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Registry of Vital Records and Statistics
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December 19th, 2024

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 2022.

Sincerely,

Robert Goldstein
Commissioner
Department of Public Health

MAURA T. HEALEY
GOVERNOR

KIMBERLEY DRISCOLL
LIEUTENANT GOVERNOR

KATHLEEN E. WALSH
SECRETARY

ROBERT GOLDSTEIN, MD, PhD
COMMISSIONER

Massachusetts Deaths 2022

November 2024

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.

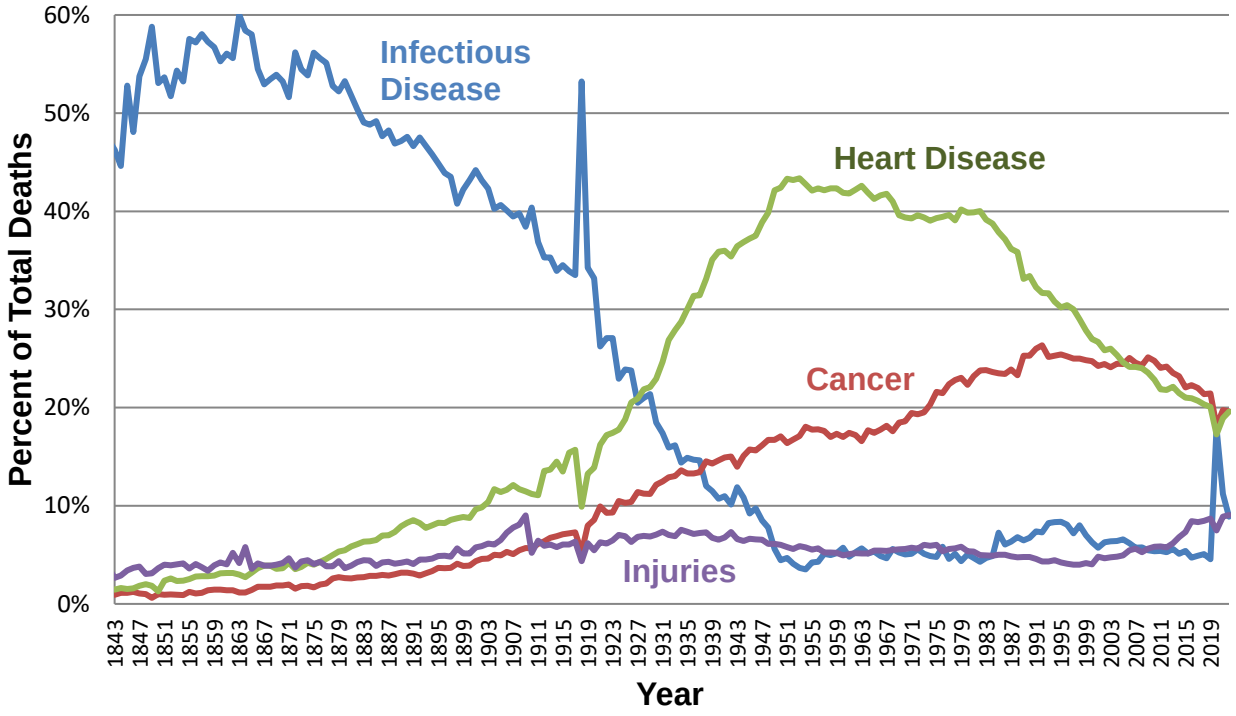
***The commissioner shall prepare from the** birth, marriage and **death records received by him under the provisions of chapter forty-six**, and from the divorce returns received by him under the provisions of section forty-six of chapter two hundred and eight, **such statistical tables as he deems 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 2022



Acknowledgments

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The Registry of Vital Records and Statistics staff, including Michael Baker, Pamela Corbin, Alex Forman, Denise O'Gara, Margaret Riley, Jennifer Smith, Monica Smith, and Maria Vu, worked to collect the data in this report.

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 critical moments: when they are born, get married or divorced, and when they die. Public health is 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. We hope that the information in this report helps inform us of our successes to date in those efforts and maps out where additional efforts are needed.

Four years after COVID-19 first arrived in Massachusetts leading to the highest number of deaths of Massachusetts' residents recorded in the Commonwealth's history, we continue our prevention efforts and monitoring of the impact of the pandemic on our communities. In 2022, COVID-19 mortality decreased, but was still the 4th leading cause of death, with more than 3,200 residents lost to the disease. Preliminary 2023 data show COVID-19 deaths decreased to just over 1,000 deaths among Commonwealth residents, similar to the impact of influenza and pneumonia, indicating prevention and treatment efforts have advanced significantly since the first wave of infections.

Despite this reduction, the data are clear: the impact of COVID-19 is more than tallying up deaths directly due to the disease. When we compare non-COVID-19 mortality in 2022 to overall mortality in 2019, it is still elevated for all racial/ethnic groups except for White non-Hispanic residents. It is unclear how various changes may have contributed to this increase in mortality, but delays in care, economic instability, more sedentary lifestyles, and reduced social interactions could have played a part in poorer outcomes. Our recovery efforts should consider the whole person and social determinants of health, not solely vaccinations and access to care.

Additionally, HIV/AIDS deaths among all residents and fatalities from poisoning amongst Black non-Hispanic residents increased in 2022, showing that we must continue to be vigilant in all dimensions of our public health efforts.

Selected Takeaways

- After an initial surge of COVID-19-related deaths in 2020, deaths of Massachusetts residents seem to have stabilized: deaths have come down by about 50% of the initial increase in 2020 and were similar for 2021 and 2022. While the all-cause age-adjusted mortality rate (hereafter: mortality rate) decreased from 2021 to 2022 for Asian/Pacific Islander non-Hispanic (4.3%), and for Hispanic (5.4%) residents, the mortality rate increased for American Indian/Alaska Native non-Hispanic (15.0%) and Black non-Hispanic residents (5.4%), while staying roughly the same for White non-Hispanic residents, highlighting the inequities of the pandemic recovery. Additionally, for all racial/ethnic groups, the mortality rates are still elevated over 2019 rates and disproportionately so for residents of color (Table 1).
  - In 2022, the mortality rate was similar to 2021 but remained above pre-pandemic rates (Table 1). For White non-Hispanic residents, mortality due to all causes other than COVID-19 (672.1 deaths per 100,000 residents) was similar to the overall mortality rate in 2019 (676.3 deaths per 100,000 residents; Table 1 and Figure 5). For residents of color, however, the 2022 mortality rate due to all causes other than COVID-19 remained elevated: for 2022 compared to 2019, the non-COVID mortality rate for American Indian/Alaska Native non-Hispanic residents was 60.5% higher, for Asian/Pacific Islander non-Hispanic residents it was 9.5% higher, for Black non-Hispanic residents it was 25.2% higher, and for Hispanic residents it was 15.9% higher (Table 1 and Figure 5). **The premature mortality rate (PMR) due to all causes other than COVID-19 was higher in 2022 than pre-pandemic PMR for all racial/ethnic groups (Figure 6).**
  - The average life expectancy of Massachusetts residents slightly increased from 2021 (2021: 80.1 years, 2022: 80.2 years; Table 2), but this is still almost a year less than the 80.9-year life expectancy pre-pandemic in 2019 (Figure 2). American Indian/Alaska Native non-Hispanic individuals experienced a noticeable decline in average life expectancy between 2021 and 2022 (Figure 2). This is also reflected when average life expectancy is examined by gender for American Indian/Alaska Native non-Hispanic people. In 2021, the life expectancy for American Indian/Alaska Native non-Hispanic women was 75.1 years. This life expectancy declined by approximately four years in 2022 to 70.1 years. American Indian/Alaska Native non-Hispanic men's life expectancies decreased by almost three years between 2021 and 2022 (2021: 72.2 years; 2022: 69.4 years; Table 2). Compared to any other racial and ethnic population groups, life expectancy at birth for American Indian/Alaska Native non-Hispanic individuals has remained the lowest from 2015 to 2022.
  - COVID-19 deaths continued to decline in 2022 compared to the first two years of the pandemic (3,217 deaths in 2022; 4,888 deaths in 2021; 9,455 deaths in 2020; Table 4), and it dropped to the fourth leading cause of death overall. However, 2022 was the first year COVID-19 was a leading cause of death for infants under 1 year (Table 4).

While the overall infant mortality rate (IMR) for 2022 was the same as 2021, the neonatal IMR decreased in 2022 (2.2 and 2.4 deaths per 1,000 live births, respectively), and post-neonatal IMR increased in 2022(1.1 and 0.9 deaths per 1,000 live births, respectively; Table 5). There is a striking disparity in infant mortality rates by race and ethnicity. Despite the decline in rates from 2002-2022, infant mortality rates have consistently been highest in the Black non-Hispanic population compared to any other racial and ethnic groups. In 2022, the infant mortality rate among the Black non-Hispanic population was 6 per 1,000 live births compared to 1 per 1,000

live births among the Asian/Pacific islander non-Hispanic population. In 2022, the infant mortality rate among the Black non-Hispanic population was almost 1.4 times higher than the state average.

- Many death trends and themes remained the same in 2022 (*e.g.*, cancer as the leading cause of deaths overall and for all racial/ethnic groups except for Hispanic residents; Tables 4 and 9). However, there were some notable differences in 2022:
  - The mortality rate due to esophageal cancer increased from 3.6 deaths per 100,000 residents in 2021 to 4.2 deaths per 100,000 residents in 2022 (Table 10). The cancers with the greatest change in mortality rate in women were brain and nervous system cancers, which increased from 3.5 deaths per 100,000 female residents in 2021 to 4.2 deaths per 100,000 female residents in 2022. In men, the mortality rate for non-Hodgkins Lymphoma decreased from 6.5 deaths per 100,000 male residents in 2021 to 5.4 deaths per 100,000 male residents in 2022. Additionally, the mortality rate for lung cancer increased from 31.6 deaths per 100,000 male residents in 2021 to 32.8 deaths per 100,000 male residents in 2022 (Table 10).
  - Deaths due to diabetes, both as an underlying and contributing cause of death, decreased from 2021 (2021: 3,553 deaths contributing cause and 1,539 deaths underlying cause; 2022: 3,415 deaths contributing cause and 1,501 deaths underlying cause; Figure 10) but remained well above pre-pandemic levels (2019: 2,738 deaths with diabetes as a contributing cause and 1,386 deaths with diabetes as an underlying cause; Figure 10). In 2022, there was a huge disparity in diabetes-related deaths by race and ethnicity. While the proportions of diabetes-related deaths were similar across all population groups, diabetes-related death rates were markedly higher in the American Indian/ Alaska Native non-Hispanic and Black non-Hispanic groups compared to White non-Hispanic or Asian/Pacific Islander non-Hispanic groups (Table 14). The diabetes-related death rates in the Black non-Hispanic population and the American Indian/Alaska Native non-Hispanic population were 2 times higher than the diabetes-related death rate in the White non-Hispanic population.
  - There were 57 deaths due to HIV/AIDS in 2022. This is an increase in number of deaths when compared to 2021, which only had 46 deaths due to HIV/AIDS (Figure 14). The increase in 2022 was driven by an increase in deaths among men of Hispanic and White non-Hispanic race/ethnicity, as well as a slight increase in deaths among Black non-Hispanic men. While HIV deaths increased among men of all race/ethnicities in 2022, there was a decrease in the number of HIV related deaths among Black non-Hispanic women (Table 22).
- In 2022, injury deaths reached an all-time high of 5,742 deaths (9.1% of all deaths; Figure 1, Table 17). Unintentional injuries, suicides, and homicides all increased compared to 2021 (Table 19).
  - Poisonings, which include opioid overdoses, continued to be the largest cause of injury deaths in 2022 slightly decreasing to 38.0 from 38.1 deaths per 100,000 residents in 2021 (Table 17). Black non-Hispanic residents experienced a sizeable increase in poisonings compared to 2021 (2021: 44.6 deaths per 100,000 Black non-Hispanic residents; 2022: 64.5 deaths per 100,000 Black non-Hispanic residents; Table 18).

- Although suicides have decreased in recent years, in 2022 the suicide rate increased to 8.2 deaths per 100,000 residents from 7.9 in 2021, driven by an increase in suicides among men (Table 19).
- The rate of homicides increased to 2.5 homicides per 100,000 in 2022 from 2.3 homicides per 100,000 residents in 2021 (Table 19).
- Deaths due to falls increased from 12.5 deaths per 100,000 residents in 2021 to a rate of 13.9 in 2022, driven by an increase for ages 75-84 years, despite a decrease in fall deaths among those 85 years and above (Table 17).
- Deaths due to legal intervention decreased from 11 in 2021 to 6 in 2022 (Table 21).
- In 2022, deaths due to adverse effects (*i.e.*, therapeutic complications) were cut in half compared to 2021 (56 and 110 deaths, respectively; Table 21). This reverses the increase seen over the past few years and was similar to levels prior to 2018.

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 2022 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

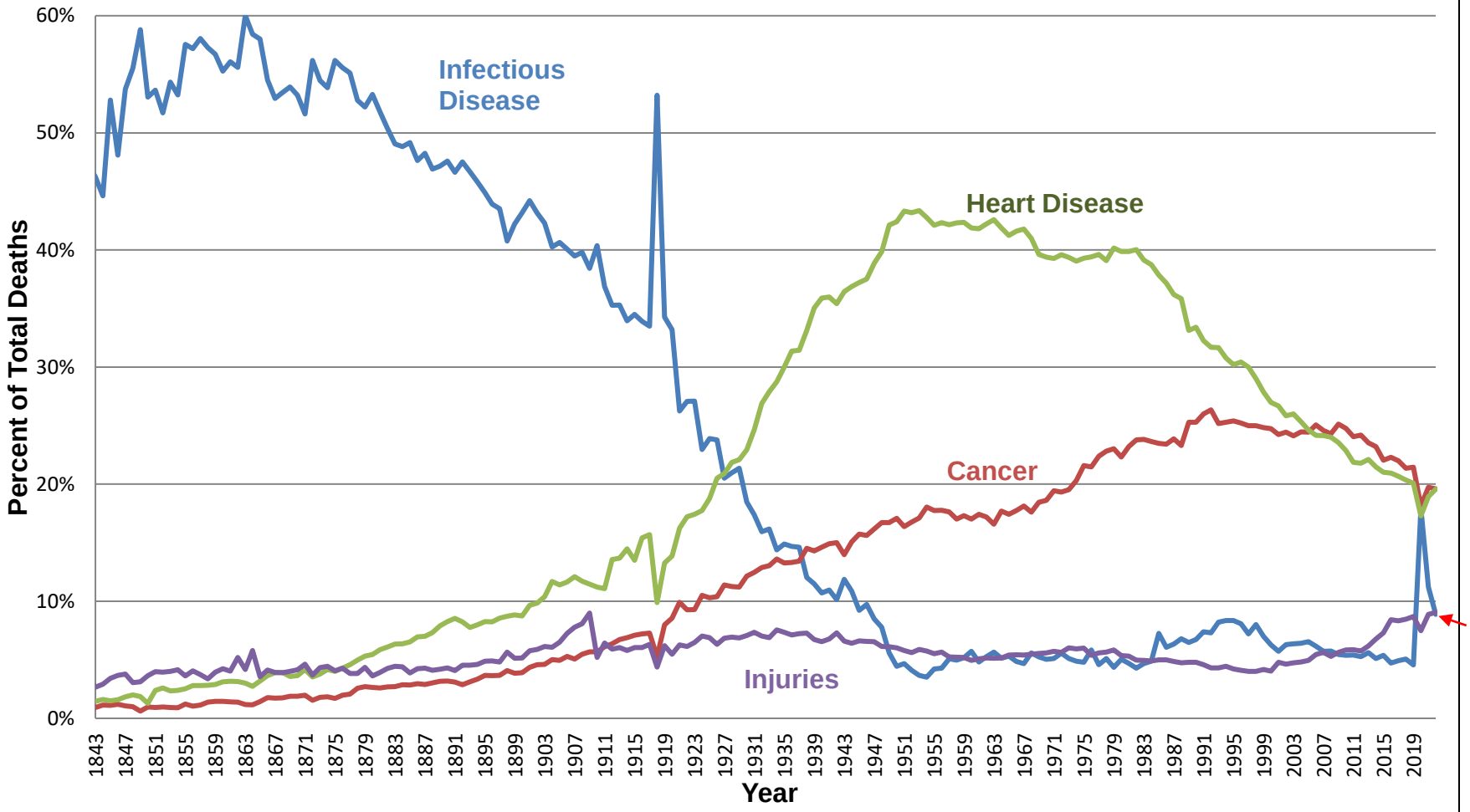
Massachusetts Deaths 2022. Boston, MA: Office of Population Health, Registry of Vital Records and Statistics, Massachusetts Department of Public Health. November 2024.

Table 1. Trends in Mortality Characteristics, Massachusetts: 2012-2022

Year		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Resident deaths	Number	53,169	54,609	55,159	57,785	56,953	58,844	59,169	58,660	68,269	63,158	63,390
	Crude rate[1,2,3]	807.1	815.9	817.7	850.5	836.1	849.7	848.1	840.9	978.7	898.4	901.7
	Age-adjusted rate[4]	669.2	664.1	662.5	684.6	668.9	675.7	662.8	654.0	756.3	689.0	691.6
Race/ethnicity of decedent[5,6]												
American Indian/ Alaska Native non-Hispanic	Number	59	68	71	104	131	135	112	94	124	128	141
	Age-adjusted rate[4]	539.8	587.4	610.5	876.2	1,056.1	1,070.7	873.0	715.1	1,052.3	1,048.1	1,204.8
Asian/Pacific Islander non-Hispanic	Number	811	816	938	1,091	1,028	1,165	1,222	1,270	1,759	1,716	1,625
	Age-adjusted rate[4]	372.4	320.5	344.7	371.8	324.7	361.1	351.8	351.4	490.0	427.6	409.0
Black non-Hispanic	Number	2,318	2,446	2,390	2,349	2,504	2,636	2,717	2,760	3,925	3,419	3,589
	Age-adjusted rate[4]	701.8	675.5	630.4	589.5	612.4	641.6	625.4	626.7	894.3	779.2	821.0
Hispanic	Number	1,487	1,548	1,702	2,037	2,126	2,372	2,377	2,544	3,451	3,379	3,235
	Age-adjusted rate[4]	484.9	444.9	447.9	493.0	473.2	505.7	480.4	506.3	689.3	667.0	631.3
White non-Hispanic	Number	48,430	49,486	49,621	51,688	50,654	52,038	52,196	51,456	58,356	53,869	54,219
	Age-adjusted rate[4]	681.0	680.9	679.5	703.3	687.9	697.1	686.8	676.3	761.6	704.7	706.6
Gender of decedent[6]												
Women	Number	27,883	28,558	28,289	29,880	28,952	29,665	29,891	29,481	34,320	30,757	31,583
	Age-adjusted rate[4]	571.1	569.5	557.9	581.2	560.2	563.2	555.1	546.9	631.6	563.9	576.9
Men	Number	25,280	26,051	26,867	27,905	28,000	29,178	29,276	29,177	33,949	32,401	31,805
	Age-adjusted rate[4]	797.9	786.5	795.9	814.7	804.9	817.9	798.3	789.2	911.9	846.9	835.0
Age of decedent[6]												
<1 year	Number	309	298	321	310	283	263	291	255	263	228	229
	Age-specific rate[7]	426.5	416.1	446.7	433.7	396.8	372.0	421.1	368.9	395.8	329.8	329.5
1-14 years	Number	99	118	129	119	115	122	111	106	69	108	114
	Age-specific rate[7]	9.1	11.0	12.1	11.2	10.9	11.4	10.3	9.9	6.5	10.4	11.0
15-24 years	Number	419	449	441	519	526	501	416	389	437	429	429
	Age-specific rate[7]	43.9	48.0	47.0	55.0	55.0	51.0	42.0	40.0	45.0	45.1	45.1
25-44 years	Number	1,880	1,993	2,234	2,475	2,742	2,788	2,751	2,646	3,019	3,086	2,959
	Age-specific rate[7]	107.6	113.5	126.3	139.2	154.3	154.8	150.4	144.0	164.3	163.8	157.1
45-64 years	Number	8,791	9,013	9,214	9,348	9,270	9,516	9,350	9,417	10,359	10,550	10,064
	Age-specific rate[7]	472.9	483.8	492.2	496.4	493.6	504.3	499.3	508.9	559.8	559.9	534.1
65-74 years	Number	7,891	8,259	8,678	9,038	9,332	9,719	9,918	9,974	11,945	11,775	11,496
	Age-specific rate[7]	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	1,661.8
75-84 years	Number	13,272	13,182	12,784	13,299	12,870	13,272	13,806	13,570	16,385	15,318	15,865
	Age-specific rate[7]	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	4,591.1
85+ years	Number	20,506	21,296	21,356	22,677	21,813	22,663	22,526	22,303	25,788	21,660	22,227
	Age-specific rate[7]	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	13,576.6

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: 1843-2022



Note: 1. 57.1% of all Infectious Disease deaths in 2022 (indicated by the red arrow) were due to COVID-19. 2. Infectious Disease percentages were updated to include influenza and pneumonia deaths for 2000-2022.

Figure 2. Life Expectancy at Birth[1] by Race and Hispanic Ethnicity[2], Massachusetts: 1900-2022

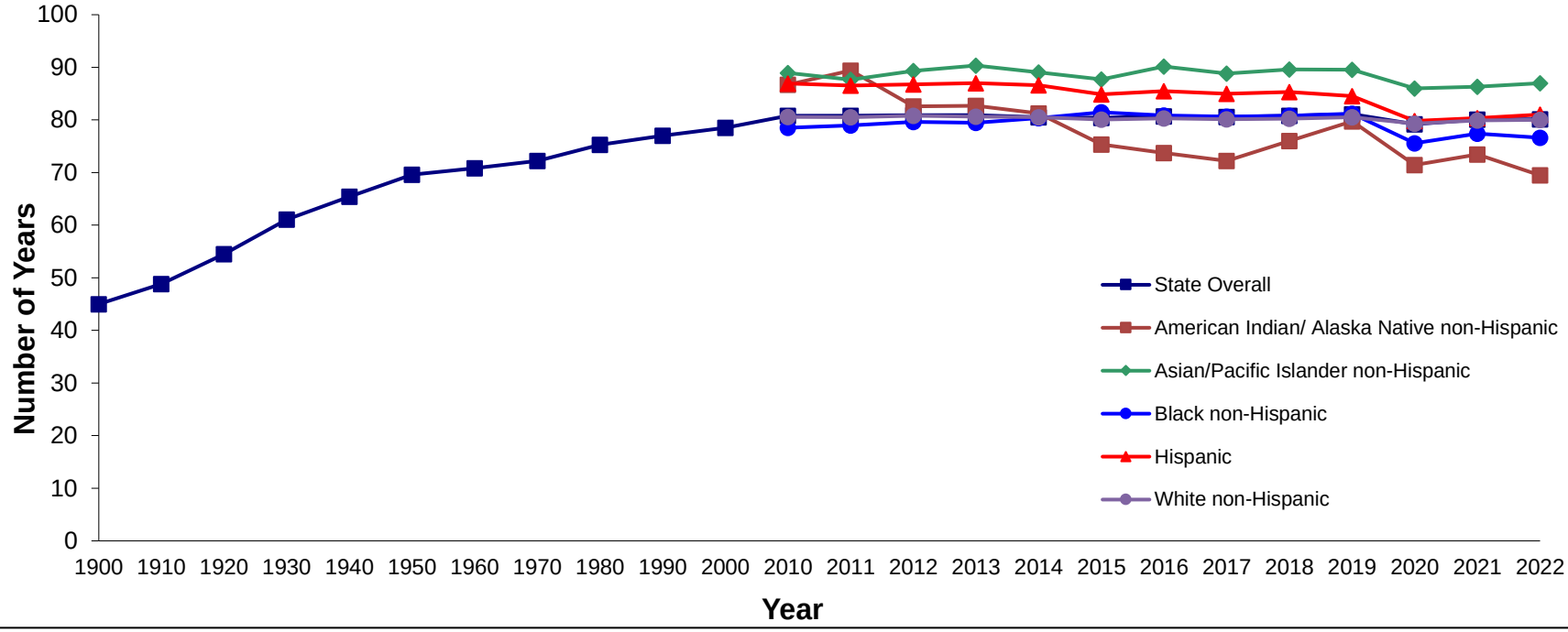
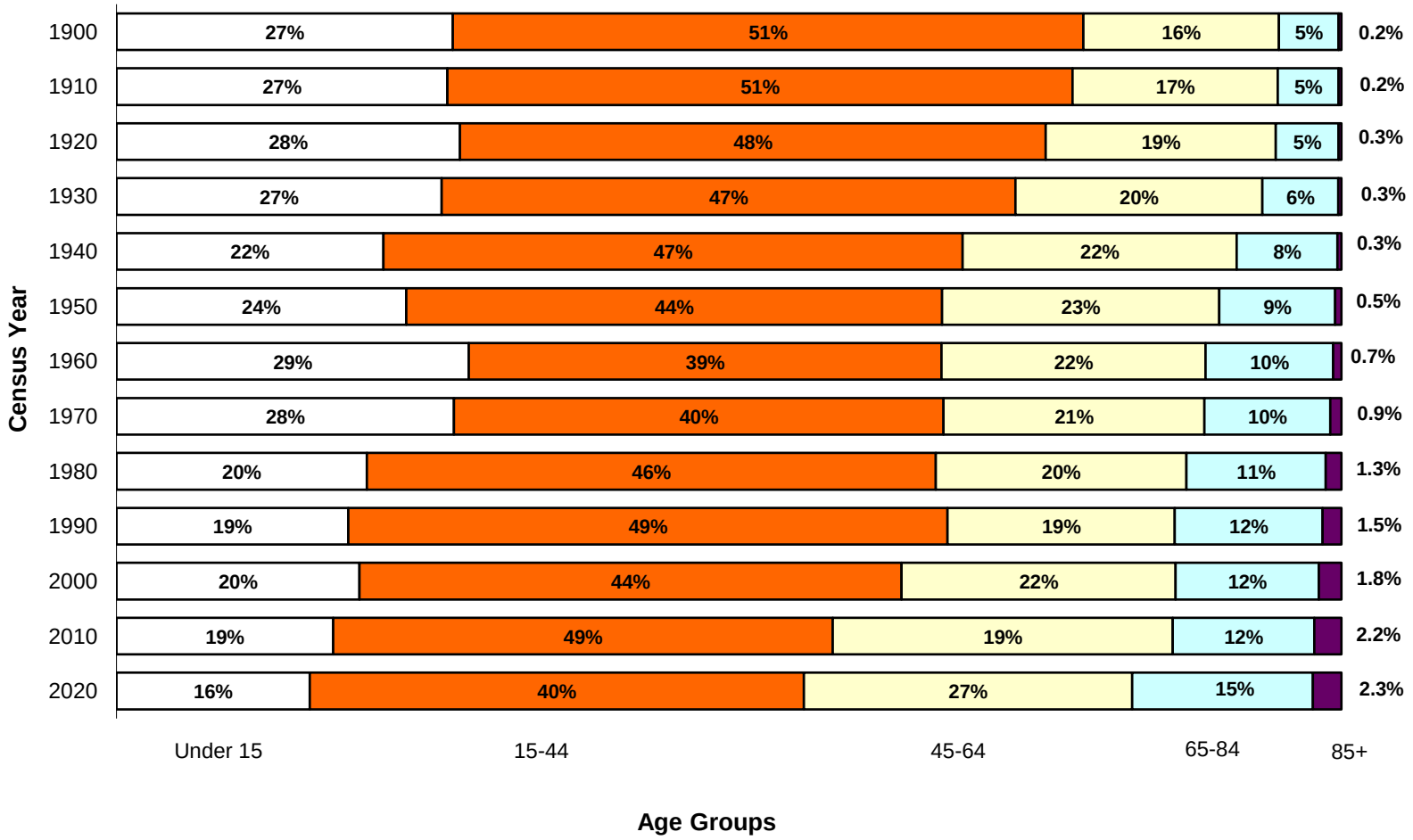


Table 2. Life Expectancy at Birth[1] by Race and Hispanic Ethnicity[2] and Gender, Massachusetts: 2012 – 2022

Year	All	All Women	American Indian/ Alaska Native non-Hispanic Women	Asian/Pacific Islander non-Hispanic Women	Black non-Hispanic Women	Hispanic Women	White non-Hispanic Women	All Men	American Indian/ Alaska Native non-Hispanic Men	Asian/Pacific Islander non-Hispanic Men	Black non-Hispanic Men	Hispanic Men	White non-Hispanic Men
2012	81.1	83.2	81.6	91.9	82.4	89.8	83.0	78.7	89.0	86.7	76.6	83.2	78.4
2013	80.9	83.1	82.0	91.9	82.4	90.2	82.8	78.6	84.5	88.5	76.3	83.3	78.3
2014	80.9	83.3	83.5	90.6	83.5	89.3	83.0	78.2	79.1	87.4	76.9	83.4	77.9
2015	80.4	82.8	75.0	89.0	84.3	87.5	82.5	77.9	76.8	86.2	78.1	82.0	77.6
2016	80.6	83.2	76.7	92.4	83.1	88.4	82.8	78.0	71.9	87.8	78.4	82.4	77.6
2017	80.4	83.0	75.3	90.1	83.4	88.5	82.8	77.7	69.4	87.4	77.6	81.0	77.4
2018	80.6	83.0	78.4	91.6	84.0	88.1	82.6	78.0	73.8	87.4	77.4	82.3	77.7
2019	80.9	83.4	79.8	91.6	84.2	87.8	83.0	78.3	81.5	87.3	77.8	81.0	78.0
2020	79.4	82.0	75.3	87.6	78.8	83.9	81.8	76.8	68.2	84.2	72.2	75.6	76.8
2021	80.1	83.0	75.1	88.3	80.6	84.6	82.7	77.2	72.2	84.1	74.2	75.9	77.1
2022	80.2	82.7	70.9	88.4	80.4	84.6	82.5	77.5	69.4	85.3	72.8	77.2	77.5

1. Note: Life Expectancy at birth calculated prior to 2010 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). Life expectancy calculations from 2010-2020 were re-calculated with the Chiang II method and this report presents these updated estimates. 2. Population estimates are from 2020 bridged population file, see Technical Notes for more information. Race/ethnicity estimates not available prior to 2010 due to population estimates limitations; please see the technical notes for more information on race and ethnicity.

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

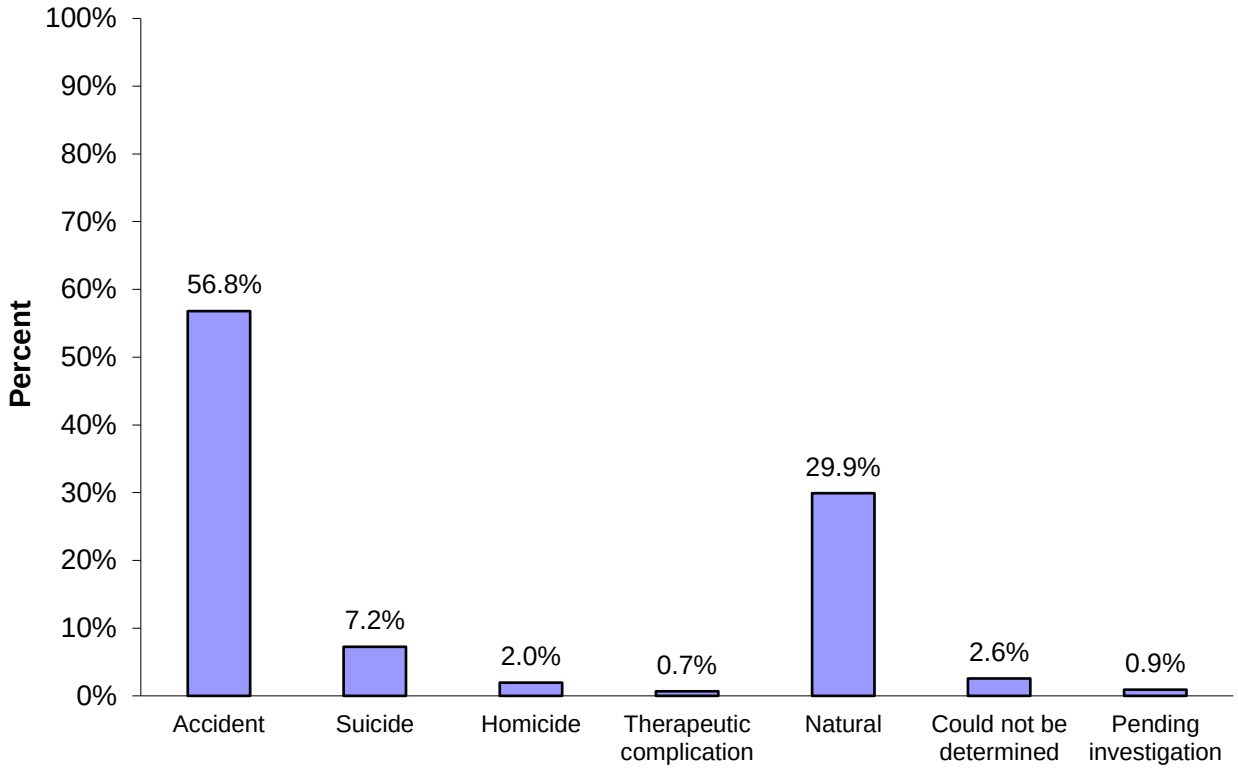


Source: US Census Bureau 1900-1999. Resident death data for 2000 are calculated using the Massachusetts (Department of Public Health) Modified Age, Race/Ethnicity, & Sex Estimates 2000 (MMARS00), released October 2006. Population estimates for 2010 are from the NCHS Modified Age, Race/Ethnicity, & Sex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

Table 3. Distribution of Deaths by Place of Occurrence, Massachusetts: 2018-2022

Type of Place Where Death Occurred	2018		2019		2020		2021		2022	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Hospital (inpatient/outpatient)	21,502	36%	21,267	36%	25,742	38	25,089	40%	24,933	39%
Dead on Arrival	681	1%	515	1%	547	1	592	1%	580	1%
Nursing Home	14,606	25%	13,830	24%	15,168	22	10,471	17%	11,247	18%
Hospice	3,525	6%	3,656	6%	3,090	5	3,107	5%	3,012	5%
Assisted Living Facility or Rest Home	1,864	3%	1,963	3%	2,360	3	2,072	3%	2,272	4%
At Home	15,552	26%	15,888	27%	19,531	29	19,984	32%	19,499	31%
Other	1,438	2%	1,535	3%	1,822	3	1,837	3%	1,847	3%
Unknown	1	0%	6	0%	9	0	6	0%	0	0%

Figure 4. Manner of Death Among Massachusetts Occurrence Deaths Certified by the Medical Examiner, 2022



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: 8,108 total cases investigated by the Medical Examiner in 2022.

Figure 5. Age-Adjusted Mortality Rate for COVID-19 and All Other Causes by Race and Hispanic Ethnicity[1], Massachusetts: 2022

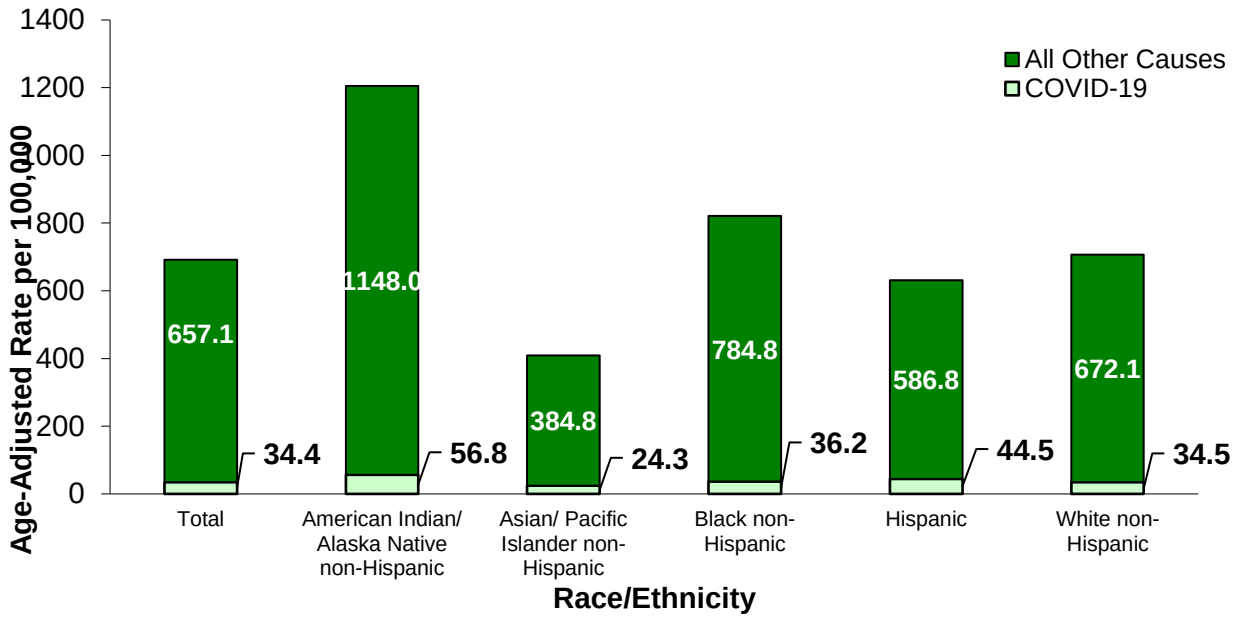
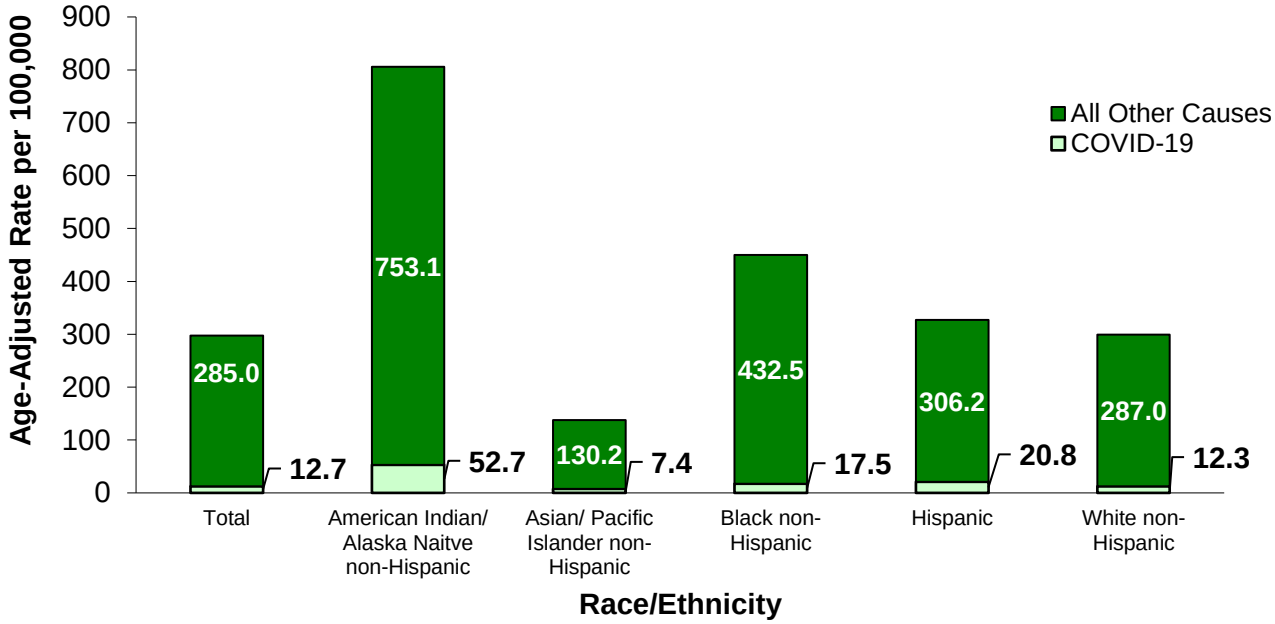


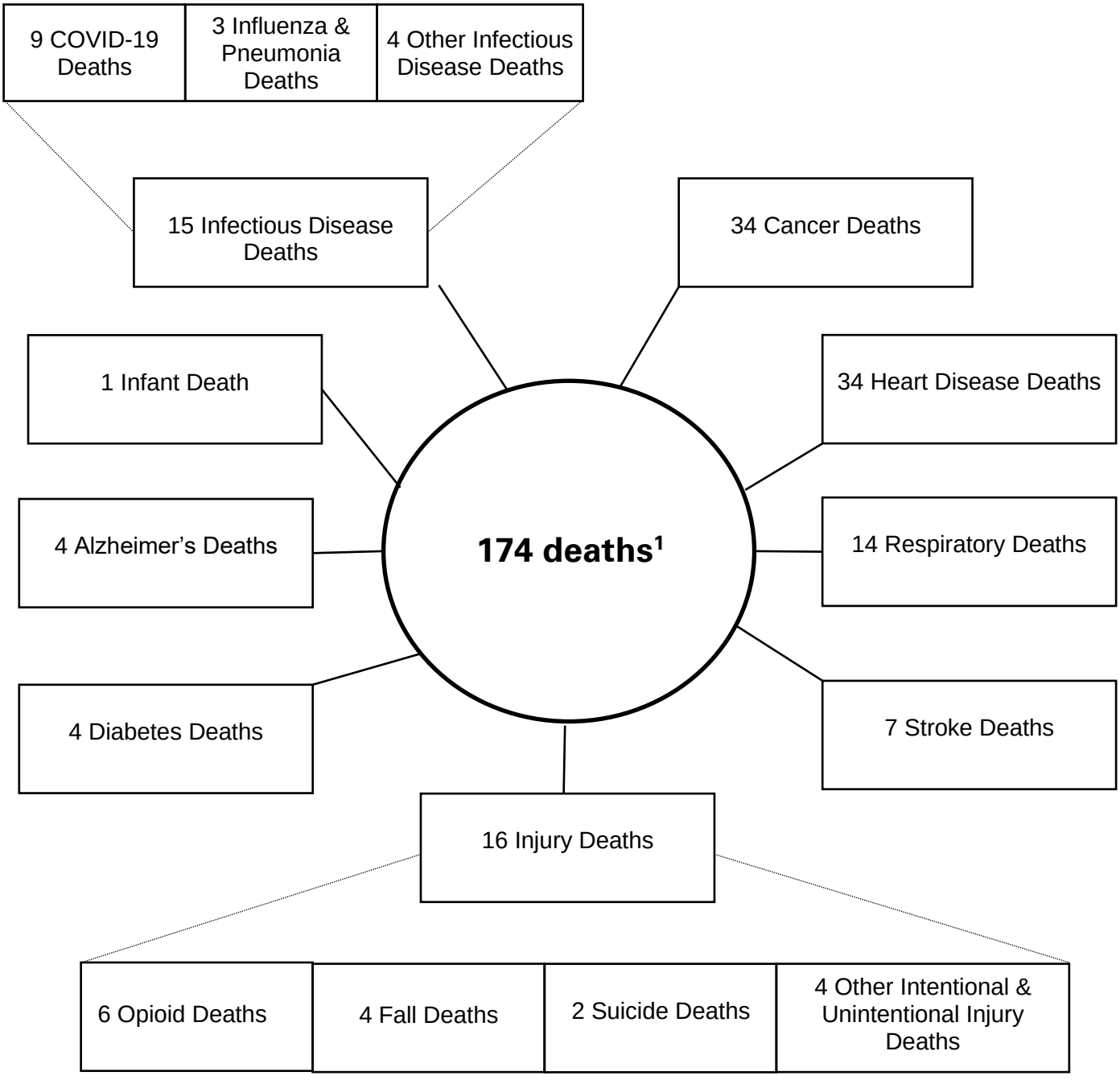
Figure 6. Premature Mortality Rate (PMR)[2] for COVID-19 and All Other Causes by Race and Hispanic Ethnicity[1], Massachusetts: 2022



Note: 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: 2022

Every day in 2022 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: 2022

	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 (36)	Unintentional Injuries[3] (19)	Unintentional Injuries[3] (200)	Unintentional Injuries[3] (1376)	Cancer (2554)	Cancer (3496)	Cancer (3655)	Heart Disease (5527)	**Cancer (12424)**
2	Short Gestation and LBW[1] (29)	Cancer (16)	Suicide (74)	Cancer (245)	Heart Disease (1633)	Heart Disease (2028)	Heart Disease (2971)	Cancer (2440)	**Heart Disease (12409)**
3	Pregnancy Complications (21)	Congenital Malformations (11)	Homicide (30)	Heart Disease (217)	Unintentional Injuries[3] (1453)	COVID-19 (627)	COVID-19 (819)	COVID-19 (1265)	**Unintentional Injuries[3] (4772)**
4	SIDS[2] (17)	Other Infections (7)	Heart Disease (21)	Suicide (195)	Chronic Liver Disease (451)	Chronic Lower Respiratory Disease[5] (573)	Chronic Lower Respiratory Disease[5] (790)	Stroke (1087)	**COVID-19 (3217)**
5	Bacterial Sepsis of Newborn (11)	Heart Disease (6)	Cancer (18)	Chronic Liver Disease (97)	COVID-19 (416)	Unintentional Injuries[3] (429)	Stroke (679)	Alzheimer's Disease (1010)	**Stroke (2391)**
6	Complications of Placenta (9)	COVID-19 (6)	Injuries of Undetermined Intent[3] (10)	Homicide[3] (95)	Diabetes (350)	Diabetes (355)	Unintentional Injuries[3] (499)	Unintentional Injuries[3] (796)	**Chronic Lower Respiratory Disease[5] (2374)**
7	Atelectasis (6)	Influenza & Pneumonia (4)	Congenital Malformations (8)	COVID-19 (72)	Chronic Lower Respiratory Disease[5] (268)	Stroke (341)	Alzheimer's Disease (457)	Chronic Lower Respiratory Disease[5] (717)	**Alzheimer's Disease (1598)**
8	Circulatory System (5)	Ill-defined Conditions-Signs and Symptoms[4] (4)	Ill-defined Conditions-Signs and Symptoms[4] (7)	Ill-defined Conditions-Signs and Symptoms[4] (55)	Stroke (242)	Nephritis (247)	Nephritis (420)	Nephritis (554)	**Diabetes (1501)**
9	Respiratory Distress (5)	Injuries of Undetermined Intent[3] (4)	COVID-19 (7)	Diabetes (39)	Suicide[3] (242)	Chronic Liver Disease (222)	Diabetes (375)	Ill-defined Conditions-Signs and Symptoms[4] (461)	**Nephritis (1408)**
10	COVID-19 (5)	in Situ Neoplasms (3)	Chronic Lower Respiratory Disease[5] (6)	Stroke (37)	Nephritis (172)	Septicemia (187)	Parkinsons (320)	Influenza & Pneumonia (434)	**Chronic Liver Disease (949)**
All Causes	**229**	**114**	**429**	**2,959**	**10,064**	**11,496**	**15,865**	**22,227**	**63,390**

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: 2012-2022

INFANT MORTALITY (less than one year of age)

	State Total[1]		American Indian/ Alaska Native non-Hispanic		Asian/Pacific Islander non-Hispanic		Black non-Hispanic		Hispanic		White non-Hispanic	
Year	#	Rate[2]	#	Rate[2]	#	Rate[2]	#	Rate[2]	#	Rate[2]	#	Rate[2]
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
2022	229	3.3	0	0.0	7	1.1	38	5.1	62	4.0	103	2.7

NEONATAL MORTALITY (birth to 27 days)

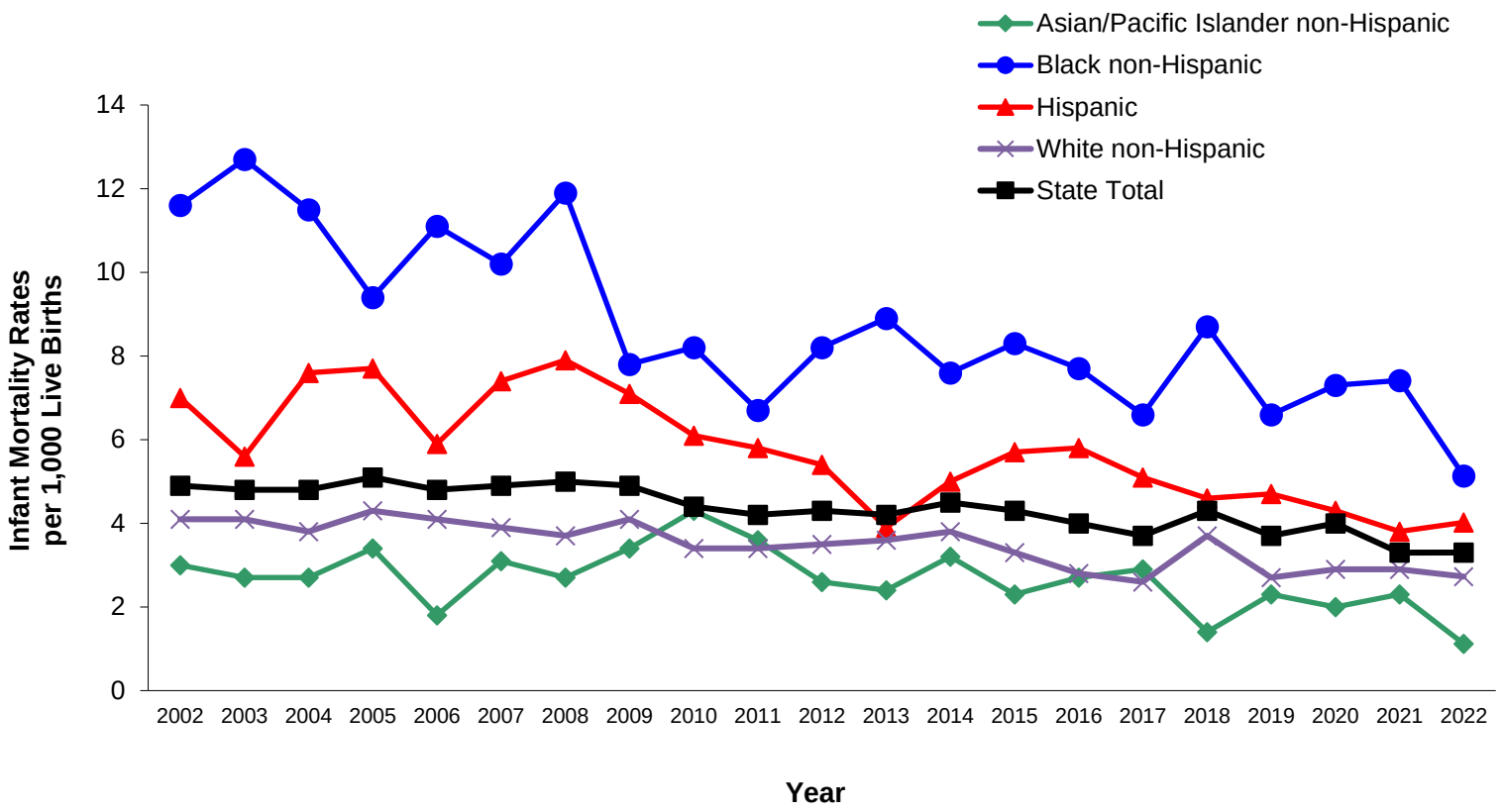
	State Total[1]		American Indian/ Alaska Native non-Hispanic		Asian/Pacific Islander non-Hispanic		Black non-Hispanic		Hispanic		White non-Hispanic	
Year	#	Rate[2]	#	Rate[2]	#	Rate[2]	#	Rate[2]	#	Rate[2]	#	Rate[2]
2012	216	3.0	0	0.0	13	2.0	41	5.9	46	3.5	111	2.5
2013	221	3.1	0	0.0	10	1.6	45	6.3	39	3.1	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
2022	149	2.2	0	0.0	4	--[3]	21	2.8	43	2.8	68	1.8

POST NEONATAL MORTALITY (28-365 days)

	State Total[1]		American Indian/ Alaska Native non-Hispanic		Asian/Pacific Islander non-Hispanic		Black non-Hispanic		Hispanic		White non-Hispanic	
Year	#	Rate[2]	#	Rate[2]	#	Rate[2]	#	Rate[2]	#	Rate[2]	#	Rate[2]
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
2022	77	1.1	0	0.0	3	--[3]	17	2.3	18	1.2	35	0.9

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: 2002-2022



NOTE: American Indian/ Alaska Native non-Hispanic not presented due to small counts of 0-4.
1. Deaths of infants of unknown race are included in the total calculation. 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: 2022

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		**229**	**100**	**149**	**100**	**77**	**100**
Infectious and parasitic diseases	**A00-B99**	**14**	**6.1**	**0**	**0.0**	**14**	**18.2**
COVID-19	U071, B342	5	**1.9**	0	0.0	5	**5.6**
Cancer	**C00-C97**	**0**	**0.0**	**0**	**0.0**	**0**	**0.0**
Diseases of the blood and blood forming organs (anemia)	**D50-D89**	**1**	--[2]	**0**	**0.0**	**1**	--[2]
Diseases of nervous system and ear	**G00-G98, H60-H93**	**7**	**3.1**	**3**	--[2]	**4**	--[2]
Diseases of the respiratory system	**J00-J98**	**2**	--[2]	**0**	**0.0**	**2**	--[2]
Diseases of digestive system	**K00-K92**	**1**	--[2]	**0**	**0.0**	**1**	--[2]
Congenital malformations	**Q00-Q99**	**36**	**15.7**	**25**	**16.8**	**11**	**14.3**
Congenital malformations of nervous system	Q00-Q07	3	--[2]	2	--[2]	1	--[2]
Anencephaly and similar malformations	Q00	0	0.0	0	0.0	0	0.0
Congenital malformations of heart	Q20-Q24	6	2.6	3	--[2]	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	1	--[2]	1	--[2]	0	0.0
Congenital malformations of genitourinary system	Q50-Q64	6	2.6	5	3.4	1	--[2]
Congenital malformations of musculoskeletal system	Q65-Q85	7	3.1	4	--[2]	3	--[2]
Chromosomal abnormalities	Q90-Q99	4	--[2]	4	--[2]	0	0.0
Certain conditions originating in the perinatal period	**P00-P96**	**127**	**55.5**	**117**	**78.5**	**7**	**9.1**
Newborn affected by maternal conditions which may be unrelated to present pregnancy	P00	2	--[2]	2	--[2]	0	0.0
Newborn affected by maternal complications of pregnancy	P01	21	9.2	19	12.8	0	0.0
Newborn affected by complications of placenta, cord and membrane	P02	9	3.9	9	6.0	0	0.0
Newborn affected by other complications of labor and delivery	P03	1	--[2]	0	0.0	0	0.0
Disorders relating to short gestation and low birthweight	P07	29	12.7	29	19.5	0	0.0
Intrauterine hypoxia and birth asphyxia	P20-P21	3	--[2]	3	--[2]	0	0.0
Respiratory distress of newborn	P22	5	2.2	4	--[2]	1	--[2]
Other respiratory conditions of newborn	P23-P28	9	3.9	8	5.4	1	--[2]
Infections specific to the perinatal period	P35-P39	14	6.1	13	8.7	1	--[2]
Neonatal hemorrhage	P50-P52, P54	4	--[2]	4	--[2]	0	0.0
Other and ill-defined conditions originating in the perinatal period	P90-P96	11	4.8	9	6.0	2	--[2]
Symptoms, signs, and ill-defined conditions	**R00-R99**	**24**	**10.5**	**2**	--[2]	**22**	**28.6**
Sudden Infant Death Syndrome (SIDS)	R95	17	7.4	1	--[2]	16	20.8
Unintentional Injuries	**V01-X59**	**0**	**0.0**	**0**	**0.0**	**0**	**0.0**
Homicide	**X85-Y09**	**0**	**0.0**	**0**	**0.0**	**0**	**0.0**
All other causes	**Residual**	**17**	**7.4**	**2**	--[2]	**15**	**19.5**

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: 2022

		Asian/Pacific Islander non-Hispanic		Black non-Hispanic		Hispanic		White non-Hispanic	
Cause of Death[2]	**ICD-10 Code**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
TOTAL		**7**	**100.0%**	**38**	**100.0%**	**62**	**100.0%**	**103**	**100.0%**
Certain conditions originating in the perinatal period	P00- P96	2	--[3]	20	52.6%	33	53.2%	55	53.4%
Congenital malformations	Q00-Q99	1	--[3]	5	13.2%	13	21.0%	17	16.5%
Symptoms, signs, and ill-defined conditions	R00-R99	0	0.0%	3	--[3]	9	14.5%	12	11.7%
SIDS	R95	0	0.0%	2	--[3]	8	12.9%	7	6.8%
Unintentional Injuries	V01-X59	0	0.0%	0	0.0%	0	0.0%	0	0.0%
All other causes	Residual	4	--[3]	10	26.3%	7	11.3%	19	18.4%

NOTE: There were zero American Indian/Alaska Native non-Hispanic infant deaths in 2022.
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: 2022

		Total		Women		Men	
Age	Cause of Death[1]	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]
1-14	**TOTAL**	**114**	**11.0**	**49**	**9.6**	**65**	**12.2**
	Unintentional Injuries	19	1.8	6	1.2	13	2.4
	Cancer	16	1.5	9	1.8	7	1.3
	Congenital Malformations	11	1.1	2	--[3]	9	1.7
	Other Infections	7	0.7	2	--[3]	5	0.9
15-24	**TOTAL**	**429**	**45.1**	**115**	**24.1**	**314**	**66.2**
	Unintentional Injuries	200	21.0	46	9.7	154	32.5
	Suicide	74	7.8	20	4.2	54	11.4
	Homicide	30	3.2	8	1.7	22	4.6
	Heart Disease	21	2.2	6	1.3	15	3.2
25-44	**TOTAL**	**2,959**	**157.1**	**953**	**100.8**	**2,005**	**213.8**
	Unintentional Injuries	1,376	73.0	384	40.6	992	105.8
	Cancer	245	13.0	131	13.8	114	12.2
	Heart Disease	217	11.5	58	6.1	159	17.0
	Suicide	195	10.4	33	3.5	161	17.2
45-64	**TOTAL**	**10,064**	**534.1**	**3,838**	**393.7**	**6,226**	**684.7**
	Cancer	2,554	135.5	1,220	125.1	1,334	146.7
	Heart Disease	1,633	86.7	486	49.8	1,147	126.1
	Unintentional Injuries	1,453	77.1	388	39.8	1,065	117.1
	Chronic Liver Disease	451	23.9	164	16.8	287	31.6
65+	**TOTAL**	**49,588**	**4,128.7**	**26,532**	**3,910.1**	**23,056**	**4,412.6**
	Heart Disease	10,526	876.4	5,308	782.2	5,218	998.6
	Cancer	9,591	798.5	4,713	694.6	4,878	933.6
	COVID-19	2,711	225.7	1,341	197.6	1,370	262.2
	Stroke	2,107	175.4	1,289	190.0	818	156.6
65-74	**TOTAL**	**11,496**	**1,661.8**	**4,914**	**1,322.1**	**6,582**	**2,056.3**
	Cancer	3,496	505.4	1,615	434.5	1,881	587.6
	Heart Disease	2,028	293.2	710	191.0	1,318	411.8
	COVID-19	627	90.6	255	68.6	372	116.2
	Chronic Lower Respiratory Disease	573	82.8	287	77.2	286	89.3
75-84	**TOTAL**	**15,865**	**4,591.1**	**7,812**	**3,935.7**	**8,053**	**5,475.6**
	Cancer	3,655	1,057.7	1,804	908.9	1,851	1,258.6
	Heart Disease	2,971	859.8	1,262	635.8	1,709	1,162.0
	COVID-19	819	237.0	368	185.4	451	306.7
	Chronic Lower Respiratory Disease	790	228.6	444	223.7	346	235.3
85+	**TOTAL**	**22,227**	**13,576.6**	**13,806**	**12,739.6**	**8,421**	**15,215.5**
	Heart Disease	5,527	3,376.0	3,336	3,078.3	2,191	3,958.8
	Cancer	2,440	1,490.4	1,294	1,194.0	1,146	2,070.6
	COVID-19	1,265	772.7	718	662.5	547	988.3
	Stroke	1,087	664.0	748	690.2	339	612.5

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.

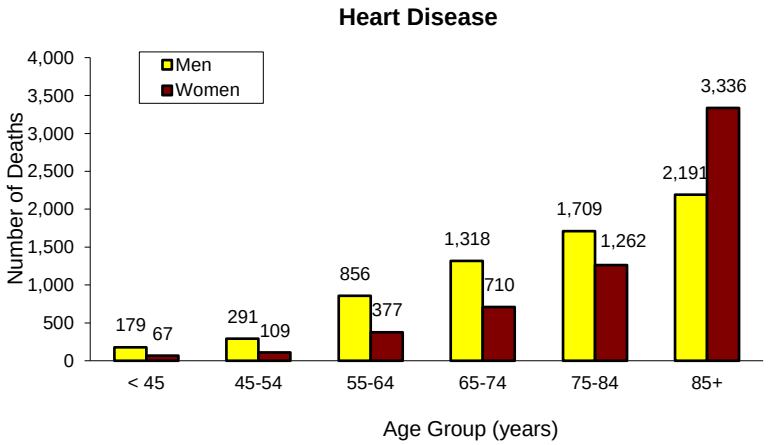
Table 9. Leading Underlying Causes of Death[1] and Age-Adjusted Rates by Race and Hispanic Ethnicity[2], Massachusetts: 2022

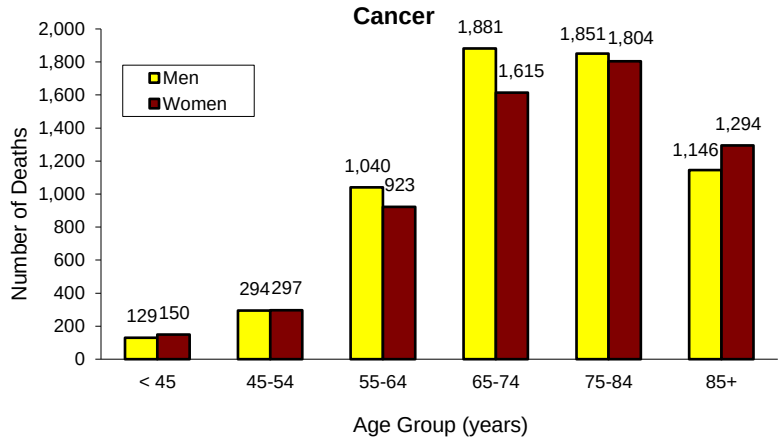
American Indian/ Alaska Native non-Hispanic			Asian/Pacific Islander non-Hispanic			Black non-Hispanic			Hispanic			White non-Hispanic		
Cause[3]	**#**	**Rate[4]**	**Cause[3]**	**#**	**Rate[4]**	**Cause[3]**	**#**	**Rate[4]**	**Cause[3]**	**#**	**Rate[4]**	**Cause[3]**	**#**	**Rate[4]**
Total	**141**	**1,204.8**	**Total**	**1,625**	**409.0**	**Total**	**3,589**	**821.0**	**Total**	**3,235**	**631.3**	**Total**	**54,219**	**706.6**
Heart Disease	34	300.9	Cancer	403	97.9	Cancer	651	148.2	Unintentional Injuries[5]	548	71.4	Heart Disease	10,909	135.5
Unintentional Injuries[5]	20	208.5	Heart Disease	282	73.1	Heart Disease	623	145.2	Cancer	526	108.3	Cancer	10,738	139.4
Cancer	16	126.9	Stroke	103	27.2	Unintentional Injuries[5]	399	80.4	Heart Disease	445	97.0	Unintentional Injuries[5]	3,643	62.4
COVID-19	8	56.8	COVID-19	95	24.3	Stroke	176	44.3	COVID-19	206	44.5	COVID-19	2,723	34.5
Chronic liver disease	6	50.3	Unintentional Injuries[5]	88	19.3	COVID-19	154	36.2	Diabetes	124	28.7	Chronic Lower Respiratory Disease	2,199	27.7
Influenza & Pneumonia	5	36.4	Diabetes	64	16.6	Diabetes	151	35.2	Stroke	106	24.6	Stroke	1,968	24.4
Stroke	4	--[6]	Nephritis	40	10.6	Nephritis	123	30.5	Nephritis	93	21.2	Alzheimer's Disease	1,455	17.5
Diabetes	3	--[6]	Chronic Lower Respiratory Disease	27	7.2	Chronic Lower Respiratory Disease	82	20.1	Chronic liver disease	86	14.3	Diabetes	1,148	14.9
Alzheimer's Disease	3	--[6]	Septicemia	26	6.3	Hypertension	75	18.0	Ill-defined conditions-signs and symptoms	57	8.8	Nephritis	1,138	14.3
Nephritis	3	--[6]	Ill-defined conditions-signs and symptoms	26	6.7	Homicide	64	12.6	Septicemia	52	10.7	Influenza & Pneumonia	842	10.6

Total		
Cause[3]	**#**	**Rate[4]**
Total	**63,390**	**691.6**
Cancer	12,424	135.2
Heart Disease	12,409	131.5
Unintentional Injuries[5]	4,772	61.1
COVID-19	3,217	34.4
Stroke	2,391	25.5
Chronic Lower Respiratory Disease	2,374	25.5
Alzheimer's Disease	1,598	16.7
Diabetes	1,501	16.3
Nephritis	1,408	15.1
Chronic Liver Disease	949	11.0

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: 2022





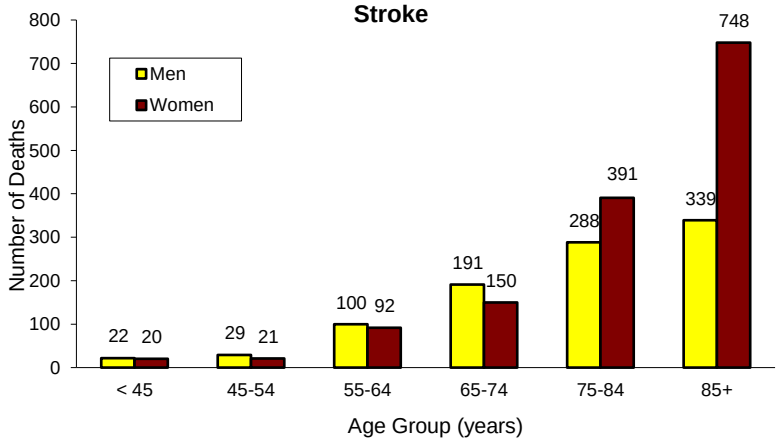


Table 10. Number and Age-Adjusted Rates of Cancer Deaths by Selected Causes and Gender, Massachusetts: 2022

Cause of Death[1]	ICD-10 Code	Total		Women		Men	
		#	Rate[2,3]	#	Rate[2]	#	Rate[2]
Total Cancer Deaths	**C00-C97**	**12,424**	**135.2**	**6,083**	**93.0**	**6,341**	**162.1**
Bladder	C67	382	4.1	113	2.1	269	7.2
Brain and nervous system	C70-C72	414	4.7	201	4.2	213	5.2
Cervix	C53	51	1.1	51	1.1	N/A	N/A
Colorectal	C18-C21	890	9.8	450	8.6	440	11.2
Esophagus	C15	385	4.2	93	1.8	292	7.2
Breast	C50	718	14.2	718	14.2	N/A	N/A
Hodgkin's disease	C81	11	0.1	6	0.1	5	0.1
Kidney and other urinary organs	C64, C65	267	2.9	81	1.5	186	4.8
Leukemia	C91-C95	444	4.9	183	3.4	261	6.9
Lung	C33, C34	2,737	29.5	1,420	27.2	1,317	32.8
Melanoma of the skin	C43	195	2.2	80	1.6	115	3.0
Multiple myeloma	C88, C90	252	2.7	97	1.8	155	3.9
Non-Hodgkin's lymphoma	C82-C85	409	4.4	198	3.7	211	5.4
Ovary	C56	330	6.7	330	6.7	N/A	N/A
Pancreas	C25	1,087	11.7	514	9.8	573	14.1
Prostate	C61	663	17.6	N/A	N/A	663	17.6
Stomach	C16	204	2.3	77	1.5	127	3.2
Uterus	C54, C55	252	4.8	252	4.8	N/A	N/A
All other cancers	Residual	2,733	29.6	1,219	23.5	1,514	37.8

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: 2022

Age	Cause of death[1]	ICD-10 Code	Number	Age-specific rate[2]
1 – 14 years	**Total**		**16**	**1.5**
	Brain and nervous system	C70-C72	6	0.6
	Leukemia	C91-C95	2	--[3]
	Kidney and other urinary organs	C64, C65	1	--[3]
15 – 24 years	**Total**		**18**	**1.9**
	Leukemia	C91-C95	4	--[3]
	Brain and nervous system	C70-C72	2	--[3]
	Ovary	C56	1	--[3]
	Kidney and other urinary organs	C64, C65	1	--[3]
25 – 44 years	**Total**		**245**	**13.0**
	Female breast[4]	C50	31	3.3
	Brain and nervous system	C70-C72	27	1.4
	Lung	C33, C34	25	1.3
	Colorectal	C18-C21	24	1.3
45 – 64 years	**Total**		**2,554**	**135.5**
	Lung	C33, C34	526	27.9
	Colorectal	C18-C21	250	13.3
	Pancreas	C25	237	12.6
	Female breast[4]	C50	201	20.6
65 + years	**Total**		**9,591**	**798.5**
	Lung	C33, C34	2,186	182.0
	Pancreas	C25	841	70.0
	Colorectal	C18-C21	616	51.3
	Prostate[5]	C61	600	114.8
65 – 74 years	**Total**		**3,496**	**505.4**
	Lung	C33, C34	884	127.8
	Pancreas	C25	340	49.1
	Colorectal	C18-C21	201	29.1
	Female breast[4]	C50	170	45.7
75 – 84 years	**Total**		**3,655**	**1,057.7**
	Lung	C33, C34	873	252.6
	Pancreas	C25	331	95.8
	Prostate[5]	C61	229	155.7
	Colorectal	C18-C21	228	66.0
85+ years	**Total**		**2,440**	**1,490.4**
	Lung	C33, C34	429	262.0
	Prostate[5]	C61	230	415.6
	Colorectal	C18-C21	187	114.2
	Pancreas	C25	170	103.8

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: 2022

American Indian/ Alaska Native non-Hispanic			Asian/Pacific Islander 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	5	33.2	Lung	96	23.7	Lung	121	27.7	Lung	57	12.5	Lung	2439	31.4
Colorectal	2	--[6]	Pancreas	37	8.8	Prostate[5]	60	38.6	Colorectal	51	10.0	Pancreas	939	12.1
Pancreas	2	--[6]	Colorectal	34	8.1	Female Breast[4]	51	20.3	Pancreas	51	10.4	Colorectal	747	10.0
Esophagus	1	--[6]	Female Breast[4]	16	7.0	Pancreas	50	11.7	Female Breast[4]	33	10.6	Female Breast[4]	614	14.7
Stomach	1	--[6]	Brain and Nervous System	16	3.3	Colorectal	47	9.7	Prostate[5]	26	16.2	Prostate[5]	565	17.5
Total Cancer	**16**	**126.9**	**Total Cancer**	**403**	**97.9**	**Total Cancer**	**651**	**148.2**	**Total Cancer**	**526**	**108.3**	**Total Cancer**	**10738**	**139.4**

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 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: 2012-2022

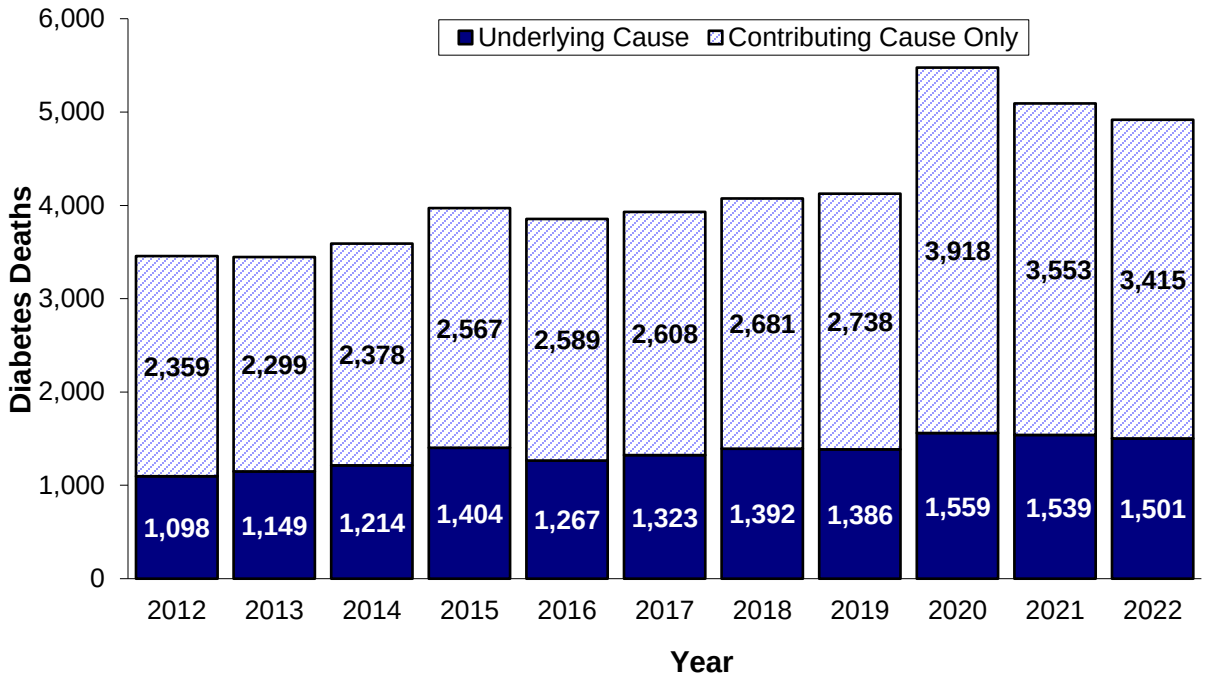


Table 13. Diabetes Deaths by Gender, Massachusetts: 2022

	Proportion of all Deaths (%)[1]			Number		
Cause of Death	Men	Women	Total	Men	Women	Total
Underlying	2.7%	2.0%	2.4%	854	647	1,501
Contributing/Associated	6.1%	4.7%	5.4%	1,944	1,471	3,415
Total Diabetes-Related	**8.8%**	**6.7%**	**7.8%**	**2,798**	**2,118**	**4,916**

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

Table 14. Diabetes Deaths by Race and Hispanic Ethnicity[1], Massachusetts: 2022

Cause of Death	Race/Hispanic Ethnicity[1]					
	American Indian/ Alaska Native non-Hispanic	Asian/ Pacific Islander non-Hispanic	Black non-Hispanic	Hispanic	White non-Hispanic	Total
	Number					
Underlying	3	64	151	124	1,148	1,501
Contributing/Associated	9	112	276	236	2,744	3,415
Total Diabetes-Related	12	176	427	360	3,892	4,916
Total Deaths (All Causes)	***141***	***1,625***	***3,589***	***3,235***	***54,219***	***63,390***
	Proportion of all deaths (%)[2]					
Underlying	2.1	3.9	4.2	3.8	2.1	2.4
Contributing/Associated	6.4	6.9	7.7	7.3	5.1	5.4
Total Diabetes-Related	***8.5***	***10.8***	***11.9***	***11.1***	***7.2***	***7.8***
	Death Rates[3]					
Underlying	--[4]	16.6	35.2	28.7	14.9	16.3
Contributing/Associated	76.2	29.7	66.2	52.5	35.5	37.3
Total Diabetes-Related	***102.8***	***46.2***	***101.4***	***81.2***	***50.4***	***53.6***

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. 4. Calculations based on values 1-4 are excluded.

Figure 11. Age Distribution of Diabetes Deaths, Massachusetts: 2022

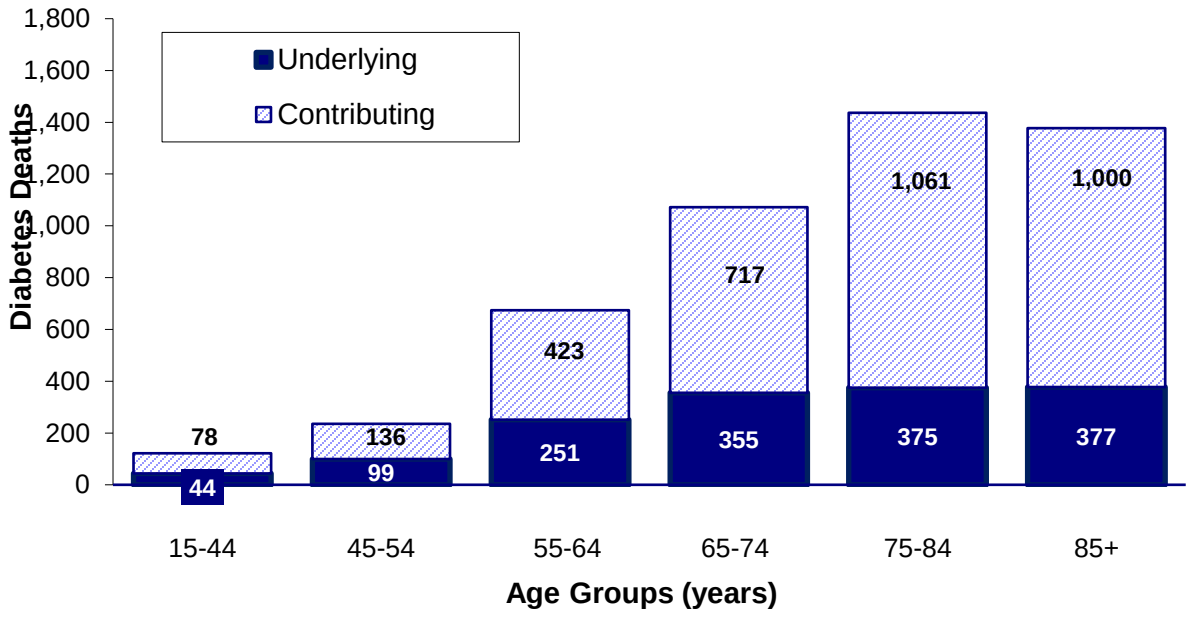
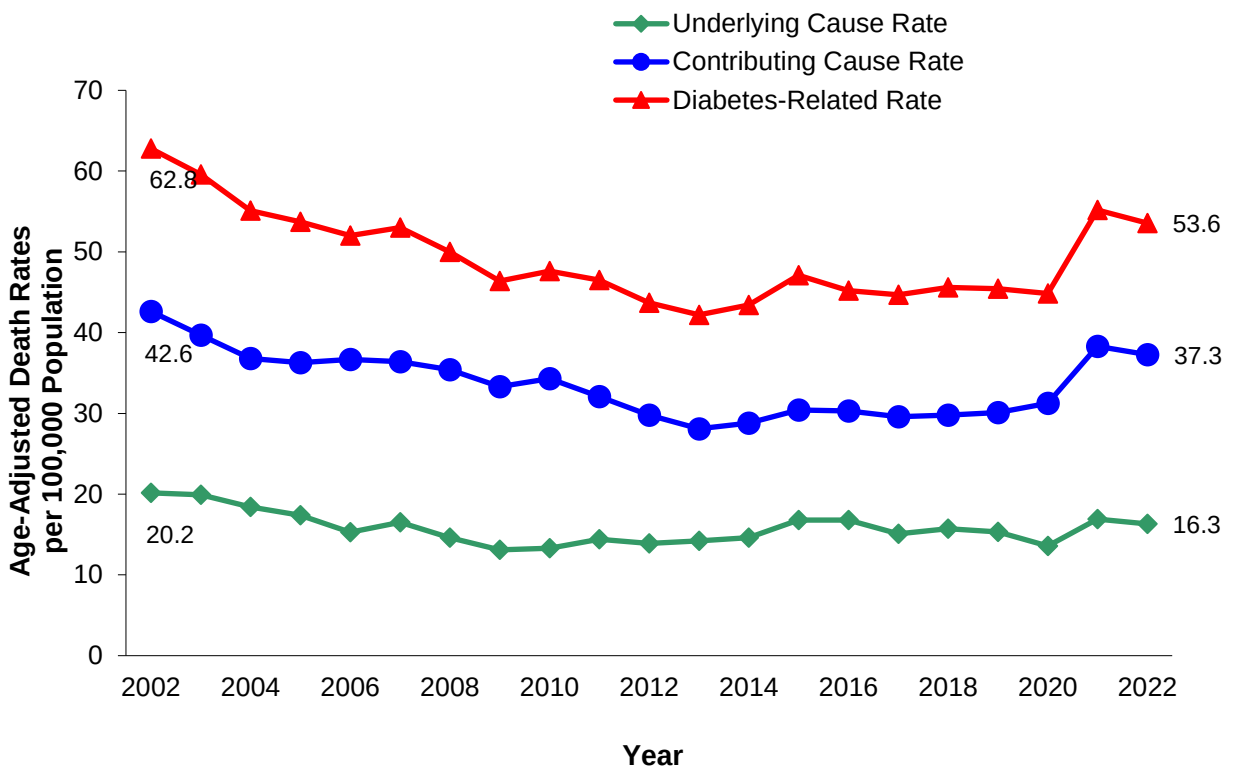


Figure 12. Diabetes Death Rates, Massachusetts: 2002-2022



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

Table 15. COVID-19 Deaths by Gender, Massachusetts: 2022

	Proportion of all Deaths (%)[1]			Number		
Cause of Death	Men	Women	Total	Men	Women	Total
Underlying	5.2%	4.9%	5.1%	1,662	1,555	3,217
Contributing/Associated	1.7%	1.6%	1.7%	553	511	1,064
Total COVID-19-Related	**7.0%**	**6.5%**	**6.8%**	**2,215**	**2,066**	**4,281**

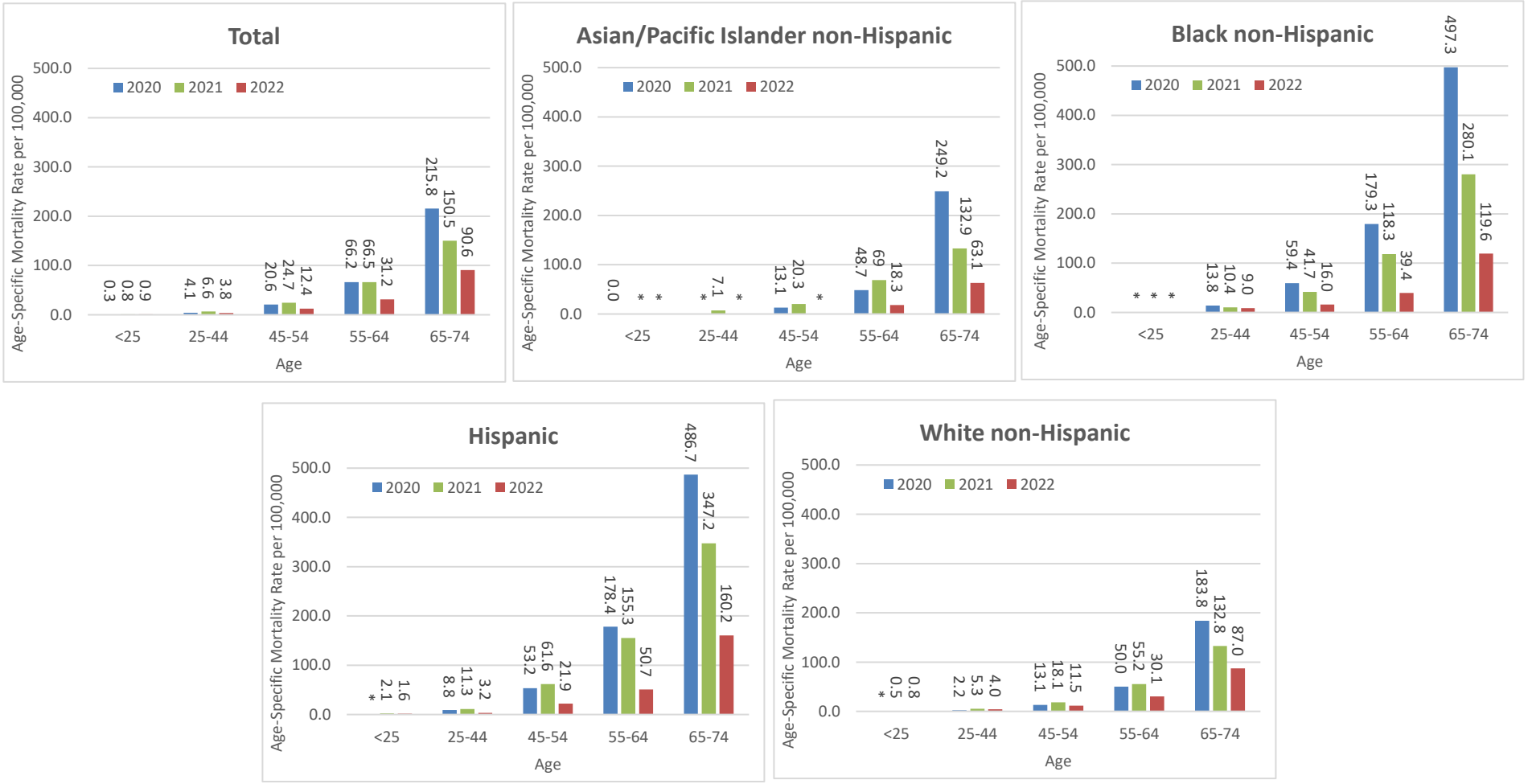
1. Proportions are out of total deaths due to all causes.

Table 16. COVID-19 Deaths by Race and Hispanic Ethnicity, Massachusetts: 2022

	Race/Hispanic Ethnicity[1]					
Cause of Death	American Indian/ Alaska Native non-Hispanic	Asian/ Pacific Islander non-Hispanic	Black non-Hispanic	Hispanic	White non-Hispanic	Total
	Number					
Underlying	8	95	154	206	2,723	3,217
Contributing/Associated	5	22	56	52	918	1,064
Total COVID-19-Related	13	117	210	258	3,641	4,281
Total Deaths (All Causes)	***141***	***1,625***	***3,589***	***3,235***	***54,219***	***63,390***
	Proportion of all deaths (%)[2]					
Underlying	5.7	5.8	4.3	6.4	5.0	5.1
Contributing/Associated	3.5	1.4	1.6	1.6	1.7	1.7
Total COVID-19-Related	***9.2***	***7.2***	***5.9***	***8.0***	***6.7***	***6.8***
	Death Rates[3]					
Underlying	56.8	24.3	36.2	44.5	34.5	34.4
Contributing/Associated	39.2	5.9	13.8	11.5	11.7	11.5
Total COVID-19-Related	***96.0***	***30.2***	***50.0***	***56.0***	***46.2***	***45.9***

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: 2020-2022



* Calculations based on values 1-4 are excluded.
Note: Data for American Indian/Alaska Native is non-Hispanic not presented due to sparse data points.
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: 2022

	All Injury Deaths[1]		Poisoning[2]		Falls		Hanging, Strangulation, or Suffocation		Motor Vehicle-Related[3]		Firearm		Other[4]	
	Number[7]	Rate[5]	Number[7]	Rate[5]	Number[7]	Rate[5]	Number[7]	Rate[5]	Number[7]	Rate[5]	Number[7]	Rate[5]	Number[7]	Rate[5]
All Persons	**5,742**	**73.9**	**2,715**	**38.0**	**1,292**	**13.9**	**443**	**5.5**	**477**	**6.2**	**263**	**3.6**	**552**	**6.7**
< 1	3	--[6]	0	0.0	0	0.0	1	--[6]	0	0.0	0	0.0	2	--[6]
1-14	29	2.8	4	--[6]	2	--[6]	5	0.5	2	--[6]	1	--[6]	15	1.4
15-24	317	33.3	120	12.6	7	0.7	33	3.5	80	8.4	53	5.6	24	2.5
25-44	1,704	90.5	1,228	65.2	29	1.5	84	4.5	134	7.1	118	6.3	111	5.9
45-64	1,780	94.5	1,173	62.3	126	6.7	147	7.8	140	7.4	55	2.9	139	7.4
65-74	519	75.0	156	22.6	149	21.5	51	7.4	53	7.7	15	2.2	95	13.7
75-84	559	161.8	23	6.7	346	100.1	59	17.1	39	11.3	12	3.5	80	23.2
85+	828	505.8	11	6.7	633	386.6	63	38.5	29	17.7	7	4.3	85	51.9
All Women	**1,865**	**42.5**	**772**	**21.2**	**631**	**10.8**	**129**	**2.8**	**132**	**3.2**	**23**	**0.6**	**178**	**3.8**
< 1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
1-14	8	1.6	2	--[6]	1	--[6]	0	0.0	2	--[6]	0	0.0	3	--[6]
15-24	76	16.0	30	6.3	1	--[6]	11	2.3	17	3.6	8	1.7	9	1.9
25-44	443	46.8	349	36.9	5	0.5	16	1.7	35	3.7	9	1.0	29	3.1
45-64	473	48.5	328	33.6	33	3.4	36	3.7	38	3.9	4	--[6]	34	3.5
65-74	154	41.4	46	12.4	49	13.2	17	4.6	14	3.8	1	--[6]	27	7.3
75-84	231	116.4	13	6.5	150	75.6	24	12.1	15	7.6	1	--[6]	28	14.1
85+	480	442.9	4	--[6]	392	361.7	25	23.1	11	10.2	0	0.0	48	44.3
All Men	**3,876**	**108.1**	**1,942**	**55.5**	**661**	**17.9**	**314**	**8.5**	**345**	**9.5**	**240**	**6.8**	**374**	**10.0**
< 1	3	--[6]	0	0.0	0	0.0	1	--[6]	0	0.0	0	0.0	2	--[6]
1-14	21	4.0	2	--[6]	1	--[6]	5	0.9	0	0.0	1	--[6]	12	2.3
15-24	241	50.8	90	19.0	6	1.3	22	4.6	63	13.3	45	9.5	15	3.2
25-44	1,260	134.4	878	93.6	24	2.6	68	7.3	99	10.6	109	11.6	82	8.7
45-64	1,307	143.7	845	92.9	93	10.2	111	12.2	102	11.2	51	5.6	105	11.5
65-74	365	114.0	110	34.4	100	31.2	34	10.6	39	12.2	14	4.4	68	21.2
75-84	328	223.0	10	6.8	196	133.3	35	23.8	24	16.3	11	7.5	52	35.4
85+	348	628.8	7	12.6	241	435.5	38	68.7	18	32.5	7	12.6	37	66.9

1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Includes drug overdoses, which account for the largest percentage. 3. Motor vehicle deaths to occupants, pedestrians, motorcyclists, and bicyclists. 4. All remaining injury causes. 5. Number of deaths per 100,000 persons in each age group; rates for all rows except the age group rows are age-adjusted to the 2000 US standard population. 6. Calculations based on values 1-4 are excluded. 7. Age group counts may not add to total due to deaths with missing ages.

Table 18. Injury Deaths by Method, Gender, and Race and Hispanic Ethnicity[7]: Numbers and Age-Adjusted Rates, Massachusetts: 2022

	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	**23**	**237.4**	**14**	**149.5**	**1**	--[6]	**3**	--[6]	**4**	--[6]	**0**	**0.0**	**1**	--[6]
Women	8	176.5	5	119.1	1	--[6]	2	--[6]	0	0.0	0	0.0	0	0.0
Men	15	298.3	9	182.4	0	0.0	1	--[6]	4	--[6]	0	0.0	1	--[6]
Asian/Pacific Islander non-Hispanic	**114**	**24.2**	**29**	**4.9**	**40**	**10.2**	**10**	**2.3**	**11**	**2.0**	**10**	**1.8**	**14**	**3.0**
Women	46	19.3	9	3.0	18	8.5	6	2.6	6	2.2	1	--[6]	6	2.7
Men	68	29.6	20	6.9	22	12.2	4	--[6]	5	1.8	9	3.5	8	3.3
Black non-Hispanic	**516**	**103.4**	**312**	**61.5**	**26**	**6.0**	**26**	**5.3**	**41**	**8.2**	**63**	**12.2**	**48**	**10.0**
Women	124	48.6	78	30.4	12	4.8	8	2.9	9	3.6	5	2.1	12	4.7
Men	392	162.9	234	95.1	14	6.7	18	8.8	32	13.5	58	22.3	36	16.4
Hispanic	**648**	**83.2**	**418**	**51.0**	**42**	**9.1**	**33**	**4.9**	**60**	**6.9**	**45**	**4.5**	**50**	**6.8**
Women	141	37.7	89	21.4	19	8.2	6	1.4	11	2.6	5	1.1	11	3.1
Men	507	131.1	329	82.4	23	9.0	27	9.8	49	11.4	40	7.8	39	10.6
White non-Hispanic	**4,345**	**75.1**	**1,893**	**38.9**	**1,179**	**14.8**	**367**	**6.1**	**343**	**6.1**	**137**	**2.6**	**426**	**6.7**
Women	1,522	45.6	578	23.2	579	11.4	106	3.0	101	3.4	12	0.5	146	4.0
Men	2,822	107.5	1,314	55.1	600	19.1	261	9.5	242	9.2	125	4.8	280	9.7

1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. 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: 2022

	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	**4,772**	**61.1**	**2,517**	**35.4**	**1,260**	**13.5**	**477**	**6.2**	**796**	**10.6**	**624**	**8.2**	**172**	**2.5**
<1	0	0.0	0	0.0	0	0.0	0	0.0	0	0	0	0	0	0
1-14	19	1.8	1	--[6]	2	--[6]	2	--[6]	5	0.5	2	--[6]	3	--[6]
15-24	200	21.0	102	10.7	4	--[6]	80	8.4	104	10.9	74	7.8	30	3.2
25-44	1,376	73.0	1167	62.0	22	1.2	134	7.1	290	15.4	195	10.4	95	5.0
45-64	1,453	77.1	1091	57.9	114	6.1	140	7.4	269	14.3	242	12.8	27	1.4
65-74	429	62.0	139	20.1	144	20.8	53	7.7	63	9.1	53	7.7	10	1.4
75-84	499	144.4	13	3.8	341	98.7	39	11.3	41	11.9	38	11.0	3	--[6]
85+	796	486.2	4	--[6]	633	386.6	29	17.7	22	13.4	19	11.6	3	--[6]
All Women	**1,646**	**37.0**	**690**	**19.2**	**626**	**10.7**	**132**	**3.2**	**168**	**4.3**	**132**	**3.3**	**36**	**1.0**
<1	0	0.0	0	0.0	0	0.0	0	0.0	0	0	0	0	0	0
1-14	6	1.2	1	--[6]	1	--[6]	2	--[6]	0	0	0	0	0	0
15-24	46	9.7	24	5.0	1	--[6]	17	3.6	28	5.9	20	4.2	8	1.7
25-44	384	40.6	329	34.8	5	0.5	35	3.7	50	5.3	33	3.5	17	1.8
45-64	388	39.8	289	29.6	29	3.0	38	3.9	65	6.7	59	6.1	6	0.6
65-74	133	35.8	37	--[6]	48	12.9	14	3.8	15	--[6]	13	--[6]	2	--[6]
75-84	216	108.8	7	--[6]	150	75.6	15	7.6	8	--[6]	6	--[6]	2	--[6]
85+	473	436.5	3	--[6]	392	361.7	11	10.2	2	--[6]	1	--[6]	1	--[6]
All Men	**3,126**	**87.5**	**1827**	**52.3**	**634**	**17.2**	**345**	**9.5**	**627**	**17.4**	**491**	**13.4**	**136**	**3.9**
<1	0	0.0	0	0.0	0	0.0	0	0.0	0	0	0	0	0	0
1-14	13	2.4	0	0.0	1	--[6]	0	0.0	5	0.9	2	--[6]	3	--[6]
15-24	154	32.5	78	16.4	3	--[6]	63	13.3	76	16.0	54	11.4	22	4.6
25-44	992	105.8	838	89.4	17	1.8	99	10.6	239	25.5	161	17.2	78	8.3
45-64	1,065	117.1	802	88.2	85	9.3	102	11.2	204	22.4	183	20.1	21	2.3
65-74	296	92.5	102	31.9	96	30.0	39	12.2	48	15.0	40	12.5	8	2.5
75-84	283	192.4	6	--[6]	191	129.9	24	16.3	33	22.4	32	21.8	1	--[6]
85+	323	583.6	1	--[6]	241	435.5	18	32.5	20	36.1	18	32.5	2	--[6]

1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. 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: 2022

	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	**20**	**208.5**	**14**	**149.5**	**1**	--[3]	**4**	--[3]	**3**	--[3]	**2**	--[3]	**1**	--[3]
Women	7	154.4	5	119.1	1	--[3]	0	0.0	1	--[3]	1	--[3]	0	0.0
Men	13	263.7	9	182.4	0	0.0	4	--[3]	2	--[3]	1	--[3]	1	--[3]
Asian/Pacific Islander non-Hispanic	**88**	**19.3**	**27**	**4.5**	**36**	**9.5**	**11**	**2.0**	**22**	**3.9**	**17**	**3.0**	**5**	**0.9**
Women	37	15.8	8	2.7	16	7.7	6	2.2	7	2.4	7	2.4	0	0.0
Men	51	23.1	19	6.5	20	11.6	5	1.8	15	5.7	10	3.7	5	1.9
Black non-Hispanic	**399**	**80.4**	**302**	**59.6**	**24**	**5.5**	**41**	**8.2**	**99**	**19.6**	**35**	**7.1**	**64**	**12.6**
Women	106	41.3	76	29.6	12	4.8	9	3.6	14	5.6	7	2.7	7	2.8
Men	293	123.9	226	92.0	12	5.8	32	13.5	85	34.2	28	11.8	57	22.5
Hispanic	**548**	**71.4**	**411**	**50.2**	**38**	**8.3**	**60**	**6.9**	**84**	**9.6**	**47**	**5.8**	**37**	**3.9**
Women	124	33.8	85	20.5	19	8.2	11	2.6	12	2.5	6	1.3	6	1.2
Men	424	110.8	326	81.8	19	7.3	49	11.4	72	17.5	41	11.0	31	6.5
White non-Hispanic	**3,643**	**62.4**	**1717**	**35.7**	**1157**	**14.4**	**343**	**6.1**	**570**	**10.5**	**515**	**9.4**	**55**	**1.1**
Women	1,353	39.7	504	20.8	576	11.3	101	3.4	130	4.7	109	3.9	21	0.9
Men	2,290	87.4	1213	51.2	581	18.5	242	9.2	439	16.7	405	15.4	34	1.4

1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Number of deaths per 100,000 persons in each group; rates are age-adjusted to the 2000 US standard population. 3. Calculations based on values 1-4 are excluded. 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: 2022

Type of Injury[1]	All Injury Deaths		Women		Men	
	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]
Unintentional Injuries (Accidents)	**4,772**	**61.1**	**1,646**	**37.0**	**3,126**	**87.5**
Motor vehicle-related	477	6.2	132	3.2	345	9.5
Injury to pedestrian	109	1.3	39	0.9	70	1.8
Injury to pedal cyclist	8	0.1	0	0.0	8	0.2
Injury to motorcyclist	55	0.8	5	0.1	50	1.4
Injury to occupant	32	0.4	8	0.2	24	0.7
Other and unspecified	273	3.6	80	2.0	193	5.3
Poisoning	2,517	35.4	690	19.2	1,827	52.3
Falls	1,260	13.5	626	10.7	634	17.2
Hanging, strangulation or suffocation	200	2.2	82	1.6	118	3.1
Cut or pierce	2	--[3]	0	0.0	2	--[3]
Firearm	1	--[3]	0	0.0	1	--[3]
Drowning and submersion	52	0.7	5	0.1	47	1.3
Smoke, fire and flames	34	0.4	16	0.3	18	0.5
Other and unspecified	203	2.3	90	1.7	113	3.0
Suicide	**624**	**8.2**	**132**	**3.3**	**491**	**13.4**
Poisoning	142	1.8	65	1.6	76	2.1
Hanging, strangulation or suffocation	235	3.1	44	1.2	191	5.3
Firearm	148	2.0	8	0.2	140	3.9
Other and unspecified	99	1.2	15	0.4	84	2.2
Homicide	**172**	**2.5**	**36**	**1.0**	**136**	**3.9**
Firearm	107	1.6	15	0.4	92	2.7
Cut or pierce	34	0.5	11	0.3	23	0.7
Other and unspecified	31	0.4	10	0.2	21	0.6
Injury Deaths of Undetermined Intent	**112**	**1.4**	**31**	**0.8**	**81**	**2.2**
Poisoning	53	0.7	17	0.4	36	1.0
Other and unspecified	59	0.7	14	0.4	45	1.1
Legal Intervention	**6**	**0.1**	**0**	**0.0**	**6**	**0.2**
Firearm	5	0.1	0	0.0	5	0.2
Other and unspecified	1	--[3]	0	0.0	1	--[3]
Adverse Effects	**56**	**0.6**	**20**	**0.4**	**36**	**0.9**
Medical care	49	0.6	17	0.4	32	0.8
Drugs	7	0.1	3	--[3]	4	--[3]
ALL INJURIES	**5,742**	**73.9**	**1,865**	**42.5**	**3,876**	**108.1**

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: 2012-2022

	Black non-Hispanic			Hispanic			White non-Hispanic		
Year	**#**	**Percent**	**Rate[2]**	**#**	**Percent**	**Rate[2]**	**#**	**Percent**	**Rate[2]**
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%	3.1	11	24%	1.6	19	41%	0.3
2022	14	25%	2.6	18	32%	2.8	25	44%	0.4
MEN									
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%	0.7
2021	7	24%	3.3	7	24%	2.2	15	52%	0.4
2022	11	24%	4.5	13	29%	4.7	21	47%	0.6
WOMEN									
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%	3.1	4	--[3]	--[3]	4	--[3]	--[3]
2022	3	--[3]	--[3]	5	42%	1.5	4	--[3]	--[3]

NOTE: There were no HIV/AIDS deaths for American Indian/Alaska Native non-Hispanic or Asian/Pacific Islander non-Hispanic residents in 2022.

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: 2002-2022

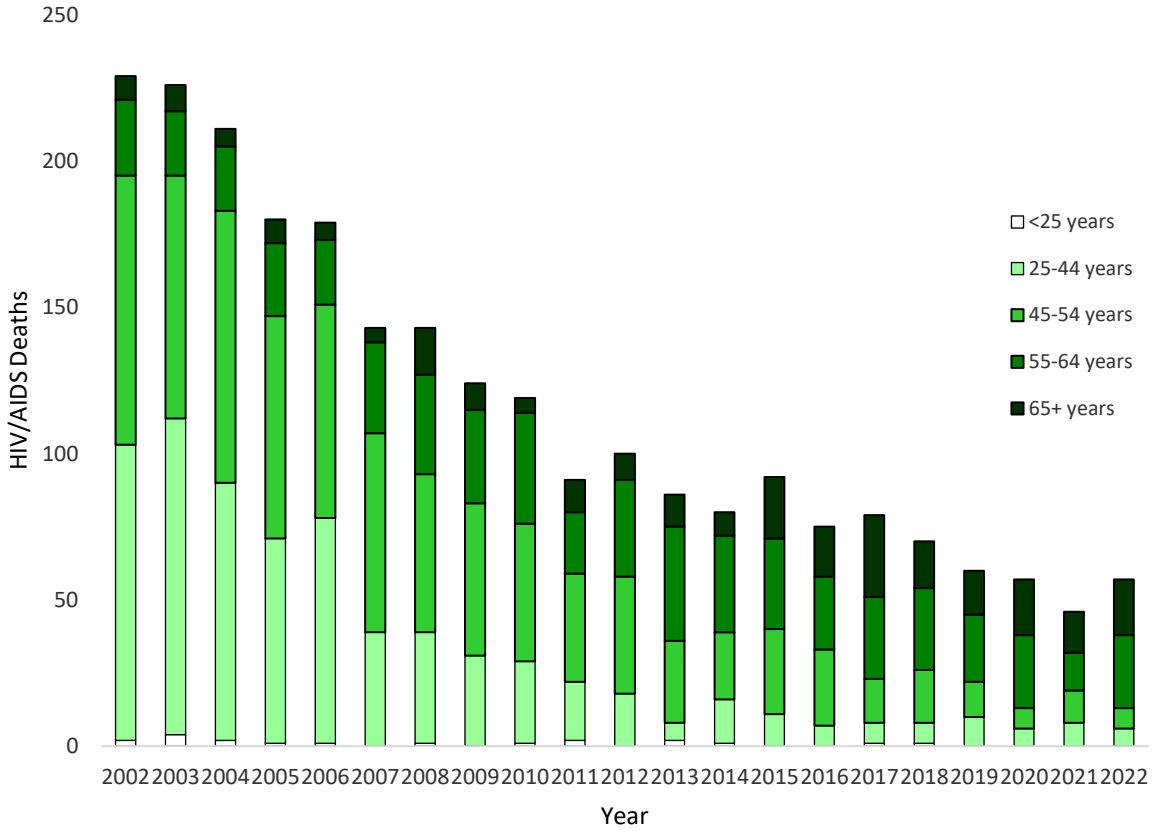


Table 23. Number and Age-Specific Rates for Leading Underlying Causes of Death by Race and Hispanic Ethnicity[1], Massachusetts: 2022

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	**114**	**1.0**	**0**	**0.0**	**9**	**0.8**	**24**	**1.7**	**33**	**1.6**	**42**	**0.3**
Unintentional Injuries[4]	19	0.2	0	0.0	2	--[6]	4	--[6]	6	0.3	6	0.0
Cancer	16	0.1	0	0.0	0	0.0	3	--[6]	7	0.3	5	0.0
Congenital Malformations	11	0.1	0	0.0	2	--[6]	1	--[6]	1	--[6]	7	0.1
Other Infections	7	0.1	0	0.0	0	0.0	2	--[6]	2	--[6]	3	--[6]
Age: 15-24, TOTAL	**429**	**4.0**	**6**	**31.5**	**19**	**2.4**	**64**	**7.4**	**95**	**6.1**	**236**	**3.3**
Unintentional Injuries[4]	200	1.9	4	--[6]	6	0.8	22	2.6	47	3.0	116	1.6
Suicide	74	0.7	1	--[6]	6	0.8	7	0.8	9	0.6	48	0.7
Homicide	30	0.3	0	0.0	1	--[6]	14	1.6	10	0.6	5	0.1
Heart Disease	21	0.2	1	--[6]	0	0.0	4	--6	7	0.4	9	0.1
Age: 25-44, TOTAL	**2,959**	**15.0**	**13**	**38.5**	**95**	**5.4**	**361**	**23.8**	**481**	**18.2**	**1,941**	**14.5**
Unintentional Injuries[4]	1,376	7.0	8	23.7	30	1.7	140	9.2	245	9.3	919	6.8
Cancer	245	1.2	0	0.0	24	1.4	31	2.0	31	1.2	155	1.2
Heart Disease	217	1.1	1	--[6]	11	0.6	26	1.7	30	1.1	145	1.1
Suicide	195	1.0	1	--[6]	6	0.3	21	1.4	27	1.0	137	1.0
Age: 45-64, TOTAL	**10,064**	**49.0**	**37**	**104.2**	**261**	**25.5**	**934**	**76.2**	**926**	**62.5**	**7,788**	**47.1**
Cancer	2,554	12.4	4	--[6]	102	10.0	191	15.6	177	11.9	2,052	12.4
Heart Disease	1,633	8.0	8	22.5	35	3.4	171	14.0	124	8.4	1,274	7.7
Unintentional Injuries[4]	1,453	7.1	6	16.9	13	1.3	167	13.6	202	13.6	1,039	6.3
Chronic Liver Disease	451	2.2	5	14.1	9	0.9	18	1.5	49	3.3	369	2.2
Age: 65+, TOTAL	**49,588**	**428.6**	**85**	**534.0**	**1,234**	**309.2**	**2,168**	**443.3**	**1,637**	**359.9**	**44,103**	**435.4**
Heart Disease	10,526	91.0	24	150.8	235	58.9	420	85.9	283	62.2	9,473	93.5
Cancer	9,591	82.9	12	75.4	276	69.2	424	86.7	309	67.9	8,513	84.1
COVID-19	2,711	23.4	4	--[6]	79	19.8	108	22.1	137	30.1	2,357	23.3
Stroke	2,107	18.2	3	--[6]	88	22.0	141	28.8	75	16.5	1,772	17.5
Age: 65-74, TOTAL	**11,496**	**1,661.8**	**34**	**3,683.6**	**263**	**873.8**	**746**	**2,348.0**	**562**	**1,667.8**	**9,783**	**1,678.8**
Cancer	3,496	505.4	6	650.1	91	302.3	196	616.9	142	421.4	3,033	520.5
Heart Disease	2,028	293.2	7	758.4	50	166.1	152	478.4	96	284.9	1,704	292.4
COVID-19	627	90.6	3	--[6]	19	63.1	38	119.6	54	160.2	507	87.0
Chronic Lower Respiratory Disease[5]	573	82.8	1	--[6]	3	--[6]	16	50.4	9	26.7	540	92.7
Age: 75-84, TOTAL	**15,865**	**4,591.1**	**25**	**5,760.4**	**413**	**2,829.7**	**694**	**4,797.1**	**570**	**4,011.8**	**14,059**	**4,736.8**
Cancer	3,655	1,057.7	4	--[6]	123	842.8	137	947.0	115	809.4	3,260	1,098.4
Heart Disease	2,971	859.8	9	2,073.7	70	479.6	128	884.8	88	619.4	2,650	892.8
COVID-19	819	237.0	0	0.0	21	143.9	34	235.0	31	218.2	727	244.9
Chronic Lower Respiratory Disease[5]	790	228.6	1	--[6]	6	41.1	25	172.8	16	112.6	740	249.3
Age: 85+, TOTAL	**22,227**	**13,576.6**	**26**	**12,206.6**	**558**	**9,982.1**	**728**	**12,419.0**	**505**	**9,654.0**	**20,261**	**13,984.9**
Heart Disease	5,527	3,376.0	8	3,755.9	115	2,057.2	140	2,388.3	99	1,892.6	5,119	3,533.3
Cancer	2,440	1,490.4	2	--[6]	62	1,109.1	91	1,552.4	52	994.1	2,220	1,532.3
COVID-19	1,265	772.7	1	--[6]	39	697.7	36	614.1	52	994.1	1,123	775.1
Stroke	1,087	664.0	0	0.0	43	769.2	57	972.4	27	516.2	947	653.7

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: 2022

CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Lung Cancer	Breast Cancer	Motor Vehicle	Homicide	Suicide	Opioid-related[3]
Massachusetts	63,390	691.6	2,737	718	477	172	624	2,314
Abington	143	802.8	9	3	0	0	1	5
Acton	161	624.8	12	1	3	0	1	4
Acushnet	98	867.7	3	0	3	0	0	5
Adams	123	1,353.4	1	4	1	0	1	3
Agawam	407	1,281.7	16	4	1	0	4	8
Alford	5	1,598.8	0	0	0	0	0	0
Amesbury	150	860.2	14	1	1	1	1	7
Amherst	162	579.2	2	1	0	0	4	1
Andover	248	516.6	9	1	1	0	1	4
Aquinnah	3	--[2]	1	0	1	0	0	0
Arlington	337	485.2	11	7	1	0	3	10
Ashburnham	36	492.6	2	0	1	0	1	3
Ashby	34	994.9	3	0	0	0	0	0
Ashfield	23	1,269.4	2	1	0	0	0	0
Ashland	119	472.8	2	1	2	0	1	4
Athol	167	1,360.9	8	3	2	0	4	9
Attleboro	489	949.9	34	8	8	1	5	21
Auburn	199	1,066.1	5	2	1	0	2	7
Avon	47	943.7	3	0	0	0	0	1
Ayer	103	1,027.7	4	0	2	0	0	3
Barnstable	622	1,287.5	29	7	4	1	12	22
Barre	41	725.0	3	1	0	0	0	0
Becket	22	1,518.3	1	2	0	0	0	0
Bedford	132	672.4	5	1	1	0	1	1
Belchertown	132	802.6	7	0	0	0	3	2
Bellingham	153	748.7	2	4	1	0	1	4
Belmont	181	432.5	6	3	2	0	1	2
Berkley	65	955.6	4	1	0	0	2	3
Berlin	45	1,508.1	5	0	1	0	0	1
Bernardston	21	1,242.7	3	0	0	0	0	0
Beverly	448	813.9	16	7	2	1	3	7
Billerica	375	707.9	15	3	5	0	1	7
Blackstone	83	1,010.8	4	3	0	0	1	4
Blandford	9	531.0	0	0	0	0	0	0
Bolton	25	439.9	0	0	0	0	1	0
Boston	4,167	484.0	161	54	28	37	44	247
Bourne	269	1,358.1	15	1	2	0	4	11
Boxborough	26	559.9	2	1	1	0	0	1
Boxford	43	511.8	0	0	0	0	0	0
Boylston	32	645.2	2	1	0	0	0	0
Braintree	422	762.4	10	3	3	0	3	10
Brewster	159	1,514.7	6	1	0	0	4	2
Bridgewater	208	616.1	9	5	2	0	4	3
Brimfield	49	1,190.1	5	1	1	0	0	1
Brockton	955	832.2	35	13	10	8	9	61
Brookfield	38	941.0	0	0	0	0	0	1
Brookline	276	277.5	6	6	2	1	1	3
Buckland	16	602.0	1	0	0	0	0	1

Table 24. Selected Causes of Death by Community, Massachusetts: 2022 (cont.)								
CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Lung Cancer	Breast Cancer	Motor Vehicle	Homicide	Suicide	Opioid-related[3]
Burlington	269	654.5	9	1	0	1	1	2
Cambridge	506	302.1	14	11	4	0	5	32
Canton	224	622.2	9	3	0	0	0	3
Carlisle	26	314.1	0	0	0	0	0	0
Carver	139	1,270.3	7	1	2	0	3	5
Charlemont	13	1,316.1	0	0	0	0	0	0
Charlton	159	1,044.2	10	3	0	0	2	3
Chatham	149	2,593.0	3	1	0	1	0	1
Chelmsford	313	712.0	11	3	0	0	8	13
Chelsea	266	490.1	8	1	3	0	3	17
Cheshire	40	1,437.0	3	2	0	0	1	1
Chester	7	543.3	0	0	0	0	0	0
Chesterfield	11	959.4	1	0	0	0	0	0
Chicopee	641	1,100.0	33	4	11	5	5	34
Chilmark	11	478.4	0	0	0	0	0	0
Clarksburg	22	1,383.0	1	1	1	1	1	0
Clinton	129	730.5	7	0	0	0	0	5
Cohasset	68	733.4	1	1	0	0	0	0
Colrain	14	1,178.7	0	0	0	0	1	0
Concord	176	717.0	5	1	0	0	2	1
Conway	13	750.3	2	1	0	0	0	0
Cummington	5	672.9	0	0	0	0	0	1
Dalton	73	898.7	5	2	0	0	0	1
Danvers	403	1,082.5	11	5	1	0	1	8
Dartmouth	348	857.3	20	1	1	1	4	11
Dedham	303	768.7	6	3	1	0	2	8
Deerfield	35	684.0	0	1	1	0	1	2
Dennis	246	2,208.9	13	1	1	1	1	7
Dighton	64	775.7	2	0	0	0	0	0
Douglas	56	696.5	3	0	1	0	1	1
Dover	29	396.1	0	0	0	0	0	0
Dracut	334	854.1	11	4	4	1	7	9
Dudley	120	941.7	7	1	1	0	1	4
Dunstable	17	614.1	0	0	0	0	0	0
Duxbury	142	893.6	11	2	1	0	0	2
East Bridgewater	172	1,059.0	8	4	0	0	2	5
East Brookfield	18	756.5	0	1	0	0	0	0
East Longmeadow	246	1,203.0	8	2	5	0	0	2
Eastham	66	1,774.3	2	1	2	0	0	0
Easthampton	157	836.3	11	2	3	0	1	6
Easton	231	853.7	19	3	1	2	2	2
Edgartown	49	830.9	0	1	1	0	3	0
Egremont	10	676.8	0	0	0	0	0	0
Erving	16	1,067.7	1	0	0	0	0	0
Essex	24	590.1	2	0	0	0	0	0
Everett	294	472.9	15	3	1	1	1	20
Fairhaven	226	1,206.5	16	0	0	0	4	8
Fall River	1,112	1,091.5	51	7	10	5	13	77
Falmouth	501	1,520.1	25	5	5	4	3	13
Fitchburg	424	967.1	15	5	2	1	5	19
Florida	10	1,889.0	0	1	1	0	0	0
Foxborough	146	623.7	8	1	2	0	3	1

Table 24. Selected Causes of Death by Community, Massachusetts: 2022 (cont.)								
CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Lung Cancer	Breast Cancer	Motor Vehicle	Homicide	Suicide	Opioid-related[3]
Framingham	619	598.6	13	2	2	1	3	17
Franklin	249	543.6	12	5	1	1	2	3
Freetown	77	954.5	6	1	1	0	0	1
Gardner	282	1,204.7	11	4	7	1	3	15
Georgetown	54	534.4	3	1	0	0	0	0
Gill	16	938.4	3	0	0	0	0	0
Gloucester	355	1,159.1	16	3	1	0	4	9
Goshen	11	1,210.0	0	0	0	0	0	0
Gosnold	0	0.0	0	0	0	0	0	0
Grafton	126	482.1	7	0	3	0	0	3
Granby	77	1,269.6	1	1	0	0	3	2
Granville	20	1,364.7	1	1	0	0	0	0
Great Barrington	109	1,327.2	3	0	1	0	3	1
Greenfield	253	1,226.2	12	5	1	0	2	9
Groton	77	630.1	1	1	1	0	2	0
Groveland	73	878.9	4	0	0	0	0	0
Hadley	84	1,311.8	1	0	0	0	1	3
Halifax	76	1,065.9	5	0	0	0	0	3
Hamilton	45	546.7	1	1	1	0	1	1
Hampden	62	1,320.5	1	1	1	0	4	0
Hancock	4	--[2]	1	0	0	0	0	0
Hanover	136	789.4	6	0	1	0	3	2
Hanson	102	783.1	1	0	0	0	1	2
Hardwick	22	884.4	0	1	0	0	1	1
Harvard	37	474.7	3	0	0	1	0	1
Harwich	218	1,762.4	12	2	1	0	3	5
Hatfield	38	1,354.4	1	0	0	0	0	0
Haverhill	666	850.9	28	9	7	1	5	22
Hawley	4	--[2]	0	0	0	0	0	0
Heath	4	--[2]	0	0	0	0	0	0
Hingham	319	856.3	6	3	0	0	4	3
Hinsdale	27	1,925.6	2	0	0	0	0	0
Holbrook	117	807.1	3	2	1	0	3	4
Holden	144	609.7	3	1	1	0	1	3
Holland	24	994.3	1	0	2	0	0	1
Holliston	110	595.9	2	1	1	0	2	0
Holyoke	480	1,138.9	14	2	7	2	5	27
Hopedale	52	557.4	4	2	0	0	1	0
Hopkinton	111	509.2	3	2	1	0	4	1
Hubbardston	34	1,012.4	4	0	0	0	0	0
Hudson	180	629.7	9	3	0	0	3	0
Hull	122	1,301.5	5	2	1	1	1	3
Huntington	20	738.1	0	0	0	0	0	3
Ipswich	135	891.1	3	1	0	0	3	2
Kingston	165	1,187.1	13	1	1	1	4	3
Lakeville	107	963.3	7	0	2	0	3	4
Lancaster	70	664.1	7	2	1	0	0	0
Lanesborough	29	1,246.2	0	1	0	1	1	0
Lawrence	514	546.2	14	2	4	3	3	59
Lee	79	1,089.3	4	1	0	0	0	0
Leicester	128	1,008.1	7	0	3	0	0	3
Lenox	114	1,631.7	1	1	0	0	1	1

Table 24. Selected Causes of Death by Community, Massachusetts: 2022 (cont.)								
CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Lung Cancer	Breast Cancer	Motor Vehicle	Homicide	Suicide	Opioid-related[3]
Leominster	465	967.8	19	6	2	1	2	14
Leverett	19	708.5	3	0	0	0	0	0
Lexington	250	603.3	6	3	4	0	3	6
Leyden	4	--[2]	1	0	0	0	0	0
Lincoln	74	464.6	0	2	1	0	1	0
Littleton	75	570.3	5	1	1	0	1	1
Longmeadow	157	682.7	7	1	1	0	1	0
Lowell	903	676.4	31	9	6	4	11	53
Ludlow	238	876.7	14	1	1	1	1	8
Lunenburg	87	657.1	7	0	1	0	0	1
Lynn	808	728.5	36	7	4	6	10	73
Lynnfield	129	855.3	7	0	0	0	0	3
Malden	440	485.6	24	7	3	0	1	24
Manchester	47	953.2	2	0	0	0	0	0
Mansfield	178	644.3	4	1	2	0	1	6
Marblehead	185	857.2	5	4	3	0	2	0
Marion	51	671.1	1	1	0	0	1	0
Marlborough	375	678.1	11	2	3	0	4	10
Marshfield	256	928.7	12	2	1	2	3	5
Mashpee	207	1,354.4	9	3	2	0	2	8
Mattapoisett	62	1,233.0	2	1	0	0	0	2
Maynard	94	792.2	7	1	1	0	1	4
Medfield	85	583.9	3	0	1	0	1	0
Medford	476	504.5	25	5	1	0	5	20
Medway	117	739.5	6	1	0	0	1	1
Melrose	276	637.3	7	2	1	0	0	7
Mendon	43	729.8	4	0	1	0	0	3
Merrimac	74	1,142.3	6	0	0	0	0	2
Methuen	476	750.0	27	9	2	2	3	13
Middleborough	296	1,237.8	11	2	6	0	6	6
Middlefield	3	--[2]	0	0	0	0	1	0
Middleton	74	621.0	4	2	0	0	1	1
Milford	284	682.9	7	4	0	0	2	9
Millbury	148	909.1	9	2	1	1	2	4
Millis	69	832.5	1	0	0	0	1	2
Millville	27	592.7	1	0	0	0	1	0
Milton	213	719.3	5	6	2	0	2	2
Monroe	1	--[2]	0	0	0	0	0	0
Monson	93	1,206.2	4	2	2	0	1	1
Montague	115	1,420.8	8	3	1	0	1	8
Monterey	2	--[2]	0	0	0	0	0	0
Montgomery	7	926.4	0	0	0	0	0	0
Mount Washington	2	--[2]	0	0	0	0	0	0
Nahant	32	889.6	1	1	1	0	0	1
Nantucket	85	429.5	3	2	1	0	2	2
Natick	247	426.1	4	1	1	0	1	6
Needham	227	534.0	8	3	2	0	1	1
New Ashford	4	--[2]	0	0	0	0	0	0
New Bedford	1,136	1,028.4	63	9	11	3	17	81
New Braintree	4	--[2]	0	0	0	0	0	0
New Marlborough	17	1,458.2	0	0	0	0	0	0
New Salem	8	649.9	0	0	0	0	0	0

Table 24. Selected Causes of Death by Community, Massachusetts: 2022 (cont.)								
CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Lung Cancer	Breast Cancer	Motor Vehicle	Homicide	Suicide	Opioid-related[3]
Newbury	60	853.8	3	0	0	0	0	0
Newburyport	214	914.8	6	2	1	0	1	6
Newton	570	446.8	15	5	2	1	3	10
Norfolk	77	464.6	3	1	0	0	3	1
North Adams	174	1,300.3	13	3	0	2	1	7
North Andover	273	677.5	6	5	1	2	2	6
North Attleborough	262	692.5	16	3	5	0	0	10
North Brookfield	46	1,020.7	2	0	0	0	0	0
North Reading	113	567.7	5	1	0	0	0	2
Northampton	324	934.0	16	3	1	2	3	7
Northborough	135	662.0	4	1	0	0	0	1
Northbridge	160	891.2	7	2	1	0	2	3
Northfield	29	747.0	0	1	0	0	1	0
Norton	150	729.1	8	2	0	0	1	4
Norwell	100	1,033.6	3	1	3	0	2	0
Norwood	329	760.2	16	4	2	0	1	8
Oak Bluffs	54	929.1	5	3	0	0	0	5
Oakham	19	939.7	1	0	1	0	0	0
Orange	103	1,255.0	3	0	1	0	2	4
Orleans	111	2,333.9	5	1	1	0	2	2
Otis	21	1,244.8	0	0	1	0	0	1
Oxford	131	982.0	4	1	4	0	1	3
Palmer	152	1,323.6	5	1	1	2	1	7
Paxton	42	678.3	0	3	0	0	0	1
Peabody	778	1,080.2	22	14	4	1	4	14
Pelham	15	1,148.1	0	1	0	0	2	0
Pembroke	190	999.5	19	4	0	0	2	3
Pepperell	111	923.2	5	1	0	0	2	2
Peru	3	--[2]	1	0	0	0	0	0
Petersham	11	1,257.0	2	0	0	0	0	1
Phillipston	21	1,544.1	0	0	0	0	0	2
Pittsfield	602	1,276.0	24	5	0	2	8	29
Plainfield	6	1,016.7	0	0	0	0	0	1
Plainville	74	647.7	5	0	1	0	0	2
Plymouth	689	972.8	41	10	9	1	7	19
Plympton	26	1,022.8	1	0	0	0	0	0
Princeton	22	815.6	0	1	0	0	0	1
Provincetown	52	1,994.3	2	0	0	0	1	0
Quincy	949	675.9	58	13	6	2	11	44
Randolph	344	857.3	12	1	3	1	4	18
Raynham	188	1,108.6	11	1	3	1	1	4
Reading	223	571.6	13	2	0	0	2	5
Rehoboth	120	900.5	5	1	0	1	2	1
Revere	474	619.2	28	4	4	2	2	30
Richmond	8	186.2	0	0	0	0	0	0
Rochester	53	879.4	1	0	0	0	2	2
Rockland	205	1,077.9	10	3	0	2	4	11
Rockport	80	1,460.2	4	0	2	0	0	1
Rowe	9	2,897.9	0	0	0	0	1	1
Rowley	42	612.6	2	0	0	0	2	1
Royalston	16	1,626.0	1	1	0	0	0	0
Russell	16	918.9	1	0	1	0	1	1

Table 24. Selected Causes of Death by Community, Massachusetts: 2022 (cont.)								
CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Lung Cancer	Breast Cancer	Motor Vehicle	Homicide	Suicide	Opioid-related[3]
Rutland	68	733.1	8	2	0	1	1	4
Salem	372	687.3	14	3	3	0	5	18
Salisbury	112	1,309.1	7	4	1	1	1	1
Sandisfield	13	2,705.6	1	0	0	0	0	0
Sandwich	194	969.7	14	5	2	0	2	3
Saugus	308	858.1	18	6	2	0	1	9
Savoy	4	--[2]	0	1	0	0	0	0
Scituate	150	731.0	6	2	1	0	2	3
Seekonk	128	720.2	5	1	0	0	1	1
Sharon	134	531.7	2	1	3	0	1	3
Sheffield	39	1,269.4	1	1	0	0	0	0
Shelburne	22	1,229.9	1	0	1	0	0	0
Sherborn	39	1,016.5	3	0	1	0	1	0
Shirley	61	584.1	4	1	1	0	0	1
Shrewsbury	316	563.0	18	2	2	0	2	6
Shutesbury	11	557.0	1	0	0	0	1	0
Somerset	246	1,011.0	8	1	2	0	1	5
Somerville	400	353.4	15	6	3	0	11	22
South Hadley	202	919.1	9	1	1	1	2	3
Southampton	48	894.1	6	1	0	0	1	0
Southborough	48	547.9	2	1	0	0	0	2
Southbridge	192	1,086.8	13	1	3	0	1	9
Southwick	86	840.8	7	1	0	0	0	7
Spencer	135	1,057.9	8	1	1	0	2	3
Springfield	1,532	942.4	63	18	23	14	8	106
Sterling	76	1,005.8	1	1	1	0	0	5
Stockbridge	20	1,200.5	1	0	0	0	2	0
Stoneham	255	863.8	12	2	3	0	2	6
Stoughton	297	895.0	10	3	5	1	2	9
Stow	46	596.8	2	0	0	0	1	0
Sturbridge	82	592.9	3	1	0	1	1	0
Sudbury	115	696.4	5	2	2	0	2	1
Sunderland	25	868.9	1	0	0	0	1	1
Sutton	65	755.8	5	2	1	0	1	1
Swampscott	120	583.0	5	1	0	0	1	1
Swansea	199	1,038.4	13	1	1	1	2	4
Taunton	647	1,013.6	30	5	5	2	10	24
Templeton	100	1,233.7	3	0	2	0	0	4
Tewksbury	354	897.2	17	3	6	0	2	7
Tisbury	41	655.3	2	1	0	0	0	1
Tolland	4	--[2]	1	0	0	0	0	0
Topsfield	54	971.5	3	2	0	0	0	0
Townsend	60	669.4	5	1	1	0	1	2
Truro	27	1,712.8	1	0	0	0	2	1
Tyngsborough	89	643.8	9	1	1	0	4	1
Tyringham	8	3,052.6	0	0	0	0	0	0
Upton	51	525.5	4	0	0	0	0	1
Uxbridge	136	887.1	5	3	1	0	1	3
Wakefield	280	710.5	7	5	1	0	1	7
Wales	16	892.5	1	0	0	0	0	0
Walpole	234	643.1	18	3	1	0	2	3
Rutland	68	733.1	8	2	0	1	1	4

Table 24. Selected Causes of Death by Community, Massachusetts: 2022 (cont.)								
CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Lung Cancer	Breast Cancer	Motor Vehicle	Homicide	Suicide	Opioid-related[3]
Waltham	446	496.0	20	10	3	1	3	23
Ware	122	1,165.3	2	0	0	0	0	6
Wareham	361	1,707.0	24	3	1	2	3	24
Warren	64	1,284.0	3	1	0	0	2	3
Warwick	4	--[2]	0	0	0	0	0	0
Washington	4	--[2]	2	0	0	0	0	0
Watertown	292	480.0	11	4	0	0	3	3
Wayland	91	418.0	3	3	0	0	1	0
Webster	264	1,366.0	20	4	3	1	1	8
Wellesley	176	544.2	5	3	0	0	1	0
Wellfleet	31	873.8	1	1	0	0	1	1
Wendell	9	1,167.2	1	0	0	0	0	0
Wenham	35	845.1	2	0	0	0	0	0
West Boylston	81	714.6	3	1	0	0	0	1
West Bridgewater	97	1,213.6	3	2	1	0	1	4
West Brookfield	56	1,142.2	3	0	2	0	0	0
West Newbury	31	650.4	1	2	0	0	0	0
West Springfield	323	1,019.8	20	7	7	3	5	11
West Stockbridge	16	1,489.5	0	0	0	0	1	1
West Tisbury	13	523.9	0	0	0	0	1	0
Westborough	139	429.7	7	1	1	0	1	0
Westfield	395	878.9	11	4	1	0	5	13
Westford	166	643.8	8	2	0	0	2	1
Westhampton	12	726.7	1	0	0	0	0	2
Westminster	68	812.5	5	1	0	0	0	1
Weston	89	662.8	2	1	0	0	0	1
Westport	197	1,109.3	11	0	0	0	4	5
Westwood	137	763.7	8	2	0	0	0	0
Weymouth	609	861.7	30	3	3	1	5	24
Whately	14	943.7	0	0	1	0	0	0
Whitman	135	809.1	8	4	0	0	1	8
Wilbraham	168	1,051.6	6	4	1	0	0	2
Williamsburg	23	783.4	2	0	0	0	0	0
Williamstown	77	1,137.8	1	1	0	0	1	1
Wilmington	224	761.9	9	4	4	0	2	8
Winchendon	123	1,160.1	8	1	2	0	2	4
Winchester	169	562.6	4	2	0	0	1	1
Windsor	12	1,944.2	0	1	0	0	1	0
Winthrop	181	790.3	7	4	0	0	2	6
Woburn	435	802.1	20	6	5	2	5	14
Worcester	1819	753.1	57	14	18	11	14	139
Worthington	10	536.7	0	0	0	0	0	0
Wrentham	139	1,023.1	4	3	1	0	3	2
Yarmouth	431	1,586.1	20	1	1	0	1	10

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: 2022

County	Number of Deaths[2]	PMR[3] (per 100,000 population)
Massachusetts	**25,291**	**297.7**
Barnstable	1,031	932.4
Berkshire	676	893.5
Bristol	2,642	711.8
Dukes	70	553.7
Essex	2,946	557.3
Franklin	344	785.7
Hampden	2,337	764.6
Hampshire	541	557.6
Middlesex	4,399	363.8
Nantucket	32	318.4
Norfolk	2,138	433.7
Plymouth	2,233	697.1
Suffolk	2,411	349.1
Worcester	3,489	618.1

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: 2022

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	**63,390**	**691.6**	**12,409**	**12,424**	**2,737**	**718**	**2,391**	**2,374**	**1,501**	**934**	**3,217**	**477**	**172**	**624**	**2,314**
Barnstable	3,281	690.3	685	647	157	30	116	133	62	39	150	21	7	38	86
Berkshire	1,693	763.0	356	339	66	27	64	81	41	27	82	5	6	22	46
Bristol	6,161	807.9	1,174	1,223	329	46	241	261	158	78	390	53	17	70	273
Dukes	171	503.5	33	41	8	5	13	9	2	2	6	2	0	4	6
Essex	7,462	682.5	1,538	1,354	302	93	291	239	191	105	394	42	18	55	269
Franklin	801	743.6	177	168	43	12	33	36	22	12	35	6	0	11	26
Hampden	5,132	845.4	1,020	890	219	54	199	195	109	65	274	66	27	41	229
Hampshire	1,462	711.7	306	279	60	10	53	58	31	23	81	5	3	21	37
Middlesex	12,337	608.9	2,441	2,435	467	144	447	407	298	206	577	86	12	123	375
Nantucket	85	505.0	14	23	3	2	6	3	0	0	4	1	0	2	2
Norfolk	6,244	619.2	1,185	1,259	254	75	259	224	122	90	299	41	7	54	157
Plymouth	5,457	762.3	1,083	1,128	264	69	212	229	109	111	261	42	17	69	188
Suffolk	5,091	641.8	880	1,032	204	63	209	161	144	44	247	35	39	51	300
Worcester	8,011	749	1,517	1,606	361	88	248	338	212	132	417	72	19	63	320

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

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, D.C., 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, Office of Population 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, Office of Population 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

State File #
Registered #

Form R-301 08012015

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)			
Branch of military (most recent)		*Rank/organization/outfit(most recent)*	
Date entered(most recent)	*Date Discharged (most recent)*	*Service Number(most recent)*	

Place of Death Type		*Date of Pronouncement*	*Time of Pronouncement*
RN/NP/PA Pronouncement?	*Name of RN/NP/PA Pronouncing Death*		*Lic #*
RN/NP/PA Employing Agency or Institution		*Name of Physician or Medical Examiner notified*	
Was M.E. Notified?	*Provider in charge of patient's care, if not certifier*		
Autopsy Performed?	*Findings available for Cause?*	*Tobacco contribute to death?*	*Pregnancy Status, if female*
Date of Injury	*Time of Injury*	*Injury at Work?*	*If Transportation Injury, specify:*
Place of Injury		*Location/Address of Injury:*	
Describe How Injury Occurred			
Expanded Race:			
Ethnicity:			
Informant Name			*Relationship*
Addr.			

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

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

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

CHAPTER 38. MEDICAL EXAMINERS AND INQUESTS

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

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

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

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

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

(4) death under suspicious or unusual circumstances;

(5) death following an unlawful abortion;

(6) death related to occupational illness or injury;

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

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

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

(10) skeletal remains;

(11) death associated with diagnostic or therapeutic procedures;

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

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

(14) death in any public or private conveyance;

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

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

(17) any person found dead;

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

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

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