The Commonwealth of Massachusetts
Executive Office of Health and Human Services
Department of Public Health
250 Washington Street, Boston, MA 02108-4619

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April 9, 2018

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

William F. Welch
Senate Clerk
State House Room 335
Boston, MA 02133

Dear Mr. Clerk,

Pursuant to Section 2 of Chapter 111 of the Massachusetts General Laws, the attached report summarizes mortality data and statistics for the 2015 calendar year.

Sincerely,

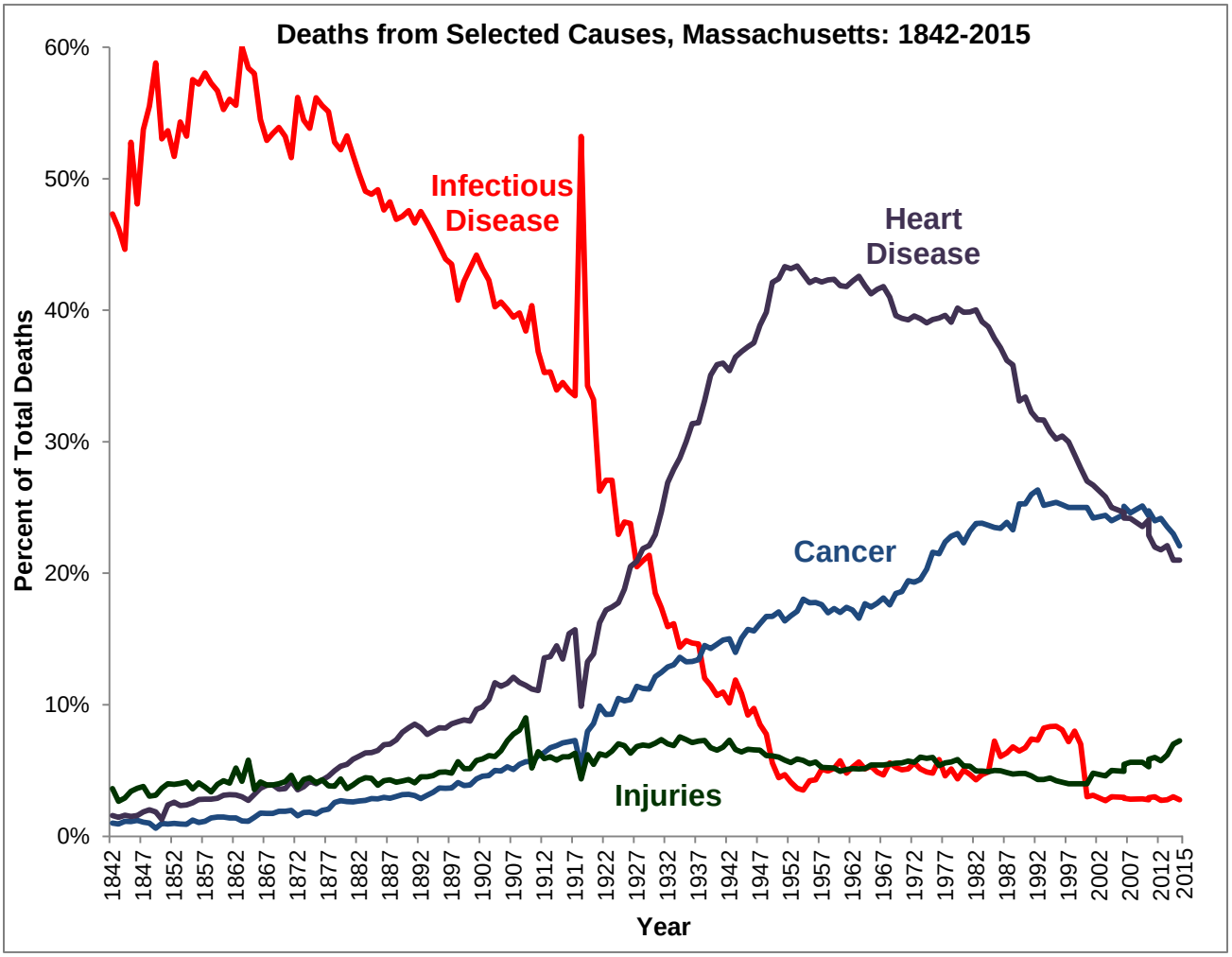
Monica Bharel, MD, MPH
Commissioner
Department of Public Health

Massachusetts Deaths 2015

April 2018

Massachusetts Department of Public Health

Massachusetts Deaths 2015



Office of Population Health

Massachusetts Department of Public Health

April 2018

Massachusetts Deaths 2015

Charles D. Baker, Governor
Marylou Sudders, Secretary of Health and Human Services
Monica Bharel, MD, MPH, Commissioner of Public Health

Abigail Averbach, Director
Office of Population Health
Karin Barrett, Registrar
Registry of Vital Records and Statistics

Massachusetts Department of Public Health

April 2018

Acknowledgments

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

To obtain additional copies of this report, contact:

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To obtain more information on deaths in Massachusetts and other Department of Public Health data please visit the Department's free, Internet-based public health information reports at: http://www.mass.gov/eohhs/researcher/community-health/masschip/

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

TABLE OF CONTENTS

2015 Massachusetts Deaths Highlights

- Massachusetts introduced a new electronic death registration system and revised the death certificate beginning in September of 2014; therefore 2015 is 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.Therefore, the reader must use caution when comparing 2015 results to findings from earlier years.
        - For example, families of decedents now report race separately from ethnicity and may choose more than one race from standard checkbox lists. Previously, families wrote free-form responses in a single field that were often difficult to categorize and may have resulted in some misclassifications. (See Note to Readers.)
    - While the new method improves accuracy, an algorithm must still be used to analyze multiple race responses and choose the most appropriate standard race category as used in this report. (See Technical Notes.)
- In 2015, the age-adjusted mortality rates for both White non-Hispanic and Hispanic residents significantly increased by 4% and 10%, respectively, from 2014 (Table 1). Similarly, between 2014 and 2015 there was a significant 4% increase in the age-adjusted mortality rate for female residents.
- The premature mortality rate (which includes only deaths that occur before age 75) for Black non-Hispanic residents (308.0 deaths per 100,000) was higher than that of White non-Hispanic (286.3), Hispanic (249.1), and Asian non-Hispanic (120.0) residents (Figure 6).
- While premature mortality (deaths under age 75) was higher for Black non-Hispanic residents than for residents of other races, the life expectancy for Blacks who lived to age 75 was higher than that of White non-Hispanic residents (Table 3), indicating that Black non-Hispanic residents live longer once they reach old age.
- For both men and women, the life expectancy of Black non-Hispanic and Hispanic residents was higher than that of White non-Hispanic residents (Table 3). In 2015, Hispanic female residents lived from birth, on average, 87.9 years, Black non-Hispanic female residents lived 85.1 years, and White non-Hispanic female residents lived 82.8 years.
- In 2015, the average life expectancy of Massachusetts residents was 80.4 years (Figure 1). Life expectancy at birth remained high, but appears to have flattened since 2006.
- Each day in 2015, there were on average 158 deaths, with 35 of those deaths due to cancer, 33 due to heart disease, 16 due to respiratory conditions, and 12 due to injuries (Figure 7).
- In 2015, cancer, heart disease, and unintentional injuries remained the leading causes of death for all residents and for White non-Hispanic, Black non-Hispanic, Asian non-Hispanic, and Hispanic residents (Table 9).
- In 2015, Hispanic residents had the highest percentage of cancer deaths for those aged 1 to 44 years (12%) and 45 to 64 years (39%) (Figure 11). Among White non-

Hispanic, Black non-Hispanic, and Asian non-Hispanic residents, there were more cancer deaths among those 65 years and older.

- For all races/ethnicities, the rate of heart disease death declined between 2002 and 2015 (Table 10). Black non-Hispanic residents experienced the greatest reduction, with heart disease deaths declining 44% from 205.9 per 100,000 in 2002 to 114.3 per 100,000 in 2015.
- The rate of cancer deaths also declined for all races/ethnicities between 2002 and 2015 (Table 10). Black non-Hispanic residents had the largest decline (41%, from 224.3 per 100,000 to 133.2 per 100,000).
- Lung cancer remained the leading cancerous cause of death, with a death rate of 39.0 per 100,000 (Table 11). Among women, breast cancer was the next leading cancerous cause of death (17.7 per 100,000 women), and among men, prostate cancer was the next leading cause (17.9 per 100,000 men).
- The overall rate of cancer death was higher among White non-Hispanic residents (157.3 per 100,000) than among Black non-Hispanic residents (133.2 per 100,000) (Table 13). It is noted that the overall rate of cancer death for Black non-Hispanic men (161.8 per 100,000) is lower than the overall rate of cancer death for White non-Hispanic men (185.2 per 100,000) for the first time since 2002. However, the decrease between 2014 and 2015 seen for Black non-Hispanic men is not statistically significant.
- The rate of prostate cancer was 1.5 times higher for Black non-Hispanic men than for White non-Hispanic men (26.5 per 100,000 for Black non-Hispanic men and 17.8 per 100,000 for White non-Hispanic men) (Table 13). Conversely, the rate of lung cancer death was 1.7 times higher for White non-Hispanic residents when compared to Black non-Hispanic residents (41.4 per 100,000 and 24.7 per 100,000 for White and Black residents, respectively).
- A larger percentage of stroke deaths occurred among residents ages 45-64 for Hispanic, Black non-Hispanic, and Asian non-Hispanic residents (25%, 18%, and 12%, respectively) when compared to White non-Hispanic residents (7%) (Figure 13).
- In 2015, diabetes-related death rates were substantially higher for Black non-Hispanic and Hispanic residents (73.4 per 100,000 and 67.4 per 100,000, respectively) than for White non-Hispanic and Asian non-Hispanic residents (44.5 per 100,000 and 33.8 per 100,000, respectively) (Table 17).
- Poisonings, which include opioid overdoses, were the largest cause of injury deaths, with a death rate of 28.4 per 100,000, while firearms contributed the fewest injury deaths, representing 3.0 per 100,000 deaths (Table 18). For poisoning and firearm deaths, the male death rates (42.2 per 100,000 and 5.7 per 100,000, respectively) were higher than the corresponding female death rates (15.1 per 100,000 and 0.6 per 100,000, respectively).
- White non-Hispanic residents had the highest rate of poisoning deaths (33.4 per 100,000), which was approximately double that of Black non-Hispanic residents (17.2 per 100,000) (Table 19). Poisoning deaths include opioid overdoses.
- For intentional injuries, men had higher rates of suicide deaths (13.7 per 100,000) and homicide deaths (3.5 per 100,000) compared to women (4.6 suicide deaths per 100,000 and 0.9 deaths per 100,000 due to homicide) (Table 22). Men ages 45-64 had

the highest rate of suicide deaths (21.6 per 100,000) and men ages 15-24 had the highest rate of homicide deaths (9.2 per 100,000).

- In 2015, the motor vehicle-related death rate for male residents (8.1 per 100,000) was more than twice as high as the corresponding rate among female residents (2.9 per 100,000) (Table 24).
- Between 2000 and 2015, the total number of HIV/AIDS deaths decreased from 226 to 92, representing a 59% decrease (Table 25).
- For Massachusetts residents, the neonatal and post neonatal mortality rates both declined between 2005 to 2015, though the reduction in post neonatal mortality (29% decline) was greater than that made in neonatal mortality (11% decline) (Table 29).
- In 2015, the leading cause of death for neonates was disorders relating to short gestation and low birthweight, while the leading cause during the post neonatal period was Sudden Infant Death Syndrome (SIDS) (Table 30).
- Between 2002 and 2015, Black non-Hispanic residents experienced the greatest reductions in amenable mortality, dropping from 162.6 deaths per 100,000 to 87.8 deaths per 100,000, signifying a 46% decrease (Figure 18).

Note to Readers

Please review the information below before reading the report. As required by Chapter 111, Section 2 of the General Laws, this report satisfies the requirement of the annual report on statistics on deaths for calendar year 2015 (Annual Report Vital Statistics of Massachusetts-Deaths, Public Document #1 2015). Public Document #1 information on 2015 births, marriages, and divorces is covered in separate reports.

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

2. **VIP System**
   The Vitals Information Partnership (VIP) system is designed to streamline and integrate vital event registration, securely, across the Commonwealth. The birth application in VIP was launched in February 2011. The death application in VIP was launched in September 2014.

3. **2003 Revisions of the U.S. Standard Certificate of Death**
   This report includes 2015 data on items that are collected on both the 1989 revision of the Standard Certificate of Death (unrevised) and the 2003 revision of the Standard Certificate of Death (revised). In addition to the collection of new variables, the 2003 revision allows the reporting of more than one race in accordance with the revised standards issued by the Office of Management and Budget (OMB) in 1997. See "Technical Notes" for detailed information on the 2015 multiple-race reporting area and methods used to bridge responses for those who report more than one race to a single race.

4. **Cape Verdean (Cabo Verdean[2]) Race Categorization**
   Prior to launching the VIP death application in September 2014, "Cape Verdean" was an option that could be selected for a decedent's race. Decedents of Cape 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" is considered an ethnicity, and is collected separately from race. For this reason, decedents of Cape Verdean ethnicity are now classified according to their reported race and may be distributed to any one of the five MDPH race/ethnicity categories (Non-Hispanic White, Non-Hispanic Black, Non-Hispanic Asian and Pacific Islander, Non-Hispanic American

[1] This report uses death record data prepared on 10/3/2017. In a very small number cases, additional data will be obtained at a later date. Therefore, the statistics presented in this report could change slightly based on any information received after 10/3/2017.

[2] In future reports, Cape Verde will be reported as the preferred name Cabo Verde. The U.S. Board on Geographic Names approved the change on December 9, 2013; however, the 2015 death worksheet still listed "Cape Verdean" as an option for ethnicity.

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.

5. **Population Sources.** Two sources of population estimates were used to calculate population-based rates in *Massachusetts Deaths 2015*:

    a. State and County Death Rates: The 2015 Modified Age, Race/Ethnicity, and Sex file (MARS), which is a bridged population file produced by the National Center for Health Statistics (NCHS) and the Census Bureau Population Estimates Program was used to calculate state rates by race and Hispanic ethnicity, e.g., teen birth rates. This file has data by single years of age, sex, race and Hispanic ethnicity in the five mutually exclusive categories used by the Department: Non-Hispanic White, Non-Hispanic Black, Non-Hispanic Asian and Pacific Islander, Non-Hispanic American Indian and Alaska Native, and Hispanic.

    b. City and town death rates: The Massachusetts Department of Public Health Race Allocated Census 2010 Estimates (MRACE 2010), which are population estimates based upon the Census 2010 Summary File 1, was used to calculate city and town rates. In this estimates file, the Census 2010 race categories, "Two or more races" and "Some other race" are redistributed to the MDPH standard race categories: Non-Hispanic White, Non-Hispanic Black, Non-Hispanic Asian and Pacific Islander, and Non-Hispanic American Indian and Alaska Native. All persons in the Census 2010 Hispanic ethnicity category are counted as "Hispanic" race in the MDPH estimates. This kind of file is often referred to as a "bridged" file, that is, one that bridges the new race and ethnicity collections to the conventionally used categories.

6. **Resident deaths.** All data in this publication are resident data unless otherwise stated. Resident data include all events that occur to residents of the Commonwealth, wherever they occur.

Suggested Citation

Massachusetts Deaths 2015. Boston, MA: Office of Population Health, Registry of Vital Records and Statistics, Massachusetts Department of Public Health. April 2018.

Table 1. Trends in Mortality Characteristics, Massachusetts: 2005-2015

Year		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Resident deaths	Number	53,776	53,293	52,690	53,341	51,915	52,420	53,536	53,169	54,609	55,159	57,785
	Crude rate[1,2,3]	840.4	827.9	816.9	820.9	787.4	800.6	812.7	807.1	815.9	817.7	850.5
	Age-adjusted rate[4]	720.6	717.6	704.4	703.5	675.1	672.7	674.0	669.2	664.1	662.5	684.6
Race/ethnicity of decedent [5,6]												
White non-Hispanic	Number	49,639	49,132	48,518	49,059	47,520	48,010	48,844	48,430	49,486	49,621	51,688
	Percent[7]	92.3	92.2	92.1	92.0	91.5	91.6	91.2	91.1	90.6	90.0	89.4
	Age-adjusted rate[4]	725.0	723.3	711.1	710.7	682.8	684.4	686.9	681.0	680.9	679.5	703.3
Black non-Hispanic	Number	2,263	2,233	2,211	2,222	2,288	2,278	2,333	2,318	2,446	2,390	2,349
	Percent[7]	4.2	4.2	4.2	4.2	4.4	4.3	4.4	4.4	4.5	4.3	4.1
	Age-adjusted rate[4]	865.8	838.4	820.5	805.8	812.2	702.6	707.6	701.8	675.5	630.4	589.5
Asian non-Hispanic	Number	570	635	610	692	697	759	806	811	816	938	1091
	Percent[7]	1.1	1.2	1.2	1.3	1.3	1.4	1.5	1.5	1.5	1.7	1.9
	Age-adjusted rate[4]	345.0	379.0	342.0	372.5	353.1	364.8	375.2	372.4	320.5	344.7	371.8
Hispanic	Number	1,230	1,194	1,264	1,275	1,337	1,308	1,477	1,487	1,548	1,702	2,037
	Percent[7]	2.3	2.2	2.4	2.4	2.6	2.5	2.8	2.8	2.8	3.1	3.5
	Age-adjusted rate[4]	500.4	479.9	477.7	458.2	439.8	443.9	468.9	484.9	444.9	447.9	493.0
Gender of decedent[6]												
Female	Number	28,695	28,508	27,851	28,246	27,356	27,368	27,983	27,883	28,558	28,289	29,880
	Age-adjusted rate[4]	617.8	612.7	596.3	595.9	572.8	567.2	572.8	571.1	569.5	557.9	581.2
Male	Number	25,079	24,785	24,838	25,095	24,557	25,051	25,553	25,280	26,051	26,867	27,905
	Age-adjusted rate[4]	852.5	858.9	853.3	852.2	822.1	811.9	808.5	797.9	786.5	795.9	814.7
Age of decedent[7]												
<1 year	Number	391	369	380	381	366	319	310	309	298	321	310
1-14 years	Number	113	124	128	119	118	113	114	99	118	129	119
15-24 years	Number	489	471	505	421	440	453	471	419	449	441	519
25-44 years	Number	2,173	1,953	2,023	1,906	1,974	1,823	1,870	1,880	1,993	2,234	2,475
45-64 years	Number	8,355	8,660	8,560	8,426	8,688	8,753	8,808	8,791	9,013	9,214	9,348
65-74 years	Number	7,905	7,572	7,494	7,425	7,380	7,423	7,616	7,891	8,259	8,678	9,038
75-84 years	Number	15,632	15,333	14,781	14,970	13,943	13,639	13,598	13,272	13,182	12,784	13,299
85+ years	Number	18,718	18,811	18,816	19,692	19,004	19,888	20,747	20,506	21,296	21,356	22,677

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

Table 2. Selected Leading Causes of Death, Age-Adjusted Rates, Massachusetts and United States: 2000-2015

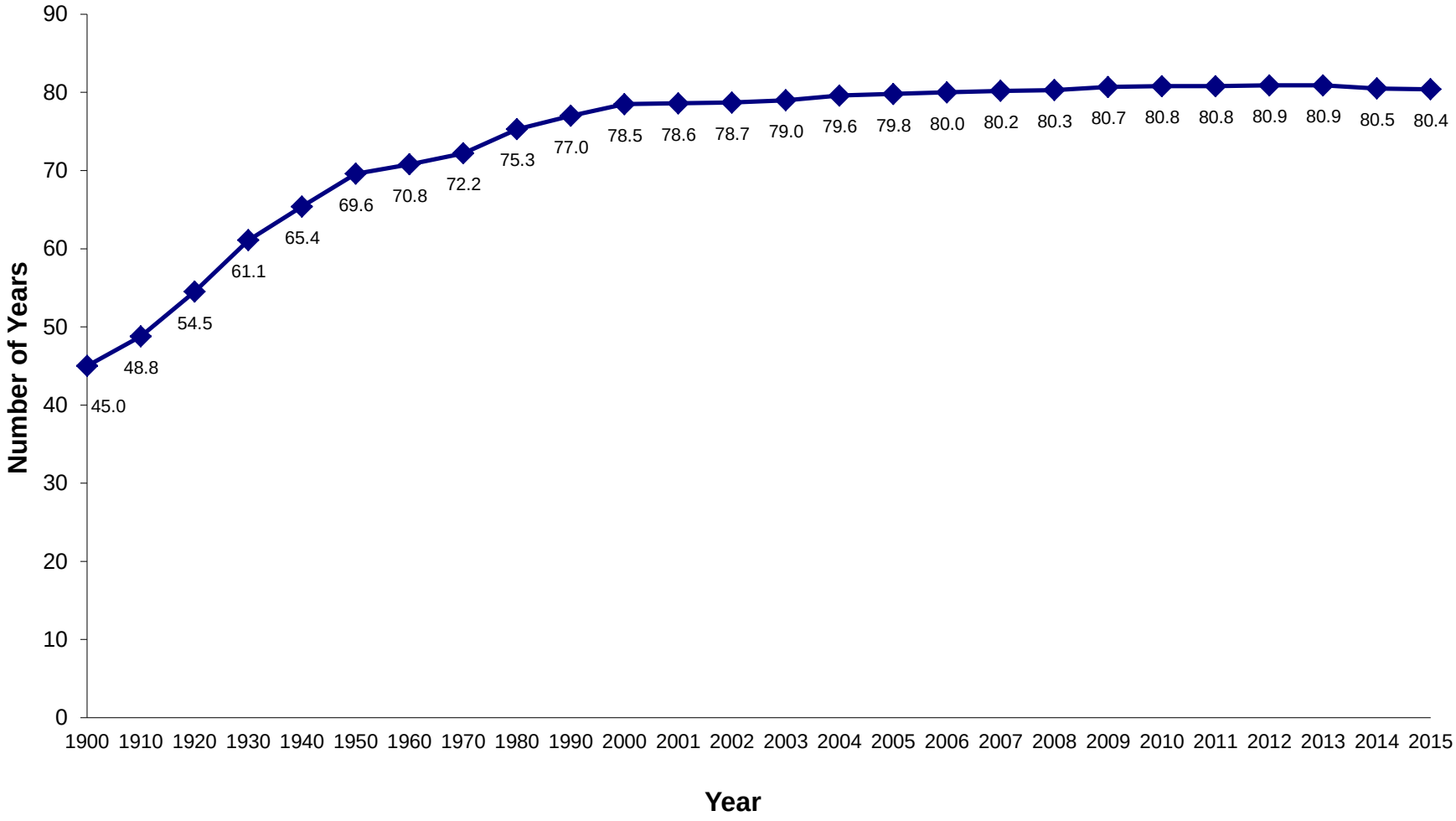
Year	Age-Adjusted Rates[1]	Heart Disease		Cancer		Stroke	
		MA	US[2]	MA	US[2]	MA	US[2]
2000	Rate	216.7	258.2	206.1	200.9	50.9	60.9
	% of Total	27.1	29.5	24.8	23.0	6.4	6.9
2001	Rate	211.0	247.7	200.0	195.8	46.7	57.9
	% of Total	26.7	28.9	24.2	22.9	6.2	6.8
2002	Rate	201.1	240.4	200.1	194.0	48.1	56.3
	% of Total	26.0	28.4	24.0	22.8	6.0	6.7
2003	Rate	196.6	232.3	193.0	190.1	45.0	53.5
	% of Total	26.0	28.0	24.1	22.7	6.0	6.5
2004	Rate	182.8	217.0	188.4	185.8	42.5	50.0
	% of Total	25.3	27.2	24.5	23.1	6.0	6.3
2005	Rate	172.2	211.0	184.9	183.8	38.1	46.6
	% of Total	24.6	26.6	24.5	22.8	5.5	5.9
2006	Rate	168.8	199.4	186.3	180.8	36.7	43.6
	% of Total	24.2	25.9	25.1	23.1	5.4	5.7
2007	Rate	165.7	190.9	179.2	178.4	35.0	42.2
	% of Total	24.2	25.9	24.6	23.1	5.1	5.7
2008	Rate	165.5	186.5	177.8	175.3	33.7	40.7
	% of Total	24.1	25.4	24.4	23.2	4.9	5.6
2009	Rate	155.2	179.8	174.0	173.6	32.2	38.9
	% of Total	23.6	24.6	25.1	23.3	4.9	5.3
2010	Rate	149.4	178.5	171.0	172.5	31.2	39.0
	% of Total	22.9	24.1	24.7	23.3	4.8	5.2
2011	Rate	144.4	173.7	166.1	173.7	30.2	37.9
	% of Total	22.1	23.7	24.0	23.7	4.6	5.1
2012	Rate	141.3	170.5	166.7	166.5	28.7	36.9
	% of Total	21.8	23.6	24.2	22.9	4.4	5.1
2013	Rate	142.2	169.8	159.5	163.2	27.7	36.2
	% of Total	22.1	23.5	23.5	22.5	4.3	5.0
2014	Rate	137.5	167.0	155.6	161.2	28.7	36.5
	% of Total	21.5	23.4	23.2	22.5	4.5	5.1
2015	Rate	138.7	167.0	152.8	161.2	28.4	36.5
	% of Total	21.0	23.4	22.1	22.5	4.3	5.1

Table 2 (continued). Selected Leading Causes of Death, Age-Adjusted Rates, Massachusetts and United States: 2000-2015

Year	Age-Adjusted Rates[1]	Influenza/Pneumonia		Unintentional Injuries		All Causes	
		MA	US[2]	MA	US[2]	MA	US[2]
2000	Rate	29.1	23.7	20.2	35.6	812.2	872.0
	% of Total	3.7	2.8	2.4	3.9		
2001	Rate	24.0	21.8	21.9	34.3	803.5	855.0
	% of Total	3.1	2.6	2.6	4.0		
2002	Rate	27.3	22.7	20.5	35.3	793.8	846.8
	% of Total	4.0	2.7	2.0	4.2		
2003	Rate	26.0	22.0	20.1	37.3	772.6	832.7
	% of Total	3.6	2.7	2.5	4.3		
2004	Rate	24.9	19.8	19.4	37.7	739.3	800.8
	% of Total	3.6	2.5	2.5	4.7		
2005	Rate	24.2	20.3	27.4	39.1	720.6	798.8
	% of Total	3.6	2.6	3.5	4.8		
2006	Rate	22.0	17.7	31.4	38.5	717.6	776.4
	% of Total	3.3	2.3	4.1	4.8		
2007	Rate	19.4	16.2	30.5	40.0	704.4	760.2
	% of Total	2.9	2.3	4.0	4.9		
2008	Rate	20.0	16.9	28.6	38.8	703.5	758.3
	% of Total	3.0	2.2	3.8	5.1		
2009	Rate	16.8	16.2	28.5	37.0	675.1	741.0
	% of Total	2.6	2.2	3.9	4.8		
2010	Rate	15.9	15.1	28.3	37.1	672.7	746.2
	% of Total	2.5	2.0	3.9	4.8		
2011	Rate	16.9	15.7	30.0	39.4	674.0	740.6
	% of Total	2.6	2.0	4.1	4.9		
2012	Rate	16.3	14.4	30.0	39.1	669.2	732.8
	% of Total	2.6	2.0	4.1	5.0		
2013	Rate	18.0	15.9	34.0	39.4	664.1	731.9
	% of Total	2.8	2.2	4.6	5.0		
2014	Rate	15.7	15.1	39.4	40.5	662.5	724.6
	% of Total	2.5	2.1	5.2	5.2		
2015	Rate	17.1	15.1	45.5	40.5	684.6	724.6
	% of Total	2.6	2.1	5.8	5.2		

Note: Cause of death: the disease or injury that initiated the events leading to death; or the circumstances of the unintentional or intentional injury that resulted in the death.
1. Data coded according to ICD-10. ICD-10 codes used in this publication are listed in the Appendix. Rates are age-adjusted per 100,000 residents using the 2000 US standard population. 2. US data for 2014 obtained from NCHS: Final Data for 2014. NCHS, Volume 65, Number 4. June 30, 2016.

Figure 1. Life Expectancy at Birth, Massachusetts: 1900-2015



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

Figure 2. Expected Years of Life Remaining at Different Ages by Race and Hispanic Ethnicity, Massachusetts: 2015

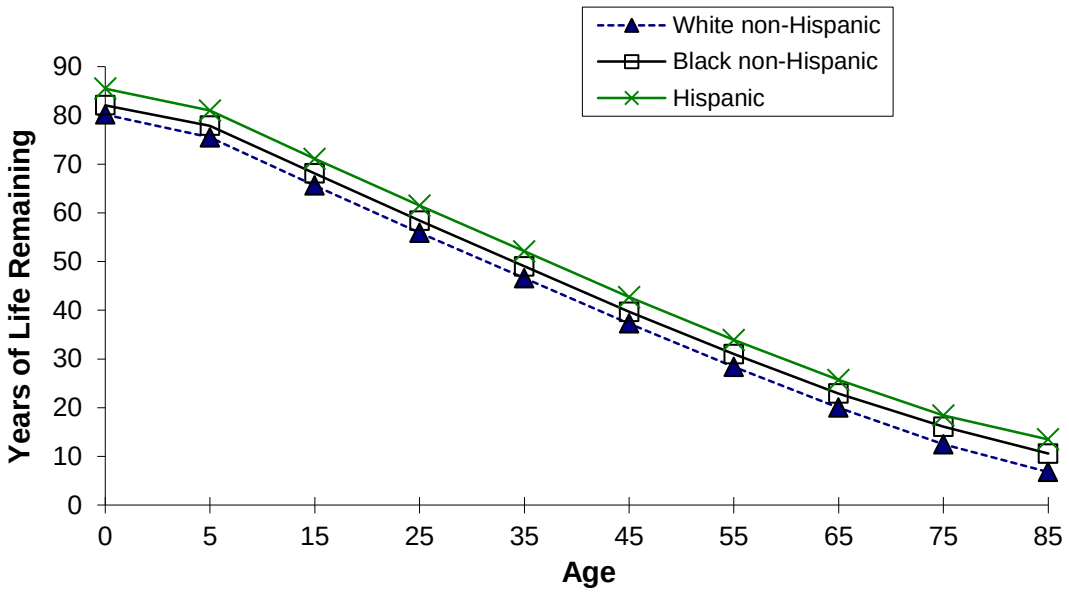
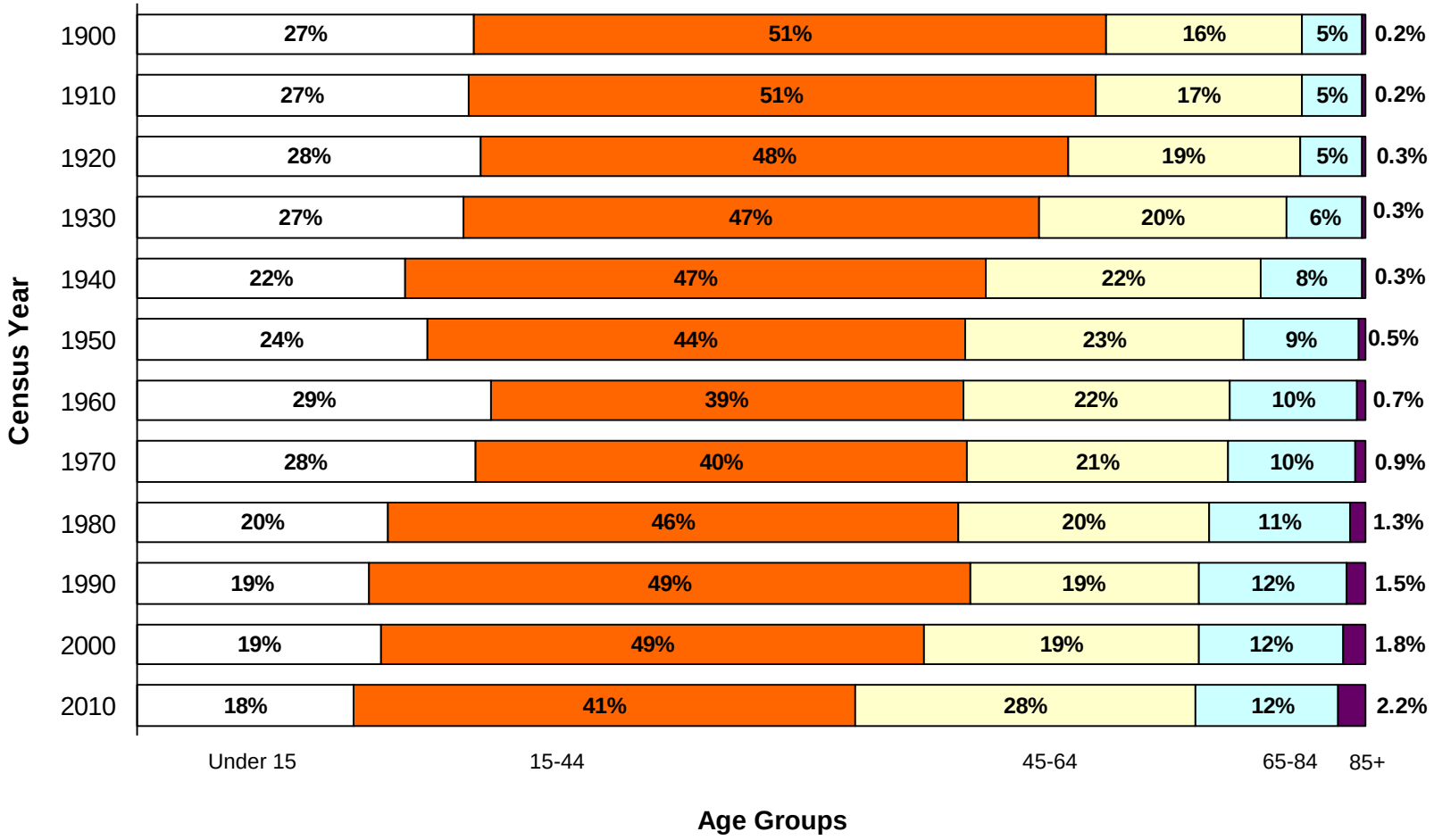


Table 3. Years of Life Remaining[1] by Race and Hispanic Ethnicity[2] and Gender, Massachusetts: 2015

At Age:	All	All Females	White non-Hispanic Females	Black non-Hispanic Females	Hispanic Females	All Males	White non-Hispanic Males	Black non-Hispanic Males	Hispanic Males
Birth	80.4	82.8	82.6	85.1	87.9	78.1	77.8	78.7	83.0
1 year old	79.8	82.1	81.8	84.9	87.4	77.4	77.1	78.4	82.4
5 years old	75.8	78.2	77.9	81.0	83.4	73.5	73.1	74.4	78.5
15 years old	66.0	68.2	67.9	71.1	73.5	63.5	63.1	64.5	68.6
25 years old	56.3	58.4	58.1	61.3	63.6	54.0	53.5	55.0	59.2
35 years old	46.9	48.8	48.5	51.7	53.9	44.8	44.5	45.8	50.0
45 years old	37.6	39.2	39.0	42.2	44.3	35.7	35.5	36.5	40.9
55 years old	28.6	30.0	29.8	33.3	35.1	27.0	26.7	28.0	32.5
65 years old	20.2	21.3	21.1	24.8	26.6	18.9	18.7	20.3	24.6
75 years old	12.7	13.4	13.2	17.6	18.9	11.7	11.5	13.8	17.8
85 years old	7.0	7.3	7.1	11.5	13.1	6.4	6.2	9.0	14.2

1. Years of Life Remaining calculated using the Greville Abridged Life Table Method (source: Dublin LI. Length of Life - A Study of the Life Table. Ronald Press Co. New York. 1949). 2. Population estimates are from 2015 bridged population file, MARS (Modified Age, Race/Ethnicity, and Sex) file. There are well-known difficulties in calculating accurate mortality rates for Massachusetts smaller populations such as Asians, Native Americans and Hispanics- please use caution when interpreting these numbers.

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



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

Figure 4. Trends in Percentage of Deaths from Selected Causes, Massachusetts: 1842-2015

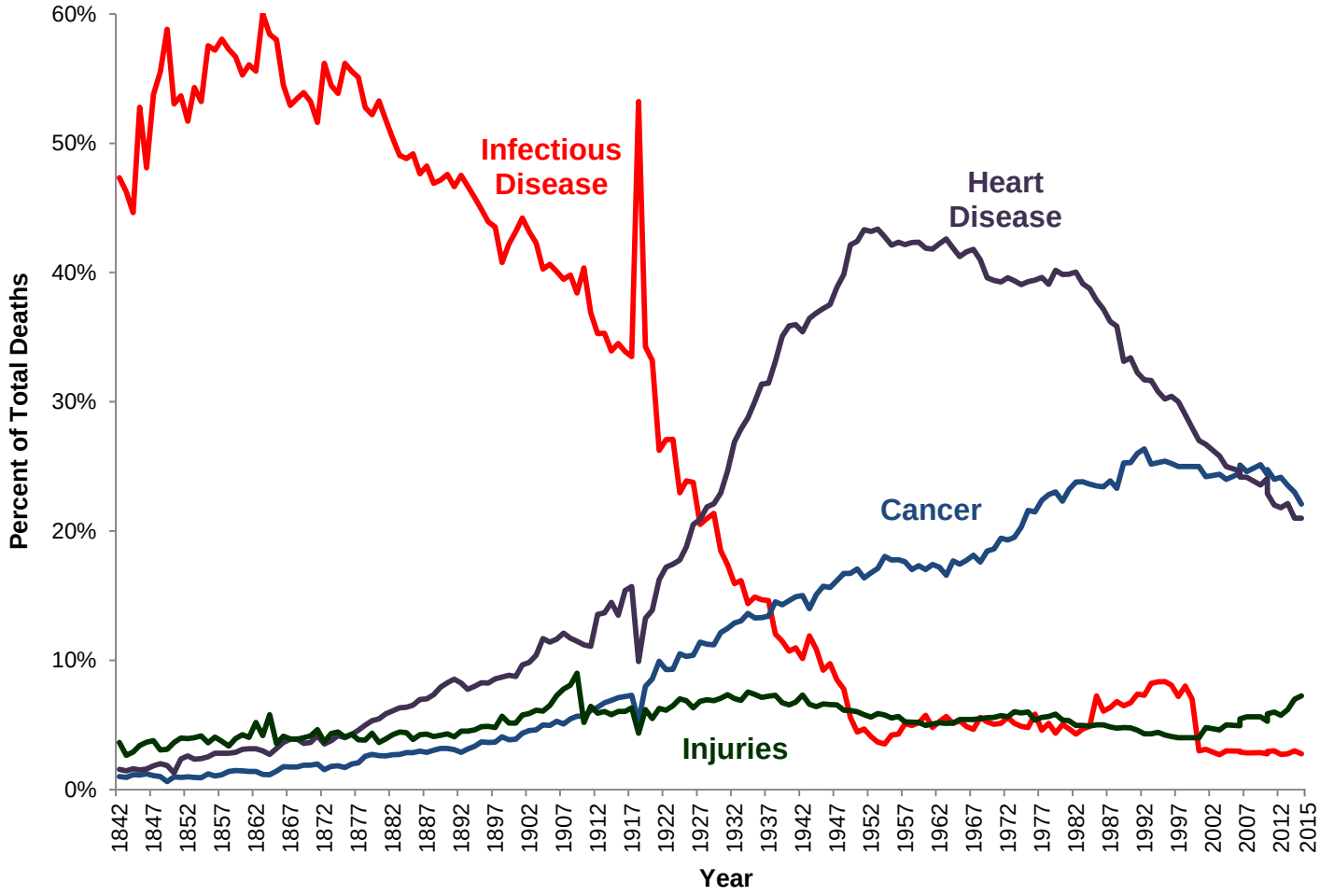
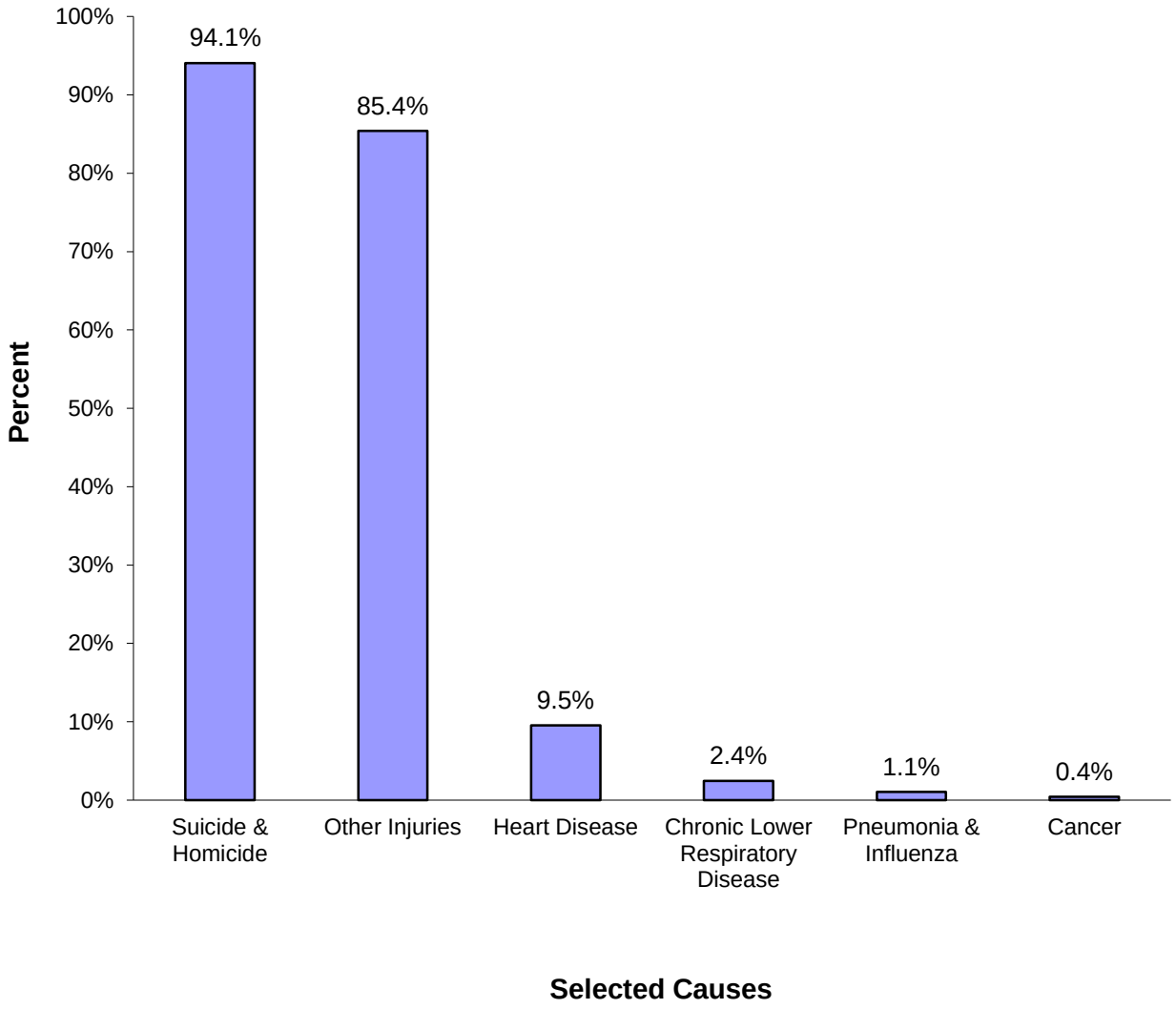


Table 4. Distribution of Deaths by Place of Occurrence, Massachusetts: 2011-2015

Type of Place where Death Occurred	2011		2012		2013		2014		2015	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Hospital (inpatient/outpatient)	20,511	38%	19,963	38%	20,277	37%	20,534	37%	21,397	37%
Dead on Arrival	525	1%	623	1%	617	1%	641	1%	602	1%
Nursing Home	15,870	30%	15,377	29%	15,652	29%	15,353	28%	16,099	28%
Hospice	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	2,628	5%
Assisted Living Facility or Rest Home	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	1,251	2%
At Home	13,986	26%	14,553	27%	15,117	28%	15,096	27%	14,419	25%
Other	2,638	5%	2,624	5%	2,842	5%	3,499	6%	5,261	2%
Unknown	6	0.01%	29	0.05%	104	0.19%	36	0.07%	7	0.01%

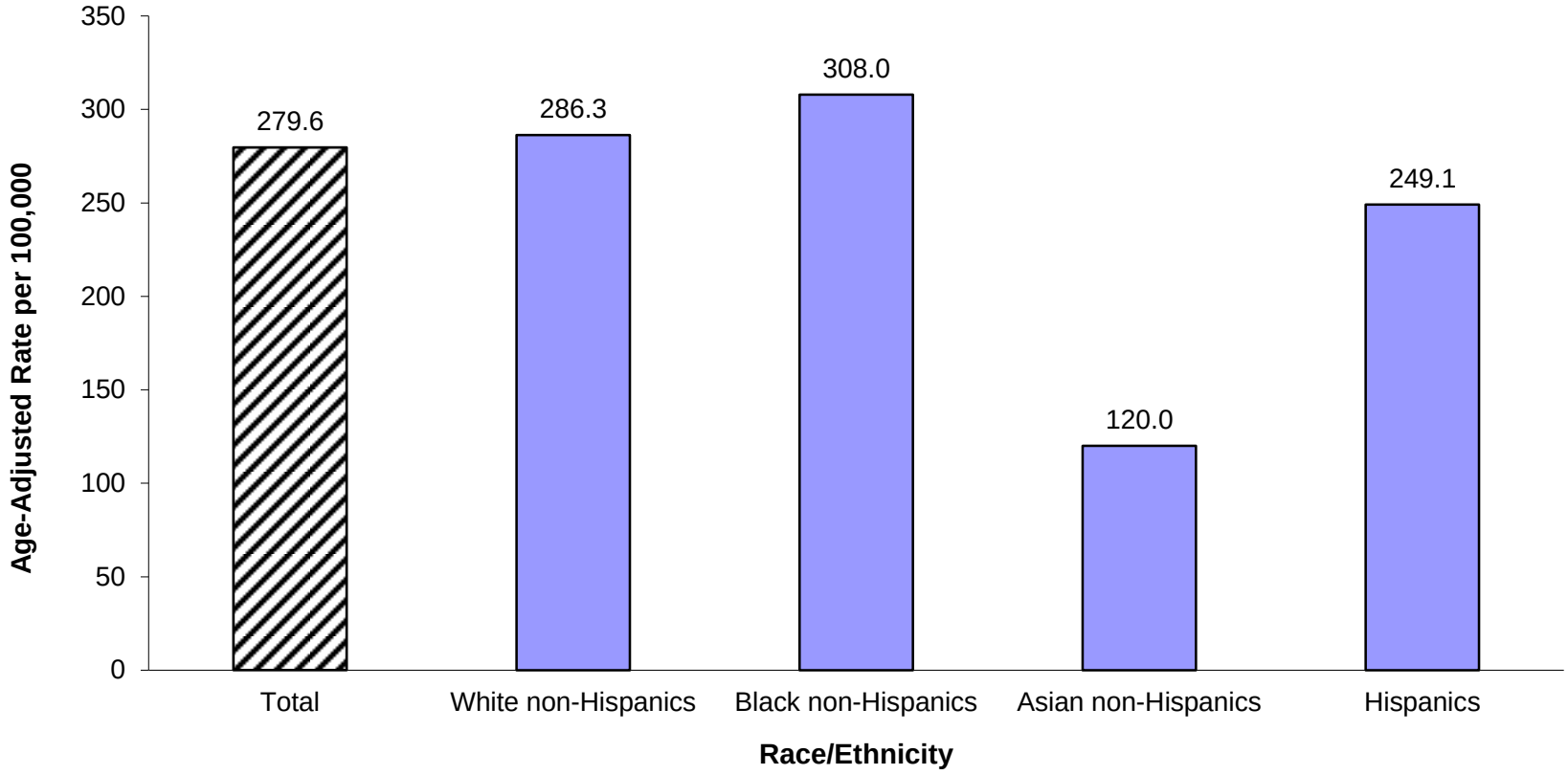
1. Prior to 2015, these deaths were included in the “Other” category.

Figure 5. Proportion of Deaths Certified by Medical Examiner for Selected Causes of Death, Massachusetts: 2015



Note: See the Appendix section, "Circumstance for Referral to the Office of the Chief Medical Examiner (OCME)" for a list of circumstances requiring referral to the Medical Examiner's Office.
Note: Other Injuries include motor vehicle-related, poisonings, falls, etc.

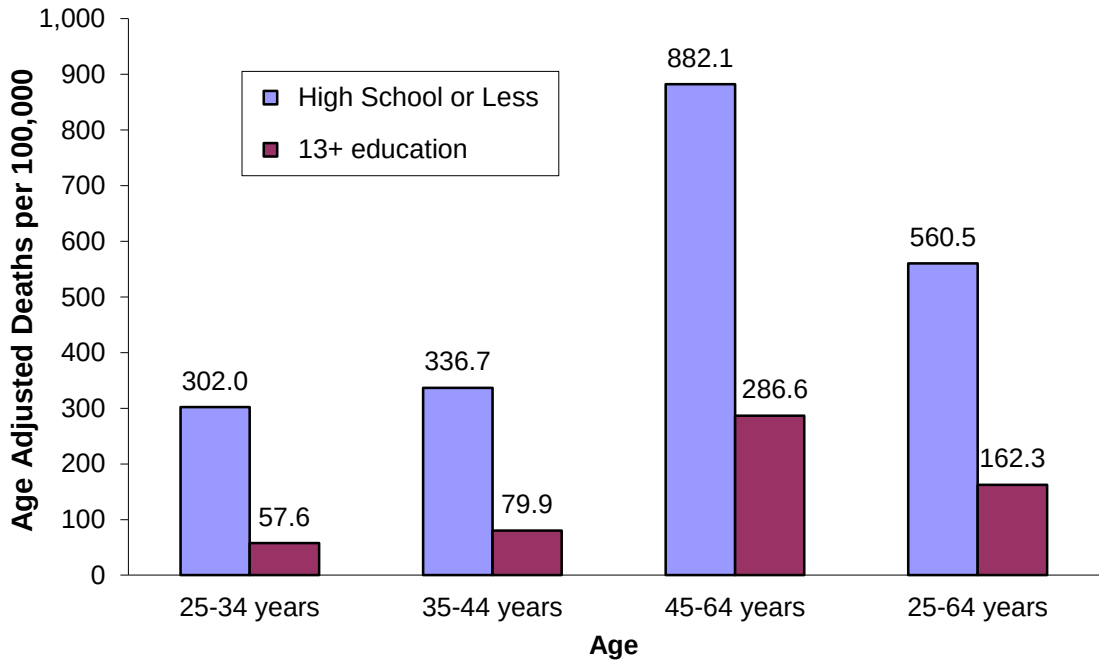
Figure 6. Premature Mortality Rate (PMR) by Race and Hispanic Ethnicity, Massachusetts: 2015



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

Table 5. Age-Adjusted Death Rates for Ages 25-64 Years by Educational Attainment, Massachusetts: 2015

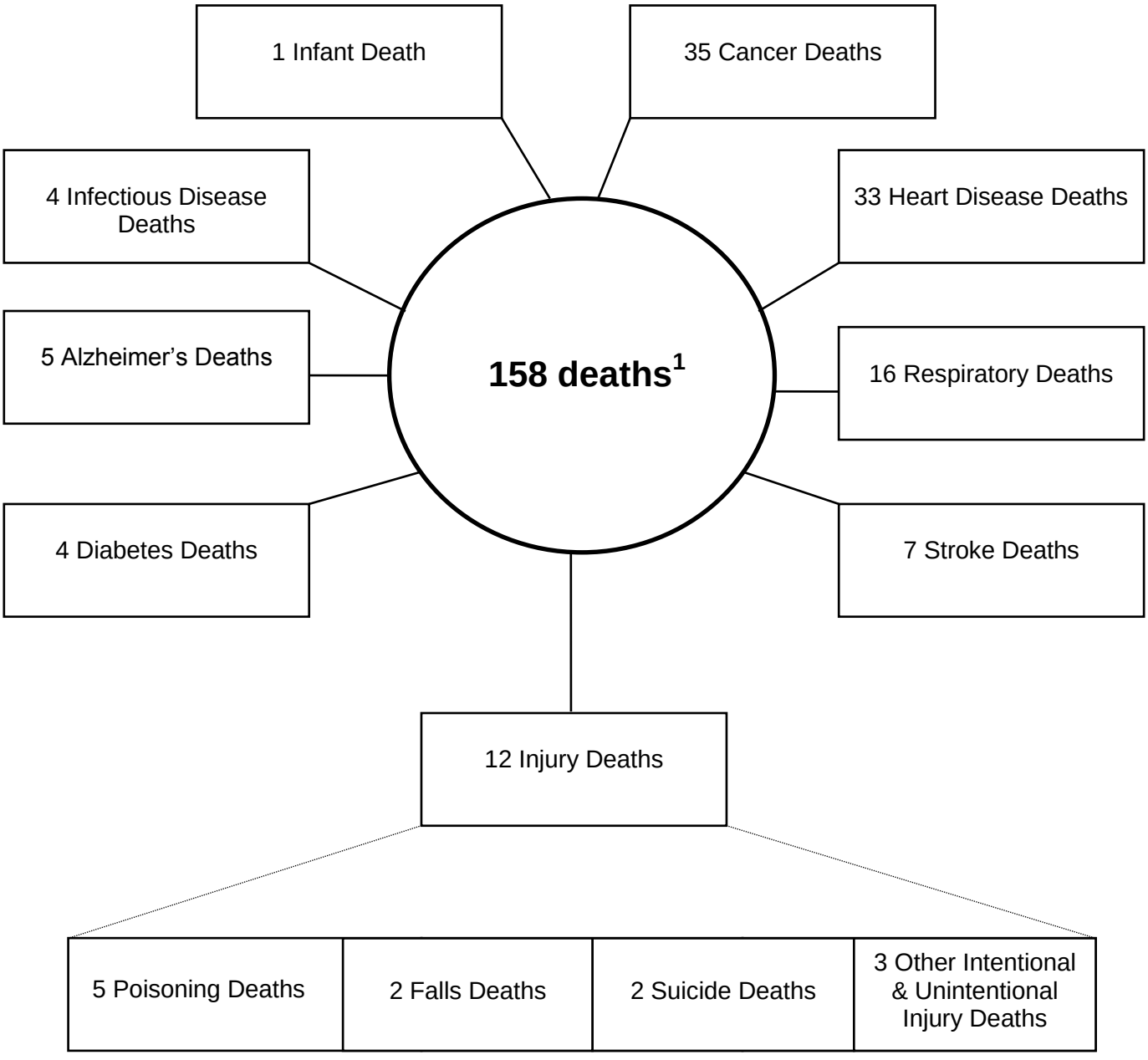
	Age-Specific Rates			Age-Adjusted Rates
Years of School Completed	**25-34 years**	**35-44 years**	**45-64 years**	**25-64 years**
High School or Less	302.0	336.7	882.1	**560.5**
13+ Education	57.6	79.9	286.6	**162.3**



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

Figure 7. Daily Mortality Statistics, Massachusetts: 2015

Every day in 2015, in Massachusetts there were on average:



1. Includes 41 deaths due to other causes.

Table 6. Top Ten Leading Underlying Causes of Death by Age, Massachusetts: 2015

	Age Groups (number of deaths)								
Rank[1]	**<1 year**	**1-14 years**	**15-24 years**	**25-44 years**	**45-64 years**	**65-74 years**	**75-84 years**	**85+ years**	**All**
1	Short Gestation and Low Birthweight (77)	Cancer (26)	Unintentional Injuries[1] (265)	Unintentional Injuries[1] (1,121)	Cancer (2,998)	Cancer (3,308)	Cancer (3,409)	Heart Disease (5,976)	**Cancer (12,742)**
2	Congenital Malformations (37)	Unintentional Injuries[1] (15)	Suicide[1] (77)	Cancer (267)	Heart Disease (1,587)	Heart Disease (1,694)	Heart Disease (2,673)	Cancer (2,708)	**Heart Disease (12,141)**
3	Pregnancy Complications (35)	Ill-Defined Conditions (12)	Homicide[1] (47)	Suicide (203)	Unintentional Injuries[1] (903)	Chronic Lower Respiratory Disease[2] (565)	Chronic Lower Respiratory Disease[2] (874)	Stroke (1,325)	**Unintentional Injuries[1] (3,324)**
4	Complications of Placenta (21)	Congenital Malformation (10)	Cancer (26)	Heart Disease (194)	Chronic Lower Respiratory Disease[2] (342)	Diabetes (291)	Stroke (618)	Alzheimer's Disease (1,271)	**Chronic Lower Respiratory Disease[2] (2,785)**
5	SIDS (18)	In Situ Neoplasms (6)	Ill-Defined Conditions (23)	Ill-Defined Conditions (111)	Diabetes (331)	Stroke (279)	Alzheimer's Disease (436)	Chronic Lower Respiratory Disease[2] (986)	**Stroke (2,474)**
6	Respiratory Distress (11)	Suicide (5)	Heart Disease (9)	Homicide[1] (68)	Chronic Liver Disease (322)	Unintentional Injuries[1] (225)	Diabetes (381)	Influenza & Pneumonia (868)	**Alzheimer's Disease (1,816)**
7	Bacterial Sepsis of Newborn (8)	Heart Disease (4)	Congenital Malformations (9)	Chronic Liver Disease (54)	Suicide[1] (277)	Nephritis (188)	Influenza & Pneumonia (337)	Nephritis (568)	**Influenza & Pneumonia (1,512)**
8	Hydrops Fetalis (7)	Influenza & Pneumonia (4)	Influenza & Pneumonia (4)	Stroke (27)	Stroke (222)	Influenza & Pneumonia (175)	Nephritis (336)	Unintentional Injuries[1] (514)	**Diabetes (1,404)**
9	Circulatory System (6)	Septicemia (3)	Chronic Lower Respiratory Disease[2] (4)	Diabetes (22)	Ill-Defined Conditions (169)	Septicemia (172)	Unintentional Injuries[1] (278)	Ill-Defined Conditions (456)	**Nephritis (1,228)**
10	Acute Bronchitis (4)	Other Infection (3)	Septicemia (2)	Injuries of Undetermined Intent[1] (17)	Septicemia (142)	Chronic Liver Disease (150)	Parkinsons (262)	Diabetes (378)	**Ill-Defined Conditions (1,024)**
All Causes	**Total (310)**	**Total (119)**	**Total (519)**	**Total (2,475)**	**Total (9,348)**	**Total (9,038)**	**Total (13,299)**	**Total (22,677)**	**57,785**

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

1. 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).
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).

Table 7. Leading Underlying Causes of Death, Numbers and Age-Specific Rates by Gender, Massachusetts: 2015

		Total		Female		Male	
Age	**Cause of Death[1]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**
1-14 years	**TOTAL**	**119**	**11.2**	**57**	**10.9**	**62**	**11.4**
	Cancer	26	2.4	10	1.9	16	2.9
	Unintentional Injuries	15	1.4	8	1.5	7	1.3
	Ill-Defined Conditions	12	1.1	5	1.0	7	1.3
	Congenital Malformations	10	0.9	3	--[4]	7	1.3
15-24 years	**TOTAL**	**519**	**55.0**	**147**	**31.0**	**372**	**77.9**
	Unintentional Injuries	265	27.8	73	15.4	192	40.2
	Suicide	77	8.1	18	3.8	59	12.4
	Homicide	47	4.9	3	--[4]	44	9.2
	Cancer	26	2.7	17	3.6	9	1.9
25-44 years	**TOTAL**	**2,475**	**139.2**	**744**	**82.7**	**1,731**	**197.1**
	Unintentional Injuries	1,121	63.1	254	28.2	867	98.7
	Cancer	267	15.0	146	16.2	121	13.8
	Suicide	203	11.4	51	5.7	152	17.3
	Heart Disease	194	10.9	55	6.1	139	15.8
45-64 years	**TOTAL**	**9,348**	**496.4**	**3,653**	**375.7**	**5,695**	**625.3**
	Cancer	2,998	159.2	1,478	152.0	1,520	166.9
	Heart Disease	1,587	84.3	443	45.6	1,144	125.6
	Unintentional Injuries	903	48	262	26.9	641	70.4
	Chronic Lower Respiratory Disease	342	18.2	178	18.3	164	18.0
65+ years[3]	**TOTAL**	**45,014**	**4306.6**	**25,144**	**4,220.9**	**19,870**	**4,420.3**
	Heart Disease	10,343	989.6	5,488	921.3	4,855	1,080.1
	Cancer	9,425	901.7	4,715	791.5	4,710	1,047.8
	Chronic Lower Respiratory Disease	2,425	232.0	1,453	243.9	972	216.2
	Stroke	2,222	212.6	1,419	238.2	803	178.6

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

Table 8. Leading Underlying Causes of Death, Numbers and Age-Specific Rates (Ages 65 and Older) by Gender, Massachusetts: 2015

		Total		Female		Male	
Age	**Cause of Death[1]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**	**Number**	**Rate[2]**
65-74	**TOTAL**	**9,038**	**1,535.5**	**3,917**	**1,239.2**	**5,121**	**1,879.2**
	Cancer	3,308	562.0	1,555	492.0	1,753	643.3
	Heart Disease	1,694	287.8	570	180.3	1,124	412.5
	Chronic Lower Respiratory Disease	565	96.0	295	93.3	270	99.1
	Diabetes	291	49.4	125	39.5	166	60.9
75-84	**TOTAL**	**13,299**	**4,461.8**	**6,669**	**3,860.6**	**6,630**	**5,290.6**
	Cancer	3,409	1,143.7	1,668	965.6	1,741	1,389.3
	Heart Disease	2,673	896.8	1,222	707.4	1,451	1,157.9
	Chronic Lower Respiratory Disease	874	293.2	518	299.9	356	284.1
	Stroke	618	207.3	345	199.7	273	217.8
85+	**TOTAL**	**22,677**	**14,302.0**	**14,558**	**13,622.2**	**8,119**	**15,707.7**
	Heart Disease	5,976	3769.0	3,696	3,458.4	2,280	4,411.1
	Cancer	2,708	1707.9	1,492	1,396.1	1,216	2,352.6
	Stroke	1,325	835.7	945	884.3	380	735.2
	Alzheimer's Disease	1,271	801.6	947	886.1	324	626.8

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

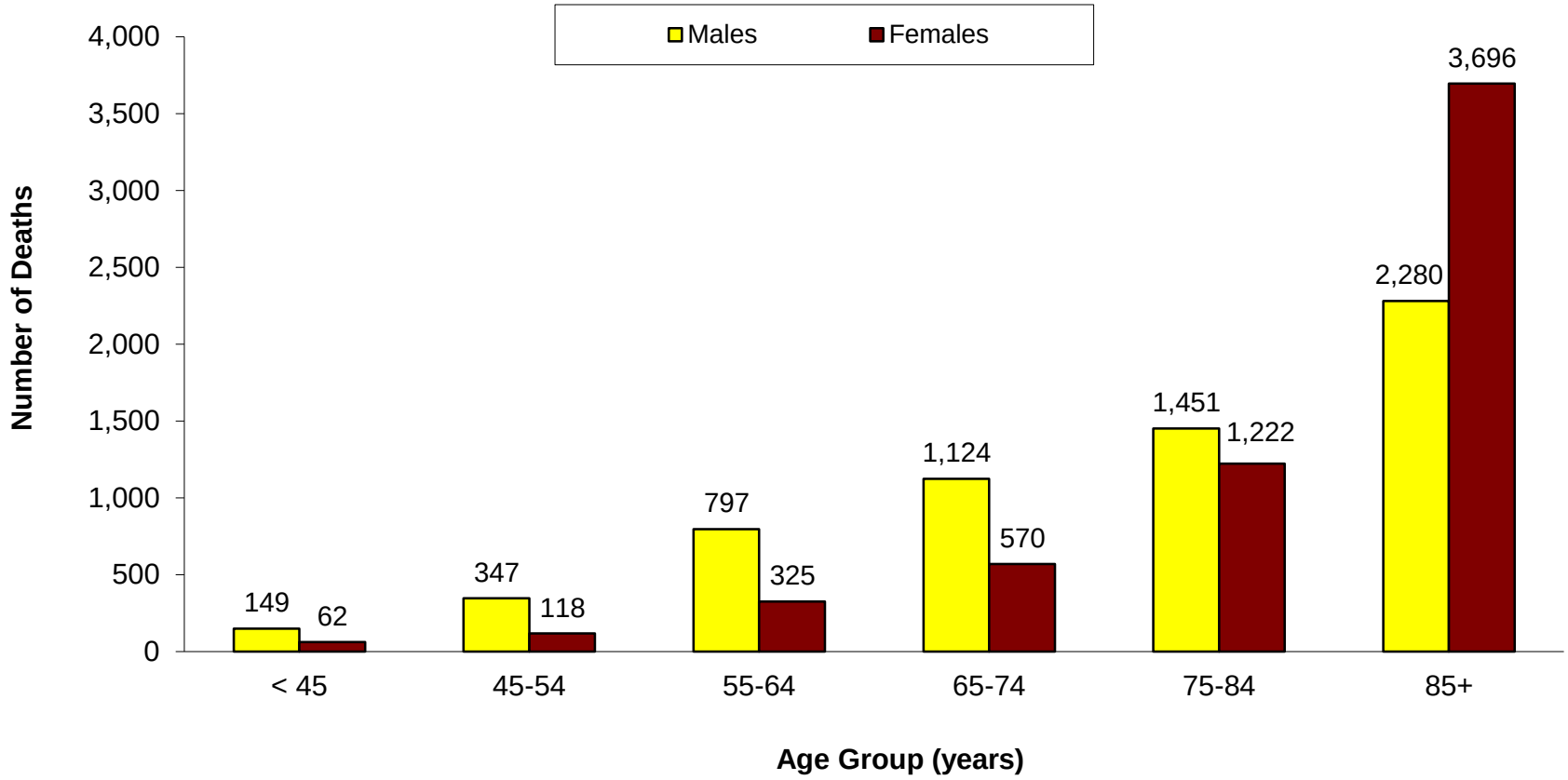
Table 9. Leading Causes of Death[1] and Age-Adjusted Death Rates by Race and Hispanic Ethnicity, Massachusetts: 2015

White non-Hispanic[2]			Black non-Hispanic[2]			Asian non-Hispanic[2]			Hispanic[2]		
Cause[3]	**#**	**Rate[4]**	**Cause[3]**	**#**	**Rate[4]**	**Cause[3]**	**#**	**Rate[4]**	**Cause[3]**	**#**	**Rate[4]**
Total	**51,688**	**703.3**	**Total**	**2,349**	**589.5**	**Total**	**1,091**	**371.8**	**Total**	**2,037**	**493.0**
Cancer	11,364	157.3	Cancer	549	133.2	Cancer	316	97.9	Cancer	389	95.6
Heart Disease	11,067	142.7	Heart Disease	441	114.3	Heart Disease	168	60.6	Heart Disease	325	90.0
Unintentional Injuries[5]	2,856	50.6	Unintentional Injuries[5]	137	29.1	Stroke	75	27.3	Unintentional Injuries[5]	219	32.2
Chronic Lower Respiratory Disease	2,627	35.4	Diabetes	109	28.5	Unintentional Injuries[5]	54	15.9	Diabetes	85	22.7
Stroke	2,182	28.0	Stroke	104	28.0	Alzheimer's Disease	41	16.7	Stroke	77	23.5
Alzheimer's Disease	1,691	20.8	Nephritis	70	18.1	Diabetes	30	10.8	Nephritis	55	15.6
Influenza & Pneumonia	1,407	17.7	Chronic Lower Respiratory Disease	64	15.8	Nephritis	28	10.2	Chronic Lower Respiratory Disease	53	15.5
Diabetes	1,163	15.9	Homicide	48	8.8	Chronic Lower Respiratory Disease	23	8.8	Perinatal Conditions	51	4.6
Nephritis	1,059	13.9	Ill-Defined Conditions	45	11.0	Ill-Defined Conditions	19	6.6	Ill-Defined Conditions	50	7.4
Ill-Defined Conditions	896	12.9	Hypertension	44	11.2	Suicide	19	3.9	Chronic Liver Disease	47	10.0

Total		
Cause[3]	**#**	**Rate[4]**
Total	**57,785**	**684.6**
Cancer	12,742	152.8
Heart Disease	12,141	138.7
Unintentional Injuries[5]	3,324	45.5
Chronic Lower Respiratory Disease	2,785	33.0
Stroke	2,474	28.4
Alzheimer's Disease	1,816	20.2
Influenza & Pneumonia	1,512	17.1
Diabetes	1,404	16.8
Nephritis	1,228	14.3
Ill-Defined Conditions	1,024	12.6

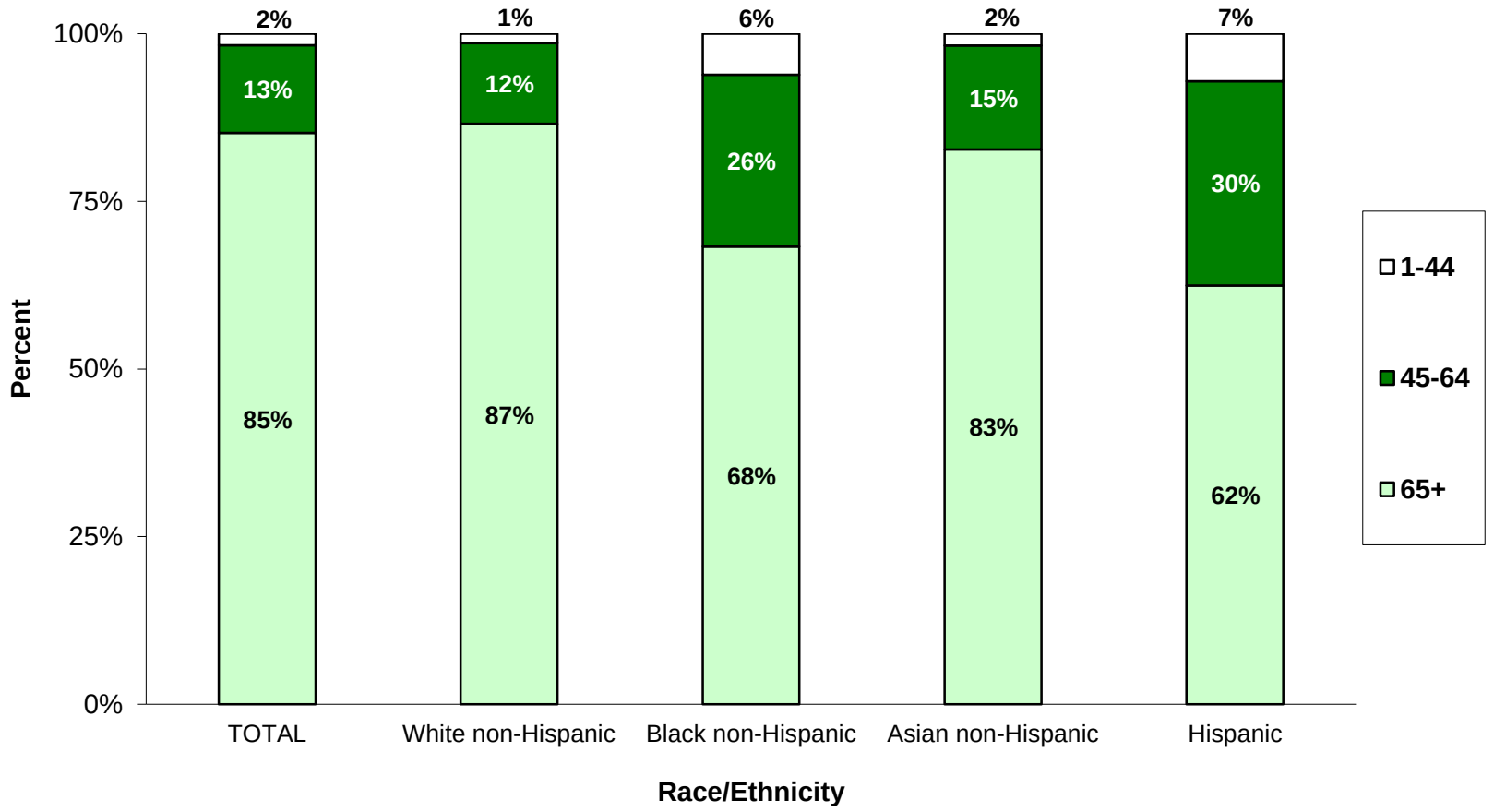
1. Ranking based on number of deaths. 2. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Technical Notes in the Appendix for a more detailed explanation. 3. Underlying Cause of Death based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

Figure 8. Number of Heart Disease Deaths by Age Group and Gender, Massachusetts: 2015



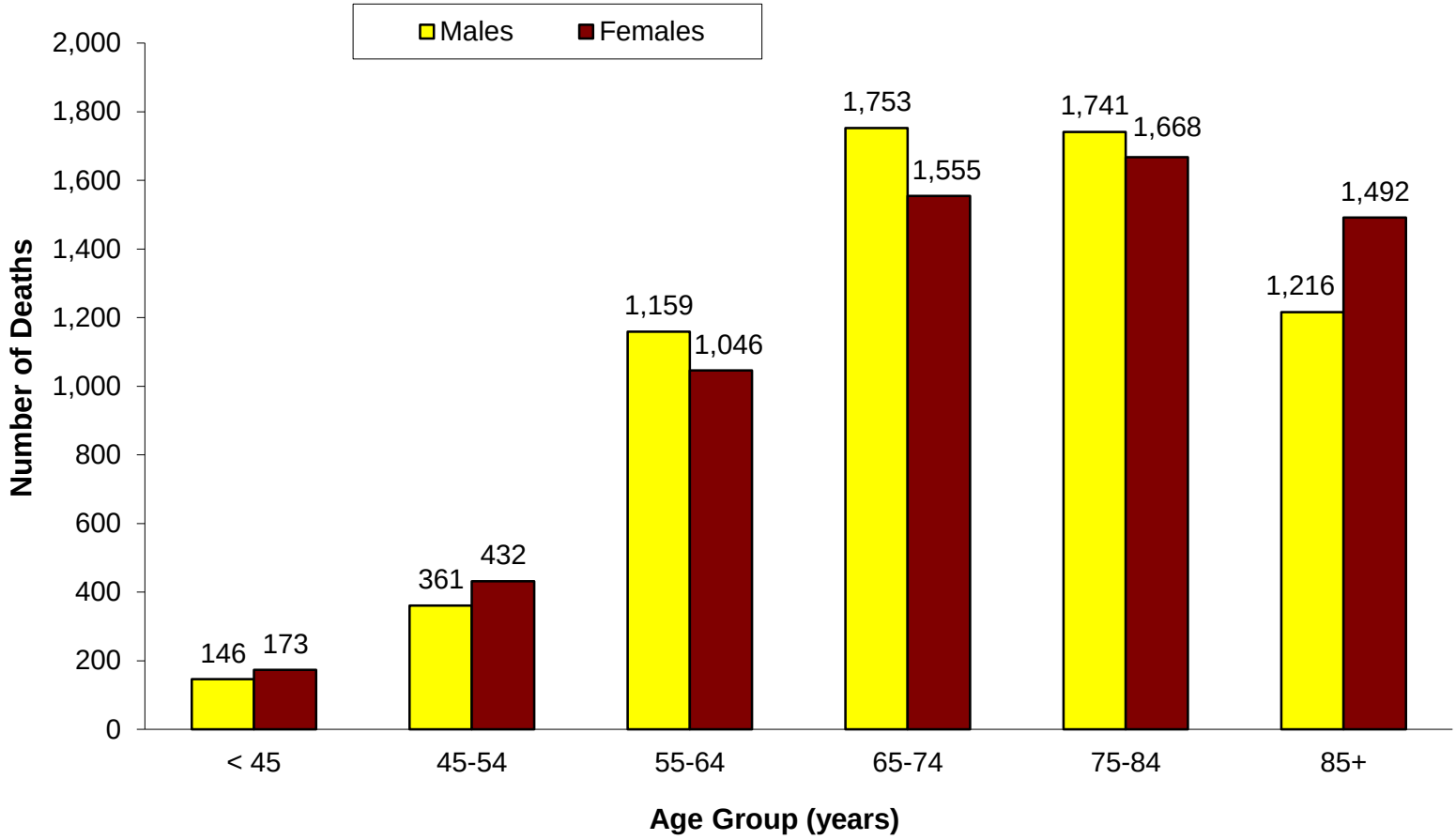
Note: The ICD-10 codes used for heart disease deaths were I00-I09, I11, I13, and I20-I51.

Figure 9. Age Distribution by Race and Hispanic Ethnicity for Heart Disease Deaths, Massachusetts: 2015



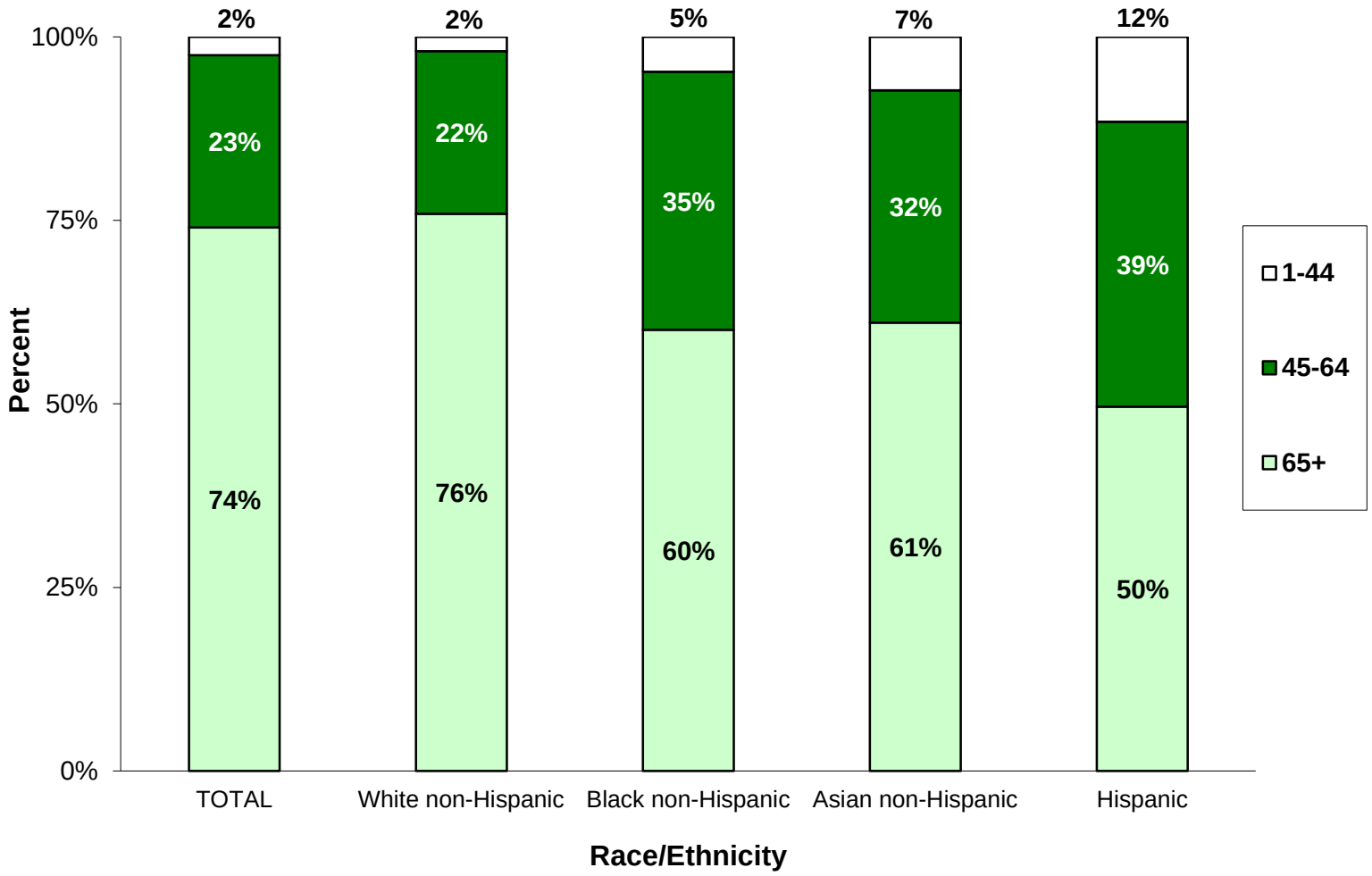
Note: The ICD-10 codes used for heart disease deaths were I00-I09, I11, I13, and I20-I51.

Figure 10. Number of Cancer Deaths by Age Group and Gender, Massachusetts: 2015



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

Figure 11. Age Distribution by Race and Hispanic Ethnicity for Cancer Deaths, Massachusetts: 2015



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

Table 10. Heart Disease and Cancer Deaths by Race and Hispanic Ethnicity and Gender, Age-Adjusted Rates[1], Massachusetts: 2002-2015

Heart Disease

Year	White non-Hispanic[2] Male	White non-Hispanic[2] Female	White non-Hispanic[2] Total	Black non-Hispanic[2] Male	Black non-Hispanic[2] Female	Black non-Hispanic[2] Total
2002	254.7	163.5	202.3	242.2	177.6	205.9
2003	250.3	160.2	198.5	272.1	188.5	223.9
2004	233.1	150.3	185.7	268.1	148.3	198.8
2005	220.6	139.1	174.9	233.7	174.5	199.8
2006	216.5	138.8	172.2	222.3	127.6	165.3
2007	216.2	134.2	168.5	233.5	142.7	180.8
2008	217.1	133.1	167.9	226.7	151.7	181.7
2009	211.3	122.6	158.4	217.3	157.3	181.6
2010	197.5	119.6	152.9	222.3	119.4	159.7
2011	196.0	113.0	148.0	185.6	114.1	143.7
2012	187.5	113.0	144.7	167.3	125.2	144.3
2013	192.3	114.3	147.4	164.6	99.1	128.3
2014	185.5	109.4	142.0	168.3	98.0	127.9
2015	184.8	111.1	142.7	156.6	85.6	114.3

Year	Asian non-Hispanic[2] Male	Asian non-Hispanic[2] Female	Asian non-Hispanic[2] Total	Hispanic[2] Male	Hispanic[2] Female	Hispanic[2] Total
2002	94.6	69.5	79.9	174.1	101.2	131.9
2003	115.2	65.0	87.6	124.8	96.2	109.7
2004	56.9	54.3	56.1	129.9	77.4	100.3
2005	77.5	48.2	61.3	118.5	83.7	99.2
2006	73.6	70.0	72.8	124.2	84.9	102.3
2007	83.3	52.9	67.4	124.9	61.8	88.3
2008	86.0	51.7	66.3	93.2	66.1	78.3
2009	69.6	51.3	60.1	111.6	62.7	83.8
2010	64.8	50.4	57.1	90.8	66.8	76.9
2011	74.1	61.0	67.5	114.9	72.0	89.7
2012	74.7	43.2	57.1	106.8	70.5	85.8
2013	67.7	43.2	54.4	81.3	56.4	67.7
2014	74.3	42.6	57.5	83.4	65.4	72.9
2015	78.6	47.2	60.6	104.6	77.6	90.0

Table 10 (continued). Heart Disease and Cancer Deaths by Race and Hispanic Ethnicity and Gender, Age-Adjusted Rates, Massachusetts: 2002-2015

Cancer

Year	White non-Hispanic[2] Male	Female	Total	Black non-Hispanic[2] Male	Female	Total
2002	245.7	175.3	202.2	293.5	179.5	224.3
2003	237.1	169.4	195.7	304.5	199.0	238.7
2004	230.4	168.4	192.5	277.6	155.7	200.1
2005	226.1	163.2	188.1	264.2	168.1	204.1
2006	234.9	161.5	190.0	265.6	180.9	212.4
2007	226.0	156.5	183.2	270.7	159.7	201.7
2008	221.4	154.8	180.6	255.0	163.7	197.9
2009	212.7	157.0	177.7	244.7	164.7	193.1
2010	211.9	150.8	174.9	244.0	131.3	174.3
2011	206.5	145.9	170.4	209.9	162.3	178.0
2012	201.3	149.1	170.2	229.4	150.7	180.6
2013	193.2	144.0	163.8	207.0	141.7	166.3
2014	192.1	137.4	159.8	194.0	114.1	145.0
2015	185.2	138.6	157.3	161.8	116.3	133.2

Year	Asian non-Hispanic[2] Male	Female	Total	Hispanic[2] Male	Female	Total
2002	145.8	90.0	114.3	144.3	103.3	120.6
2003	134.6	87.4	109.3	110.0	76.6	90.0
2004	109.5	79.7	93.1	125.6	82.5	100.4
2005	138.9	79.5	106.1	118.2	97.3	105.7
2006	126.0	91.7	107.2	119.9	74.3	93.7
2007	124.4	76.4	98.4	125.0	90.0	104.7
2008	132.1	89.3	109.0	141.2	83.1	107.8
2009	123.2	71.0	94.3	129.9	98.2	111.8
2010	128.0	98.1	111.8	129.9	87.2	103.9
2011	127.1	92.6	107.3	125.6	84.0	101.1
2012	137.3	78.8	104.6	150.5	94.4	117.7
2013	106.3	66.3	84.4	122.6	91.7	105.1
2014	131.0	83.3	104.7	115.9	89.3	100.2
2015	112.9	86.5	97.9	114.3	83.3	95.6

1. Rates are per 100,000 age-adjusted to the 2000 US standard population. 2. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Technical Notes in the Appendix for a more detailed explanation.

Table 11. Number and Age-Adjusted Rates of Cancer Deaths by Selected Causes and Gender, Massachusetts: 2015

Cause of Death[1]	ICD-10 Code	Total		Female		Male	
		#	Rate[2,3]	#	Rate[2]	#	Rate[2]
Total Cancer Deaths	**C00-C97**	**12,742**	**152.8**	**6,366**	**134.6**	**6,376**	**180.0**
Bladder	C67	397	4.7	120	2.3	277	8.1
Brain and nervous system	C70-C72	382	4.7	167	3.8	215	5.9
Cervix	C53	44	1.1	44	1.1	NA	NA
Colorectal	C18-C21	1,012	12.0	539	11.1	473	13.2
Esophageal	C15	411	4.9	87	1.9	324	8.7
Female breast[4]	C50[4]	815	17.7	815	17.7	NA	NA
Hodgkin's disease	C81	18	0.2	8	0.2	10	0.3
Kidney and other urinary organs	C64, C65	297	3.5	110	2.2	187	5.1
Leukemia	C91-C95	470	5.7	219	4.5	251	7.4
Lung	C33, C34	3,241	39.0	1,661	35.3	1,580	44.2
Melanoma of the skin	C43	193	2.3	76	1.6	117	3.3
Multiple myeloma	C88, C90	263	3.1	120	2.5	143	4.1
Non-Hodgkin's lymphoma	C82-C85	424	5.2	200	4.2	224	6.6
Ovarian	C56	323	6.9	323	6.9	NA	NA
Pancreatic	C25	943	11.3	499	10.4	444	12.3
Prostate	C61	595	17.9	NA	NA	595	17.9
Stomach	C16	263	3.2	100	2.2	163	4.6
Uterus	C54, C55	223	4.8	223	4.8	NA	NA
All other cancers	Residual	2,428	28.9	1,055	22.1	1,373	38.0

1. Common terms are used to describe the causes of cancer deaths. For detailed terminology of cancer sites, please see the ICD-10 code list in the Appendix. 2. All rates are age-adjusted by the direct method using the 2000 US standard population. Rates are per 100,000 population. 3. The total resident population is used to calculate all "Total Rates" except for ICD-10 codes C50, C53-C56, which are based on the total female population, and ICD-10 C61, which is based on the total male population. 4. Includes only female breast cancer.

Table 12. Selected Causes of Cancer Deaths by Age, Massachusetts: 2015

Age	Cause of Death[1]	ICD-10 Code	Number	Age-specific rate[2]
1-14 years	**Total**		**26**	**2.4**
	Leukemia	C91-C95	9	0.8
	Brain and nervous system	C70-C72	5	0.5
	Non-Hodgkin's lymphoma	C82-C85	2	--[3]
	Kidney and other urinary organs	C64, C65	1	--[3]
15-24 years	**Total**		**26**	**2.7**
	Brain and nervous system	C70-C72	5	0.5
	Non-Hodgkin's lymphoma	C82-C85	4	--[3]
	Colorectal	C18-C21	2	--[3]
	Lung	C33, C34	1	--[3]
25-44 years	**Total**		**267**	**15.0**
	Female breast[4]	C50	39	4.3
	Colorectal	C18-C21	30	1.7
	Brain and nervous system	C70-C72	27	1.5
	Lung	C33, C34	18	1.0
45-64 years	**Total**		**2,998**	**159.2**
	Lung	C33, C34	776	41.2
	Female breast[4]	C50	253	26.0
	Colorectal	C18-C21	234	12.4
	Pancreas	C25	233	12.4
65+ years	**Total**		**9,425**	**901.7**
	Lung	C33, C34	2,446	234.0
	Colorectal	C18-C21	746	71.4
	Pancreas	C25	704	67.4
	Prostate[5]	C61	560	124.6
65-74 years	**Total**		**3,308**	**562.0**
	Lung	C33, C34	953	161.9
	Pancreas	C25	259	44.0
	Colorectal	C18-C21	214	36.4
	Female breast[4]	C50	189	59.8
75-84 years	**Total**		**3,409**	**1,143.7**
	Lung	C33, C34	968	324.8
	Pancreas	C25	271	90.9
	Colorectal	C18-C21	239	80.2
	Prostate[5]	C61	192	153.2
85+ years	**Total**		**2,708**	**1,707.9**
	Lung	C33, C34	525	331.1
	Colorectal	C18-C21	293	184.8
	Prostate[5]	C61	237	458.5
	Pancreas	C25	174	109.7

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

Table 13. Leading Causes of Cancer Deaths and Age-Adjusted Rates by Race and Hispanic Ethnicity, Massachusetts: 2015

White non-Hispanic[1]			Black non-Hispanic[1]			Asian non-Hispanic[1]			Hispanic[1]		
Cause[2]	**#**	**Rate[3]**	**Cause[2]**	**#**	**Rate[3]**	**Cause[2]**	**#**	**Rate[3]**	**Cause[2]**	**#**	**Rate[3]**
Lung	2,983	41.4	Lung	104	24.7	Lung	79	25.6	Lung	57	15.3
Colorectal	893	12.2	Colorectal	51	12.3	Colorectal	26	8.8	Colorectal	33	8.7
Pancreas	851	11.8	Female Breast[4]	51	21.3	Stomach	25	7.0	Stomach	27	6.2
Female Breast[4]	705	17.9	Prostate[5]	37	26.5	Pancreas	24	7.2	Female Breast[4]	25	9.8
Prostate[5]	526	17.8	Pancreas	36	8.8	Female Breast[4]	20	9.8	Pancreas	24	5.2
Total Cancer	**11,364**	**157.3**	**Total Cancer**	**549**	**133.2**	**Total Cancer**	**316**	**97.9**	**Total Cancer**	**389**	**95.6**

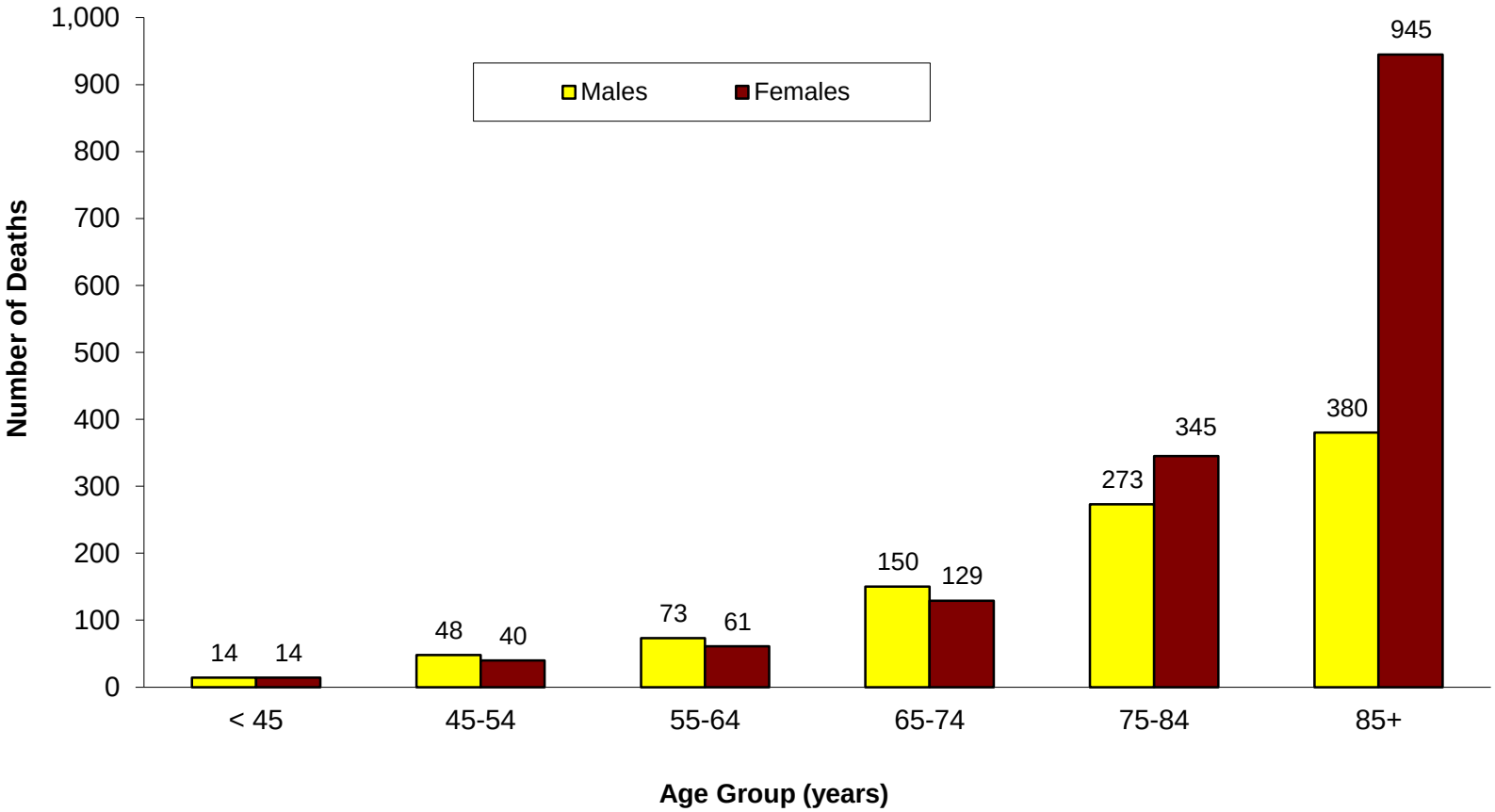
1. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see the Technical Notes in the Appendix for a more detailed explanation. 2. ICD-10 codes used. Please see the ICD-10 codes listing in the Appendix for detailed terminology. 3. All rates are age-adjusted by the direct method using the 2000 US standard population. Rates are per 100,000 population. 4. Calculation based on female population. 5. Calculation based on male population.

Table 14. Number, Percent, and Age-Adjusted Rates of Stroke Deaths by Type and Gender, Massachusetts: 2015

Cause of Death	ICD-10 Code	Total			Female			Male		
		#	%	Rate[1]	#	%	Rate[1]	#	%	Rate[1]
Total Stroke Deaths	**I60-I69**	**2,474**	**100%**	**28.4**	**1,535**	**100%**	**28.1**	**939**	**100%**	**28.2**
Subarachnoid hemorrhage	I60	125	5.1%	1.5	86	5.6%	1.8	39	4.2%	1.2
Intracerebral and other intracranial hemorrhage	I61-I62	519	21.0%	6.3	279	18.2%	5.6	240	25.6%	7.2
Cerebral infarction	I63	182	7.4%	2.1	118	7.7%	2.2	64	6.8%	1.9
Stroke, not specified	I64	1,138	46.0%	12.7	738	48.1%	12.9	400	42.6%	12.0
Other	I67, I69	510	20.6%	5.7	314	20.5%	5.5	196	20.9%	5.9

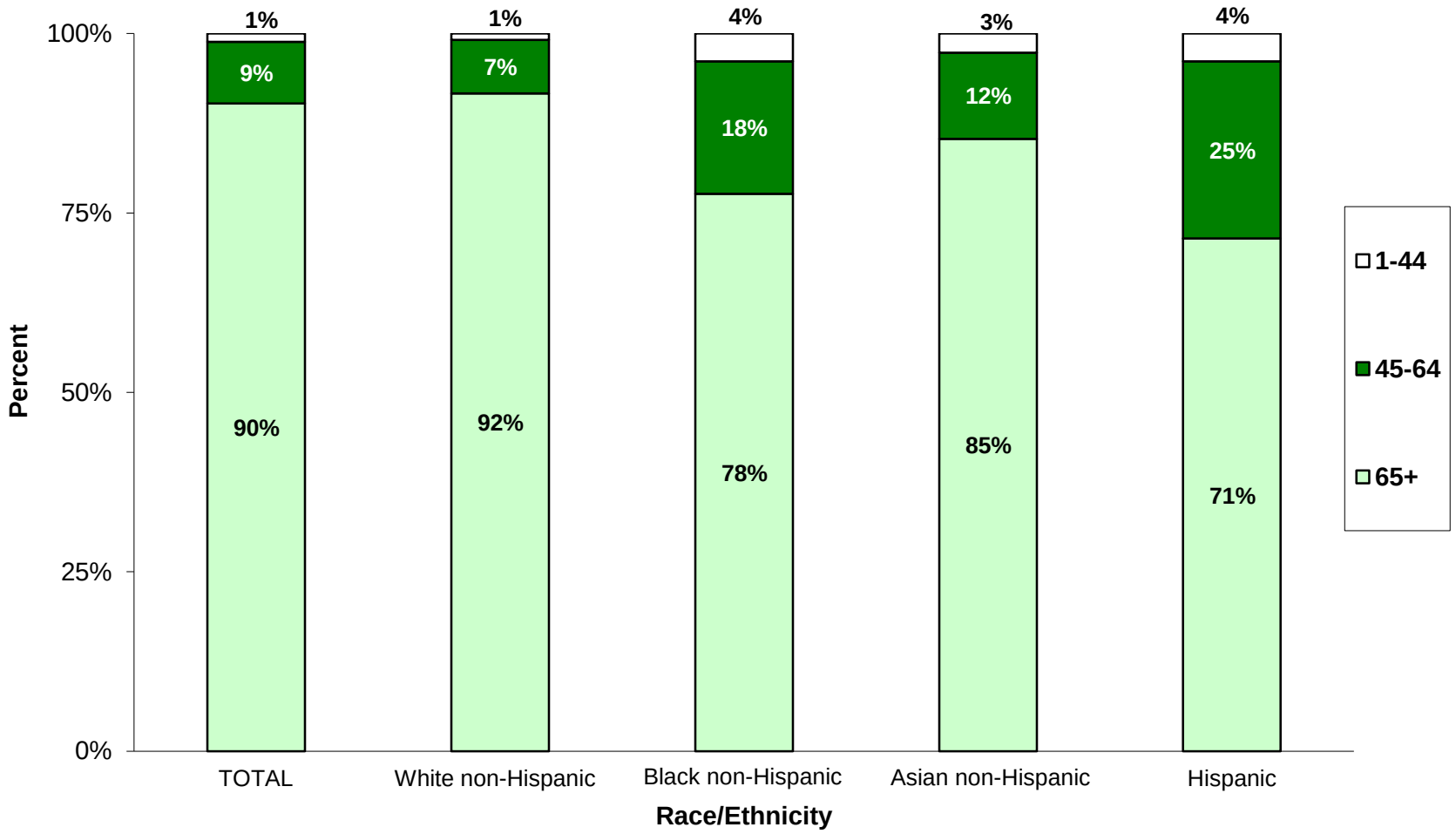
1. All rates are age-adjusted to the 2000 US Standard Population. Rates are per 100,000 population.

Figure 12. Number of Stroke Deaths by Age Group and Gender, Massachusetts: 2015



Note: The total number of stroke deaths in Figure 12 does not match the total presented in Table 14 because the age of some decedents was unknown.
Note: The ICD-10 codes used for stroke deaths were I60-I69.

Figure 13. Age Distribution by Race and Hispanic Ethnicity for Stroke Deaths, Massachusetts: 2015



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

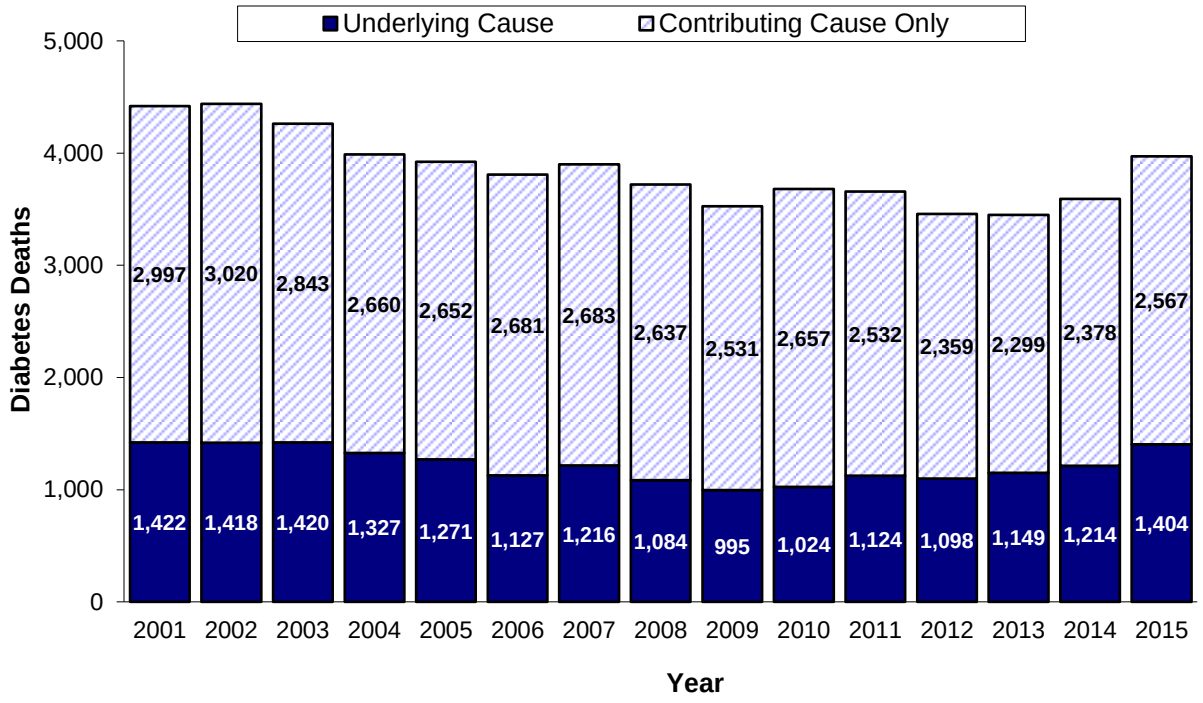
Table 15. Stroke Deaths by Race and Hispanic Ethnicity and Gender, Age-Adjusted Rates[1], Massachusetts: 2002-2015

Year	White non-Hispanic[2] Male	White non-Hispanic[2] Female	White non-Hispanic[2] Total	Black non-Hispanic[2] Male	Black non-Hispanic[2] Female	Black non-Hispanic[2] Total
2002	50.2	45.7	47.9	57.9	60.2	59.5
2003	44.7	43.9	44.7	45.9	54.9	52.7
2004	42.8	40.4	41.9	52.1	58.3	56.2
2005	37.7	37.3	37.9	50.6	44.9	47.5
2006	37.5	35.6	36.7	57.6	51.9	54.5
2007	35.4	34.0	34.8	34.4	36.4	35.6
2008	33.1	33.4	33.6	53.5	40.7	45.5
2009	31.7	31.7	32.0	51.7	36.0	42.7
2010	30.5	30.1	30.5	46.2	39.9	42.9
2011	30.4	29.6	30.2	34.4	29.8	32.0
2012	27.6	28.0	28.1	37.2	34.2	36.1
2013	26.4	27.9	27.7	33.4	29.6	31.3
2014	26.8	28.8	28.4	35.8	30.2	32.7
2015	27.4	28.0	28.0	33.1	24.7	28.0

Year	Asian non-Hispanic[2] Male	Asian non-Hispanic[2] Female	Asian non-Hispanic[2] Total	Hispanic[2] Male	Hispanic[2] Female	Hispanic[2] Total
2002	21.2	28.7	25.6	49.6	30.2	38.3
2003	39.3	28.7	33.4	44.3	36.0	39.3
2004	35.2	32.7	34.1	39.7	32.6	35.5
2005	28.2	27.5	28.1	33.2	24.5	28.2
2006	34.5	41.9	39.2	26.5	29.6	28.8
2007	26.7	29.5	28.4	32.0	26.7	28.9
2008	23.4	27.1	25.6	23.9	18.4	21.1
2009	38.1	22.0	28.1	23.9	16.7	19.9
2010	35.2	27.0	30.8	31.1	22.1	26.0
2011	21.3	25.5	24.2	22.0	23.3	23.1
2012	31.0	24.4	27.0	19.2	27.2	24.7
2013	16.0	25.6	21.6	25.7	18.1	21.2
2014	19.1	20.8	20.4	24.8	22.2	23.4
2015	28.6	26.4	27.3	23.7	22.5	23.5

1. Rates are per 100,000 age-adjusted to the 2000 US standard population. 2. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Technical Notes in the Appendix for a more detailed explanation.

Figure 84. Diabetes Deaths, Massachusetts: 2001-2015



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

Table 16. Diabetes Deaths by Gender, Massachusetts: 2015

	Proportion of all Deaths (%)[1]			Number		
Cause of Death	Males	Females	Total	Males	Females	Total
Underlying	2.8%	2.1%	2.4%	769	635	1,404
Contributing/Associated	5.0%	3.9%	4.4%	1,393	1,174	2,567
Total diabetes-related	**7.7%**	**6.1%**	**6.9%**	**2,162**	**1,809**	**3,971**

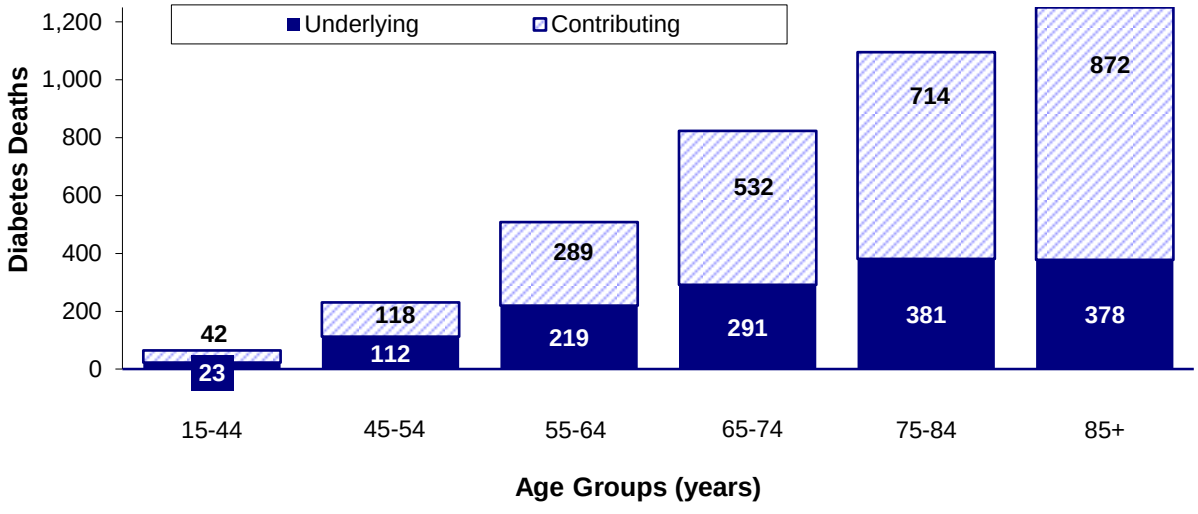
Note: The ICD-10 codes used for diabetes deaths were E10-E14.
1. Proportions are out of total deaths due to all causes.

Table 17. Diabetes Deaths by Race and Hispanic Ethnicity, Massachusetts: 2015

Cause of Death	Race/Hispanic Ethnicity				
	White non-Hispanic	Black non-Hispanic	Hispanic	Asian non-Hispanic	Total
	Number				
Underlying	1,163	109	85	30	1,404
Contributing/Associated	2,135	170	162	61	2,567
Total diabetes-related	3,298	279	247	91	3,971
Total deaths (all causes)	***51,688***	***2,349***	***2,037***	***1,091***	***57,785***
	Proportion of all deaths (%)				
Underlying	2.3	4.6	4.2	2.7	2.4
Contributing/Associated	4.1	7.2	8.0	5.6	4.4
Total diabetes-related	***6.4***	***11.9***	***12.1***	***8.3***	***6.9***
	Death Rates[1]				
Underlying	15.9	28.5	22.7	10.8	*16.8*
Contributing/Associated	28.7	44.9	44.7	23.0	*30.4*
Total diabetes-related	***44.6***	***73.4***	***67.4***	***33.8***	***47.1***

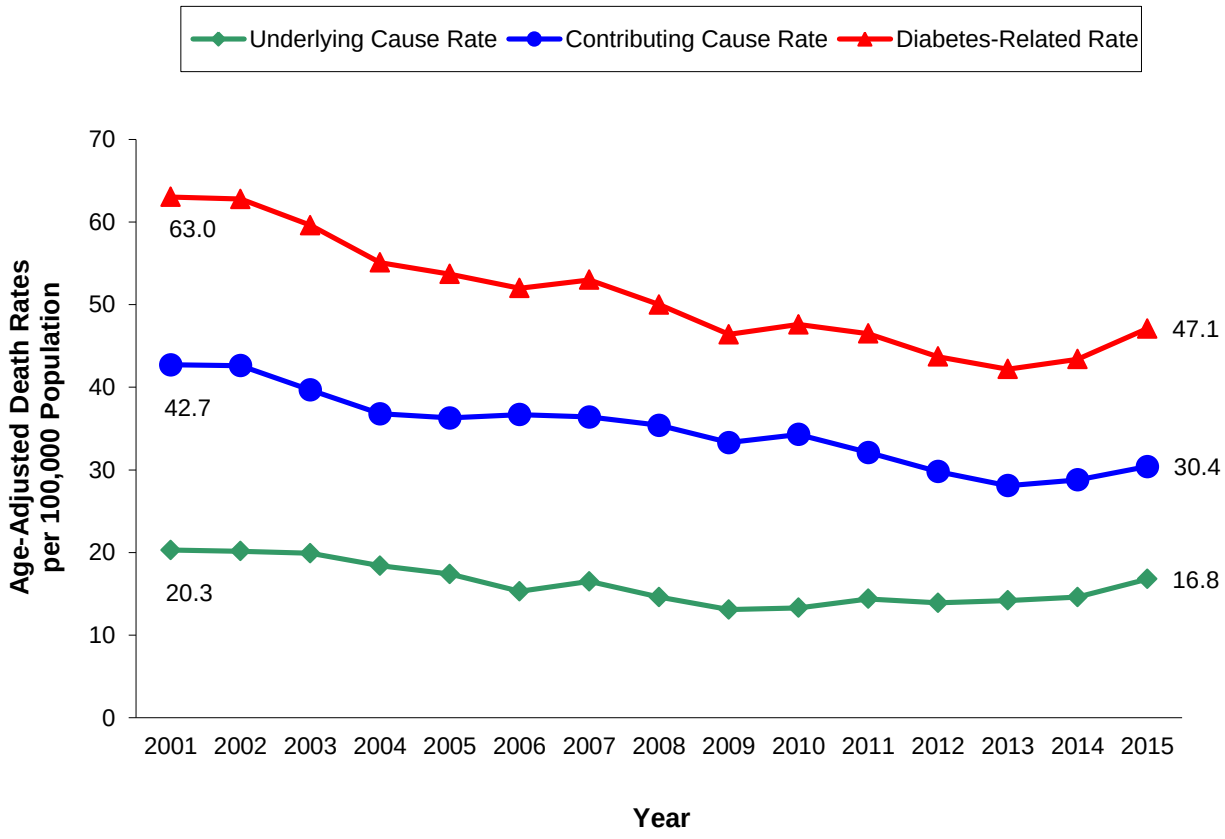
Note: The ICD-10 codes used for diabetes deaths were E10-E14.
1. Rates are per 100,000 age-adjusted to the 2000 U.S. standard population

Figure 15. Age Distribution of Diabetes Deaths, Massachusetts: 2015



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

Figure 16. Diabetes Death Rates, Massachusetts: 2001-2015



Note: The ICD-10 codes used for diabetes deaths were E10-E14.
Note: Rates are per 100,000 age-adjusted to the 2000 U.S. standard population.

Table 18. Injury Deaths by Leading Causes, Gender, Age: Numbers, Age-Adjusted, and Age-Specific Rates, Massachusetts: 2015

	All Injury Deaths[1]		Poisoning[2]		Falls		Hanging, Strangulation, or Suffocation		Motor Vehicle-Related[3]		Firearm		Other[4]	
	Number	Rate[5]	Number	Rate[5]	Number	Rate[5]	Number	Rate[5]	Number	Rate[5]	Number	Rate[5]	Number	Rate[5]
All Persons	**4,224**	**58.0**	**1,913**	**28.4**	**755**	**8.7**	**462**	**6.3**	**395**	**5.4**	**214**	**3.0**	**485**	**6.1**
<1	3	--[6]	0	0.0	0	0.0	1	--[6]	2	--[6]	0	0.0	0	0.0
1-14	23	2.2	1	--[6]	0	0.0	7	0.7	4	--[6]	1	--[6]	10	0.9
15-24	392	41.2	178	18.7	3	--[6]	49	5.1	87	9.1	45	4.7	30	3.2
25-44	1,415	79.6	1,014	57.0	22	1.2	124	7.0	104	5.8	76	4.3	75	4.2
45-64	1,237	65.7	670	35.6	109	5.8	144	7.6	100	5.3	56	3.0	158	8.4
65-74	291	49.4	34	5.8	87	14.8	36	6.1	55	9.3	17	2.9	62	10.5
75-84	323	108.4	11	3.7	177	59.4	39	13.1	30	10.1	13	4.4	53	17.8
85+	540	340.6	5	3.2	357	225.2	62	39.1	13	8.2	6	3.8	97	61.2
All Females	**1,370**	**33.2**	**528**	**15.1**	**362**	**6.7**	**143**	**3.5**	**115**	**2.9**	**22**	**0.6**	**200**	**4.3**
<1	2	--[6]	0	0.0	0	0.0	1	--[6]	1	--[6]	0	0.0	0	0.0
1-14	12	2.3	0	0.0	0	0.0	5	1.0	2	--[6]	0	0.0	5	1.0
15-24	94	19.8	49	10.3	0	0.0	12	2.5	25	5.3	1	--[6]	7	1.5
25-44	328	36.5	242	26.9	3	--[6]	31	3.4	20	2.2	12	1.3	20	2.2
45-64	363	37.3	215	22.1	36	3.7	34	3.5	27	2.8	7	0.7	44	4.5
65-74	111	35.1	12	3.8	37	11.7	12	3.8	20	6.3	2	--[6]	28	8.9
75-84	147	85.1	7	4.1	79	45.7	18	10.4	15	8.7	0	0.0	28	16.2
85+	313	292.9	3	--[6]	207	193.7	30	28.1	5	4.7	0	0.0	68	63.6
All Males	**2,854**	**84.9**	**1,385**	**42.2**	**393**	**11.6**	**319**	**9.3**	**280**	**8.1**	**192**	**5.7**	**285**	**8.1**
<1	1	--[6]	0	0.0	0	0.0	0	0.0	1	--[6]	0	0.0	0	0.0
1-14	11	2.0	1	--[6]	0	0.0	2	--[6]	2	--[6]	1	--[6]	5	0.9
15-24	298	62.4	129	27.0	3	--[6]	37	7.8	62	13.0	44	9.2	23	4.8
25-44	1,087	123.8	772	87.9	19	2.2	93	10.6	84	9.6	64	7.3	55	6.3
45-64	874	96.0	455	50.0	73	8.0	110	12.1	73	8.0	49	5.4	114	12.5
65-74	180	66.1	22	8.1	50	18.3	24	8.8	35	12.8	15	5.5	34	12.5
75-84	176	140.4	4	--[6]	98	78.2	21	16.8	15	12.0	13	10.4	25	19.9
85+	227	439.2	2	--[6]	150	290.2	32	61.9	8	15.5	6	11.6	29	56.1

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. Includes drug overdoses, which account for the largest percentage. 3. Motor vehicle deaths to occupants, pedestrians, motorcyclists and bicyclists. 4. All remaining injury causes. 5. Number of deaths per 100,000 persons in each age group; rates for all rows except the age group rows are age-adjusted to the 2000 US standard population. 6. Calculations based on values 1-4 are excluded.

Table 19. Injury Deaths by Leading Causes, Gender and Race and Hispanic Ethnicity: Numbers and Age Adjusted Rates, Massachusetts: 2015

	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]
White non-Hispanic	**3,543**	**63.1**	**1,630**	**33.4**	**696**	**9.2**	**400**	**7.0**	**307**	**5.6**	**124**	**2.2**	**386**	**5.7**
Females	1,192	36.5	462	18.1	338	7.0	123	3.9	86	2.9	15	0.5	168	4.1
Males	2,351	91.7	1,168	49.2	358	12.2	277	10.5	221	8.4	109	4.1	218	7.4
Black non-Hispanic	**215**	**43.9**	**86**	**17.2**	**15**	**3.7**	**16**	**3.7**	**24**	**4.9**	**39**	**7.0**	**35**	**7.4**
Females	68	26.9	28	10.8	5	2.3	8	3.3	9	3.4	1	--[6]	17	6.8
Males	147	62.4	58	24.1	10	5.4	8	4.3	15	6.5	38	13.8	18	8.2
Asian non-Hispanic	**76**	**20.8**	**13**	**2.3**	**16**	**5.9**	**11**	**2.9**	**18**	**5.5**	**3**	--[6]	**15**	**3.6**
Females	30	16.8	3	--[6]	6	4.1	5	2.6	12	7.0	0	0.0	4	--[6]
Males	46	25.0	10	3.6	10	7.8	6	3.2	6	3.8	3	--[6]	11	5.3
Hispanic	**313**	**44.3**	**154**	**20.9**	**19**	**4.7**	**25**	**3.3**	**33**	**4.1**	**41**	**4.8**	**41**	**6.5**
Females	60	19.2	25	6.9	8	4.4	7	2.1	5	1.4	6	1.4	9	3.2
Males	253	69.9	129	35.5	11	4.7	18	4.3	28	6.8	35	8.4	32	10.1

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. Includes drug overdoses, which account for the largest percentage. 3. Motor vehicle deaths to occupants, pedestrians, motorcyclists and bicyclists. 4. All remaining injury causes. 5. Number of deaths per 100,000 persons in each group; rates are age-adjusted to the 2000 US standard population. 6. Calculations based on values 1-4 are excluded.

Table 20. Unintentional Injury Deaths by Gender, Age: Numbers, Age-Adjusted, and Age-Specific Rates, Massachusetts: 2015

	All Unintentional[1]		Poisonings		Falls		Motor Vehicle-Related	
	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]
All Persons	**3,324**	**45.5**	**1,751**	**26.2**	**732**	**8.4**	**395**	**5.4**
<1	3	--[3]	0	0.0	0	0.0	2	--[3]
1-14	15	1.4	1	--[3]	0	0.0	4	--[3]
15-24	265	27.8	166	17.4	1	--[3]	87	9.1
25-44	1121	63.1	970	54.6	12	0.7	104	5.8
45-64	903	48.0	582	30.9	100	5.3	100	5.3
65-74	225	38.2	22	3.7	85	14.4	55	9.3
75-84	278	93.3	6	2.0	177	59.4	30	10.1
85+	514	324.2	4	--[3]	357	225.2	13	8.2
All Females	**1124**	**26.7**	**450**	**13.1**	**357**	**6.6**	**115**	**2.9**
<1	2	--[3]	0	0.0	0	0.0	1	--[3]
1-14	8	1.5	0	0.0	0	0.0	2	--[3]
15-24	73	15.4	44	9.3	0	0.0	25	5.3
25-44	254	28.2	224	24.9	1	--[3]	20	2.2
45-64	262	26.9	172	17.7	33	3.4	27	2.8
65-74	91	28.8	6	1.9	37	11.7	20	6.3
75-84	131	75.8	2	--[3]	79	45.7	15	8.7
85+	303	283.5	2	--[3]	207	193.7	5	4.7
All Males	**2,200**	**65.9**	**1301**	**39.8**	**375**	**11.1**	**280**	**8.1**
<1	1	--[3]	0	0.0	0	0.0	1	--[3]
1-14	7	1.3	1	--[3]	0	0.0	2	--[3]
15-24	192	40.2	122	25.6	1	--[3]	62	13.0
25-44	867	98.7	746	84.9	11	1.3	84	9.6
45-64	641	70.4	410	45.0	67	7.4	73	8.0
65-74	134	49.2	16	5.9	48	17.6	35	12.8
75-84	147	117.3	4	--[3]	98	78.2	15	12.0
85+	211	408.2	2	--[3]	150	290.2	8	15.5

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

Table 21. Unintentional Injury Deaths by Gender and Race and Hispanic Ethnicity: Numbers and Age-Adjusted Rates, Massachusetts: 2015

	All Unintentional[1]		Poisonings		Falls		Motor Vehicle-Related	
	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]
White non-Hispanic	**2,856**	**50.6**	**1490**	**30.9**	**678**	**8.8**	**307**	**5.6**
Females	983	29.2	391	15.6	334	6.9	86	2.9
Males	1,873	73.7	1099	46.6	344	11.7	221	8.4
Black non-Hispanic	**137**	**29.1**	**80**	**16.1**	**13**	**3.3**	**24**	**4.9**
Females	50	20.2	25	9.7	5	2.3	9	3.4
Males	87	39	55	23.0	8	4.6	15	6.5
Asian non-Hispanic	**54**	**15.9**	**10**	**1.7**	**15**	**5.6**	**18**	**5.5**
Females	24	14.3	2	--[3]	6	4.1	12	7.0
Males	30	17.6	8	2.8	9	7.2	6	3.8
Hispanic	**219**	**32.2**	**142**	**19.1**	**18**	**4.6**	**33**	**4.1**
Females	49	16.5	23	6.2	8	4.4	5	1.4
Males	170	47.7	119	32.4	10	4.5	28	6.8

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

Table 22. Intentional Injury Deaths by Gender, Age: Numbers, Age-Adjusted, and Age-Specific Rates, Massachusetts: 2015

	All Intentional[1]		Suicide		Homicide	
	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]
All Persons	**792**	**11.1**	**647**	**9.0**	**145**	**2.2**
<1	0	0.0	0	0.0	0	0.0
1-14	8	0.8	5	0.5	3	--[3]
15-24	124	13.0	77	8.1	47	4.9
25-44	271	15.2	203	11.4	68	3.8
45-64	294	15.6	277	14.7	17	0.9
65-74	55	9.3	49	8.3	6	1.0
75-84	28	9.4	24	8.1	4	--[3]
85+	12	7.6	12	7.6	0	0.0
All Females	**202**	**5.5**	**172**	**4.6**	**30**	**0.9**
<1	0	0.0	0	0.0	0	0.0
1-14	4	--[3]	2	--[3]	2	--[3]
15-24	21	4.4	18	3.8	3	--[3]
25-44	67	7.4	51	5.7	16	1.8
45-64	86	8.8	80	8.2	6	0.6
65-74	14	4.4	12	3.8	2	--[3]
75-84	8	4.6	7	4.1	1	--[3]
85+	2	--[3]	2	--[3]	0	0.0
All Males	**590**	**17.2**	**475**	**13.7**	**115**	**3.5**
<1	0	0.0	0	0.0	0	0.0
1-14	4	--[3]	3	--[3]	1	--[3]
15-24	103	21.6	59	12.4	44	9.2
25-44	204	23.2	152	17.3	52	5.9
45-64	208	22.8	197	21.6	11	1.2
65-74	41	15.0	37	13.6	4	--[3]
75-84	20	16.0	17	13.6	3	--[3]
85+	10	19.3	10	19.3	0	0.0

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

Table 23. Intentional Injury Deaths by Gender and Race and Hispanic Ethnicity: Numbers and Age-Adjusted Rates, Massachusetts: 2015

	All Intentional[1]		Suicide		Homicide	
	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]
White non-Hispanic	**599**	**11.1**	**557**	**10.2**	**42**	**0.8**
Females	171	6.2	154	5.5	17	0.7
Males	428	16.3	403	15.2	25	1.0
Black non-Hispanic	**71**	**13.2**	**23**	**4.4**	**48**	**8.8**
Females	14	5.1	8	2.9	6	2.1
Males	57	21.8	15	5.9	42	15.8
Asian non-Hispanic	**21**	**4.4**	**19**	**3.9**	**2**	**--[3]**
Females	6	2.5	5	1.9	1	--[3]
Males	15	6.5	14	6.1	1	--[3]
Hispanic	**83**	**10.3**	**38**	**5.3**	**45**	**5.0**
Females	10	2.5	4	--[3]	6	1.4
Males	73	18.3	34	9.8	39	8.5

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

Table 24. Injury Deaths by Intent, Method and Gender: Numbers and Age-Adjusted Rates, Massachusetts: 2015

Type of Injury[1]	All Injury Deaths		Female		Male	
	Number	Rate[2]	Number	Rate[2]	Number	Rate[2]
Unintentional Injuries (Accidents)	**3,324**	**45.5**	**1,124**	**26.7**	**2,200**	**65.9**
Motor vehicle-related	395	5.4	115	2.9	280	8.1
Injury to pedestrian	94	1.2	31	0.7	63	1.8
Injury to pedal cyclist	6	0.1	4	--[3]	2	--[3]
Injury to motorcyclist	64	0.9	3	--[3]	61	1.7
Injury to occupant	39	0.5	10	0.3	29	0.8
Other and unspecified	192	2.7	67	1.8	125	3.6
Poisoning	1751	26.2	450	13.1	1301	39.8
Falls	732	8.4	357	6.6	375	11.1
Hanging, strangulation or suffocation	146	1.7	66	1.3	80	2.3
Drowning and submersion	45	0.6	14	0.4	31	0.9
Smoke, fire and flames	43	0.5	23	0.5	20	0.5
Other and unspecified	190	2.2	96	1.8	94	2.6
Suicide	**647**	**9.0**	**172**	**4.6**	**475**	**13.7**
Poisoning	138	1.9	67	1.8	71	2.0
Hanging, strangulation or suffocation	312	4.5	73	2.1	239	7.0
Firearm	118	1.6	12	0.3	106	3.1
Other and unspecified	79	1.0	20	0.5	59	1.6
Homicide	**145**	**2.2**	**30**	**0.9**	**115**	**3.5**
Firearm	86	1.3	10	0.3	76	2.3
Cut or pierce	28	0.4	9	0.2	19	0.6
Other and unspecified	31	0.5	11	0.3	20	0.6
Injury Deaths of Undetermined Intent	**51**	**0.7**	**20**	**0.5**	**31**	**0.9**
Poisoning	24	0.3	11	0.3	13	0.4
Other and unspecified	27	0.3	9	0.2	18	0.5
Legal Intervention	**9**	**0.1**	**0**	**0.0**	**9**	**0.3**
Firearm	8	0.1	0	0.0	8	0.3
Other and unspecified	1	--[3]	0	0.0	1	--[3]
Adverse Effects	**48**	**0.6**	**24**	**0.5**	**24**	**0.7**
Medical care	39	0.5	20	0.4	19	0.5
Drugs	9	0.1	4	--[3]	5	0.2
ALL INJURIES	**4,224**	**58.0**	**1,370**	**33.2**	**2,854**	**84.9**

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. Number of deaths per 100,000 persons; rates are adjusted to the 2000 US standard population. 3. Calculations based on values 1-4 are excluded.

Table 25. HIV/AIDS Deaths by Place of Occurrence, Massachusetts: 2000-2015

Year		Total[1]	Place of Occurrence			
			At Home	Hospital	Out of State	Hospice/Nursing Home/Other
2000	#	226	48	145	0	33
	%	100.0	21.2	64.2	0.0	14.6
2001	#	249	47	164	4	34
	%	100.0	18.9	65.9	--[2]	13.7
2002	#	229	33	156	4	36
	%	100.0	14.4	68.1	--[2]	15.7
2003	#	226	55	134	5	32
	%	100.0	24.3	59.3	2.2	14.2
2004	#	211	45	134	1	31
	%	100.0	21.3	63.5	--[2]	14.7
2005	#	180	28	122	1	30
	%	100.0	15.6	67.8	--[2]	16.7
2006	#	179	22	122	2	33
	%	100.0	12.3	68.2	--[2]	18.4
2007	#	143	15	98	2	28
	%	100.0	10.5	68.5	--[2]	19.6
2008	#	143	27	92	1	23
	%	100.0	18.9	64.3	--[2]	16.1
2009	#	124	25	76	1	22
	%	100.0	20.2	61.3	--[2]	17.7
2010	#	119	22	68	1	28
	%	100.0	18.5	57.1	--[2]	23.5
2011	#	91	14	58	0	19
	%	100.0	15.4	63.7	0.0	20.9
2012	#	100	24	56	0	20
	%	100.0	24.0	56.0	0.0	20.0
2013	#	86	13	53	0	20
	%	100.00	15.1	61.6	0.0	23.3
2014	#	80	13	50	0	17
	%	100.00	16.3	62.5	0.0	21.3
2015	#	92	26	42	0	24
	%	100.00	28.3	45.7	0.0	26.1

1. AIDS: Acquired Immune Deficiency Syndrome, HIV: Human Immunodeficiency Virus. The deaths reported are cases for which AIDS or HIV-related disease was the underlying cause of death. Deaths were coded according to ICD-10: B20-B24. 2. Calculations based on values 1-4 are excluded.

Table 26. HIV/AIDS[1] Deaths by Age, Massachusetts: 2000-2015						
Year		Age (in years)				
		<15	15-24	25-34	35-44	45+
2000	#	4	0	26	104	92
	%	--[2]	0.0	11.5	46.0	40.7
2001	#	1	2	25	111	110
	%	--[2]	--[2]	10.0	44.6	44.2
2002	#	1	1	10	91	126
	%	--[2]	--[2]	4.4	39.7	55.0
2003	#	1	3	14	94	114
	%	--[2]	--[2]	6.2	41.6	50.4
2004	#	0	2	9	79	121
	%	0.0	--[2]	4.3	37.4	57.4
2005	#	0	1	6	64	109
	%	0.0	--[2]	3.3	35.6	60.6
2006	#	0	1	6	71	101
	%	0.0	--[2]	3.4	39.7	56.4
2007	#	0	0	5	34	104
	%	0.0	0.0	3.5	32.7	72.7
2008	#	0	1	6	32	104
	%	0.0	--[2]	4.2	22.4	72.7
2009	#	0	0	6	25	93
	%	0.0	0.0	4.8	20.2	75.0
2010	#	0	1	4	24	90
	%	0.0	--[2]	--[2]	20.2	75.6
2011	#	0	2	1	19	69
	%	0.0	--[2]	--[2]	20.9	75.8
2012	#	0	0	2	16	82
	%	0.0	0.0	--[2]	16.0	82.0
2013	#	0	2	3	3	78
	%	0.0	--[2]	--[2]	--[2]	90.7
2014	#	0	1	6	9	64
	%	0.0	--[2]	7.5	11.3	80.0
2015	#	0	0	4	7	81
	%	0.0	0.0	--[2]	7.6	88.0

1. AIDS: Acquired Immune Deficiency Syndrome, HIV: Human Immunodeficiency Virus. The deaths reported are cases for which AIDS or HIV-related disease was the underlying cause of death. Deaths were coded according to ICD-10: B20-B24. 2. Calculations based on values 1-4 are excluded.

Table 27. HIV/AIDS[1] Deaths by Gender, Race and Hispanic Ethnicity, Massachusetts: 2000-2015

Year		Gender		Race and Ethnicity			
		Male	Female	White non-Hispanic[2]	Black non-Hispanic[2]	Other[3]	Hispanic[2]
2000	#	161	65	104	61	2	59
	%	71.2	28.8	46.0	27.0	--[4]	26.1
2001	#	182	67	125	73	0	51
	%	73.1	26.9	50.2	29.3	0.0	20.5
2002	#	163	66	108	68	1	52
	%	71.2	28.8	47.1	29.7	--[4]	22.7
2003	#	150	76	113	58	2	53
	%	66.4	33.6	50.0	25.7	--[4]	23.5
2004	#	151	60	976	55	4	55
	%	71.6	28.4	46.0	26.1	--[4]	26.1
2005	#	122	58	75	56	4	45
	%	67.8	32.2	41.7	31.1	--[4]	25.0
2006	#	122	57	91	49	2	37
	%	68.2	31.8	50.8	27.4	--[4]	20.7
2007	#	96	47	58	48	0	37
	%	67.4	32.9	40.6	33.6	0.0	25.9
2008	#	101	42	69	37	5	31
	%	70.6	29.4	48.6	26.1	3.5	21.8
2009	#	89	35	48	37	6	33
	%	71.8	28.2	38.7	29.8	4.8	26.6
2010	#	80	39	58	34	1	26
	%	67.2	32.8	48.7	28.6	--[4]	21.8
2011	#	64	27	36	30	1	24
	%	70.3	29.7	39.6	33.0	--[4]	26.4
2012	#	62	38	50	26	1	23
	%	62.0	38.0	50.0	26.0	--[4]	23.0
2013	#	58	28	35	32	0	18
	%	67.4	32.6	41.2	37.6	0.0	21.2
2014	#	59	21	41	21	1	16
	%	73.8	26.3	51.3	26.3	--[4]	20.0
2015	#	74	18	41	28	2	21
	%	80.4	19.6	44.6	30.4	--[4]	22.8

1. AIDS: Acquired Immune Deficiency Syndrome, HIV: Human Immunodeficiency Virus. The deaths reported are cases for which AIDS or HIV-related disease was the underlying cause of death. Deaths were coded according to the ICD-10 (codes B20-B24). 2. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Technical Notes in the Appendix for a more detailed explanation. 3. The "Other" category represents Asian non-Hispanics, American Indian non-Hispanics, and other non-Hispanics. 4. Calculations based on values 1-4 are excluded.

Table 28. HIV/AIDS[1] Deaths by Gender, Race and Hispanic Ethnicity: Numbers, Percent and Age-Adjusted Rates, Massachusetts: 2002-2015

	White non-Hispanic[2]			Black non-Hispanic[2]			Hispanic[2]		
Year	**#**	**Percent**	**Rate[3]**	**#**	**Percent**	**Rate[3]**	**#**	**Percent**	**Rate[3]**
2002	108	47%	1.9	68	30%	20.3	52	23%	13.5
2003	113	50%	2.0	58	26%	17.2	53	23%	14.9
2004	97	46%	1.7	55	26%	15.8	55	26%	13.9
2005	75	42%	1.3	56	31%	16.0	45	25%	11.5
2006	91	51%	1.6	49	27%	13.7	37	21%	8.4
2007	58	41%	1.0	48	34%	13.0	37	26%	8.9
2008	69	50%	1.2	37	27%	10.6	31	23%	8.3
2009	48	41%	0.5	37	31%	15.2	33	28%	11.6
2010	58	49%	0.5	34	29%	15.2	26	22%	11.6
2011	36	40%	0.6	30	33%	6.9	24	27%	4.7
2012	50	51%	0.8	26	26%	6.1	23	23%	4.6
2013	35	41%	0.5	32	38%	6.7	18	21%	3.2
2014	41	51%	0.6	21	26%	4.4	16	20%	3.2
2015	41	46%	0.6	28	31%	5.9	21	23%	3.6
MALE									
2002	86	53%	3.1	43	26%	27.9	34	21%	18.7
2003	74	49%	2.7	36	24%	23.4	39	26%	23.8
2004	74	49%	2.7	39	26%	24.0	34	23%	18.4
2005	52	43%	1.9	34	28%	20.9	33	27%	18.4
2006	67	55%	2.4	33	27%	20.0	21	17%	9.8
2007	48	50%	1.7	23	24%	13.4	25	26%	13.3
2008	55	56%	1.9	25	26%	16.0	18	18%	11.0
2009	32	38%	1.1	29	34%	15.6	24	28%	12.4
2010	40	51%	1.1	20	25%	15.6	19	24%	12.4
2011	30	48%	1.1	14	22%	6.6	19	30%	8.2
2012	35	57%	1.2	14	23%	7.8	12	20%	5.6
2013	24	69%	0.7	21	21%	9.8	12	12%	4.3
2014	34	59%	1.0	14	24%	6.5	10	17%	4.7
2015	33	45%	1.0	23	32%	10.3	17	23%	6.4
FEMALE									
2002	22	33%	0.8	25	38%	13.8	18	27%	8.7
2003	39	51%	1.4	22	29%	12.0	14	18%	7.1
2004	23	38%	0.8	16	27%	8.7	21	35%	10.0
2005	23	40%	0.8	22	38%	11.8	12	21%	5.4
2006	24	42%	0.9	16	28%	8.3	16	28%	7.1
2007	10	21%	0.3	25	53%	12.8	12	26%	5.2
2008	14	36%	0.5	12	31%	6.4	13	33%	6.4
2009	16	48%	0.5	8	24%	3.8	9	27%	3.8
2010	18	46%	0.5	14	36%	3.8	7	18%	3.8
2011	6	22%	0.2	16	59%	7.1	5	19%	1.6
2012	15	39%	0.4	12	32%	4.9	11	29%	3.9
2013	11	11%	0.3	11	11%	4.4	6	6%	2.1
2014	7	35%	0.2	7	35%	2.7	6	30%	2.0
2015	8	47%	0.3	5	29%	2.1	4	--4	--[4]

1. AIDS and HIV disease deaths coded using ICD-10: B20-B24. 2. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Technical Notes in the Appendix for a more detailed explanation. 3. Number of deaths per 100,000 persons; rates are age-adjusted to the 2000 US standard population. 4. Calculations based on values 1-4 are excluded

Table 29. Trends in Infant, Neonatal, and Post Neonatal Mortality, by Race and Hispanic Ethnicity, Massachusetts: 2005-2015

INFANT MORTALITY (less than one year of age)

	State Total[1]		White non-Hispanic		Black non-Hispanic		Hispanic		Asian non-Hispanic		Other[2]	
Year	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]
2005	391	5.1	230	4.3	57	9.4	77	7.7	18	3.4	8	4.3
2006	369	4.8	220	4.1	72	11.1	63	5.9	10	1.8	3	--[4]
2007	380	4.9	206	3.9	66	10.2	81	7.4	18	3.1	4	--[4]
2008	381	5.0	192	3.7	79	11.9	86	7.9	16	2.7	8	5.1
2009	366	4.9	205	4.1	54	7.8	78	7.1	20	3.4	9	7.8
2010	319	4.4	163	3.4	56	8.2	65	6.1	25	4.3	7	4.4
2011	310	4.2	158	3.4	47	6.7	75	5.8	22	3.6	6	4.2
2012	309	4.3	158	3.5	57	8.2	71	5.4	17	2.6	4	--[4]
2013	298	4.2	161	3.6	63	8.9	49	3.9	15	2.4	3	--[4]
2014	321	4.5	169	3.8	54	7.6	62	5.0	20	3.2	8	10.5
2015	310	4.3	146	3.3	59	8.3	75	5.7	15	2.3	14	21.8

NEONATAL MORTALITY (birth to 27 days)

	State Total[1]		White non-Hispanic		Black non-Hispanic		Hispanic		Asian, non-Hispanic		Other[2]	
Year	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]
2005	282	3.7	168	3.1	40	6.6	57	5.8	11	2.1	5	2.7
2006	279	3.6	173	3.3	53	8.2	42	3.9	7	1.3	3	--[4]
2007	263	3.4	141	2.7	48	7.4	53	4.9	15	2.6	4	--[4]
2008	290	3.8	152	2.9	57	8.6	65	6.0	10	1.7	6	3.8
2009	276	3.7	162	3.2	36	5.2	54	4.9	17	2.9	7	6.0
2010	238	3.3	121	2.5	43	6.3	47	4.4	20	3.4	5	4.6
2011	230	3.1	111	2.4	33	4.7	60	4.7	19	3.1	3	--[4]
2012	216	3.0	111	2.5	41	5.9	46	3.5	13	2.0	3	--[4]
2013	221	3.1	119	2.6	45	6.3	39	3.1	10	1.6	0	0.0
2014	236	3.3	122	2.7	38	5.3	50	3.9	15	2.3	6	9.5
2015	237	3.3	106	2.4	45	6.4	59	4.5	15	2.3	11	17.1

POST NEONATAL MORTALITY (28-365 days)

	State Total[1]		White non-Hispanic		Black non-Hispanic		Hispanic		Asian non-Hispanic		Other[2]	
Year	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]
2005	109	1.4	62	1.2	17	2.8	20	2.0	7	1.3	3	--[4]
2006	90	1.2	47	0.9	19	2.9	21	2.0	3	--[4]	0	0.0
2007	117	1.5	65	1.2	18	2.8	28	2.6	3	--[4]	0	0.0
2008	91	1.2	40	0.8	22	3.3	21	1.9	6	1.0	2	--[4]
2009	90	1.2	43	0.9	18	2.6	24	2.2	3	--[4]	2	--[4]
2010	81	1.1	42	0.9	13	1.9	18	1.7	5	0.9	2	--[4]
2011	80	1.1	47	1.0	14	2.0	15	1.2	3	--[4]	3	--[4]
2012	93	1.3	47	1.0	16	2.3	25	1.9	4	--[4]	1	--[4]
2013	77	1.1	42	0.9	18	2.5	10	0.8	5	0.8	1	--[4]
2014	85	1.2	47	1.1	16	2.2	12	0.9	5	0.8	2	--[4]
2015	73	1.0	40	0.9	14	2.0	16	1.2	0	0.0	3	--[4]

1. Deaths of infants of unknown race are included in the total calculation. For rate computations, births of infants of unknown race are allocated into the race categories according to the distribution of births of known race. 2. Other: American Indian and Other races. 3. Rates are expressed per 1,000 live births. 4. Calculations based on values 1-4 are excluded.

Table 30. Infant, Neonatal, and Post Neonatal Deaths by Cause, Massachusetts: 2015

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		**310**	**100.0**	**237**	**100.0**	**73**	**100.0**
Infectious and parasitic diseases	**A00-B99**	**2**	--[2]	**0**	**0.0**	**2**	--[2]
Cancer	**C00-C97**	**0**	**0.0**	**0**	**0.0**	**0**	**0.0**
Diseases of the blood and blood forming organs (anemia)	**D50-D89**	**3**	--[2]	**0**	**0.0**	**3**	--[2]
Diseases of nervous system and ear	**G00-G98, H60-H93**	**6**	**1.9**	**4**	--[2]	**2**	--[2]
Diseases of the respiratory system	**J00-J98**	**9**	**2.9**	**0**	**0.0**	**9**	**12.3**
Diseases of digestive system	**K00-K92**	**3**	--[2]	**2**	--[2]	**1**	--[2]
Congenital malformations	**Q00-Q99**	**37**	**11.9**	**28**	**11.8**	**9**	**12.3**
Congenital malformations of nervous system	Q00-Q07	1	--[2]	1	--[2]	0	0.0
Anencephalus and similar malformations	Q00	0	0.0	0	0.0	0	0.0
Congenital malformations of heart	Q20-Q24	10	3.2	7	3.0	3	--[2]
Other congenital malformations of circulatory system	Q25-Q28	4	--[2]	2	--[2]	2	--[2]
Congenital malformations of respiratory system	Q30-Q34	2	--[2]	2	--[2]	0	0.0
Congenital malformations of genitourinary system	Q50-Q64	5	1.6	4	--[2]	1	--[2]
Congenital malformations of musculoskeletal system	Q65-Q85	3	--[2]	2	--[2]	1	--[2]
Chromosomal abnormalities	Q90-Q99	7	2.3	6	2.5	1	--[2]
Certain conditions originating in the perinatal period	**P00-P96**	**198**	**63.9**	**193**	**81.4**	**5**	**6.8**
Newborn affected by maternal conditions which may be unrelated to present pregnancy	P00	1	--[2]	1	--[2]	0	0.0
Newborn affected by maternal complications of pregnancy	P01	35	11.3	34	14.3	1	--[2]
Newborn affected by complications of placenta, cord and membrane	P02	21	6.8	21	8.9	0	0.0
Newborn affected by other complications of labor and delivery	P03	0	0.0	0	0.0	0	0.0
Disorders relating to short gestation and low birthweight	P07	77	24.8	77	32.5	0	0.0
Intrauterine hypoxia and birth asphyxia	P20-P21	1	--[2]	1	--[2]	0	0.0
Respiratory distress of newborn	P22	11	3.5	11	4.6	0	0.0
Other respiratory conditions of newborn	P23-P28	8	2.6	6	2.5	2	--[2]
Infections specific to the perinatal period	P35-P39	9	2.9	9	3.8	0	0.0
Neonatal hemorrhage	P50-P52, P54	3	--[2]	3	--[2]	0	0.0
Other and ill-defined conditions originating in the perinatal period	P90-P96	7	2.3	6	2.5	1	--[2]
Symptoms, signs, and ill-defined conditions	**R00-R99**	**40**	**12.9**	**5**	**2.1**	**35**	**47.9**
Sudden Infant Death Syndrome (SIDS)	R95	18	5.8	3	--[2]	15	20.5
Unintentional injuries	**V01-X59**	**3**	--[2]	**0**	**0.0**	**3**	--[2]
Homicide	**X85-Y09**	**0**	**0.0**	**0**	**0.0**	**0**	**0.0**
All other causes	**Residual**	**9**	**2.9**	**5**	**2.1**	**4**	--[2]

1. Please see Technical Notes in the Appendix for an explanation of ICD-10 codes. 2. Calculations based on values 1-4 are excluded.

Table 31. Infant Deaths by Major Causes, Race and Hispanic Ethnicity[1], Massachusetts: 2015

Cause of Death[2]	ICD-10 Code	White non-Hispanic		Black non-Hispanic		Asian non-Hispanic		Hispanic	
		#	%	#	%	#	%	#	%
TOTAL		**146**	**100.0%**	**59**	**100.0%**	**15**	**100.0%**	**75**	**100.0%**
Certain conditions originating in the perinatal period	P00- P96	83	56.8%	42	71.2%	14	93.3%	51	68.0%
Congenital malformations	Q00-Q99	20	13.7%	4	--[3]	1	--[3]	10	13.3%
Symptoms, signs, and ill-defined conditions	R00-R99	22	15.1%	4	--[3]	0	0.0%	12	16.0%
SIDS	R95	12	8.2%	0	0.0%	0	0.0%	5	6.7%
Unintentional Injuries	V01-X59	2	--[3]	0	0.0%	0	0.0%	1	--[3]
Homicide	X85-Y09	19	13.0%	9	15.3%	0	0.0%	1	--[3]
All other causes	Residual	0	0.0%	0	0.0%	0	0.0%	0	0.0%

1. Race and ethnicity data in this table are presented as mutually exclusive categories and Cape Verdeans are not included with Blacks. Persons of Hispanic ethnicity are not included in a race category. Please see Technical Notes in the Appendix for a more detailed explanation. 2. Deaths are coded according to ICD-10. Please see Appendix for comparability ratios. 3. Calculations based on values 1-4 are excluded.

Table 32. Target Status for Selected Healthy People 2020 Mortality Objectives (underlying cause of death only)

HEALTHY PEOPLE 2020 OBJECTIVE	TARGET 2020[1]	MA 2010[2]	MA 2013[2]	MA 2014[2]	MA 2015[2]	TARGET STATUS
Overall Cancer	161.4	171.0	159.5	155.6	152.8	√
Lung Cancer	45.5	47.3	41.4	40.7	39.0	√
Female Breast Cancer (per 100,000 females)	20.7	19.1	18.4	18.0	17.7	√
Uterine Cervical Cancer (per 100,000 females)	2.2	4.3	1.0	1.3	1.1	√
Colorectal Cancer	14.5	14.9	13.0	12.6	12.0	√
Oropharyngeal Cancer	2.3	3.0	2.4	2.3	2.4	**O**
Prostate Cancer (per 100,000 males)	21.8	21.2	18.5	18.8	17.9	√
Malignant Melanoma	2.4	3.1	3.2	3.6	3.1	●
COPD, ages 45+	102.6	84.4	86.8	85.8	90.9	√
Coronary Heart Disease	103.4	96.5	87.6	82.4	80.8	√
Stroke	34.8	31.2	31.8	39.4	45.5	●
Cirrhosis	8.2	5.4	4.6	5.5	4.1	√
Drug-Induced Deaths	11.3	12.5	19.0	23.5	29.0	●
HIV/AIDS	3.3	1.6	1.0	0.7	1.1	√
Injury Deaths	53.7	43.3	46.7	51.6	58.0	**O**
Residential Fire Deaths	0.9	0.2	0.2	0.4	0.5	√
Falls	7.2	6.9	7.8	7.9	8.7	**O**
Falls, Ages 65+	47.0	48.1	55.4	52.2	59.4	●
Firearm-Related	9.3	4.0	3.2	3.1	3.0	√
Poisonings	13.2	12.5	18.4	23.6	28.4	●
Poisonings, Ages 35-54	25.6	22.8	30.5	30.5	46.5	●
Unintentional or Undetermined Intent Injuries	11.1	10.9	16.5	16.5	26.3	●
Unintentional or Undetermined Intent Injuries, Ages 35-54	21.6	20.0	30.5	30.7	46.5	●
Unintentional Injuries	36.4	28.3	33.9	39.4	45.5	**O**
Motor Vehicle Crashes	12.4	5.4	5.2	5.7	5.4	√
Drowning	1.1	1.2	1.3	1.0	1.0	√
Hanging, Strangulation or Suffocation	1.8	5.8	5.4	3.8	6.3	●
Homicide	5.5	3.2	2.3	2.3	2.2	√
Suicide	10.2	8.7	8.5	8.5	9.0	√
Infant and Child Health						
Infant Deaths (per 1,000 live births)	6.0	4.4	4.2	4.5	4.3	√
Neonatal Deaths (per 1,000 live births)	4.1	3.3	3.1	3.3	3.3	√
Post Neonatal Deaths (per 1,000 live births)	2.0	1.1	1.1	1.2	1.0	√
Birth Defects (per 1,000 live births)	1.3	0.7	0.8	0.7	0.5	√
Congenital Heart Defects (per 1,000 live births)	0.34	0.14	0.20	0.21	0.14	√
Sudden Infant Death Syndrome (SIDS) (per 1,000 live births)	0.50	0.47	0.21	0.25	0.25	√
Child/Adolescent/Young Adults Death Rates						
1-4 years old	26.5	13.6	15.4	14.7	16.7	√
5-9 years old	12.4	7.3	8.4	5.3	9.1	√
10-14 years old	14.8	8.6	10.3	6.8	9.1	√
15-19 years old	54.3	30.9	27.8	19.5	31.1	√
20-24 years old	88.3	65.2	66.6	40.9	76.1	√
Asthma Deaths (per million)						
Ages 35-64 Years	4.9	6.3	10.3	11.4	10.3	●
Ages 65+ Years	21.5	29.9	31.3	35.4	45.9	●

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

1. Data 2020 the Healthy People 2020 Database. (Source: https://www.healthypeople.gov).
2. Death rates are per 100,000 and age adjusted to the 2010 US Population except when noted.

Table 33. Rank of Premature Mortality Rates for the Largest 30 Communities, Massachusetts: 2015 (Sorted by PMR)

Largest 30 Communities[1]	Number of Premature Deaths	PMR[2] (per 100,000)
Fall River	457	505.3*
Springfield	662	482.4*
Lowell	455	479.1*
New Bedford	435	466.9*
Worcester	759	466.7*
Pittsfield	235	466.1*
Brockton	428	465.6*
Haverhill	274	454.1*
Taunton	256	435.2*
Lynn	368	434.8*
Chicopee	249	409.5*
Lawrence	257	408.9*
Weymouth	215	361.1*
Revere	192	359.1*
Attleboro	161	350.9*
Quincy	345	349.6*
Methuen	167	343.6*
Barnstable	197	342.1*
Boston	1799	341.7*
Plymouth	218	339.5*
Malden	196	338.7*
Somerville	187	322.9
Peabody	178	295.8
Medford	167	295.1
Waltham	161	277.2
Framingham	177	263.0
Arlington	105	233.3
Cambridge	189	224.0*
Newton	143	161.7*
Brookline	83	150.3*
STATE	**21,809**	**279.6**

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

*** Significantly different from State PMR.**

Table 34. Premature Mortality Rates by Community, Massachusetts: 2015		
City/Town	**Premature Deaths (#)**	**PMR**[1] (per 100,000 population)
STATE	**21,809**	**279.6**
Abington	61	361.2
Acton	40	188.3
Acushnet	40	334.4
Adams	33	346.7
Agawam	114	341.6
Alford	1	--[2]
Amesbury	56	317.3
Amherst	34	161.1
Andover	76	226.7
Aquinnah	0	--[2]
Arlington	105	233.3
Ashburnham	17	261.4
Ashby	9	254.1
Ashfield	8	460.9
Ashland	48	270.9
Athol	59	483.8
Attleboro	161	350.9
Auburn	62	323.6
Avon	20	415.0
Ayer	57	795.6
Barnstable	197	342.1
Barre	23	439.4
Becket	4	--[2]
Bedford	42	265.8
Belchertown	44	286.4
Bellingham	61	359.1
Belmont	41	152.4
Berkley	21	312.4
Berlin	14	472.3
Bernardston	11	448.7
Beverly	154	361.4
Billerica	138	315.4
Blackstone	29	340.5
Blandford	3	--[2]
Bolton	11	240.2
Boston	1799	341.7
Bourne	88	401.2
Boxborough	5	133.6
Boxford	17	231.8
Boylston	12	247.5
Braintree	104	259.1
Brewster	35	249.5
Bridgewater	96	388.5
Brimfield	15	334.5
Brockton	428	465.6
Brookfield	15	310.4

Table 35 (continued). Premature Mortality Rates by Community, Massachusetts: 2015		
City/Town	**Premature Deaths (#)**	**PMR**[1] (per 100,000 population)
Brookline	83	150.3
Buckland	7	344.9
Burlington	77	272.9
Cambridge	189	224.0
Canton	64	275.8
Carlisle	11	166.2
Carver	57	445.0
Charlemont	7	412.6
Charlton	32	273.2
Chatham	24	239.3
Chelmsford	106	261.1
Chelsea	112	399.4
Cheshire	7	152.9
Chester	4	--[2]
Chesterfield	3	--[2]
Chicopee	249	409.5
Chilmark	2	--[2]
Clarksburg	8	429.7
Clinton	58	407.6
Cohasset	21	257.0
Colrain	12	554.3
Concord	31	148.4
Conway	5	178.4
Cummington	3	--[2]
Dalton	24	325.1
Danvers	93	310.8
Dartmouth	87	233.9
Dedham	83	306.0
Deerfield	10	156.5
Dennis	71	326.2
Dighton	20	259.9
Douglas	21	277.6
Dover	4	--[2]
Dracut	94	305.3
Dudley	30	259.0
Dunstable	7	177.4
Duxbury	27	153.3
East Bridgewater	51	341.3
East Brookfield	9	347.1
East Longmeadow	50	295.4
Eastham	24	297.7
Easthampton	75	407.0
Easton	67	279.1
Edgartown	15	315.5
Egremont	4	--[2]
Erving	11	533.5
Essex	7	177.5
Everett	139	364.9
Fairhaven	70	373.0

Table 36 (continued). Premature Mortality Rates by Community, Massachusetts: 2015		
City/Town	**Premature Deaths (#)**	**PMR**[1] (per 100,000 population)
Fall River	457	505.3
Falmouth	142	355.3
Fitchburg	178	471.5
Florida	1	--[2]
Foxborough	51	269.8
Framingham	177	263.0
Franklin	66	231.0
Freetown	35	354.2
Gardner	99	473.3
Gay Head	1	--[2]
Georgetown	22	285.5
Gill	12	830.7
Gloucester	135	359.7
Goshen	4	--[2]
Gosnold	1	--[2]
Grafton	51	293.3
Granby	22	316.8
Granville	3	--[2]
Great Barrington	34	370.8
Greenfield	79	402.9
Groton	21	210.8
Groveland	18	242.4
Hadley	14	225.5
Halifax	24	255.7
Hamilton	10	126.3
Hampden	14	243.7
Hancock	2	--[2]
Hanover	36	240.5
Hanson	48	452.9
Hardwick	12	386.6
Harvard	7	101.7
Harwich	51	296.5
Hatfield	12	277.8
Haverhill	274	454.1
Hawley	2	--[2]
Heath	6	637.6
Hingham	42	152.2
Hinsdale	10	419.3
Holbrook	52	442.7
Holden	75	403.2
Holland	12	467.1
Holliston	34	254.5
Holyoke	173	460.5
Hopedale	17	287.1
Hopkinton	33	270.2
Hubbardston	18	414.8
Hudson	50	231.1
Hull	48	332.0
Huntington	12	491.9

Table 37 (continued). Premature Mortality Rates by Community, Massachusetts: 2015		
City/Town	**Premature Deaths (#)**	**PMR**[1] (per 100,000 population)
Ipswich	39	231.1
Kingston	44	334.7
Lakeville	31	286.6
Lancaster	22	273.2
Lanesborough	11	303.1
Lawrence	257	408.9
Lee	24	338.3
Leicester	34	288.6
Lenox	17	276.2
Leominster	161	379.6
Leverett	3	--[2]
Lexington	48	146.5
Leyden	1	--[2]
Lincoln	9	120.9
Littleton	16	166.1
Longmeadow	20	107.4
Lowell	455	479.1
Ludlow	77	335.3
Lunenburg	34	298.4
Lynn	368	434.8
Lynnfield	25	209.5
Malden	196	338.7
Manchester	19	291.8
Mansfield	58	299.8
Marblehead	50	196.4
Marion	12	183.4
Marlborough	119	310.2
Marshfield	80	258.0
Mashpee	54	312.3
Mattapoisett	19	248.7
Maynard	38	338.9
Medfield	33	285.7
Medford	167	295.1
Medway	36	302.1
Melrose	75	243.3
Mendon	15	242.7
Merrimac	24	349.3
Methuen	167	343.6
Middleborough	97	366.6
Middlefield	2	--[2]
Middleton	19	226.8
Milford	96	328.9
Millbury	60	386.7
Millis	20	238.1
Millville	14	497.4
Milton	48	164.2
Monroe	0	0.0
Monson	35	330.8
Montague	37	360.8

Table 38 (continued). Premature Mortality Rates by Community, Massachusetts: 2015		
City/Town	**Premature Deaths (#)**	**PMR**[1] (per 100,000 population)
Monterey	2	--[2]
Montgomery	1	--[2]
Mount Washington	3	--[2]
Nahant	13	294.8
Nantucket	27	237.0
Natick	77	214.0
Needham	50	156.6
New Ashford	3	--[2]
New Bedford	435	466.9
New Braintree	4	--[2]
New Marlborough	6	277.6
New Salem	6	387.7
Newbury	26	308.7
Newburyport	54	248.2
Newton	143	161.7
Norfolk	30	282.8
North Adams	66	455.6
North Andover	62	223.2
North Attleboro	93	333.7
North Brookfield	14	262.0
North Reading	39	240.2
Northampton	75	259.4
Northborough	33	230.9
Northbridge	54	368.1
Northfield	8	262.3
Norton	60	295.1
Norwell	22	214.7
Norwood	108	342.7
Oak Bluffs	14	259.7
Oakham	6	287.3
Orange	39	450.9
Orleans	21	180.5
Otis	2	--[2]
Oxford	60	425.8
Palmer	58	422.9
Paxton	13	301.9
Peabody	178	295.8
Pelham	4	--[2]
Pembroke	47	255.2
Pepperell	28	232.0
Peru	3	--[2]
Petersham	8	536.8
Phillipston	7	392.3
Pittsfield	235	466.1
Plainfield	0	--[2]
Plainville	30	349.7
Plymouth	218	339.5
Plympton	11	355.2
Princeton	10	240.5

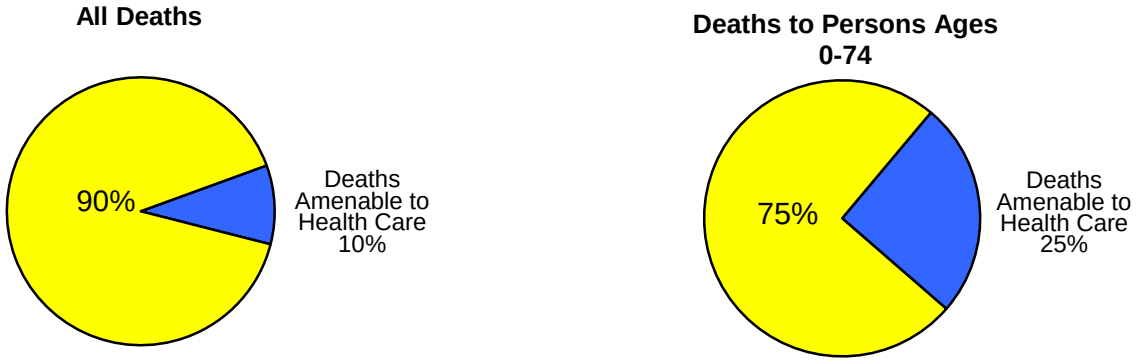
Table 39 (continued). Premature Mortality Rates by Community, Massachusetts: 2015		
City/Town	**Premature Deaths (#)**	**PMR**[1] (per 100,000 population)
Provincetown	11	363.8
Quincy	345	349.6
Randolph	131	391.1
Raynham	47	322.7
Reading	51	201.6
Rehoboth	38	314.7
Revere	192	359.1
Richmond	9	324.1
Rochester	12	173.5
Rockland	76	416.0
Rockport	28	298.2
Rowe	2	--[2]
Rowley	15	248.2
Royalston	8	534.8
Russell	5	296.8
Rutland	26	348.0
Salem	140	332.4
Salisbury	48	442.1
Sandisfield	6	499.0
Sandwich	77	296.8
Saugus	108	342.2
Savoy	2	--[2]
Scituate	57	241.4
Seekonk	33	209.3
Sharon	43	229.1
Sheffield	12	284.6
Shelburne	11	578.3
Sherborn	6	137.6
Shirley	19	282.3
Shrewsbury	81	221.5
Shutesbury	4	--[2]
Somerset	69	314.5
Somerville	187	322.9
South Hadley	51	280.6
Southampton	27	378.6
Southborough	22	200.0
Southbridge	71	425.4
Southwick	23	249.1
Spencer	49	378.7
Springfield	662	482.4
Sterling	15	161.4
Stockbridge	7	214.0
Stoneham	73	295.0
Stoughton	122	392.3
Stow	14	164.9
Sturbridge	37	348.5
Sudbury	18	96.0
Sunderland	4	--[2]
Sutton	30	325.0

Table 40 (continued). Premature Mortality Rates by Community, Massachusetts: 2015		
City/Town	**Premature Deaths (#)**	**PMR**[1] (per 100,000 population)
Swampscott	27	194.1
Swansea	66	354.6
Taunton	256	435.2
Templeton	30	328.2
Tewksbury	99	296.8
Tisbury	12	247.0
Tolland	2	--[2]
Topsfield	19	263.8
Townsend	31	338.9
Truro	5	109.1
Tyngsborough	35	335.5
Tyringham	2	--[2]
Upton	14	184.3
Uxbridge	31	232.1
Wakefield	77	281.9
Wales	6	270.4
Walpole	64	241.5
Waltham	161	277.2
Ware	38	363.8
Wareham	119	422.7
Warren	18	304.6
Warwick	7	788.5
Washington	1	--[2]
Watertown	76	232.4
Wayland	25	155
Webster	98	535.7
Wellesley	39	145.8
Wellfleet	10	170
Wendell	3	--[2]
Wenham	10	319.4
West Boylston	26	296.3
West Bridgewater	18	204
West Brookfield	22	431.5
West Newbury	7	147.9
West Springfield	107	334.7
West Stockbridge	4	--[2]
West Tisbury	10	300.5
Westborough	53	294.1
Westfield	142	333.4
Westford	39	165.4
Westhampton	6	271.6
Westminster	19	251.8
Weston	19	145.8
Westport	62	301.4
Westwood	27	185.3
Weymouth	215	361.1
Whately	5	288.7
Whitman	53	373.7
Wilbraham	40	223.7

Table 41 (continued). Premature Mortality Rates by Community, Massachusetts: 2015		
City/Town	**Premature Deaths (#)**	**PMR**[1] (per 100,000 population)
Williamsburg	8	228
Williamstown	15	155.9
Wilmington	67	296.2
Winchendon	49	473.9
Winchester	28	127.2
Windsor	0	0
Winthrop	76	346.3
Woburn	111	272.6
Worcester	759	466.7
Worthington	2	--[2]
Wrentham	38	318.1
Yarmouth	112	401.5

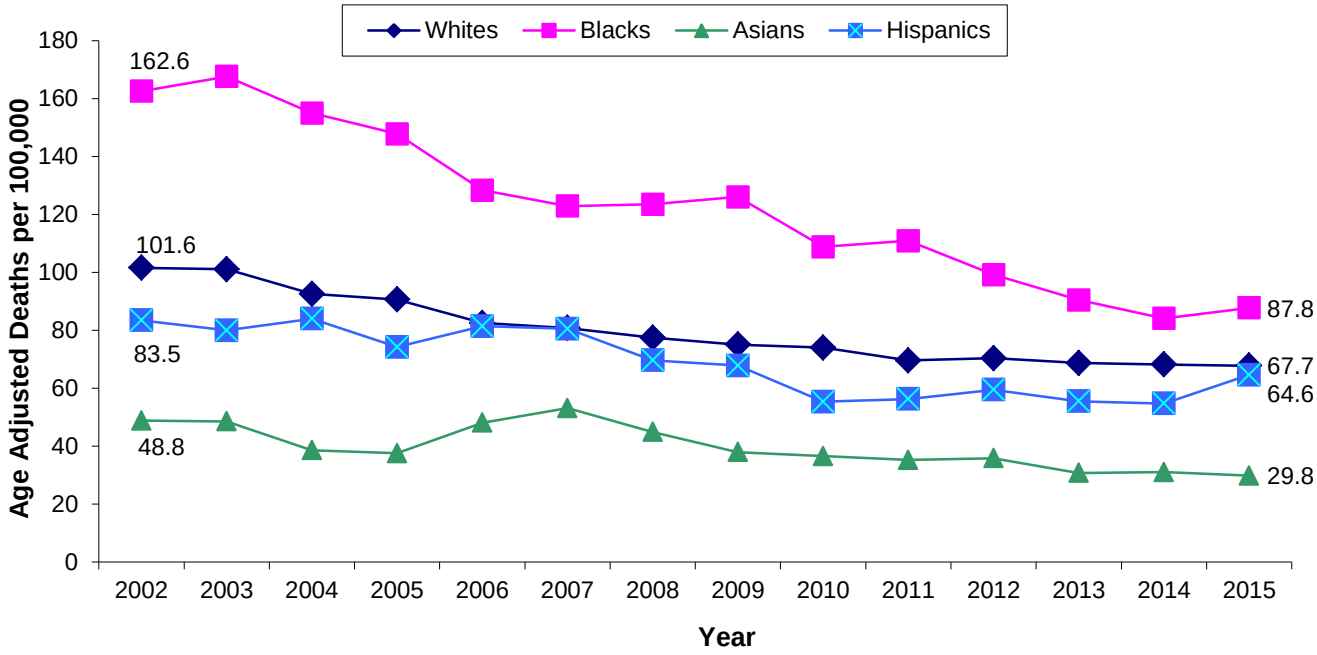
1. Premature mortality rates (PMR) are age-adjusted to the 2000 US Standard Population for persons ages 0-74 years.
2. Age-adjusted rates based on values 1-4 are excluded.

Figure 17. Percent of Deaths Amenable to Health Care[1], Massachusetts: 2015



1. See Table A10 for a complete list of ICD codes included in this category.

Figure 18. Amenable Mortality[1] by Race and Hispanic Ethnicity[2], Massachusetts: 2002-2015



1. See Table A10 for a complete list of ICD codes included in this category.
2. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Technical Notes in the Appendix for a more detailed explanation.

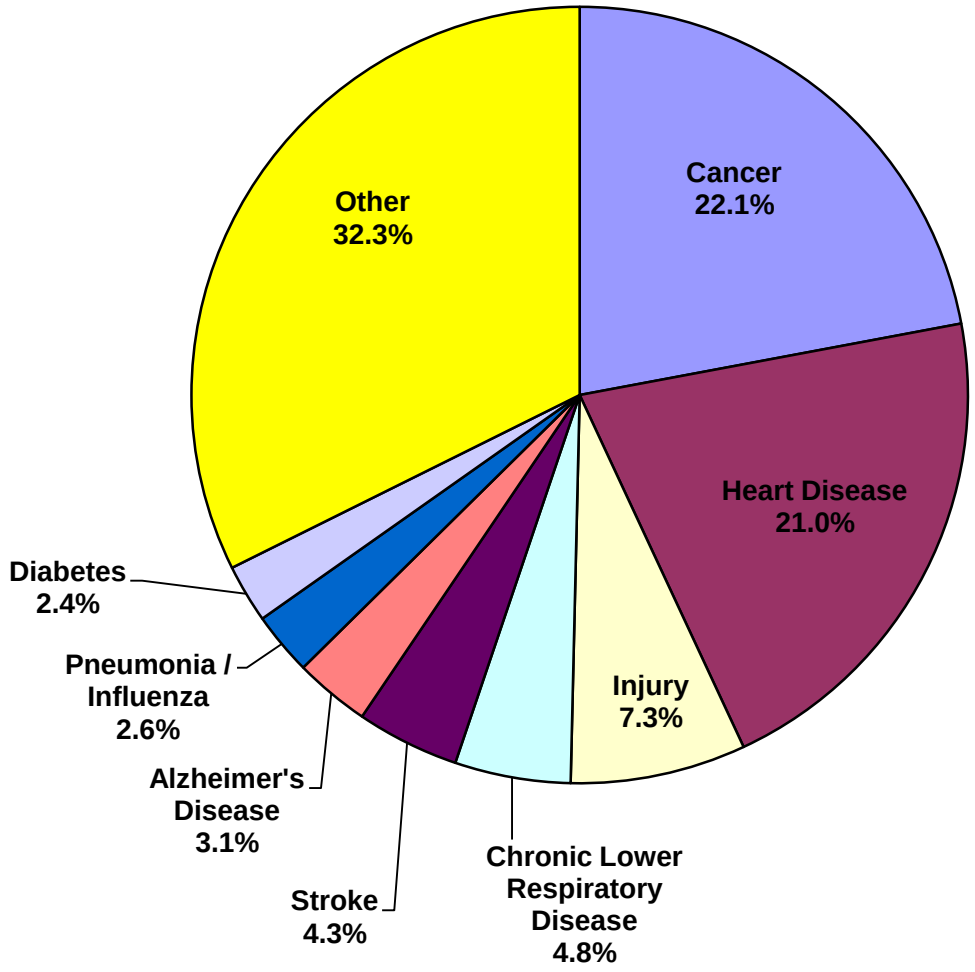
APPENDIX

Additional Tables & Figures

Technical Notes

Glossary

Figure 19. Percent Distribution of Leading Underlying Causes of Death, Massachusetts: 2015



Note: Total Number of Deaths = 57,785
Note: Causes of Death are classified according to ICD-10

Table 42. Number and Age-Specific Rates for Selected Causes of Death by Race and Hispanic Ethnicity, Massachusetts: 2015

Selected Causes[1]	Total		White non-Hispanic[2]		Black non-Hispanic[2]		Asian non-Hispanic[2]		Hispanic[2]	
	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]	#	Rate[3]
Age: 1-14, TOTAL	**119**	**11.2**	**67**	**9.7**	**16**	**15.8**	**6**	**7.6**	**24**	**12.8**
Unintentional Injuries[4]	26	2.4	18	2.6	2	--[5]	0	0.0	6	3.2
Cancer	15	1.4	6	0.9	4	--[5]	2	--[5]	3	--[5]
Congenital Malformations	12	1.1	5	0.7	1	--[5]	0	0.0	5	2.7
Ill-Defined Conditions	10	0.9	10	1.4	0	0.0	0	0.0	0	0.0
Age: 15-24, TOTAL	**519**	**54.5**	**351**	**53.9**	**49**	**57.6**	**19**	**25.9**	**78**	**55.8**
Unintentional Injuries[4]	265	27.8	212	32.6	9	10.6	4	--[5]	28	20.0
Suicide	77	8.1	53	8.1	7	8.2	6	8.2	11	7.9
Homicide	47	4.9	6	0.9	17	20.0	0	0.0	20	14.3
Cancer	26	2.7	17	2.6	2	--[5]	2	--[5]	3	--[5]
Age: 25-44, TOTAL	**2,475**	**139.2**	**1,884**	**153.9**	**187**	**130.1**	**55**	**33.0**	**296**	**123.7**
Unintentional Injuries[4]	1,121	63.1	923	75.4	48	33.4	13	7.8	113	47.2
Cancer	267	15.0	184	15.0	22	15.3	21	12.6	36	15.0
Suicide	203	11.4	166	13.6	8	5.6	6	3.6	18	7.5
Heart Disease	194	10.9	143	11.7	25	17.4	2	--[5]	22	9.2
Age: 45-64, TOTAL	**9,348**	**496.4**	**7,815**	**512.0**	**625**	**528.9**	**197**	**200.8**	**579**	**425.5**
Cancer	2,998	159.2	2,517	164.9	193	163.3	100	101.9	151	111.0
Heart Disease	1,587	84.3	1,330	87.1	113	95.6	26	26.5	99	72.8
Unintentional Injuries[4]	903	48.0	772	50.6	57	48.2	6	6.1	57	41.9
Chronic Liver Disease	342	18.2	304	19.9	19	16.1	1	--[5]	13	9.6
Age: 65+, TOTAL	**45,014**	**4,306.6**	**41,425**	**4,507.7**	**1,413**	**3,069.5**	**799**	**2,157.3**	**985**	**2,381.0**
Heart Disease	10,343	989.6	9,582	1,042.7	301	653.9	139	375.3	203	490.7
Cancer	9,425	901.7	8,628	938.9	330	716.9	193	521.1	193	466.5
Chronic Lower Respiratory Disease	2,425	232.0	2,313	251.7	41	89.1	21	56.7	38	91.9
Stroke	2,222	212.6	1,999	217.5	80	173.8	64	172.8	55	132.9

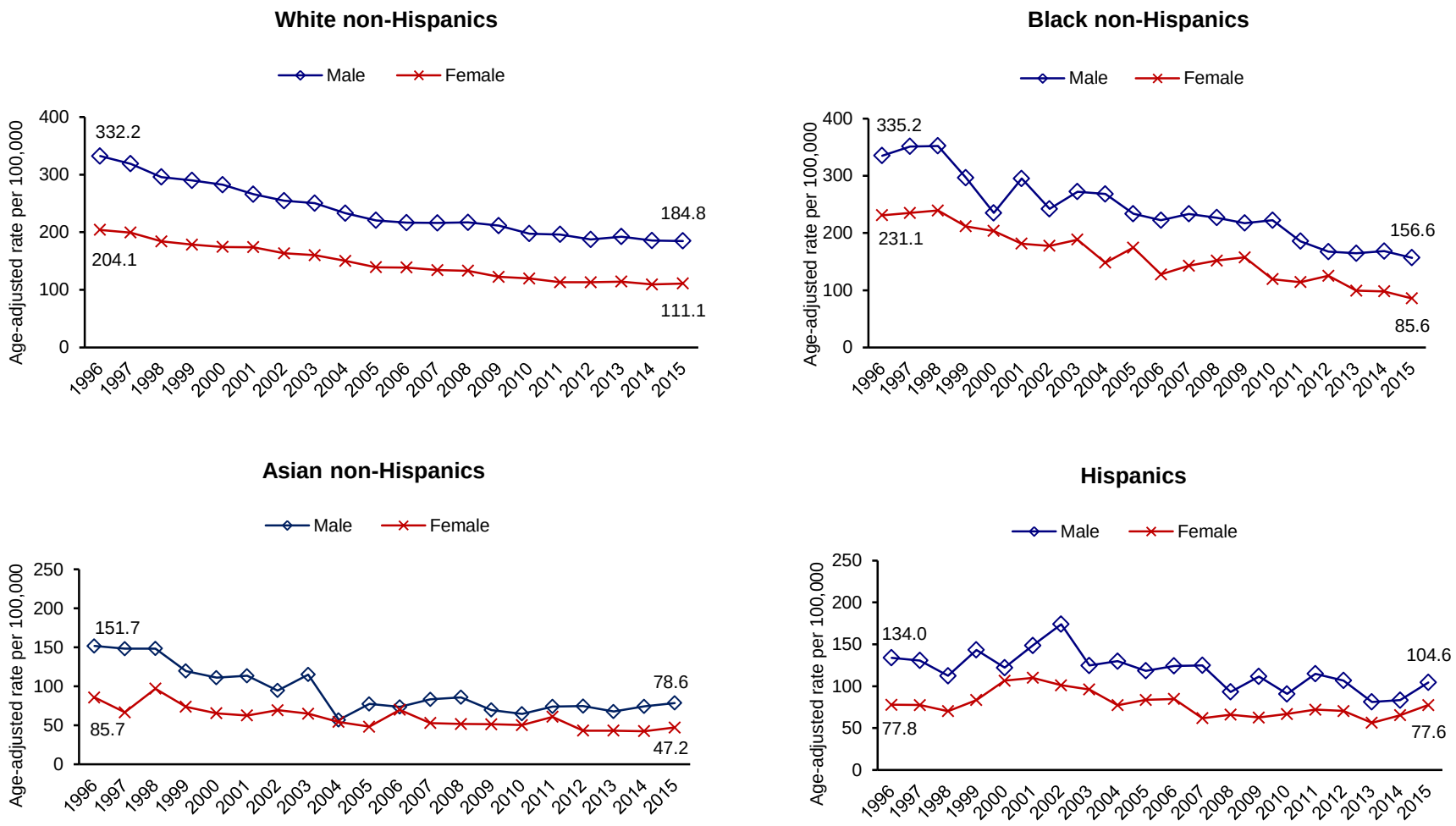
1. Deaths are coded according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include persons of Hispanic ethnicity in a race category. Please see Technical Notes in the Appendix for a more detailed explanation. 3. Number of deaths per 100,000 persons in each age group. 4. Unintentional injuries include injuries such as motor vehicle-related and other transportation related deaths, falls, fires, and drownings that were not intended to occur. 5. Calculations based on values 1-4 are excluded.

Table 35 (continued). Number and Age-Specific Rates for Selected Causes of Death by Race and Hispanic Ethnicity, Massachusetts: 2015

	Total		White non-Hispanic[1]		Black non-Hispanic[1]		Asian non-Hispanic[1]		Hispanic[1]	
Selected Causes[2]	**#**	**Rate[3]**	**#**	**Rate[3]**	**#**	**Rate[3]**	**#**	**Rate[3]**	**#**	**Rate[3]**
Age: 65-74, TOTAL	**9,038**	**1,535.5**	**7,977**	**1,560.7**	**469**	**1,695.5**	**169**	**755.5**	**336**	**1,273.2**
Cancer	3,308	562.0	2,969	580.9	163	589.3	70	312.9	85	322.1
Heart Disease	1,694	287.8	1,481	289.8	97	350.7	25	111.8	67	253.9
Chronic Lower Respiratory Disease[4]	565	96.0	526	102.9	19	68.7	2	--[6]	14	53.0
Stroke	291	49.4	236	46.2	22	79.5	7	31.3	23	87.2
Age: 75-84, TOTAL	**13,299**	**4,461.8**	**12,068**	**4,596.8**	**452**	**3,439.4**	**292**	**2,680.6**	**352**	**3,206.4**
Cancer	3,409	1,143.7	3,129	1,191.9	101	768.5	65	596.7	83	756.1
Heart Disease	2,673	896.8	2,427	924.5	98	745.7	50	459.0	58	528.3
Chronic Lower Respiratory Disease[4]	874	293.2	842	320.7	11	83.7	5	45.9	14	127.5
Stroke	618	207.3	532	202.6	21	159.8	27	247.9	27	245.9
Age: 85+, TOTAL	**22,677**	**14,302.0**	**21,380**	**14,711.8**	**492**	**9,407.3**	**338**	**8,956.0**	**297**	**7,423.1**
Heart Disease	5,976	3,769.0	5,674	3,904.3	106	2,026.8	64	1,695.8	78	1,949.5
Cancer	2,708	1,707.9	2,530	1,740.9	66	1,262.0	58	1,536.8	25	624.8
Stroke	1,325	835.7	1,237	851.2	38	726.6	25	662.4	15	374.9
Alzheimer's Disease	1,271	801.6	1,192	820.2	24	458.9	28	741.9	18	449.9

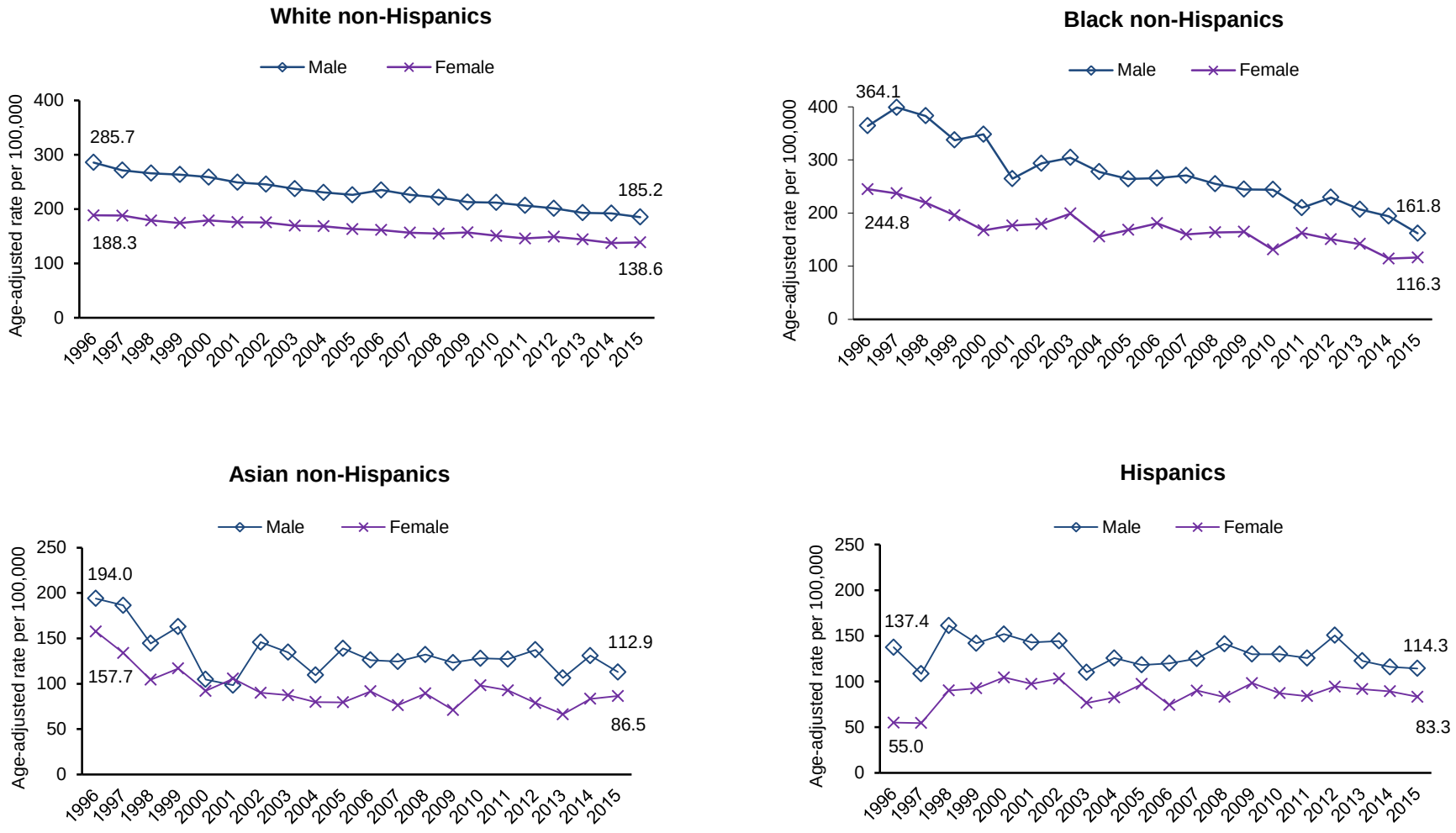
1. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include persons of Hispanic ethnicity in a race category. Please see Technical Notes in the Appendix for a more detailed explanation. 2. Deaths are coded according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 3. Number of deaths per 100,000 persons in each age group. 4. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title). 6. Calculations based on values 1-4 are excluded.

Figure 20. Heart Disease Death Rates[1] by Race and Hispanic Ethnicity and Gender, Massachusetts: 1996-2015[2]



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

Figure 21. Cancer Death Rates[1] by Race and Hispanic Ethnicity and Gender, Massachusetts: 1996-2015[2]



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

Table 43. HIV/AIDS[1] Deaths by Race, Hispanic Ethnicity, and Gender of Persons Ages 25-44, Massachusetts: 2001-2015

	White non-Hispanic[2]		Black non-Hispanic[2]		Hispanic[2]	
Year	**#**	**Rate[3]**	**#**	**Rate[3]**	**#**	**Rate[3]**
2001	70	4.4	35	29.3	31	20.3
2002	42	2.7	24	20.1	35	22.1
2003	63	4.1	19	15.8	25	15.1
2004	38	2.6	17	14.0	31	18.0
2005	29	2.0	22	18.2	19	10.7
2006	35	2.5	17	14.2	23	12.9
2007	16	1.2	11	9.1	12	6.6
2008	19	1.4	9	7.4	8	4.3
2009	11	0.8	7	5.7	12	6.3
2010	9	0.7	6	4.7	12	6.1
2011	6	0.5	7	5.4	7	3.4
2012	6	0.5	3	--[4]	9	4.4
2013	1	--[4]	3	--[4]	2	--[4]
2014	1	--[4]	9	6.4	5	2.2
2015	2	--[4]	6	4.2	3	--[4]
MALE						
2001	46	5.8	19	33.3	23	30.6
2002	29	3.8	15	26.3	21	26.8
2003	42	5.6	10	17.3	19	23.1
2004	30	4.1	11	18.9	19	22.1
2005	21	2.9	12	20.4	11	12.3
2006	22	3.2	12	20.5	12	13.3
2007	16	2.4	5	8.5	9	9.7
2008	13	2.0	3	--[4]	6	6.2
2009	8	1.2	4	--[4]	5	5.5
2010	3	--[4]	3	--[4]	3	--[4]
2011	4	--[4]	4	--[4]	3	--[4]
2012	5	0.8	1	--[4]	5	4.8
2013	1	--[4]	2	--[4]	1	--[4]
2014	1	--[4]	6	8.8	3	--[4]
2015	1	--[4]	4	--[4]	1	--[4]
FEMALE						
2001	24	2.9	16	25.7	8	10.3
2002	13	1.6	9	14.4	14	17.4
2003	21	2.7	9	14.4	6	7.2
2004	8	1.1	6	9.6	12	13.9
2005	8	1.1	10	16.0	8	9.0
2006	13	1.8	5	8.2	11	12.5
2007	0	0.0	6	9.8	3	--[4]
2008	6	0.9	6	9.8	2	--[4]
2009	3	--[4]	3	--[4]	7	7.0
2010	6	0.9	3	--[4]	9	9.3
2011	2	--[4]	3	--[4]	4	--[4]
2012	1	--[4]	2	--[4]	4	--[4]
2013	0	0.0	1	--[4]	1	--[4]
2014	0	0.0	3	--[4]	2	--[4]
2015	1	--[4]	2	--[4]	2	--[4]

1. AIDS and HIV disease deaths coded using ICD-10: B20-B24. 2. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Technical Notes in the Appendix for a more detailed explanation. 3. Number of deaths per 100,000 residents in the specified population group. 4. Calculations based on values 1-4 are excluded.

Table 44. Premature Mortality Rates by Community Health Network Area (CHNA), Massachusetts: 2015

CHNA (Name and Number)	Number of Deaths	PMR[1] (per 100,000 population)
Massachusetts	**21,809**	**279.6**
1. Community Health Network of Berkshire	558	355.3
2. Upper Valley Health Web (Franklin County)	382	379.3
3. Partnership for Health in Hampshire County (Northampton)	424	274.6
4. The Community Health Connection (Springfield)	1,137	379.0
5. Community Health Network of Southern Worcester County	488	380.9
6. Community Partners for Health (Milford)	484	296.1
7. Community Health Network of Greater Metro West (Framingham)	1,013	248.6
8. Common Pathways (Worcester)	1,173	389.3
9. Community Health Network of North Central Massachusetts	978	359.7
10. Greater Lowell Community Health Network	973	345.7
11. Greater Lawrence Community Health Network	581	316.9
12. Greater Haverhill Community Health Network	561	350.4
13. Community Health Network North (Beverly/Gloucester)	421	305.7
14. North Shore Community Health Network	1,002	329.2
15. Northwest Suburban Health Alliance	485	205.4
16. North Suburban Health Alliance (Medford/Malden/Melrose)	817	293.2
17. Greater Cambridge/Somerville Community Health Network	598	236.1
18. West Suburban Health Network (Newton/Waltham)	526	195.7
19. Alliance for Community Health (Boston/Chelsea/Revere/Winthrop)	2,262	329.5
20. Blue Hills Community Health Alliance (Greater Quincy)	1,248	298.6
21. Community Health Network of Chicopee, Holyoke, Ludlow, Westfield	657	388.7
22. Greater Brockton Community Health Network	968	397.8
23. South Shore Community Health Network	668	313.0
24. Greater Attleboro-Taunton Health & Education Response	915	339.9
25. Partners for Healthier Communities (Fall River)	654	431.8
26. Greater New Bedford Community Health Network	829	376.9
27. Cape Cod and Islands Health Network	1,003	316.0

1. Rates are per 100,000 population age-adjusted to the 2000 US Standard Population for persons ages 0-74 years.

Table 45. Premature Mortality Rates by County, Massachusetts: 2015

County	Number of Deaths	PMR[1] (per 100,000 population)
Massachusetts	**21,809[2]**	**279.6**
Barnstable	922	314.4
Berkshire	558	333.2
Bristol	2,175	335.3
Dukes	55	235.8
Essex	2,565	284.4
Franklin	300	312.7
Hampden	1,815	343.5
Hampshire	436	237.4
Middlesex	4,000	227.7
Nantucket	27	199.7
Norfolk	1,988	246.9
Plymouth	1,834	294.1
Suffolk	2,179	297.0
Worcester	2,952	316.8

1. Rates are per 100,000 population age-adjusted to the 2000 US Standard Population for persons ages 0-74 years.
2. Includes three deaths with an unknown county of residence.

Table 46. Selected Causes of Death by Community, Massachusetts: 2015

CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	Opioid-related[5]
Massachusetts	**57,785**	**684.6**	**12,141**	**12,742**	**3,241**	**815**	**2,474**	**2,785**	**1,404**	**1,512**	**395**	**145**	**647**	**1,637**
Abington	132	840.2	28	29	11	0	0	4	1	7	1	0	2	6
Acton	117	593.4	24	23	3	2	6	4	1	2	1	0	2	4
Acushnet	108	813.8	25	27	7	4	5	3	4	1	2	0	1	4
Adams	97	734.9	21	26	11	1	7	6	1	1	1	0	2	3
Agawam	356	745.6	77	68	17	4	17	16	12	15	3	1	3	5
Alford	4	--[4]	0	2	0	0	0	0	0	0	0	0	0	0
Amesbury	144	774.2	35	25	7	2	6	8	5	4	0	0	2	6
Amherst	140	548.6	33	28	3	1	9	9	0	1	1	0	1	1
Andover	230	595.1	52	43	10	2	10	9	4	9	1	0	1	5
Aquinnah	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Arlington	370	614.6	67	90	17	6	13	15	9	14	3	0	5	6
Ashburnham	39	795.2	11	13	1	0	2	2	2	0	1	0	0	1
Ashby	21	874.9	5	7	0	2	0	4	0	0	0	0	0	0
Ashfield	12	627.0	2	4	1	1	0	1	0	1	0	0	0	1
Ashland	104	676.2	20	26	9	1	4	7	4	5	2	0	1	4
Athol	143	954.1	34	33	10	0	5	6	4	4	0	0	2	3
Attleboro	375	757.2	73	76	15	2	14	29	14	11	2	0	5	10
Auburn	180	707.8	44	46	12	3	11	4	2	3	0	0	3	3
Avon	51	876.2	16	10	3	1	2	2	2	2	0	1	1	3
Ayer	128	1756.7	18	29	10	2	6	6	3	1	0	0	1	1
Barnstable	534	726.4	121	117	31	9	23	25	15	16	4	2	9	13
Barre	43	720.7	7	11	4	0	1	2	0	3	2	0	0	3
Becket	10	537.2	4	3	1	0	0	0	1	1	0	0	0	0
Bedford	151	663.0	23	32	8	5	6	8	3	5	0	0	1	1
Belchertown	99	771.6	19	27	7	0	1	8	5	1	0	0	4	2
Bellingham	146	981.9	36	32	11	2	2	6	3	2	1	0	3	3
Belmont	156	458.9	28	46	11	6	4	4	2	3	0	0	1	4
Berkley	49	1169.2	10	14	5	0	0	3	2	1	0	0	0	0
Berlin	32	952.9	4	9	3	0	2	2	1	3	0	0	0	1
Bernardston	26	897.3	7	8	1	1	2	0	1	0	0	0	0	0

Table 47 (continued). Selected Causes of Death by Community, Massachusetts: 2015														
CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	Opioid-related[5]
Beverly	445	844.4	111	80	15	11	20	20	10	9	1	1	3	13
Billerica	326	903.4	69	67	18	5	10	21	11	13	3	1	2	11
Blackstone	71	838.2	17	18	10	0	1	2	2	1	2	0	1	3
Blandford	7	474.4	3	2	0	0	1	1	0	0	0	0	0	0
Bolton	24	684.7	5	6	0	0	1	1	0	1	1	0	0	2
Boston	3,896	722.9	761	902	201	61	161	148	112	80	23	36	44	144
Bourne	234	833.9	46	50	17	5	7	13	6	6	0	1	5	8
Boxborough	17	565.6	3	5	1	1	0	1	0	0	1	0	0	0
Boxford	48	650.8	7	13	2	2	0	4	1	2	0	0	0	2
Boylston	31	640.0	7	11	2	1	3	1	0	0	0	0	2	2
Braintree	382	714.8	85	80	18	8	14	20	3	9	2	0	3	9
Brewster	159	616.8	45	33	5	3	9	3	3	3	1	0	1	0
Bridgewater	180	771.4	49	40	6	0	5	10	6	7	1	0	4	11
Brimfield	28	692.3	1	9	1	0	2	2	1	2	0	0	1	0
Brockton	833	877.9	185	173	39	14	27	28	24	21	8	9	12	47
Brookfield	30	741.7	7	10	5	1	0	1	2	0	0	0	0	0
Brookline	298	443.3	77	63	18	6	10	9	6	3	2	1	3	3
Buckland	18	805.0	6	1	0	0	1	4	0	0	0	0	0	1
Burlington	256	821.5	51	58	18	4	7	16	5	10	1	0	2	3
Cambridge	499	591.8	94	114	27	8	26	18	15	5	3	0	11	12
Canton	253	748.2	57	47	16	1	15	8	6	4	2	0	4	6
Carlisle	28	848.8	5	9	0	1	1	1	0	2	0	0	0	0
Carver	122	906.1	19	29	11	1	3	4	4	5	1	0	0	6
Charlemont	16	919.5	4	4	1	0	1	1	1	0	0	0	2	0
Charlton	134	927.1	31	24	6	2	6	10	3	2	1	0	2	0
Chatham	131	705.2	50	28	9	2	6	7	2	4	0	0	1	2
Chelmsford	331	736.6	68	81	18	4	17	14	9	8	0	0	4	5
Chelsea	261	911.1	48	33	11	1	11	12	15	7	1	2	0	18
Cheshire	28	687.7	3	4	0	1	1	1	2	5	0	0	0	0
Chester	12	857.0	2	2	1	0	0	3	0	1	1	0	1	0
Chesterfield	5	351.9	2	0	0	0	0	0	0	0	0	0	0	0
Chicopee	583	787.8	117	138	45	6	22	35	13	20	4	1	6	18
Chilmark	12	592.7	2	4	1	0	0	0	0	0	0	0	0	0
Clarksburg	19	992.6	5	4	1	0	1	0	0	0	0	0	1	0

Table 48 (continued). Selected Causes of Death by Community, Massachusetts: 2015														
CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	Opioid-related[5]
Clinton	134	871.2	35	29	11	2	10	7	6	4	1	0	2	5
Cohasset	68	650.6	15	19	4	1	4	1	0	2	0	0	0	0
Colrain	26	1261.7	5	6	1	2	4	1	2	0	0	0	1	0
Concord	165	479.6	25	37	4	6	7	10	2	3	0	0	3	0
Conway	9	509.2	1	2	0	0	0	0	0	0	0	0	2	0
Cummington	6	501.0	1	0	0	0	1	1	0	0	0	0	0	0
Dalton	77	724.7	19	18	7	3	3	3	1	3	0	0	0	0
Danvers	365	854.4	72	76	19	5	20	10	8	14	3	0	4	6
Dartmouth	298	617.8	77	65	16	6	12	11	9	14	3	1	1	2
Dedham	316	738.8	69	68	17	2	13	9	12	8	1	0	2	4
Deerfield	29	462.9	5	6	1	0	2	0	0	1	0	0	0	1
Dennis	236	717.6	55	65	16	4	6	13	9	8	1	0	2	2
Dighton	62	800.0	15	14	3	2	3	4	1	2	1	0	1	0
Douglas	48	864.7	16	12	2	1	2	1	0	0	1	0	1	2
Dover	20	438.2	5	6	1	0	0	0	0	0	0	0	2	0
Dracut	223	727.2	55	60	22	2	3	7	5	5	1	0	5	8
Dudley	85	710.8	23	22	5	5	2	4	1	0	3	0	0	0
Dunstable	17	754.5	5	4	2	1	0	1	0	0	1	0	0	0
Duxbury	121	552.4	34	18	1	3	5	7	4	1	2	0	0	1
East Bridgewater	113	813.5	29	25	4	3	3	5	2	1	2	0	2	1
East Brookfield	19	764.2	5	2	0	0	1	3	0	0	0	0	2	0
East Longmeadow	234	777.4	39	44	12	5	11	12	2	5	0	0	1	3
Eastham	75	649.8	23	19	5	0	4	3	2	2	0	0	1	2
Easthampton	185	866.5	44	44	16	2	8	15	4	2	1	0	4	1
Easton	178	814.1	28	44	11	1	3	8	5	5	2	0	1	6
Edgartown	30	658.3	6	6	1	0	0	3	0	0	0	0	0	0
Egremont	15	775.1	1	4	2	0	2	0	1	0	0	0	0	0
Erving	18	803.1	4	4	3	0	0	0	0	0	0	0	0	0
Essex	26	621.9	8	5	1	0	2	0	0	0	1	0	0	1
Everett	328	786.9	69	77	15	4	13	14	9	10	1	0	4	17
Fairhaven	241	849.6	46	53	12	6	13	11	5	11	3	0	2	7
Fall River	994	864.8	211	195	55	6	33	47	40	41	10	4	20	40
Falmouth	461	771.5	98	104	21	6	23	12	7	13	1	0	6	15
Fitchburg	400	907.6	83	89	29	5	27	20	11	10	4	1	5	19

Table 49 (continued). Selected Causes of Death by Community, Massachusetts: 2015														
CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	Opioid-related[5]
Florida	5	705.2	1	2	0	0	0	0	0	0	1	0	0	0
Foxborough	125	698.2	25	32	10	1	3	9	3	6	2	0	2	0
Framingham	549	641.1	131	107	26	10	22	37	11	14	6	2	4	12
Franklin	196	752.2	35	50	11	4	6	7	6	5	1	0	3	7
Freetown	72	899.4	19	16	2	0	1	3	1	2	1	0	1	2
Gardner	220	828.6	50	44	12	4	34	10	4	3	0	0	6	6
Gay Head	1	--[4]	0	0	0	0	0	0	0	0	0	0	0	1
Georgetown	51	765.1	16	11	1	0	2	3	2	1	1	0	0	2
Gill	20	1275.4	5	8	2	1	0	2	0	1	2	0	1	0
Gloucester	315	750.2	61	83	30	8	9	21	4	12	0	0	1	11
Goshen	7	539.1	2	0	0	0	1	0	0	0	0	0	1	0
Gosnold	1	--[4]	1	0	0	0	0	0	0	0	0	0	0	0
Grafton	136	840.4	27	32	11	1	4	4	1	4	1	0	2	2
Granby	43	654.4	11	13	3	1	4	1	1	0	0	0	0	2
Granville	12	870.6	4	2	0	1	1	0	0	0	1	0	0	0
Great Barrington	86	742.0	15	18	7	1	2	3	4	0	4	0	0	0
Greenfield	216	812.1	47	43	13	3	14	15	7	4	3	0	1	8
Groton	60	639.6	14	12	5	1	4	1	0	2	0	0	3	1
Groveland	49	616.5	8	14	1	0	2	3	2	2	0	0	1	0
Hadley	47	505.5	9	12	2	2	4	0	0	0	0	0	1	0
Halifax	65	761.9	14	17	4	1	3	4	4	1	2	0	0	1
Hamilton	43	557.3	14	12	4	0	1	2	0	1	0	1	0	0
Hampden	43	584.2	10	8	1	0	1	2	1	0	1	0	0	0
Hancock	5	459.3	1	3	0	0	0	0	0	0	0	0	0	0
Hanover	113	818.1	20	27	9	1	4	3	3	2	2	0	0	1
Hanson	100	1152.1	17	28	8	3	4	1	1	3	0	0	0	8
Hardwick	22	683.1	1	8	1	1	0	3	0	1	0	0	0	2
Harvard	24	533.2	3	5	1	0	0	0	0	2	0	0	1	0
Harwich	190	683.3	52	46	13	3	7	9	0	8	0	0	2	4
Hatfield	39	826.3	5	12	4	2	3	1	1	1	0	0	0	1
Haverhill	599	886.9	139	123	33	8	18	32	11	14	6	0	9	29
Hawley	3	--[4]	1	1	0	0	1	0	0	0	0	0	0	0
Heath	11	1195.4	0	3	2	0	1	0	0	1	2	0	0	0
Hingham	266	603.0	61	46	9	1	13	8	8	14	0	0	0	0

Table 50 (continued). Selected Causes of Death by Community, Massachusetts: 2015														
CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	Opioid-related[5]
Hinsdale	27	1119.8	11	3	1	0	0	2	2	0	2	0	1	1
Holbrook	126	979.0	29	31	10	0	0	6	6	6	1	0	1	4
Holden	155	713.9	28	41	11	1	4	7	3	2	4	0	2	4
Holland	27	1419.1	5	5	3	1	2	0	1	1	1	0	0	1
Holliston	85	691.3	17	23	6	1	0	1	4	3	1	0	1	3
Holyoke	442	864.6	85	75	14	3	15	19	12	16	6	2	7	6
Hopedale	48	616.9	15	7	2	1	2	3	2	2	0	0	0	0
Hopkinton	93	962.0	22	14	3	1	4	3	2	0	1	0	1	4
Hubbardston	30	853.4	4	9	3	0	2	1	0	0	0	0	1	2
Hudson	144	694.7	34	27	11	0	9	3	5	0	2	0	1	6
Hull	108	899.1	21	29	8	1	0	8	3	4	0	0	0	4
Huntington	20	965.2	3	7	2	0	1	2	0	0	0	0	1	0
Ipswich	114	561.2	28	31	2	1	3	3	3	4	0	0	0	3
Kingston	144	847.8	33	26	5	3	4	12	2	8	2	0	1	1
Lakeville	85	822.2	19	23	7	2	4	9	1	2	1	0	0	0
Lancaster	51	633.6	3	19	6	2	5	3	1	3	0	0	0	2
Lanesborough	23	626.5	6	8	2	0	2	0	1	0	0	0	0	1
Lawrence	482	777.4	86	79	22	6	20	19	25	11	4	5	7	26
Lee	67	690.1	12	18	5	0	3	5	1	0	0	0	0	2
Leicester	100	842.5	18	15	4	1	4	12	3	3	1	0	1	2
Lenox	112	739.2	23	22	6	1	3	8	1	5	1	0	0	0
Leominster	392	769.7	74	88	24	5	25	25	7	11	3	1	6	7
Leverett	11	586.8	4	2	0	0	0	1	0	0	0	0	0	0
Lexington	225	425.6	49	45	5	0	7	8	5	4	0	0	5	3
Leyden	4	--[4]	1	1	1	0	1	0	0	0	0	0	0	0
Lincoln	52	609.0	8	14	5	2	0	2	2	2	0	0	1	0
Littleton	64	593.8	6	16	5	0	4	2	1	2	0	0	2	0
Longmeadow	161	521.7	34	35	5	6	13	5	4	5	1	0	0	0
Lowell	888	917.9	151	166	39	8	30	47	25	23	8	2	8	59
Ludlow	217	745.7	50	49	11	4	15	11	5	3	1	0	1	4
Lunenburg	95	888.6	22	25	7	1	6	6	1	0	1	0	2	2
Lynn	739	823.6	154	166	46	8	36	39	16	14	6	3	10	45
Lynnfield	102	607.7	22	20	6	1	2	6	1	1	1	0	0	2
Malden	453	750.2	85	111	29	7	16	22	13	11	1	2	3	21

Table 51 (continued). Selected Causes of Death by Community, Massachusetts: 2015														
CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	Opioid-related[5]
Manchester	44	614.6	10	11	1	1	1	0	2	2	1	0	0	0
Mansfield	134	756.2	34	27	8	3	3	6	2	4	3	0	1	3
Marblehead	158	575.8	28	38	9	2	10	8	1	5	0	1	2	1
Marion	75	777.6	11	15	2	1	4	3	1	1	0	0	0	1
Marlborough	322	735.5	92	72	19	8	13	13	10	8	0	0	1	8
Marshfield	215	883.0	40	59	15	5	4	11	1	8	1	1	0	2
Mashpee	158	705.1	40	27	3	3	9	10	3	0	0	0	2	10
Mattapoisett	60	687.8	10	7	1	1	3	6	0	1	0	0	2	2
Maynard	79	722.3	17	25	6	1	7	2	3	3	0	0	1	3
Medfield	83	704.8	13	22	3	1	2	3	2	2	0	0	1	0
Medford	510	672.1	91	106	34	5	17	18	17	15	0	1	6	20
Medway	103	859.6	26	25	4	3	2	10	4	3	1	0	0	1
Melrose	241	636.0	54	52	13	1	8	10	3	8	0	0	3	2
Mendon	43	969.3	9	13	3	0	1	2	2	1	1	0	0	1
Merrimac	60	919.6	13	20	5	2	0	2	2	0	1	0	0	2
Methuen	445	740.4	94	94	28	2	27	21	12	21	2	0	4	7
Middleborough	224	850.9	46	50	14	2	10	13	5	12	2	0	3	12
Middlefield	3	--[4]	1	1	0	0	0	0	0	0	0	0	0	0
Middleton	70	795.1	13	14	2	0	4	5	2	2	0	0	0	4
Milford	277	846.0	73	60	18	3	14	14	11	5	0	1	3	3
Millbury	148	873.0	30	34	9	1	10	11	0	4	2	0	2	4
Millis	50	712.2	9	13	6	0	3	2	2	1	1	0	2	1
Millville	26	1070.6	4	13	6	0	1	1	1	0	0	0	0	1
Milton	210	527.9	48	46	13	4	11	4	6	10	0	0	1	1
Monroe	1	--[4]	0	0	0	0	0	0	0	0	0	0	0	0
Monson	69	744.1	17	16	5	1	4	1	5	1	0	0	0	0
Montague	87	733.3	15	23	9	1	4	6	4	2	1	0	0	1
Monterey	8	554.9	2	3	2	0	0	0	0	0	0	0	0	0
Montgomery	4	--[4]	0	1	0	0	2	0	0	0	0	0	0	0
Mount Washington	4	--[4]	2	0	0	0	0	1	0	0	0	0	0	0
Nahant	58	927.1	16	15	4	0	4	0	0	1	0	0	0	1
Nantucket	71	692.9	16	15	0	1	2	4	0	1	2	1	2	1
Natick	271	670.6	57	52	11	2	17	10	9	2	0	0	3	4
Needham	266	551.0	56	59	15	5	9	9	3	6	0	0	2	1

Table 52 (continued). Selected Causes of Death by Community, Massachusetts: 2015														
CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	Opioid-related[5]
New Ashford	5	2095.1	1	1	0	0	0	0	0	0	1	0	0	1
New Bedford	1,043	874.3	218	193	50	10	48	44	28	34	10	4	11	49
New Braintree	10	859.6	2	3	2	0	1	1	0	0	0	0	0	0
New Marlborough	10	462.4	3	4	1	0	0	0	1	0	1	0	0	0
New Salem	10	1041.3	3	4	1	0	0	1	0	0	0	0	0	1
Newbury	55	769.6	19	12	6	0	2	4	0	3	0	0	2	2
Newburyport	191	745.8	31	38	9	2	6	12	3	7	0	0	4	2
Newton	605	506.5	139	149	26	8	25	20	12	9	0	0	8	7
Norfolk	68	987.5	11	16	4	1	4	6	3	2	0	0	1	1
North Adams	174	904.1	38	35	10	2	7	14	10	4	1	0	0	5
North Andover	275	723.0	70	45	8	4	10	9	7	10	0	3	1	3
North Attleboro	221	853.8	51	51	14	5	9	18	6	5	2	0	3	8
North Brookfield	35	617.4	8	7	1	0	1	1	0	2	0	0	1	0
North Reading	113	759.0	28	28	8	3	4	1	3	5	1	0	3	1
Northampton	254	692.5	59	54	16	1	12	14	7	2	2	0	2	4
Northborough	122	780.4	23	34	7	4	4	11	2	1	0	0	0	0
Northbridge	188	934.9	37	30	5	5	12	12	4	3	3	0	2	4
Northfield	31	817.8	5	3	1	0	1	4	2	2	0	0	0	1
Norton	144	866.2	31	37	10	6	5	7	3	6	2	0	3	1
Norwell	89	610.4	15	16	6	0	0	3	1	5	0	0	0	3
Norwood	340	771.3	66	70	17	6	13	16	6	7	4	0	2	6
Oak Bluffs	49	722.4	12	7	3	0	1	5	0	3	0	0	0	3
Oakham	14	885.7	2	5	2	0	1	0	1	0	0	0	0	0
Orange	79	865.9	17	12	2	2	2	5	5	6	0	0	1	3
Orleans	109	565.9	41	25	4	3	8	2	1	2	0	0	1	0
Otis	8	422.6	1	3	1	0	2	0	0	0	0	0	0	0
Oxford	118	892.3	20	29	9	1	3	12	4	6	0	0	0	4
Palmer	136	826.4	27	34	7	0	10	9	5	2	1	0	1	1
Paxton	29	589.5	7	5	0	0	1	0	0	1	1	0	0	1
Peabody	704	731.3	151	138	36	9	25	37	9	16	2	2	4	10
Pelham	11	665.6	2	2	1	0	1	0	0	0	0	0	0	0
Pembroke	117	812.2	24	29	7	1	8	4	4	3	0	0	0	4
Pepperell	81	890.3	21	21	8	0	2	3	1	1	1	0	0	3
Peru	5	687.0	0	1	0	0	0	1	0	0	0	0	1	0

Table 53 (continued). Selected Causes of Death by Community, Massachusetts: 2015														
CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	Opioid-related[5]
Petersham	15	981.9	3	4	0	0	0	2	0	0	0	0	0	0
Phillipston	17	1395.2	2	5	2	1	0	0	0	0	1	0	0	0
Pittsfield	577	866.7	104	135	34	9	33	37	19	16	1	3	6	17
Plainfield	2	--[4]	0	1	0	0	0	0	0	0	0	0	0	0
Plainville	66	800.6	11	20	3	3	3	4	0	2	2	0	0	0
Plymouth	541	828.7	104	115	33	5	21	32	11	15	4	1	9	20
Plympton	21	854.3	2	6	1	0	0	0	0	2	0	0	1	1
Princeton	18	553.8	2	6	0	1	1	0	0	0	0	0	0	1
Provincetown	54	1127.0	10	13	3	1	3	4	2	1	0	0	1	0
Quincy	901	743.2	192	195	62	11	47	56	16	31	7	1	11	44
Randolph	284	769.1	57	58	17	3	14	14	6	7	7	1	2	12
Raynham	120	777.5	26	28	6	3	7	7	3	4	1	0	0	4
Reading	188	590.9	37	38	7	3	11	9	1	6	1	0	3	3
Rehoboth	79	749.5	18	24	6	4	5	4	1	3	3	0	0	2
Revere	463	716.8	107	107	36	6	16	17	11	12	2	3	3	16
Richmond	23	1046.5	5	6	2	1	1	2	0	0	1	0	0	0
Rochester	31	601.0	7	11	2	0	1	1	2	1	0	0	1	0
Rockland	195	958.0	31	43	13	5	5	9	8	5	3	0	3	10
Rockport	88	693.8	20	21	5	4	7	4	1	0	0	0	1	3
Rowe	7	935.9	1	1	0	0	0	0	0	0	0	0	0	0
Rowley	36	650.9	9	5	1	0	0	5	2	0	0	0	0	0
Royalston	11	840.7	2	4	1	0	0	1	0	1	0	0	0	0
Russell	17	1164.8	4	3	0	1	0	2	0	0	0	0	0	0
Rutland	48	783.5	8	12	3	1	3	2	1	1	0	0	2	0
Salem	343	728.4	75	77	17	4	14	15	4	14	1	1	3	13
Salisbury	106	1140.2	26	20	9	1	4	7	1	1	1	0	0	5
Sandisfield	15	1266.1	3	1	0	0	0	1	0	1	0	0	1	0
Sandwich	193	728.2	24	64	7	7	10	7	2	5	0	0	3	2
Saugus	293	791.0	49	69	19	5	21	14	10	10	2	0	3	9
Savoy	5	631.9	1	1	1	0	0	0	0	0	0	0	0	0
Scituate	194	759.6	49	46	11	6	8	5	1	8	2	0	2	4
Seekonk	105	658.6	26	22	4	1	8	3	0	5	2	0	3	3
Sharon	115	629.0	26	30	5	3	0	2	1	3	0	0	1	1
Sheffield	36	747.8	8	11	2	2	0	2	0	0	0	0	1	0

Table 54 (continued). Selected Causes of Death by Community, Massachusetts: 2015														
CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	Opioid-related[5]
Shelburne	27	1055.8	5	7	2	0	0	3	0	2	0	0	0	0
Sherborn	26	621.8	7	6	0	0	1	1	1	0	0	0	1	1
Shirley	53	897.2	14	6	2	0	5	0	2	1	0	0	0	1
Shrewsbury	269	620.8	66	60	12	5	13	13	7	5	2	0	3	2
Shutesbury	9	624.0	0	2	0	0	0	2	0	0	0	0	1	0
Somerset	259	737.6	64	59	17	3	6	11	3	12	0	0	0	4
Somerville	425	693.8	89	113	28	3	20	14	15	1	1	2	8	17
South Hadley	186	708.8	38	43	8	5	13	11	1	5	0	0	3	2
Southampton	51	858.9	11	13	3	0	4	0	0	2	0	0	1	1
Southborough	61	732.8	13	21	3	3	2	5	1	0	0	0	0	0
Southbridge	169	819.6	46	33	11	1	6	10	4	6	1	1	2	6
Southwick	79	668.5	14	18	4	3	4	7	1	0	1	1	1	1
Spencer	117	882.1	23	31	11	0	5	5	0	2	1	1	1	10
Springfield	1,273	870.1	255	252	69	22	61	58	41	26	10	21	17	41
Sterling	67	698.4	11	12	5	0	1	6	2	1	1	0	0	0
Stockbridge	25	662.0	4	7	0	1	3	1	0	0	0	0	1	0
Stoneham	247	716.0	47	58	13	4	14	13	5	7	0	0	2	6
Stoughton	298	827.5	65	71	14	7	6	9	5	3	3	0	5	11
Stow	39	588.1	8	10	3	1	2	1	0	1	0	0	0	1
Sturbridge	84	789.8	22	24	4	0	3	2	1	1	2	0	0	1
Sudbury	101	576.7	30	24	3	1	6	2	1	5	0	0	0	0
Sunderland	22	638.4	1	5	1	1	1	0	0	1	0	0	0	0
Sutton	57	776.0	6	18	3	2	1	4	1	0	1	0	1	1
Swampscott	109	501.4	26	28	7	2	3	4	2	7	0	1	0	2
Swansea	157	719.1	19	45	15	3	5	7	3	8	1	0	1	0
Taunton	564	859.7	126	133	34	7	20	35	18	12	6	2	12	16
Templeton	75	826.3	9	18	6	0	3	3	4	2	1	0	1	2
Tewksbury	278	820.7	57	65	21	3	13	13	7	7	3	0	1	8
Tisbury	46	821.9	10	12	3	2	6	1	1	4	0	0	1	3
Tolland	2	--[4]	0	2	0	0	0	0	0	0	0	0	0	0
Topsfield	70	684.8	9	11	1	1	3	8	1	0	0	0	0	0
Townsend	50	666.6	6	16	3	1	1	3	4	0	1	0	0	1
Truro	20	586.5	4	6	1	2	0	1	0	1	0	0	0	0
Tyngsborough	71	853.8	13	18	7	0	1	4	3	0	3	0	0	5

Table 55 (continued). Selected Causes of Death by Community, Massachusetts: 2015														
CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	Opioid-related[5]
Tyringham	5	901.2	0	3	0	0	0	0	0	0	0	0	1	1
Upton	41	672.9	9	12	5	0	3	1	2	1	1	0	0	0
Uxbridge	96	717.1	24	23	9	1	1	3	2	1	0	0	1	4
Wakefield	241	755.7	50	40	10	3	6	19	6	5	1	0	4	6
Wales	13	819.2	2	3	0	0	1	0	0	0	0	0	1	0
Walpole	209	643.0	44	51	14	2	9	11	10	2	1	0	1	4
Waltham	422	636.9	69	102	28	6	24	20	10	9	1	0	9	10
Ware	102	832.6	24	23	8	2	5	10	1	2	2	0	1	2
Wareham	270	917.9	70	62	14	1	13	13	7	5	1	0	5	7
Warren	39	718.4	10	11	3	0	0	2	1	0	0	0	0	2
Warwick	12	1471.3	2	2	1	0	1	1	0	0	0	0	1	1
Washington	3	--[4]	1	0	0	0	1	0	0	0	0	0	0	0
Watertown	253	617.6	53	54	13	6	8	6	7	7	3	0	4	10
Wayland	101	531.3	21	20	4	0	8	1	0	5	0	0	1	1
Webster	248	1066.4	50	52	15	2	14	11	8	5	3	2	2	6
Wellesley	156	464.0	44	25	2	1	9	7	1	2	2	1	0	2
Wellfleet	31	547.4	6	10	1	0	1	3	0	1	0	0	0	0
Wendell	6	1442.1	3	0	0	0	1	0	0	0	0	0	0	0
Wenham	39	741.3	6	9	2	0	4	1	0	0	0	0	1	1
West Boylston	89	701.9	13	16	5	0	5	2	3	5	3	0	1	0
West Bridgewater	71	610.9	28	11	3	0	0	3	3	2	0	0	0	0
West Brookfield	58	892.1	9	8	4	0	4	3	3	4	0	0	3	0
West Newbury	22	585.0	3	6	1	1	3	3	0	0	0	0	0	0
West Springfield	277	743.0	48	69	24	1	9	11	3	7	4	0	3	6
West Stockbridge	8	489.1	1	2	1	0	1	0	0	0	0	0	0	1
West Tisbury	17	569.5	5	4	1	0	1	0	0	1	1	0	0	0
Westborough	174	747.9	34	40	1	2	8	9	2	3	1	0	1	3
Westfield	385	776.6	80	82	23	5	15	28	7	4	0	0	2	7
Westford	133	880.9	27	36	10	2	5	7	2	0	0	0	2	0
Westhampton	11	607.0	3	6	4	0	0	0	0	0	1	0	0	0
Westminster	37	506.8	12	8	3	0	2	1	0	0	0	0	1	0
Weston	115	601.1	31	18	1	1	5	3	2	2	0	0	1	0
Westport	148	676.2	36	36	9	2	5	6	2	2	0	0	3	2
Westwood	156	602.3	49	30	8	0	8	10	0	7	0	0	2	1

Table 56 (continued). Selected Causes of Death by Community, Massachusetts: 2015

CITY/TOWN	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	Opioid-related[5]
Weymouth	544	803.5	117	112	40	8	15	35	13	20	6	1	1	24
Whately	10	504.2	1	4	1	1	0	1	0	0	0	0	0	0
Whitman	115	928.5	19	22	8	1	5	10	3	1	0	0	2	6
Wilbraham	153	616.6	35	29	9	2	7	4	3	2	0	0	2	2
Williamsburg	25	725.4	10	5	0	0	1	3	0	0	0	0	0	0
Williamstown	81	480.1	16	15	3	2	11	4	0	0	0	0	1	0
Wilmington	185	753.4	33	46	9	4	5	9	3	4	2	0	2	6
Winchendon	93	955.4	24	19	6	0	9	5	5	2	0	0	0	2
Winchester	162	482.1	35	38	7	4	19	3	2	2	1	0	2	1
Windsor	2	--[4]	1	1	0	0	0	0	0	0	0	0	0	0
Winthrop	210	878.3	43	61	17	1	8	10	4	8	0	0	0	7
Woburn	381	708.0	71	69	22	6	19	30	13	8	3	0	4	6
Worcester	1,740	905.3	320	340	85	24	62	102	46	56	14	8	21	79
Worthington	6	424.9	4	0	0	0	0	0	0	0	0	0	0	0
Wrentham	114	848.9	20	19	3	1	5	5	3	3	1	0	0	2
Yarmouth	402	784.0	95	94	16	3	21	23	5	11	2	0	4	9
Unknown	5	0	0	0	0	0	0	0	0	0	0	0	1	1

1. Rates are per 100,000 population age-adjusted to the 2000 US Standard Population and calculated using MDPH population estimates for 2010, which are the most up-to-date information available on the number of persons by age, race, and sex at the sub-state level. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Includes only female breast cancer. 3. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title). 4. Rates based on 1 to 4 deaths are not calculated. 5. Deaths due to narcotics and hallucinogens including cannabis, cocaine, codeine, heroin, lysergic acid diethylamide (LSD), mescaline, methadone, morphine, and opium (alkaloids).

Table 57. Selected Causes of Death by Community Health Network Area (CHNA), Massachusetts: 2015

CHNA Name	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	Opioid-related[4]
Massachusetts	**57,785**	**684.6**	**12,141**	**12,742**	**3,241**	**815**	**2,474**	**2,785**	**1,404**	**1,512**	**395**	**145**	**647**	**1,637**
1. Community Health Network of Berkshire	1,569	765.3	313	364	100	24	83	91	45	36	14	3	16	32
2. Upper Valley Health Web (Franklin County)	906	804.0	186	202	57	14	42	57	26	26	9	0	12	21
3. Partnership for Health in Hampshire County (Northampton)	1,222	696.0	278	284	75	16	67	73	20	16	7	0	18	16
4. The Community Health Connection (Springfield)	2,823	784.3	567	583	153	46	141	128	77	63	22	23	28	59
5. Community Health Network of Southern Worcester County	1,204	855.2	262	270	78	13	50	66	29	31	12	4	15	30
6. Community Partners for Health (Milford)	1,340	822.5	307	313	89	22	48	66	40	24	12	1	15	30
7. Community Health Network of Greater Metro West (Framingham)	2,986	686.1	659	674	155	44	136	146	78	68	20	2	23	58
8. Common Pathways (Worcester)	2,877	816.3	560	600	151	37	117	156	65	83	28	8	37	99
9. Community Health Network of North Central Massachusetts	2,261	804.6	450	529	157	28	154	117	56	52	17	2	31	64
10. Greater Lowell Community Health Network	2,267	835.5	445	497	137	25	79	114	62	56	19	3	22	96
11. Greater Lawrence Community Health Network	1,502	726.2	315	275	70	14	71	63	50	53	7	8	13	45
12. Greater Haverhill Community Health Network	1,361	811.9	306	287	75	18	43	83	29	34	9	0	18	50
13. Community Health Network North (Beverly/Gloucester)	1,184	723.8	267	263	61	26	50	59	21	28	3	2	6	32
14. North Shore Community Health Network	2,871	751.8	593	627	163	36	135	133	51	82	15	8	26	89
15. Northwest Suburban Health Alliance	1,803	598.5	333	392	87	35	81	94	37	44	9	0	24	24
16. North Suburban Health Alliance (Medford/Malden/Melrose)	2,321	704.8	461	510	129	30	89	106	57	67	5	3	28	76
17. Greater Cambridge/Somerville Community Health Network	1,703	602.9	331	417	96	29	71	57	48	30	10	2	29	49
18. West Suburban Health Network (Newton/Waltham)	2,056	568.6	462	457	98	23	93	78	40	43	4	1	26	25
19. Alliance for Community Health (Boston/Chelsea/Revere/Winthrop)	5,128	710.0	1,036	1,166	283	75	206	196	148	110	28	42	50	188
20. Blue Hills Community Health Alliance (Greater Quincy)	3,754	724.7	809	794	226	53	154	180	70	124	30	3	27	114
21. Community Health Network of Chicopee, Holyoke, Ludlow, Westfield	1,659	794.2	337	353	96	18	68	98	37	44	12	3	18	35
22. Greater Brockton Community Health Network	2,097	842.3	476	456	109	27	51	85	57	55	18	10	30	95
23. South Shore Community Health Network	1,754	830.5	338	397	107	28	61	87	42	53	17	2	14	55
24. Greater Attleboro-Taunton Health & Education Response	2,162	801.6	475	499	126	37	88	138	56	67	25	2	31	59
25. Partners for Healthier Communities	1,558	805.0	330	335	96	14	49	71	48	63	11	4	24	46
26. Greater New Bedford Community Health Network	2,198	811.3	483	449	106	29	100	95	57	70	20	5	24	74
27. Cape Cod and Islands Health Network	3,213	720.7	762	749	161	54	147	148	58	90	12	4	41	74

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

Table 58. Selected Causes of Death by County, Massachusetts: 2015

County	Total Deaths	Age-Adjusted Death Rate[1]	Heart Disease	Total Cancer	Lung Cancer	Female Breast Cancer[2]	Stroke	CLRD[3]	Diabetes	Influenza & Pneumonia	Motor Vehicle	Homicide	Suicide	Opioids-related[4]
Massachusetts	**57,785**	**684.6**	**12,141**	**12,742**	**3,241**	**815**	**2,474**	**2,785**	**1,404**	**1,512**	**395**	**145**	**647**	**1,637**
Barnstable	2,987	707.5	710	701	152	51	137	135	57	81	9	3	38	67
Berkshire	1,569	741.4	313	364	100	24	83	91	45	36	14	3	16	32
Bristol	5,351	749.8	1,153	1,159	299	74	205	267	150	183	54	11	69	163
Dukes	156	646.8	36	33	9	2	8	9	1	8	1	0	1	7
Essex	6,918	691.9	1,481	1,452	369	94	299	338	151	197	34	18	63	216
Franklin	720	730.3	145	156	44	13	37	48	22	21	8	0	10	18
Hampden	4,530	762.3	909	946	251	65	213	226	116	110	35	26	47	95
Hampshire	1,242	647.8	281	291	77	16	68	75	20	16	7	0	19	16
Middlesex	11,543	616.7	2,343	2,582	633	166	485	512	288	268	58	10	140	316
Nantucket	71	580.5	16	15	0	1	2	4	0	1	2	1	2	1
Norfolk	5,944	641.0	1,303	1,300	349	85	229	280	128	158	47	6	56	151
Plymouth	4,600	722.4	985	1,002	252	61	157	216	110	145	35	11	49	159
Suffolk	4,830	666.1	959	1,103	265	69	196	187	142	107	26	41	47	185
Worcester	7,319	757.5	1,507	1,638	441	94	355	397	174	181	65	15	89	210

Please note that 2011 population estimates are used for county rates.

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

TECHNICAL NOTES

DATA SOURCES

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

CHANGES TO MORTALITY DATA, EFFECTIVE 1999

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

CHANGES TO THE PRESENTATION OF RACE AND ETHNICITY DATA

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

Decedent Race

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

Decedent Race

Enter race to appear on death certificate: _____

Decedent Ethnicity

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

POPULATION ESTIMATES

Two sources of population estimates were used to calculate population-based rates in *Massachusetts Deaths 2015*:

a. State and County Death Rates: The 2015 Modified Age, Race/Ethnicity, and Sex file (MARS), which is a bridged population file produced by the National Center for Health Statistics (NCHS) and the Census Bureau Population Estimates Program was used to calculate state rates by race and Hispanic ethnicity, e.g., teen birth rates. This file has data by single years of age, sex, race and Hispanic ethnicity in the five mutually exclusive categories used by the Department: White Non-Hispanic, Black Non-Hispanic, Asian Non-Hispanic, American Indian/Alaska Native Non-Hispanic, and Hispanic. Available from: http://www.cdc.gov/nchs/nvss/bridged_race.htm as of September 28, 2016.

b. City and town death rates: The Massachusetts Department of Public Health Race Allocated Census 2010 Estimates (MRACE 2010), which are population estimates based upon the Census 2010 Summary File 1, was used to calculate city and town rates. In this estimates file, the Census 2010 race categories, "Two or more races" and "Some other race" are redistributed to the MDPH standard race categories: Non-Hispanic White, Non-Hispanic Black, Non-Hispanic Asian and Pacific Islander, and Non-Hispanic American Indian and Alaska Native. All persons in the Census 2010 Hispanic ethnicity category are counted as "Hispanic" race in the MDPH estimates. This kind of file is often referred to as a "bridged" file, that is, one that bridges the new race and ethnicity collections to the conventionally used categories. These population estimates are available from MassCHIP (http://masschip.state.ma.us).

LIMITATIONS OF SMALL NUMBERS

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

APPLYING COMPARABILITY RATIOS TO EXAMINE TRENDS IN MORTALITY

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

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

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

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

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

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

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

TESTS OF STATISTICAL SIGNIFICANCE

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

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

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

> National Vital Statistics Reports, Volume 52, Number 10
> Births: Final Data for 2002
> by Joyce A. Martin, M.P.H.; Brady E. Hamilton, Ph.D.; Paul D. Sutton, Ph.D.; Stephanie J. Ventura, M.A.; Fay Menacker, Dr. P.H.; and Martha L. Munson, M.S.;
> From the Division of Vital Statistics, NCHS. (Technical Notes, "Significance testing" section begins on page 110).

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

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

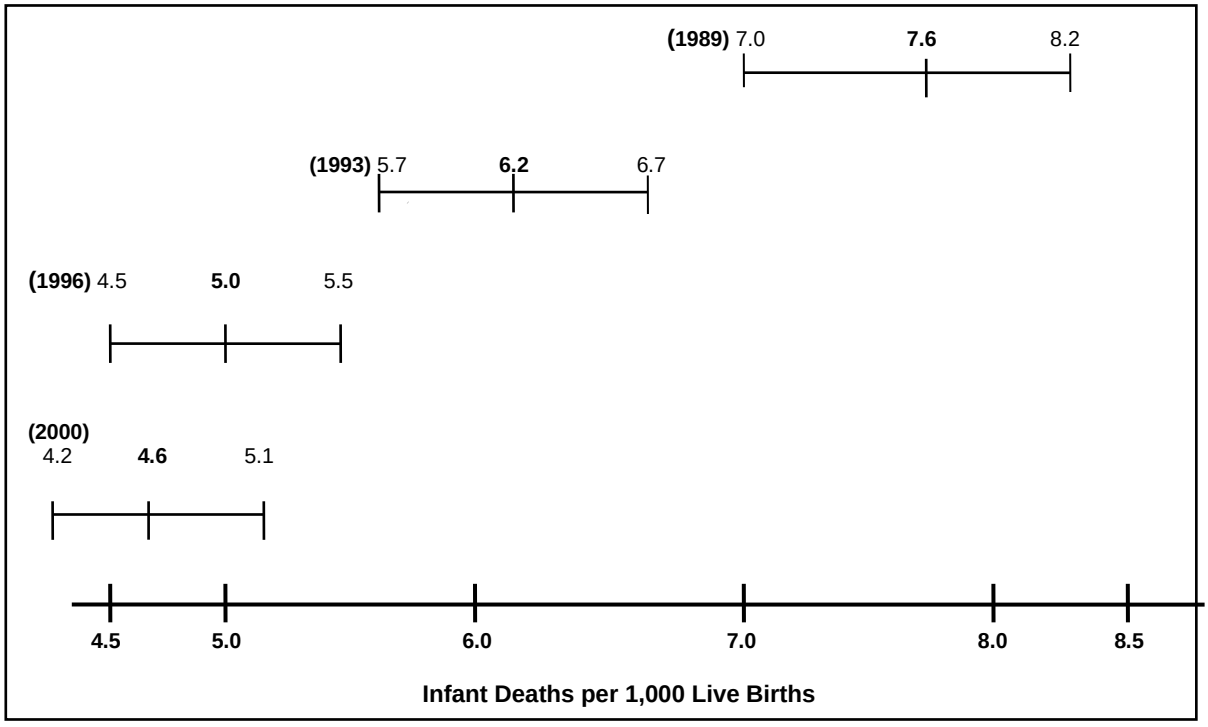
When two statistics are determined to differ significantly, they are referred to in the text with language expressing differences, such as, "higher" and "lower", or "increased" and "decreased". Otherwise, differences that are not significant are reported as having "no change" or "no statistical difference."

CONFIDENCE INTERVALS AND INFANT MORTALITY RATES

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

Comparison of Infant Mortality Rates and Confidence Intervals for Selected Years

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



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

GLOSSARY

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

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

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

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

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

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

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

Community Health Network Areas (CHNA)
The Department of Public Health, in collaboration with health service providers, coalition members, and interested citizens, has designated 27 areas for community health planning. It is the Department's intention to foster in each of these areas the development of Community Health Networks – consortia of health care providers, human service agencies, schools, churches, youth, parents, elders, advocacy groups, and individual consumers -- to address the health needs of the community. CHNAs mobilize around key health issues impacting the community, promote prevention efforts, enhance access to care, provide opportunities for more collaboration among agencies, and create a client-centered, outcome-oriented health service delivery system. CHNAs also promote efficiency in service delivery by working to reduce duplication and overlap, and by identifying gaps in service. These community coalitions participate in monitoring outcomes and progress of strategies and responses to those health needs. To determine which cities and towns make up a particular CHNA, please see Table A8, which provides the CHNA code for each city and town based on the geographic definitions established in 1997.

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

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

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

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

A CR of less than 1.00 results from 1) a decrease in the number of deaths assigned to a cause in ICD-10 compared with ICD-9 or 2) the cause described in ICD-10 is only a part of the ICD-9 title to which it is being compared.

A CR of more than 1.00 results from 1) an increase in the assignments of deaths to a cause in ICD-10 compared with ICD-9 or 2) the ICD-10 title is broader than the ICD-9 title to which it is being compared.

Preliminary comparability ratios supplied by the National Center for Health Statistics (NCHS) in February 2001 are used in this report (see Table A7 and A8).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(Sorted by ICD-10 Codes)

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

1. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title).

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

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

Table A3. ICD-10 Codes for Selected Healthy People 2020 Mortality Objectives[1] Used in this Publication

(Sorted by Objective Number)

Cause of Death	ICD-10 Identifying Codes
Cancer (all sites)	C00-C97
Lung cancer	C33-C34
Female breast cancer	C50
Uterine Cervix cancer	C53
Colorectal cancer	C18-C21
Oropharyngeal cancer	C00-C14
Prostate cancer	C61
Malignant melanoma	C43
Coronary heart disease	I11, I20-I25
COPD	J40-J44
Stroke	I60-I69
HIV infection	B20-B24
Firearm-related deaths	W32-W34, X72-X74, Y22-Y24, Y35.0, X93-X95
Poisoning	X40-X49, X60-X69, X85-X90, Y10-Y19, Y35.2
Hanging, strangulation or suffocation	W75-W84, X70, X91, Y20
Unintentional injuries (Accidents)	V01-X59, Y85-Y86
Motor vehicle-related	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2
Residential fire deaths	X00, X02
Falls	W00-W19, X80, Y01, Y30
Drownings	W65-W74, X71, X92, Y21
Homicides	X85-Y09, Y87.1
Birth defects	Q00-Q99
Congenital heart and vascular defects	Q20-Q24
Sudden infant death syndrome (SIDS)	R95
Suicide	X60-X84, Y87.0
Asthma	J45-J46
Motor-vehicle crash deaths	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2
Cirrhosis	K74
Drug induced deaths	F11.0-F11.5, F11.7-F11.9, F12.0-F12.5, F12.7-F12.9, F13.0-F13.5, F13.7-F13.9, F14.0-F14.5, F14.7-F14.9, F15.0-F15.5, F15.7-F15.9, F16.0-F16.5, F16.7-F16.9, F17.0, F17.3-F17.5, F17.7-F17.9, F18.0-F18.5, F18.7-F18.9, F19.0-F19.5, F19.7-F19.9,X40-X44,X60-64, X85,Y10-Y14

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

Table A4. Preliminary Comparability Ratios

Cause of Death	ICD-10 Code	ICD-9 Code (most similar title)	Comparability Ratio
Infectious and parasitic diseases	**A00-B99**		**NA**
Septicemia	A40-A41	038	1.1949
Human Immunodeficiency Virus (HIV) disease	B20-B24	042-044	1.0637[1] and 1.1448[2]
Cancer (Malignant Neoplasms)	C00-C97	140-208	1.0068
of esophagus	C15	150	0.9965
of stomach	C16	151	1.0063
of colon, rectum, rectum and anus	C18-C21	153-154	0.9993
of pancreas	C25	157	0.9980
of trachea, bronchus and lung	C33-C34	162	0.9837
of breast	C50	174-175	1.0056
of cervix uteri	C53	180	0.9871
of corpus uteri and uterus, part unspecified	C54-C55	179,182	1.0260
of ovary	C56	183.0	0.9954
of prostate	C61	185	1.0134
of kidney and renal pelvis	C64-C65	189.0-189.1	1.0000
of bladder	C67	188	0.9968
of meninges, brain & other parts of central nervous system	C70-C72	191-192	0.9691
Hodgkin Disease	C81	201	0.9855
Non-Hodgkin lymphoma	C82-C85	200, 202	0.9781
Leukemia	C91-C95	204-208	1.0119
Multiple myeloma and immunoproliferative neoplasms	C88, C90	203	1.0383
Diabetes Mellitus	E10-E14	250	1.0082
Alzheimer's Disease	G30	331.0	1.5536
Heart Disease	I00-I09, I11, I13, I20-I51	390-398, 402, 404, 410[--4]29	0.9858
Stroke (Cerebrovascular disease)	I60-I69	430[--4]34, 436[--4]38	1.0588
Influenza and pneumonia	J10-J18	480[--4]87	0.6982
Chronic lower respiratory diseases	J40-J47	490[--4]94,496	1.0478
Chronic liver disease and cirrhosis	K70, K73-K74	571	1.0367
Nephritis	N00-N07, N17-N19, N25-N27	580-589	1.2320
Congenital malformations, deformations, and chromosomal abnormalities	Q00-Q99	740-759	0.8470
Certain conditions originating in the perinatal period (Perinatal Conditions)	P00-P96	760-771.2, 771.4-779	1.0658
External causes of injuries and poisonings (intentional, unintentional and of undetermined intent)	V01-Y89	E800-E999	NA
Accidents (Unintentional Injuries)	V01-X59, Y85-Y86	E800-E869, E880-E929	1.0305
Motor Vehicle-related injuries	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2	E810-E825	0.9754[3]
Non-transport injuries	W00-X59, Y86	E850-E869, E880-E928, E929.2-E929.9	1.0763
Suicide	X60-X84, Y87.0	E950-E959	0.9962
Homicide	X85-Y09, Y87.1	E960-E969	0.9983
Injuries of undetermined intent	Y10-Y34,Y87.2,Y89.9	E980-E989	*

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

Note. Please refer to Appendix for an example of how to apply comparability ratios.

1. Comparability Modified number and rate based on preliminary comparability ratios (CR) from NCHS based on 1996 data (February 2001). 2. Comparability Modified number and rate based on preliminary comparability ratios (CR) from NCHS based on 1998 data (revised June 2001). 3. This is the revised comparability ratio for motor vehicle-related injuries, effective May 2001.

Table A5. Preliminary Comparability Ratios: Causes of Infant Death

Cause of Death	ICD-10 Code	ICD-9 Code (most similar title)	Comparability Ratio
Certain infectious and parasitic diseases	A00-B99	001-033, 034.1-134, 136-139, 771.3	0.7339
Septicemia	A40-A41	038	1.3802
Human Immunodeficiency Virus (HIV) disease	B20-B24	042-044	1.0455
Cancer (Malignant Neoplasms)	C00-C97	140-208	1.0435
Influenza and pneumonia	J10-J18	480–487	0.7624
Certain conditions originating in the perinatal period (Perinatal Conditions)	P00-P96	760-771.2, 771.4-779	1.0581
Newborn affected by maternal complications of pregnancy	P01	761	1.0295
Newborn affected by complications of placenta, cord and membranes	P02	762	1.0470
Disorders relating to short gestation and low birthweight	P07	765	1.1060
Intrauterine hypoxia and birth asphyxia	P20-P21	768	1.4477
Respiratory distress of newborn	P22	769	1.0257
Other respiratory conditions originating in perinatal period	P23-P28	770	0.8455
Infections specific to the perinatal period	P35-P39	771.0-771.2, 771.4-771.8	1.0199
Neonatal hemorrhage	P50-P52, P54	772	1.4369
Congenital malformations, deformations, and chromosomal abnormalities	Q00-Q99	740-759	0.9064
Anencephaly and similar malformations	Q00	740	1.0000
Congenital malformations of heart	Q20-Q24	745-746	0.9951
Congenital malformations of respiratory system	Q30-Q34	748	0.6322
Congenital malformations of digestive system	Q35-Q45	749-751	*
Congenital malformations of genitourinary system	Q50-Q64	752-753	0.9432
Congenital malformations of musculoskeletal system	Q65-Q85	754-757	0.8650
Sudden Infant Death Syndrome (SIDS)	R95	798.0	1.0362
External causes of injuries and poisonings (intentional, unintentional and of undetermined intent)	V01-Y89	E800-E999	NA
Accidents (Unintentional Injuries)	V01-X59	E800-E869, E880-E929	1.0246
Motor Vehicle-related injuries	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2	E810-E825	0.9167
Homicide	X85-Y09	E960-E969	0.9481
Injuries of undetermined intent	Y10-Y34,Y87.2,Y89.9	E980-E989	*

Source: National Center for Health Statistics, Preliminary Comparability Study. February 2001. NA: not available *: not reliable
Note: Please refer to Appendix for an example of how to apply comparability ratios.

Table A6. Causes of Death Considered Amenable to Health Care

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

Note: Amenable Causes are from E. Nolte and M. McKee, *Does Healthcare Save Lives*? *Avoidable Mortality Revisited* (London: Nuffield Trust, 2004). Available at http://content.healthaffairs.org/cgi/data/27/1/58/DC1/1. Accessed 7/15/2010

Table A7. Population Estimates for Massachusetts Community Health Network Areas (CHNA) and Counties: 2010 and 2015

CHNA	POPULATION[1]	COUNTY	POPULATION[2]
1. Community Health Network of Berkshire County	131,219	Barnstable	187,244
2. Upper Valley Health Web (Franklin County)	87,130	Berkshire	115,452
3. Partnership for Health in Hampshire County (Northampton)	155,900	Bristol	517,911
4. The Community Health Connection (Springfield)	296,850	Dukes	15,993
5. Community Health Network of Southern Worcester County	119,539	Essex	722,041
6. Community Partners for Health (Milford)	166,824	Franklin	65,497
7. Community Health Network of Greater Metro West (Framingham)	388,909	Hampden	438,203
8. Common Pathways (Worcester)	309,013	Hampshire	151,209
9. Community Health Network of North Central Massachusetts	262,652	Middlesex	1,484,714
10. Greater Lowell Community Health Network	275,404	Nantucket	10,293
11. Greater Lawrence Community Health Network	194,172	Norfolk	644,949
12. Greater Haverhill Community Health Network	148,563	Plymouth	475,758
13. Community Health Network North (Beverly/Gloucester)	115,782	Suffolk	740,432
14. North Shore Community Health Network	284,642	Worcester	768,104
15. Northwest Suburban Health Alliance	215,757		
16. North Suburban Health Alliance (Medford/Malden/Melrose)	270,281	**STATE**	**6,337,800**
17. Greater Cambridge/Somerville Community Health Network	280,404		
18. West Suburban Health Network (Newton/Waltham)	258,843		
19. Alliance for Community Health (Boston/Chelsea/Revere/Winthrop)	780,755		
20. Blue Hills Community Health Alliance (Greater Quincy)	377,279		
21. Community Health Network of Chicopee, Holyoke, Ludlow, Westfield	160,892		
22. Greater Brockton Community Health Network	236,778		
23. South Shore Community Health Network (Plymouth)	190,549		
24. Greater Attleboro-Taunton Health & Education Response	256,322		
25. Partners for Healthier Communities (Fall River)	138,419		
26. Greater New Bedford Community Health Network	202,156		
27. Cape Cod and Islands Health Network	242,595		

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

2. National Center for Health Statistics. Postcensal estimates of the resident population of the United States for April 1, 2010-July 1, 2015, by year, county, single-year of age (0, 1, 2, .., 85 years and over), bridged race, Hispanic origin, and sex (Vintage 2015). Prepared under a collaborative arrangement with the U.S. Census Bureau. Available from: http://www.cdc.gov/nchs/nvss/bridged_race.htm as of September 28, 2016.

Table A8. Population Estimates for Massachusetts Communities, 2010

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

Table A8 (continued). Population Estimates for Massachusetts Communities, 2010

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

Table A8 (continued). Population Estimates for Massachusetts Communities, 2010

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

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

Table A9. 2015 Massachusetts Population Estimates[1] By Age Group, Gender, Race and Hispanic Ethnicity (mutually exclusive)

AGE	GENDER	TOTAL	WHITE Non-Hispanic[2]	BLACK Non-Hispanic[2]	ASIAN Non-Hispanic[2]	HISPANIC[2]
Under 1	Male	37,416	23,502	3,283	2,764	7,784
	Female	35,684	22,385	3,124	2,627	7,470
	Total	73,100	45,887	6,407	5,391	15,254
1 TO 4	Male	150,056	93,411	15,475	11,452	29,351
	Female	143,406	89,144	14,419	11,331	28,151
	Total	293,462	182,555	29,894	22,783	57,502
5 TO 14	Male	392,819	261,272	36,697	27,975	65,882
	Female	377,158	249,571	34,820	27,933	63,881
	Total	769,977	510,843	71,517	55,908	129,763
15 TO 24	Male	477,375	326,188	42,810	35,122	72,003
	Female	474,198	324,773	42,269	38,104	67,873
	Total	951,573	650,961	85,079	73,226	139,876
25 TO 34	Male	470,250	320,036	38,672	42,615	67,780
	Female	473,598	322,095	38,920	47,846	63,671
	Total	943,848	642,131	77,592	90,461	131,451
35 TO 44	Male	407,931	286,376	31,863	35,907	52,964
	Female	426,162	295,826	34,319	40,211	54,939
	Total	834,093	582,202	66,182	76,118	107,903
45 TO 54	Male	476,080	375,667	31,652	27,859	39,750
	Female	502,222	392,231	34,514	30,191	44,105
	Total	978,302	767,898	66,166	58,050	83,855
55 TO 64	Male	434,675	366,474	24,316	18,680	24,237
	Female	470,170	392,013	27,693	21,386	27,983
	Total	904,845	758,487	52,009	40,066	52,220
65 TO 74	Male	272,511	238,247	11,939	10,364	11,433
	Female	316,089	272,879	15,722	12,006	14,958
	Total	588,600	511,126	27,661	22,370	26,391
75 TO 84	Male	125,317	110,752	4,967	5,002	4,346
	Female	172,747	151,780	8,175	5,891	6,632
	Total	298,064	262,532	13,142	10,893	10,978
85 +	Male	51,688	47,100	1,560	1,523	1,407
	Female	106,870	98,226	3670	2,251	2,594
	Total	158,558	145,326	5,230	3,774	4,001
ALL AGES	**Male**	**3,296,118**	**2,449,025**	**243,234**	**219,263**	**376,937**
	Female	**3,498,304**	**2,610,923**	**257,645**	**239,777**	**382,257**
	Total	**6,794,422**	**5,059,948**	**500,879**	**459,040**	**759,194**

1. National Center for Health Statistics. Postcensal estimates of the resident population of the United States for April 1, 2010-July 1, 2015, by year, county, single-year of age (0, 1, 2, .., 85 years and over), bridged race, Hispanic origin, and sex (Vintage 2015). Prepared under a collaborative arrangement with the U.S. Census Bureau. Available from: http://www.cdc.gov/nchs/nvss/bridged_race.htm as of September 28, 2016.
2. Persons of Hispanic ethnicity are NOT included in the race categories. These estimates are used to calculate population based rates published in this report.

Massachusetts Death Certificate: 2015

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 *Ag* *Se*

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.

Massachusetts Deaths: 2015 Evaluation Form

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

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

Please return your comments to:

Massachusetts Department of Public Health
Registry of Vital Records and Statistics
150 Mt. Vernon Street 1st Floor
Dorchester, MA 02125