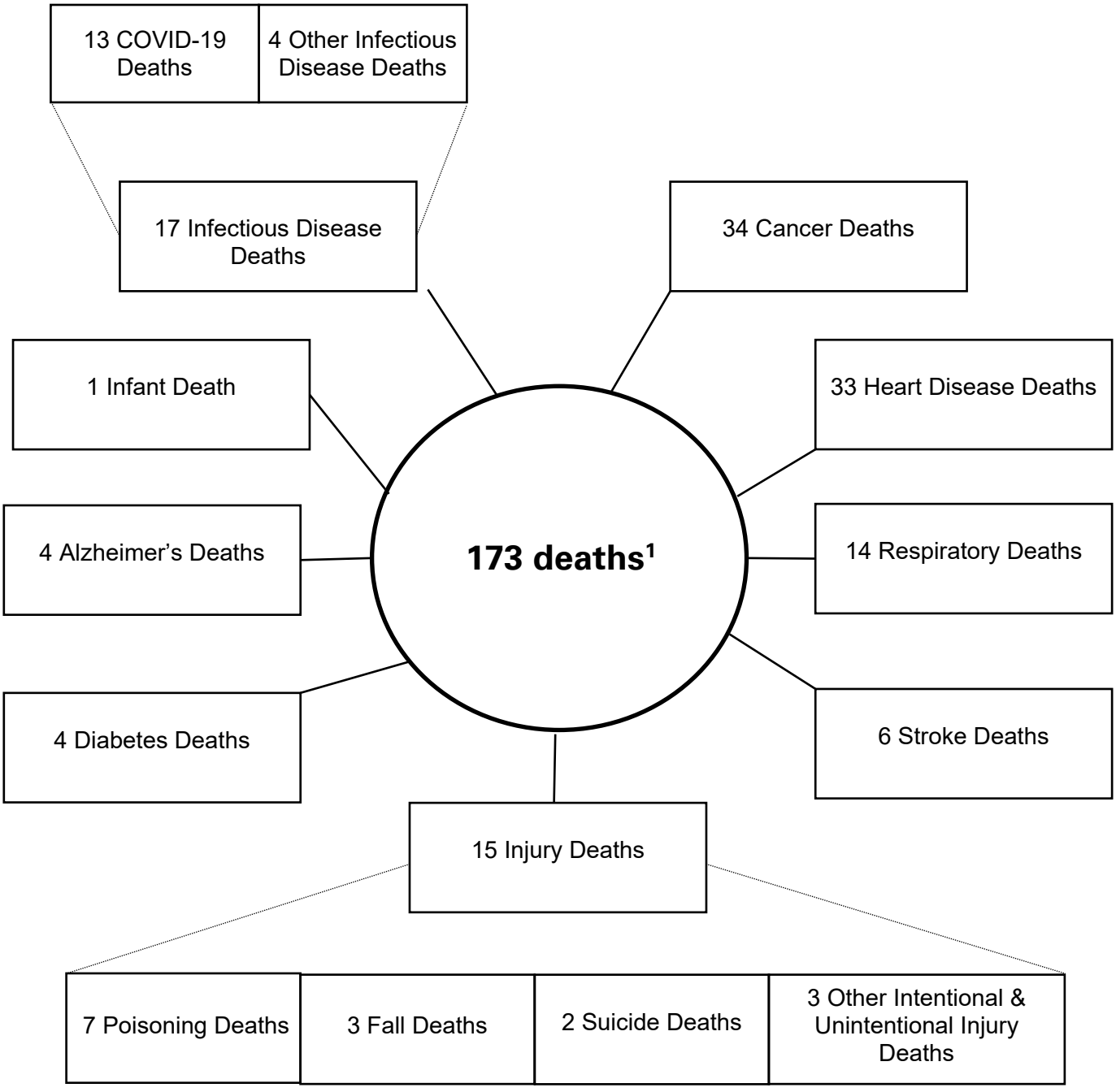

**Figure 6. Premature Mortality Rate (PMR)[2] for COVID-19 and All Other Causes by Race and Hispanic Ethnicity[1], Massachusetts: 2021**




Note: The Premature Mortality Rate for American Indian/Alaska Native non-Hispanic is not presented as it is based on values 1-4, which are excluded.
1. Please see the technical notes for more information on race and ethnicity. 2. 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.

**Figure 7. Daily Mortality Statistics, Massachusetts: 2021**

Every day in 2021 in Massachusetts there were on average:




1. Includes 45 deaths due to other causes. Individual categories may not sum to the total due to rounding.

## Table 4. Top Ten Leading Underlying Causes of Death by Age, Massachusetts: 2021

| | Age Groups (number of deaths) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Rank** | **<1 year** | **1-14 years** | **15-24 years** | **25-44 years** | **45-64 years** | **65-74 years** | **75-84 years** | **85+ years** | **All** |
| **1** | Congenital Malformations (42) | Cancer (22) | Unintentional Injuries[3] (223) | Unintentional Injuries[3] (1,413) | Cancer (2,648) | Cancer (3,550) | Cancer (3,545) | Heart Disease (5,270) | **Cancer (12,466)** |
| **2** | Short Gestation and LBW[1] (29) | Unintentional Injuries[3] (17) | Suicide[3] (65) | Cancer (242) | Heart Disease (1,651) | Heart Disease (1,978) | Heart Disease (2,804) | Cancer (2,434) | **Heart Disease (11,954)** |
| **3** | SIDS[2] (26) | Congenital Malformations (7) | Homicide[3] (34) | Heart Disease (230) | Unintentional Injuries[3] (1,405) | COVID-19 (1,041) | COVID-19 (1,334) | COVID-19 (1,502) | **COVID-19 (4,888)** |
| **4** | Pregnancy Complications (15) | Heart Disease (6) | Cancer (25) | Suicide[3] (200) | COVID-19 (870) | Chronic Lower Respiratory Disease (594) | Chronic Lower Respiratory Disease (820) | Stroke (1,061) | **Unintentional Injuries[3] (4,636)** |
| **5** | Complications of Placenta (14) | COVID-19 (6) | COVID-19 (11) | COVID-19 (124) | Chronic Liver Disease (472) | Unintentional Injuries[3] (389) | Stroke (598) | Alzheimer's Disease (1,015) | **Chronic Lower Respiratory Disease (2,415)** |
| **6** | Intrauterine Hypoxia (8) | Other Infections (4) | Heart Disease (10) | Chronic Liver Disease (116) | Diabetes (382) | Diabetes (360) | Alzheimer's Disease (424) | Unintentional Injuries[3] (797) | **Stroke (2,278)** |
| **7** | Respiratory Distress (7) | Ill-defined Conditions-Signs and Symptoms[4] (4) | Congenital Malformations (8) | Homicide[3] (82) | Chronic Lower Respiratory Disease (289) | Stroke (360) | Unintentional Injuries[3] (390) | Chronic Lower Respiratory Disease (680) | **Alzheimer's Disease (1,558)** |
| **8** | Neonatal Hemorrhage (7) | Suicide[3] (4) | Ill-defined Conditions-Signs and Symptoms[4] (8) | Diabetes (46) | Stroke (218) | Nephritis (236) | Diabetes (382) | Nephritis (470) | **Diabetes (1,539)** |
| **9** | Necrotizing Entercolitis (7) | Homicide[3] (3) | Diabetes (4) | Ill-defined Conditions-Signs and Symptoms[4] (43) | Suicide[3] (203) | Chronic Liver Disease (208) | Nephritis (368) | Diabetes (365) | **Nephritis (1,224)** |
| **10** | Circulatory System (6) | In Situ Neoplasms (2) | Stroke (3) | Stroke (35) | Nephritis (133) | Septicemia (188) | Parkinsons (323) | Influenza & Pneumonia (358) | **Chronic Liver Disease (932)** |
| **All Causes** | **228** | **108** | **429** | **3,086** | **10,550** | **11,775** | **15,318** | **21,660** | **63,158** |

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 5. Trends in Infant, Neonatal, and Post Neonatal Mortality, by Race and Hispanic Ethnicity[4], Massachusetts: 2011-2021

### INFANT MORTALITY (less than one year of age)

| | State Total[1] | | American Indian/ Alaska Native non-Hispanic | | Asian non-Hispanic | | Black non-Hispanic | | Hispanic | | White non-Hispanic | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | # | Rate[2] | # | Rate[2] | # | Rate[2] | # | Rate[2] | # | Rate[2] | # | Rate[2] |
| 2011 | 310 | 4.2 | 1 | --[3] | 22 | 3.6 | 47 | 6.7 | 75 | 5.8 | 158 | 3.4 |
| 2012 | 309 | 4.3 | 1 | --[3] | 17 | 2.6 | 57 | 8.2 | 71 | 5.4 | 158 | 3.5 |
| 2013 | 298 | 4.2 | 0 | 0.0 | 15 | 2.4 | 63 | 8.9 | 49 | 3.9 | 161 | 3.6 |
| 2014 | 321 | 4.5 | 0 | 0.0 | 20 | 3.2 | 54 | 7.6 | 62 | 5.0 | 169 | 3.8 |
| 2015 | 310 | 4.3 | 2 | --[3] | 15 | 2.3 | 59 | 8.3 | 75 | 5.7 | 146 | 3.3 |
| 2016 | 283 | 4.0 | 0 | 0.0 | 18 | 2.7 | 56 | 7.7 | 78 | 5.8 | 119 | 2.8 |
| 2017 | 263 | 3.7 | 1 | --[3] | 19 | 2.9 | 49 | 6.6 | 71 | 5.1 | 109 | 2.6 |
| 2018 | 291 | 4.3 | 0 | 0.0 | 9 | 1.4 | 62 | 8.7 | 63 | 4.6 | 148 | 3.7 |
| 2019 | 255 | 3.7 | 0 | 0.0 | 15 | 2.3 | 48 | 6.6 | 67 | 4.7 | 108 | 2.7 |
| 2020 | 263 | 4.0 | 1 | --[3] | 13 | 2.0 | 51 | 7.3 | 61 | 4.3 | 111 | 2.9 |
| 2021 | 228 | 3.3 | 0 | 0.0 | 14 | 2.3 | 52 | 7.4 | 55 | 3.8 | 94 | 2.4 |

### NEONATAL MORTALITY (birth to 27 days)

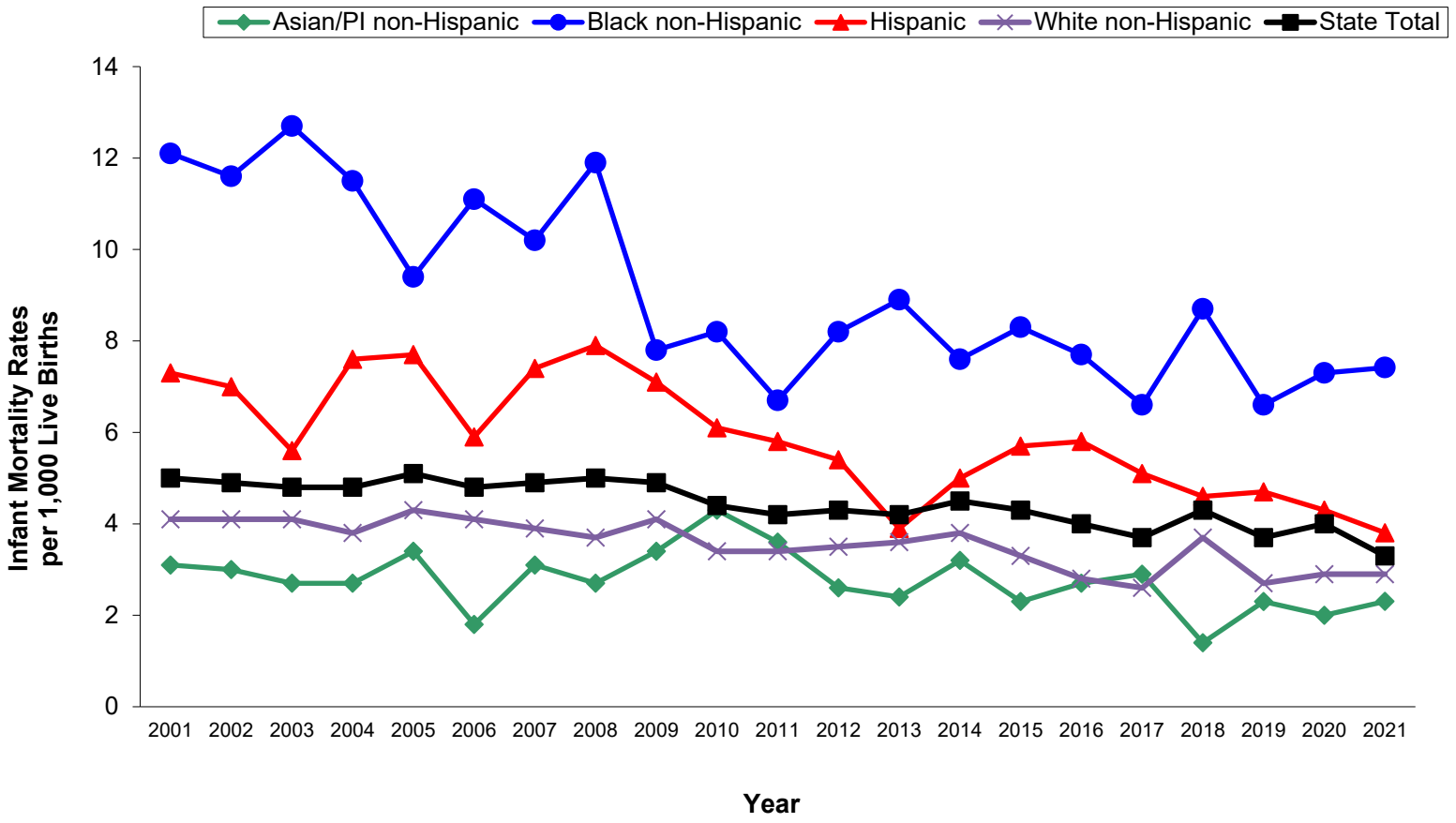
| | State Total[1] | | American Indian/ Alaska Native non-Hispanic | | Asian non-Hispanic | | Black non-Hispanic | | Hispanic | | White non-Hispanic | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | # | Rate[2] | # | Rate[2] | # | Rate[2] | # | Rate[2] | # | Rate[2] | # | Rate[2] |
| 2011 | 230 | 3.1 | 0 | 0.0 | 19 | 3.1 | 33 | 4.7 | 60 | 4.7 | 111 | 2.4 |
| 2012 | 216 | 3.0 | 0 | 0.0 | 13 | 2.0 | 41 | 5.9 | 46 | 3.5 | 111 | 2.5 |
| 2013 | 221 | 3.1 | 0 | 0.0 | 10 | 1.6 | 45 | 6.3 | 39 | 3.1 | 119 | 2.6 |
| 2014 | 236 | 3.3 | 0 | 0.0 | 15 | 2.3 | 38 | 5.3 | 50 | 3.9 | 122 | 2.7 |
| 2015 | 237 | 3.3 | 0 | 0.0 | 15 | 2.3 | 45 | 6.4 | 59 | 4.5 | 106 | 2.4 |
| 2016 | 214 | 3.0 | 0 | 0.0 | 9 | 1.3 | 47 | 6.5 | 64 | 4.8 | 87 | 2.0 |
| 2017 | 180 | 2.5 | 1 | --[3] | 11 | 1.7 | 32 | 4.3 | 52 | 3.7 | 70 | 1.7 |
| 2018 | 224 | 2.7 | 0 | 0.0 | 6 | 0.9 | 54 | 7.6 | 49 | 3.6 | 107 | 2.7 |
| 2019 | 188 | 2.7 | 0 | 0.0 | 11 | 1.7 | 41 | 5.6 | 52 | 3.6 | 69 | 1.7 |
| 2020 | 190 | 2.9 | 1 | --[3] | 10 | 1.5 | 39 | 5.6 | 42 | 3.0 | 75 | 2.0 |
| 2021 | 164 | 2.4 | 0 | 0.0 | 13 | 2.1 | 36 | 5.1 | 41 | 2.8 | 65 | 1.6 |

### POST NEONATAL MORTALITY (28-365 days)

| | State Total[1] | | American Indian/ Alaska Native non-Hispanic | | Asian non-Hispanic | | Black non-Hispanic | | Hispanic | | White non-Hispanic | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | # | Rate[2] | # | Rate[2] | # | Rate[2] | # | Rate[2] | # | Rate[2] | # | Rate[2] |
| 2011 | 80 | 1.1 | 1 | --[3] | 3 | --[3] | 14 | 2.0 | 15 | 1.2 | 47 | 1.0 |
| 2012 | 93 | 1.3 | 1 | --[3] | 4 | --[3] | 16 | 2.3 | 25 | 1.9 | 47 | 1.0 |
| 2013 | 77 | 1.1 | 0 | 0.0 | 5 | 0.8 | 18 | 2.5 | 10 | 0.8 | 42 | 0.9 |
| 2014 | 85 | 1.2 | 0 | 0.0 | 5 | 0.8 | 16 | 2.2 | 12 | 0.9 | 47 | 1.1 |
| 2015 | 73 | 1.0 | 2 | --[3] | 0 | 0.0 | 14 | 2.0 | 16 | 1.2 | 40 | 0.9 |
| 2016 | 69 | 1.0 | 0 | 0.0 | 9 | 1.3 | 9 | 1.2 | 14 | 1.0 | 32 | 0.7 |
| 2017 | 83 | 1.2 | 0 | 0.0 | 8 | 1.2 | 17 | 2.3 | 19 | 1.4 | 39 | 0.9 |
| 2018 | 67 | 1.0 | 0 | 0.0 | 3 | --[3] | 8 | 1.1 | 14 | 1.0 | 41 | 1.0 |
| 2019 | 67 | 1.0 | 0 | 0.0 | 4 | --[3] | 7 | 1.0 | 15 | 1.0 | 39 | 1.0 |
| 2020 | 73 | 1.1 | 1 | --[3] | 3 | --[3] | 12 | 1.7 | 19 | 1.3 | 36 | 0.9 |
| 2021 | 64 | 0.9 | 0 | 0.0 | 1 | --[3] | 16 | 2.3 | 14 | 1.0 | 29 | 0.7 |

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. Rates are expressed per 1,000 live births. 3. Calculations based on values 1-4 are excluded. 4. Please see the Technical Notes for more information on race and ethnicity.

**Figure 8. Infant Mortality Rates[1,2] by Race and Hispanic Ethnicity[3], Massachusetts: 2001-2021**




NOTE: American Indian/ Alaska Native non-Hispanic not presented due to small counts of 1-4.
1. Deaths of infants of unknown race are included in the total calculation. For rate computations, births of infants of unknown race are allocated into the race categories according to the distribution of births of known race. 2. Rates are expressed per 1,000 live births. 3. Please see the Technical Notes for more information on race and ethnicity.

## Table 6. Infant, Neonatal, and Post Neonatal Deaths by Cause, Massachusetts: 2021

| Cause of Death[1] | ICD-10 Code | Infant (<1 year) # | Infant (<1 year) % | Neonatal (<28 days) # | Neonatal (<28 days) % | Post Neonatal (28-365 days) # | Post Neonatal (28-365 days) % |
|---|---|---|---|---|---|---|---|
| **TOTAL** | | **228** | **100** | **164** | **100** | **64** | **100** |
| **Infectious and parasitic diseases** | **A00-B99** | **0** | **0.0** | **0** | **0.0** | **7** | **10.9** |
| **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** | **5** | **2.2** | **3** | --[2] | **2** | --[2] |
| **Diseases of the respiratory system** | **J00-J98** | **3** | --[2] | **1** | --[2] | **2** | --[2] |
| **Diseases of digestive system** | **K00-K92** | **0** | **0.0** | **0** | **0.0** | **0** | **0.0** |
| **Congenital malformations** | **Q00-Q99** | **42** | **18.4** | **31** | **18.9** | **11** | **17.2** |
| Congenital malformations of nervous system | Q00-Q07 | 3 | --[2] | 3 | --[2] | 0 | 0.0 |
| Anencephalus and similar malformations | Q00 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Congenital malformations of heart | Q20-Q24 | 9 | 3.9 | 6 | 3.7 | 3 | --[2] |
| Other congenital malformations of circulatory system | Q25-Q28 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Congenital malformations of respiratory system | Q30-Q34 | 4 | --[2] | 3 | --[2] | 1 | --[2] |
| Congenital malformations of genitourinary system | Q50-Q64 | 4 | --[2] | 4 | --[2] | 0 | 0.0 |
| Congenital malformations of musculoskeletal system | Q65-Q85 | 1 | --[2] | 1 | --[2] | 0 | 0.0 |
| Chromosomal abnormalities | Q90-Q99 | 10 | 4.4 | 6 | 3.7 | 4 | --[2] |
| **Certain conditions originating in the perinatal period** | **P00-P96** | **122** | **53.5** | **118** | **72.0** | **4** | --[2] |
| Newborn affected by maternal conditions which may be unrelated to present pregnancy | P00 | 3 | --[2] | 3 | --[2] | 0 | 0.0 |
| Newborn affected by maternal complications of pregnancy | P01 | 15 | 6.6 | 15 | 9.1 | 0 | 0.0 |
| Newborn affected by complications of placenta, cord and membrane | P02 | 14 | 6.1 | 13 | 7.9 | 1 | --[2] |
| Newborn affected by other complications of labor and delivery | P03 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Disorders relating to short gestation and low birthweight | P07 | 29 | 12.7 | 29 | 17.7 | 0 | 0.0 |
| Intrauterine hypoxia and birth asphyxia | P20-P21 | 8 | 3.5 | 8 | 4.9 | 0 | 0.0 |
| Respiratory distress of newborn | P22 | 7 | 3.1 | 7 | 4.3 | 0 | 0.0 |
| Other respiratory conditions of newborn | P23-P28 | 11 | 4.8 | 10 | 6.1 | 1 | --[2] |
| Infections specific to the perinatal period | P35-P39 | 3 | --[2] | 2 | --[2] | 1 | --[2] |
| Neonatal hemorrhage | P50-P52, P54 | 7 | 3.1 | 6 | 3.7 | 1 | --[2] |
| Other and ill-defined conditions originating in the perinatal period | P90-P96 | 5 | 2.2 | 5 | 3.0 | 0 | 0.0 |
| **Symptoms, signs, and ill-defined conditions** | **R00-R99** | **33** | **14.5** | **7** | **4.3** | **26** | **40.6** |
| Sudden Infant Death Syndrome (SIDS) | R95 | 26 | 11.4 | 6 | 3.7 | 20 | 31.3 |
| **COVID-19** | **U701, B342** | **0** | **0.0** | **0** | **0.0** | **0** | **0.0** |
| **Unintentional injuries** | **V01-X59** | **2** | --[2] | **0** | **0.0** | **2** | --[2] |
| **Homicide** | **X85-Y09** | **0** | **0.0** | **0** | **0.0** | **0** | **0.0** |
| **All other causes** | **Residual** | **12** | **5.3** | **4** | --[2] | **8** | **12.5** |

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 7. Infant[1] Deaths by Major Causes[2], Race and Hispanic Ethnicity[4], Massachusetts: 2021

| | | Asian/PI non-Hispanic | | Black non-Hispanic | | Hispanic | | White non-Hispanic | |
|---|---|---|---|---|---|---|---|---|---|
| **Cause of Death[2]** | **ICD-10 Code** | **#** | **%** | **#** | **%** | **#** | **%** | **#** | **%** |
| **TOTAL** | | 14 | 100.0% | 52 | 100.0% | 55 | 100.0% | 94 | 100.0% |
| Certain conditions originating in the perinatal period | P00- P96 | 8 | 57.1% | 27 | 51.9% | 29 | 52.7% | 52 | 55.3% |
| Congenital malformations | Q00-Q99 | 1 | --[3] | 9 | 17.3% | 12 | 21.8% | 17 | 18.1% |
| Symptoms, signs, and ill-defined conditions | R00-R99 | 1 | --[3] | 9 | 17.3% | 10 | 18.2% | 12 | 12.8% |
| SIDS | R95 | 1 | --[3] | 6 | 11.5% | 9 | 16.4% | 9 | 9.6% |
| Unintentional Injuries | V01-X59 | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 1 | --[3] |
| All other causes | Residual | 4 | --[3] | 7 | 13.5% | 4 | --[3] | 12 | 12.8% |

NOTE: There were zero American Indian/Alaska Native non-Hispanic infant deaths in 2021.
1. Deaths less than 1 year of age. 2. Deaths are coded according to ICD-10. 3. Calculations based on values 1-4 are excluded. 4. Please see the Technical Notes for more information on race and ethnicity.

## Table 8. Leading Underlying Causes of Death, Numbers and Age-Specific Rates by Gender, Massachusetts: 2021

| | | Total | | Women | | Men | |
|---|---|---|---|---|---|---|---|
| Age | Cause of Death[1] | Number | Rate[2] | Number | Rate[2] | Number | Rate[2] |
| **1-14** | **TOTAL** | **108** | **10.4** | **43** | **8.4** | **65** | **12.2** |
| | Cancer | 22 | 2.1 | 9 | 1.8 | 13 | 2.4 |
| | Unintentional Injuries | 17 | 1.6 | 4 | --[3] | 13 | 2.4 |
| | Congenital Malformations | 7 | 0.7 | 2 | --[3] | 5 | 0.9 |
| | Heart Disease | 6 | 0.6 | 1 | --[3] | 5 | 0.9 |
| **15-24** | **TOTAL** | **429** | **45** | **109** | **22.9** | **320** | **67.4** |
| | Unintentional Injuries | 223 | 23.5 | 52 | 10.9 | 171 | 36.0 |
| | Suicide | 65 | 6.8 | 14 | 2.9 | 51 | 10.7 |
| | Homicide | 34 | 3.6 | 6 | 1.3 | 28 | 5.9 |
| | Cancer | 25 | 2.6 | 6 | 1.3 | 19 | 4.0 |
| **25-44** | **TOTAL** | **3,086** | **163.8** | **984** | **104.0** | **2,102** | **224.1** |
| | Unintentional Injuries | 1,413 | 75.0 | 368 | 38.9 | 1,045 | 111.4 |
| | Cancer | 242 | 12.8 | 139 | 14.7 | 103 | 11.0 |
| | Heart Disease | 230 | 12.2 | 67 | 7.1 | 163 | 17.4 |
| | Suicide | 200 | 10.6 | 36 | 3.8 | 164 | 17.5 |
| **45-64** | **TOTAL** | **10,550** | **559.9** | **3,953** | **405.4** | **6,597** | **725.5** |
| | Cancer | 2,648 | 140.5 | 1,275 | 130.8 | 1,373 | 151.0 |
| | Heart Disease | 1,651 | 87.6 | 486 | 49.8 | 1,165 | 128.1 |
| | Unintentional Injuries | 1,405 | 74.6 | 395 | 40.5 | 1,010 | 111.1 |
| | COVID-19 | 870 | 46.2 | 291 | 29.8 | 579 | 63.7 |
| **65+** | **TOTAL** | **48,753** | **4,059.2** | **25,570** | **3,768.3** | **23,183** | **4,436.9** |
| | Heart Disease | 10,052 | 836.9 | 5,041 | 742.9 | 5,011 | 959.0 |
| | Cancer | 9,529 | 793.4 | 4,627 | 681.9 | 4,902 | 938.2 |
| | COVID-19 | 3,877 | 322.8 | 1,745 | 257.2 | 2,132 | 408.0 |
| | Chronic Lower Respiratory Disease | 2,094 | 174.3 | 1,169 | 172.3 | 925 | 177.0 |
| **65-74** | **TOTAL** | **11,775** | **1,702.1** | **4,910** | **1,321.0** | **6,865** | **2,144.7** |
| | Cancer | 3,550 | 513.2 | 1,603 | 431.3 | 1,947 | 608.3 |
| | Heart Disease | 1,978 | 285.9 | 664 | 178.6 | 1,314 | 410.5 |
| | COVID-19 | 1,041 | 150.5 | 391 | 105.2 | 650 | 203.1 |
| | Chronic Lower Respiratory Disease | 594 | 85.9 | 311 | 83.7 | 283 | 88.4 |
| **75-84** | **TOTAL** | **15,318** | **4,432.8** | **7,469** | **3,762.9** | **7,849** | **5,336.9** |
| | Cancer | 3,545 | 1,025.9 | 1,739 | 876.1 | 1,806 | 1,228.0 |
| | Heart Disease | 2,804 | 811.4 | 1,246 | 627.7 | 1,558 | 1,059.4 |
| | COVID-19 | 1,334 | 386.0 | 576 | 290.2 | 758 | 515.4 |
| | Chronic Lower Respiratory Disease | 820 | 237.3 | 447 | 225.2 | 373 | 253.6 |
| **85+** | **TOTAL** | **21,660** | **13,230.2** | **13,191** | **12,172.1** | **8,469** | **15,302.1** |
| | Heart Disease | 5,270 | 3,219.0 | 3,131 | 2,889.2 | 2,139 | 3,864.8 |
| | Cancer | 2,434 | 1,486.7 | 1,285 | 1,185.7 | 1,149 | 2,076.1 |
| | COVID-19 | 1,502 | 917.4 | 778 | 717.9 | 724 | 1,308.1 |
| | Stroke | 1,061 | 648.1 | 724 | 668.1 | 337 | 608.9 |

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. Calculations based on values 1-4 are excluded

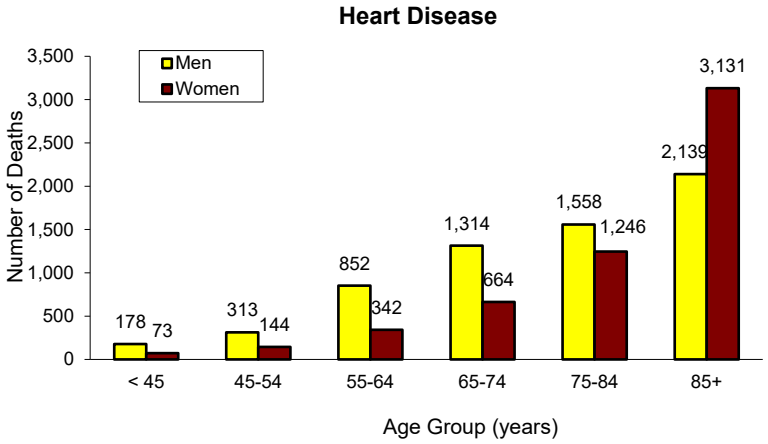
## Table 9. Leading Underlying Causes of Death[1] and Age-Adjusted Rates by Race and Hispanic Ethnicity[2], Massachusetts: 2021

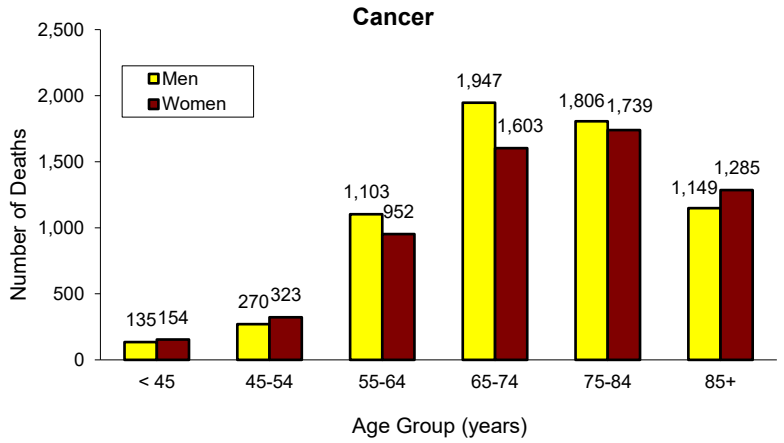
| American Indian/ Alaska Native non-Hispanic | | | Asian/PI non-Hispanic | | | Black non-Hispanic | | | Hispanic | | | White non-Hispanic | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cause[3] | # | Rate[4] | Cause[3] | # | Rate[4] | Cause[3] | # | Rate[4] | Cause[3] | # | Rate[4] | Cause[3] | # | Rate[4] |
| Total | 128 | 1,048.1 | Total | 1,716 | 427.6 | Total | 3,419 | 779.2 | Total | 3,379 | 667.0 | Total | 53,869 | 704.7 |
| Cancer | 29 | 224.5 | Cancer | 437 | 104.6 | Cancer | 614 | 141.2 | Unintentional Injuries[5] | 508 | 66.3 | Cancer | 10,770 | 139.7 |
| Heart Disease | 19 | 150.8 | Heart Disease | 260 | 68.3 | Heart Disease | 553 | 127.7 | Cancer | 501 | 106.3 | Heart Disease | 10,565 | 131.3 |
| Unintentional Injuries[5] | 16 | 152.1 | COVID-19 | 203 | 49.6 | COVID-19 | 331 | 76.8 | COVID-19 | 493 | 103.2 | COVID-19 | 3,766 | 48.0 |
| Covid-19 | 11 | 93.6 | Stroke | 99 | 25.7 | Unintentional Injuries[5] | 321 | 65.2 | Heart Disease | 452 | 100.7 | Unintentional Injuries[5] | 3,649 | 64.1 |
| Stroke | 6 | 49.5 | Unintentional Injuries[5] | 73 | 16.1 | Diabetes | 161 | 37.0 | Diabetes | 141 | 29.7 | Chronic Lower Respiratory Disease | 2,228 | 28.3 |
| Diabetes | 5 | 40.8 | Diabetes | 54 | 14.0 | Stroke | 143 | 34.6 | Stroke | 116 | 27.5 | Stroke | 1,885 | 23.2 |
| Chronic Lower Respiratory Disease | 3 | --[6] | Nephritis | 44 | 11.6 | Nephritis | 108 | 26.0 | Chronic Lower Respiratory Disease | 72 | 16.2 | Alzheimer's Disease | 1,416 | 16.9 |
| Ill-Defined Conditions-Signs and Symptoms | 3 | --[6] | Hypertension | 35 | 9.5 | Hypertension | 79 | 18.6 | Nephritis | 65 | 14.6 | | | |
| Alzheimer's Disease | 2 | --[6] | Chronic Lower Respiratory Disease | 29 | 7.4 | Chronic Lower Respiratory Disease | 69 | 17.0 | Chronic Liver Disease | 62 | 9.8 | Diabetes | 1,161 | 15.3 |
| Hypertension | 2 | --[6] | Suicide | 28 | 5.1 | Alzheimer's Disease | 61 | 16.4 | Alzheimer's Disease | 52 | 15.4 | Nephritis | 992 | 12.4 |
| | | | | | | | | | | | | Chronic Liver Disease | 808 | 12.4 |

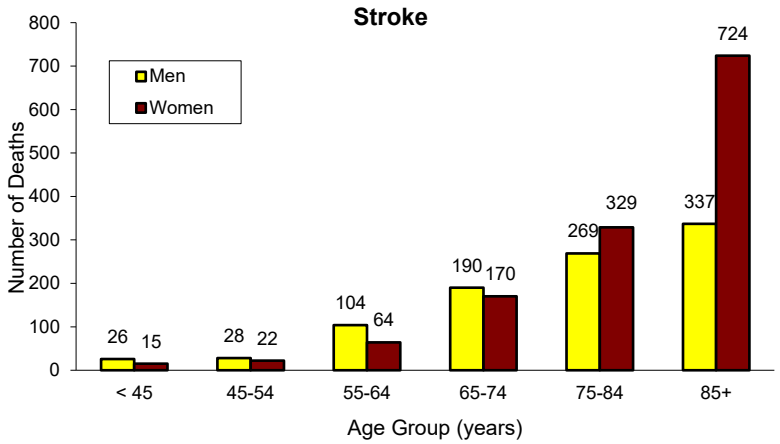
| Total | | |
|---|---|---|
| Cause[3] | # | Rate[4] |
| Total | 63,158 | 689.0 |
| Cancer | 12,466 | 135.2 |
| Heart Disease | 11,954 | 126.9 |
| COVID-19 | 4,888 | 53.0 |
| Unintentional Injuries | 4,636 | 59.7 |
| Chronic Lower Respiratory Disease | 2,415 | 26.1 |
| Stroke | 2,278 | 24.2 |
| Alzheimer's Disease | 1,558 | 16.3 |
| Diabetes | 1,539 | 16.9 |
| Nephritis | 1,224 | 13.1 |
| Chronic Liver Disease | 932 | 10.9 |

1. Ranking based on number of deaths. 2. See the technical notes for more information on race and ethnicity. 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 include injuries such as motor vehicle-related and other transportation related deaths, falls, fires, and drownings that were not intended to occur. 6. Calculations based on values 1-4 are excluded.

## Figure 9. Selected Causes of Death by Age Group and Gender, Massachusetts: 2021



## Table 10. Number and Age-Adjusted Rates of Cancer Deaths by Selected Causes and Gender, Massachusetts: 2021

| Cause of Death[1] | ICD-10 Code | Total | | Women | | Men | |
|---|---|---|---|---|---|---|---|
| | | # | Rate[2,3] | # | Rate[2] | # | Rate[2] |
| **Total Cancer Deaths** | **C00-C97** | **12,466** | **135.2** | **6,056** | **203.1** | **6,410** | **243.3** |
| Bladder | C67 | 383 | 4.1 | 121 | 2.2 | 262 | 6.8 |
| Brain and nervous system | C70-C72 | 394 | 4.5 | 163 | 3.5 | 231 | 5.7 |
| Cervix | C53 | 54 | 1.2 | 54 | 1.2 | N/A | N/A |
| Colorectal | C18-C21 | 922 | 10.1 | 452 | 8.8 | 470 | 11.7 |
| Esophagus | C15 | 341 | 3.6 | 64 | 1.2 | 277 | 6.7 |
| Breast | C50 | 733 | 14.7 | 733 | 14.7 | N/A | N/A |
| Hodgkin's disease | C81 | 17 | 0.2 | 7 | 0.1 | 10 | 0.3 |
| Kidney and other urinary organs | C64, C65 | 237 | 2.6 | 88 | 1.6 | 149 | 3.7 |
| Leukemia | C91-C95 | 470 | 5.2 | 205 | 3.9 | 265 | 6.9 |
| Lung | C33, C34 | 2,733 | 29.2 | 1,441 | 27.5 | 1,292 | 31.6 |
| Melanoma of the skin | C43 | 200 | 2.1 | 74 | 1.4 | 126 | 3.2 |
| Multiple myeloma | C88, C90 | 254 | 2.7 | 106 | 2.0 | 148 | 3.8 |
| Non-Hodgkin's lymphoma | C82-C85 | 428 | 4.7 | 180 | 3.4 | 248 | 6.5 |
| Ovary | C56 | 312 | 6.1 | 312 | 6.1 | N/A | N/A |
| Pancreas | C25 | 1,100 | 11.9 | 544 | 10.4 | 556 | 13.8 |
| Prostate | C61 | 671 | 17.8 | N/A | N/A | 671 | 17.8 |
| Stomach | C16 | 223 | 2.5 | 79 | 1.6 | 144 | 3.5 |
| Uterus | C54, C55 | 289 | 5.4 | 289 | 5.4 | N/A | N/A |
| All other cancers | Residual | 2,705 | 29.4 | 1,144 | 22.1 | 1,561 | 39.0 |

1. Common terms are used to describe the causes of cancer deaths. For detailed terminology of cancer sites, please see the ICD-10 code list in the Appendix. 2. 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.

## Table 11. Selected Causes of Cancer Deaths by Age, Massachusetts: 2021

| Age | Cause of death[1] | ICD-10 Code | Number | Age-specific rate[2] |
|---|---|---|---|---|
| **1 – 14 years** | **Total** | | **22** | **2.1** |
| | Brain and nervous system | C70-C72 | 6 | 0.6 |
| | Leukemia | C91-C95 | 5 | 0.5 |
| | Colorectal | C18-C21 | 1 | --[3] |
| | Kidney and other urinary organs | C64, C65 | 1 | --[3] |
| **15 – 24 years** | **Total** | | **25** | **2.6** |
| | Brain and nervous system | C70-C72 | 10 | 1.1 |
| | Leukemia | C91-C95 | 3 | --[3] |
| | Melanoma of the skin | C43 | 1 | --[3] |
| | Non-Hodgkins lymphoma | #N/A | 1 | --[3] |
| **25 – 44 years** | **Total** | | **242** | **12.8** |
| | Colorectal | C18-C21 | 40 | 2.1 |
| | Breast[4] | C50 | 32 | 3.4 |
| | Brain and nervous system | C70-C72 | 31 | 1.6 |
| | Leukemia | C91-C95 | 14 | 0.7 |
| **45 – 64 years** | **Total** | | **2,648** | **140.5** |
| | Lung | C33, C34 | 539 | 28.6 |
| | Colorectal | C18-C21 | 262 | 13.9 |
| | Pancreas | C25 | 226 | 12.0 |
| | Breast[4] | C50 | 210 | 21.5 |
| **65 + years** | **Total** | | **9,529** | **793.4** |
| | Lung | C33, C34 | 2,182 | 181.7 |
| | Pancreas | C25 | 862 | 71.8 |
| | Prostate[5] | C61 | 621 | 118.8 |
| | Colorectal | C18-C21 | 619 | 51.5 |
| **65 – 74 years** | **Total** | | **3,550** | **513.2** |
| | Lung | C33, C34 | 935 | 135.2 |
| | Pancreas | C25 | 349 | 50.4 |
| | Colorectal | C18-C21 | 205 | 29.6 |
| | Breast[4] | C50 | 167 | 44.9 |
| **75 – 84 years** | **Total** | | **3,545** | **1,025.9** |
| | Lung | C33, C34 | 841 | 243.4 |
| | Pancreas | C25 | 341 | 98.7 |
| | Prostate[5] | C61 | 226 | 153.7 |
| | Colorectal | C18-C21 | 205 | 59.3 |
| **85+ years** | **Total** | | **2,434** | **1,486.7** |
| | Lung | C33, C34 | 406 | 248.0 |
| | Prostate[5] | C61 | 233 | 421.0 |
| | Colorectal | C18-C21 | 209 | 127.7 |
| | Pancreas | C25 | 172 | 105.1 |

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

**Table 12. Leading Causes of Cancer Deaths and Age-Adjusted Rates by Race and Hispanic Ethnicity[1], Massachusetts: 2021**

| American Indian/ Alaska Native non-Hispanic | | | Asian/PI non-Hispanic | | | Black non-Hispanic | | | Hispanic | | | White non-Hispanic | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Cause[2]** | **#** | **Rate[3]** | **Cause[2]** | **#** | **Rate[3]** | **Cause[2]** | **#** | **Rate[3]** | **Cause[2]** | **#** | **Rate[3]** | **Cause[2]** | **#** | **Rate[3]** |
| Lung | 13 | 102.3 | Lung | 95 | 23.4 | Lung | 104 | 23.6 | Lung | 77 | 18.2 | Lung | 2,435 | 30.9 |
| Pancreas | 3 | --[6] | Colorectal | 43 | 10.0 | Pancreas | 63 | 15.1 | Pancreas | 57 | 11.9 | Pancreas | 933 | 12.0 |
| Colorectal | 2 | --[6] | Pancreas | 37 | 8.8 | Colorectal | 52 | 11.8 | Colorectal | 40 | 7.8 | Colorectal | 775 | 10.4 |
| Breast[4] | 1 | --[6] | Stomach | 22 | 5.3 | Breast[4] | 47 | 18.9 | Breast[4] | 34 | 11.1 | Breast[4] | 625 | 15.2 |
| Uterus[4] | 1 | --[6] | Leukemia | 22 | 5.3 | Prostate[5] | 45 | 29.0 | Leukemia | 25 | 4.7 | Prostate[5] | 584 | 18.0 |
| **Total Cancer** | **29** | **224.5** | **Total Cancer** | **437** | **104.6** | **Total Cancer** | **614** | **141.2** | **Total Cancer** | **501** | **106.3** | **Total Cancer** | **10,770** | **139.7** |

1. See the technical notes for more information on race and ethnicity. 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. 6. Calculations based on values 1-4 are excluded.

**Figure 10. Diabetes Deaths, Massachusetts: 2011-2021**

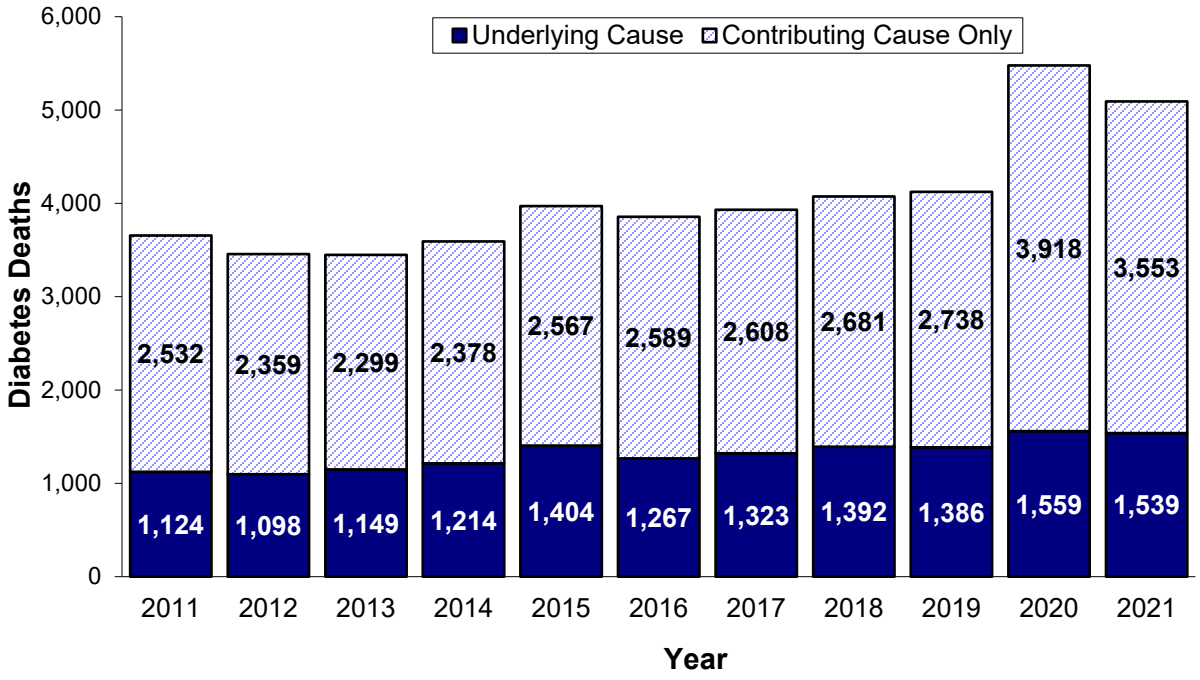



**Table 13. Diabetes Deaths by Gender, Massachusetts: 2021**

| | Proportion of all Deaths (%)[1] | | | Number | | |
|---|---|---|---|---|---|---|
| Cause of Death | Men | Women | Total | Men | Women | Total |
| Underlying | 2.8% | 2.1% | 2.4% | 895 | 644 | 1,539 |
| Contributing/Associated | 6.2% | 5.0% | 5.6% | 2,025 | 1,528 | 3,553 |
| **Total Diabetes-Related** | **9.0%** | **7.1%** | **8.1%** | **2,920** | **2,172** | **5,092** |

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

## Table 14. Diabetes Deaths by Race and Hispanic Ethnicity, Massachusetts: 2021

| Cause of Death | Race/Hispanic Ethnicity[1] | | | | | |
|---|---|---|---|---|---|---|
| | American Indian/ Alaska Native non-Hispanic | Asian/PI non-Hispanic | Black non-Hispanic | Hispanic | White non-Hispanic | Total |
| | Number | | | | | |
| Underlying | 5 | 54 | 161 | 141 | 1,161 | 1,539 |
| Contributing/Associated | 7 | 121 | 260 | 288 | 2,834 | 3,553 |
| *Total Diabetes-Related* | 12 | 175 | 421 | 429 | 3,995 | 5,092 |
| ***Total Deaths (All Causes)*** | ***128*** | ***1,716*** | ***3,419*** | ***3,379*** | ***53,869*** | ***63,158*** |
| | Proportion of all deaths (%)[2] | | | | | |
| Underlying | 3.9 | 3.1 | 4.7 | 4.2 | 2.2 | 2.4 |
| Contributing/Associated | 5.5 | 7.1 | 7.6 | 8.5 | 5.3 | 5.6 |
| ***Total Diabetes-Related*** | ***9.4*** | ***10.2*** | ***12.3*** | ***12.7*** | ***7.4*** | ***8.1*** |
| | Death Rates[3] | | | | | |
| Underlying | 40.8 | 14.0 | 37.0 | 29.7 | 15.3 | 16.9 |
| Contributing/Associated | 49.4 | 32.0 | 59.6 | 63.6 | 36.1 | 38.3 |
| ***Total Diabetes-Related*** | ***90.3*** | ***46.0*** | ***96.6*** | ***93.3*** | ***51.4*** | ***55.2*** |

1. See the technical notes for more information on race and ethnicity. 2. Proportions are out of total deaths due to all causes. 3.Rates are per 100,000 age-adjusted to the 2000 U.S. standard population

## Figure 11. Age Distribution of Diabetes Deaths, Massachusetts: 2021

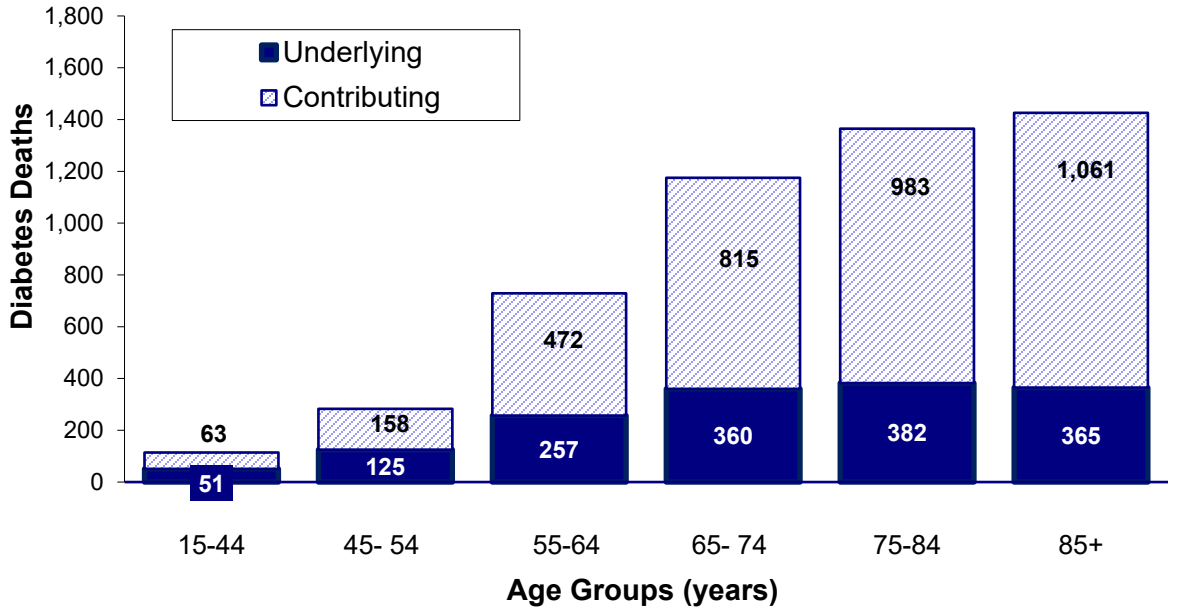
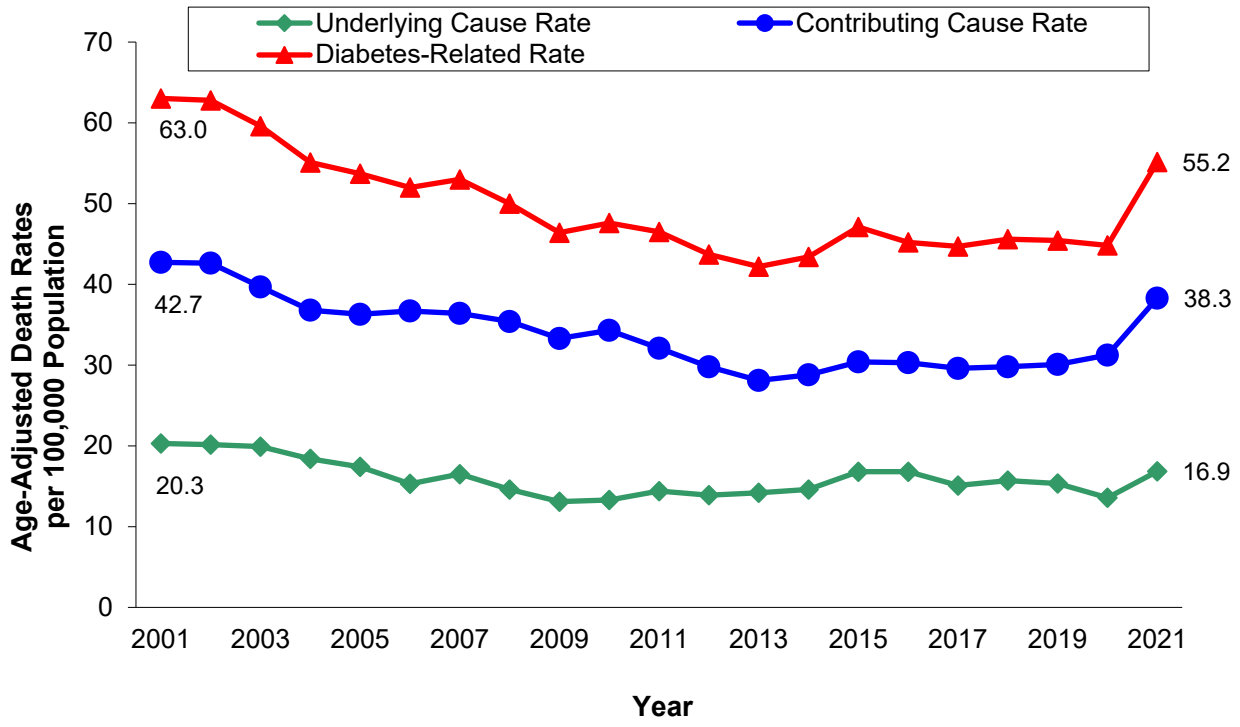


**Figure 12. Diabetes Death Rates, Massachusetts: 2001-2021**




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

## Table 15. COVID-19 Deaths by Gender, Massachusetts: 2021

| | Proportion of all Deaths (%)[1] | | | Number | | |
|---|---|---|---|---|---|---|
| Cause of Death | Men | Women | Total | Men | Women | Total |
| Underlying | 8.7% | 6.7% | 7.7% | 2,812 | 2,076 | 4,888 |
| Contributing/Associated | 0.9% | 1.0% | 1.0% | 300 | 318 | 618 |
| **Total COVID-19-Related** | **9.6%** | **7.8%** | **8.7%** | **3,112** | **2,394** | **5,506** |

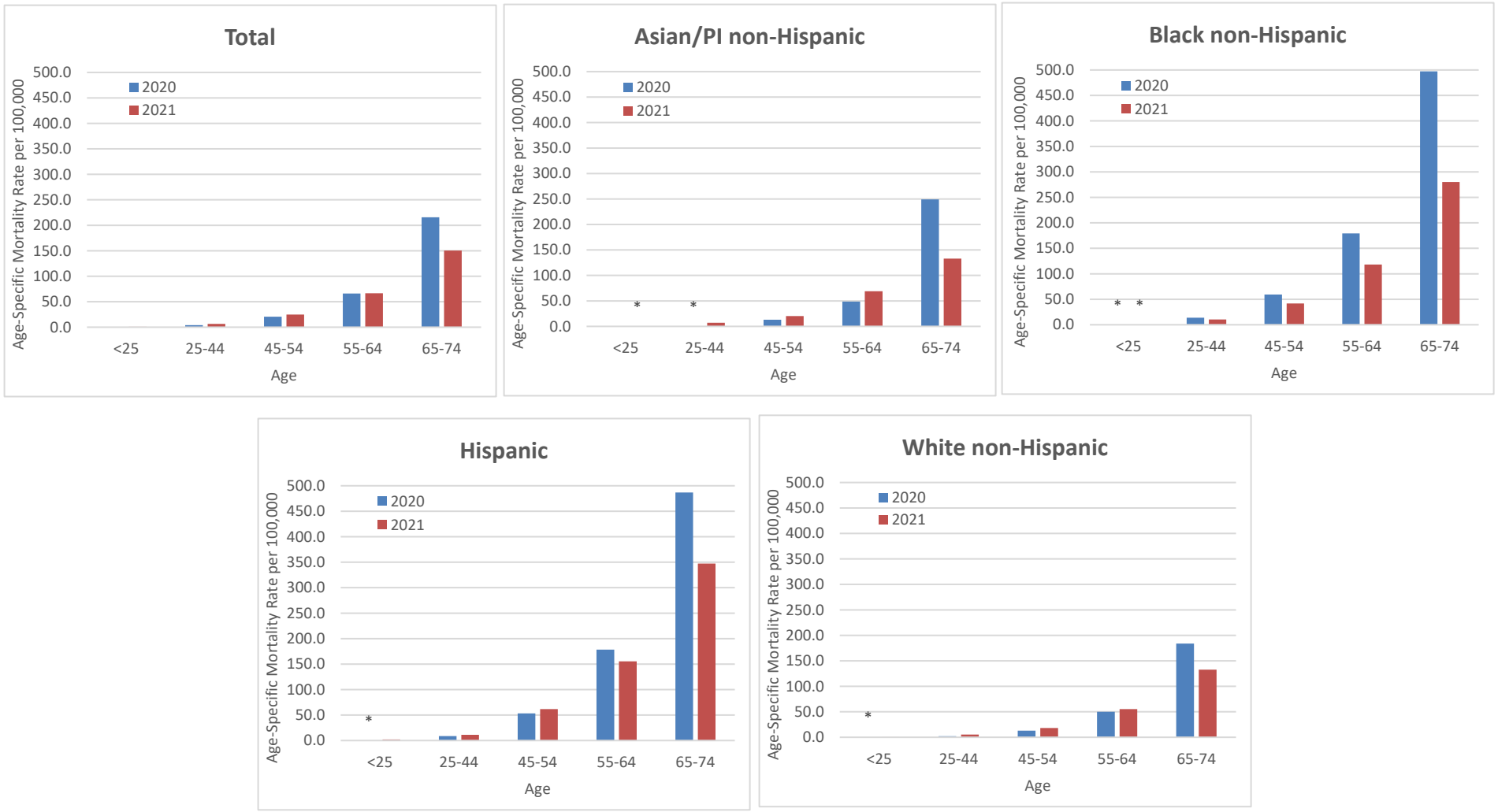
1. Proportions are out of total deaths due to all causes.

## Table 16. COVID-19 Deaths by Race and Hispanic Ethnicity, Massachusetts: 2021

| | **Race/Hispanic Ethnicity[1]** | | | | | |
|---|---|---|---|---|---|---|
| Cause of Death | American Indian/ Alaska Native non-Hispanic | Asian/PI non-Hispanic | Black non-Hispanic | Hispanic | White non-Hispanic | Total |
| | Number | | | | | |
| Underlying | 11 | 203 | 331 | 493 | 3,766 | 4,888 |
| Contributing/Associated | 0 | 10 | 36 | 38 | 527 | 618 |
| *Total COVID-19-Related* | 11 | 213 | 367 | 531 | 4,293 | 5,506 |
| ***Total Deaths (All Causes)*** | ***128*** | ***1,716*** | ***3,419*** | ***3,379*** | ***53,869*** | ***63,158*** |
| | Proportion of all deaths (%)[2] | | | | | |
| Underlying | 8.6 | 11.8 | 9.7 | 14.6 | 7.0 | 7.7 |
| Contributing/Associated | 0.0 | 0.6 | 1.1 | 1.1 | 1.0 | 1.0 |
| ***Total COVID-19-Related*** | ***8.6*** | ***12.4*** | ***10.7*** | ***15.7*** | ***8.0*** | ***8.7*** |
| | Death Rates[3] | | | | | |
| Underlying | 93.6 | 49.6 | 76.8 | 103.2 | 48.0 | 53.0 |
| Contributing/Associated | 0.0 | 2.5 | 8.1 | 8.1 | 6.6 | 6.6 |
| ***Total COVID-19-Related*** | ***93.6*** | ***52.1*** | ***84.9*** | ***111.3*** | ***54.7*** | ***59.6*** |

1. See the technical notes for more information on race and ethnicity. 2. Proportions are out of total deaths due to all causes. 3. Rates are per 100,000 age-adjusted to the 2000 U.S. standard population

**Figure 13. COVID-19 Age-Specific Death Rates[1] by Race/Ethnicity[2], Massachusetts: 2020-2021**




* Calculations based on values 1-4 are excluded.
Note: Data for American Indian/Alaska Native is non-Hispanic not presented due to extremely small numbers.
1. Number of deaths per 100,000 residents in each age group. 2. See the technical notes for more information on race and ethnicity.

## Table 17. Injury Deaths by Method, Gender and Age: Numbers, Age-Adjusted, and Age-Specific Rates, Massachusetts: 2021

| | All Injury Deaths[1] | | Poisoning[2] | | Falls | | Hanging, Strangulation, or Suffocation | | Motor Vehicle-Related[3] | | Firearm | | Other[4] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Rate[5] | Number | Rate[5] | Number | Rate[5] | Number | Rate[5] | Number | Rate[5] | Number | Rate[5] | Number | Rate[5] |
| **All Persons** | **5,606** | **72.3** | **2,704** | **38.2** | **1,176** | **12.5** | **432** | **5.3** | **460** | **6.0** | **247** | **3.3** | **587** | **7.0** |
| < 1 | 5 | 7.2 | 0 | 0.0 | 0 | 0.0 | 1 | --[6] | 0 | 0.0 | 0 | 0.0 | 4 | --[6] |
| 1-14 | 26 | 2.5 | 2 | --[6] | 0 | 0.0 | 8 | 0.8 | 4 | --[6] | 1 | --[6] | 11 | 1.1 |
| 15-24 | 324 | 34.1 | 146 | 15.4 | 9 | 0.9 | 30 | 3.2 | 78 | 8.2 | 40 | 4.2 | 21 | 2.2 |
| 25-44 | 1,747 | 92.7 | 1,254 | 66.6 | 28 | 1.5 | 99 | 5.3 | 131 | 7.0 | 109 | 5.8 | 126 | 6.7 |
| 45-64 | 1,681 | 89.2 | 1,134 | 60.2 | 101 | 5.4 | 121 | 6.4 | 141 | 7.5 | 49 | 2.6 | 135 | 7.2 |
| 65-74 | 523 | 75.6 | 129 | 18.6 | 144 | 20.8 | 66 | 9.5 | 45 | 6.5 | 25 | 3.6 | 114 | 16.5 |
| 75-84 | 455 | 131.7 | 23 | 6.7 | 276 | 79.9 | 40 | 11.6 | 24 | 6.9 | 14 | 4.1 | 78 | 22.6 |
| 85+ | 843 | 514.9 | 16 | 9.8 | 618 | 377.5 | 66 | 40.3 | 37 | 22.6 | 8 | 4.9 | 98 | 59.9 |
| **All Women** | **1,855** | **41.9** | **758** | **20.7** | **592** | **10.1** | **120** | **2.6** | **123** | **2.9** | **28** | **0.8** | **234** | **4.9** |
| < 1 | 3 | --[6] | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 3 | --[6] |
| 1-14 | 7 | 1.4 | 0 | 0.0 | 0 | 0.0 | 2 | --[6] | 1 | --[6] | 0 | 0.0 | 4 | --[6] |
| 15-24 | 73 | 15.3 | 38 | 8.0 | 2 | --[6] | 7 | 1.5 | 18 | 3.8 | 4 | --[6] | 4 | --[6] |
| 25-44 | 439 | 46.4 | 334 | 35.3 | 7 | 0.7 | 18 | 1.9 | 28 | 3.0 | 13 | 1.4 | 39 | 4.1 |
| 45-64 | 479 | 49.1 | 325 | 33.3 | 31 | 3.2 | 38 | 3.9 | 39 | 4.0 | 6 | 0.6 | 40 | 4.1 |
| 65-74 | 160 | 43.0 | 41 | 11.0 | 53 | 14.3 | 12 | 3.2 | 10 | 2.7 | 3 | --[6] | 41 | 11.0 |
| 75-84 | 208 | 104.8 | 10 | 5.0 | 137 | 69.0 | 15 | 7.6 | 7 | 3.5 | 2 | --[6] | 37 | 18.6 |
| 85+ | 486 | 448.5 | 10 | 9.2 | 362 | 334.0 | 28 | 25.8 | 20 | 18.5 | 0 | 0.0 | 66 | 60.9 |
| **All Men** | **3,751** | **105.3** | **1,946** | **56.3** | **584** | **15.8** | **312** | **8.4** | **337** | **9.3** | **219** | **6.1** | **353** | **9.4** |
| < 1 | 2 | --[6] | 0 | 0.0 | 0 | 0.0 | 1 | --[6] | 0 | 0.0 | 0 | 0.0 | 1 | --[6] |
| 1-14 | 19 | 3.6 | 2 | --[6] | 0 | 0.0 | 6 | 1.1 | 3 | --[6] | 1 | --[6] | 7 | 1.3 |
| 15-24 | 251 | 52.9 | 108 | 22.8 | 7 | 1.5 | 23 | 4.8 | 60 | 12.6 | 36 | 7.6 | 17 | 3.6 |
| 25-44 | 1,308 | 139.5 | 920 | 98.1 | 21 | 2.2 | 81 | 8.6 | 103 | 11.0 | 96 | 10.2 | 87 | 9.3 |
| 45-64 | 1,202 | 132.2 | 809 | 89.0 | 70 | 7.7 | 83 | 9.1 | 102 | 11.2 | 43 | 4.7 | 95 | 10.4 |
| 65-74 | 363 | 113.4 | 88 | 27.5 | 91 | 28.4 | 54 | 16.9 | 35 | 10.9 | 22 | 6.9 | 73 | 22.8 |
| 75-84 | 247 | 167.9 | 13 | 8.8 | 139 | 94.5 | 25 | 17.0 | 17 | 11.6 | 12 | 8.2 | 41 | 27.9 |
| 85+ | 357 | 645.0 | 6 | 10.8 | 256 | 462.5 | 38 | 68.7 | 17 | 30.7 | 8 | 14.5 | 32 | 57.8 |

1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. 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 18. Injury Deaths by Method, Gender and Race and Hispanic Ethnicity[7]: Numbers and Age-Adjusted Rates, Massachusetts: 2021

| | All Injury Deaths[1] | | Poisoning[2] | | Falls | | Hanging, Strangulation, or Suffocation | | Motor Vehicle-Related[3] | | Firearm | | Other[4] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Rate[5] | Number | Rate[5] | Number | Rate[5] | Number | Rate[5] | Number | Rate[5] | Number | Rate[5] | Number | Rate[5] |
| **American Indian/ Alaska Native non-Hispanic** | **17** | **159.4** | **13** | **118.6** | **1** | --[6] | **0** | **0.0** | **2** | --[6] | **0** | **0.0** | **1** | --[6] |
| Women | 5 | 91.2 | 3 | --[6] | 1 | --[6] | 0 | 0.0 | 1 | --[6] | 0 | 0.0 | 0 | 0.0 |
| Men | 12 | 228.1 | 10 | 187.3 | 0 | 0.0 | 0 | 0.0 | 1 | --[6] | 0 | 0.0 | 1 | --[6] |
| **Asian/PI non-Hispanic** | **109** | **23.2** | **32** | **5.8** | **29** | **7.5** | **21** | **4.0** | **12** | **2.6** | **4** | --[6] | **11** | **2.5** |
| Women | 35 | 14.5 | 7 | 2.5 | 11 | 5.3 | 9 | 3.3 | 4 | --[6] | 1 | --[6] | 3 | --[6] |
| Men | 74 | 33.5 | 25 | 9.3 | 18 | 10.3 | 12 | 5.0 | 8 | 3.8 | 3 | --[6] | 8 | 3.8 |
| **Black non-Hispanic** | **422** | **85.4** | **228** | **44.6** | **26** | **6.0** | **16** | **3.4** | **38** | **7.7** | **56** | **11.3** | **58** | **12.4** |
| Women | 109 | 42.8 | 56 | 21.2 | 14 | 6.0 | 5 | 1.9 | 8 | 3.1 | 6 | 2.3 | 20 | 8.3 |
| Men | 313 | 129.8 | 172 | 69.3 | 12 | 5.6 | 11 | 4.8 | 30 | 12.4 | 50 | 20.4 | 38 | 17.4 |
| **Hispanic** | **608** | **77.7** | **365** | **44.2** | **44** | **9.9** | **30** | **3.9** | **78** | **8.5** | **37** | **3.5** | **54** | **7.7** |
| Women | 138 | 35.3 | 76 | 17.7 | 20 | 8.1 | 1 | --[6] | 15 | 3.0 | 5 | 0.9 | 21 | 5.3 |
| Men | 470 | 123.2 | 289 | 72.2 | 24 | 11.9 | 29 | 8.5 | 63 | 14.1 | 32 | 6.0 | 33 | 10.5 |
| **White non-Hispanic** | **4,356** | **76.7** | **2,026** | **42.4** | **1,064** | **13.2** | **355** | **5.9** | **319** | **5.7** | **144** | **2.6** | **448** | **6.9** |
| Women | 1,543 | 46.4 | 605 | 24.4 | 543 | 10.8 | 102 | 2.9 | 93 | 3.0 | 15 | 0.6 | 185 | 4.7 |
| Men | 2,813 | 109.4 | 1,421 | 60.9 | 521 | 16.7 | 253 | 9.2 | 226 | 8.6 | 129 | 4.9 | 263 | 9.2 |

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. 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. 7. See the technical notes for more information on race and ethnicity.

## Table 19. Injury Deaths by Intent, Gender and Age: Numbers, Age-Adjusted, and Age-Specific Rates, Massachusetts: 2021

| | Unintentional Injuries[1] | | | | | | | | Intentional Injuries[1] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | | Poisonings[2] | | Falls | | Motor Vehicle-Related[3] | | Total | | Suicide | | Homicide | |
| | Number[4] | Rate[5] | Number[4] | Rate[5] | Number[4] | Rate[5] | Number[4] | Rate[5] | Number[4] | Rate[5] | Number[4] | Rate[5] | Number[4] | Rate[5] |
| **All Persons** | **4,636** | **59.7** | **2,534** | **36.0** | **1,142** | **12.0** | **460** | **6.0** | **766** | **10.2** | **605** | **7.9** | **161** | **2.3** |
| <1 | 2 | --[6] | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | --[6] | 0 | 0 | 2 | --[6] |
| 1-14 | 17 | 1.6 | 1 | --[6] | 0 | 0.0 | 4 | --[6] | 7 | 0.7 | 4 | --[6] | 3 | --[6] |
| 15-24 | 223 | 23.5 | 132 | 13.9 | 2 | --[6] | 78 | 8.2 | 99 | 10.4 | 65 | 6.8 | 34 | 3.6 |
| 25-44 | 1,413 | 75.0 | 1,207 | 64.1 | 15 | 0.8 | 131 | 7.0 | 282 | 15.0 | 200 | 10.6 | 82 | 4.4 |
| 45-64 | 1,405 | 74.6 | 1,062 | 56.4 | 98 | 5.2 | 141 | 7.5 | 224 | 11.9 | 203 | 10.8 | 21 | 1.1 |
| 65-74 | 389 | 56.2 | 109 | 15.8 | 139 | 20.1 | 45 | 6.5 | 90 | 13.0 | 76 | 11.0 | 14 | 2.0 |
| 75-84 | 390 | 112.9 | 13 | 3.8 | 273 | 79.0 | 24 | 6.9 | 37 | 10.7 | 33 | 9.5 | 4 | --[6] |
| 85+ | 797 | 486.8 | 10 | 6.1 | 615 | 375.6 | 37 | 22.6 | 23 | 14.0 | 22 | 13.4 | 1 | --[6] |
| **All Women** | **1,584** | **35.4** | **679** | **18.8** | **587** | **10.0** | **123** | **2.9** | **182** | **4.6** | **142** | **3.5** | **40** | **1.1** |
| <1 | 1 | --[6] | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | --[6] | 0 | 0 | 1 | --[6] |
| 1-14 | 4 | --[6] | 0 | 0.0 | 0 | 0.0 | 1 | --[6] | 2 | --[6] | 1 | --[6] | 1 | --[6] |
| 15-24 | 52 | 10.9 | 33 | 6.9 | 0 | 0.0 | 18 | 3.8 | 20 | 4.2 | 14 | 2.9 | 6 | 1.3 |
| 25-44 | 368 | 38.9 | 318 | 33.6 | 7 | 0.7 | 28 | 3.0 | 52 | 5.5 | 36 | 3.8 | 16 | 1.7 |
| 45-64 | 395 | 40.5 | 292 | 29.9 | 31 | 3.2 | 39 | 4.0 | 63 | 6.5 | 55 | 5.6 | 8 | 0.8 |
| 65-74 | 111 | 29.9 | 24 | 6.5 | 53 | 14.3 | 10 | 2.7 | 26 | 7.0 | 21 | 5.6 | 5 | 1.3 |
| 75-84 | 184 | 92.7 | 4 | --[6] | 135 | 68.0 | 7 | 3.5 | 13 | 6.5 | 11 | 5.5 | 2 | --[6] |
| 85+ | 469 | 432.8 | 8 | 7.4 | 361 | 333.1 | 20 | 18.5 | 5 | 4.6 | 4 | --[5] | 1 | --[6] |
| **All Men** | **3,052** | **86.0** | **1,855** | **53.8** | **555** | **15.0** | **337** | **9.3** | **584** | **16.1** | **463** | **12.7** | **121** | **3.5** |
| <1 | 1 | --[6] | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | --[6] | 0 | 0 | 1 | --[6] |
| 1-14 | 13 | 2.4 | 1 | --[6] | 0 | 0.0 | 3 | --[6] | 5 | 0.9 | 3 | --[6] | 2 | --[6] |
| 15-24 | 171 | 36.0 | 99 | 20.9 | 2 | --[6] | 60 | 12.6 | 79 | 16.7 | 51 | 10.7 | 28 | 5.9 |
| 25-44 | 1,045 | 111.4 | 889 | 94.8 | 8 | 0.9 | 103 | 11.0 | 230 | 24.5 | 164 | 17.5 | 66 | 7.0 |
| 45-64 | 1,010 | 111.1 | 770 | 84.7 | 67 | 7.4 | 102 | 11.2 | 161 | 17.7 | 148 | 16.3 | 13 | 1.4 |
| 65-74 | 278 | 86.9 | 85 | 26.6 | 86 | 26.9 | 35 | 10.9 | 64 | 20.0 | 55 | 17.2 | 9 | 2.8 |
| 75-84 | 206 | 140.1 | 9 | 6.1 | 138 | 93.8 | 17 | 11.6 | 24 | 16.3 | 22 | 15.0 | 2 | --[6] |
| 85+ | 328 | 592.6 | 2 | --[6] | 254 | 458.9 | 17 | 30.7 | 18 | 32.5 | 18 | 32.5 | 0 | 0.0 |

1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Includes drug overdoses. 3. Motor vehicle deaths to occupants, pedestrians, motorcyclists and bicyclists.4. Age group counts may not add to total due to deaths with missing ages. 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 20. Injury Deaths by Intent, Gender and Race and Hispanic Ethnicity[4]: Numbers and Age-Adjusted Rates, Massachusetts: 2021

| | Unintentional Injuries[1] | | | | | | | | Intentional Injuries[1] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | | Poisonings | | Falls | | Motor Vehicle-Related | | Total | | Suicide | | Homicide | |
| | Number | Rate[2] | Number | Rate[2] | Number | Rate[2] | Number | Rate[2] | Number | Rate[2] | Number | Rate[2] | Number | Rate[2] |
| **American Indian/ Alaska Native non-Hispanic** | **16** | **152.1** | **13** | **118.6** | **1** | --[3] | **2** | --[3] | **0** | **0.0** | **0** | **0.0** | **0** | **0.0** |
| Women | 5 | 91.2 | 3 | --[3] | 1 | --[3] | 1 | --[3] | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Men | 11 | 212.9 | 10 | 187.3 | 0 | 0.0 | 1 | --[3] | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| **Asian/PI non-Hispanic** | **73** | **16.1** | **26** | **4.5** | **27** | **7.1** | **12** | **2.6** | **33** | **6.4** | **28** | **5.1** | **5** | **1.2** |
| Women | 21 | 9.2 | 4 | --[3] | 11 | 5.3 | 4 | --[3] | 13 | 4.8 | 12 | 4.3 | 1 | --[3] |
| Men | 52 | 24.2 | 22 | 8.0 | 16 | 9.4 | 8 | 3.8 | 20 | 8.2 | 16 | 6.1 | 4 | --[3] |
| **Black non-Hispanic** | **321** | **65.2** | **222** | **43.5** | **23** | **5.4** | **38** | **7.7** | **81** | **16.1** | **23** | **4.7** | **58** | **11.5** |
| Women | 91 | 35.7 | 55 | 20.9 | 13 | 5.6 | 8 | 3.1 | 12 | 4.7 | 2 | --[3] | 10 | 3.9 |
| Men | 230 | 96.4 | 167 | 67.3 | 10 | 4.7 | 30 | 12.4 | 69 | 27.8 | 21 | 8.8 | 48 | 18.9 |
| **Hispanic** | **508** | **66.3** | **358** | **43.3** | **41** | **9.6** | **78** | **8.5** | **78** | **8.1** | **37** | **4.1** | **41** | **4.0** |
| Women | 113 | 29.7 | 70 | 16.2 | 20 | 8.1 | 15 | 3.0 | 16 | 3.4 | 7 | 1.8 | 9 | 1.6 |
| Men | 395 | 105.8 | 288 | 72.0 | 21 | 11.4 | 63 | 14.1 | 62 | 12.9 | 30 | 6.6 | 32 | 6.3 |
| **White non-Hispanic** | **3,649** | **64.1** | **1,879** | **39.8** | **1,040** | **12.8** | **319** | **5.7** | **554** | **10.2** | **504** | **9.2** | **50** | **1.0** |
| Women | 1,336 | 39.7 | 538 | 22.3 | 539 | 10.7 | 93 | 3.0 | 135 | 4.6 | 117 | 4.0 | 18 | 0.7 |
| Men | 2,313 | 90.4 | 1,341 | 57.7 | 501 | 15.9 | 226 | 8.6 | 419 | 16.2 | 387 | 14.9 | 32 | 1.3 |

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 group; rates are age-adjusted to the 2000 US standard population. 3. Calculations based on values 1-4 are excluded. 4. See the technical notes for more information on race and ethnicity.

## Table 21. Injury Deaths by Intent, Method and Gender: Numbers and Age-Adjusted Rates, Massachusetts: 2021

| Type of Injury[1] | All Injury Deaths | | Women | | Men | |
|---|---|---|---|---|---|---|
| | Number | Rate[2] | Number | Rate[2] | Number | Rate[2] |
| **Unintentional Injuries (Accidents)** | **4,636** | **59.7** | **1,584** | **35.4** | **3,052** | **86.0** |
| Motor vehicle-related | 460 | 6.0 | 123 | 2.9 | 337 | 9.3 |
| Injury to pedestrian | 90 | 1.1 | 28 | 0.6 | 62 | 1.6 |
| Injury to pedal cyclist | 6 | 0.1 | 1 | --[3] | 5 | 0.1 |
| Injury to motorcyclist | 66 | 0.9 | 7 | 0.2 | 59 | 1.7 |
| Injury to occupant | 27 | 0.3 | 7 | 0.2 | 20 | 0.5 |
| Other and unspecified | 271 | 3.6 | 80 | 1.9 | 191 | 5.3 |
| Poisoning | 2,534 | 36.0 | 679 | 18.8 | 1,855 | 53.8 |
| Falls | 1,142 | 12.0 | 587 | 10.0 | 555 | 15.0 |
| Hanging, strangulation or suffocation | 177 | 1.9 | 64 | 1.2 | 113 | 2.9 |
| Cut or pierce | 1 | --[3] | 0 | 0.0 | 1 | --[3] |
| Firearm | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Drowning and submersion | 57 | 0.8 | 14 | 0.4 | 43 | 1.3 |
| Smoke, fire and flames | 36 | 0.4 | 18 | 0.3 | 18 | 0.5 |
| Other and unspecified | 212 | 2.4 | 95 | 1.7 | 117 | 3.0 |
| **Suicide** | **605** | **7.9** | **142** | **3.5** | **463** | **12.7** |
| Poisoning | 131 | 1.7 | 64 | 1.5 | 67 | 1.9 |
| Hanging, strangulation or suffocation | 248 | 3.3 | 53 | 1.4 | 195 | 5.4 |
| Firearm | 136 | 1.7 | 9 | 0.2 | 127 | 3.4 |
| Other and unspecified | 90 | 1.2 | 16 | 0.4 | 74 | 2.0 |
| **Homicide** | **161** | **2.3** | **40** | **1.1** | **121** | **3.5** |
| Firearm | 99 | 1.4 | 18 | 0.5 | 81 | 2.4 |
| Cut or pierce | 30 | 0.4 | 10 | 0.3 | 20 | 0.6 |
| Other and unspecified | 32 | 0.4 | 12 | 0.3 | 20 | 0.5 |
| **Injury Deaths of Undetermined Intent** | **83** | **1.1** | **30** | **0.8** | **53** | **1.5** |
| Poisoning | 38 | 0.5 | 15 | 0.4 | 23 | 0.6 |
| Other and unspecified | 45 | 0.6 | 15 | 0.4 | 30 | 0.9 |
| **Legal Intervention** | **11** | **0.2** | **1** | --[3] | **10** | **0.3** |
| Firearm | 9 | 0.1 | 1 | --[3] | 8 | 0.2 |
| Other and unspecified | 2 | --[3] | 0 | 0.0 | 2 | --[3] |
| **Adverse Effects** | **110** | **1.2** | **58** | **1.2** | **52** | **1.3** |
| Medical care | 95 | 1.0 | 49 | 1.0 | 46 | 1.2 |
| Drugs | 15 | 0.2 | 9 | 0.2 | 6 | 0.1 |
| **ALL INJURIES** | **5,606** | **72.3** | **1,855** | **41.9** | **3,751** | **105.3** |

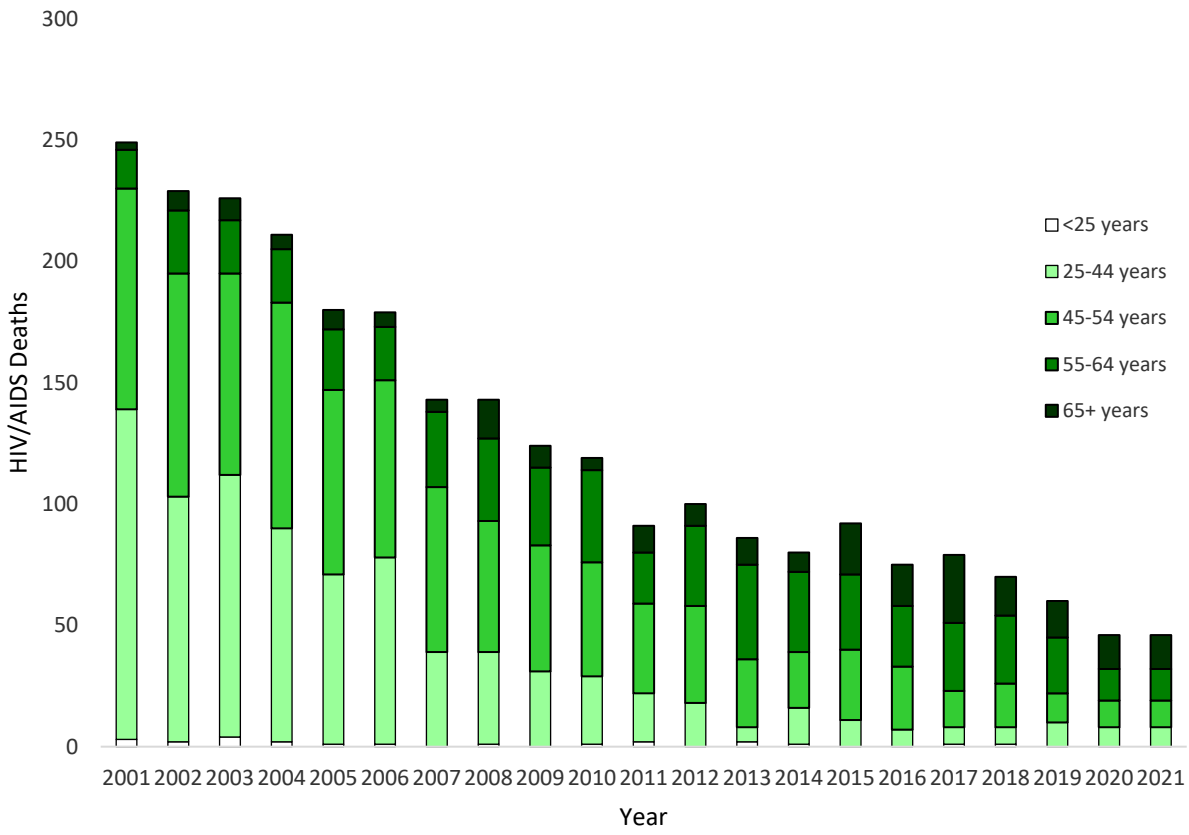
1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Number of deaths per 100,000 persons in each group; rates are age-adjusted to the 2000 US standard population. 3. Calculations based on values 1-4 are excluded.

**Table 22. HIV/AIDS Deaths by Gender, Race and Hispanic Ethnicity[1]: Numbers, Percent and Age-Adjusted Rates, Massachusetts: 2011-2021**

| | Black non-Hispanic | | | Hispanic | | | White non-Hispanic | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | # | Percent | Rate[2] | # | Percent | Rate[3] | # | Percent | Rate[3] |
| 2011 | 30 | 33% | 6.9 | 24 | 27% | 4.7 | 36 | 40% | 0.6 |
| 2012 | 26 | 26% | 6.1 | 23 | 23% | 4.6 | 50 | 51% | 0.8 |
| 2013 | 32 | 38% | 6.7 | 18 | 21% | 3.2 | 35 | 41% | 0.5 |
| 2014 | 21 | 26% | 4.4 | 16 | 20% | 3.2 | 41 | 51% | 0.6 |
| 2015 | 28 | 31% | 5.9 | 21 | 23% | 3.6 | 41 | 46% | 0.6 |
| 2016 | 23 | 33% | 4.7 | 11 | 16% | 1.8 | 36 | 51% | 0.5 |
| 2017 | 16 | 21% | 3.8 | 30 | 39% | 1.9 | 31 | 41% | 0.4 |
| 2018 | 22 | 32% | 4.4 | 12 | 17% | 1.8 | 35 | 51% | 0.5 |
| 2019 | 16 | 28% | 3.3 | 20 | 34% | 2.9 | 22 | 38% | 0.3 |
| 2020 | 16 | 31% | 3.2 | 9 | 18% | 1.2 | 26 | 51% | 0.4 |
| 2021 | 16 | 35% | 3.2 | 11 | 24% | 1.2 | 19 | 41% | 0.4 |
| **MEN** | | | | | | | | | |
| 2011 | 14 | 22% | 6.6 | 19 | 30% | 8.2 | 30 | 48% | 1.1 |
| 2012 | 14 | 23% | 7.8 | 12 | 20% | 5.6 | 35 | 57% | 1.2 |
| 2013 | 21 | 21% | 9.8 | 12 | 12% | 4.3 | 24 | 69% | 0.7 |
| 2014 | 14 | 24% | 6.5 | 10 | 17% | 4.7 | 34 | 59% | 1.0 |
| 2015 | 23 | 32% | 10.3 | 17 | 23% | 6.4 | 33 | 45% | 1.0 |
| 2016 | 12 | 26% | 5.7 | 6 | 13% | 2.2 | 28 | 61% | 0.9 |
| 2017 | 12 | 24% | 8.8 | 15 | 31% | 6.6 | 22 | 45% | 0.7 |
| 2018 | 12 | 27% | 5.7 | 7 | 16% | 2.5 | 25 | 57% | 0.7 |
| 2019 | 10 | 25% | 4.8 | 13 | 33% | 4.1 | 17 | 43% | 0.5 |
| 2020 | 10 | 27% | 3.7 | 5 | 14% | 1.3 | 22 | 59% | 0.2 |
| 2021 | 7 | 24% | 3.7 | 7 | 24% | 1.3 | 15 | 52% | 7 |
| **WOMEN** | | | | | | | | | |
| 2011 | 16 | 59% | 7.1 | 5 | 19% | 1.6 | 6 | 22% | 0.2 |
| 2012 | 12 | 32% | 4.9 | 11 | 29% | 3.9 | 15 | 39% | 0.4 |
| 2013 | 11 | 11% | 4.4 | 6 | 6% | 2.1 | 11 | 11% | 0.3 |
| 2014 | 7 | 35% | 2.7 | 6 | 30% | 2.0 | 7 | 35% | 0.2 |
| 2015 | 5 | 29% | 2.1 | 4 | --[3] | --[3] | 8 | 47% | 0.3 |
| 2016 | 11 | 46% | 4.0 | 5 | 21% | 1.5 | 8 | 33% | 0.2 |
| 2017 | 4 | --[3] | --[3] | 15 | 54% | 2.3 | 9 | 32% | 0.2 |
| 2018 | 10 | 40% | 3.6 | 5 | 20% | 1.3 | 10 | 40% | 0.2 |
| 2019 | 6 | 33% | 2.2 | 7 | 39% | 1.9 | 5 | 28% | 0.1 |
| 2020 | 6 | 43% | 2.5 | 4 | --[3] | --[3] | 4 | --[3] | --[3] |
| 2021 | 9 | 53% | 2.5 | 4 | --[3] | --[3] | 4 | --[3] | --[3] |

NOTE: There were no HIV/AIDS deaths for American Indian/ Alaska Native non-Hispanic or Asian/PI non-Hispanic residents in 2021.
1. See the Technical Notes for a more information on race and ethnicity. 2. Number of deaths per 100,000 persons; rates are age-adjusted to the 2000 US standard population. 3. Calculations based on values 1-4 are excluded

**Figure 14. HIV/AIDS Deaths by Age, Massachusetts: 2001-2021**



## Table 23. Number and Age-Specific Rates for Leading Underlying Causes of Death by Race and Hispanic Ethnicity[1], Massachusetts: 2021

| Selected Causes[2] | Total | | American Indian/ Alaska Native non-Hispanic | | Asian/PI non-Hispanic | | Black non-Hispanic | | Hispanic | | White non-Hispanic | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | Rate[3] | # | Rate[3] | # | Rate[3] | # | Rate[3] | # | Rate[3] | # | Rate[3] |
| **Age: 1-14, TOTAL** | **108** | **1.7** | **1** | —[6] | **11** | **2.4** | **12** | **2.2** | **29** | **2.4** | **52** | **1.4** |
| Cancer | 22 | 0.3 | 0 | 0.0 | 3 | —[6] | 2 | —[6] | 4 | —[6] | 13 | 0.3 |
| Unintentional Injuries[4] | 17 | 0.3 | 1 | —[6] | 1 | —[6] | 3 | —[6] | 3 | —[6] | 7 | 0.2 |
| Congenital Malformations | 7 | 0.1 | 0 | 0.0 | 2 | —[6] | 1 | —[6] | 1 | —[6] | 2 | —[6] |
| Heart Disease | 6 | 0.1 | 0 | 0.0 | 2 | —[6] | 0 | 0.0 | 1 | —[6] | 3 | —[6] |
| **Age: 15-24, TOTAL** | **429** | **7.4** | **0** | **0.0** | **15** | **3.3** | **53** | **11.3** | **88** | **9.7** | **253** | **6.7** |
| Unintentional Injuries[4] | 223 | 3.8 | 0 | 0.0 | 3 | —[6] | 19 | 4.0 | 52 | 5.7 | 141 | 3.7 |
| Suicide | 65 | 1.1 | 0 | 0.0 | 8 | 1.7 | 7 | 1.5 | 6 | 0.7 | 42 | 1.1 |
| Homicide | 34 | 0.6 | 0 | 0.0 | 0 | 0.0 | 17 | 3.6 | 12 | 1.3 | 2 | —[6] |
| Cancer | 25 | 0.4 | 0 | 0.0 | 1 | —[6] | 3 | —[6] | 2 | —[6] | 17 | 0.4 |
| **Age: 25-44, TOTAL** | **3,086** | **28.3** | **7** | **37.5** | **95** | **9.0** | **306** | **34.7** | **513** | **32.6** | **2,087** | **28.9** |
| Unintentional Injuries[4] | 1,413 | 12.9 | 5 | 26.8 | 21 | 2.0 | 100 | 11.3 | 232 | 14.7 | 1,025 | 14.2 |
| Cancer | 242 | 2.2 | 0 | 0.0 | 20 | 1.9 | 29 | 3.3 | 28 | 1.8 | 162 | 2.2 |
| Heart Disease | 230 | 2.1 | 0 | 0.0 | 8 | 0.8 | 29 | 3.3 | 50 | 3.2 | 134 | 1.9 |
| Suicide | 200 | 1.8 | 0 | 0.0 | 12 | 1.1 | 11 | 1.2 | 19 | 1.2 | 149 | 2.1 |
| **Age: 45-64, TOTAL** | **10,550** | **93.7** | **31** | **166.5** | **296** | **47.9** | **929** | **132.1** | **927** | **103.5** | **8,232** | **92.9** |
| Cancer | 2,648 | 23.5 | 8 | 43.0 | 116 | 18.8 | 192 | 27.3 | 154 | 17.2 | 2,148 | 24.3 |
| Heart Disease | 1,651 | 14.7 | 6 | 32.2 | 32 | 5.2 | 161 | 22.9 | 110 | 12.3 | 1,324 | 14.9 |
| Unintentional Injuries[4] | 1,405 | 12.5 | 9 | 48.3 | 13 | 2.1 | 138 | 19.6 | 169 | 18.9 | 1,060 | 12.0 |
| COVID-19 | 870 | 7.7 | 1 | —[6] | 48 | 7.8 | 92 | 13.1 | 160 | 17.9 | 546 | 6.2 |
| **Age: 65+, TOTAL** | **48,753** | **720.7** | **89** | **930.9** | **1,285** | **504.6** | **2,067** | **694.3** | **1,765** | **605.9** | **43,149** | **737.1** |
| Heart Disease | 10,052 | 148.6 | 13 | 136.0 | 217 | 85.2 | 361 | 121.3 | 290 | 99.5 | 9,095 | 155.4 |
| Cancer | 9,529 | 140.9 | 21 | 219.7 | 297 | 116.6 | 388 | 130.3 | 313 | 107.4 | 8,430 | 144.0 |
| COVID-19 | 3,877 | 57.3 | 10 | 104.6 | 141 | 55.4 | 223 | 74.9 | 293 | 100.6 | 3,152 | 53.8 |
| Chronic Lower Respiratory Disease[5] | 2,094 | 31.0 | 3 | —[6] | 24 | 9.4 | 50 | 16.8 | 47 | 16.1 | 1,959 | 33.5 |
| **Age: 65-74, TOTAL** | **11,775** | **1,702.1** | **34** | **3,685.2** | **297** | **986.8** | **721** | **2,269.3** | **610** | **1,810.2** | **10,002** | **1,716.4** |
| Cancer | 3,550 | 513.2 | 11 | 1,192.3 | 110 | 365.5 | 170 | 535.1 | 132 | 391.7 | 3,099 | 531.8 |
| Heart Disease | 1,978 | 285.9 | 4 | —[6] | 31 | 103.0 | 135 | 424.9 | 83 | 246.3 | 1,704 | 292.4 |
| COVID-19 | 1,041 | 150.5 | 3 | —[6] | 40 | 132.9 | 89 | 280.1 | 117 | 347.2 | 774 | 132.8 |
| Chronic Lower Respiratory Disease[5] | 594 | 85.9 | 1 | —[6] | 7 | 23.3 | 14 | 44.1 | 12 | 35.6 | 557 | 95.6 |
| **Age: 75-84, TOTAL** | **15,318** | **4,432.8** | **30** | **6,906.9** | **407** | **2,788.5** | **687** | **4,748.8** | **640** | **4,504.4** | **13,410** | **4,518.1** |
| Cancer | 3,545 | 1,025.9 | 7 | 1,611.6 | 103 | 705.7 | 149 | 1,029.9 | 114 | 802.3 | 3,142 | 1,058.6 |
| Heart Disease | 2,804 | 811.4 | 4 | —[6] | 70 | 479.6 | 117 | 808.7 | 116 | 816.4 | 2,469 | 831.9 |
| COVID-19 | 1,334 | 386.0 | 5 | 1,151.1 | 52 | 356.3 | 76 | 525.3 | 107 | 753.1 | 1,072 | 361.2 |
| Chronic Lower Respiratory Disease[5] | 820 | 237.3 | 2 | —[6] | 8 | 54.8 | 23 | 159.0 | 18 | 126.7 | 765 | 257.7 |
| **Age: 85+, TOTAL** | **21,660** | **13,230.2** | **25** | **11,753.3** | **581** | **10,393.2** | **659** | **11,242.2** | **515** | **9,844.7** | **19,737** | **13,623.2** |
| Heart Disease | 5,270 | 3,219.0 | 5 | 2,350.7 | 116 | 2,075.1 | 109 | 1,859.5 | 91 | 1,739.5 | 4,922 | 3,397.3 |
| Cancer | 2,434 | 1,486.7 | 3 | —[6] | 84 | 1,502.6 | 69 | 1,177.1 | 67 | 1,280.8 | 2,189 | 1,510.9 |
| COVID-19 | 1,502 | 917.4 | 2 | —[6] | 49 | 876.5 | 58 | 989.5 | 69 | 1,319.0 | 1,306 | 901.5 |
| Stroke | 1,061 | 648.1 | 2 | —[6] | 42 | 751.3 | 48 | 818.9 | 30 | 573.5 | 935 | 645.4 |

1. See the Technical Notes for more information on race and ethnicity. 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.

## Table 24. Selected Causes of Death by Community, Massachusetts: 2021

| CITY/TOWN | Total Deaths | Age-Adjusted Death Rate[1] | Lung Cancer | Breast Cancer | Motor Vehicle | Homicide | Suicide | Opioid-related[3] |
|---|---|---|---|---|---|---|---|---|
| **Massachusetts** | 63,158 | 689.0 | 2,733 | 733 | 460 | 161 | 605 | 2,275 |
| | | | | | | | | |
| Abington | 182 | 880.5 | 10 | 3 | 0 | 0 | 2 | 9 |
| Acton | 131 | 482.9 | 5 | 4 | 0 | 0 | 0 | 4 |
| Acushnet | 106 | 851.5 | 6 | 3 | 0 | 0 | 2 | 2 |
| Adams | 106 | 1,266.3 | 4 | 2 | 1 | 0 | 2 | 5 |
| Agawam | 360 | 1,139.7 | 12 | 4 | 3 | 0 | 7 | 8 |
| Alford | 6 | 1,728.2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Amesbury | 169 | 957.3 | 7 | 2 | 2 | 0 | 0 | 8 |
| Amherst | 151 | 610.4 | 6 | 2 | 0 | 0 | 4 | 1 |
| Andover | 265 | 574.8 | 11 | 4 | 0 | 1 | 3 | 8 |
| Aquinnah | 4 | —[2] | 1 | 0 | 0 | 0 | 1 | 0 |
| Arlington | 349 | 449.2 | 21 | 8 | 1 | 0 | 3 | 3 |
| Ashburnham | 35 | 541.8 | 2 | 0 | 0 | 0 | 0 | 0 |
| Ashby | 22 | 857.0 | 1 | 0 | 0 | 0 | 2 | 2 |
| Ashfield | 10 | 447.0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Ashland | 133 | 523.8 | 7 | 0 | 4 | 0 | 2 | 1 |
| Athol | 171 | 1,406.9 | 6 | 2 | 3 | 0 | 2 | 12 |
| Attleboro | 507 | 984.9 | 26 | 7 | 4 | 0 | 6 | 22 |
| Auburn | 205 | 953.0 | 10 | 2 | 1 | 0 | 0 | 4 |
| Avon | 59 | 1,190.2 | 2 | 2 | 0 | 0 | 0 | 3 |
| Ayer | 103 | 1,019.2 | 5 | 1 | 3 | 0 | 1 | 1 |
| Barnstable | 632 | 1,272.7 | 22 | 4 | 8 | 2 | 6 | 16 |
| Barre | 47 | 739.2 | 2 | 1 | 1 | 0 | 1 | 0 |
| Becket | 16 | 1,116.3 | 2 | 0 | 0 | 0 | 1 | 0 |
| Bedford | 143 | 747.4 | 6 | 1 | 1 | 1 | 3 | 3 |
| Belchertown | 126 | 749.6 | 3 | 3 | 1 | 0 | 0 | 1 |
| Bellingham | 156 | 959.4 | 10 | 3 | 3 | 0 | 4 | 6 |
| Belmont | 164 | 340.0 | 6 | 0 | 0 | 0 | 3 | 1 |
| Berkley | 62 | 1,082.0 | 3 | 1 | 1 | 0 | 2 | 3 |
| Berlin | 39 | 1,391.6 | 1 | 2 | 1 | 0 | 0 | 3 |
| Bernardston | 32 | 1,379.5 | 2 | 0 | 1 | 0 | 0 | 0 |
| Beverly | 440 | 783.5 | 13 | 7 | 0 | 0 | 7 | 8 |
| Billerica | 372 | 728.8 | 20 | 4 | 3 | 0 | 2 | 11 |
| Blackstone | 74 | 914.5 | 5 | 1 | 0 | 0 | 2 | 1 |
| Blandford | 11 | 1,234.2 | 1 | 1 | 0 | 0 | 0 | 1 |
| Bolton | 28 | 577.9 | 3 | 1 | 1 | 0 | 1 | 0 |
| Boston | 4,266 | 495.7 | 165 | 44 | 37 | 43 | 44 | 249 |
| Bourne | 280 | 1,378.8 | 14 | 1 | 3 | 0 | 4 | 5 |
| Boxborough | 31 | 621.0 | 3 | 2 | 1 | 0 | 0 | 1 |
| Boxford | 50 | 728.5 | 2 | 1 | 0 | 0 | 0 | 1 |
| Boylston | 40 | 840.3 | 0 | 0 | 1 | 0 | 0 | 1 |
| Braintree | 402 | 781.2 | 13 | 9 | 2 | 1 | 3 | 7 |
| Brewster | 162 | 1,757.9 | 5 | 1 | 2 | 0 | 1 | 3 |
| Bridgewater | 243 | 780.8 | 15 | 0 | 4 | 1 | 4 | 5 |
| Brimfield | 34 | 867.2 | 1 | 1 | 0 | 0 | 0 | 1 |
| Brockton | 960 | 878.4 | 37 | 14 | 11 | 8 | 4 | 58 |
| Brookfield | 41 | 1,280.3 | 2 | 0 | 1 | 0 | 0 | 1 |
| Brookline | 308 | 295.1 | 12 | 6 | 0 | 0 | 3 | 1 |
| Buckland | 16 | 802.4 | 0 | 1 | 0 | 0 | 0 | 1 |

| Table 24. Selected Causes of Death by Community, Massachusetts: 2021 (cont.) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| CITY/TOWN | Total Deaths | Age-Adjusted Death Rate[1] | Lung Cancer | Breast Cancer | Motor Vehicle | Homicide | Suicide | Opioid-related[3] |
| Burlington | 245 | 597.0 | 10 | 2 | 1 | 0 | 0 | 3 |
| Cambridge | 529 | 318.4 | 16 | 11 | 3 | 3 | 4 | 21 |
| Canton | 235 | 667.5 | 10 | 1 | 1 | 1 | 2 | 1 |
| Carlisle | 27 | 631.4 | 0 | 1 | 0 | 0 | 0 | 1 |
| Carver | 138 | 1,201.0 | 9 | 2 | 1 | 0 | 1 | 1 |
| Charlemont | 15 | 1,408.3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Charlton | 147 | 1,007.6 | 8 | 1 | 4 | 1 | 2 | 0 |
| Chatham | 112 | 1,797.4 | 1 | 0 | 0 | 0 | 0 | 0 |
| Chelmsford | 356 | 785.8 | 11 | 1 | 0 | 0 | 4 | 7 |
| Chelsea | 272 | 577.4 | 12 | 4 | 8 | 2 | 3 | 12 |
| Cheshire | 46 | 1,340.5 | 5 | 0 | 1 | 0 | 0 | 3 |
| Chester | 13 | 1,497.1 | 1 | 0 | 0 | 0 | 0 | 2 |
| Chesterfield | 8 | 815.5 | 0 | 0 | 0 | 0 | 1 | 1 |
| Chicopee | 675 | 1,092.4 | 18 | 1 | 11 | 4 | 6 | 26 |
| Chilmark | 12 | 1,417.3 | 0 | 0 | 0 | 0 | 0 | 1 |
| Clarksburg | 9 | 600.8 | 0 | 1 | 1 | 0 | 0 | 0 |
| Clinton | 149 | 858.7 | 10 | 0 | 3 | 0 | 2 | 4 |
| Cohasset | 71 | 702.4 | 4 | 1 | 0 | 0 | 0 | 0 |
| Colrain | 10 | 1,008.8 | 0 | 1 | 0 | 0 | 0 | 2 |
| Concord | 161 | 564.0 | 5 | 0 | 1 | 0 | 3 | 2 |
| Conway | 15 | 1,011.5 | 2 | 0 | 0 | 0 | 0 | 0 |
| Cummington | 5 | 484.4 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dalton | 88 | 1,120.9 | 2 | 0 | 0 | 0 | 0 | 3 |
| Danvers | 342 | 909.8 | 19 | 4 | 1 | 1 | 1 | 4 |
| Dartmouth | 349 | 820.3 | 15 | 3 | 1 | 0 | 2 | 6 |
| Dedham | 305 | 821.8 | 13 | 4 | 0 | 0 | 0 | 10 |
| Deerfield | 48 | 991.6 | 2 | 1 | 0 | 0 | 0 | 3 |
| Dennis | 251 | 2,136.9 | 16 | 2 | 1 | 0 | 3 | 10 |
| Dighton | 71 | 792.7 | 2 | 1 | 1 | 0 | 0 | 1 |
| Douglas | 53 | 566.8 | 1 | 1 | 0 | 0 | 0 | 4 |
| Dover | 24 | 606.9 | 2 | 0 | 0 | 0 | 0 | 0 |
| Dracut | 296 | 762.9 | 16 | 3 | 2 | 0 | 6 | 10 |
| Dudley | 96 | 792.7 | 9 | 1 | 0 | 0 | 1 | 6 |
| Dunstable | 18 | 749.7 | 0 | 0 | 0 | 0 | 0 | 0 |
| Duxbury | 152 | 1,026.9 | 6 | 4 | 0 | 0 | 0 | 2 |
| East Bridgewater | 142 | 935.9 | 9 | 2 | 2 | 1 | 1 | 3 |
| East Brookfield | 27 | 1,125.5 | 0 | 1 | 0 | 0 | 0 | 1 |
| East Longmeadow | 236 | 1,102.8 | 7 | 7 | 1 | 0 | 2 | 1 |
| Eastham | 100 | 3,100.9 | 2 | 1 | 1 | 0 | 0 | 3 |
| Easthampton | 162 | 842.1 | 6 | 2 | 0 | 0 | 3 | 4 |
| Easton | 195 | 779.9 | 11 | 4 | 1 | 1 | 5 | 9 |
| Edgartown | 33 | 590.8 | 0 | 0 | 0 | 0 | 1 | 1 |
| Egremont | 18 | 1,777.7 | 3 | 2 | 0 | 0 | 0 | 1 |
| Erving | 15 | 1,228.5 | 2 | 0 | 0 | 0 | 0 | 2 |
| Essex | 32 | 748.6 | 1 | 1 | 1 | 0 | 0 | 0 |
| Everett | 299 | 503.1 | 18 | 2 | 2 | 2 | 1 | 24 |
| Fairhaven | 252 | 1,439.0 | 12 | 2 | 1 | 0 | 2 | 4 |
| Fall River | 1,188 | 1,207.6 | 58 | 11 | 9 | 4 | 11 | 71 |
| Falmouth | 498 | 1,648.0 | 21 | 3 | 3 | 0 | 3 | 21 |
| Fitchburg | 444 | 929.7 | 25 | 1 | 3 | 0 | 2 | 17 |
| Florida | 4 | —[2] | 0 | 0 | 0 | 0 | 0 | 0 |
| Foxborough | 147 | 709.9 | 5 | 1 | 0 | 0 | 1 | 6 |

| Table 24. Selected Causes of Death by Community, Massachusetts: 2021 (cont.) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| CITY/TOWN | Total Deaths | Age-Adjusted Death Rate[1] | Lung Cancer | Breast Cancer | Motor Vehicle | Homicide | Suicide | Opioid-related[3] |
| Framingham | 561 | 533.6 | 21 | 7 | 2 | 1 | 7 | 8 |
| Franklin | 261 | 622.8 | 17 | 4 | 2 | 2 | 0 | 3 |
| Freetown | 71 | 851.0 | 3 | 0 | 2 | 0 | 2 | 5 |
| Gardner | 286 | 1,347.1 | 10 | 3 | 0 | 0 | 2 | 11 |
| Georgetown | 59 | 566.4 | 8 | 1 | 0 | 0 | 1 | 0 |
| Gill | 6 | 256.2 | 1 | 0 | 0 | 0 | 0 | 0 |
| Gloucester | 359 | 1,293.3 | 20 | 3 | 0 | 0 | 5 | 18 |
| Goshen | 7 | 338.4 | 1 | 0 | 0 | 0 | 0 | 0 |
| Gosnold | 0 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grafton | 127 | 539.7 | 7 | 1 | 0 | 0 | 1 | 3 |
| Granby | 68 | 803.8 | 3 | 0 | 0 | 0 | 0 | 0 |
| Granville | 12 | 1,020.1 | 0 | 0 | 2 | 0 | 0 | 0 |
| Great Barrington | 103 | 1,424.7 | 5 | 2 | 0 | 0 | 0 | 0 |
| Greenfield | 214 | 1,036.8 | 12 | 0 | 0 | 0 | 2 | 11 |
| Groton | 67 | 602.0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Groveland | 61 | 878.7 | 6 | 0 | 1 | 0 | 0 | 1 |
| Hadley | 77 | 1,465.1 | 4 | 0 | 1 | 0 | 1 | 3 |
| Halifax | 96 | 1,352.7 | 8 | 0 | 3 | 0 | 2 | 0 |
| Hamilton | 54 | 715.7 | 2 | 1 | 1 | 0 | 0 | 2 |
| Hampden | 57 | 1,107.6 | 3 | 0 | 0 | 0 | 0 | 4 |
| Hancock | 9 | 1,719.3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hanover | 113 | 677.7 | 6 | 2 | 0 | 0 | 2 | 0 |
| Hanson | 98 | 853.2 | 3 | 0 | 0 | 0 | 2 | 2 |
| Hardwick | 22 | 764.1 | 0 | 0 | 0 | 0 | 1 | 0 |
| Harvard | 37 | 445.2 | 0 | 0 | 1 | 0 | 0 | 2 |
| Harwich | 186 | 1,458.7 | 9 | 1 | 0 | 0 | 0 | 1 |
| Hatfield | 45 | 1,500.2 | 1 | 1 | 1 | 0 | 0 | 1 |
| Haverhill | 672 | 933.7 | 25 | 6 | 7 | 2 | 10 | 33 |
| Hawley | 3 | —[2] | 0 | 0 | 0 | 0 | 0 | 0 |
| Heath | 7 | 963.5 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hingham | 284 | 845.6 | 10 | 6 | 1 | 0 | 2 | 2 |
| Hinsdale | 21 | 1,500.2 | 0 | 0 | 1 | 0 | 0 | 0 |
| Holbrook | 104 | 872.1 | 5 | 1 | 2 | 1 | 1 | 5 |
| Holden | 153 | 703.1 | 8 | 2 | 0 | 0 | 4 | 3 |
| Holland | 26 | 833.4 | 1 | 0 | 0 | 0 | 0 | 1 |
| Holliston | 96 | 557.3 | 5 | 4 | 0 | 0 | 1 | 3 |
| Holyoke | 479 | 1,088.3 | 26 | 6 | 3 | 1 | 4 | 23 |
| Hopedale | 55 | 725.9 | 3 | 0 | 0 | 0 | 0 | 0 |
| Hopkinton | 93 | 433.1 | 2 | 2 | 1 | 0 | 3 | 1 |
| Hubbardston | 37 | 917.7 | 0 | 0 | 0 | 0 | 0 | 1 |
| Hudson | 187 | 756.7 | 8 | 4 | 3 | 0 | 2 | 4 |
| Hull | 124 | 1,268.4 | 7 | 0 | 0 | 0 | 2 | 5 |
| Huntington | 21 | 921.4 | 1 | 1 | 0 | 0 | 0 | 0 |
| Ipswich | 139 | 901.6 | 8 | 1 | 1 | 1 | 0 | 4 |
| Kingston | 147 | 902.9 | 7 | 1 | 0 | 0 | 0 | 5 |
| Lakeville | 111 | 1,005.6 | 2 | 4 | 2 | 0 | 0 | 5 |
| Lancaster | 61 | 539.1 | 1 | 1 | 1 | 0 | 0 | 2 |
| Lanesborough | 30 | 1,324.4 | 2 | 0 | 0 | 0 | 0 | 1 |
| Lawrence | 517 | 555.6 | 15 | 7 | 8 | 4 | 4 | 48 |
| Lee | 96 | 1,394.1 | 4 | 0 | 0 | 0 | 0 | 3 |
| Leicester | 110 | 1,026.9 | 7 | 0 | 1 | 0 | 1 | 3 |
| Lenox | 97 | 1,543.9 | 2 | 0 | 1 | 0 | 0 | 0 |

| Table 24. Selected Causes of Death by Community, Massachusetts: 2021 (cont.) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| CITY/TOWN | Total Deaths | Age-Adjusted Death Rate[1] | Lung Cancer | Breast Cancer | Motor Vehicle | Homicide | Suicide | Opioid-related[3] |
| Leominster | 390 | 782.1 | 17 | 4 | 3 | 0 | 2 | 12 |
| Leverett | 9 | 419.9 | 1 | 0 | 0 | 0 | 1 | 1 |
| Lexington | 228 | 487.9 | 11 | 3 | 0 | 0 | 0 | 0 |
| Leyden | 7 | 866.1 | 1 | 0 | 0 | 0 | 0 | 0 |
| Lincoln | 69 | 465.7 | 5 | 3 | 0 | 0 | 1 | 1 |
| Littleton | 84 | 835.7 | 7 | 1 | 1 | 0 | 3 | 1 |
| Longmeadow | 179 | 828.3 | 7 | 4 | 0 | 0 | 2 | 2 |
| Lowell | 950 | 747.0 | 45 | 6 | 10 | 6 | 5 | 61 |
| Ludlow | 236 | 880.0 | 6 | 1 | 2 | 0 | 2 | 7 |
| Lunenburg | 105 | 800.4 | 4 | 2 | 1 | 0 | 2 | 3 |
| Lynn | 818 | 727.0 | 37 | 10 | 7 | 3 | 10 | 63 |
| Lynnfield | 94 | 617.9 | 1 | 2 | 0 | 0 | 1 | 0 |
| Malden | 470 | 537.8 | 23 | 2 | 6 | 2 | 2 | 20 |
| Manchester | 59 | 1,098.5 | 2 | 1 | 0 | 0 | 2 | 1 |
| Mansfield | 148 | 584.9 | 8 | 0 | 0 | 0 | 5 | 5 |
| Marblehead | 176 | 806.1 | 5 | 4 | 0 | 0 | 0 | 2 |
| Marion | 53 | 1,012.0 | 2 | 0 | 1 | 0 | 1 | 1 |
| Marlborough | 382 | 739.3 | 12 | 2 | 6 | 0 | 5 | 14 |
| Marshfield | 260 | 1,086.8 | 9 | 3 | 2 | 1 | 0 | 4 |
| Mashpee | 217 | 1,311.6 | 12 | 4 | 2 | 1 | 2 | 3 |
| Mattapoisett | 81 | 1,211.8 | 1 | 0 | 0 | 0 | 0 | 3 |
| Maynard | 82 | 667.0 | 3 | 1 | 2 | 0 | 1 | 4 |
| Medfield | 75 | 731.4 | 3 | 0 | 0 | 0 | 4 | 0 |
| Medford | 475 | 526.7 | 25 | 2 | 2 | 2 | 5 | 12 |
| Medway | 85 | 527.1 | 2 | 2 | 1 | 0 | 0 | 0 |
| Melrose | 246 | 574.4 | 11 | 2 | 3 | 0 | 3 | 7 |
| Mendon | 37 | 707.6 | 1 | 1 | 0 | 0 | 1 | 0 |
| Merrimac | 63 | 1,074.1 | 1 | 1 | 0 | 0 | 0 | 1 |
| Methuen | 464 | 702.2 | 21 | 7 | 4 | 0 | 6 | 11 |
| Middleborough | 339 | 1,361.5 | 7 | 6 | 1 | 0 | 6 | 11 |
| Middlefield | 7 | 2,548.4 | 0 | 0 | 0 | 0 | 0 | 1 |
| Middleton | 78 | 699.7 | 2 | 2 | 0 | 0 | 1 | 2 |
| Milford | 289 | 768.9 | 15 | 4 | 2 | 1 | 2 | 9 |
| Millbury | 151 | 1,026.3 | 4 | 2 | 2 | 0 | 2 | 2 |
| Millis | 77 | 832.0 | 3 | 0 | 0 | 0 | 2 | 1 |
| Millville | 22 | 529.8 | 1 | 0 | 0 | 0 | 0 | 1 |
| Milton | 227 | 696.6 | 9 | 2 | 0 | 2 | 1 | 2 |
| Monroe | 1 | —[2] | 0 | 0 | 0 | 0 | 0 | 0 |
| Monson | 67 | 861.5 | 4 | 0 | 2 | 0 | 1 | 3 |
| Montague | 83 | 956.3 | 4 | 2 | 0 | 0 | 1 | 7 |
| Monterey | 9 | 1,592.3 | 0 | 0 | 0 | 0 | 0 | 1 |
| Montgomery | 8 | 825.0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Mount Washington | 1 | —[2] | 0 | 0 | 0 | 0 | 0 | 0 |
| Nahant | 50 | 1,632.5 | 4 | 0 | 0 | 0 | 0 | 3 |
| Nantucket | 90 | 494.7 | 3 | 0 | 0 | 0 | 2 | 4 |
| Natick | 265 | 533.5 | 11 | 5 | 3 | 0 | 2 | 7 |
| Needham | 271 | 652.0 | 8 | 1 | 4 | 0 | 2 | 3 |
| New Ashford | 2 | —[2] | 0 | 0 | 0 | 0 | 0 | 0 |
| New Bedford | 1,202 | 1,114.4 | 46 | 14 | 5 | 5 | 7 | 81 |
| New Braintree | 6 | 693.6 | 0 | 0 | 0 | 0 | 0 | 1 |
| New Marlborough | 13 | 1,226.5 | 0 | 0 | 0 | 0 | 0 | 0 |
| New Salem | 7 | 574.2 | 0 | 0 | 0 | 0 | 0 | 0 |

| Table 24. Selected Causes of Death by Community, Massachusetts: 2021 (cont.) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| CITY/TOWN | Total Deaths | Age-Adjusted Death Rate[1] | Lung Cancer | Breast Cancer | Motor Vehicle | Homicide | Suicide | Opioid-related[3] |
| Newbury | 62 | 1,143.3 | 2 | 1 | 0 | 0 | 2 | 1 |
| Newburyport | 226 | 1,105.4 | 10 | 2 | 1 | 0 | 2 | 5 |
| Newton | 564 | 489.9 | 24 | 8 | 0 | 0 | 5 | 10 |
| Norfolk | 58 | 372.9 | 2 | 0 | 0 | 0 | 0 | 0 |
| North Adams | 183 | 1,354.0 | 7 | 3 | 1 | 0 | 5 | 9 |
| North Andover | 284 | 727.2 | 17 | 2 | 3 | 0 | 4 | 6 |
| North Attleborough | 243 | 620.5 | 17 | 0 | 0 | 1 | 1 | 8 |
| North Brookfield | 47 | 1,198.4 | 3 | 1 | 1 | 1 | 0 | 1 |
| North Reading | 117 | 590.8 | 7 | 3 | 0 | 0 | 0 | 2 |
| Northampton | 272 | 755.9 | 11 | 4 | 2 | 0 | 3 | 11 |
| Northborough | 110 | 611.4 | 5 | 2 | 1 | 0 | 1 | 1 |
| Northbridge | 153 | 815.6 | 7 | 1 | 1 | 0 | 0 | 5 |
| Northfield | 29 | 828.8 | 1 | 0 | 2 | 0 | 0 | 0 |
| Norton | 180 | 963.2 | 13 | 3 | 1 | 0 | 4 | 15 |
| Norwell | 65 | 570.7 | 1 | 2 | 0 | 1 | 0 | 0 |
| Norwood | 335 | 786.2 | 14 | 3 | 1 | 0 | 3 | 8 |
| Oak Bluffs | 64 | 873.3 | 2 | 1 | 0 | 0 | 1 | 1 |
| Oakham | 21 | 1,456.0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Orange | 101 | 1,460.4 | 3 | 3 | 2 | 0 | 2 | 7 |
| Orleans | 109 | 2,113.6 | 3 | 3 | 1 | 0 | 1 | 1 |
| Otis | 15 | 1,114.2 | 2 | 0 | 0 | 0 | 0 | 0 |
| Oxford | 144 | 1,130.5 | 12 | 3 | 2 | 1 | 1 | 6 |
| Palmer | 145 | 1,275.2 | 3 | 1 | 3 | 2 | 3 | 5 |
| Paxton | 41 | 823.4 | 0 | 0 | 0 | 0 | 0 | 1 |
| Peabody | 750 | 925.0 | 31 | 3 | 6 | 0 | 5 | 13 |
| Pelham | 6 | 418.9 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pembroke | 154 | 826.8 | 6 | 1 | 4 | 0 | 2 | 3 |
| Pepperell | 84 | 845.2 | 10 | 0 | 1 | 0 | 2 | 1 |
| Peru | 4 | —[2] | 0 | 0 | 0 | 0 | 0 | 1 |
| Petersham | 10 | 960.9 | 0 | 0 | 0 | 0 | 0 | 0 |
| Phillipston | 13 | 736.3 | 0 | 0 | 0 | 0 | 0 | 1 |
| Pittsfield | 689 | 1,533.2 | 29 | 6 | 5 | 3 | 7 | 33 |
| Plainfield | 5 | 632.9 | 1 | 0 | 0 | 0 | 0 | 0 |
| Plainville | 90 | 824.9 | 4 | 1 | 1 | 0 | 1 | 3 |
| Plymouth | 699 | 971.3 | 29 | 7 | 6 | 0 | 4 | 15 |
| Plympton | 28 | 1,127.4 | 4 | 0 | 0 | 0 | 0 | 0 |
| Princeton | 25 | 675.5 | 0 | 1 | 0 | 0 | 1 | 0 |
| Provincetown | 46 | 1,762.4 | 2 | 0 | 0 | 0 | 0 | 1 |
| Quincy | 881 | 644.6 | 46 | 12 | 3 | 0 | 9 | 50 |
| Randolph | 330 | 850.8 | 9 | 4 | 1 | 1 | 4 | 13 |
| Raynham | 155 | 924.2 | 6 | 0 | 0 | 0 | 3 | 6 |
| Reading | 217 | 590.0 | 7 | 6 | 0 | 0 | 1 | 3 |
| Rehoboth | 104 | 742.8 | 5 | 1 | 0 | 0 | 0 | 0 |
| Revere | 434 | 576.6 | 15 | 5 | 0 | 0 | 5 | 25 |
| Richmond | 13 | 1,045.2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rochester | 46 | 887.5 | 1 | 0 | 0 | 0 | 1 | 1 |
| Rockland | 173 | 889.8 | 10 | 3 | 2 | 0 | 1 | 4 |
| Rockport | 82 | 1,070.7 | 2 | 2 | 0 | 0 | 1 | 0 |
| Rowe | 2 | —[2] | 0 | 0 | 0 | 0 | 1 | 0 |
| Rowley | 63 | 893.8 | 3 | 1 | 0 | 0 | 2 | 1 |
| Royalston | 14 | 1,318.2 | 1 | 0 | 0 | 0 | 0 | 0 |
| Russell | 9 | 631 | 0 | 0 | 0 | 0 | 0 | 0 |

| Table 24. Selected Causes of Death by Community, Massachusetts: 2021 (cont.) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| CITY/TOWN | Total Deaths | Age-Adjusted Death Rate[1] | Lung Cancer | Breast Cancer | Motor Vehicle | Homicide | Suicide | Opioid-related[3] |
| Rutland | 64 | 736.1 | 3 | 0 | 0 | 0 | 1 | 5 |
| Salem | 364 | 687.6 | 20 | 3 | 0 | 0 | 4 | 23 |
| Salisbury | 113 | 1,422.5 | 8 | 0 | 1 | 0 | 0 | 5 |
| Sandisfield | 17 | 2,783.1 | 1 | 1 | 0 | 0 | 1 | 1 |
| Sandwich | 214 | 1,145.0 | 6 | 6 | 2 | 0 | 6 | 5 |
| Saugus | 337 | 1,036.0 | 21 | 7 | 5 | 1 | 0 | 11 |
| Savoy | 7 | 1,064.9 | 0 | 0 | 1 | 0 | 0 | 0 |
| Scituate | 150 | 797.6 | 6 | 2 | 2 | 0 | 0 | 3 |
| Seekonk | 137 | 794.7 | 8 | 1 | 2 | 1 | 2 | 3 |
| Sharon | 103 | 414.4 | 5 | 0 | 1 | 0 | 1 | 1 |
| Sheffield | 37 | 989.1 | 2 | 0 | 0 | 0 | 0 | 0 |
| Shelburne | 26 | 1,083.5 | 2 | 0 | 1 | 0 | 0 | 0 |
| Sherborn | 23 | 523.4 | 3 | 0 | 1 | 0 | 2 | 0 |
| Shirley | 60 | 610.7 | 3 | 0 | 1 | 1 | 1 | 2 |
| Shrewsbury | 315 | 523.4 | 19 | 6 | 0 | 1 | 4 | 3 |
| Shutesbury | 10 | 310.6 | 0 | 0 | 0 | 0 | 0 | 0 |
| Somerset | 247 | 1,056.2 | 11 | 3 | 1 | 0 | 1 | 4 |
| Somerville | 417 | 347.3 | 16 | 5 | 3 | 0 | 5 | 17 |
| South Hadley | 205 | 979.4 | 8 | 4 | 3 | 0 | 0 | 6 |
| Southampton | 57 | 908.5 | 1 | 0 | 0 | 0 | 2 | 1 |
| Southborough | 49 | 436.9 | 3 | 0 | 1 | 0 | 2 | 1 |
| Southbridge | 187 | 1,123.3 | 6 | 0 | 0 | 0 | 2 | 11 |
| Southwick | 109 | 1,123.1 | 7 | 1 | 1 | 0 | 0 | 5 |
| Spencer | 125 | 1,106.9 | 4 | 3 | 0 | 0 | 1 | 4 |
| Springfield | 1,571 | 969.5 | 60 | 20 | 21 | 20 | 12 | 84 |
| Sterling | 82 | 920.9 | 2 | 1 | 0 | 0 | 1 | 0 |
| Stockbridge | 20 | 802.5 | 1 | 1 | 0 | 0 | 0 | 0 |
| Stoneham | 248 | 793.5 | 9 | 2 | 3 | 0 | 1 | 6 |
| Stoughton | 309 | 946.4 | 11 | 3 | 4 | 1 | 5 | 9 |
| Stow | 50 | 666.8 | 3 | 3 | 1 | 0 | 0 | 1 |
| Sturbridge | 82 | 753.5 | 2 | 0 | 0 | 0 | 1 | 1 |
| Sudbury | 122 | 474.4 | 2 | 1 | 0 | 0 | 1 | 0 |
| Sunderland | 23 | 568.0 | 3 | 0 | 0 | 0 | 1 | 1 |
| Sutton | 72 | 846.3 | 1 | 2 | 0 | 0 | 3 | 0 |
| Swampscott | 116 | 633.1 | 2 | 2 | 1 | 0 | 1 | 2 |
| Swansea | 182 | 985.1 | 9 | 0 | 3 | 0 | 2 | 7 |
| Taunton | 658 | 1,082.3 | 37 | 14 | 10 | 2 | 9 | 34 |
| Templeton | 94 | 1,153.0 | 3 | 0 | 1 | 0 | 0 | 5 |
| Tewksbury | 324 | 861.0 | 16 | 3 | 2 | 0 | 2 | 11 |
| Tisbury | 41 | 662.3 | 2 | 0 | 0 | 0 | 0 | 2 |
| Tolland | 4 | —[2] | 0 | 0 | 0 | 0 | 0 | 0 |
| Topsfield | 70 | 1,111.7 | 4 | 1 | 0 | 0 | 1 | 0 |
| Townsend | 85 | 952.9 | 7 | 1 | 0 | 0 | 2 | 0 |
| Truro | 31 | 2,127.6 | 1 | 0 | 0 | 0 | 1 | 0 |
| Tyngsborough | 122 | 913.2 | 6 | 4 | 0 | 0 | 5 | 2 |
| Tyringham | 6 | 729.2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Unknown | 1 | —[2] | 0 | 0 | 0 | 0 | 1 | 0 |
| Upton | 68 | 886.9 | 2 | 3 | 1 | 0 | 0 | 3 |
| Uxbridge | 129 | 969.4 | 6 | 3 | 0 | 0 | 0 | 5 |
| Wakefield | 285 | 847.8 | 13 | 3 | 1 | 1 | 2 | 14 |
| Wales | 23 | 1,889.3 | 1 | 0 | 2 | 0 | 0 | 2 |
| Walpole | 224 | 708.2 | 5 | 3 | 1 | 0 | 1 | 5 |

| Table 24. Selected Causes of Death by Community, Massachusetts: 2021 (cont.) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| CITY/TOWN | Total Deaths | Age-Adjusted Death Rate[1] | Lung Cancer | Breast Cancer | Motor Vehicle | Homicide | Suicide | Opioid-related[3] |
| Waltham | 476 | 521.7 | 17 | 1 | 2 | 0 | 7 | 11 |
| Ware | 120 | 1,340.7 | 6 | 0 | 2 | 0 | 1 | 13 |
| Wareham | 356 | 1,648.1 | 14 | 4 | 1 | 0 | 3 | 17 |
| Warren | 60 | 1,144.4 | 1 | 0 | 0 | 0 | 0 | 2 |
| Warwick | 8 | 1,295.0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Washington | 7 | 1,995.1 | 1 | 1 | 0 | 0 | 0 | 0 |
| Watertown | 278 | 500.7 | 9 | 6 | 2 | 1 | 0 | 11 |
| Wayland | 98 | 465.6 | 4 | 0 | 0 | 0 | 0 | 1 |
| Webster | 212 | 1,154.1 | 5 | 2 | 0 | 1 | 1 | 5 |
| Wellesley | 186 | 563.9 | 11 | 0 | 1 | 0 | 2 | 3 |
| Wellfleet | 46 | 1,278.9 | 2 | 0 | 0 | 0 | 1 | 0 |
| Wendell | 9 | 1,385.4 | 2 | 0 | 1 | 0 | 0 | 0 |
| Wenham | 39 | 1,177.6 | 3 | 0 | 0 | 0 | 2 | 1 |
| West Boylston | 92 | 935.8 | 3 | 0 | 0 | 0 | 0 | 1 |
| West Bridgewater | 89 | 1,017.7 | 2 | 1 | 0 | 0 | 1 | 3 |
| West Brookfield | 64 | 1,634.5 | 1 | 0 | 2 | 0 | 1 | 1 |
| West Newbury | 25 | 758.6 | 1 | 1 | 0 | 0 | 0 | 0 |
| West Springfield | 316 | 937.2 | 17 | 7 | 3 | 0 | 2 | 16 |
| West Stockbridge | 8 | 1,108.3 | 0 | 0 | 0 | 0 | 0 | 0 |
| West Tisbury | 17 | 390.9 | 0 | 2 | 0 | 0 | 0 | 0 |
| Westborough | 159 | 442.2 | 8 | 2 | 0 | 0 | 0 | 0 |
| Westfield | 437 | 1,020.5 | 17 | 5 | 3 | 0 | 4 | 18 |
| Westford | 145 | 539.9 | 2 | 1 | 2 | 0 | 1 | 4 |
| Westhampton | 18 | 1,581.9 | 3 | 1 | 0 | 0 | 0 | 0 |
| Westminster | 52 | 505.5 | 1 | 3 | 0 | 0 | 0 | 0 |
| Weston | 89 | 590.8 | 4 | 0 | 0 | 0 | 1 | 0 |
| Westport | 190 | 986.2 | 8 | 2 | 0 | 0 | 2 | 5 |
| Westwood | 152 | 757.0 | 7 | 1 | 1 | 0 | 1 | 1 |
| Weymouth | 596 | 878.2 | 31 | 8 | 7 | 0 | 4 | 19 |
| Whately | 11 | 1,157.9 | 0 | 1 | 0 | 0 | 0 | 1 |
| Whitman | 158 | 1,026.1 | 4 | 2 | 1 | 0 | 4 | 4 |
| Wilbraham | 156 | 965.5 | 7 | 3 | 0 | 1 | 1 | 4 |
| Williamsburg | 35 | 1,682.2 | 1 | 1 | 0 | 0 | 0 | 0 |
| Williamstown | 72 | 1,142.6 | 3 | 1 | 0 | 0 | 1 | 0 |
| Wilmington | 232 | 771.2 | 11 | 3 | 1 | 0 | 0 | 7 |
| Winchendon | 96 | 976.3 | 5 | 2 | 1 | 0 | 2 | 4 |
| Winchester | 132 | 473.7 | 7 | 4 | 0 | 0 | 0 | 1 |
| Windsor | 7 | 1,392.1 | 1 | 0 | 0 | 0 | 1 | 1 |
| Winthrop | 186 | 955.9 | 12 | 3 | 1 | 2 | 1 | 6 |
| Woburn | 401 | 702.7 | 20 | 6 | 1 | 1 | 3 | 11 |
| Worcester | 1,740 | 733.9 | 72 | 15 | 9 | 5 | 19 | 105 |
| Worthington | 9 | 978.6 | 0 | 0 | 0 | 0 | 1 | 2 |
| Wrentham | 119 | 776.9 | 2 | 2 | 0 | 0 | 1 | 1 |

1. Rates are per 100,000 population age-adjusted to the 2000 US Standard Population and calculated using MDPH population estimates for 2020, 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. Rates based on 1 to 4 deaths are not calculated. 3. 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.

**Table 25. Premature Mortality[1] Rates by County, Massachusetts: 2021**

| County | Number of Deaths[2] | PMR[3] (per 100,000 population) |
|---|---|---|
| **Massachusetts** | 26,176 | 308.1 |
| Barnstable | 1,089 | 491.7 |
| Berkshire | 721 | 495.9 |
| Bristol | 2,839 | 383.8 |
| Dukes | 53 | 209.6 |
| Essex | 3,034 | 291.1 |
| Franklin | 312 | 364.1 |
| Hampden | 2,344 | 382.5 |
| Hampshire | 562 | 284.2 |
| Middlesex | 4,582 | 188.0 |
| Nantucket | 34 | 187.1 |
| Norfolk | 2,277 | 233.2 |
| Plymouth | 2,320 | 360.3 |
| Suffolk | 2,457 | 180.6 |
| Worcester | 3,550 | 310.9 |

1. Premature mortality is death before 75 years of age. 2. County deaths may not add to total due to deaths with missing ages.
3. Rates are per 100,000 population age-adjusted to the 2000 US Standard Population for persons ages 0-74 years.

## Table 26. Selected Causes of Death by County, Massachusetts: 2021

| County | Total Deaths | Age-Adjusted Death Rate[1] | Heart Disease | Total Cancer | Lung Cancer | Breast Cancer | Stroke | CLRD[2] | Diabetes | Influenza & Pneumonia | COVID-19 | Motor Vehicle | Homicide | Suicide | Opioids-related[3] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Massachusetts** | **63,158** | **689.0** | **11,954** | **12,466** | **2,733** | **733** | **2,278** | **2,415** | **1,539** | **817** | **4,888** | **460** | **161** | **605** | **2,275** |
| Barnstable | 3,315 | 352.6 | 633 | 657 | 141 | 33 | 153 | 124 | 57 | 41 | 197 | 24 | 3 | 28 | 81 |
| Berkshire | 1,759 | 408.2 | 346 | 328 | 76 | 20 | 78 | 71 | 37 | 15 | 128 | 12 | 3 | 18 | 62 |
| Bristol | 6,247 | 409.7 | 1,137 | 1,187 | 304 | 70 | 196 | 268 | 163 | 92 | 668 | 42 | 14 | 68 | 291 |
| Dukes | 171 | 256.4 | 34 | 44 | 5 | 3 | 9 | 4 | 5 | 3 | 1 | 0 | 0 | 3 | 5 |
| Essex | 7,492 | 343.7 | 1,420 | 1,421 | 334 | 90 | 266 | 274 | 150 | 97 | 630 | 50 | 13 | 75 | 286 |
| Franklin | 717 | 332.3 | 169 | 152 | 40 | 9 | 20 | 28 | 21 | 8 | 26 | 7 | 0 | 8 | 36 |
| Hampden | 5,162 | 424.5 | 964 | 885 | 200 | 62 | 193 | 208 | 145 | 62 | 449 | 57 | 28 | 46 | 212 |
| Hampshire | 1,404 | 339.2 | 294 | 298 | 56 | 19 | 56 | 53 | 33 | 13 | 95 | 10 | 0 | 16 | 45 |
| Middlesex | 12,202 | 300.7 | 2,410 | 2,538 | 541 | 144 | 399 | 445 | 300 | 167 | 825 | 82 | 21 | 115 | 353 |
| Nantucket | 90 | 278.2 | 18 | 18 | 3 | 0 | 3 | 5 | 3 | 1 | 2 | 0 | 0 | 2 | 4 |
| Norfolk | 6,192 | 308.1 | 1,127 | 1,315 | 266 | 74 | 248 | 192 | 130 | 72 | 381 | 36 | 9 | 55 | 162 |
| Plymouth | 5,441 | 378.3 | 1,053 | 1,135 | 225 | 69 | 189 | 211 | 145 | 88 | 418 | 44 | 12 | 45 | 166 |
| Suffolk | 5,158 | 324.6 | 916 | 962 | 203 | 56 | 205 | 160 | 170 | 46 | 398 | 46 | 47 | 53 | 292 |
| Worcester | 7,804 | 363.7 | 1,433 | 1,526 | 339 | 84 | 263 | 372 | 180 | 112 | 669 | 50 | 11 | 72 | 280 |

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. 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). 3. 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.

# APPENDIX

## Technical Notes

## Glossary

## TECHNICAL NOTES

### 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 categories in the race and ethnicity sections (see "Decedent Race" and "Decedent Ethnicity" sections below)*. 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 respondents reporting Hispanic/Latino ethnicity are included in the Hispanic/Latino category regardless of race. Even though we bridge responses down to seven categories (American Indian / Alaska Native NH, Asian/Pacific Islander NH, Black NH, Hispanic, White NH, Other NH, and Unknown) not all categories are used in each table or figure that compares race and ethnicity data. There are well-known difficulties in calculating accurate mortality rates for smaller populations such as Asian/Pacific Islanders and Native Americans. Please use caution when interpreting these small numbers. When numbers are below a certain threshold, they are suppressed to protect privacy and ensure statistical stability (see "Limitations of Small Numbers" below). Not all race groups are presented in the tables and graphs due to small numbers of events.

> **Note on Cabo Verdean Race Categorization:** Prior to launching the VIP death application in September 2014, "Cape Verdean" [20] 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"[1] 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 Massachusetts Department of Public Health (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.

### Decedent Race

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

[1] 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, the death worksheet still used the name "Cape Verdean".

**Decedent Race**

Enter race to appear on death certificate: _____

**Decedent Ethnicity**

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

**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.

**POPULATION ESTIMATES**

State, County, and Small Area Population Estimates 2011-2020, version 2020, Massachusetts Department of Public Health, Bureau of Environmental Health. Population estimates used for years following the decennial census were developed by the University of Massachusetts Donahue Institute (UMDI) in partnership with the Massachusetts Department of Public Health, Bureau of Environmental Health. Detailed population estimates at fine levels of geography are prone to estimation error. Estimated error was best described by age and population size and was used to adjust final population numbers, however a margin of error exists for all estimates.

## 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 Pneumonia[1] Deaths: Massachusetts, 1996-2000**

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

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

Looking 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.

## 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.

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

**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:

$$\text{Crude death rate} = \frac{\text{Number of resident deaths in a year}}{\text{Number of residents}} \times 100{,}000$$

**Death Certificate**
A vital record can be signed by a licensed physician doctor (which includes medical examiners) or a Nurse Practitioner. Starting in 2016 Physician Assistants (PA) could also sign. Some 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, use except for the ICD-9, which was used 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 and Comparability Ratios

| Cause of Death | ICD-10 Code | ICD-9 Code | Comparability Ratio |
|---|---|---|---|
| **Infectious and Parasitic Diseases** | A00-B99 | 001-139 | **N/A** |
| Septicemia | A40-A41 | 038 | 1.1949 |
| Human Immunodeficiency Virus (HIV) disease | B20-B24 | 042-044 | 1.0637[1] and 1.1448[2] |
| **Cancer (Malignant Neoplasms)** | C00-C97 | 140-208 | 1.0068 |
| of esophagus | C15 | 150 | 0.9965 |
| of stomach | C16 | 151 | 1.0063 |
| of colon, rectum, rectum and anus | C18-C21 | 153-154, 159.9 | 0.9993 |
| of pancreas | C25 | 157 | 0.9980 |
| of trachea, bronchus and lung | C33-C34 | 162 | 0.9837 |
| of female breast | C50 | 174 | 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 (except 202.4) | 0.9781 |
| Leukemia | C91-C95 | 202.4, 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--29 | 0.9858 |
| **Stroke (Cerebrovascular Disease)** | I60-I69 | 430-38 | 1.0588 |
| **Influenza and Pneumonia** | J10-J18 | 480--87 | 0.6982 |
| **COVID-19** | U071, B342 | N/A | N/A |
| **Chronic Lower Respiratory Diseases[3]** | J40-J47 | 490--96 | 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 | 760-779 | 1.0658 |
| **Ill-defined Conditions** | R00-R99 | 780-797, 798.1-798.9, 799 | N/A |
| Sudden infant death syndrome (SIDS) | R95 | 798.0 | N/A |
| **External Causes of Injuries and Poisonings (intentional, unintentional and of undetermined intent)** | V01-Y89 | E800-E999 | N/A |
| Accidents (Unintentional Injuries) | V01-X59, Y85-Y86 | E800-E949 | 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, | E810-E825 | 0.9754[4] |

| | | | |
|---|---|---|---|
| | V88.0-V88.8, V89.0, V89.2 | | |
| Injury to pedestrian | V02-V04, V09.0, V09 | | N/A |
| Injury to pedal cyclist | V12-V14, V19.0, V19.2, V19.4, V19.5, V19.6 | | N/A |
| Injury to motorcyclist | V20-V29 | | N/A |
| Injury to occupant | V30-V79, V80.3, V80.4, V80.5, V81.0,V81.1, V82.0, V82.1, V83-V86 | | N/A |
| Other and unspecified | Residual | | N/A |
| Unintentional non-transport injuries | W00-X59, Y86 | E850-E869, E880-E928, E929.2-E929.9 | 1.0763 |
| Falls | W00-W19 | | N/A |
| Hanging, strangulation or suffocation | W75-W84 | | N/A |
| Drowning or submersion | W65-W74 | | N/A |
| Smoke, fire and flames and contact with heat and hot substances | X00-X19 | | N/A |
| Poisoning | X40-X49 | | N/A |
| Firearm | W32-W34 | | N/A |
| Other and unspecified | Residual | | N/A |
| Suicide | X60-X84, Y87.0 | E950-E959 | 0.9962 |
| Poisoning | X60-X69 | | N/A |
| Hanging, strangulation or suffocation | X70 | | N/A |
| Firearm | X72-X74 | | N/A |
| Other and unspecified | Residual | | N/A |
| Homicide | X85-Y09, Y87.1 | E960-E969 | 0.9983 |
| Poisoning | Y10-Y19 | | N/A |
| Drowning or submersion | Y21 | | N/A |
| Other and unspecified | Residual | | N/A |
| Injuries of undetermined intent | Y10-Y34,Y87.2,Y89.9 | E980-E989 | * |
| Poisoning | Y10-Y19 | | N/A |
| Drowning or submersion | Y21 | | N/A |
| Other and unspecified | Residual | | N/A |
| Legal Intervention | Y35-Y36, Y89.0, Y89.1 | | N/A |
| Firearm | Y35.0 | | N/A |
| Adverse Effects | Y40-Y59, Y60-Y84, Y88 | | N/A |
| Drugs | Y40-Y59, Y88.0 | | N/A |
| Medical Care | Y60-Y84, Y88.1, Y88.2, Y88.3 | | N/A |

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. 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. This is the revised comparability ratio for motor vehicle-related injuries, effective May 2001.

## Table A2. 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 A3. Population Estimates[1] for Massachusetts Communities, 2020

| TOWN NAME | COUNTY | CHNA | POPULATION | TOWN NAME | COUNTY | CHNA | POPULATION |
|---|---|---|---|---|---|---|---|
| Abington | Plymouth | 22 | 17,062 | Concord | Middlesex | 15 | 18,491 |
| Acton | Middlesex | 15 | 24,021 | Conway | Franklin | 2 | 1,761 |
| Acushnet | Bristol | 26 | 10,559 | Cummington | Hampshire | 3 | 829 |
| Adams | Berkshire | 1 | 8,166 | Dalton | Berkshire | 1 | 6,330 |
| Agawam | Hampden | 4 | 28,692 | Danvers | Essex | 14 | 28,087 |
| Alford | Berkshire | 1 | 486 | Dartmouth | Bristol | 26 | 33,783 |
| Amesbury | Essex | 12 | 17,366 | Dedham | Norfolk | 18 | 25,364 |
| Amherst | Hampshire | 3 | 39,263 | Deerfield | Franklin | 2 | 5,090 |
| Andover | Essex | 11 | 36,569 | Dennis | Barnstable | 27 | 14,674 |
| Aquinnah (Gay Head) | Dukes | 27 | 439 | Dighton | Bristol | 24 | 8,101 |
| Arlington | Middlesex | 17 | 46,308 | Douglas | Worcester | 6 | 8,983 |
| Ashburnham | Worcester | 9 | 6,315 | Dover | Norfolk | 18 | 5,923 |
| Ashby | Middlesex | 9 | 3,193 | Dracut | Middlesex | 10 | 32,617 |
| Ashfield | Franklin | 2 | 1,695 | Dudley | Worcester | 5 | 11,921 |
| Ashland | Middlesex | 7 | 18,832 | Dunstable | Middlesex | 10 | 3,358 |
| Athol | Worcester | 2 | 11,945 | Duxbury | Plymouth | 23 | 16,090 |
| Attleboro | Bristol | 24 | 46,461 | East Bridgewater | Plymouth | 22 | 14,440 |
| Auburn | Worcester | 8 | 16,889 | East Brookfield | Worcester | 5 | 2,224 |
| Avon | Norfolk | 22 | 4,777 | East Longmeadow | Hampden | 4 | 16,430 |
| Ayer | Middlesex | 9 | 8,479 | Eastham | Barnstable | 27 | 5,752 |
| Barnstable | Barnstable | 27 | 48,916 | Easthampton | Hampshire | 3 | 16,211 |
| Barre | Worcester | 9 | 5,530 | Easton | Bristol | 22 | 25,058 |
| Becket | Berkshire | 1 | 1,931 | Edgartown | Dukes | 27 | 5,168 |
| Bedford | Middlesex | 15 | 14,383 | Egremont | Berkshire | 1 | 1,372 |
| Belchertown | Hampshire | 3 | 15,350 | Erving | Franklin | 2 | 1,665 |
| Bellingham | Norfolk | 6 | 16,945 | Essex | Essex | 13 | 3,675 |
| Belmont | Middlesex | 17 | 27,295 | Everett | Middlesex | 16 | 49,075 |
| Berkley | Bristol | 24 | 6,764 | Fairhaven | Bristol | 26 | 15,924 |
| Berlin | Worcester | 9 | 3,158 | Fall River | Bristol | 25 | 94,000 |
| Bernardston | Franklin | 2 | 2,102 | Falmouth | Barnstable | 27 | 32,517 |
| Beverly | Essex | 13 | 42,670 | Fitchburg | Worcester | 9 | 41,946 |
| Billerica | Middlesex | 10 | 42,119 | Florida | Berkshire | 1 | 694 |
| Blackstone | Worcester | 6 | 9,208 | Foxborough | Norfolk | 7 | 18,618 |
| Blandford | Hampden | 4 | 1,215 | Framingham | Middlesex | 7 | 72,362 |
| Bolton | Worcester | 9 | 5,665 | Franklin | Norfolk | 6 | 33,261 |
| Boston | Suffolk | 19 | 675,647 | Freetown | Bristol | 26 | 9,206 |
| Bourne | Barnstable | 27 | 20,452 | Gardner | Worcester | 9 | 21,287 |
| Boxborough | Middlesex | 15 | 5,506 | Georgetown | Essex | 12 | 8,470 |
| Boxford | Essex | 12 | 8,203 | Gill | Franklin | 2 | 1,551 |
| Boylston | Worcester | 8 | 4,849 | Gloucester | Essex | 13 | 29,729 |
| Braintree | Norfolk | 20 | 39,143 | Goshen | Hampshire | 3 | 960 |
| Brewster | Barnstable | 27 | 10,318 | Gosnold | Dukes | 27 | 70 |
| Bridgewater | Plymouth | 22 | 28,633 | Grafton | Worcester | 8 | 19,664 |
| Brimfield | Hampden | 5 | 3,694 | Granby | Hampshire | 3 | 6,110 |
| Brockton | Plymouth | 22 | 105,643 | Granville | Hampden | 4 | 1,538 |
| Brookfield | Worcester | 5 | 3,439 | Great Barrington | Berkshire | 1 | 7,172 |
| Brookline | Norfolk | 19 | 63,191 | Greenfield | Franklin | 2 | 17,768 |
| Buckland | Franklin | 2 | 1,816 | Groton | Middlesex | 9 | 11,315 |
| Burlington | Middlesex | 15 | 26,377 | Groveland | Essex | 12 | 6,752 |
| Cambridge | Middlesex | 17 | 118,403 | Hadley | Hampshire | 3 | 5,325 |
| Canton | Norfolk | 20 | 24,370 | Halifax | Plymouth | 23 | 7,749 |
| Carlisle | Middlesex | 15 | 5,237 | Hamilton | Essex | 13 | 7,561 |
| Carver | Plymouth | 23 | 11,645 | Hampden | Hampden | 4 | 4,966 |
| Charlemont | Franklin | 2 | 1,185 | Hancock | Berkshire | 1 | 757 |
| Charlton | Worcester | 5 | 13,315 | Hanover | Plymouth | 23 | 14,833 |
| Chatham | Barnstable | 27 | 6,594 | Hanson | Plymouth | 23 | 10,639 |
| Chelmsford | Middlesex | 10 | 36,392 | Hardwick | Worcester | 9 | 2,667 |
| Chelsea | Suffolk | 19 | 40,787 | Harvard | Worcester | 9 | 6,851 |
| Cheshire | Berkshire | 1 | 3,258 | Harwich | Barnstable | 27 | 13,440 |
| Chester | Hampden | 21 | 1,228 | Hatfield | Hampshire | 3 | 3,352 |
| Chesterfield | Hampshire | 3 | 1,186 | Haverhill | Essex | 12 | 67,787 |
| Chicopee | Hampden | 21 | 55,560 | Hawley | Franklin | 2 | 351 |
| Chilmark | Dukes | 27 | 1,212 | Heath | Franklin | 2 | 723 |
| Clarksburg | Berkshire | 1 | 1,657 | Hingham | Plymouth | 20 | 24,284 |
| Clinton | Worcester | 9 | 15,428 | Hinsdale | Berkshire | 1 | 1,919 |
| Cohasset | Norfolk | 20 | 8,381 | Holbrook | Norfolk | 22 | 11,405 |
| Colrain | Franklin | 2 | 1,606 | Holden | Worcester | 8 | 19,905 |

## Table A3 (continued). Population Estimates[1] for Massachusetts Communities, 2020

| TOWN NAME | COUNTY | CHNA | POPULATION | TOWN NAME | COUNTY | CHNA | POPULATION |
|---|---|---|---|---|---|---|---|
| Holland | Hampden | 5 | 2,603 | New Marlborough | Berkshire | 1 | 1,528 |
| Holliston | Middlesex | 7 | 14,996 | New Salem | Franklin | 2 | 983 |
| Holyoke | Hampden | 21 | 38,238 | Newbury | Essex | 12 | 6,716 |
| Hopedale | Worcester | 6 | 6,017 | Newburyport | Essex | 12 | 18,289 |
| Hopkinton | Middlesex | 7 | 18,758 | Newton | Middlesex | 18 | 88,923 |
| Hubbardston | Worcester | 9 | 4,328 | Norfolk | Norfolk | 7 | 11,662 |
| Hudson | Middlesex | 7 | 20,092 | North Adams | Berkshire | 1 | 12,961 |
| Hull | Plymouth | 20 | 10,072 | North Andover | Essex | 11 | 30,915 |
| Huntington | Hampshire | 21 | 2,094 | North Attleboro | Bristol | 24 | 30,834 |
| Ipswich | Essex | 13 | 13,785 | North Brookfield | Worcester | 5 | 4,735 |
| Kingston | Plymouth | 23 | 13,708 | North Reading | Middlesex | 16 | 15,554 |
| Lakeville | Plymouth | 24 | 11,523 | Northampton | Hampshire | 3 | 29,571 |
| Lancaster | Worcester | 9 | 8,441 | Northborough | Worcester | 7 | 15,741 |
| Lanesborough | Berkshire | 1 | 3,038 | Northbridge | Worcester | 6 | 16,335 |
| Lawrence | Essex | 11 | 89,143 | Northfield | Franklin | 2 | 2,866 |
| Lee | Berkshire | 1 | 5,788 | Norton | Bristol | 24 | 19,202 |
| Leicester | Worcester | 8 | 11,087 | Norwell | Plymouth | 20 | 11,351 |
| Lenox | Berkshire | 1 | 5,095 | Norwood | Norfolk | 20 | 31,611 |
| Leominster | Worcester | 9 | 43,782 | Oak Bluffs | Dukes | 27 | 5,341 |
| Leverett | Franklin | 2 | 1,865 | Oakham | Worcester | 9 | 1,851 |
| Lexington | Middlesex | 15 | 34,454 | Orange | Franklin | 2 | 7,569 |
| Leyden | Franklin | 2 | 733 | Orleans | Barnstable | 27 | 6,307 |
| Lincoln | Middlesex | 15 | 7,014 | Otis | Berkshire | 1 | 1,634 |
| Littleton | Middlesex | 15 | 10,141 | Oxford | Worcester | 5 | 13,347 |
| Longmeadow | Hampden | 4 | 15,853 | Palmer | Hampden | 4 | 12,448 |
| Lowell | Middlesex | 10 | 115,554 | Paxton | Worcester | 8 | 5,004 |
| Ludlow | Hampden | 21 | 21,002 | Peabody | Essex | 14 | 54,481 |
| Lunenburg | Worcester | 9 | 11,782 | Pelham | Hampshire | 3 | 1,280 |
| Lynn | Essex | 14 | 101,253 | Pembroke | Plymouth | 23 | 18,361 |
| Lynnfield | Essex | 14 | 13,000 | Pepperell | Middlesex | 9 | 11,604 |
| Malden | Middlesex | 16 | 66,263 | Peru | Berkshire | 1 | 814 |
| Manchester | Essex | 13 | 5,395 | Petersham | Worcester | 2 | 1,194 |
| Mansfield | Bristol | 24 | 23,860 | Phillipston | Worcester | 2 | 1,726 |
| Marblehead | Essex | 14 | 20,441 | Pittsfield | Berkshire | 1 | 43,927 |
| Marion | Plymouth | 26 | 5,347 | Plainfield | Hampshire | 3 | 633 |
| Marlborough | Middlesex | 7 | 41,793 | Plainville | Norfolk | 7 | 9,945 |
| Marshfield | Plymouth | 23 | 25,825 | Plymouth | Plymouth | 23 | 61,217 |
| Mashpee | Barnstable | 27 | 15,060 | Plympton | Plymouth | 23 | 2,930 |
| Mattapoisett | Plymouth | 26 | 6,508 | Princeton | Worcester | 9 | 3,495 |
| Maynard | Middlesex | 7 | 10,746 | Provincetown | Barnstable | 27 | 3,664 |
| Medfield | Norfolk | 7 | 12,799 | Quincy | Norfolk | 20 | 101,636 |
| Medford | Middlesex | 16 | 59,659 | Randolph | Norfolk | 20 | 34,984 |
| Medway | Norfolk | 6 | 13,115 | Raynham | Bristol | 24 | 15,142 |
| Melrose | Middlesex | 16 | 29,817 | Reading | Middlesex | 16 | 25,518 |
| Mendon | Worcester | 6 | 6,228 | Rehoboth | Bristol | 24 | 12,502 |
| Merrimac | Essex | 12 | 6,723 | Revere | Suffolk | 19 | 62,186 |
| Methuen | Essex | 11 | 53,059 | Richmond | Berkshire | 1 | 1,407 |
| Middleborough | Plymouth | 24 | 24,245 | Rochester | Plymouth | 26 | 5,717 |
| Middlefield | Hampshire | 3 | 385 | Rockland | Plymouth | 23 | 17,803 |
| Middleton | Essex | 11 | 9,779 | Rockport | Essex | 13 | 6,992 |
| Milford | Worcester | 6 | 30,379 | Rowe | Franklin | 2 | 424 |
| Millbury | Worcester | 8 | 13,831 | Rowley | Essex | 12 | 6,161 |
| Millis | Norfolk | 7 | 8,460 | Royalston | Worcester | 2 | 1,250 |
| Millville | Worcester | 6 | 3,174 | Russell | Hampden | 4 | 1,643 |
| Milton | Norfolk | 20 | 28,630 | Rutland | Worcester | 9 | 9,049 |
| Monroe | Franklin | 2 | 117 | Salem | Essex | 14 | 44,480 |
| Monson | Hampden | 4 | 8,150 | Salisbury | Essex | 12 | 9,236 |
| Montague | Franklin | 2 | 8,580 | Sandisfield | Berkshire | 1 | 989 |
| Monterey | Berkshire | 1 | 1,095 | Sandwich | Barnstable | 27 | 20,259 |
| Montgomery | Hampden | 4 | 819 | Saugus | Essex | 14 | 28,619 |
| Mt. Washington | Berkshire | 1 | 160 | Savoy | Berkshire | 1 | 645 |
| Nahant | Essex | 14 | 3,334 | Scituate | Plymouth | 20 | 19,063 |
| Nantucket | Nantucket | 27 | 14,255 | Seekonk | Bristol | 24 | 15,531 |
| Natick | Middlesex | 7 | 37,006 | Sharon | Norfolk | 20 | 18,575 |
| Needham | Norfolk | 18 | 32,091 | Sheffield | Berkshire | 1 | 3,327 |
| New Ashford | Berkshire | 1 | 250 | Shelburne | Franklin | 2 | 1,884 |
| New Bedford | Bristol | 26 | 101,079 | Sherborn | Middlesex | 7 | 4,401 |
| New Braintree | Worcester | 9 | 996 | Shirley | Middlesex | 9 | 7,431 |

## Table A3 (continued). Population Estimates[1] for Massachusetts Communities, 2020

| TOWN NAME | COUNTY | CHNA | POPULATION |
|---|---|---|---|
| Shrewsbury | Worcester | 8 | 38,325 |
| Shutesbury | Franklin | 2 | 1,717 |
| Somerset | Bristol | 25 | 18,303 |
| Somerville | Middlesex | 17 | 81,045 |
| South Hadley | Hampshire | 3 | 18,150 |
| Southampton | Hampshire | 3 | 6,224 |
| Southborough | Worcester | 7 | 10,450 |
| Southbridge | Worcester | 5 | 17,740 |
| Southwick | Hampden | 4 | 9,232 |
| Spencer | Worcester | 5 | 11,992 |
| Springfield | Hampden | 4 | 155,929 |
| Sterling | Worcester | 9 | 7,985 |
| Stockbridge | Berkshire | 1 | 2,018 |
| Stoneham | Middlesex | 16 | 23,244 |
| Stoughton | Norfolk | 22 | 29,281 |
| Stow | Middlesex | 7 | 7,174 |
| Sturbridge | Worcester | 5 | 9,867 |
| Sudbury | Middlesex | 7 | 18,934 |
| Sunderland | Franklin | 2 | 3,663 |
| Sutton | Worcester | 6 | 9,357 |
| Swampscott | Essex | 14 | 15,111 |
| Swansea | Bristol | 25 | 17,144 |
| Taunton | Bristol | 24 | 59,408 |
| Templeton | Worcester | 9 | 8,149 |
| Tewksbury | Middlesex | 10 | 31,342 |
| Tisbury | Dukes | 27 | 4,815 |
| Tolland | Hampden | 4 | 471 |
| Topsfield | Essex | 13 | 6,569 |
| Townsend | Middlesex | 9 | 9,127 |
| Truro | Barnstable | 27 | 2,454 |
| Tyngsborough | Middlesex | 10 | 12,380 |
| Tyringham | Berkshire | 1 | 427 |
| Upton | Worcester | 6 | 8,000 |
| Uxbridge | Worcester | 6 | 14,162 |
| Wakefield | Middlesex | 16 | 27,090 |
| Wales | Hampden | 5 | 1,832 |
| Walpole | Norfolk | 7 | 26,383 |
| Waltham | Middlesex | 18 | 65,218 |
| Ware | Hampshire | 3 | 10,066 |
| Wareham | Plymouth | 26 | 23,303 |
| Warren | Worcester | 5 | 4,975 |
| Shrewsbury | Worcester | 8 | 38,325 |
| Warwick | Franklin | 2 | 780 |
| Washington | Berkshire | 1 | 494 |
| Watertown | Middlesex | 17 | 35,329 |
| Wayland | Middlesex | 7 | 13,943 |
| Webster | Worcester | 5 | 17,776 |
| Wellesley | Norfolk | 18 | 29,550 |
| Wellfleet | Barnstable | 27 | 3,566 |
| Wendell | Franklin | 2 | 924 |
| Wenham | Essex | 13 | 4,979 |
| West Boylston | Worcester | 8 | 7,877 |
| West Bridgewater | Plymouth | 22 | 7,707 |
| West Brookfield | Worcester | 5 | 3,833 |
| West Newbury | Essex | 12 | 4,500 |
| West Springfield | Hampden | 4 | 28,835 |
| West Stockbridge | Berkshire | 1 | 1,343 |
| West Tisbury | Dukes | 27 | 3,555 |
| Westborough | Worcester | 7 | 21,567 |
| Westfield | Hampden | 21 | 40,834 |
| Westford | Middlesex | 10 | 24,643 |
| Westhampton | Hampshire | 3 | 1,622 |
| Westminster | Worcester | 9 | 8,213 |
| Weston | Middlesex | 18 | 11,851 |
| Westport | Bristol | 25 | 16,339 |
| Westwood | Norfolk | 18 | 16,266 |
| Weymouth | Norfolk | 20 | 57,437 |
| Whately | Franklin | 2 | 1,607 |
| Whitman | Plymouth | 22 | 15,121 |
| Wilbraham | Hampden | 4 | 14,613 |
| Williamsburg | Hampshire | 3 | 2,504 |
| Williamstown | Berkshire | 1 | 7,513 |
| Wilmington | Middlesex | 15 | 23,349 |
| Winchendon | Worcester | 9 | 10,364 |
| Winchester | Middlesex | 15 | 22,970 |
| Windsor | Berkshire | 1 | 831 |
| Winthrop | Suffolk | 19 | 19,316 |
| Woburn | Middlesex | 15 | 40,876 |
| Worcester | Worcester | 8 | 206,518 |
| Worthington | Hampshire | 3 | 1,193 |
| Wrentham | Norfolk | 7 | 12,178 |
| Yarmouth | Barnstable | 27 | 25,023 |

1. State, County, and Small Area Population Estimates 2011-2020, version 2020, Massachusetts Department of Public Health, Bureau of Environmental Health. Population estimates used for years following the decennial census were developed by the University of Massachusetts Donahue Institute (UMDI) in partnership with the Massachusetts Department of Public Health, Bureau of Environmental Health. Detailed population estimates at fine levels of geography are prone to estimation error. Estimated error was best described by age and population size and was used to adjust final population numbers. However, a margin of error exists for all estimates.

## Table A4. 2020 Massachusetts Population Estimates[1] By Age Group, Gender, Race and Hispanic Ethnicity[1] (mutually exclusive)

| AGE | GENDER | TOTAL | American Indian/ Alaska Native Non-Hispanic | Asian/PI Non-Hispanic | Black Non-Hispanic | Hispanic | White Non-Hispanic |
|---|---|---|---|---|---|---|---|
| Under 1 | Male | 35,672 | 52 | 2,558 | 2,805 | 7,825 | 18,860 |
| | Female | 33,809 | 43 | 2,281 | 2,718 | 7,681 | 17,960 |
| | Total | 69,481 | 94 | 4,840 | 5,523 | 15,506 | 36,820 |
| 1 TO 4 | Male | 147,055 | 217 | 10,530 | 11,992 | 31,132 | 80,547 |
| | Female | 140,340 | 174 | 9,866 | 11,762 | 30,288 | 76,048 |
| | Total | 287,395 | 390 | 20,396 | 23,753 | 61,420 | 156,595 |
| 5 TO 14 | Male | 384,249 | 581 | 28,231 | 31,867 | 73,935 | 217,689 |
| | Female | 369,000 | 603 | 27,512 | 30,849 | 71,282 | 208,082 |
| | Total | 753,249 | 1,184 | 55,743 | 62,717 | 145,217 | 425,771 |
| 15 TO 24 | Male | 474,461 | 649 | 37,276 | 34,836 | 81,358 | 285,598 |
| | Female | 476,372 | 629 | 41,573 | 35,226 | 76,176 | 287,559 |
| | Total | 950,832 | 1,278 | 78,849 | 70,062 | 157,535 | 573,157 |
| 25 TO 34 | Male | 510,419 | 783 | 46,840 | 39,872 | 83,365 | 313,282 |
| | Female | 504,954 | 717 | 50,972 | 38,413 | 74,644 | 312,597 |
| | Total | 1,015,373 | 1,500 | 97,811 | 78,286 | 158,008 | 625,878 |
| 35 TO 44 | Male | 427,388 | 568 | 40,046 | 32,899 | 63,018 | 274,290 |
| | Female | 440,898 | 567 | 45,806 | 33,490 | 63,154 | 278,727 |
| | Total | 868,285 | 1,136 | 85,852 | 66,390 | 126,172 | 553,016 |
| 45 TO 54 | Male | 443,979 | 640 | 32,698 | 30,208 | 45,517 | 321,119 |
| | Female | 472,121 | 649 | 36,200 | 32,100 | 50,275 | 337,433 |
| | Total | 916,100 | 1,290 | 68,898 | 62,309 | 95,791 | 658,552 |
| 55 TO 64 | Male | 465,286 | 703 | 23,081 | 26,486 | 30,725 | 373,344 |
| | Female | 502,849 | 782 | 26,221 | 29,299 | 34,311 | 399,928 |
| | Total | 968,135 | 1,485 | 49,302 | 55,785 | 65,036 | 773,272 |
| 65 TO 74 | Male | 320,091 | 450 | 13,470 | 14,047 | 14,173 | 272,137 |
| | Female | 371,695 | 472 | 16,628 | 17,725 | 19,524 | 310,586 |
| | Total | 691,786 | 923 | 30,098 | 31,772 | 33,698 | 582,723 |
| 75 TO 84 | Male | 147,071 | 224 | 6,462 | 5,471 | 5,303 | 127,411 |
| | Female | 198,490 | 210 | 8,134 | 8,996 | 8,905 | 169,391 |
| | Total | 345,561 | 434 | 14,595 | 14,467 | 14,208 | 296,803 |
| 85 + | Male | 55,345 | 102 | 2,334 | 1,926 | 1,699 | 48,643 |
| | Female | 108,371 | 111 | 3,256 | 3935 | 3,533 | 96,235 |
| | Total | 163,716 | 213 | 5,590 | 5,862 | 5,231 | 144,878 |
| **ALL AGES** | **Male** | 3,411,016 | 4,969 | 243,527 | 232,410 | 438,050 | 2,332,921 |
| | **Female** | 3,618,898 | 4,957 | 268,447 | 244,515 | 439,772 | 2,494,546 |
| | **Total** | 7,029,914 | 9,927 | 511,973 | 476,925 | 877,822 | 4,827,467 |

1. State, County, and Small Area Population Estimates 2011-2020, version 2020, Massachusetts Department of Public Health, Bureau of Environmental Health. The University of Massachusetts Donahue Institute (UMDI) developed population estimates for years following the decennial census in partnership with the Massachusetts Department of Public Health, Bureau of Environmental Health. Detailed population estimates at fine levels of geography are prone to estimation error. Estimated error was best described by age and population size and was used to adjust final population numbers, however a margin of error exists for all estimates.

# Massachusetts Death Certificate

Commonwealth of Massachusetts
Registry of Vital Records and Statistics
CERTIFICATE OF DEATH

Form R-301 08012015

State File #
Registered #

**DECEDENT**

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

**MEDICAL CERTIFIER**

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.

**DISPOSITION**

Funeral Licensee/ Designee | Lic #
Facility/Addr.
Immediate Disposition
Date of Immediate Disposition
Place/Address

Date of Record
Date of Amendment

| |
|---|
| *If U.S. war veteran, specify war/conflict(s)*<br><br>*Branch of military (most recent)* *Rank/organization/outfit(most recent)*<br><br>*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:*<br>*Ethnicity:* | | | |
| *Informant Name*<br><br>*Addr.* | | | *Relationship* |
| *Date Disposition Permit Issued:*<br>*State Tracking No.* | | *Board of Health Agent*<br>*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.