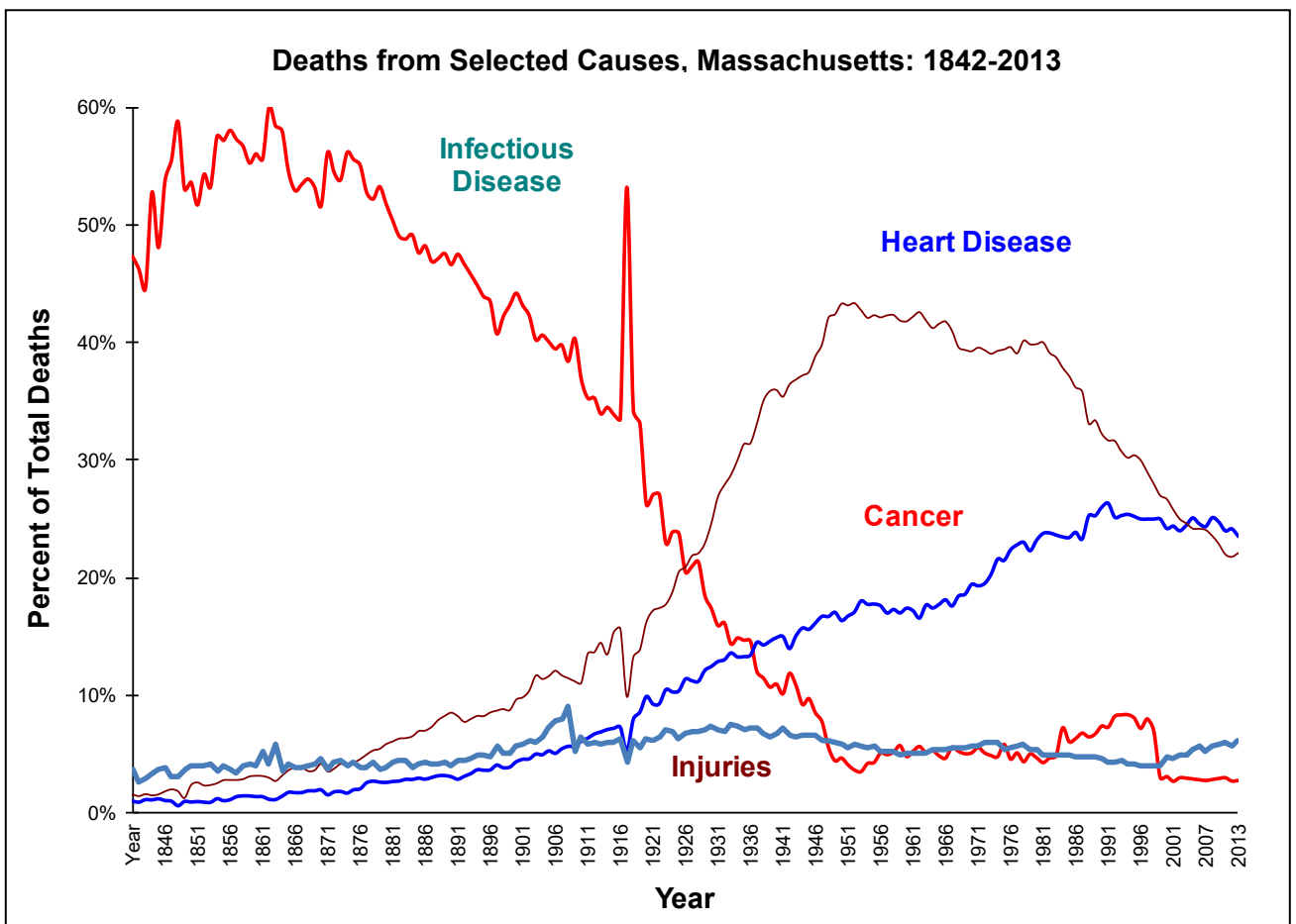

Massachusetts Deaths 2013: Data Supplement



Office of Data Management and Outcomes Assessment

Massachusetts Department of Public Health

August 2015

Massachusetts Deaths 2013: Data Supplement



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

Tom Land, Director
Office of Data Management and Outcomes Assessment
Antonio Sousa, Registrar
Registry of Vital Records and Statistics

Massachusetts Department of Public Health

August 2015

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To obtain additional copies of this report, contact:

Massachusetts Department of Public Health
Office of Data Management and Outcomes Assessment
250 Washington Street, 6th floor
Boston, MA 02108

or

Massachusetts Department of Public Health
Registry of Vital Records and Statistics
150 Mt. Vernon Street 1st Floor
Dorchester, MA 02125
(617) 740-2670

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

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

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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 2013 (Annual Report Vital Statistics of Massachusetts-Deaths, Public Document #1 2013). Public Document #1 information on 2013 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 this year, the department is closing our annual file later than the file sent to the NCHS to get more complete reporting of events. While cause of death information will be more complete due to this change, it may also cause the appearance of an increase in the number of deaths when compared to previous years.. Thus, comparisons between years should be interpreted with caution. This caution should be applied especially for causes of death that are often referred to the Office of the Chief Medical Examiner for determination of underlying causes of death. See Figure 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. **Population Sources.** Two sources of population estimates were used to calculate population-based rates in *Massachusetts Deaths 2013*:
 - a. State and County Death Rates: We used the 2013 Modified Age, Race/Ethnicity, and Sex (MARS) estimates, from the National Center for Health Statistics. Postcensal estimates of the resident population of the United States for July 1, 2010- July 1, 2013, by year, county, single-year of age (0, 1, 2, .., 85 years and over), bridged race, Hispanic origin, and sex (Vintage 2011). Prepared under a collaborative arrangement with the U.S. Census Bureau. Available from: http://www.cdc.gov/nchs/nvss/bridged_race.htm as of June 26, 2014.
 - 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>).
3. **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 2013. Boston, MA: Office of Data Management and Outcomes Assessment, Massachusetts Department of Public Health. July 2015.

Table 1. Trends in Mortality Characteristics, Massachusetts: 2003-2013

Year		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Resident deaths¹	Number	56,194	54,419	53,776	53,293	52,690	53,341	51,915	52,420	53,536	53,169	54,609
	Crude rate ^{2,3,4}	875.2	848.1	840.4	827.9	816.9	820.9	787.4	800.6	812.7	807.1	815.9
	Age-adjusted rate ⁵	772.6	739.3	720.6	717.6	704.4	703.5	675.1	672.7	674.0	669.2	664.1
Race/ethnicity of decedent^{6,7}												
White non-Hispanic	Number	52,050	50,439	49,639	49,132	48,518	49,059	47,520	48,010	48,844	48,430	49,486
	Percent ⁸	92.6	92.7	92.3	92.2	92.1	92.0	91.5	91.6	91.2	91.1	90.6
	Age-adjusted rate	775.2	744.7	725.0	723.3	711.1	710.7	682.8	684.4	686.9	681.0	680.9
Black non-Hispanic	Number	2,378	2,225	2,263	2,233	2,211	2,222	2,288	2,278	2,333	2,318	2,446
	Percent ⁸	4.2	4.1	4.2	4.2	4.2	4.2	4.4	4.3	4.4	4.4	4.5
	Age-adjusted rate	949.1	866.2	865.8	838.4	820.5	805.8	812.2	702.6	707.6	701.8	675.5
Asian non-Hispanic	Number	579	531	570	635	610	692	697	759	806	811	816
	Percent ⁸	1.0	1.0	1.1	1.2	1.2	1.3	1.3	1.4	1.5	1.5	1.5
	Age-adjusted rate	411.9	353.7	345.0	379.0	342.0	372.5	353.1	364.8	375.2	372.4	320.5
Hispanic	Number	1,121	1,115	1,230	1,194	1,264	1,275	1,337	1,308	1,477	1,487	1,548
	Percent ⁸	2.0	2.1	2.3	2.2	2.4	2.4	2.6	2.5	2.8	2.8	2.8
	Age-adjusted rate	520.6	482.1	500.4	479.9	477.7	458.2	439.8	443.9	468.9	484.9	444.9
Gender of decedent⁷												
Female	Number	30,053	29,067	28,695	28,508	27,851	28,246	27,356	27,368	27,983	27,883	28,558
	Age-adjusted rate	659.3	632.3	617.8	612.7	596.3	595.9	572.8	567.2	572.8	571.1	569.5
Male	Number	26,141	25,352	25,079	24,785	24,838	25,095	24,557	25,051	25,553	25,280	26,051
	Age-adjusted rate	923.3	878.0	852.5	858.9	853.3	852.2	822.1	811.9	808.5	797.9	786.5
Age of decedent⁷												
<1 year	Number	383	376	391	369	380	381	366	319	310	309	298
1-14 years	Number	149	137	113	124	128	119	118	113	114	99	118
15-24 years	Number	490	517	489	471	505	421	440	453	471	419	449
25-44 years	Number	2,484	2,247	2,173	1,953	2,023	1,906	1,974	1,823	1,870	1,880	1,993
45-64 years	Number	8,476	8,347	8,355	8,660	8,560	8,426	8,688	8,753	8,808	8,791	9,013
65-74 years	Number	8,611	8,126	7,905	7,572	7,494	7,425	7,380	7,423	7,616	7,891	8,259
75-84 years	Number	16,973	16,342	15,632	15,333	14,781	14,970	13,943	13,639	13,598	13,272	13,182
85+ years	Number	18,627	18,327	18,718	18,811	18,816	19,692	19,004	19,888	20,747	20,506	21,296

1. Deaths presented in all tables and figures are resident deaths. 2. Deaths per 100,000 residents. 3. See Glossary for further definition of terms and rates. 4. Rate calculations are based on resident population estimates. 5. Rates are age-adjusted per 100,000 residents using the 2000 US standard population. 6. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see the Technical Notes in the Appendix for a more detailed explanation. 7. Column sum may not equal total because the race, gender or age of some decedents was unknown. 8. Percent of all resident deaths in that year.

Table 2. Selected Leading Causes of Death, Age-Adjusted Rates, Massachusetts and United States: 2000-2013

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

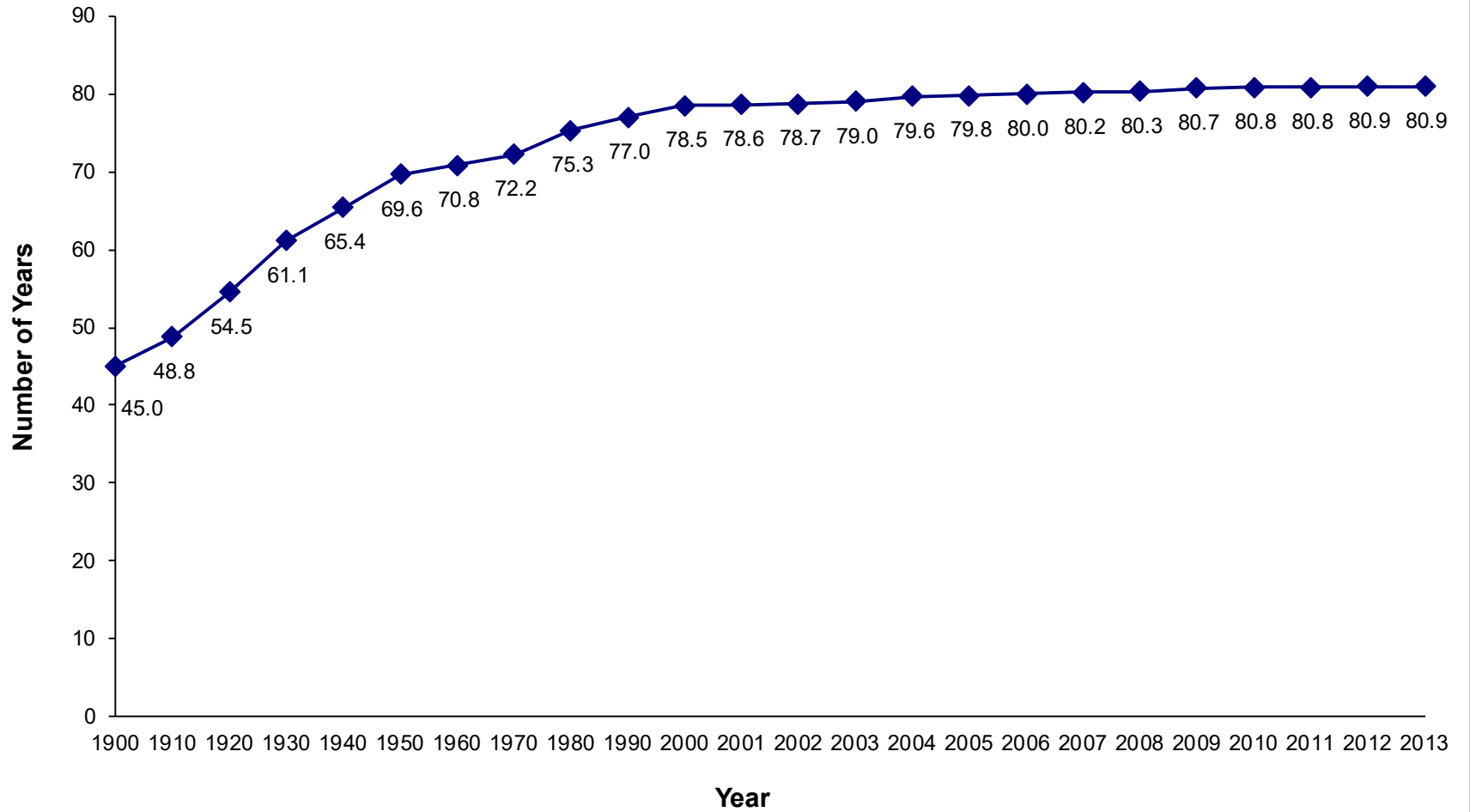
Note: Cause of death: the disease or injury that initiated the events leading to death; or the circumstances of the unintentional or intentional injury that resulted in the death.
 1. Data coded according to ICD-10. ICD-9 and ICD-10 codes used in this publication are listed in the Appendix. Rates are age-adjusted per 100,000 residents using the 2000 US standard population. 2. US data for 2013 obtained from NCHS: Final Data for 2013. NCHS, 2015, Volume 64, Number 2.

**Table 2 (continued). Selected Leading Causes of Death, Age-Adjusted Rates,
Massachusetts and United States: 2000-2013**

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		

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-9 and 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. 2. US data for 2013 obtained from NCHS: Final Data for 2013. NCHS, 2015, Volume 64, Number 2.

Figure 1. Life Expectancy at Birth, Massachusetts: 1900-2013



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: 2013

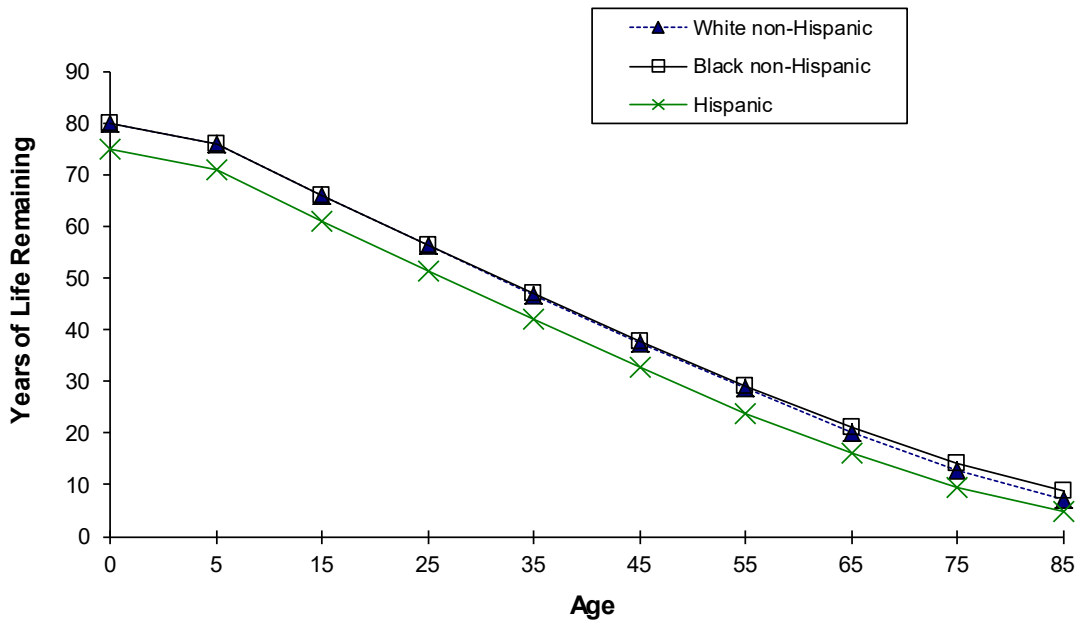
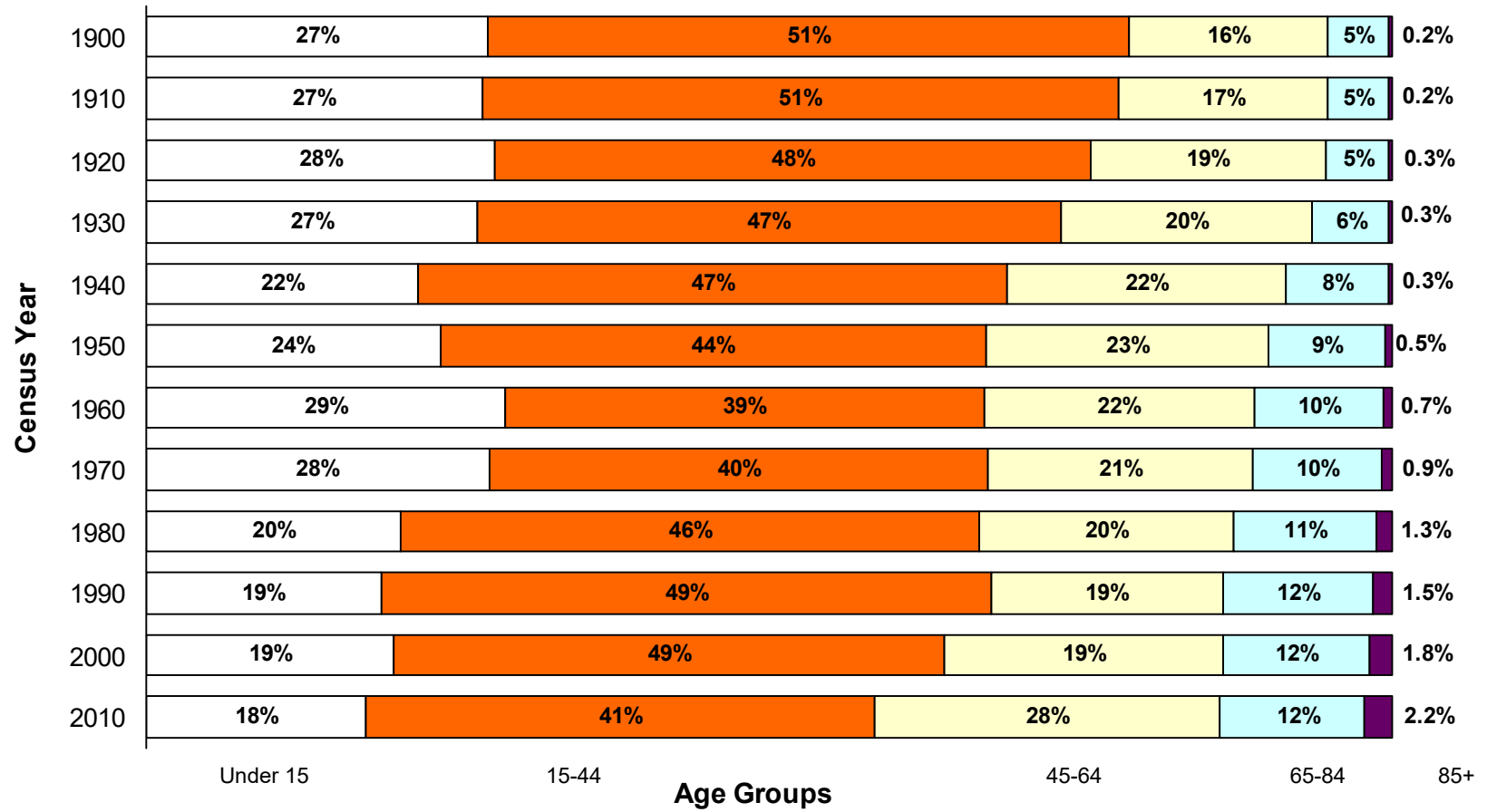


Table 3. Years of Life Remaining¹ by Race² and Hispanic Ethnicity and Gender, Massachusetts: 2013

At Age:	All	Females	White non-Hispanic Females	Black non-Hispanic Females	Hispanic Females	Males	White non-Hispanic Males	Black non-Hispanic Males	Hispanic Males ²
Birth	80.9	83.1	82.7	83.0	90.7	78.8	78.5	76.6	83.7
1 year old	80.3	82.4	82.0	82.6	90.1	78.1	77.7	76.7	83.0
5 years old	76.3	78.5	78.1	78.6	86.2	74.1	73.7	72.8	79.1
15 years old	66.4	68.6	68.2	68.8	76.2	64.1	63.8	62.9	69.2
25 years old	56.7	58.7	58.3	59.0	66.3	54.6	54.3	53.6	59.6
35 years old	47.2	49.0	48.6	49.3	56.6	45.1	44.9	44.4	50.1
45 years old	37.8	39.4	39.1	39.9	46.9	35.9	35.7	35.2	40.8
55 years old	28.8	30.2	30.0	30.8	37.7	27.1	26.9	26.7	32.2
65 years old	20.4	21.5	21.3	22.4	28.9	19.1	18.8	19.5	24.1
75 years old	12.9	13.7	13.4	14.9	20.8	11.8	11.7	12.8	17.1
85 years old	7.3	7.7	7.6	9.3	16.1	6.6	6.4	8.1	12.6

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 2011 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: 1842-2013

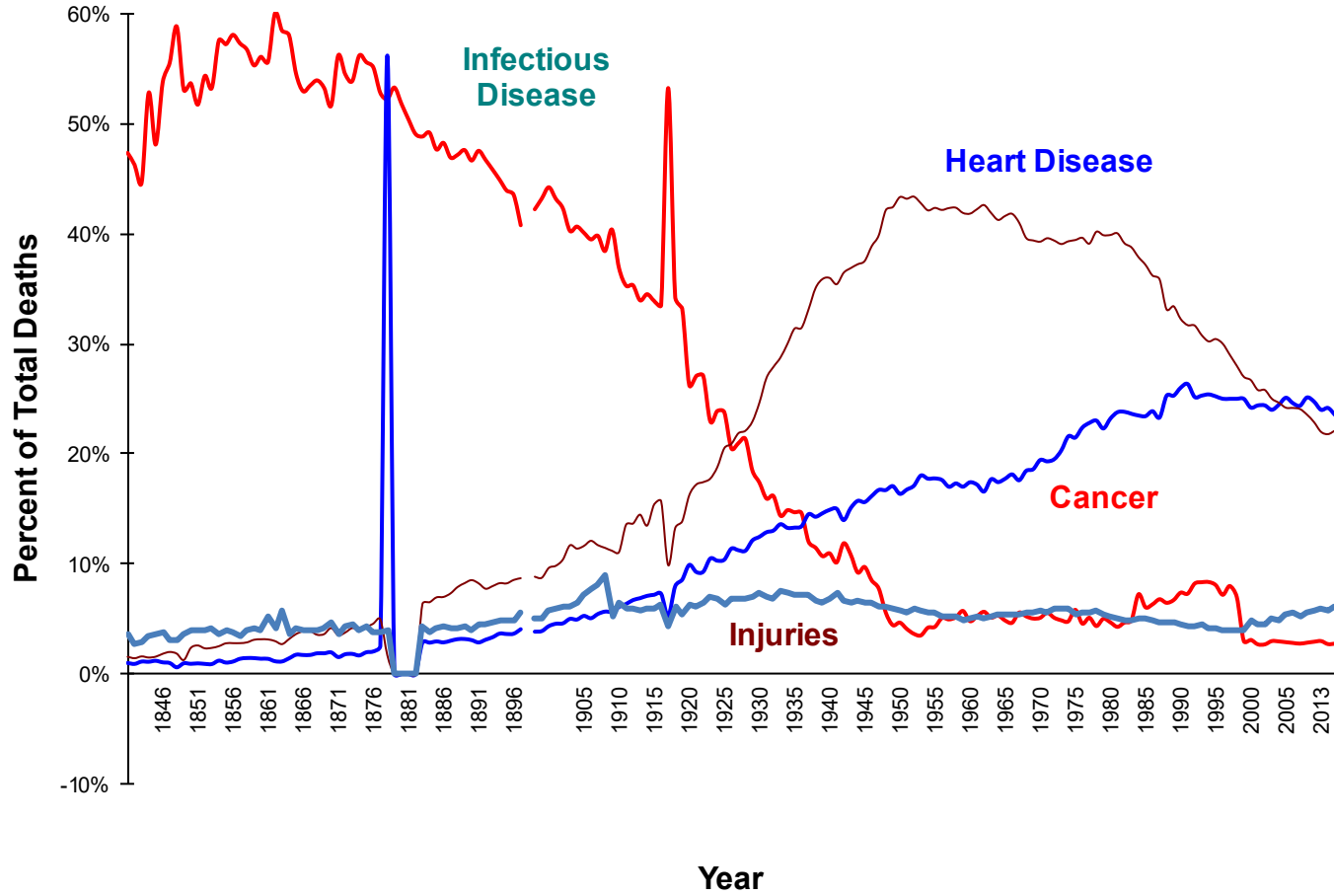
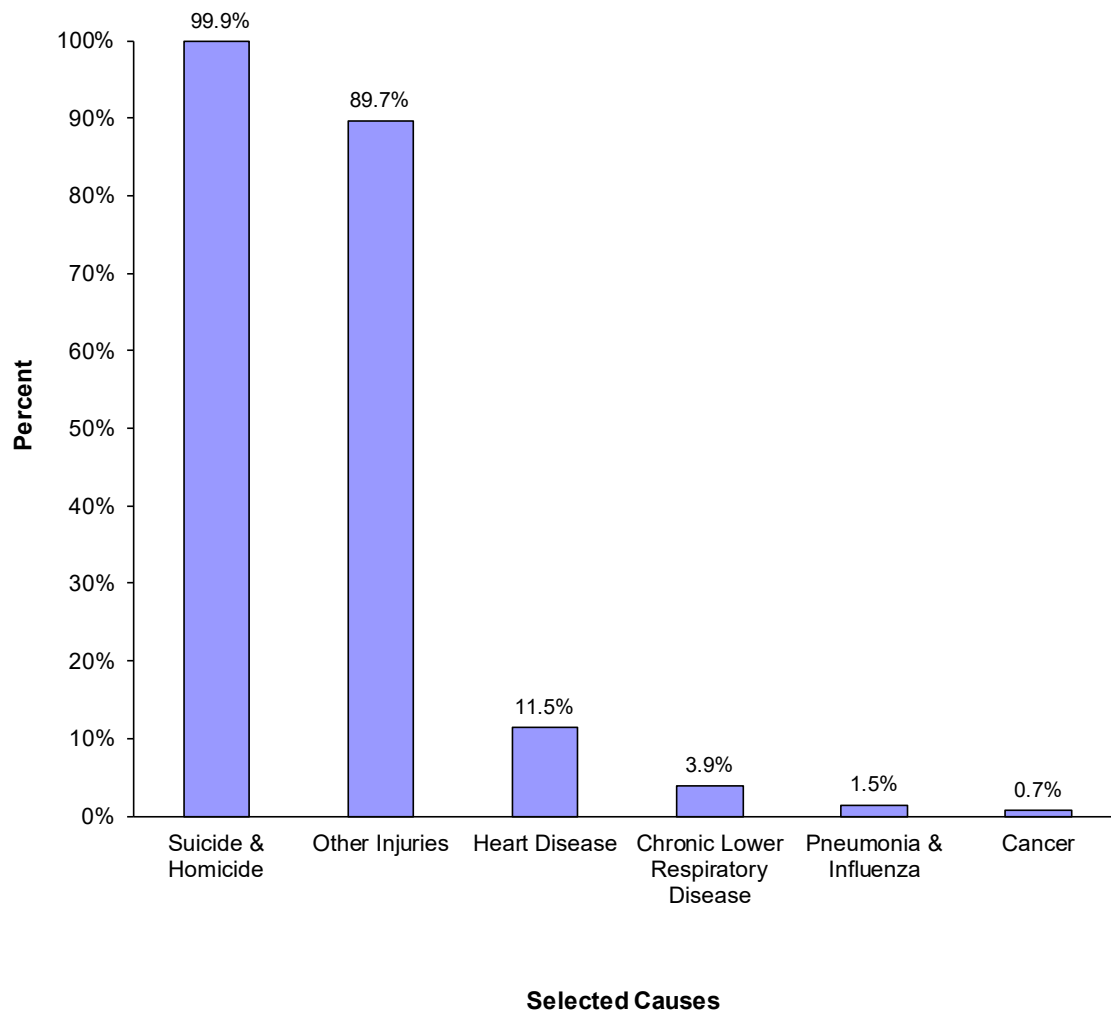


Table 4. Distribution of Deaths by Place of Occurrence, Massachusetts: 2009-2013

Type of Place where Death Occurred	2009		2010		2011		2012		2013	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Hospital (inpatient/outpatient)	21,197	41%	20,668	39%	20,511	38%	19,963	38%	20,277	37%
Dead on Arrival	504	1%	454	1%	525	1%	623	1%	617	1%
Nursing Home	15,185	29%	15,261	29%	15,870	30%	15,377	29%	15,652	29%
At Home	12,940	25%	13,481	26%	13,986	26%	14,553	27%	15,117*	28%
Other	2,060	4%	2,545	5%	2,638	5%	2,624	5%	2,842	5%
Unknown	29	0.1%	11	0.02%	6	0.01%	29	0.05%	104	0.19%

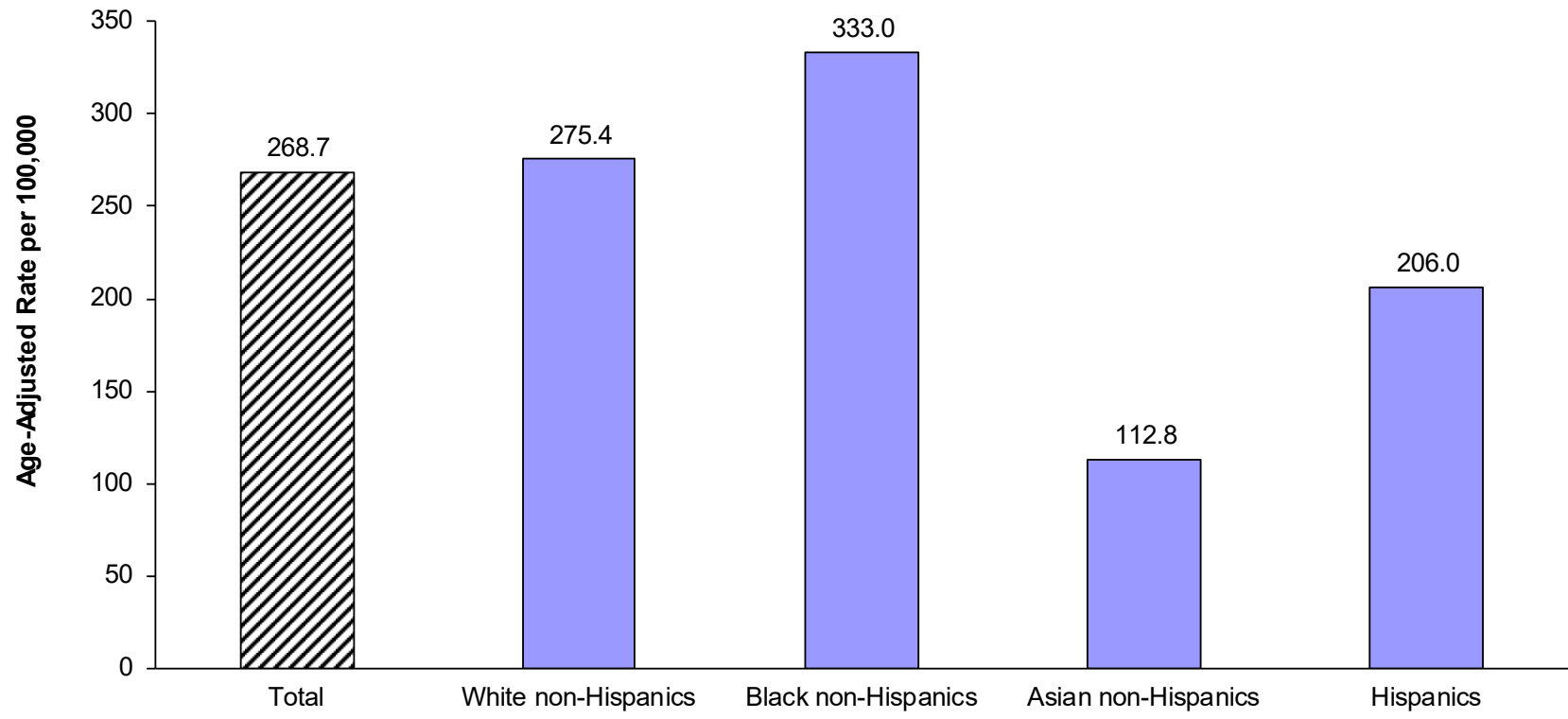
Note: * Statistically higher number than 2012

Figure 5. Proportion of Deaths Certified by Medical Examiner for Selected Causes of Death, Massachusetts: 2013



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.

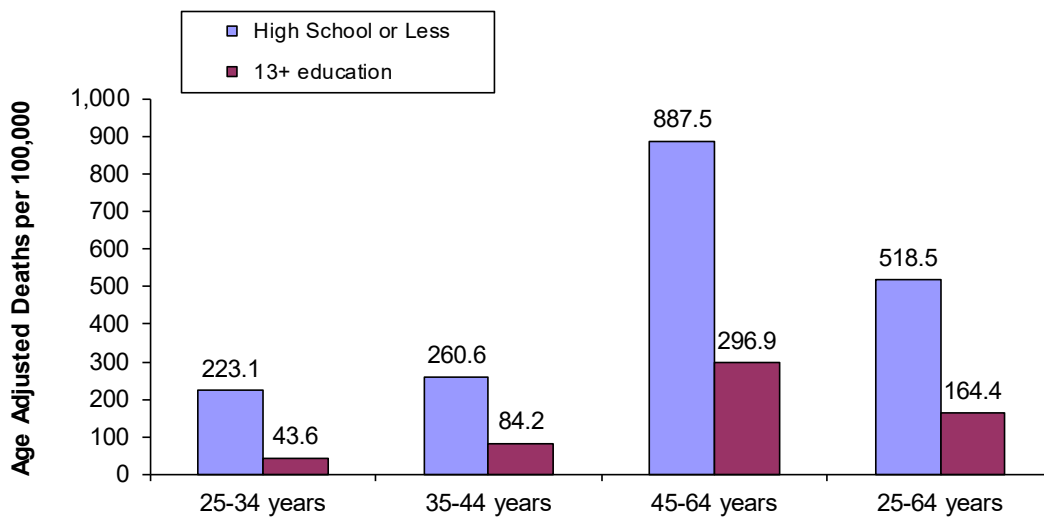
Figure 6. Premature Mortality Rate (PMR) by Race and Hispanic Ethnicity, Massachusetts: 2013



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: 2013

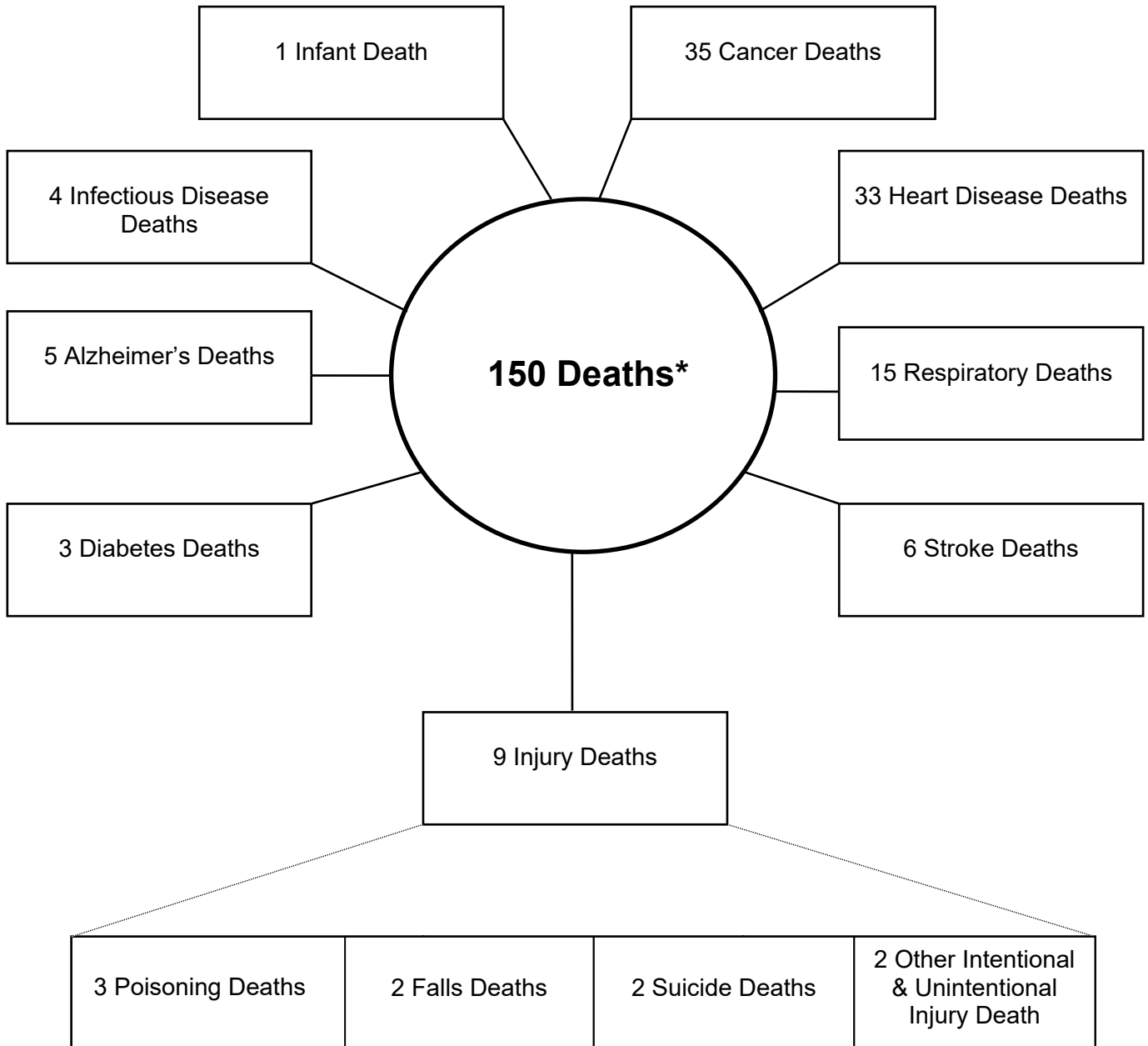
	<u>Age-Specific Rates</u>			<u>Age-Adjusted Rates</u>
	25-34 years	35-44 years	45-64 years	25-64 years
Years of School Completed				
High school or less	223.1	260.6	887.5	518.5
13+ Education	43.6	84.2	296.9	164.4



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: 2013

Every day in 2013, in Massachusetts there were on average:



*includes 39 deaths due to other causes.

Table 6. Top Ten Leading Underlying Causes of Death by Age, Massachusetts: 2013

Rank ¹	Age Groups (number of deaths)								
	<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 LBW (77)	Unintentional Injuries (21)	Unintentional Injuries (197)	Unintentional Injuries (667)	Cancer (3,175)	Cancer (3,132)	Cancer (3,437)	Heart Disease (5,837)	Cancer (12,851)
2	Congenital Malformations (54)	Cancer (16)	Suicide (80)	Cancer (319)	Heart Disease (1,623)	Heart Disease (1,633)	Heart Disease (2,801)	Cancer (2,747)	Heart Disease (12,077)
3	Pregnancy Complications (31)	Ill-Defined Conditions-Signs and Symptoms (11)	Homicide (45)	Suicide (202)	Unintentional Injuries (695)	Chronic Lower Respiratory Disease (503)	Chronic Lower Respiratory Disease (873)	Stroke (1,244)	Chronic Lower Respiratory Disease (2,575)
4	SIDS (15)	Congenital Malformations (9)	Cancer (22)	Heart Disease (169)	Chronic Liver dDisease (312)	Stroke (271)	Stroke (626)	Alzheimer's Disease (1,147)	Unintentional Injuries (2,485)
5	Complications of Placenta (9)	Suicide (6)	Ill-Defined Conditions-Signs and Symptoms (16)	Ill-Defined Conditions-Signs and Symptoms (83)	Chronic Lower Respiratory Disease (293)	Diabetes (233)	Alzheimer's Disease (442)	Chronic Lower Respiratory Disease (882)	Stroke (2,355)
6	Respiratory Distress (7)	Heart Disease (4)	Heart Disease (9)	Homicide (65)	Diabetes (258)	Nephritis (177)	Nephritis (377)	Influenza & Pneumonia (879)	Alzheimer's Disease (1698)
7	Neonatal Hemorrhage (6)	Stroke (4)	Congenital Malformations (7)	Chronic Liver Disease (38)	Suicide (227)	Unintentional Injuries (168)	Influenza & Pneumonia (364)	Nephritis (582)	Influenza & Pneumonia (1,551)
8	Homicide (6)	Septicemia (3)	Influenza & Pneumonia (5)	Diabetes (28)	Stroke (185)	Influenza & Pneumonia (158)	Diabetes (322)	Unintentional Injuries (454)	Nephritis (1,263)
9	Intrauterine Hypoxia (4)	Other Infections (3)	Chronic Lower Respiratory Disease (5)	Injuries of Undetermined Intent (28)	Ill-Defined Conditions-Signs and Symptoms (158)	Septicemia (151)	Unintentional Injuries (281)	Ill-Defined Conditions-Signs and Symptoms (431)	Diabetes (1,149)
10	Bacterial Sepsis of Newborn (4)	Influenza & Pneumonia (3)	legal Intervention (5)	Stroke (22)	Septicemia (131)	Chronic Liver Disease (134)	Septicemia (234)	Septicemia (316)	Ill-Defined Conditions-Signs and Symptoms (958)
All Causes	298	118	449	1,993	9,013	8,259	13,182	21,296	54,609

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

Note: 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).

Table 7. Leading Underlying Causes of Death, Numbers and Age-Specific Rates by Gender, Massachusetts: 2013

Age	Cause of Death ¹	<u>Total</u>		<u>Female</u>		<u>Male</u>	
		Number	Rate ²	Number	Rate ²	Number	Rate ²
1-14 years	TOTAL	118	11.0	59	11.3	59	10.8
	Unintentional Injuries	21	2.0	9	1.7	12	2.2
	Cancer	16	1.5	8	1.5	8	1.5
	Ill Defined Conditions	11	1.0	6	1.1	5	0.9
	Congenital Malformations	9	0.8	3	-- ⁵	6	1.1
15-24 years	TOTAL	449	48	111	23.7	338	71.5
	Unintentional Injuries	197	20.9	44	9.4	153	32.4
	Suicide	80	8.5	22	4.7	58	12.3
	Homicide	45	4.8	5	1.1	40	8.5
	Cancer	22	2.3	8	1.7	14	3.0
25-44 years	TOTAL	1,993	113.5	695	78.0	1,298	150.1
	Unintentional Injuries	667	38	195	21.9	472	54.6
	Cancer	319	18.2	165	18.5	154	17.8
	Suicide	202	11.5	51	5.7	151	17.5
	Heart Disease	169	9.6	45	5.1	124	14.3
45-64 years	TOTAL	9,013	483.8	3,470	360.8	5,543	615.0
	Cancer	3,175	170.4	1,471	152.9	1,704	189.1
	Heart Disease	1,623	87.1	427	44.4	1,196	132.7
	Unintentional Injuries	695	37.3	206	21.4	489	54.3
	Chronic Liver Disease	312	16.7	107	11.1	205	22.7
65+ years³	TOTAL	42,737	4319.9	24,082	4,239.7	18,655	4,427.9
	Heart Disease	10,271	1038.2	5,477	964.2	4,794	1,137.9
	Cancer	9,316	941.7	4,737	834.0	4,579	1,086.9
	Chronic Lower Respiratory Disease	2,258	228.2	1,320	232.4	938	222.6
	Stroke	2,141	216.4	1,407	247.7	734	174.2

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. 5. 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: 2013

Age	Cause of Death ¹	Total		Female		Male	
		Number	Rate ²	Number	Rate ²	Number	Rate ²
65-74	TOTAL	8,259	1,536.7	3,638	1,258.3	4,621	1,860.8
	Cancer	3,132	582.7	1,505	520.5	1,627	655.2
	Heart Disease	1,633	303.8	570	197.1	1,063	428.0
	Chronic Lower Respiratory Disease	503	93.6	259	89.6	244	98.3
	Stroke	271	50.4	129	44.6	142	57.2
75-84	TOTAL	13,182	4,453.8	6,765	3,908.9	6,417	5,221.0
	Cancer	3,437	1,161.3	1,705	985.2	1,732	1,409.2
	Heart Disease	2,801	946.4	1,296	748.9	1,505	1,224.5
	Chronic Lower Respiratory Disease	873	295.0	502	290.1	371	301.9
	Stroke	626	211.5	367	212.1	259	210.7
85+	TOTAL	21,296	13,661.7	13,679	12,926.3	7,617	15,216.3
	Heart Disease	5,837	3744.5	3,611	3,412.3	2,226	4,446.8
	Cancer	2,747	1762.2	1,527	1,443.0	1,220	2,437.2
	Stroke	1,244	798	911	860.9	333	665.2
	Alzheimer's Disease	1,147	735.8	863	815.5	284	567.3

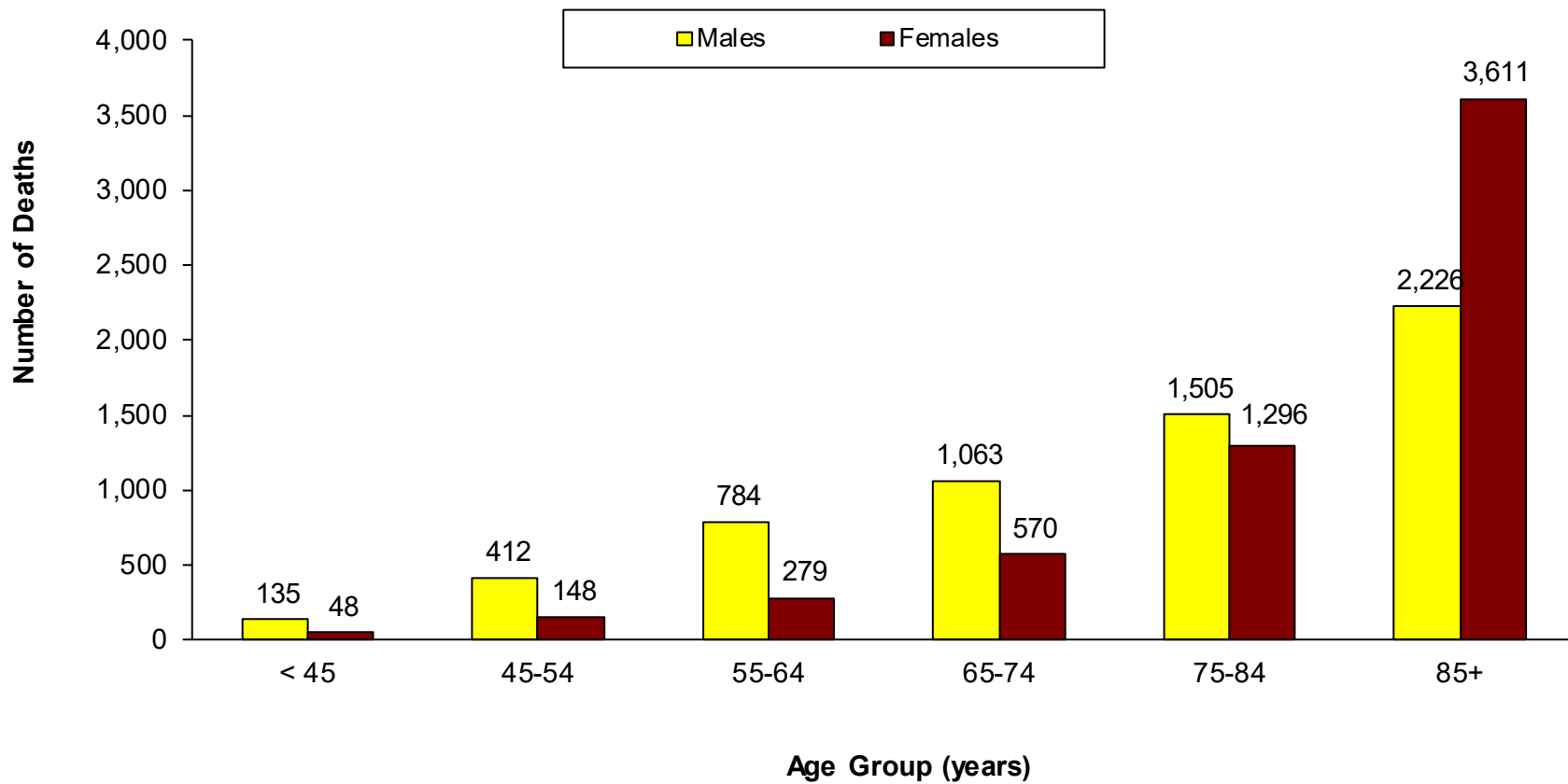
1. Cause of Death classified according to ICD-10 ranked based on number of deaths for all persons at specific age group. See Appendix for a list of-10 codes. 2. Number of deaths per 100,000 residents in each age group.

Table 9. Leading Causes of Death¹ and Age-Adjusted Death Rates by Race and Hispanic Ethnicity, Massachusetts: 2013

<u>White non-Hispanic²</u>			<u>Black non-Hispanic²</u>			<u>Asian non-Hispanic²</u>			<u>Hispanic²</u>		
<u>Cause³</u>	<u>#</u>	<u>Rate⁴</u>	<u>Cause³</u>	<u>#</u>	<u>Rate⁴</u>	<u>Cause³</u>	<u>#</u>	<u>Rate⁴</u>	<u>Cause³</u>	<u>#</u>	<u>Rate⁴</u>
Total	49,486	680.9	Total	2,446	675.5	Total	816	320.5	Total	1,548	444.9
Cancer	11,578	163.8	Cancer	603	166.3	Cancer	239	84.4	Cancer	355	105.1
Heart Disease	11,218	147.4	Heart Disease	456	128.3	Heart Disease	127	54.4	Heart Disease	210	67.7
Chronic Lower Respiratory Disease ⁵	2,431	33.5	Unintentional Injuries ⁶	134	29.9	Stroke	52	21.6	Unintentional Injuries ⁶	146	25.6
Unintentional Injuries ⁶	2,143	36.5	Diabetes	114	33.0	Unintentional Injuries ⁶	38	13.4	Stroke	60	21.2
Stroke	2,125	27.7	Stroke	103	31.3	Nephritis	28	12.3	Diabetes	58	19.2
Alzheimer's Disease	1,605	20.1	Nephritis	74	22.2	Influenza & Pneumonia	26	11.8	Chronic Lower Respiratory Disease ⁵	50	18.1
Influenza & Pneumonia	1,438	18.5	Chronic Lower Respiratory Disease ⁵	58	17.7	Chronic Lower Respiratory Disease ⁵	26	11.2	Nephritis	47	16.0
Nephritis	1,108	14.8	Ill-Defined Conditions-Signs and Symptoms	52	12.9	Diabetes	20	7.9	Influenza & Pneumonia	43	15.4
Diabetes	946	13.2	Homicide	52	10.0	Suicide	20	5.1	Homicide	39	4.6
Ill-Defined Conditions-Signs and Symptoms	830	11.8	Alzheimer's Disease	47	16.1	Septicemia	18	8.2	Suicide	33	4.5
<u>Total</u>											
			<u>Cause³</u>			<u>#</u>		<u>Rate⁴</u>			
			Total			54,609		664.1			
			Cancer			12,851		159.5			
			Heart Disease			12,077		142.2			
			Chronic Lower Respiratory Disease ⁵			2,575		31.8			
			Unintentional Injuries ⁶			2,485		33.9			
			Stroke			2,355		27.7			
			Alzheimer's Disease			1,698		19.4			
			Influenza & Pneumonia			1,551		18.0			
			Nephritis			1,263		15.2			
			Diabetes			1,149		14.2			
			Ill-Defined Conditions-Signs and Symptoms			958		11.8			

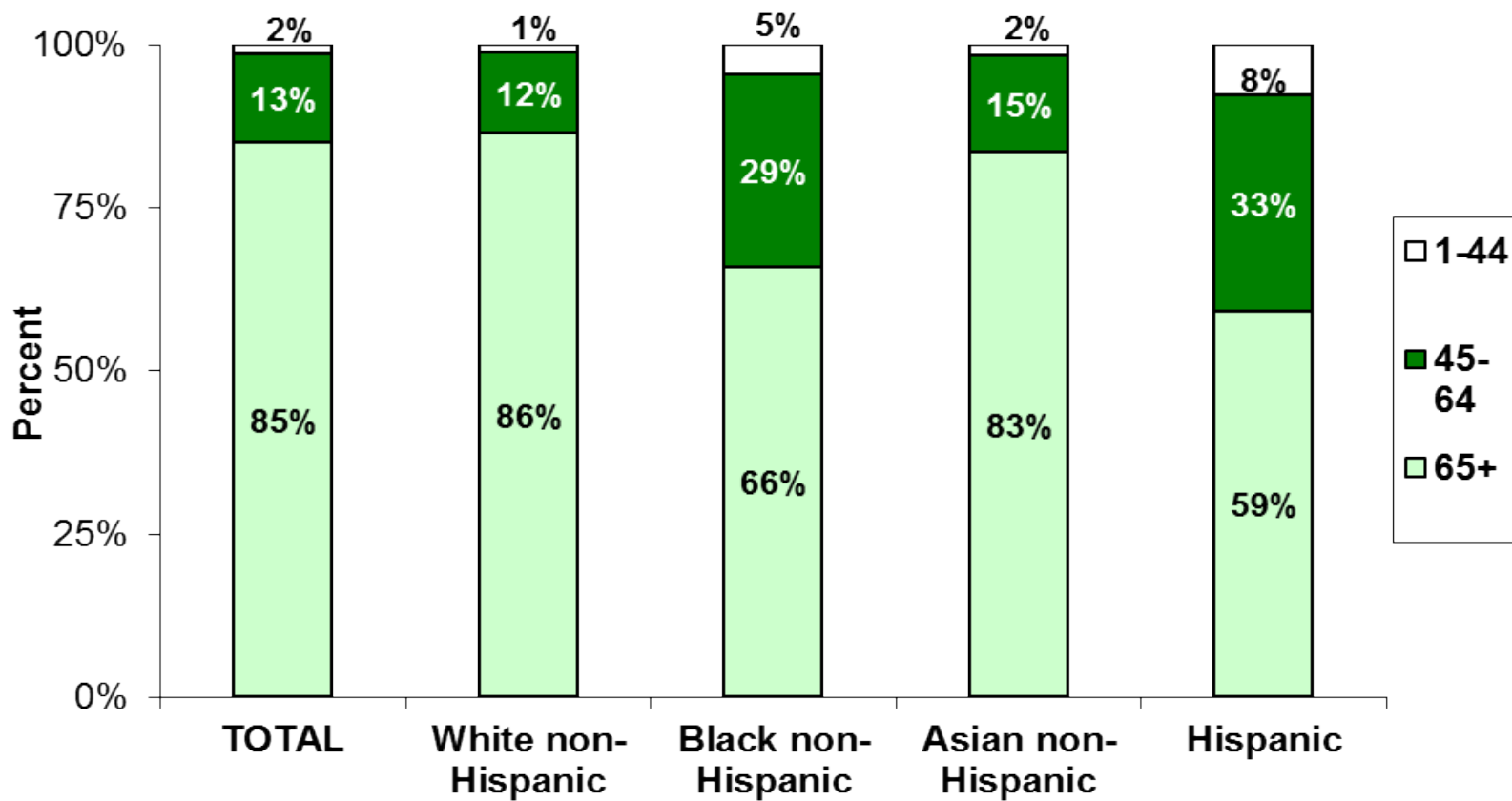
1. Ranking based on number of deaths. 2. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Technical Notes in the Appendix for a more detailed explanation. 3. Underlying Cause of Death based 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. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title). 6. Unintentional injuries such as motor vehicle-related and other transportation related deaths, falls, fires, and drownings that were not intended to occur.

Figure 8. Number of Heart Disease Deaths by Age Group and Gender, Massachusetts: 2013



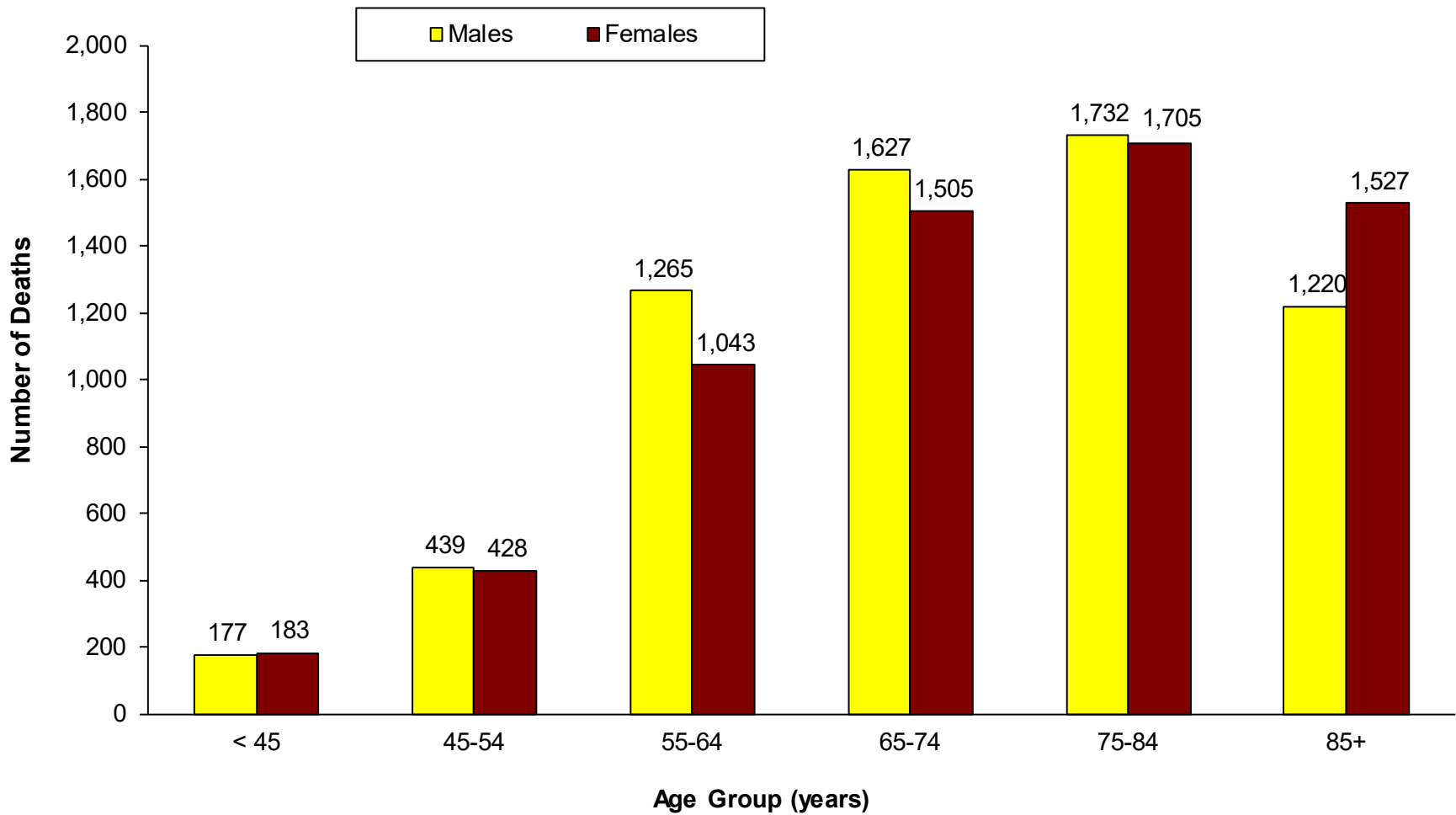
ICD-10: I00-I09, I11, I13, I20-I51

Figure 9. Age Distribution by Race and Ethnicity for Heart Disease Deaths, Massachusetts: 2013



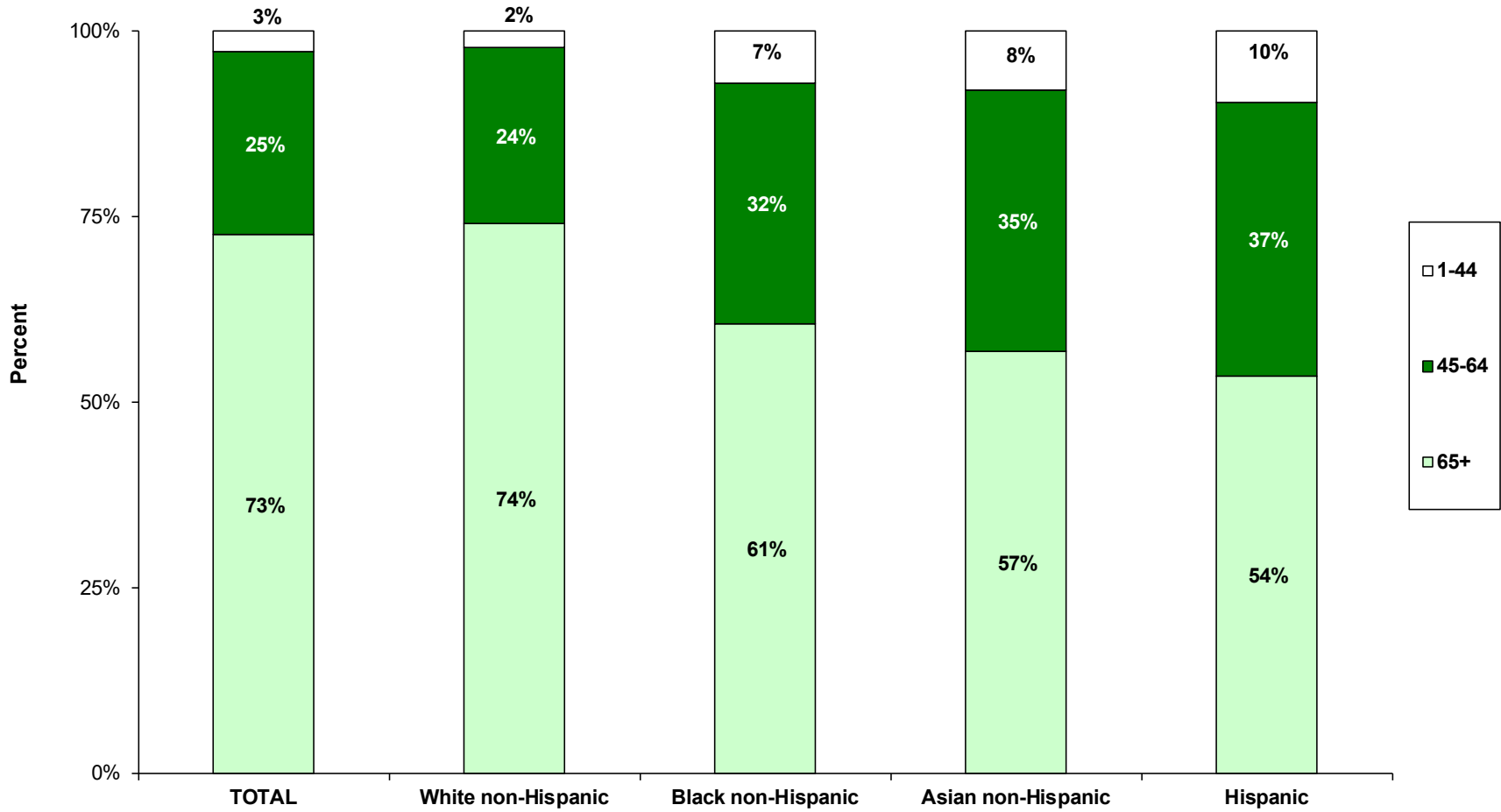
ICD-10: I00-I09, I11, I13, I20-I51

Figure 10. Number of Cancer Deaths by Age Group and Gender, Massachusetts: 2013



ICD-10: C00-C97

Figure 11. Age Distribution by Race and Ethnicity for Cancer Deaths, Massachusetts: 2013



ICD-10: C00-C97

Table 10. Heart Disease and Cancer Deaths by Race and Gender, Age-Adjusted Rates¹, Massachusetts: 2000-2013

Heart Disease						
Year	<u>White non-Hispanic²</u>			<u>Black non-Hispanic²</u>		
	Male	Female	Total	Male	Female	Total
2000	282.4	174.4	219.3	235.1	203.6	221.9
2001	265.9	174.0	213.4	295.2	181.3	228.6
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

Year	<u>Asian non-Hispanic²</u>			<u>Hispanic</u>		
	Male	Female	Total	Male	Female	Total
2000	111.2	65.5	85.6	122.1	106.6	115.6
2001	113.5	62.6	85.1	148.7	110.0	126.9
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

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 10 (continued). Heart Disease and Cancer Deaths by Race and Gender, Age-Adjusted Rates, Massachusetts: 2000-2013

Cancer						
Year	<u>White non-Hispanic²</u>			<u>Black non-Hispanic²</u>		
	Male	Female	Total	Male	Female	Total
2000	258.7	179.0	209.0	348.1	167.4	237.8
2001	249.2	175.8	203.5	264.7	176.4	212.1
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	141.7	166.3

Year	<u>Asian non-Hispanic²</u>			<u>Hispanic</u>		
	Male	Female	Total	Male	Female	Total
2000	104.7	92.1	99.0	151.9	104.5	123.8
2001	98.3	105.6	103.1	142.9	97.4	116.4
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

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: 2013

Cause of Death ¹	ICD-10 Code	Total		Female		Male	
		#	Rate ^{2,3}	#	Rate	#	Rate
Total Cancer Deaths	C00-C97	12,851	159.5	6,391	139.0	6,460	189.6
Bladder	C67	403	4.9	133	2.8	270	8.2
Brain and nervous system	C70-C72	333	4.3	145	3.5	188	5.4
Cervix	C53	40	1.0	40	1.0	NA	NA
Colorectal	C18-C21	1,051	13.0	547	11.7	504	14.8
Esophagus	C15	343	4.2	64	1.3	279	8.0
Female breast ⁴	C50 ⁴	832	18.4	832	18.4	NA	NA
Hodgkin disease	C81	20	0.3	9	0.2	11	0.3
Kidney and other urinary organs	C64, C65	275	3.4	99	2.1	176	5.0
Leukemia	C91-C95	546	7.0	235	5.2	311	9.5
Lung	C33, C34	3,331	41.4	1,652	36.2	1,679	48.9
Melanoma of the skin	C43	240	3.0	96	2.2	144	4.3
Multiple myeloma	C88, C90	258	3.2	133	2.8	125	3.7
Non-Hodgkin lymphoma	C82-C85	434	5.4	215	4.5	219	6.7
Ovary	C56	362	8.0	362	8.0	NA	NA
Pancreas	C25	900	11.1	442	9.3	458	13.3
Prostate	C61	602	18.5	NA	NA	602	18.5
Stomach	C16	236	2.9	117	2.5	119	3.5
Uterus	C54, C55	234	5.1	234	5.1	NA	NA
All other cancers	Residual	2,411	29.7	1,036	22.2	1,375	39.5

1. Common terms are used to describe the causes of cancer deaths. For detailed terminology of cancer sites, please see the ICD-10 code list in the Appendix. 2. 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: 2013

Age	Cause of Death ¹	ICD-10 Code	Number	Age-specific rate ²
1-14 years	Total		16	1.5
	Brain and nervous system	C70-C72	7	0.7
	Leukemia	C91-C95	4	... ³
	Kidney and other urinary organs	C64, C65	1	... ³
	Non-Hodgkin's lymphoma	C82-C85	1	... ³
15-24 years	Total		22	2.3
	Brain and nervous system	C70-C72	5	0.5
	Leukemia	C91-C95	4	... ³
	Hodgkin's disease	C81	2	... ³
	Colorectal	C18-C21	1	... ³
25-44 years	Total		319	18.2
	Female breast ⁴	C50	50	5.6
	Colorectal	C18-C21	44	2.5
	Brain and nervous system	C70-C72	32	1.8
	Lung	C33, C34	27	1.5
45-64 years	Total		3,175	170.4
	Lung	C33, C34	846	45.4
	Female breast ⁴	C50	264	27.4
	Colorectal	C18-C21	257	13.8
	Pancreas	C25	221	11.9
65+ years	Total		9,316	941.7
	Lung	C33, C34	2,458	248.5
	Colorectal	C18-C21	749	75.7
	Pancreas	C25	663	67.0
	Prostate ⁵	C61	534	126.7
65-74 years	Total		3,132	582.7
	Lung	C33, C34	956	177.9
	Colorectal	C18-C21	219	40.7
	Pancreas	C25	212	39.4
	Female breast ⁴	C50	158	54.6
75-84 years	Total		3,437	1,161.3
	Lung	C33, C34	948	320.3
	Colorectal	C18-C21	251	84.8
	Pancreas	C25	248	83.8
	Leukemia	C91-C95	201	67.9
85+ years	Total		2,747	1,762.2
	Lung	C33, C34	554	355.4
	Colorectal	C18-C21	279	179.0
	Prostate ⁵	C61	220	439.5
	Pancreas	C25	203	130.2

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: 2013

<u>White non-Hispanic¹</u>			<u>Black non-Hispanic¹</u>			<u>Asian non-Hispanic¹</u>			<u>Hispanic¹</u>		
Cause²	#	Rate³	Cause	#	Rate³	Cause	#	Rate³	Cause	#	Rate³
Lung	3,054	43.2	Lung	147	40.4	Lung	58	22.0	Lung	51	16.7
Colorectal	921	13.0	Colorectal	56	15.6	Colorectal	23	8.0	Colorectal	42	12.9
Pancreas	813	11.4	Female Breast ⁴	50	23.6	Pancreas	13	4.4	Female Breast ⁴	36	16.1
Female Breast ⁴	733	18.8	Pancreas	45	12.9	Stomach	11	3.8	Pancreas	24	6.2
Prostate ⁵	539	18.5	Multiple Myeloma And Neoplasms	33	9.1	Female Breast ⁴	11	6.3	Prostate ⁵	21	16.7
Total Cancer	11,578	163.8	Total Cancer	603	166.3	Total Cancer	239	84.4	Total Cancer	355	105.1

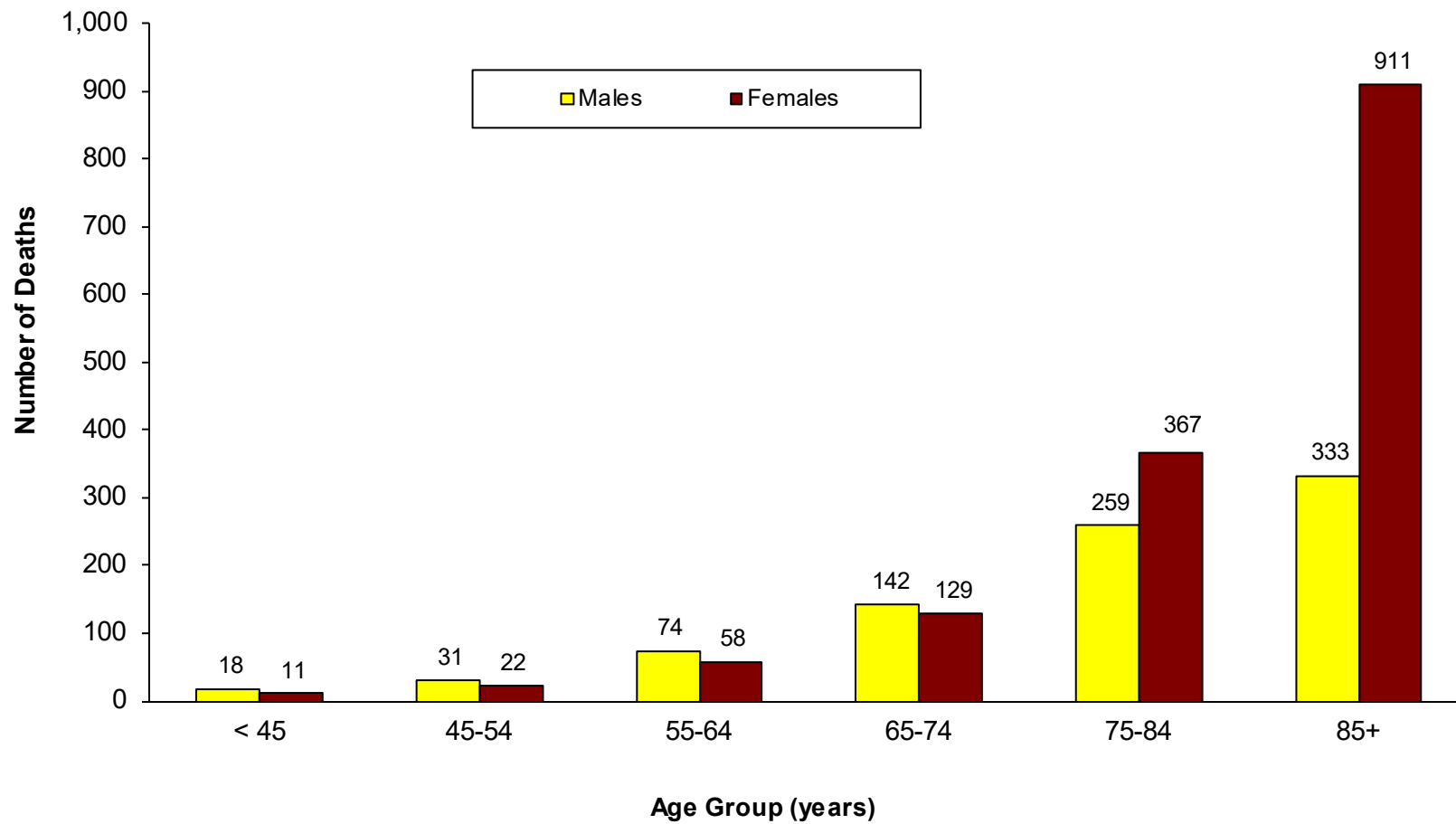
1. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see the Technical Notes in the Appendix for a more detailed explanation. 2. ICD-10 codes used. Please see the ICD-10 codes listing in the 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: 2013

Cause of Death	ICD-10 Code	Total			Female			Male		
		#	%	Rate ¹	#	%	Rate ¹	#	%	Rate ¹
Total Stroke Deaths	I60-I69	2,355	100%	27.7	1,498	100%	27.9	857	100%	26.6
Subarachnoid hemorrhage	I60	92	3.9%	1.1	55	3.7%	1.2	37	4.3%	1.1
Intracerebral and other intracranial hemorrhage	I61-I62	491	20.8%	6.1	289	19.3%	5.9	202	23.6%	6.2
Cerebral infarction	I63	170	7.2%	1.9	105	7.0%	1.8	65	7.6%	1.9
Stroke, not specified	I64	1,145	48.6%	13.2	769	51.3%	13.8	376	43.9%	11.8
Other	I67, I69	457	19.4%	5.4	280	18.7%	5.2	177	20.7%	5.6

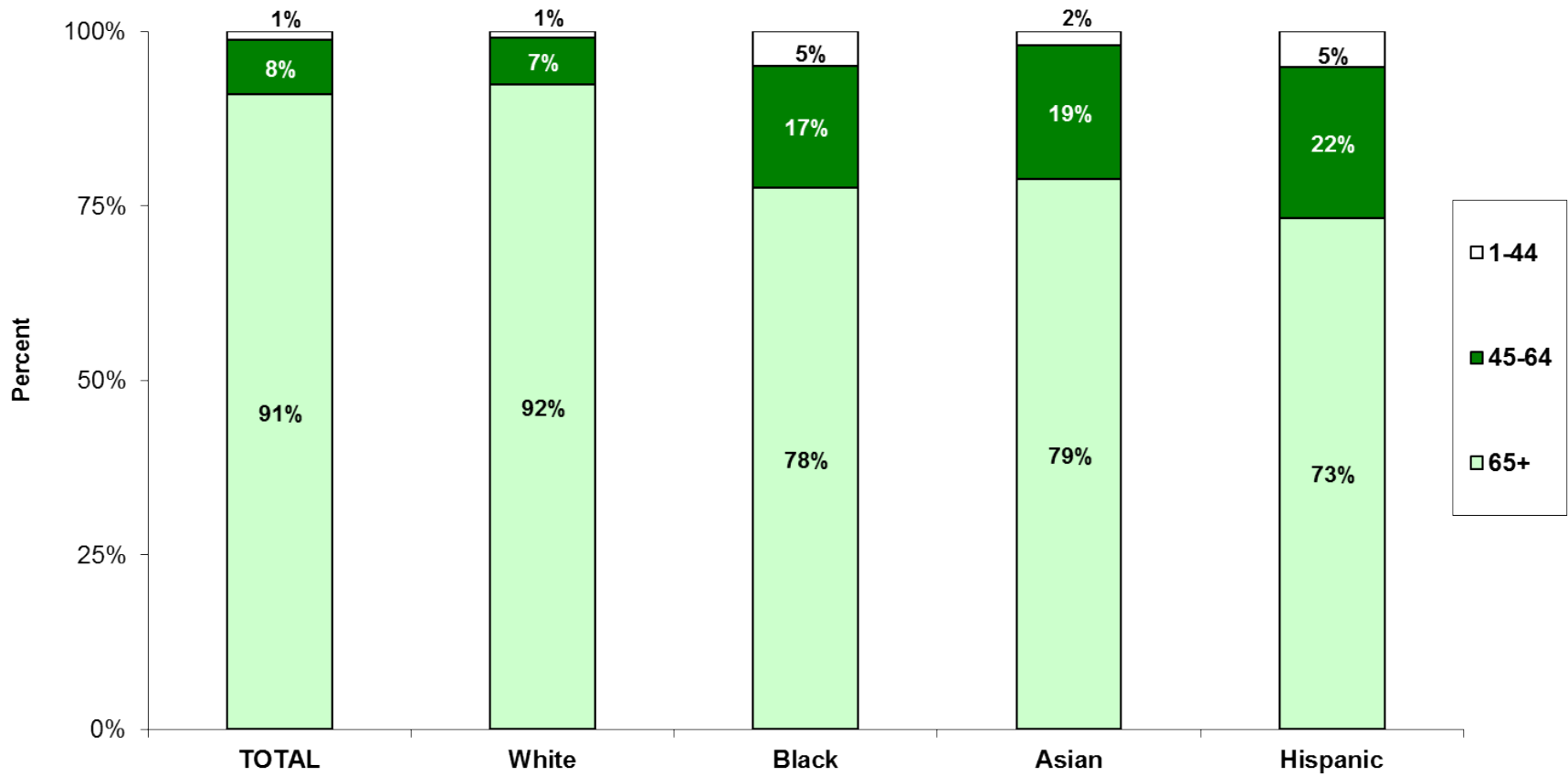
1. All rates are age-adjusted to the 2000 US Standard Population. Rates are per 100,000 population.

Figure 12. Number of Stroke Deaths by Age Group and Gender, Massachusetts: 2013



ICD-10: I60-I69

Figure 13. Age Distribution by Race and Ethnicity for Stroke Deaths, Massachusetts: 2013



ICD-10: I60-I69

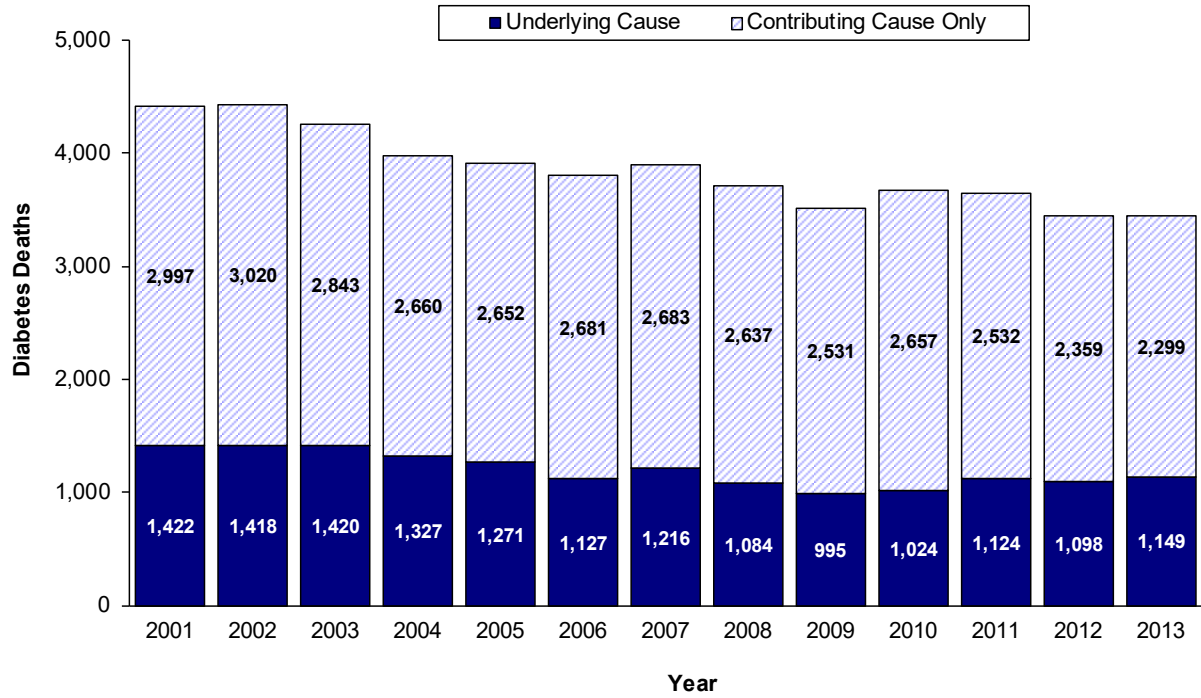
Table 15. Stroke Deaths by Race and Gender, Age-Adjusted Rates, Massachusetts: 2000-2013

Stroke¹						
Year	<u>White non-Hispanic²</u>			<u>Black non-Hispanic²</u>		
	Male	Female	Total	Male	Female	Total
2000	48.8	50.6	50.5	65.3	56.4	60.8
2001	51.5	46.0	48.5	50.8	61.5	59.3
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

Year	<u>Asian non-Hispanic²</u>			<u>Hispanic</u>		
	Male	Female	Total	Male	Female	Total
2000	50.9	49.4	50.4	40.6	47.1	45.0
2001	23.8	38.0	32.0	39.4	28.5	33.2
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

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

Figure 14. Diabetes Deaths, Massachusetts: 2001-2013



ICD-10: E10-E14

Table 16. Diabetes Deaths by Gender, Massachusetts: 2013

Cause of Death	Proportion of all Deaths (%)			Number		
	Males	Females	Total	Males	Females	Total
Underlying	2.4%	1.8%	2.1%	629	520	1,149
Contributing/Associated	4.4%	4.0%	4.2%	1,157	1,142	2,299
Total diabetes-related	6.9%	5.8%	6.3%	1,786	1,662	3,448
<i>Total deaths (all causes)</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>	<i>26,051</i>	<i>28,558</i>	<i>54,609</i>

ICD-10: E10-E14

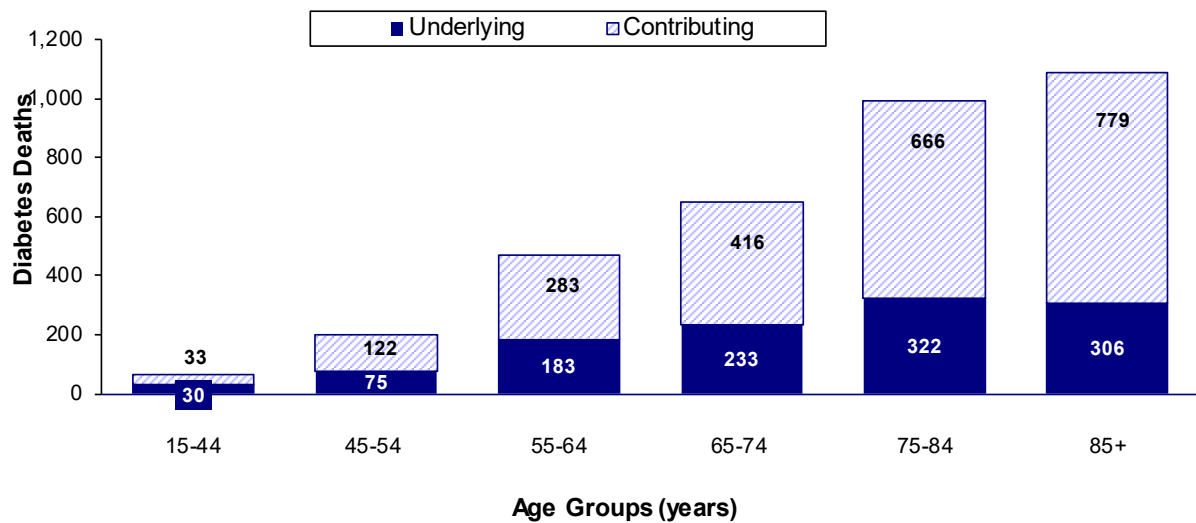
Table 17. Diabetes Deaths by Race and Hispanic Ethnicity, Massachusetts: 2013

Cause of Death	Race/Hispanic Ethnicity				
	White non-Hispanic	Black non-Hispanic	Hispanic	Asian non-Hispanic	Total
	Number				
Underlying	946	114	58	20	1,149
Contributing/Associated	1,986	146	96	46	2,299
<i>Total diabetes-related</i>	2,932	260	154	66	3,448
Total deaths (all causes)	49,486	2,446	1,548	816	54,609
	Proportion of all deaths (%)				
Underlying	1.9	4.7	3.7	2.5	2.1
Contributing/Associated	4.0	6.0	6.2	5.6	4.2
Total diabetes-related	5.9	10.6	9.9	8.1	6.3
	Death Rates ¹				
Underlying	13.2	33	19.2	7.9	14.2
Contributing/Associated	27.2	42.4	31.9	20.6	28.1
Total diabetes-related	40.4	75.3	51	28.6	42.2

ICD-10: E10-E14

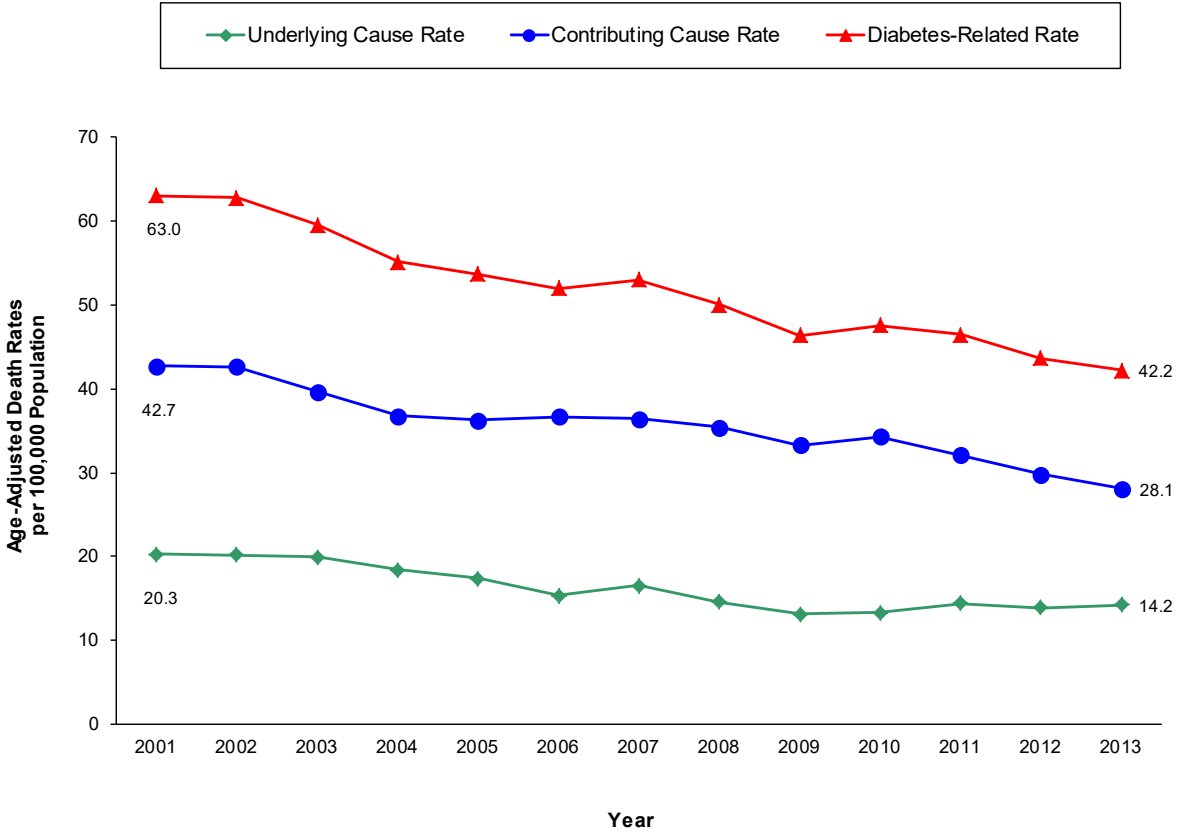
1. Rates are per 100,000 age-adjusted to the 2000 U.S. standard population

Figure 15. Age Distribution of Diabetes Deaths, Massachusetts: 2013



ICD-10: E10-E14.

Figure 16. Diabetes Death Rates, Massachusetts: 2001-2013



ICD-10: E10-E14.
 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: 2013

	All Injury Deaths ¹		Poisoning ²		Falls		Hanging, strangulation, or suffocation		Motor Vehicle-related ³		Firearm		Other ⁴	
	Number	Rate ⁵	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Persons	3,381	46.7	1,246	18.4	652	7.8	381	5.4	375	5.2	217	3.2	510	6.7
<1	8	10.9	0	0.0	0	0.0	2	-- ⁶	0	0.0	0	0.0	6	8.2
1-14	33	3.1	2	-- ⁶	0	0.0	7	0.7	8	0.7	0	0.0	16	1.5
15-24	334	35.5	102	10.8	5	0.5	42	4.5	82	8.7	53	5.6	50	5.3
25-44	969	55.2	579	33.0	18	1.0	122	6.9	84	4.8	87	5.0	79	4.5
45-64	995	53.4	510	27.4	80	4.3	115	6.2	109	5.9	47	2.5	134	7.2
65-74	246	45.8	29	5.4	63	11.7	37	6.9	31	5.8	21	3.9	65	12.1
75-84	314	106.1	16	5.4	176	59.5	26	8.8	37	12.5	5	1.7	54	18.2
85+	482	309.2	8	5.1	310	198.9	30	19.2	24	15.4	4	-- ⁶	106	68.0
All Females	1,228	30.1	415	11.8	347	6.8	119	3.2	125	3.3	18	0.5	204	4.6
<1	3	-- ⁶	0	0.0	0	0.0	2	-- ⁶	0	0.0	0	0.0	1	-- ⁶
1-14	18	3.4	1	-- ⁶	0	0.0	6	1.1	2	-- ⁶	0	0.0	9	1.7
15-24	74	15.8	24	5.1	1	-- ⁶	14	3.0	20	4.3	3	-- ⁶	12	2.6
25-44	275	30.9	181	20.3	4	-- ⁶	29	3.3	29	3.3	9	1.0	23	2.6
45-64	303	31.5	182	18.9	23	2.4	24	2.5	33	3.4	4	-- ⁶	37	3.8
65-74	88	30.4	15	5.2	28	9.7	11	3.8	12	4.2	2	-- ⁶	20	6.9
75-84	169	97.7	6	3.5	104	60.1	16	9.2	17	9.8	0	0.0	26	15.0
85+	298	281.6	6	5.7	187	176.7	17	16.1	12	11.3	0	0.0	76	71.8
All Males	2,153	64.6	831	25.2	305	9.3	262	7.8	250	7.3	199	6.0	306	9.0
<1	5	13.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	5	13.3
1-14	15	2.7	1	-- ⁶	0	0.0	1	-- ⁶	6	1.1	0	0.0	7	1.3
15-24	260	55.0	78	16.5	4	-- ⁶	28	5.9	62	13.1	50	10.6	38	8.0
25-44	694	80.2	398	46.0	14	1.6	93	10.8	55	6.4	78	9.0	56	6.5
45-64	692	76.8	328	36.4	57	6.3	91	10.1	76	8.4	43	4.8	97	10.8
65-74	158	63.6	14	5.6	35	14.1	26	10.5	19	7.7	19	7.7	45	18.1
75-84	145	118.0	10	8.1	72	58.6	10	8.1	20	16.3	5	4.1	28	22.8
85+	184	367.6	2	-- ⁶	123	245.7	13	26.0	12	24.0	4	-- ⁶	30	59.9

1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. Includes drug overdoses, which account for the largest percentage. 3. Motor vehicle deaths to occupants, pedestrians, motorcyclists and bicyclists. 4. All remaining injury causes. 5. Number of deaths per 100,000 persons in each age group; rates for all rows except the age group rows are age-adjusted to the 2000 US standard population. 6. Calculations based on values 1-4 are excluded.

Table 19. Injury Deaths by Leading Causes, Gender and Race and Hispanic Ethnicity: Numbers and Age Adjusted Rates, Massachusetts: 2013

	All Injury Deaths ¹		Poisoning ²		Falls		Hanging, strangulation, or suffocation		Motor Vehicle-related ³		Firearm		Other ⁴	
	Number	Rate ⁵	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
White non-Hispanic	2,825	49.0	1,082	21.3	599	8.1	320	5.8	286	5.0	127	2.3	411	6.5
Females	1,082	32.8	379	14.4	326	7.0	100	3.3	94	3.1	9	0.3	174	4.6
Males	1,743	66.4	703	28.4	273	9.4	220	8.4	192	7.1	118	4.5	237	8.5
Black non-Hispanic	224	47.6	65	13.7	22	5.7	16	3.3	32	6.5	49	9.2	40	9.2
Females	65	27.2	21	8.7	10	4.6	5	2.0	12	4.9	6	2.3	11	4.8
Males	159	70.5	44	19.4	12	7.3	11	4.8	20	8.2	43	16.2	29	14.6
Asian non-Hispanic	67	20.4	9	1.9	13	6.1	14	3.9	13	3.8	1	--⁶	17	4.6
Females	25	14.5	3	-- ⁶	4	-- ⁶	6	2.7	7	4.2	0	0.0	5	3.1
Males	42	27.7	6	2.7	9	10.2	8	5.3	6	3.2	1	-- ⁶	12	5.9
Hispanic	231	37.3	82	12.6	12	4.6	29	4.8	37	5.6	39	4.6	32	5.0
Females	46	16.3	10	2.9	6	4.1	8	2.5	10	3.0	3	-- ⁶	9	3.0
Males	185	60.1	72	23.2	6	5.3	21	7.5	27	8.5	36	8.4	23	7.2

1. Data presented in this table are classified according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 2. 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: 2013

	All Unintentional¹		Poisonings		Falls		Motor Vehicle-related	
	Number	Rate²	Number	Rate²	Number	Rate²	Number	Rate²
All Persons	2,485	33.9	1,063	15.8	631	7.5	375	5.2
<1	2	-- ³	0	0.0	0	0.0	0	0.0
1-14	21	2.0	1	-- ³	0	0.0	8	0.7
15-24	197	20.9	85	9.0	2	-- ³	82	8.7
25-44	667	38.0	536	30.5	9	0.5	84	4.8
45-64	695	37.3	413	22.2	72	3.9	109	5.9
65-74	168	31.3	16	3.0	62	11.5		5.8
75-84	281	94.9	8	2.7	176	59.5	37	12.5
85+	454	291.2	4	-- ³	310	198.9	24	15.4
All Females	964	22.9	315	9.1	342	6.6	125	3.3
<1	2	-- ³	0	0.0	0	0.0	0	0.0
1-14	9	1.7	0	0.0	0	0.0	2	-- ³
15-24	44	9.4	20	4.3	0	0.0	20	4.3
25-44	195	21.9	152	17.1	2	-- ³	29	3.3
45-64	206	21.4	128	13.3	22	2.3	33	3.4
65-74	66	22.8	8	2.8	27	9.3	12	4.2
75-84	159	91.9	4	-- ³	104	60.1	17	9.8
85+	283	267.4	3	-- ³	187	176.7	12	11.3
All Males	1,521	45.8	748	22.8	289	8.8	250	7.3
<1	0	0.0	0	0.0	0	0.0	0	0.0
1-14	12	2.2	1	-- ³	0	0.0	6	1.1
15-24	153	32.4	65	13.7	2	-- ³	62	13.1
25-44	472	54.6	384	44.4	7	0.8	55	6.4
45-64	489	54.3	285	31.6	50	5.5	76	8.4
65-74	102	41.1	8	3.2	35	14.1	19	7.7
75-84	122	99.3	4	-- ³	72	58.6	20	16.3
85+	171	341.6	1	-- ³	123	245.7	12	24.0

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 21. Unintentional Injury Deaths by Gender and Race and Hispanic Ethnicity: Numbers, and Age-Adjusted Rates, Massachusetts: 2013

	All Unintentional¹		Poisonings		Falls		Motor Vehicle-related	
	<u>Number</u>	<u>Rate²</u>	<u>Number</u>	<u>Rate²</u>	<u>Number</u>	<u>Rate²</u>	<u>Number</u>	<u>Rate²</u>
White non-Hispanic	2,143	36.5	917	18.4	584	7.8	286	5.0
Females	866	25.1	288	11.2	323	6.9	94	3.1
Males	1,277	48.7	629	25.8	261	9.0	192	7.1
Black non-Hispanic	134	29.9	58	12.2	17	4.8	32	6.5
Females	50	21.4	19	7.8	8	3.9	12	4.9
Males	84	39.9	39	16.9	9	6.1	20	8.2
Asian non-Hispanic	38	13.4	3	--³	13	6.1	13	3.8
Females	15	9.8	0	0.0	4	-- ³	7	4.2
Males	23	18.3	3	-- ³	9	10.2	6	3.2
Hispanic	146	25.6	78	12.1	12	4.6	37	5.6
Females	28	10.8	7	2.0	6	4.1	10	3.0
Males	118	42.0	71	22.9	6	5.3	27	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 22. Intentional Injury Deaths by Gender, Age: Numbers, Age-Adjusted, and Age-Specific Rates, Massachusetts: 2013

	All Intentional¹		Suicide		Homicide	
	<u>Number</u>	<u>Rate²</u>	<u>Number</u>	<u>Rate²</u>	<u>Number</u>	<u>Rate²</u>
All Persons	750	10.8	595	8.5	155	2.3
<1	6	8.2	0	0.0	6	8.2
1-14	10	0.9	6	0.6	4	N
15-24	125	13.3	80	8.5	45	4.8
25-44	267	15.2	202	11.5	65	3.7
45-64	250	13.4	227	12.2	23	1.2
65-74	56	10.4	50	9.3	6	1.1
75-84	19	6.4	17	5.7	2	-. ³
85+	17	10.9	13	8.3	4	-. ³
All Females	201	5.6	162	4.5	39	1.1
<1	1	-. ³	0	0.0	1	-. ³
1-14	7	1.3	5	1.0	2	-. ³
15-24	27	5.8	22	4.7	5	1.1
25-44	67	7.5	51	5.7	16	1.8
45-64	72	7.5	64	6.7	8	0.8
65-74	13	4.5	10	3.5	3	-. ³
75-84	4	N	3	-. ³	1	-. ³
85+	10	9.4	7	6.6	3	-. ³
All Males	549	16.3	433	12.8	116	3.5
<1	5	13.3	0	0.0	5	13.3
1-14	3	-. ³	1	-. ³	2	-. ³
15-24	98	20.7	58	12.3	40	8.5
25-44	200	23.1	151	17.5	49	5.7
45-64	178	19.7	163	18.1	15	1.7
65-74	43	17.3	40	16.1	3	-. ³
75-84	15	12.2	14	11.4	1	-. ³
85+	7	14.0	6	12.0	1	-. ³

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

2. Number of deaths per 100,000 persons in each 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: 2013

	All Intentional ¹		Suicide		Homicide	
	<u>Number</u>	<u>Rate²</u>	<u>Number</u>	<u>Rate²</u>	<u>Number</u>	<u>Rate²</u>
White non-Hispanic	570	10.6	513	9.5	57	1.1
Females	163	5.9	139	5.0	24	0.9
Males	407	15.6	374	14.3	33	1.3
Black non-Hispanic	75	14.6	23	4.6	52	10.0
Females	12	4.5	6	2.2	6	2.3
Males	63	25.4	17	7.4	46	18.0
Asian non-Hispanic	25	6.2	20	5.1	5	1.1
Females	8	3.9	7	3.5	1	... ³
Males	17	8.6	13	6.9	4	... ³
Hispanic	72	9.1	33	4.5	39	4.6
Females	14	3.8	8	2.1	6	1.7
Males	58	14.3	25	7.0	33	7.3

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

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

Table 24. Injury Deaths by Intent, Method and Gender: Number and Age-Adjusted Rates, Massachusetts: 2013

Type of Injury ¹	<u>All Injury Deaths</u>		<u>Female</u>		<u>Male</u>	
	Number	Rate ²	Number	Rate ²	Number	Rate ²
Unintentional Injuries (Accidents)	2,485	33.9	964	22.9	1,521	45.8
Motor Vehicle-related	375	5.2	125	3.3	250	7.3
Injury to pedestrian	84	1.1	33	0.8	51	1.5
Injury to pedal cyclist	12	0.2	5	0.1	7	0.2
Injury to motorcyclist	47	0.7	2	-- ³	45	1.3
Injury to occupant	47	0.7	14	0.4	33	1.0
Other and unspecified	185	2.6	71	1.9	114	3.4
Poisoning	1,063	15.8	315	9.1	748	22.8
Falls	631	7.5	342	6.6	289	8.8
Hanging, strangulation or suffocation	107	1.3	48	1.1	59	1.6
Drowning and submersion	66	1.0	15	0.5	51	1.5
Smoke, fire and flames	30	0.4	16	0.4	14	0.4
Other and unspecified	197	2.4	102	2.0	95	2.8
Suicide	595	8.5	162	4.5	433	12.8
Poisoning	136	1.8	72	1.9	64	1.8
Hanging, strangulation or suffocation	268	4.0	67	2.0	201	6.1
Firearm	115	1.6	6	0.2	109	3.2
Other and unspecified	76	1.0	17	0.4	59	1.7
Homicide	155	2.3	39	1.1	116	3.5
Firearm	85	1.3	12	0.4	73	2.2
Cut or pierce	25	0.4	9	0.3	16	0.5
Other and unspecified	45	0.7	18	0.5	27	0.8
Injury Deaths of Undetermined Intent	94	1.3	43	1.2	51	1.5
Poisoning	46	0.7	28	0.8	18	0.5
Other and unspecified	48	0.6	15	0.4	33	1.0
Legal Intervention	14	0.2	0	0.0	14	0.5
Firearm	12	0.2	0	0.0	12	0.4
Other and unspecified	2	-- ³	0	0.0	2	0.1
Adverse Effects	38	0.5	20	0.5	18	0.5
Medical Care	33	0.4	17	0.4	16	0.5
Drugs	5	0.1	3	-- ³	2	-- ³
ALL INJURIES	3,381	46.7	1,228	30.1	2,153	64.6

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

Table 25. HIV/AIDS Deaths by Place of Occurrence, Massachusetts: 2000-2013

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
	%	100.0	15.1	61.6	0.0	23.3

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 Deaths by Age, Massachusetts: 2000-2013

Year		Age (in years)				
		<15	15-24	25-34	35-44	45+
2000	# ¹	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

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 Deaths by Gender, Race and Hispanic Ethnicity, Massachusetts: 2000-2013

Year		Gender		Race and Ethnicity			
		Male	Female	White non-Hispanic ²	Black non-Hispanic ²	Other ³	Hispanic ²
2000	# ¹	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	97 ⁶	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

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 Deaths by Gender, Race and Hispanic Ethnicity: Numbers, Percent and Age-adjusted Rates, Massachusetts: 2000-2013

TOTAL¹	White non-Hispanic²			Black non-Hispanic²			Hispanic²		
Year	#	Percent	Rate³	#	Percent	Rate³	#	Percent	Rate³
2000	104	46%	1.9	61	27%	18.3	59	26%	17.4
2001	125	50%	2.2	73	29%	21.1	51	20%	13.5
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
MALE									
2000	77	48%	2.8	40	25%	26.0	42	26%	27.7
2001	92	51%	3.3	50	27%	31.4	40	22%	22.5
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	24%	0.7	21	21%	9.8	12	12%	4.3
FEMALE									
2000	27	42%	1.0	21	32%	11.4	17	26%	8.6
2001	33	49%	1.2	23	34%	12.1	11	16%	5.4
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

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.

Table 29. Trends in Infant, Neonatal, and Post Neonatal Mortality, by Race and Hispanic Ethnicity, Massachusetts: 2002-2013

INFANT MORTALITY (less than one year of age)												
	State Total¹		White non-Hispanic		Black non-Hispanic		Hispanic		Asian non-Hispanic		Other²	
Year	#	Rate³	#	Rate³	#	Rate³	#	Rate³	#	Rate³	#	Rate³
2002	397	4.9	239	4.1	69	11.6	67	7.0	16	3.0	6	3.8
2003	383	4.8	235	4.1	75	12.7	55	5.6	14	2.7	4	-- ⁴
2004	376	4.8	210	3.8	70	11.5	75	7.6	15	2.7	6	3.5
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

NEONATAL MORTALITY (birth to 27 days)												
	State Total¹		White non-Hispanic		Black non-Hispanic		Hispanic		Asian, non-Hispanic		Other²	
Year	#	Rate³	#	Rate³	#	Rate³	#	Rate³	#	Rate³	#	Rate³
2002	299	3.7	185	3.2	49	8.2	50	5.2	13	2.4	2	-- ⁴
2003	285	3.6	179	3.1	56	9.5	38	3.9	10	1.9	2	-- ⁴
2004	291	3.7	167	3.0	51	8.4	57	5.8	12	2.2	4	-- ⁴
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	-- ⁴

POST NEONATAL MORTALITY (28-365 days)												
	State Total¹		White non-Hispanic		Black non-Hispanic		Hispanic		Asian non-Hispanic		Other²	
Year	#	Rate³	#	Rate³	#	Rate³	#	Rate³	#	Rate³	#	Rate³
2002	98	1.2	54	0.9	20	3.4	17	1.8	3	-- ⁴	4	-- ⁴
2003	98	1.2	56	1.0	19	3.2	17	1.7	4	-- ⁴	2	-- ⁴
2004	85	1.1	43	0.8	19	3.1	18	1.8	3	-- ⁴	2	-- ⁴
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

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: 2013

Cause of Death ¹	ICD-10 Code	Infant (<1 year)		Neonatal (<28 days)		Post Neonatal (28-365 days)	
		#	%	#	%	#	%
TOTAL		298	100.0	221	100.0	77	100.0
Infectious and parasitic diseases	A00-B99	3	--²	0	0.0	3	--²
Cancer	C00-C97	3	--²	1	--²	2	--²
Diseases of the blood and blood forming organs (anemia)	D50-D89	2	--²	1	--²	1	--²
Diseases of nervous system and ear	G00-G98, H60-H93	3	--²	1	--²	2	--²
Diseases of the respiratory system	J00-J98	2	--²	0	0.0	2	--²
Diseases of digestive system	K00-K92	4	1.3	2	0.9	2	2.6
Congenital malformations	Q00-Q99	54	18.1	38	17.2	16	20.8
Congenital malformations of nervous system	Q00-Q07	4	-- ²	3	-- ²	1	-- ²
Anencephalus and similar malformations	Q00	1	-- ²	1	-- ²	0	0.0
Congenital malformations of heart	Q20-Q24	14	4.7	8	3.6	6	7.8
Congenital malformations of respiratory system	Q30-Q34	4	-- ²	4	-- ²	0	0.0
Congenital malformations of genitourinary system	Q50-Q64	3	-- ²	2	-- ²	1	-- ²
Congenital malformations of musculoskeletal system	Q65-Q85	6	2.0	3	-- ²	3	-- ²
Chromosomal abnormalities	Q90-Q99	10	3.4	8	3.6	2	-- ²
Certain conditions originating in the perinatal period	P00-P96	177	59.4	170	76.9	7	9.1
Newborn affected by maternal conditions which may be unrelated to present pregnancy	P00	1	-- ²	0	0.0	1	-- ²
Newborn affected by maternal complications of pregnancy	P01	31	10.4	31	14.0	0	0.0
Newborn affected by complications of placenta, cord and membrane	P02	9	3.0	9	4.1	0	0.0
Newborn affected by other complications of labor and delivery	P03	2	-- ²	1	-- ²	1	-- ²
Disorders relating to short gestation and low birthweight	P07	77	25.8	77	34.8	0	0.0
Intrauterine hypoxia and birth asphyxia	P20-P21	4	-- ²	4	-- ²	0	0.0
Respiratory distress of newborn	P22	7	2.3	7	3.2	0	0.0
Other respiratory conditions of newborn	P23-P28	11	3.7	9	4.1	2	-- ²
Infections specific to the perinatal period	P35-P39	5	1.7	3	-- ²	2	-- ²
Neonatal hemorrhage	P50-P52, P54	6	2.0	6	2.7	0	0.0
Other and ill-defined conditions originating in the perinatal period	P90-P96	4	-- ²	4	-- ²	0	0.0
Symptoms, signs, and ill-defined conditions	R00-R99	35	11.7	5	2.3	30	39.0
Sudden Infant Death Syndrome (SIDS)	R95	15	5.0	0	0.0	15	19.5
Unintentional Injuries	V01-X59	2	--²	0	0.0	2	--²
Homicide	X85-Y09	6	2.0	0	0.0	6	7.8
All other causes	Residual	7	2.3	3	--²	4	--²

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

Table 31. Infant Deaths by Major Causes, Race and Hispanic Ethnicity, Massachusetts: 2013

Cause of Death ²	ICD-10 Code	White non-Hispanic ¹		Black non-Hispanic ¹		Asian non-Hispanic ¹		Hispanic	
		#	%	#	%	#	%	#	%
TOTAL		161	100.0%	63	100.0%	15	100.0%	49	100.0%
Certain conditions originating in the perinatal period	P00- P96	97	60.2%	36	57.1%	8	53.3%	31	63.3%
Congenital malformations	Q00-Q99	26	16.1%	14	22.2%	4	-- ³	8	16.3%
Symptoms, signs, and ill-defined conditions	R00-R99	21	13.0%	6	9.5%	1	-- ³	5	10.2%
SIDS	R95	11	6.8%	3	-- ³	0	0.0%	0	0.0%
Unintentional Injuries	V01-X59	1	-- ³	0	0.0%	0	0.0%	1	-- ³
Homicide	X85-Y09	2	-- ³	0	0.0%	2	-- ³	2	-- ³
All other causes	Residual	14	8.7%	7	11.1%	0	0.0%	2	-- ³

1. Race and ethnicity data in this table are presented as mutually exclusive categories and Cape Verdeans are not included with Blacks. Persons of Hispanic ethnicity are not included in a race category. Please see 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	MA 2012	MA 2013	TARGET STATUS
Overall Cancer death rate	160.6	171.0	166.7	159.5	√
Lung Cancer	45.5	47.3	45.4	41.4	√
Female Breast Cancer (per 100,000 females)	20.6	19.1	19.7	18.4	√
Uterine Cervix (per 100,000 females)	2.2	4.3	4.3	1.0	√
Colorectal Cancer	14.5	14.9	13.6	13.0	√
Oropharyngeal Cancer	2.3	3.0	2.4	2.4	○
Prostate Cancer (per 100,000 males)	21.2	21.2	19.5	18.5	√
Malignant Melanoma	2.4	3.1	2.9	3.2	●
COPD, ages 45+	98.5	84.4	87.7	86.8	√
Coronary Heart Disease	100.8	96.5	88.1	87.6	√
Stroke	33.8	31.2	28.7	31.8	√
Cirrhosis	8.2	5.4	4.8	4.6	√
Drug-induced deaths	11.3	12.5	14.7	19.0	●
HIV/AIDS	3.3	1.6	1.3	1.0	√
Injury Deaths	53.3	43.3	42.6	46.7	√
Residential fire deaths	0.9	0.2	0.3	0.2	√
Falls	7.0	6.9	7.9	7.8	○
Falls, ages 65+	45.3	48.1	57.8	55.4	○
Firearm- related	9.2	4.0	3.5	3.2	√
Poisonings	13.1	12.5	14.2	18.4	●
Poisonings, ages 35-54	25.5	22.8	22.5	30.5	○
Unintentional or Undetermined Intent injuries	11.1	10.9	12.5	16.5	●
Unintentional or Undetermined Intent injuries, ages 35-54	21.6	20.0	21.5	30.5	●
Unintentional Injuries	36.0	28.3	30.0	33.9	√
Motor vehicle crashes	12.4	5.4	5.3	5.2	√
Drowning	1.1	1.2	1.0	1.3	○
Hanging, strangulation or suffocation	1.7	5.8	5.7	5.4	●
Suffocation, persons 65+	7.2	12.3	13.5	9.4	●
Homicide	5.5	3.2	2.1	2.3	√
Suicide	10.2	8.7	8.9	8.5	√
Infant and Child Health					
Infant deaths (per 1,000 live births)	6.0	4.4	4.3	4.2	√
Neonatal deaths (per 1,000 live births)	4.1	3.3	3.0	3.1	√
Post neonatal deaths (per 1,000 live births)	2.0	1.1	1.3	1.1	√
Birth defects (per 1,000 live births)	1.3	0.7	0.7	0.8	√
Congenital heart defects (per 1,000 live births)	0.34	0.14	0.11	0.20	√
Sudden infant death syndrome (SIDS) (per 1,000 live births)	0.50	0.47	0.17	0.21	√
Child/Adolescent/Young Adults Death Rates					
1-4 years old	25.7	13.6	14.7	15.4	√
5-9 years old	12.3	7.3	7.3	8.4	√
10-14 years old	15.2	8.6	7.0	10.3	√
15-19 years old	55.7	30.9	30.0	27.8	√
20-24 years old	88.5	65.2	59.1	66.6	√
Asthma deaths (per million)					
Ages 35-64 years	6.0	6.3	7.4	10.3	●
Ages 65+ years	22.9	29.9	36.9	31.3	●

√ = YES, met target

○ = NO, but within 25% of target

● = NO, > 25% from target

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

1. Data 2020 the Healthy People 2020 Database. CDC Wonder website.

Table 33. Rank of Premature Mortality Rates for the Largest 30 Communities, Massachusetts: 2013 (Sorted by PMR)

Largest 30 Communities¹	Number of Premature Deaths	PMR² (per 100,000)
New Bedford	450	477.2*
Fall River	417	459.7*
Brockton	397	429.3*
Springfield	590	425.6*
Taunton	246	423.2*
Pittsfield	210	420.9*
Lowell	382	410.6*
Worcester	652	401.8*
Chicopee	242	400.1*
Haverhill	228	370.5*
Attleboro	166	364.1*
Lawrence	210	336.2*
Lynn	286	334.2*
Revere	176	332.5*
Weymouth	200	329.0*
Boston	1,682	319.6*
Methuen	157	318.3
Quincy	315	317.1*
Peabody	185	311.1
Malden	183	307.3
Plymouth	197	298.6
Framingham	205	295.1
Somerville	163	285.3
Barnstable	167	284.9
Medford	145	257.3
Waltham	144	249.9
Cambridge	171	207.9*
Arlington	93	200.1*
Brookline	96	168.6*
Newton	144	157.5*
Massachusetts	20,130	268.7

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: 2013

<u>City/Town</u>	<u>Premature Deaths (#)</u>	<u>PMR</u> ¹ (per 100,000 population)
STATE	20,130	268.7
Abington	51	284.3
Acton	42	190.4
Acushnet	30	225.3
Adams	37	381.2
Agawam	108	329.9
Alford	3	. ²
Amesbury	55	325.5
Amherst	37	163.8
Andover	48	139.4
Arlington	93	200.1
Ashburnham	22	365.5
Ashby	11	308.6
Ashfield	8	328.1
Ashland	35	196.1
Athol	57	474.2
Attleboro	166	364.1
Auburn	48	254.6
Avon	15	288.9
Ayer	40	561.1
Barnstable	167	284.9
Barre	16	261.3
Becket	7	226.1
Bedford	42	252.0
Belchertown	53	360.0
Bellingham	60	348.4
Belmont	51	178.1
Berkley	21	305.7
Berlin	8	188.6
Bernardston	9	336.4
Beverly	133	316.9
Billerica	122	273.3
Blackstone	28	306.6
Blandford	2	. ²
Bolton	10	188.6
Boston	1,682	319.6
Bourne	78	316.9
Boxborough	7	104.8
Boxford	12	119.3
Boylston	7	158.0
Braintree	110	277.8
Brewster	25	217.8
Bridgewater	60	240.5
Brimfield	11	238.1
Brockton	397	429.3
Brookfield	14	332.1
Brookline	96	168.6

Table 34. Premature Mortality Rates by Community, Massachusetts: 2013

<u>City/Town</u>	<u>Premature Deaths (#)</u>	<u>PMR¹</u> (per 100,000 population)
Buckland	6	267.8
Burlington	64	224.8
Cambridge	171	207.9
Canton	71	298.7
Carlisle	6	97.3
Carver	41	311.8
Charlemont	3	-. ²
Charlton	30	234.5
Chatham	18	162.5
Chelmsford	104	252.2
Chelsea	111	407.6
Cheshire	13	309.6
Chester	2	-. ²
Chesterfield	2	-. ²
Chicopee	242	400.1
Chilmark	4	-. ²
Clarksburg	6	361.4
Clinton	60	415.4
Cohasset	19	277.6
Colrain	9	444.2
Concord	47	213.6
Conway	3	-. ²
Cummington	1	-. ²
Dalton	22	262.8
Danvers	94	313.4
Dartmouth	93	250.9
Dedham	71	273.3
Deerfield	10	166.6
Dennis	65	288.9
Dighton	20	249.2
Douglas	21	273.8
Dover	5	71.2
Dracut	99	319.8
Dudley	33	279.8
Dunstable	12	332.5
Duxbury	32	162.9
East Bridgewater	53	353.1
East Brookfield	6	231.2
East Longmeadow	47	277.9
Eastham	26	380.1
Easthampton	67	379.6
Easton	69	290.4
Edgartown	11	209.3
Egremont	3	-. ²
Erving	5	253.0
Essex	5	129.5
Everett	121	319.7
Fairhaven	55	282.1
Fall River	417	459.7

Table 34. Premature Mortality Rates by Community, Massachusetts: 2013

<u>City/Town</u>	<u>Premature Deaths (#)</u>	<u>PMR¹</u> (per 100,000 population)
Falmouth	110	258.5
Fitchburg	150	391.3
Florida	2	-. ²
Foxborough	41	215.1
Framingham	205	295.1
Franklin	64	230.7
Freetown	28	280.6
Gardner	86	418.9
Gay Head	3	-. ²
Georgetown	22	238.3
Gill	4	-. ²
Gloucester	100	250.9
Goshen	2	-. ²
Gosnold	0	0
Grafton	45	257.2
Granby	20	283.3
Granville	6	333.4
Great Barrington	39	449.7
Greenfield	94	486.7
Groton	29	279.6
Groveland	18	250.3
Hadley	18	285.1
Halifax	31	358.8
Hamilton	16	183.5
Hampden	21	286.0
Hancock	1	-. ²
Hanover	40	264.1
Hanson	41	389.9
Hardwick	8	278.9
Harvard	11	143.4
Harwich	49	288.0
Hatfield	16	407.2
Haverhill	228	370.5
Hawley	3	-. ²
Heath	3	-. ²
Hingham	38	151.6
Hinsdale	5	171.1
Holbrook	63	574.4
Holden	42	211.3
Holland	7	200.6
Holliston	32	201.8
Holyoke	148	388.7
Hopedale	12	199.7
Hopkinton	31	240.0
Hubbardston	12	280.3
Hudson	50	228.0
Hull	40	266.6
Huntington	8	349.0
Ipswich	34	214.5

Table 34. Premature Mortality Rates by Community, Massachusetts: 2013

<u>City/Town</u>	<u>Premature Deaths (#)</u>	<u>PMR</u> ¹ (per 100,000 population)
Kingston	41	285.9
Lakeville	30	235.6
Lancaster	13	147.5
Lanesborough	5	125.4
Lawrence	210	336.2
Lee	26	334.3
Leicester	38	312.2
Lenox	13	194.9
Leominster	132	306.9
Leverett	6	266.6
Lexington	46	123.2
Leyden	4	-. ²
Lincoln	6	81.4
Littleton	8	78.8
Longmeadow	36	207.1
Lowell	382	410.6
Ludlow	67	270.9
Lunenburg	34	290.8
Lynn	286	334.2
Lynnfield	24	172.7
Malden	183	307.3
Manchester	7	107.2
Mansfield	43	235.8
Marblehead	40	177.9
Marion	18	291.3
Marlborough	124	326.3
Marshfield	80	275.8
Mashpee	54	294.9
Mattapoisett	22	255.8
Maynard	27	249.8
Medfield	21	157.3
Medford	145	257.3
Medway	35	320.8
Melrose	88	286.6
Mendon	14	225.2
Merrimac	22	302.2
Methuen	157	318.3
Middleborough	81	306.2
Middlefield	2	-. ²
Middleton	20	204.3
Milford	68	237.0
Millbury	48	325.9
Millis	26	288.5
Millville	9	339.8
Milton	59	203.4
Monroe	0	0
Monson	22	236.8
Montague	31	322.1
Monterey	0	0

Table 34. Premature Mortality Rates by Community, Massachusetts: 2013

<u>City/Town</u>	<u>Premature Deaths (#)</u>	<u>PMR¹</u> (per 100,000 population)
Montgomery	1	-.2
Mount Washington	1	-.2
Nahant	15	303.8
Nantucket	14	125.0
Natick	81	234.3
Needham	48	148.0
New Ashford	1	-.2
New Bedford	450	477.2
New Braintree	2	-.2
New Marlborough	2	-.2
New Salem	6	427.7
Newbury	13	150.1
Newburyport	48	234.8
Newton	144	157.5
Norfolk	28	250.0
North Adams	62	427.9
North Andover	65	246.9
North Attleboro	104	362.0
North Brookfield	9	174.5
North Reading	41	240.6
Northampton	93	286.3
Northborough	26	153.8
Northbridge	53	334.2
Northfield	7	224.8
Norton	61	321.4
Norwell	31	262.8
Norwood	101	324.7
Oak Bluffs	13	229.6
Oakham	10	388.7
Orange	42	512.5
Orleans	16	167.4
Otis	9	397.9
Oxford	48	330.3
Palmer	53	392.7
Paxton	10	179.3
Peabody	185	311.1
Pelham	2	-.2
Pembroke	59	301.4
Pepperell	33	288.4
Peru	3	-.2
Petersham	7	449.7
Phillipston	7	367.5
Pittsfield	210	420.9
Plainfield	0	0
Plainville	25	268.3
Plymouth	197	298.6
Plympton	10	255.0
Princeton	7	150.2
Provincetown	10	181.2

Table 34. Premature Mortality Rates by Community, Massachusetts: 2013

<u>City/Town</u>	<u>Premature Deaths (#)</u>	<u>PMR</u> ¹ (per 100,000 population)
Quincy	315	317.1
Randolph	92	267.7
Raynham	42	280.0
Reading	45	167.3
Rehoboth	30	216.2
Revere	176	332.5
Richmond	7	321.7
Rochester	8	108.2
Rockland	78	418.3
Rockport	16	150.8
Rowe	2	-. ²
Rowley	13	228.9
Royalston	4	-. ²
Russell	5	258.7
Rutland	22	322.0
Salem	138	321.4
Salisbury	41	394.0
Sandisfield	7	406.5
Sandwich	62	247.4
Saugus	103	327.3
Savoy	0	0
Scituate	39	193.0
Seekonk	43	269.3
Sharon	38	206.1
Sheffield	14	322.7
Shelburne	9	333.0
Sherborn	5	90.2
Shirley	28	391.5
Shrewsbury	72	207.1
Shutesbury	3	-. ²
Somerset	70	313.5
Somerville	163	285.3
South Hadley	53	293.7
Southampton	16	200.8
Southborough	18	196.9
Southbridge	52	314.6
Southwick	29	272.6
Spencer	51	377.6
Springfield	590	425.6
Sterling	16	216.3
Stockbridge	8	300.5
Stoneham	75	296.8
Stoughton	91	293.4
Stow	15	182.1
Sturbridge	25	232.4
Sudbury	18	124.2
Sunderland	5	150.6
Sutton	24	246.8
Swampscott	35	225.9

Table 34. Premature Mortality Rates by Community, Massachusetts: 2013

<u>City/Town</u>	<u>Premature Deaths (#)</u>	<u>PMR</u> ¹ (per 100,000 population)
Swansea	57	289.7
Taunton	246	423.2
Templeton	29	320.2
Tewksbury	98	303.2
Tisbury	14	305.0
Tolland	1	-. ²
Topsfield	9	123.6
Townsend	24	283.2
Truro	7	250.7
Tyngsborough	21	206.8
Tyringham	0	0
Upton	22	274.9
Uxbridge	40	287.6
Wakefield	86	306.8
Wales	5	233.0
Walpole	56	215.5
Waltham	144	249.9
Ware	45	382.9
Wareham	125	475.8
Warren	19	340.1
Warwick	3	-. ²
Washington	0	0
Watertown	75	223.7
Wayland	24	141.1
Webster	92	502.4
Wellesley	26	91.1
Wellfleet	19	531.4
Wendell	2	-. ²
Wenham	12	306.3
West Boylston	24	268.8
West Bridgewater	35	433.2
West Brookfield	12	237.0
West Newbury	11	228.4
West Springfield	99	325.0
West Stockbridge	3	-. ²
West Tisbury	7	194.0
Westborough	36	197.8
Westfield	147	335.9
Westford	41	183.3
Westhampton	3	-. ²
Westminster	23	292.5
Weston	20	174.5
Westport	58	286.1
Westwood	31	187.2
Weymouth	200	329.0
Whately	6	243.5
Whitman	42	295.2
Wilbraham	36	211.6
Williamsburg	5	163.1

Table 34. Premature Mortality Rates by Community, Massachusetts: 2013

<u>City/Town</u>	<u>Premature Deaths (#)</u>	<u>PMR</u> ¹ (per 100,000 population)
Williamstown	17	209.6
Wilmington	55	254.5
Winchendon	36	344.4
Winchester	51	229.4
Windsor	3	-. ²
Winthrop	66	312.6
Woburn	117	281.9
Worcester	652	401.8
Worthington	3	-. ²
Wrentham	38	358.3
Yarmouth	120	378.9

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, Massachusetts: 2013

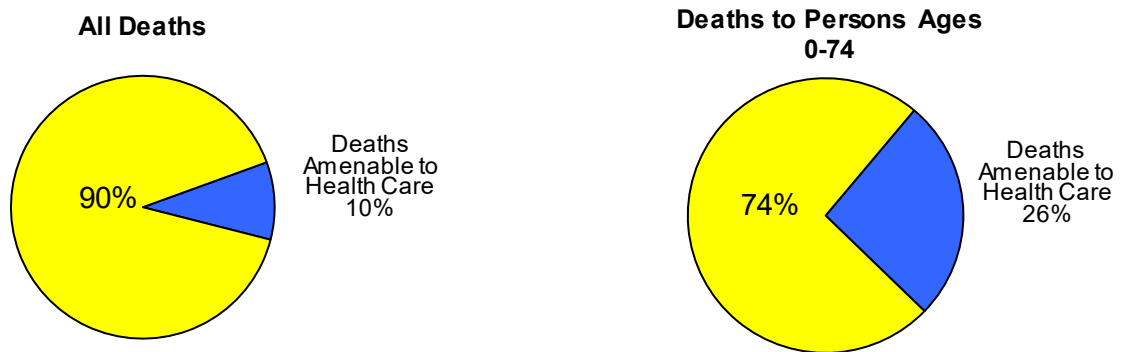
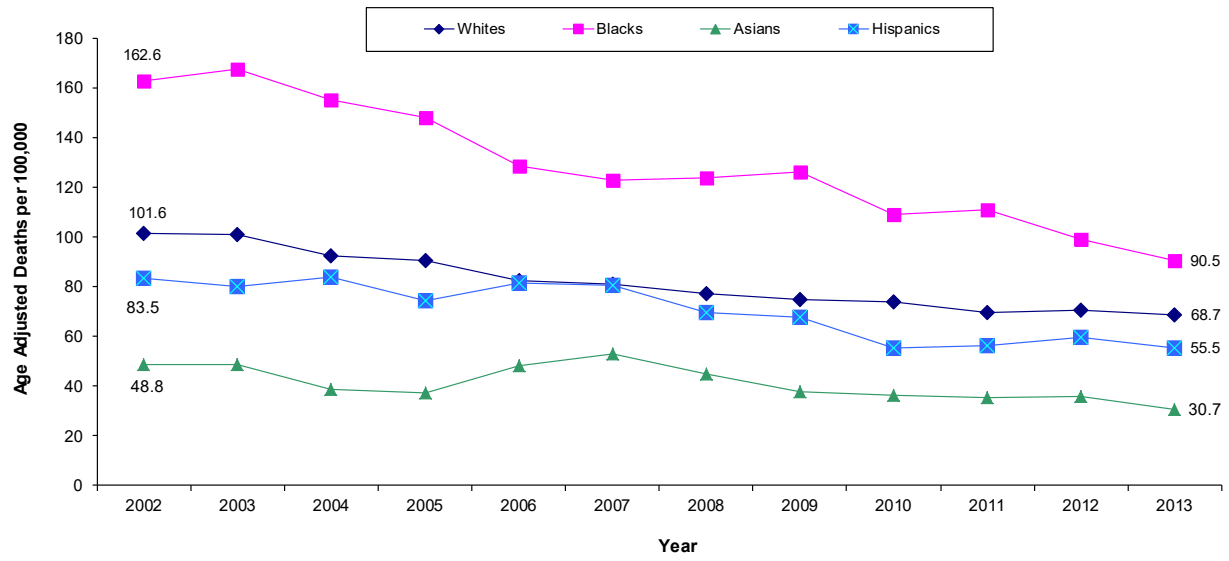


Figure 18. Amenable Mortality by Race and Hispanic ethnicity, Massachusetts: 2002-2013



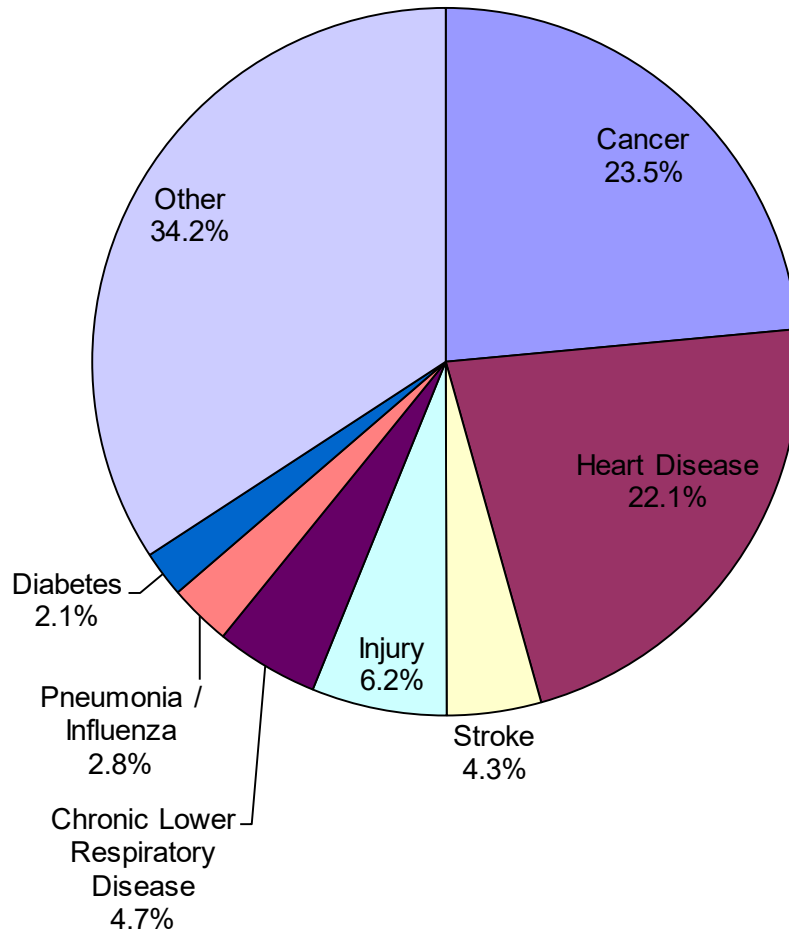
APPENDIX

Additional Tables & Figures

Technical Notes

Glossary

Figure 19. Percent Distribution of Leading Underlying Causes of Death, Massachusetts: 2013



1. Total Number of Deaths = 54,609
2. Causes of Death are classified according to ICD-10

Table 35. Number and Age-Specific Rates for Selected Causes of Death by Race and Hispanic Ethnicity, Massachusetts: 2013

Selected Causes ²	Total		White non-Hispanic ¹		Black non-Hispanic ¹		Asian non-Hispanic ¹		Hispanic	
	#	Rate ³	#	Rate	#	Rate	#	Rate	#	Rate
Age: 1-14, TOTAL	118	11.0	65	9.0	19	19.4	8	10.8	23	13.0
Unintentional Injuries	21	2.0	7	1.0	6	6.1	2	-- ⁶	6	3.4
Cancer	16	1.5	9	1.3	2	-- ⁶	1	-- ⁶	3	-- ⁶
Ill-defined conditions	11	1.0	6	0.8	1	-- ⁶	0	0.0	3	-- ⁶
Congenital malformations	9	0.8	5	0.7	0	0.0	2	-- ⁶	2	-- ⁶
Age: 15-24, TOTAL	449	47.7	310	47.2	67	80.8	12	18.2	57	43.0
Unintentional Injuries ⁴	197	20.9	152	23.1	18	21.7	3	-- ⁶	23	17.4
Suicide	80	8.5	61	9.3	7	8.4	4	-- ⁶	7	5.3
Homicide	45	4.8	10	1.5	20	24.1	0	0.0	14	10.6
Cancer	22	2.3	17	2.6	2	2.4	2	-- ⁶	1	-- ⁶
Age: 25-44, TOTAL	1,993	113.5	1,542	123.9	184	136.4	51	33.6	194	87.9
Unintentional Injuries ⁴	667	38.0	561	45.1	38	28.2	7	4.6	54	24.5
Cancer	319	18.2	230	18.5	37	27.4	16	10.5	30	13.6
Suicide	202	11.5	166	13.3	8	5.9	8	5.3	18	8.2
Heart Disease	169	9.6	133	10.7	17	12.6	2	-- ⁶	15	6.8
Age: 45-64, TOTAL	9,013	483.8	7,642	496.8	665	602.1	161	185.3	460	373.5
Cancer	3,175	170.4	2,736	177.9	195	176.5	84	96.7	130	105.6
Heart Disease	1,623	87.1	1,382	89.8	134	121.3	19	21.9	70	56.8
Unintentional Injuries ⁴	695	37.3	585	38.0	49	44.4	7	8.1	48	39.0
Chronic liver disease	312	16.7	277	18.0	15	13.6	1	1.2	17	13.8
Age: 65+, TOTAL	42,737	4,319.9	39,766	4,517.4	1,445	3,526.7	569	1,822.5	765	2,173.9
Heart Disease	10,271	1,038.2	9,694	1,101.2	301	734.6	106	339.5	124	352.4
Cancer	9,316	941.7	8,584	975.1	366	893.3	136	435.6	191	542.8
Chronic lower respiratory disease ⁵	2,258	228.2	2,149	244.1	43	104.9	22	70.5	35	99.5
Stroke	2,141	216.4	1,965	223.2	80	195.3	41	131.3	44	125.0

1. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include persons of Hispanic ethnicity in a race category. Please see Technical Notes in the Appendix for a more detailed explanation. 2. Deaths are coded according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 3. Number of deaths per 100,000 persons in each age group. 4. Unintentional injuries include injuries such as motor vehicle-related and other transportation related deaths, falls, fires, and drownings that were not intended to occur. 5. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title). 6. Calculations based on values 1-4 are excluded.

Table 35 (continued). Number and Age-Specific Rates for Selected Causes of Death by Race and Hispanic Ethnicity, Massachusetts: 2013

Selected Causes²	Total		White non-Hispanic¹		Black non-Hispanic¹		Asian non-Hispanic¹		Hispanic	
	#	Rate³	#	Rate	#	Rate	#	Rate	#	Rate
Age: 65-74, TOTAL	8,259	1,536.7	7,433	1,577.8	408	1,683.9	131	702.1	236	1,048.7
Cancer	3,132	582.7	2,850	605.0	139	573.7	51	273.3	80	355.5
Heart Disease	1,633	303.8	1,467	311.4	99	408.6	21	112.5	36	160.0
Chronic Lower Respiratory Disease ⁵	503	93.6	479	101.7	11	45.4	4	-- ⁶	6	26.7
Stroke	271	50.4	229	48.6	14	57.8	10	53.6	13	57.8
Age: 75-84, TOTAL	13,182	4,453.8	12,100	4,573.3	504	4,199.3	210	2,211.2	305	3,242.3
Cancer	3,437	1,161.3	3,167	1,197.0	127	1,058.2	59	621.2	68	722.9
Heart Disease	2,801	946.4	2,610	986.5	92	766.5	36	379.1	56	595.3
Chronic Lower Respiratory Disease ⁵	873	295.0	823	311.1	23	191.6	7	73.7	18	191.3
Stroke	626	211.5	566	213.9	29	241.6	11	115.8	15	159.5
Age: 85+, TOTAL	21,296	13,661.7	20,233	13,990.9	533	11,242.4	228	7,438.8	224	6,829.3
Heart Disease	5,837	3,744.5	5,617	3,884.1	110	2,320.2	49	1,598.7	32	975.6
Cancer	2,747	1,762.2	2,567	1,775.1	100	2,109.3	26	848.3	43	1,311.0
Stroke	1,244	798.0	1,170	809.0	37	780.4	20	652.5	16	487.8
Alzheimer's Disease	1,147	735.8	1,091	754.4	30	632.8	10	326.3	13	396.3

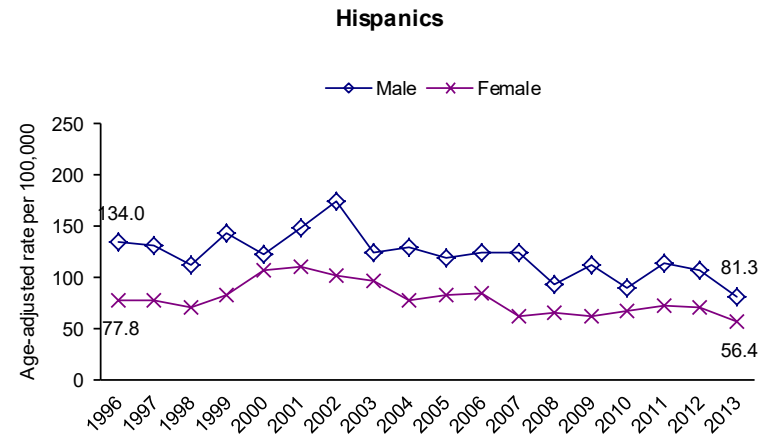
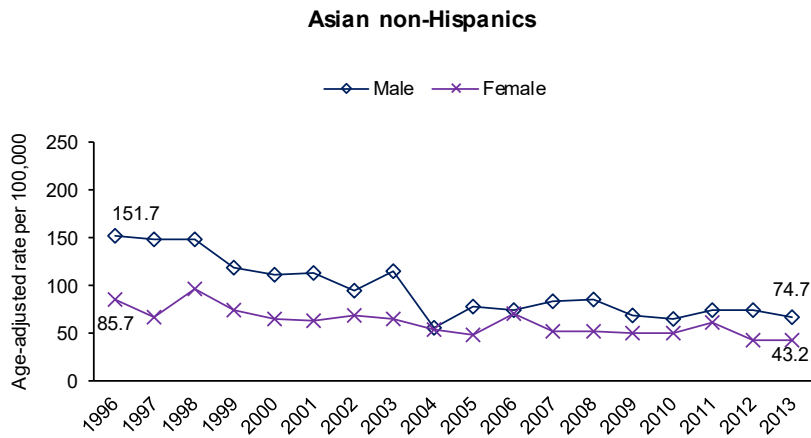
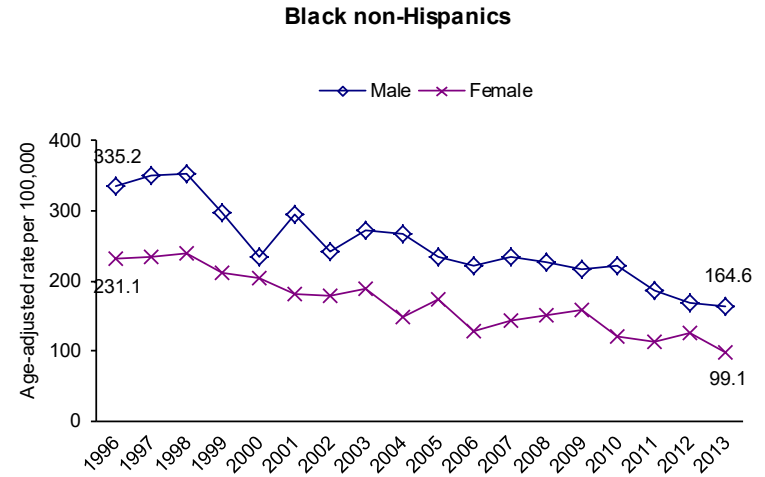
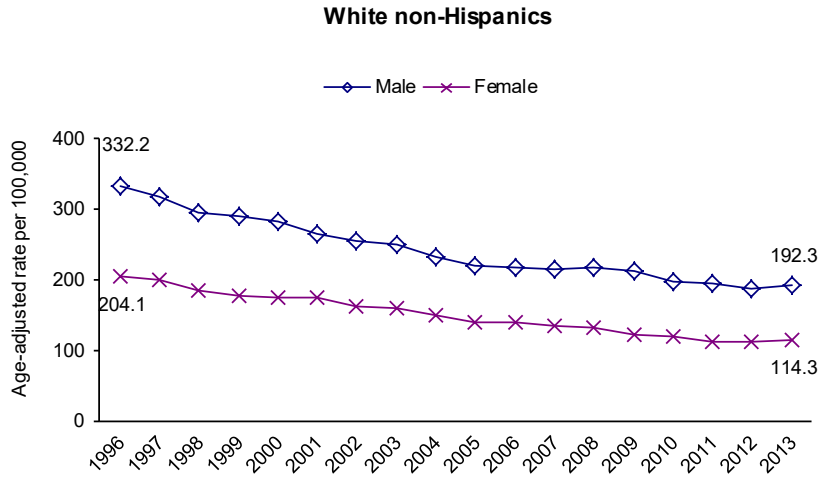
1. Race and ethnicity data in this table are presented as mutually exclusive categories. Persons of Hispanic ethnicity are not included in a race category. Please see Table A1 in the Appendix for death data by race according to Federal definitions, which include persons of Hispanic ethnicity in a race category. Please see Technical Notes in the Appendix for a more detailed explanation. 2. Deaths are coded according to ICD-10. Please see Appendix for a list of ICD-10 codes used in this table. 3. Number of deaths per 100,000 persons in each age group. 4. Unintentional injuries include injuries such as motor vehicle-related and other transportation related deaths, falls, fires, and drownings that were not intended to occur. 5. The title of this cause of death has changed between ICD-10 and ICD-9. Chronic Lower Respiratory Disease (ICD-10 title) corresponds to Chronic Obstructive Pulmonary Disease (COPD) (ICD-9 title). 6. Calculations based on values 1-4 are excluded.

Table 36. Number of Deaths for Leading Causes of Death by Hispanic Ethnicity, Massachusetts: 2013

Ethnicity \Leading Causes of Death¹	Cancer	Heart Disease	Unintentional Injuries	Stroke	Diabetes	Chronic lower respiratory disease	Nephritis	Homicide	Ill defined conditions	Perinatal	ALL DEATHS
Puerto Rican	201	118	93	31	37	38	36	24	18	19	952
Dominican	55	34	18	5	9	4	7	12	7	6	233
Central American	37	25	18	9	2	4	1	2	4	4	147
South American	32	14	5	7	4	2	2	1	0	2	95
Cuban	11	14	5	7	5	2	1	0	1	0	66
Mexican	10	5	2	1	1	0	0	0	1	0	34
Other/Unknown	8	0	4	0	0	0	0	0	0	0	13
All Hispanics	354	210	144	60	58	50	47	39	32	32	1,548

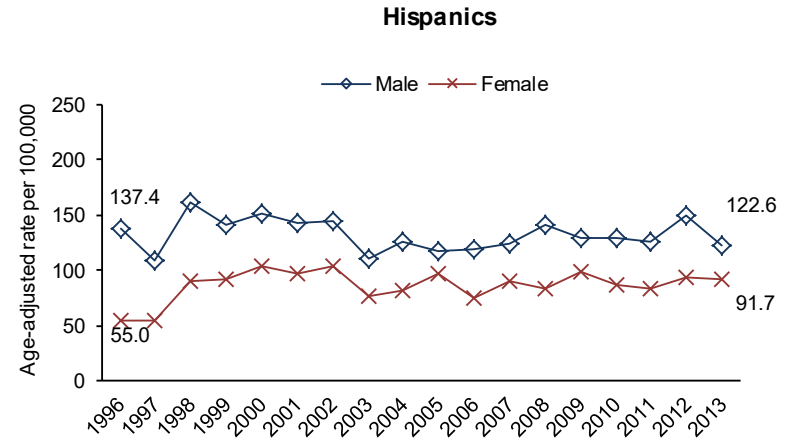
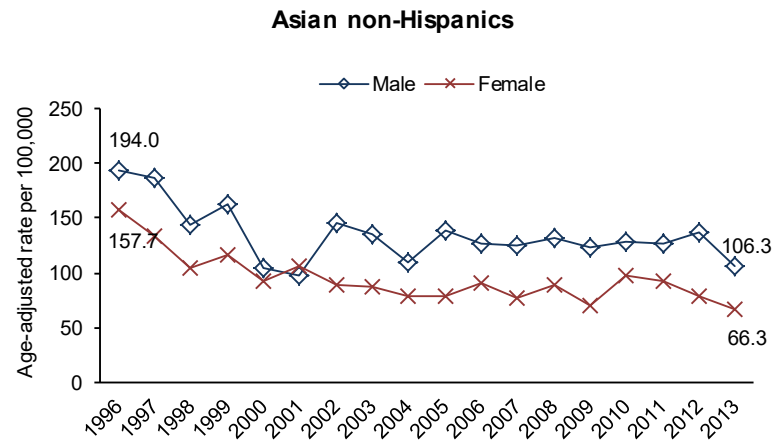
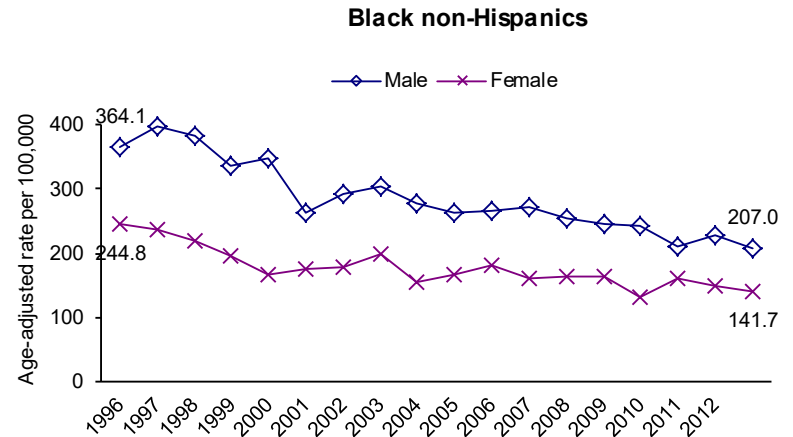
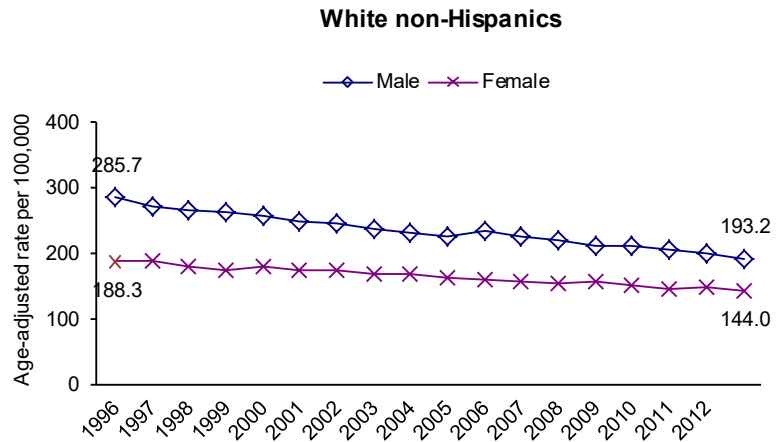
1. Ranking based on number of deaths. Underlying Cause of Death based on ICD-10 (Please see Appendix for a list of ICD-10 codes used).

Figure 20. Heart Disease Death Rates¹ by Race/Ethnicity and Gender, Massachusetts: 1996-2013²



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 Rates¹ by Race/Ethnicity and Gender, Massachusetts: 1996-2013²



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

Table 37. HIV/AIDS¹ Deaths by Race, Hispanic Ethnicity, and Gender of Persons Ages 25-44, Massachusetts: 2000-2013

Year	White non-Hispanic ²		Black non-Hispanic ²		Hispanic	
	#	Rate ³	#	Rate ³	#	Rate ³
2000	60	3.7	28	23.8	40	27.6
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
MALE						
2000	39	4.9	17	30.1	27	37.9
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
FEMALE						
2000	21	2.5	11	17.9	13	17.6
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

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 38. Premature Mortality Rates by Community Health Network Area (CHNA),
Massachusetts: 2013**

CHNA (Name and Number)	Number of Deaths	PMR¹ (per 100,000 population)
Massachusetts	20,130	268.7
1. Community Health Network of Berkshire	529	336.8
2. Upper Valley Health Web (Franklin County)	358	356.8
3. Partnership for Health in Hampshire County (Northampton)	438	271.9
4. The Community Health Connection (Springfield)	1,056	349.4
5. Community Health Network of Southern Worcester County	414	316.5
6. Community Partners for Health (Milford)	450	273.5
7. Community Health Network of Greater Metro West (Framingham)	962	233.0
8. Common Pathways (Worcester)	986	327.3
9. Community Health Network of North Central Massachusetts	872	320.1
10. Greater Lowell Community Health Network	879	314.5
11. Greater Lawrence Community Health Network	500	270.0
12. Greater Haverhill Community Health Network	483	296.9
13. Community Health Network North (Beverly/Gloucester)	332	238.9
14. North Shore Community Health Network	920	299.4
15. Northwest Suburban Health Alliance	491	201.3
16. North Suburban Health Alliance (Medford/Malden/Melrose)	784	278.5
17. Greater Cambridge/Somerville Community Health Network	553	221.1
18. West Suburban Health Network (Newton/Waltham)	489	181.6
19. Alliance for Community Health (Boston/Chelsea/Revere/Winthrop)	2,131	311.6
20. Blue Hills Community Health Alliance (Greater Quincy)	1,153	275.7
21. Community Health Network of Chicopee, Holyoke, Ludlow, Westfield	614	359.4
22. Greater Brockton Community Health Network	876	358.2
23. South Shore Community Health Network	650	299.8
24. Greater Attleboro-Taunton Health & Education Response	887	329.4
25. Partners for Healthier Communities (Fall River)	602	392.9
26. Greater New Bedford Community Health Network	829	375.3
27. Cape Cod and Islands Health Network	892	270.1

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

Table 39. Premature Mortality Rates by County, Massachusetts: 2013

County	Number of Deaths	PMR¹ (per 100,000 population)
Massachusetts	20,130	268.7
Barnstable	826	270.4
Berkshire	529	320.8
Bristol	2,103	333.7
Dukes	52	213.7
Essex	2,235	257.8
Franklin	283	309.9
Hampden	1,685	328.5
Hampshire	446	251.3
Middlesex	3,827	226.9
Nantucket	14	112.7
Norfolk	1,845	238.4
Plymouth	1,720	287.3
Suffolk	2,035	294.7
Worcester	2,530	283.3

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

Table 40. Selected Causes of Death by Community, Massachusetts: 2013

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	54,609	664.1	12,077	12,851	3,331	832	2,355	2,575	1,149	1,551	375	155	595	953
Abington	134	855.4	22	29	8	1	4	9	2	3	3	0	2	2
Acton	102	502.8	27	22	1	2	10	5	4	2	0	0	1	0
Acushnet	77	552.4	14	27	14	0	0	6	0	3	2	0	1	0
Adams	106	773.6	28	24	6	3	5	6	2	4	1	0	2	1
Agawam	348	753.1	89	83	23	8	16	15	10	7	3	0	4	3
Alford	6	664.8	2	1	0	0	1	0	0	1	0	0	0	0
Amesbury	149	832.7	28	36	8	1	4	10	3	2	3	0	5	2
Amherst	147	551.4	33	33	4	3	9	9	2	6	0	1	0	2
Andover	207	534	33	51	11	4	9	3	3	7	2	1	1	4
Aquinnah	7	2,661.20	3	3	0	0	0	0	0	0	0	0	0	0
Arlington	335	546.4	81	70	15	6	16	16	3	4	0	4	4	3
Ashburnham	40	790.9	14	11	3	2	0	1	0	1	2	0	0	0
Ashby	22	842.2	2	7	1	1	1	0	1	0	2	0	0	0
Ashfield	14	618.7	3	5	0	1	1	0	0	0	0	0	0	0
Ashland	88	582.7	21	26	7	2	3	2	0	7	0	0	1	0
Athol	132	875.6	31	29	12	0	3	7	3	5	1	1	2	2
Attleboro	400	814.5	96	90	31	9	20	24	8	17	0	0	6	13
Auburn	155	605.9	35	37	8	0	7	7	3	6	1	1	1	2
Avon	43	713.2	12	7	3	1	1	1	0	2	0	0	0	1
Ayer	88	1,208.90	17	23	10	1	3	4	2	1	0	1	1	1
Barnstable	549	726.9	129	121	33	8	27	38	11	12	4	0	8	8
Barre	41	676.8	8	10	4	0	2	2	1	0	1	0	0	0
Becket	13	613.6	3	3	1	0	1	1	0	0	0	0	1	0
Bedford	156	690.6	36	36	9	3	5	2	4	5	1	0	2	0
Belchertown	109	832.3	24	30	1	1	4	5	2	4	1	0	3	3
Bellingham	125	815.8	17	40	13	4	5	9	4	4	0	0	3	1
Belmont	195	562.1	50	57	17	5	5	4	2	7	0	0	0	0
Berkley	45	1,057.40	13	6	2	0	4	3	1	0	0	0	3	1
Berlin	27	707.1	5	9	2	0	3	0	0	1	0	0	1	0
Bernardston	22	728.6	1	5	1	0	4	3	1	0	0	0	0	0
Beverly	362	700.7	92	82	24	3	15	13	8	7	1	1	12	5
Billerica	309	861.1	64	83	21	3	11	18	4	5	4	0	3	3

Table 40. Selected Causes of Death by Community, Massachusetts: 2013

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
Blackstone	65	693.8	16	11	3	0	4	4	2	1	2	1	0	0
Blandford	5	337.5	3	0	0	0	0	0	0	0	0	0	0	0
Bolton	29	849.9	9	6	1	1	1	2	0	1	0	0	0	0
Boston	3,787	704	726	944	219	59	143	160	105	99	28	38	38	86
Bourne	234	782.3	47	50	14	2	12	17	3	6	1	0	1	2
Boxborough	14	355.4	3	9	0	1	0	0	0	1	0	0	0	0
Boxford	39	487.2	16	9	2	0	2	0	0	1	0	0	1	0
Boylston	18	392.7	3	5	1	1	1	3	0	0	0	0	0	0
Braintree	374	706.6	97	78	19	4	17	22	5	13	0	0	3	3
Brewster	129	551.9	40	17	3	1	6	3	5	3	1	0	1	1
Bridgewater	174	781.5	32	44	9	0	6	15	2	2	1	0	4	5
Brimfield	27	686.4	4	5	2	1	1	0	1	1	1	0	1	0
Brockton	810	848.3	217	188	56	9	29	37	20	18	7	8	3	27
Brookfield	27	692.6	7	8	3	0	0	0	1	1	1	0	0	1
Brookline	329	490.7	60	90	23	3	16	5	6	11	3	0	5	1
Buckland	16	685.3	5	2	1	1	1	0	1	2	0	0	0	1
Burlington	203	649	38	54	15	3	6	11	4	8	0	0	1	3
Cambridge	458	549.8	88	122	27	3	18	15	20	11	2	3	7	6
Canton	233	686.2	48	55	18	1	6	9	3	6	3	0	1	4
Carlisle	18	542.3	4	6	0	0	0	0	0	0	0	0	0	0
Carver	120	886.3	33	19	9	1	7	5	1	7	6	0	3	2
Charlemont	13	764.6	4	3	0	0	0	0	1	1	0	0	0	0
Charlton	98	637.3	21	20	5	2	5	6	5	2	1	0	2	1
Chatham	130	648.3	51	27	6	1	9	5	2	6	0	0	0	0
Chelmsford	333	735.4	60	78	18	3	16	18	8	9	0	0	0	3
Chelsea	247	869.9	47	45	9	2	8	14	6	8	0	3	4	7
Cheshire	30	733.1	8	11	3	1	2	0	0	0	0	0	0	0
Chester	8	559.1	0	2	0	0	0	2	0	0	0	0	0	0
Chesterfield	7	475.3	1	2	0	0	0	1	0	0	0	0	1	0
Chicopee	605	811.1	147	129	31	11	22	31	14	32	2	2	6	9
Chilmark	11	632.7	3	3	0	0	0	0	0	2	0	0	0	0
Clarksburg	18	990.5	3	5	2	0	0	1	0	0	0	0	1	1
Clinton	139	902	22	34	8	2	15	8	3	7	3	0	2	2
Cohasset	75	732.3	23	17	3	1	2	2	2	0	0	0	0	0
Colrain	16	787.8	1	4	1	0	1	1	1	1	0	0	0	0

Table 40. Selected Causes of Death by Community, Massachusetts: 2013

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
Concord	184	548.8	45	36	7	4	8	2	3	4	1	0	1	0
Conway	8	533.1	2	2	1	0	0	0	0	0	0	0	0	0
Cummington	3	-.4	0	2	0	0	0	0	0	0	0	0	0	0
Dalton	95	831.8	19	13	5	0	0	9	1	3	0	0	2	0
Danvers	356	839.6	83	53	8	8	13	16	5	12	1	0	2	6
Dartmouth	319	671.6	78	59	13	6	19	16	3	13	3	0	4	2
Dedham	305	719.7	71	74	13	6	12	7	6	11	2	1	1	3
Deerfield	35	570.1	6	13	3	0	3	3	0	1	0	0	1	0
Dennis	224	668.7	50	56	11	5	9	13	4	5	2	0	1	4
Dighton	55	732.1	18	17	3	1	2	2	0	0	0	0	0	1
Douglas	40	681.3	12	8	4	0	0	2	1	1	1	0	1	0
Dover	19	405.8	5	8	0	1	0	0	0	0	0	0	0	0
Dracut	253	825.1	64	68	21	4	8	12	4	5	1	1	2	6
Dudley	88	751.6	25	25	11	3	6	4	1	1	0	0	2	3
Dunstable	22	897.4	3	8	3	2	0	1	0	0	0	0	1	1
Duxbury	151	676.7	35	27	7	3	8	7	2	2	1	0	4	0
East Bridgewater	113	804.8	32	22	4	4	3	5	2	2	0	0	1	4
East Brookfield	21	829.4	2	6	1	0	2	0	0	0	0	0	1	0
East Longmeadow	200	680	48	45	16	0	10	11	1	6	0	0	1	5
Eastham	91	841.3	24	24	10	1	3	4	2	1	1	0	1	2
Easthampton	148	711.1	32	38	8	3	7	9	1	2	2	0	1	6
Easton	156	706.7	25	43	11	5	2	11	3	7	5	0	1	2
Edgartown	22	465.2	4	3	1	1	2	1	1	2	0	0	0	0
Egremont	5	381.4	2	1	0	0	0	0	0	0	0	0	0	0
Erving	13	649.4	4	2	0	0	0	1	0	0	0	0	0	1
Essex	26	628.7	9	8	0	1	0	1	0	2	0	0	0	0
Everett	269	650.8	45	67	26	3	9	16	9	9	0	2	3	5
Fairhaven	200	691.8	48	35	11	2	4	7	6	5	0	1	0	4
Fall River	993	856.3	215	217	70	11	29	60	45	25	2	2	9	29
Falmouth	412	663.3	82	92	20	7	29	18	9	11	2	2	2	7
Fitchburg	374	831.9	70	80	19	2	34	17	12	13	5	1	1	6
Florida	5	519.7	1	1	0	0	0	0	0	0	0	0	0	0
Foxborough	120	677.5	32	31	7	3	4	8	3	1	0	0	1	1
Framingham	559	646.2	133	131	35	8	25	31	10	12	2	1	2	4
Franklin	192	741.4	33	55	14	5	5	11	3	3	1	0	3	2

Table 40. Selected Causes of Death by Community, Massachusetts: 2013

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
Freetown	52	631.2	12	10	3	2	4	5	3	0	1	0	1	0
Gardner	221	829.9	44	51	18	1	24	14	2	12	0	0	3	4
Georgetown	53	746	19	8	2	0	0	4	1	0	0	0	2	1
Gill	11	702.9	3	2	1	0	0	1	1	0	0	0	0	0
Gloucester	291	680.9	60	73	22	1	9	9	5	8	2	0	3	6
Goshen	4	-.4	1	1	0	0	0	0	0	1	0	0	0	0
Gosnold	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grafton	109	647.1	18	39	14	1	5	5	0	2	3	0	1	3
Granby	44	672	12	14	7	1	2	1	1	1	0	0	0	2
Granville	15	938.2	5	2	1	0	0	0	0	0	0	0	0	0
Great Barrington	107	948.9	17	25	8	2	4	6	2	5	1	0	2	0
Greenfield	217	846	46	44	13	1	14	25	2	5	0	0	4	5
Groton	63	620.6	7	16	3	2	2	2	0	4	1	0	2	1
Groveland	47	612.5	9	12	2	0	2	6	0	1	1	0	1	1
Hadley	83	830.2	7	14	1	2	6	2	1	5	0	0	1	0
Halifax	75	909.2	13	16	2	1	6	7	3	1	0	0	1	5
Hamilton	48	602.2	10	15	4	0	3	1	0	2	1	0	1	1
Hampden	59	781.7	10	13	5	1	1	2	0	2	0	0	0	0
Hancock	7	727.6	2	0	0	0	0	1	0	0	0	0	0	0
Hanover	101	716.2	17	23	8	1	2	5	6	4	2	0	0	1
Hanson	79	895.8	20	23	5	1	1	5	3	2	1	0	2	1
Hardwick	17	557	6	2	0	0	1	2	0	0	0	0	0	0
Harvard	32	712.3	10	8	2	0	0	2	0	0	1	0	1	1
Harwich	200	726.3	61	46	11	1	8	15	6	5	0	1	2	2
Hatfield	34	756	10	8	1	1	3	0	1	1	0	0	2	3
Haverhill	517	751.6	134	115	38	8	17	31	11	11	3	2	2	8
Hawley	5	1,094.90	3	1	1	0	1	0	0	0	0	0	0	0
Heath	4	-4	2	1	0	0	1	0	0	0	0	0	0	0
Hingham	221	513.3	42	53	9	5	13	5	5	16	1	0	1	1
Hinsdale	14	544	2	4	1	0	1	0	1	0	1	0	0	0
Holbrook	114	927.6	25	31	10	1	5	3	2	8	3	0	2	4
Holden	139	641.5	28	35	8	1	12	6	3	3	2	0	0	0
Holland	11	498.7	1	2	0	0	0	0	1	0	0	0	0	0
Holliston	87	676	21	26	3	4	1	2	0	2	2	0	1	1
Holyoke	431	798.8	108	74	16	5	16	22	8	11	5	2	4	8

Table 40. Selected Causes of Death by Community, Massachusetts: 2013

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
Hopedale	39	455.5	5	15	5	1	3	1	0	0	0	0	0	0
Hopkinton	60	574.6	15	16	6	1	0	0	0	1	1	0	2	0
Hubbardston	27	845.1	6	5	0	0	3	2	0	1	0	0	0	0
Hudson	138	655.4	30	34	11	0	7	6	3	5	0	0	2	1
Hull	102	857	24	31	6	1	4	5	3	3	0	0	0	0
Huntington	15	661.2	2	4	0	0	0	1	0	1	0	0	2	0
Ipswich	113	569.9	22	25	3	2	5	5	2	5	0	0	1	1
Kingston	136	775.1	32	32	4	2	2	6	2	6	3	0	1	0
Lakeville	95	880.3	21	22	3	0	6	4	1	2	0	0	0	1
Lancaster	54	673.1	16	13	3	1	7	1	2	1	0	0	0	0
Lanesborough	21	556.5	6	3	0	1	0	2	0	0	0	0	0	0
Lawrence	446	733.6	98	100	20	10	12	20	15	12	2	3	5	10
Lee	78	826.9	19	14	5	0	5	4	1	2	0	0	0	0
Leicester	86	715	11	27	8	2	6	10	3	1	0	0	0	2
Lenox	93	615.8	27	12	3	1	9	4	1	0	0	0	0	1
Leominster	370	714.4	89	78	23	4	33	19	7	9	1	0	6	6
Leverett	15	869.8	2	4	1	1	1	1	0	1	1	0	0	0
Lexington	223	409.9	48	51	8	7	14	9	4	6	0	0	1	1
Leyden	7	1,458.70	1	4	0	0	2	0	0	0	0	0	0	0
Lincoln	29	340.3	5	6	1	0	2	2	0	1	0	0	0	0
Littleton	24	233.3	3	5	0	0	2	0	0	3	0	0	0	0
Longmeadow	167	567.4	36	39	9	4	10	4	0	2	1	0	1	2
Lowell	810	845	173	165	43	8	32	38	20	25	6	2	10	25
Ludlow	201	666.8	40	55	12	3	10	7	3	4	2	0	2	2
Lunenburg	79	724.1	22	15	8	0	5	5	2	1	1	0	0	2
Lynn	637	709.7	145	151	49	12	32	24	17	15	8	4	6	25
Lynnfield	93	531.7	21	32	5	4	7	3	1	0	0	0	0	0
Malden	407	666.6	71	107	38	10	16	29	18	13	2	0	7	12
Manchester	26	359.5	8	7	1	0	4	1	0	0	0	0	1	0
Mansfield	122	714.6	28	31	9	1	4	7	2	3	1	1	1	4
Marblehead	162	608.3	35	43	8	5	7	7	1	9	0	0	2	2
Marion	71	788.4	19	16	3	2	5	5	2	4	0	0	0	0
Marlborough	326	740.5	75	77	19	5	19	17	4	6	1	0	10	3
Marshfield	197	812.2	44	56	14	5	9	17	5	6	1	0	1	4
Mashpee	156	676.1	25	50	17	7	4	4	2	5	0	0	2	5

Table 40. Selected Causes of Death by Community, Massachusetts: 2013

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
Mattapoisett	48	525.7	11	13	4	1	1	2	0	1	0	0	0	0
Maynard	70	660.6	16	19	5	2	1	1	0	1	2	0	3	0
Medfield	65	544	17	22	5	3	4	4	0	3	0	0	0	0
Medford	460	598.9	113	117	32	3	13	17	6	11	1	0	4	9
Medway	93	802	22	15	6	1	5	4	3	6	0	0	1	1
Melrose	239	642.7	47	51	11	3	6	17	9	3	3	0	2	5
Mendon	41	945.1	7	10	3	2	2	1	0	0	0	0	0	2
Merrimac	43	630.3	11	9	4	0	0	2	0	1	0	0	1	1
Methuen	425	704.6	104	81	30	7	24	16	8	13	4	0	6	6
Middleborough	205	779.6	37	40	11	3	13	5	5	8	5	1	3	6
Middlefield	3	⁻⁴	0	2	2	0	0	0	0	0	1	0	0	0
Middleton	54	584.4	13	18	5	0	2	2	1	4	0	0	1	0
Milford	220	680	69	51	15	5	9	10	3	6	1	0	2	2
Millbury	139	835.1	33	36	13	2	5	6	4	1	1	0	1	2
Millis	55	741.9	10	13	3	1	2	9	0	1	0	0	0	1
Millville	18	771.7	5	4	1	0	2	1	0	1	0	0	1	0
Milton	248	635.1	53	60	15	1	11	9	4	10	3	1	2	0
Monroe	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monson	59	687.9	20	11	2	1	0	1	1	2	0	0	1	2
Montague	75	651.2	16	25	11	0	1	2	2	4	2	0	1	0
Monterey	1	⁻⁴	1	0	0	0	0	0	0	0	0	0	0	0
Montgomery	2	⁻⁴	2	0	0	0	0	0	0	0	0	0	0	0
Mount Washington	3	⁻⁴	0	1	0	0	0	2	0	0	0	0	0	0
Nahant	45	693.8	8	12	0	3	4	1	1	1	0	0	0	0
Nantucket	50	493.9	7	15	3	0	3	3	1	2	0	0	0	1
Natick	259	662.2	80	67	19	5	12	11	6	5	1	1	3	3
Needham	237	496.1	67	47	8	4	8	5	5	3	0	0	0	0
New Ashford	1	⁻⁴	0	1	0	0	0	0	0	0	0	0	0	0
New Bedford	1,012	847.3	208	201	62	18	35	44	18	33	3	7	15	29
New Braintree	4	⁻⁴	2	0	0	0	0	1	0	0	0	0	0	0
New Marlborough	8	375.7	3	1	1	0	1	0	0	1	0	0	0	0
New Salem	9	934.2	2	4	1	0	0	1	0	0	0	0	0	0
Newbury	36	512.5	9	8	0	2	0	4	1	1	1	0	1	1
Newburyport	150	618	26	28	8	2	5	17	5	5	0	0	2	2
Newton	581	480.3	133	150	26	14	33	10	10	27	3	0	8	2

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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
Norfolk	62	893.8	13	15	2	2	3	1	1	1	1	0	0	0
North Adams	164	861.3	40	35	10	0	7	6	1	2	2	1	3	1
North Andover	278	725.7	64	51	16	4	12	12	6	6	1	0	1	1
North Attleboro	209	785.3	43	58	17	3	7	8	5	8	1	0	3	5
North Brookfield	30	564.9	9	13	6	1	0	2	1	1	1	0	0	0
North Reading	104	679.5	21	34	7	2	4	2	1	1	1	0	0	1
Northampton	297	800.3	64	70	13	5	13	16	7	6	0	0	3	4
Northborough	108	657.3	25	23	3	3	5	3	2	1	1	0	1	0
Northbridge	160	804	45	32	10	1	11	4	1	7	2	0	3	1
Northfield	27	706.5	9	5	0	0	1	1	0	0	1	0	1	0
Norton	140	830.6	30	25	4	1	10	9	2	3	2	0	1	4
Norwell	100	709.5	13	31	4	1	3	4	0	6	0	0	0	1
Norwood	335	770.9	79	85	23	3	14	14	10	2	1	0	6	2
Oak Bluffs	46	649.2	12	12	3	1	2	3	0	2	0	0	0	1
Oakham	15	748.3	5	2	0	0	1	0	0	0	0	0	0	0
Orange	79	891	22	16	4	2	3	6	2	2	2	0	2	2
Orleans	90	487.6	30	19	3	1	5	4	2	2	0	1	0	1
Otis	20	993.7	4	6	3	0	0	1	0	1	0	0	0	0
Oxford	113	867	25	32	10	3	5	7	5	6	2	0	0	1
Palmer	137	812.9	28	35	13	3	8	8	1	7	0	0	4	1
Paxton	30	545.6	4	10	1	1	2	1	0	1	0	0	0	1
Peabody	701	738	167	141	33	8	36	34	8	13	2	0	1	12
Pelham	2	⁻⁴	1	0	0	0	0	0	0	0	0	0	0	0
Pembroke	135	921.3	37	44	11	9	2	5	4	3	1	0	0	1
Pepperell	66	689.4	11	15	5	0	4	3	3	2	0	0	0	1
Peru	5	764.5	3	1	0	0	1	0	0	0	0	0	0	0
Petersham	19	1,259.40	2	4	1	1	2	3	0	0	0	0	0	1
Phillipston	12	886	4	5	0	0	0	1	0	0	0	0	0	0
Pittsfield	562	850.3	137	118	33	7	19	32	9	10	7	0	8	15
Plainfield	2	⁻⁴	1	0	0	0	0	0	1	0	0	0	0	0
Plainville	72	866.2	20	16	8	0	3	7	1	2	0	0	0	1
Plymouth	498	761.6	117	111	32	8	24	21	6	27	3	0	7	6
Plympton	26	1,052.60	6	8	1	0	0	1	2	1	0	0	0	0
Princeton	16	509.8	1	4	0	0	3	1	0	0	0	0	1	1
Provincetown	46	899.2	9	7	2	0	4	5	2	2	0	0	0	0

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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
Quincy	822	681.5	164	219	59	13	36	37	19	18	3	2	10	26
Randolph	227	611.6	61	42	14	3	7	11	9	6	4	3	2	5
Raynham	115	738.9	27	25	6	3	6	6	2	2	0	0	1	2
Reading	174	536.7	39	37	7	2	14	12	5	1	0	0	1	1
Rehoboth	77	722.7	10	30	8	4	4	7	1	1	1	0	0	0
Revere	436	670.3	86	110	30	6	19	22	12	14	2	3	4	15
Richmond	11	514.3	2	4	2	1	0	0	0	0	0	0	0	1
Rochester	29	618.2	5	4	1	0	1	2	1	2	0	0	1	0
Rockland	158	766.9	44	40	6	3	4	8	2	4	1	0	3	3
Rockport	72	522.6	15	21	3	2	0	1	1	3	0	0	1	1
Rowe	7	1,056.60	2	1	0	1	0	1	0	0	0	0	0	0
Rowley	41	734.3	8	10	2	2	4	2	0	0	0	0	0	2
Royalston	8	658.2	1	1	0	0	0	2	0	1	1	0	1	2
Russell	11	649.2	5	1	1	0	1	0	0	0	0	0	0	0
Rutland	48	846.6	7	16	3	3	2	2	1	0	0	0	1	0
Salem	312	663.6	75	78	19	9	16	9	5	8	2	0	6	7
Salisbury	78	832.3	18	18	7	0	4	5	0	3	1	0	1	1
Sandisfield	13	920.7	5	3	2	0	3	0	0	0	0	0	0	0
Sandwich	162	619.6	35	39	10	6	9	8	4	5	3	0	2	2
Saugus	274	743	60	67	22	3	4	13	5	6	2	1	2	6
Savoy	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scituate	146	597.4	26	34	7	2	11	5	4	5	1	0	2	2
Seekonk	102	631.3	27	29	9	3	2	3	0	1	1	0	1	0
Sharon	102	551.1	27	25	5	3	3	3	4	1	0	0	1	3
Sheffield	31	633.7	10	8	0	1	1	3	1	1	0	0	1	0
Shelburne	23	763.1	8	8	2	0	1	1	0	1	0	0	0	0
Sherborn	22	503.3	5	5	0	0	1	0	0	1	0	0	0	0
Shirley	42	630.9	8	15	2	1	0	4	0	1	0	0	2	0
Shrewsbury	254	592.1	59	54	19	3	8	11	6	10	2	0	3	6
Shutesbury	7	449.9	2	3	1	0	0	0	0	0	0	0	0	0
Somerset	226	672.5	58	56	11	5	6	11	4	9	4	0	2	1
Somerville	415	682.1	70	110	24	6	17	18	11	11	2	1	11	11
South Hadley	170	668.5	43	36	5	4	7	11	3	6	2	0	2	4
Southampton	47	836.5	11	10	1	0	3	1	1	1	1	0	0	1
Southborough	35	423.5	10	7	1	1	1	0	0	1	0	0	4	0

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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
Southbridge	170	785.9	34	37	7	2	6	4	2	12	1	1	1	2
Southwick	87	721.8	20	23	7	0	7	5	2	1	1	0	1	0
Spencer	109	803.4	25	29	11	2	2	6	0	5	2	0	1	1
Springfield	1,229	837.1	268	303	76	21	43	50	29	24	13	20	16	22
Sterling	67	734.6	16	10	1	0	3	1	1	6	0	0	0	1
Stockbridge	23	669.7	6	10	1	1	0	0	0	0	0	0	0	1
Stoneham	217	650.1	45	66	15	3	10	6	5	6	0	1	1	2
Stoughton	268	740.6	62	57	17	3	7	12	7	8	1	2	0	7
Stow	27	378.5	9	7	3	0	0	0	1	1	0	1	0	0
Sturbridge	73	693.2	19	17	4	0	4	3	1	3	1	0	0	1
Sudbury	95	555.4	22	21	2	3	2	6	1	1	0	0	4	0
Sunderland	29	827.8	8	2	1	1	1	1	0	2	0	0	1	1
Sutton	60	863	12	14	2	1	5	2	0	3	0	1	2	0
Swampscott	128	563.1	31	35	12	0	6	1	1	3	2	0	2	4
Swansea	171	737	35	39	12	0	7	10	2	8	0	1	1	4
Taunton	521	810.6	103	123	33	8	19	23	10	19	8	2	6	13
Templeton	85	945.5	17	20	7	2	4	6	1	2	1	0	0	1
Tewksbury	277	832.6	42	60	15	5	10	18	10	7	2	1	3	1
Tisbury	35	649.8	7	8	3	0	2	1	0	3	0	0	1	0
Tolland	3	⁻⁴	2	0	0	0	0	0	0	1	0	0	0	0
Topsfield	46	422.9	6	6	5	0	1	0	0	3	0	0	0	1
Townsend	53	800.7	12	10	5	0	3	6	2	1	1	0	0	4
Truro	15	494.9	4	5	1	0	0	1	0	0	0	0	0	0
Tyngsborough	59	760.8	16	17	7	1	4	4	0	4	0	0	0	1
Tyringham	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Upton	46	689.8	10	14	1	1	1	2	0	0	0	0	1	1
Uxbridge	94	682.3	29	24	4	2	2	3	1	2	2	0	2	2
Wakefield	235	734.3	41	51	10	2	7	11	6	10	3	0	5	7
Wales	7	366	1	2	0	0	0	0	0	0	1	0	0	0
Walpole	192	607.7	50	47	12	5	8	8	1	5	2	0	2	3
Waltham	410	624.2	98	107	27	6	28	17	5	11	4	1	4	9
Ware	114	907	29	25	5	1	4	0	7	3	1	0	0	4
Wareham	285	996.8	56	73	28	1	8	16	5	8	2	0	2	9
Warren	43	818.7	9	7	2	0	4	2	2	1	0	0	0	1
Warwick	5	554.6	1	2	1	0	0	0	0	0	0	0	0	0

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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
Washington	2	-.4	1	0	0	0	0	0	0	0	0	0	0	0
Watertown	231	561	50	48	10	3	14	9	6	10	0	0	1	7
Wayland	103	535.6	15	22	4	2	10	9	1	6	0	0	0	0
Webster	221	944	53	45	11	3	6	15	2	5	3	0	2	3
Wellesley	156	453.2	37	34	5	3	9	5	0	0	0	0	2	0
Wellfleet	42	923.8	10	12	4	2	2	0	1	1	1	0	0	1
Wendell	7	1,695.80	1	0	0	0	1	1	0	0	1	0	0	0
Wenham	37	697.5	8	6	1	1	1	0	1	1	0	0	1	1
West Boylston	73	576.9	16	14	4	1	4	4	2	4	0	0	0	1
West Bridgewater	93	870.5	28	21	6	1	7	1	3	1	1	0	3	2
West Brookfield	43	678.3	10	7	1	0	2	2	4	0	2	0	0	1
West Newbury	28	721.7	7	6	1	0	2	2	0	1	0	0	0	0
West Springfield	260	717.2	71	60	23	1	9	11	5	4	2	0	5	7
West Stockbridge	7	294.5	2	2	0	0	0	0	1	0	0	0	0	0
West Tisbury	20	705.4	6	3	0	0	1	1	0	1	1	0	0	0
Westborough	137	587.9	31	25	7	3	9	7	3	5	1	0	0	0
Westfield	370	755.9	72	92	23	9	12	19	7	11	5	0	5	7
Westford	106	675.2	22	39	10	5	3	5	2	1	0	0	0	0
Westhampton	14	875	6	2	0	0	1	0	0	0	0	0	0	0
Westminster	54	755.4	15	13	2	0	0	1	1	4	3	0	0	0
Weston	98	539.3	16	23	9	4	6	2	1	2	0	0	0	1
Westport	144	665.1	38	38	11	0	5	8	1	5	1	0	3	2
Westwood	156	572.2	29	43	8	7	1	6	4	4	0	1	0	0
Weymouth	530	773.4	112	126	31	10	17	37	11	10	0	2	3	13
Whately	19	841.4	4	5	0	0	0	1	1	0	0	0	0	0
Whitman	85	677.6	20	22	8	0	2	6	2	0	0	0	1	3
Wilbraham	140	575.7	28	32	9	2	4	5	0	6	1	0	1	0
Williamsburg	16	514.3	2	5	1	0	0	1	0	0	0	0	0	1
Williamstown	69	470.4	16	12	4	0	4	1	3	4	0	0	1	1
Wilmington	191	790.9	40	43	14	3	4	10	4	5	0	1	0	3
Winchendon	83	869.4	11	20	5	1	4	7	3	0	1	0	1	1
Winchester	165	547.1	27	47	8	2	14	3	3	4	1	0	2	0
Windsor	7	755.8	0	3	0	0	1	0	0	0	0	0	0	0
Winthrop	168	718.6	41	39	12	3	8	4	7	3	0	0	3	2
Woburn	341	650	81	102	30	5	12	14	5	10	1	0	1	6

Table 40. Selected Causes of Death by Community, Massachusetts: 2013

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
Worcester	1,588	824.6	301	335	93	14	68	89	45	52	13	7	29	43
Worthington	11	838.4	1	3	0	0	2	1	0	1	0	0	0	0
Wrentham	124	934.3	30	21	7	2	5	4	1	6	5	0	1	0
Yarmouth	425	779.5	102	109	28	3	24	23	9	11	1	0	3	8

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 41. Selected Causes of Death by Community Health Network Area (CHNA), Massachusetts: 2013

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	54,609	664.1	12,077	12,851	3,331	832	2,355	2,575	1,149	1,551	375	155	595	953
1. Community Health Network of Berkshire	1,525	749.0	369	322	90	18	65	79	23	34	12	1	21	22
2. Upper Valley Health Web (Franklin County)	854	760.1	196	202	57	9	42	63	15	26	9	1	13	15
3. Partnership for Health in Hampshire County (Northampton)	1,255	703.5	278	295	49	21	61	57	27	37	8	1	13	30
4. The Community Health Connection (Springfield)	2,722	755.2	635	647	185	41	109	112	49	62	21	20	34	42
5. Community Health Network of Southern Worcester County	1,081	765.0	245	255	74	17	43	51	26	38	16	1	10	15
6. Community Partners for Health (Milford)	1,193	726.7	282	293	81	23	54	54	18	34	9	2	19	12
7. Community Health Network of Greater Metro West (Framingham)	2,804	642.2	680	671	169	55	125	136	38	74	19	3	37	18
8. Common Pathways (Worcester)	2,591	734.0	508	592	169	26	118	142	66	80	22	8	35	60
9. Community Health Network of North Central Massachusetts	2,156	770.5	452	493	135	24	158	113	44	68	23	2	22	32
10. Greater Lowell Community Health Network	2,169	803.7	444	518	138	31	84	114	48	56	13	4	19	40
11. Greater Lawrence Community Health Network	1,410	678.2	312	301	82	25	59	53	33	42	9	4	14	21
12. Greater Haverhill Community Health Network	1,181	705.6	285	259	74	15	40	83	21	26	9	2	16	19
13. Community Health Network North (Beverly/Gloucester)	1,021	626.1	230	243	63	10	38	31	17	31	4	1	20	16
14. North Shore Community Health Network	2,708	707.0	625	612	156	52	125	108	44	67	17	5	21	62
15. Northwest Suburban Health Alliance	1,650	552.3	357	417	93	30	77	58	31	49	4	1	9	13
16. North Suburban Health Alliance (Medford/Malden/Melrose)	2,105	639.3	422	530	146	28	79	110	59	54	10	3	23	42
17. Greater Cambridge/Somerville Community Health Network	1,634	580.2	339	407	93	23	70	62	42	43	4	9	23	27
18. West Suburban Health Network (Newton/Waltham)	1,962	542.5	456	486	96	45	97	52	31	58	9	3	15	15
19. Alliance for Community Health (Boston/Chelsea/Revere/Winthrop)	4,967	689.2	960	1,228	293	73	194	205	136	135	33	43	54	111
20. Blue Hills Community Health Alliance (Greater Quincy)	3,515	678.8	769	856	213	48	144	163	79	96	16	8	31	60
21. Community Health Network of Chicopee, Holyoke, Ludlow, Westfield	1,630	771.0	369	356	82	28	60	82	32	59	14	4	19	26
22. Greater Brockton Community Health Network	1,990	799.2	475	464	132	25	66	100	43	51	21	10	17	57
23. South Shore Community Health Network	1,676	787.9	398	399	99	34	65	87	36	63	19	0	22	23
24. Greater Attleboro-Taunton Health & Education Response	2,086	775.5	453	496	136	36	97	101	37	64	19	4	25	50
25. Partners for Healthier Communities	1,534	786.3	346	350	104	16	47	89	52	47	7	3	15	36
26. Greater New Bedford Community Health Network	2,093	773.4	451	438	139	32	77	103	38	69	11	8	24	44
27. Cape Cod and Islands Health Network	3,096	679.9	741	721	183	47	161	167	64	87	17	4	24	45

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.

*Please note that CHNA totals add to one less than the state total, which is due to one person missing age and could not be included in the calculation of age-adjusted rates

Table 42. Selected Causes of Death by County, Massachusetts: 2013

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	54,609	664.1	12,077	12,851	3,331	832	2,355	2,575	1,149	1,551	375	155	595	953
Barnstable	2,905	676	699	674	173	45	151	158	62	75	16	4	23	43
Berkshire	1,525	732	369	322	90	18	65	79	23	34	12	1	21	22
Bristol	5,136	736	1,126	1,159	340	82	189	270	116	162	35	14	59	116
Dukes	141	572	35	32	7	2	7	6	1	10	1	0	1	1
Essex	6,320	652	1,452	1,415	375	102	262	275	115	166	39	12	71	118
Franklin	683	708	158	163	44	8	37	50	12	20	7	0	10	10
Hampden	4,382	741	1,008	1,008	269	70	170	193	83	121	37	24	52	68
Hampshire	1,270	678	280	299	49	21	61	58	27	38	8	1	15	30
Middlesex	10,815	595	2,308	2,689	672	173	471	477	230	299	51	22	119	153
Nantucket	50	428	7	15	3	0	3	3	1	2	0	0	0	1
Norfolk	5,673	628	1,276	1,373	351	94	216	253	114	145	32	12	49	82
Plymouth	4,387	719	1,003	1,042	266	65	181	213	93	144	40	9	45	86
Suffolk	4,638	662	900	1,138	270	70	178	200	130	124	30	43	49	110
Worcester	6,683	707	1,456	1,522	422	82	364	340	142	210	67	13	81	113

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.

*Please note that county totals add to one less than the state total, which is due to one person missing age and could not be included in the calculation of age-adjusted rates

TECHNICAL NOTES

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

NOTE

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

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

In response to readers' feedback, the presentation of race and ethnicity data has been changed. Previously, race and ethnicity data were presented according to Federal definitions of race and ethnicity; that is, persons of Hispanic ethnicity can be of any race group. Beginning with the 1999 report, race and ethnicity data are presented as mutually exclusive categories, that is, persons of Hispanic ethnicity are not included in a race group. All race and ethnicity data presented in trend tables have been updated to reflect this change. Thus, race and ethnicity data tables include the categories White non-Hispanic; Black non-Hispanic; Asian; and Hispanic. In addition, Table A1 in the Appendix contains data according to the Federal definitions so data can be compared with the nation and other states. Race data presented in Table A1 are for Whites (including persons of Hispanic ethnicity) and Blacks (including persons of Hispanic ethnicity). Furthermore, starting with the 2001 publication, there has been a nomenclature change in the way data for Asians are presented: the Asian/Pacific Islander non-Hispanics category was renamed Asians, which includes Pacific Islanders.

CAPE VERDEANS

The US Federal Census and the National Center for Health Statistics (NCHS) places persons who are Cape Verdean in the race category "Black". Historically, we have followed this federal definition in order to be consistent with NCHS. Beginning with 1999 data, we have separated the concept of "Race" from "Ethnic Group" for reporting death statistics. This enables us to place Cape Verdeans where they self-identify: Cape Verdeans are classified as "Cape Verdeans" in ethnicity tables. With respect to race, 70% of Cape Verdeans classified their race as "Other" while only 24% classified themselves as Black and 6% as White in 1999. We have no Cape Verdean population counts or estimates with which to calculate rates at the state or lower geographic levels. Although we can identify Cape Verdeans in the count of deaths

(numerator), because we have no count or estimate of the number of Cape Verdeans in the Massachusetts population (denominator), we are unable to calculate death rates.

POPULATION ESTIMATES

Two sources of population estimates were used to calculate population-based rates in *Massachusetts Deaths 2013*:

- a. State and County Death Rates: We used the 2013 Modified Age, Race/Ethnicity, and Sex (MARS) estimates, from the National Center for Health Statistics. Postcensal estimates of the resident population of the United States for July 1, 2010-July 1, 2013, by year, county, single-year of age (0, 1, 2, ..., 85 years and over), bridged race, Hispanic origin, and sex (Vintage 2011). Prepared under a collaborative arrangement with the U.S. Census Bureau. Available from: http://www.cdc.gov/nchs/nvss/bridged_race.htm as of June 26, 2014.
- 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-10th revision (ICD-10). Due to the changes in coding rules, comparison of mortality trends over time using different revisions of ICD is challenging. A method was devised to assess if changes in causes of death are "real" changes, or due to the new classification system. Using this method, death data for 1996 were coded twice; once according to ICD-9 and again according to ICD-10. A comparability ratio (CR) was then calculated by dividing the number of deaths coded according to ICD-10 by the number of deaths coded according to the most similar codes in ICD-9 (please refer to Table A7. Preliminary Comparability Ratios for a list of codes and CR used in this publication).

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

EXAMPLE: Influenza and Pneumonia¹ Deaths: Massachusetts, 1996-2000

Year	Age-adjusted 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 that 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.

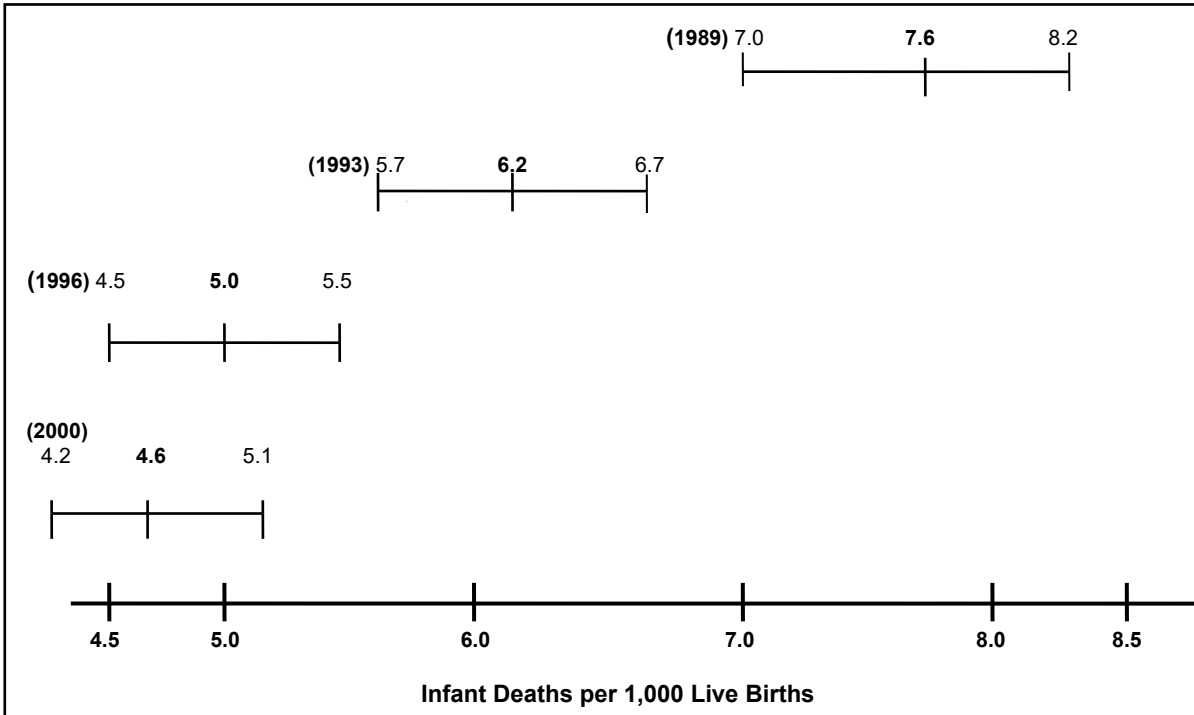
When two statistics are determined to differ significantly, they are referred to in the text with language expressing differences, such as, “higher” and “lower”, or “increased” and “decreased”. Otherwise, differences that are not significant are reported as having “no change” or “no statistical difference.”

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.

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<u>Comparison of Infant Mortality Rates and Confidence Intervals for Selected Years</u>		
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 (Cape Cod) and Hampshire County, the age-adjusted formula would account for the fact that 24% of the Barnstable County residents were 65 years of age or older, whereas only 11% of the Hampshire County residents were in this age group.

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

The 2000 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 (using 1940 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. The Community Health Network Area (CHNA) mobilize around key health issues impacting the community, promote prevention efforts, enhance access to care, provide opportunities for more collaboration among agencies, and create a client-centered, outcome-oriented health service delivery system. 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.

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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:

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

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Death Certificate

A vital record signed by a licensed physician that includes cause of death, decedent's name, gender, birth date, place of residence, and place of occurrence. (A copy of the Massachusetts death certificate used in 2012 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. ICD-9 codes used in this publication are listed on Tables A1-Table 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)

The tenth revision of the International Classification of Diseases was used to code mortality data beginning in 1999. For a list of ICD-10 codes used in the publication, please see 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 definition

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)

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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 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.

Potential Years of Life Lost (PYLL)

Total potential years of life lost (PYLL) is calculated by multiplying the number of deaths for each group by the years of life lost (the difference between life expectancy and the midpoint of the age group, then adding the figures for all age groups).

A measure of the impact of death from various diseases on society, highlighting the total loss to society, especially the loss contributed by early deaths. For calculating PYLL, since *Massachusetts Deaths 2002*, we have adjusted the maximum age to be 75 years so that we do not include deaths beyond average life expectancy. Data after 2002 are not comparable with previous publications because we used a different maximum age cutoff.

Premature Mortality Rate

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

Race and Hispanic Ethnicity

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

Beginning with the 1999 report, race and ethnicity categories are presented as mutually exclusive categories. All trend data from 1989-2003 presented in this report have been re-tabulated to reflect this modification. Data presented by race in this report are not directly comparable to previously published data by race.

Resident Death

The death of a person whose usual place of residence or permanent address (as reported by the informant) is in one of the 351 cities or towns of Massachusetts, regardless of where the death took place. Unless otherwise noted, all data in this publication are resident data. An interstate exchange agreement among the 50 states, 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.

Total Rate of Change

The total rate of change is calculated as follows:

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

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

Underlying Cause of Death

The disease or injury that initiated the series of events leading to death, or the circumstances of the unintentional or intentional injury that resulted in the death. The underlying cause of death is used for all analyses published in this report 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, 404-429
Stroke (Cerebrovascular disease)	I60-I69	430-438
Influenza and pneumonia	J10-J18	480-487
Chronic lower respiratory diseases¹	J40-J47	490-496
Chronic liver disease and cirrhosis	K70, K73-K74	571
Nephritis	N00-N07, N17-N19, N25-N27	580-589
Congenital malformations, deformations, and chromosomal abnormalities	Q00-Q99	740-759
Certain conditions originating in the perinatal period (Perinatal Conditions)	P00-P96	760-779 780-797, 798.1-798.9, 799
Ill-defined conditions	R00-R99	
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 and ICD-9 Codes Used in this Publication

(Sorted by Cause of Death)

Cause of Death	ICD-10 Code	ICD-9 Code
Alzheimer's Disease	G30	331.0
Cancer (Malignant Neoplasms)	C00-C97	140-208
of bladder	C67	188
of cervix uteri	C53	180
of colon, rectum, rectum and anus	C18-C21	153-154, 159.9
of corpus uteri and uterus, part unspecified	C54-C55	179,182
of esophagus	C15	150
of female breast	C50	174
Hodgkin Disease	C81	201
of kidney and renal pelvis	C64-C65	189.0-189.1
Leukemia	C91-C95	202.4, 204-208
of meninges, brain & other parts of central nervous system	C70-C72	191-192
Multiple myeloma and immunoproliferative neoplasms	C88, C90	203
Non-Hodgkin lymphoma	C82-C85	200, 202 (except 202.4)
of ovary	C56	183.0
of prostate	C61	185
of stomach	C16	151
of pancreas	C25	157
of trachea, bronchus and lung	C33-C34	162
Certain conditions originating in the perinatal period (Perinatal Conditions)	P00-P96	760-779
Chronic liver disease and cirrhosis	K70, K73-K74	571
Chronic lower respiratory diseases¹	J40-J47	490-496
Congenital malformations, deformations, and chromosomal abnormalities	Q00-Q99	740-759
Diabetes Mellitus	E10-E14	250
External causes of injuries and poisonings (intentional, unintentional and of undetermined intent)	V01-Y98	E800-E999
Homicide	X85-Y09, Y87.1	E960-E969
Injuries of undetermined intent	Y10-Y34, Y87.2, Y89.9	E980-E989
Suicide	X60-X84, Y87.0	E950-E959
Accidents (Unintentional Injuries)	V01-X59	E800-E949
Motor Vehicle-related injuries	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2	E810-E825 E850-E869, E880-E928, E929.2-E929.9
Unintentional non-transport injuries	W00-X59, Y86	
Heart Disease	I00-I09, I11, I13, I20-I51	390-398, 402, 404-429
Infectious and parasitic diseases	A00-B99	001-139
Human Immunodeficiency Virus (HIV) disease (AIDS)	B20-B24	042-044
Septicemia	A40-A41	038
Influenza and pneumonia	J10-J18	480-487
Nephritis	N00-N07, N17-N19, N25-N27	580-589
Stroke (Cerebrovascular disease)	I60-I69	430-438 780-797, 798.1-798.9,
Ill-defined conditions	R00-R99	799
Sudden infant death syndrome (SIDS)	R95	798.0

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

Table A3. ICD-10 Injury Codes Used in this Publication

<u>Cause of Death</u>	<u>ICD-10 Code</u>
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 A4. ICD-10 Codes for Selected Healthy People 2020 Mortality Objectives
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

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

Table A5. Preliminary Comparability Ratios

<u>Cause of Death</u>	<u>ICD-10 Code</u>	<u>ICD-9 Code</u> (most similar title)	<u>Comparability Ratio</u>
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, 410-429	0.9858
Stroke (Cerebrovascular disease)	I60-I69	430-434, 436-438	1.0588
Influenza and pneumonia	J10-J18	480-487	0.6982
Chronic lower respiratory diseases	J40-J47	490-494,496	1.0478
Chronic liver disease and cirrhosis	K70, K73-K74	571	1.0367
Nephritis	N00-N07, N17-N19, N25-N27	580-589	1.2320
Congenital malformations, deformations, and chromosomal abnormalities	Q00-Q99	740-759	0.8470
Certain conditions originating in the perinatal period (Perinatal Conditions)	P00-P96	760-771.2, 771.4-779	1.0658
External causes of injuries and poisonings (intentional, unintentional and of undetermined intent)	V01-Y89	E800-E999	NA
Accidents (Unintentional Injuries)	V01-X59, Y85-Y86	E800-E869, E880-E929	1.0305
Motor Vehicle-related injuries	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2	E810-E825	0.9754 ³
Non-transport injuries	W00-X59, Y86	E850-E869, E880-E928, E929.2-E929.9	1.0763
Suicide	X60-X84, Y87.0	E950-E959	0.9962
Homicide	X85-Y09, Y87.1	E960-E969	0.9983
Injuries of undetermined intent	Y10-Y34, Y87.2, Y89.9	E980-E989	*

Source: National Center for Health Statistics, Preliminary Comparability Study. February 2001. NA: not available *: not reliable
Please refer to 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 A6. Preliminary Comparability Ratios: Causes of Infant Death

<u>Cause of Death</u>	<u>ICD-10 Code</u>	<u>ICD-9 Code</u> (most similar title)	<u>Comparability Ratio</u>
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
Please refer to Appendix for an example of how to apply comparability ratios.

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Table A7. Population Estimates for Massachusetts Community Health Network Areas (CHNA) and Counties: 2010 and 2013

CHNA	POPULATION ¹	COUNTY	POPULATION ²
1. Community Health Network of Berkshire County	131,219	Barnstable	214,990
2. Upper Valley Health Web (Franklin County)	87,130	Berkshire	129,585
3. Partnership for Health in Hampshire County (Northampton)	155,900	Bristol	552,780
4. The Community Health Connection (Springfield)	296,850	Dukes	17,256
5. Community Health Network of Southern Worcester County	119,539	Essex	762,550
6. Community Partners for Health (Milford)	166,824	Franklin	71,221
7. Community Health Network of Greater Metro West (Framingham)	388,909	Hampden	467,319
8. Common Pathways (Worcester)	309,013	Hampshire	159,596
9. Community Health Network of North Central Massachusetts	262,652	Middlesex	1,552,802
10. Greater Lowell Community Health Network	275,404	Nantucket	10,399
11. Greater Lawrence Community Health Network	194,172	Norfolk	687,802
12. Greater Haverhill Community Health Network	148,563	Plymouth	501,915
13. Community Health Network North (Beverly/Gloucester)	115,782	Suffolk	755,503
14. North Shore Community Health Network	284,642	Worcester	809,106
15. Northwest Suburban Health Alliance	215,757		
16. North Suburban Health Alliance (Medford/Malden/Melrose)	270,281	STATE	6,692,824
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 July 1, 2010-July 1, 2013, by year, county, single-year of age (0, 1, 2, ..., 85 years and over), bridged race, Hispanic origin, and sex (Vintage 2011). Prepared under a collaborative arrangement with the U.S. Census Bureau. Available from: http://www.cdc.gov/nchs/nvss/bridged_race.htm as of June 26, 2014.

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. 2013 Massachusetts Population Estimates¹ By Age Group, Gender, Race and Hispanic Ethnicity² (mutually exclusive)

AGE	GENDER	TOTAL	WHITE Non-Hispanic	BLACK Non-Hispanic	ASIAN Non-Hispanic	HISPANIC
Under 1	Male	37,597	23,848	3,236	2,697	7,729
	Female	35,914	22,787	3,090	2,576	7,381
	Total	73,511	46,635	6,326	5,273	15,110
1 TO 4	Male	149,447	95,560	14,684	11,059	27,770
	Female	142,588	91,222	13,755	10,821	26,430
	Total	292,035	186,782	28,439	21,880	54,200
5 TO 14	Male	397,450	272,504	35,465	25,890	62,599
	Female	381,029	259,728	33,905	26,216	60,225
	Total	778,479	532,232	69,370	52,106	122,824
15 TO 24	Male	472,813	330,008	41,973	31,693	67,851
	Female	467,979	326,907	40,908	34,265	64,699
	Total	940,792	656,915	82,881	65,958	132,550
25 TO 34	Male	452,533	315,770	34,902	38,740	62,094
	Female	460,264	319,405	36,287	43,658	59,876
	Total	912,797	635,175	71,189	82,398	121,970
35 TO 44	Male	412,389	299,513	30,609	33,403	47,979
	Female	430,436	309,814	33,058	35,964	50,698
	Total	842,825	609,327	63,667	69,367	98,677
45 TO 54	Male	485,507	392,329	31,017	24,372	36,596
	Female	510,438	408,968	33,035	26,528	40,679
	Total	995,945	801,297	64,052	50,900	77,275
55 TO 64	Male	415,778	355,475	21,689	16,729	20,958
	Female	451,350	381,443	24,713	19,264	24,924
	Total	867,128	736,918	46,402	35,993	45,882
65 TO 74	Male	248,336	219,141	10,364	8,672	9,672
	Female	289,122	251,955	13,866	9,987	12,832
	Total	537,458	471,096	24,230	18,659	22,504
75 TO 84	Male	122,908	110,339	4,385	4,341	3,605
	Female	173,065	154,241	7,617	5,156	5,802
	Total	295,973	264,580	12,002	9,497	9,407
85 +	Male	50,058	46,265	1,400	1,181	1,144
	Female	105,823	98,350	3,341	1,884	2,136
	Total	155,881	144,615	4,741	3,065	3,280
ALL AGES	Male	3,244,816	2,460,752	229,724	198,777	347,997
	Female	3,448,008	2,624,820	243,575	216,319	355,682
	Total	6,692,824	5,085,572	473,299	415,096	703,679

1. National Center for Health Statistics. Postcensal estimates of the resident population of the United States for July 1, 2010-July 1, 2013, by year, county, single-year of age (0, 1, 2, ..., 85 years and over), bridged race, Hispanic origin, and sex (Vintage 2011). Prepared under a collaborative arrangement with the U.S. Census Bureau. Available from: http://www.cdc.gov/nchs/nvss/bridged_race.htm as of June 26, 2014.

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.

Table A10. 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 A36, A35, A80, A40-
Other infectious (Diphtheria, Tetanus, Poliomyelitis)	0-74	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

Massachusetts Death Certificate: 2013

OR USE BY
MEDICAL EXAMINERS
ONLY



The Commonwealth of Massachusetts
**MEDICAL EXAMINER'S CERTIFICATE OF DEATH
REGISTRY OF VITAL RECORDS AND STATISTICS**

OCME CASE NUMBER REGISTERED NUMBER STATE USE ONLY

DATE USE ONLY HOSPITAL TYPE HISpanic AGE RES COB DISP AUT MANR WORK PLACE CERT PRON PERMANENT BLACK INK ONLY PRONOUNCEMENT FORM ON FILE <input type="checkbox"/> FORM 301-ME-010107	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3">1 DECEDENT - NAME FIRST MIDDLE LAST</td> <td colspan="2">2 SEX</td> <td colspan="2">3 DATE OF DEATH (Mo., Day, Yr.)</td> </tr> <tr> <td colspan="2">4a PLACE OF DEATH (City/Town)</td> <td colspan="2">4b COUNTY OF DEATH</td> <td colspan="3">4c HOSPITAL OR OTHER INSTITUTION - Name (If not in either, give street and number)</td> </tr> <tr> <td colspan="4">5 PLACE OF DEATH (Check only one) Hospital <input type="checkbox"/> Inpatient <input type="checkbox"/> Outpatient <input type="checkbox"/> DDA Other <input type="checkbox"/> Nursing Home <input type="checkbox"/> Residence <input type="checkbox"/> Other (specify):</td> <td colspan="2">6 SOCIAL SECURITY NUMBER</td> <td colspan="1">7 IF US WAR VETERAN Specify War</td> </tr> <tr> <td colspan="3">8a WAS DECEDENT OF HISPANIC ORIGIN? 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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: 2013 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:

Office of Data Management and Outcomes Assessment
Massachusetts Department of Public Health
250 Washington Street, 6th floor
Boston, MA 02108

FAX: (617) 624-5631