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Suicides in Massachusetts

2017

December 2020

Massachusetts Department of Public Health

Legislative Mandate

The following report is hereby issued pursuant to Section 232 of Chapter 111 of the Massachusetts General Laws as follows:

The department, in consultation with the executive office of public safety and security shall, subject to appropriation, collect, record and analyze data on all suicides in the Commonwealth. Data collected for each incident shall include, to the extent possible and with respect to all applicable privacy protection laws, the following: (i) the means of the suicide; (ii) the source of the means of the suicide; (iii) the length of time between purchase of the means and the death of the decedent; (iv) the relationship of the owner of the means to the decedent; (v) whether the means was legally obtained and owned pursuant to the laws of the commonwealth; (vi) a record of past suicide attempts by the decedent; and (vii) a record of past mental health treatment of the decedent.

The department shall annually submit a report, which shall include aggregate data collected for the preceding calendar year and the department's analysis, with the clerks of the House of Representatives and the Senate and the Executive Office of Public Safety and Security not later than December 31. Names, addresses or other identifying factors shall not be included.

The commissioner shall work in conjunction with the offices and agencies in custody of the data listed in this section to facilitate collection of the data and to ensure that data sharing mechanisms are in compliance with all applicable laws relating to privacy protection. Data collected and held by the department to complete the report pursuant to this section shall not be subject to section 10 of chapter 66 and clause Twenty-sixth of section 7 of chapter.

Executive Summary

Section 232 of Chapter 111 of the Massachusetts General Laws tasks the Massachusetts Department of Public Health (DPH) with collecting, recording, and analyzing data on all suicides in the Commonwealth and submitting an annual report.

DPH analyzed data collected on suicides for 2017 and found the following:

- In 2017, 688 suicides occurred in Massachusetts. This number was greater than the number of deaths due to motor vehicles (n=347) and homicides (n=174) combined.
- In 2017, the rate of suicide in Massachusetts was 10.0/100,000 persons. This rate has increased an average of 2.5% per year since 2007. There were approximately 34% more suicides in 2017 than in 2007.
- The majority of suicide victims were male (n=535, 77.8%). However, rates for both males and females have increased since 2007. From 2007 to 2017, the rate of suicides increased 24.8% for males and 26.5% for females.
- Suicides that occurred in 2017 were most commonly seen among individuals 45-64 years of age (n=258, 37.5%).
- The most prevalent means of suicide for males were hanging/suffocation (50.3%) and firearm (27.3%), which combined accounted for 77.6% of male suicides.
- The most prevalent means of suicide for females were hanging/suffocation (51.6%) and poisoning/overdose (28.8%), which combined accounted for 80.4% of female suicides.
- In 2017, firearms accounted for 23.3% of suicides (n=160). Males accounted for 91.3% of firearm suicides (n=146). Handguns were the most common type of firearm used in suicides (n=120, 75%).
- In 2017, poisonings/overdoses accounted for 15.7% of suicides (n=108). Antidepressants (n=55, 50.9%) and opiates (n=35, 32.4%) were the most common classes of drugs used.[1]
- In 2017, 26.1% of female suicide victims (n=40) and 12.5% of male suicide victims (n=67) were known to have a prior suicide attempt.
- In 2017, 68.0% of female suicide victims (n=104) and 39.3% of male suicide victims (n=210) were known to have a history of treatment for a mental health or substance abuse problem.

[1] Please note that more than one substance may be associated with a single suicide. Because these substances are not mutually exclusive, the total count will add up to more than the 108 victims who died from poisoning or overdose.

Introduction

In 2014, the Legislature passed Chapter 284 of the Acts of 2014: An Act to reduce gun violence. This law included a requirement for the Massachusetts Department of Public Health (DPH) to collect, record, and analyze data on all suicides in the Commonwealth.

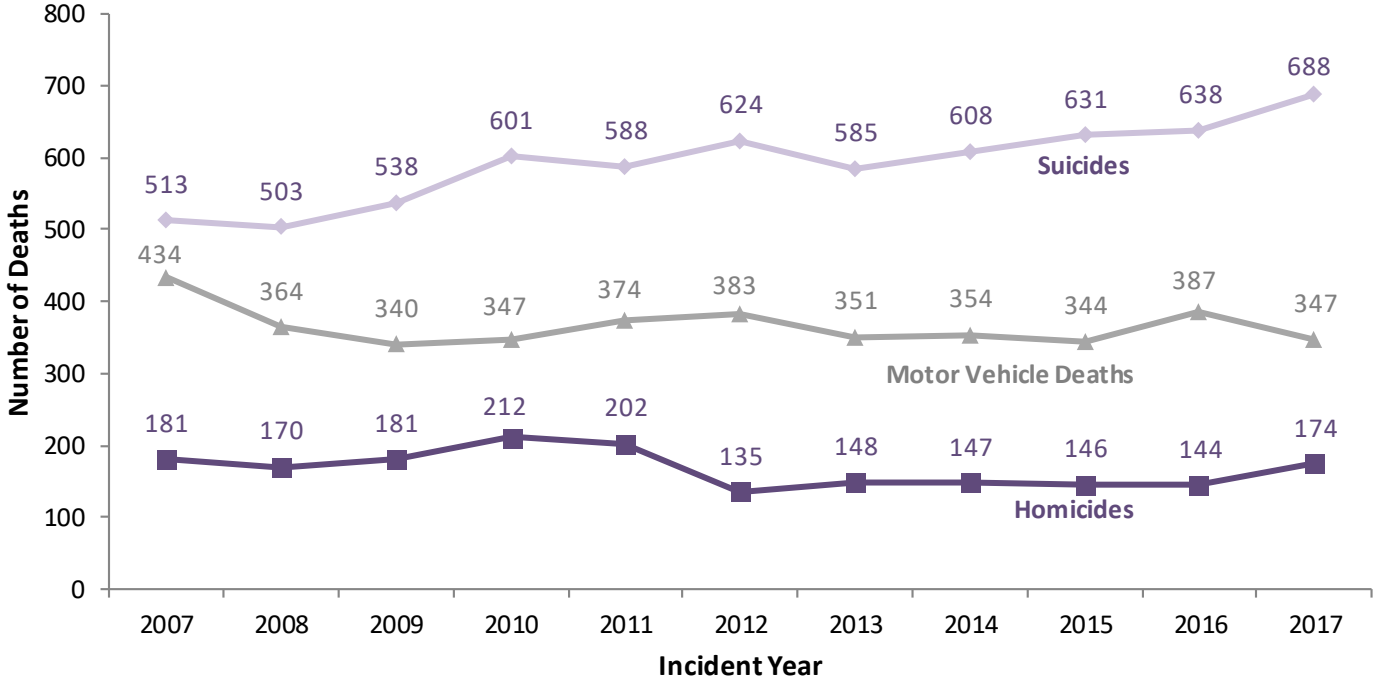
The Massachusetts Violent Death Reporting System (MAVDRS) began collecting data on all homicides, suicides, deaths of undetermined intent, unintentional firearm deaths, and legal intervention deaths that occurred in the Commonwealth starting in 2003. MAVDRS is a part of the National Violent Death Reporting System (NVDRS) and is funded by the Centers for Disease Control and Prevention (CDC). The software, variables, and coding guidance are standardized by CDC across all funded states. The data contained in this report is for 2017, the latest year available. Due to the extensive information collected, CDC allows eighteen months after the end of the data year for data completion.

Since the passage of Chapter 284 of the Acts of 2014, MAVDRS has worked towards obtaining better data on all of the information specified in the legislation. MAVDRS has been working with current data partners, which include the Registry of Vital Records and Statistics (RVRS), the Office of the Chief Medical Examiner (OCME), the Massachusetts State Police (MSP), and the Boston Police Department (BPD), as well as new partners within the Executive Office of Public Safety and Security (EOPSS) like the Department of Criminal Justice Information Services (DCJIS), to work on obtaining additional data elements as well as improving upon the quality of data currently collected. MAVDRS received data for 2017 firearm suicides from DCJIS that has been used to improve the reporting on information related to firearm suicides.

Suicide Data 2017

From January 1, 2017 to December 31, 2017, there were 688 suicides (10.0/100,000 persons) that occurred in the Commonwealth of Massachusetts. Of the 688 suicide deaths, 535 of the victims were male (16.1/100,000 persons, 77.8%) and 153 of the victims were female (4.3/100,000 persons, 22.2%).

Figure 1. Suicides, Homicides, and Motor Vehicle Deaths, MA 2007-2017



Sources: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health; Fatality Analysis Reporting System (FARS, data accessed 01/06/2020), National Highway Traffic Safety Administration

- The number of suicide deaths was 2.0 times higher than the number of motor vehicle traffic-related deaths (n=347) and 4.0 times higher than the number of homicides (n=174) in 2017.

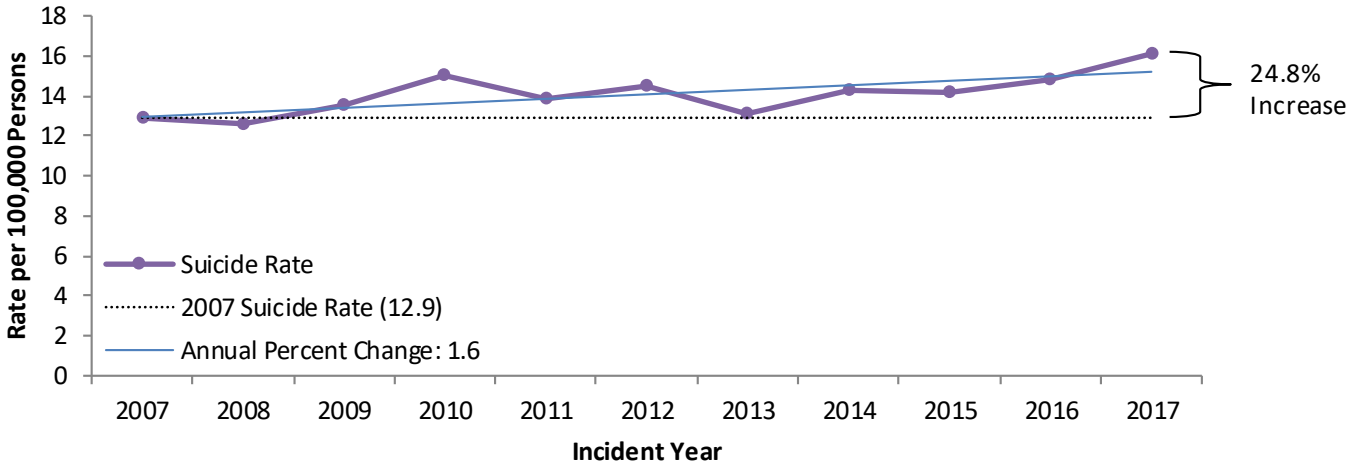
- Massachusetts had a lower age-adjusted rate of suicide (9.5/100,000 persons) in 2017 compared to the rest of the U.S. The age-adjusted rate of suicide for the U.S. in 2017 was 14.0/100,000 persons.[2]

- Since 2007, age-adjusted suicide rates increased an average of 1.8% per year. There were approximately 34% more suicides in 2017 than in 2007. This increase mirrors an increase in the U.S. age-adjusted suicide rate, which increased an average of 2.0% per year since 2007.[2]

[2] Source: Centers for Disease Control and Prevention (CDC), WISQARS – Fatal Injuries Report, 1999-2017, for National, Region, and States

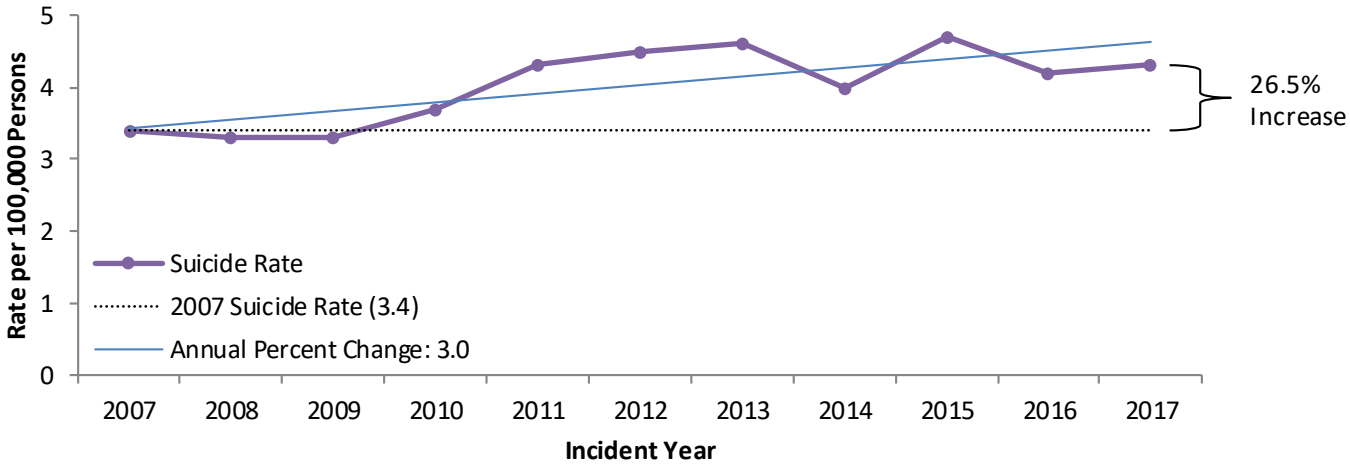
Suicide Rate Demographics

Figure 2A. Male Suicide Rate, MA 2007-2017



Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

Figure 2B. Female Suicide Rate, MA 2007-2017

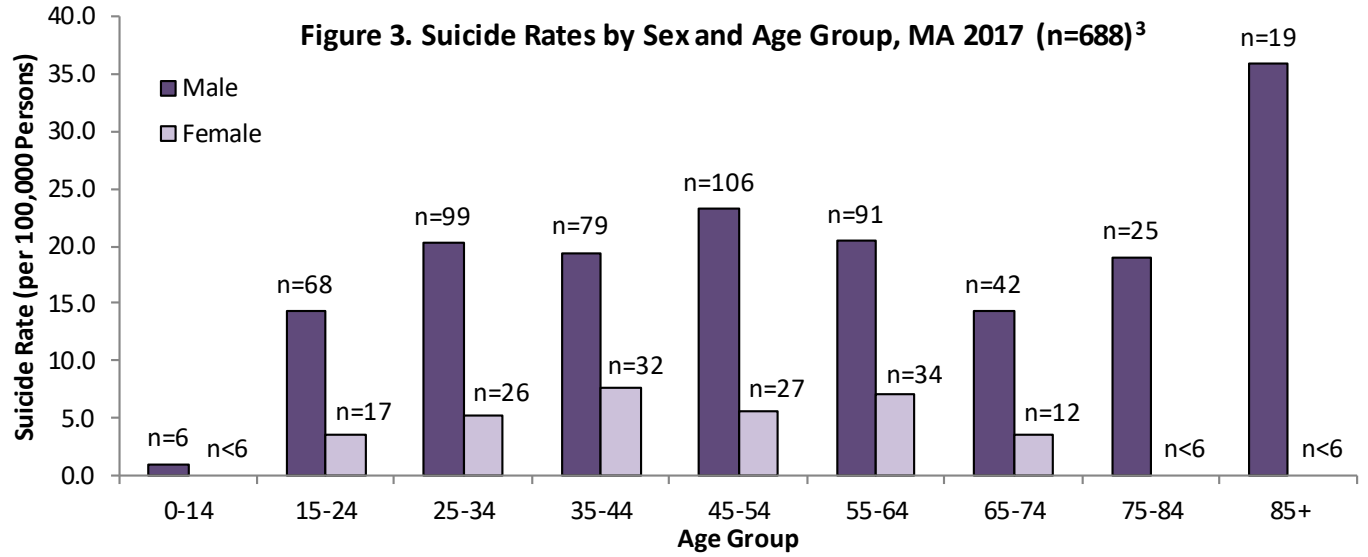


Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

- While the majority of deaths by suicide occurred in males, there have been overall increases in the rates of suicides among both males and females.

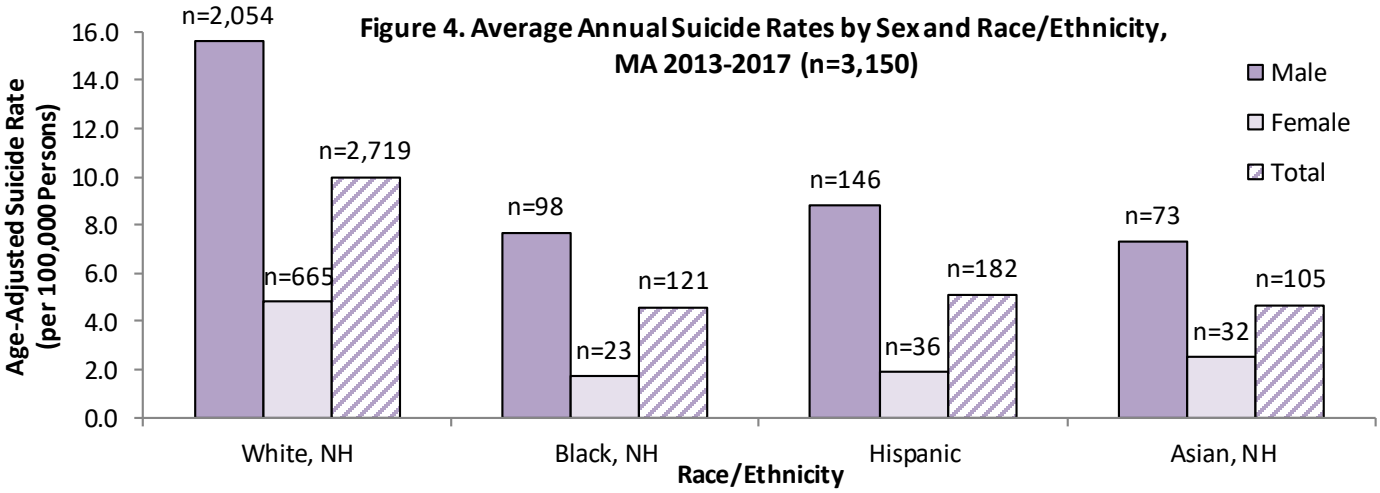
- When comparing suicide rates for 2007 and 2017, the net change in suicide rates among males increased by 24.8% (from 12.9 to 16.1 per 100,000 persons); among females, suicide rates increased by 26.5% (from 3.4 to 4.3 per 100,000 persons.)

- Although suicide rates for both males and females have fluctuated from year to year, the modeled annual percent change (APC) in suicide rates between 2007 and 2017 was higher for females (3.2% per year) as opposed to males (1.6% per year). Even though the APC for females was higher for the overall time period of 2007 to 2017, the rate for females was stable from 2012 to 2017.



Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

- 37.5% of suicides that occurred in 2017 were among individuals aged 45-64 years (n=258). Between 2007 and 2017, the rate of suicides in this group increased an average of 6.0% per year.
- The age group with the highest rate of suicide for males was individuals aged 45-54 years (23.2/100,000 persons, n=106). Although the calculated rate of suicide for males aged 85 and over is higher (35.8/100,000 persons, n=19), rates are not considered stable for counts less than 20.
- The age group with the highest rate of suicide for females was individuals aged 35-44 years (7.6/100,000 persons, n=32).

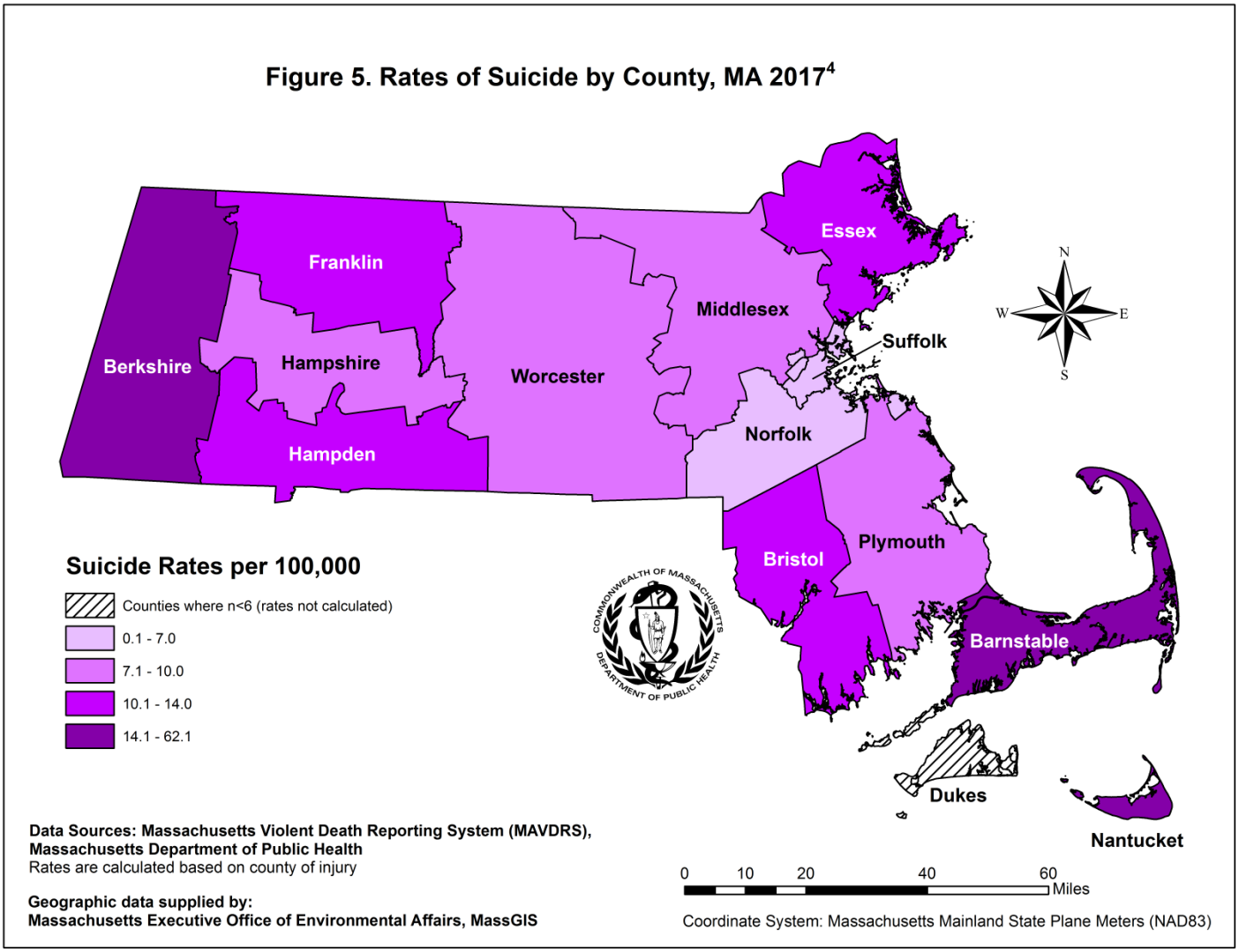


Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

- For 2013-2017, the average annual age-adjusted suicide rate was highest among White, non-Hispanic males (15.6/100,000 persons, n=2,054).
- Similarly, White, non-Hispanic females had a higher average annual age-adjusted rate of suicide (4.8/100,000 persons, n=665) compared to other race/ethnicity groups.

[3] Rates are not counted for numbers less than six and are considered unstable for counts less than 20.

Suicides by County



- In 2017, Nantucket (62.1/100,000 persons, n=7), Berkshire (17.4/100,000 persons, n=22), and Barnstable (15.9/100,000 persons, n=34) counties had the highest rates of suicide, and Middlesex County had the highest number of suicides (n=157, 9.8/100,000 persons).[4] Please note that while Nantucket County did record the highest rate of suicide, the low count (n=7) means that this rate is considered unstable and should be interpreted with caution.

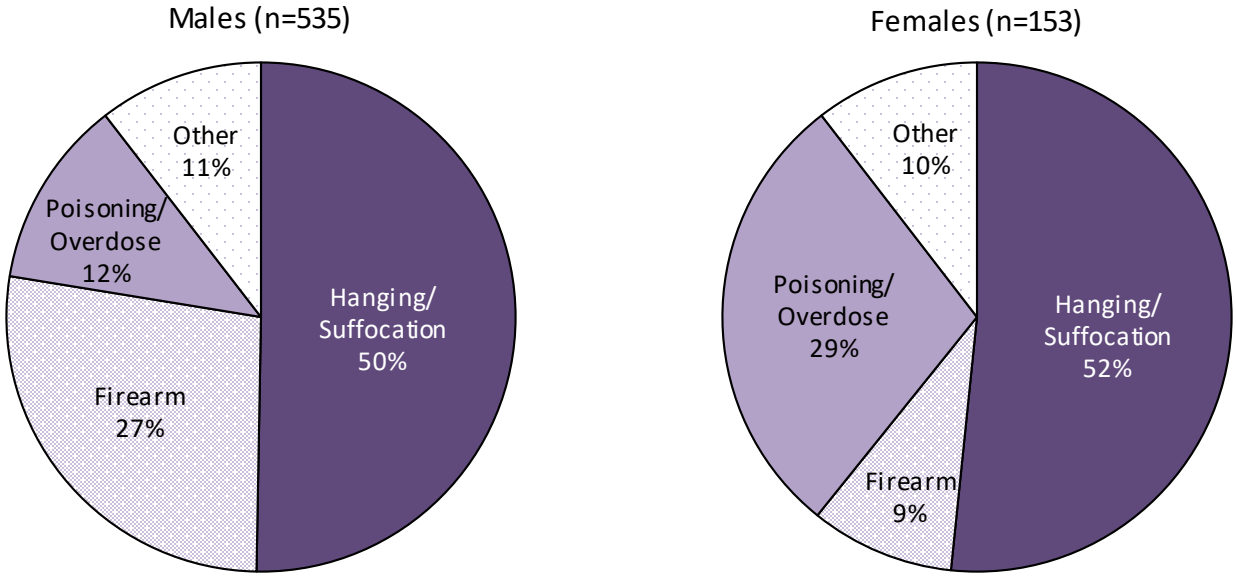
- The county with the lowest measurable rate in 2017 was Suffolk County (6.0/100,000 persons, n=48). In addition, there were no recorded suicides in Dukes County in 2017.

[4] Rates are not counted for numbers less than six and are considered unstable for counts less than 20. Additionally, rates are calculated based on county of injury.

The Means of Suicide and Source of the Means of Suicide

Section 232 (i) and (ii) specify that this report contains both the means of the suicide (e.g., firearm suicides) and the source of the means (e.g., type of firearm). The means used in suicides varies greatly, as does its source. The following information represents the data currently available on the type and source of means used in suicides in Massachusetts in 2017.

Figure 6. Suicides by Sex and Means, MA 2017 (N=688)



Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

Table 1. Means of Suicide: Number, Percent and Rate, MA 2017

	Male			Female			Total		
Means of Suicide	**N**	**Percent**	**Rate per 100,000**	**N**	**Percent**	**Rate per 100,000**	**N**	**Percent**	**Rate per 100,000**
Hanging/Suffocation	269	50.3	8.1	79	51.6	2.2	348	50.6	5.1
Firearm	146	27.3	4.4	14	9.2	0.4	160	23.3	2.3
Poisoning/Overdose	64	12.0	1.9	44	28.8	1.2	108	15.7	1.6
Sharp Instrument	13	2.4	0.4	4	2.6	--	17	2.5	0.2
Fall	17	3.2	0.5	3	2.0	--	20	2.9	0.3
Other Means	26	4.9	0.8	9	5.9	0.3	35	5.1	0.5
Total	**535**	**100.0**	**16.1**	**153**	**100.0**	**4.3**	**688**	**100.0**	**10.0**

Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

- The most prevalent methods of suicide in 2017 were hanging/suffocation (n=348, 50.6%), fireamm (n=160, 23.3%) and poisoning/overdose (n=108, 15.7%).
- Hanging/suffocation (n=269) and firearm (n=146) were the most common methods for males.
- Hanging/suffocation (n=79) and poisoning/overdose (n=44) were the most common methods for females.

The Means of Suicide and Source of the Means of Suicide

Table 2. Source of Means of Firearm Suicides: Number, MA 2017[5]		
Means	**N**	**%**
Firearm	**160**	**100.0**
Handgun	**120**	**75.0**
Semi-Automatic Pistol	*68*	
Revolver	*42*	
Single Shot Pistol	*<6*	
Unknown Type	*≥6*	
Shotgun	**20**	**12.5**
Pump Action	*8*	
Semi-Automatic	*<6*	
Single Shot	*<6*	
Double Barrel	*<6*	
Bolt Action	*<6*	
Unknown Type	*<6*	
Rifle	**17**	**10.6**
Bolt Action	*8*	
Semi-Automatic	*6*	
Lever Action	*<6*	
Unknown Type	*<6*	
Other Type	**<6**	**--**

Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

- Massachusetts has a lower rate of firearm suicides compared to the rest of the U.S. In 2017, the rate for the U.S. was 6.9/100,000 persons compared to 2.3/100,000 persons for Massachusetts.[6]
- There were three known types of firearms used in firearm-related suicides in 2017: handguns, shotguns and rifles.
- The most common type of firearm used was handgun (n=120, 75.0%).
- The majority of victims who died from firearm-related suicides were male (n=146, 91.3%).

Table 3. Source of Means of Hanging/Suffocation Suicides: Number, MA 2017[5]			
Means	**Male**	**Female**	**Total**
Hanging/Suffocation	**269**	**79**	**348**
Rope/Clothing Line	96	17	113
Belt/Strap	52	17	69
Cord/Cable/Wire	40	15	55
Clothing/Shoelace	23	10	33
Plastic Bag/Plastic Bag + Gas	15	9	24
Sheet/Curtain	≥6	<6	19
Dog Leash	≥6	<6	12
Other Specified Means	≥6	<6	12
Unknown	≥6	<6	11

Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

- For suicides by hanging/suffocation, the most common known ligatures used were a rope/clothing line (n=113, 32.5%), belt/strap (n=69, 19.8%), and cord/cable/wire (n=55, 15.8%).
- For men, the most common ligature used was a rope/clothing line (n=96, 35.7%), while for women, the most common ligatures used were a rope/clothing line and a belt/strap (n=17, 21.5% for each).
- Twenty-four victims used plastic bags as a means of suffocation, either alone or in conjunction with a gas such as helium or propane.
- "Other specified means" includes chains, garden hoses, laundry hoses, zip ties, etc.

[5] Data suppressed for counts less than 6 for select variables. Some values greater than 6 have also been suppressed to prevent back-calculation.

[6] Source: Centers for Disease Control and Prevention (CDC), WISQARS – Fatal Injuries Report, 1999-2017, for National, Region, and States

The Means of Suicide and Source of the Means of Suicide (Continued)

Table 4. Source of Means of Poisoning/Overdose Suicides: Number, MA 2017[7,8]			
Means	**Male**	**Female**	**Total**
Poisoning Suicides	**64**	**44**	**108**
Alcohol	9	8	17
Amphetamine	0	<6	<6
Anticonvulsant	≥6	<6	15
Antidepressant	24	31	55
Antipsychotic	8	11	19
Barbiturates	<6	0	<6
Benzodiazepines	18	16	34
Carbon Monoxide	≥6	<6	19
Cocaine	≥6	<6	11
Muscle Relaxant	<6	<6	6
Opiate	18	17	35
Other Substance Class	30	26	56
Total Substances Used	**144**	**128**	**272**

Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

This table includes all substances listed in the cause of death for poisoning suicides by substance class.

- There were 272 different substances included as the cause of death in 108 poisoning suicides.
- The most common classes of substances used in poisoning suicides were antidepressants, which accounted for 20.2% of all substances used, and opiates, which accounted for 12.9% of all substances used.
- The most common other substance class used was diphenhydramine, which accounted for 4.4% of all substances used (n=12).

Table 5. Source of Means of Sharp Instrument Suicides: Number, MA 2017[8]	
Means	**Total**
Sharp Instrument	**17**
Knife	10
Razor Blade/Box Cutter	<6
Multiple/Other/Not Specified	<6

Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

- For suicides by sharp instrument, the most common instrument used was a knife (n=10, 58.8%).

[7] The substances listed have been identified as the cause of death of victims (n=108); however, please note that more than one substance may be associated with a single suicide. Because these substances are not mutually exclusive, the total count will add up to more than the 108 victims who died from poisoning.

[8] Data suppressed for counts less than 6 for select variables. Some values greater than 6 have also been suppressed to prevent back-calculation.

The Means of Suicide and Source of the Means of Suicide (Continued)

Table 6. Source of Means of Fall Suicides: Number, MA 2017[8]	
Means	**Total**
Fall	**20**
Residential Building/Dorm	6
Bridge	6
Parking Garage	<6
Other/Unknown	<6

Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

- In 2017, residential buildings/dorms (n=6, 30%) and bridges (n=6, 30%) were most often utilized in suicides resulting from falling or jumping from a height.

Table 7. Source of Means of Other Suicides: Number, MA 2017[9]	
Means	**Total**
Other Means	**35**
Drowning	13
Train	13
Motor Vehicle	<6
Fire/Burn	<6
Other/Unknown	<6

Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

- In 2017, the most prevalent other methods of suicide were those involving drownings (n=13, 37.1%) and being struck by trains (n=13, 37.1%).

[9] Data suppressed for counts less than 6 for select variables. Some values greater than 6 have also been suppressed to prevent back-calculation.

The Relationship between the Owner of the Means and the Decedent

Table 8. Relationship of Suicide Victim to Gun Owner, MA 2017		
Firearm Suicides	**160**	**100.0**
Relationship	**N**	**%**
Self	75	46.9%
Other Known Person*	18	11.3%
Unknown	67	41.9%
*Includes family, friend, or other known person		

Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

MAVDRS collects information on the relationship of the owner of a firearm to the decedent from police reports and medical examiner files. However, information on the relationship between the owner and decedent is not always clearly documented in these records. Additional information was obtained for this report from DCJIS to improve this information.

In 2017, of the 160 firearm suicides, 93 had documented information on the relationship of the firearm owner to the decedent. In 46.9% of suicides by firearm, it was known that the decedent was the owner of the firearm, and in 11.3% of cases, it was known that the owner of the firearm was a family member, friend or other known person.

For prescription drugs used in poisoning suicides, MAVDRS collects information on the relationship between the decedent and the person for whom the prescription medication was prescribed. In 2017, 45.4% of pharmaceutical drugs used in poisoning suicides were known to be prescribed to the decedent.

MAVDRS does not collect information on the relationship between the owner of the means and the decedent for the following means because these are commonly available and non-regulated objects: hanging/suffocation, sharp instruments, non-prescription drugs or falls.

The Length of Time between Purchase of the Means and the Death of the Decedent

Table 9. Length of Time Between Firearm Purchase and Death of Victims who Owned Firearm, MA 2017		
Length of Time from Firearm Purchase to Death	**N**	**%**
Victim was Gun Owner	**75**	**100.0**
Less than 1 year	16	21.3%
Between 1 and 5 years	13	17.3%
Over 5 years	27	36.0%
Unknown	19	25.3%

Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

MAVDRS was able to obtain information on the length of time between the purchase of the means and the death of the decedent for firearm suicides where the victim was the owner of the firearm. Information on the length of time from purchase to death was known for 74.7% of firearm suicides where the victim owned the firearm. Among them, 21.3% of victims had owned the firearm for less than a year, 17.3% of victims had owned the firearm between 1 and 5 years, and 36.0% of victims had owned the firearm for over 5 years.

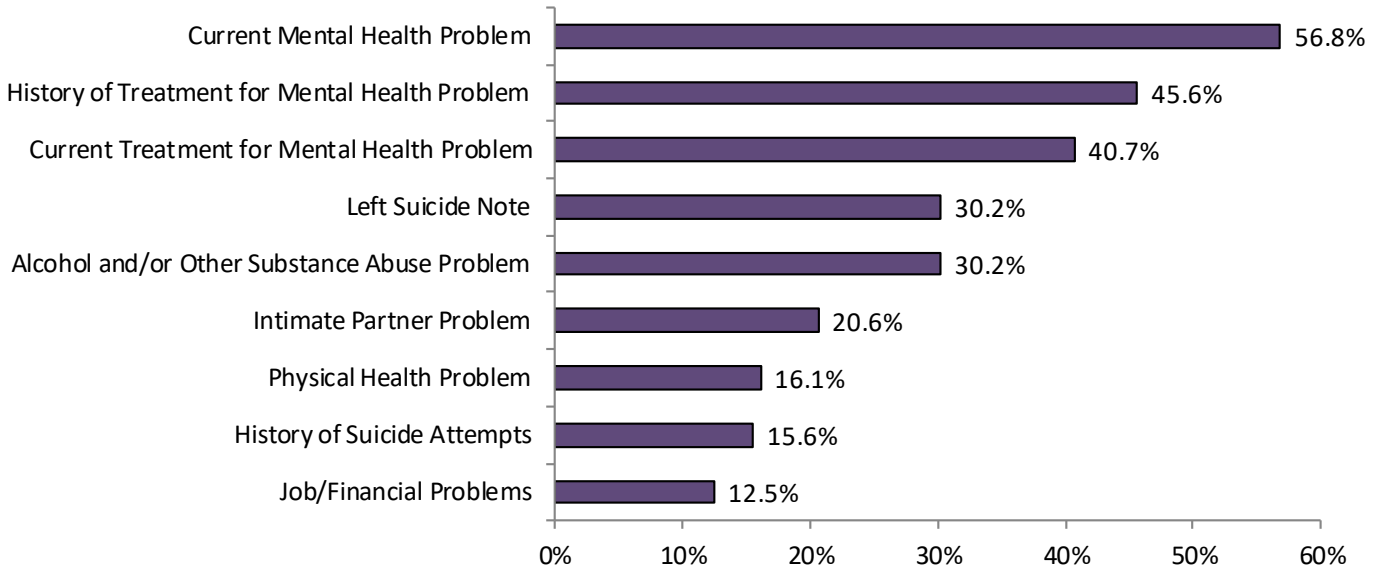
Whether the Means was Legally Obtained and Owned Pursuant to the Laws of the Commonwealth

Of the variety of means used in suicides, only those by firearm and poisoning may or may not be obtained and owned legally. For firearms, MAVDRS currently collects information on whether a firearm was known to be stolen, but this information is often incomplete. Of the 160 firearm suicides in 2017, two were known to be stolen.

In 2017, there were 11 known cases where illicit substances were part of the cause of death in poisoning suicides. MAVDRS does not currently have a variable for capturing whether prescription drugs used in poisoning suicides were obtained legally or not.

Circumstances

Figure 7. Circumstances Associated with Suicide, MA 2017 (n=688)[10]



Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

A circumstance is a condition, fact, or event that affects a situation. Circumstances surrounding the decedent's life prior to death can highlight opportunities for future prevention efforts. MAVDRS systematically collects information on suicides and allows for more than one circumstance to be listed for a suicide victim. 95.8% of suicide victims had at least one circumstance identified during case-review (n=659), and 83.6% had multiple circumstances known (n=575). It is important to remember that some circumstances are more likely to be known and documented than others, and if a circumstance is not identified, that does not mean it was not present in the decedent's life. The above figure represents percentages of circumstances noted out of all suicides (n=688). Among all suicide victims in 2017:

- 56.8% had a documented[11] current mental health problem, such as depression, anxiety disorder, schizophrenia, or post-traumatic stress disorder.
- 40.7% were currently receiving treatment for a mental health or substance abuse problem, and 45.6% had a history of treatment for a mental health or substance abuse problem.
- 30.2% left a suicide note.
- 30.2% had a known alcohol or other substance abuse problem.
- 20.6% experienced an intimate partner problem prior to their death such as divorce, break-up, jealousy, or conflict. In 2017, there were 4 intimate partner related homicide/suicide cases.
- 16.1% had a physical health problem.
- 15.6% had a known history of suicide attempts.
- 12.5% experienced job and/or financial problems.

[10] Circumstances are not mutually exclusive and will not add up to 100%.

[11] Documented means information on a current mental health was mentioned in the records available, including medical records, medication, and family reporting.

Past Suicide Attempts

Information on past suicide attempts is obtained from the medical examiner's files and police reports, which rely on information from psychiatric/hospital records and/or the decedent's family and friends. There are limitations to these sources of information, as friends and family of the decedent may not know of the decedent's past suicide attempts or may choose not to report that information to the authorities. Additionally, hospital records are not available on all suicides, and even if they are present, not all suicide attempts would cause an injury that would make this information present in records.

Table 10. Means of Suicide Victims who had a Previous Suicide Attempt, MA 2017[12]

	Male			Female			Total		
	Prior Attempts	Total	Percent	Prior Attempts	Total	Percent	Prior Attempts	Total	Percent
Total	**67**	**535**	**12.5%**	**40**	**153**	**26.1%**	**107**	**688**	**15.6%**
Hanging/Suffocation	37	269	13.8%	19	79	24.1%	56	348	16.1%
Firearm	≥6	146	--	<6	14	--	10	160	6.3%
Poisoning/Overdose	16	64	25.0%	15	44	34.1%	31	108	28.7%
All Other Means	≥6	56	--	<6	16	--	10	72	13.9%

Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

- Of the 688 suicide victims in 2017, 107 (15.6%) had a previous suicide attempt. Females had a higher percentage (26.1%) of prior suicide attempts than males (12.5%).

- Among hanging/suffocation victims, 13.8% of male victims (n=37) and 24.1% of female victims (n=19) had prior suicide attempts.

- Among poisoning/overdose victims, 25.0% of male victims (n=16) and 34.1% of female victims (n=15) had prior suicide attempts.

[12] Data suppressed for counts less than 6 for select variables. Some values greater than 6 have also been suppressed to prevent back-calculation.

Past Mental Health Treatment of the Decedent

One of the important protective factors against suicide is having effective mental health treatment. While 57% of suicide victims in 2017 had evidence of a current mental health problem, only 46% of victims had evidence of ever having mental health treatment, suggesting that some people who could benefit from mental health treatment are not receiving it. Finding ways to address this gap in treatment could help prevent future suicides.

Table 11. Means of Suicide Victims with History of Treatment for Mental Health or Substance Abuse Problem, MA 2017[13]

	Male			Female			Total		
	History Of Tx	Total	Percent	History Of Tx	Total	Percent	History Of Tx	Total	Percent
Total	**210**	**535**	**39.3%**	**104**	**153**	**68.0%**	**314**	**688**	**45.6%**
Hanging/Suffocation	110	269	40.9%	54	79	68.4%	164	348	47.1%
Firearm	42	146	28.8%	6	14	42.9%	48	160	30.0%
Poisoning/Overdose	36	64	56.3%	36	44	81.8%	72	108	66.7%
All Other Means	22	56	39.3%	8	16	50.0%	30	72	41.7%

Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

- Of the 688 suicide victims in 2017, 314 (45.6%) were noted to have a history of treatment for a mental health or substance abuse problem. Females had a higher percentage (68.0%) of a history of treatment than males (39.3%).

- Among hanging/suffocation victims, 40.9% of male victims (n=110) and 68.4% of female victims (n=54) had a history of treatment for a mental health or substance abuse problem.

- Among firearm victims, 28.8% of male victims (n=42) and 42.9% of female victims (n=6) had a history of treatment for a mental health or substance abuse problem.

- Among poisoning/overdose victims, 56.3% of male victims (n=36) and 81.8% of female victims (n=36) had a history of treatment for a mental health or substance abuse problem.

- Among all other victims, 39.3% of male victims (n=22) and 50.0% of female victims (n=8) had a history of treatment for a mental health or substance abuse problem.

[13] Data suppressed for counts less than 6 for select variables. Some values greater than 6 have also been suppressed to prevent back-calculation.

Suicide Prevention Program

The Suicide Prevention Program (SPP) at DPH employs the latest suicide prevention strategies using the public health approach and is funded by a specific line item in the Massachusetts State budget. The SPP uses data to help inform its prevention strategies.

Massachusetts has one of the lowest suicide rates in the country. Factors that contribute to Massachusetts' low rate include the Commonwealth's low rate of household gun ownership, high rates of health care insurance coverage, better access to emergency medical care and behavioral health services, and a 10+ year history of state suicide prevention funding and planning.

One key public health strategy is to identify health disparities – when a disease, illness or injury disproportionately affects a particular population. Analyzing data on suicides and non-fatal self-injuries enables the Program to identify at-risk populations and target funding to those populations. The Program issued a competitive procurement for FY15 that resulted in the funding of 20 community-based providers to address the needs of these vulnerable populations statewide. Our providers and services fall into three distinct categories offering evidence-based strategies around suicide prevention, intervention, and postvention as described below:

- Prevention:
  - Training – support the development of professional skills for mental health professionals, school personnel, community service providers and gatekeepers
  - Community Awareness Campaigns
  - Online and face-to-face screenings and referrals
  - Evidence-based strategies targeting high-risk populations – working-aged men, LGBTQ+, elders, veterans
- Intervention:
  - Support Groups for Attempt Survivors
  - Statewide Samaritans toll-free helpline – funding provided to four Samaritans agencies
  - Evidence-based trainings for clinicians around assessment skills for suicidality
- Postvention:
  - Loss Survivor and bereavement groups
  - Postvention services to schools/communities in the wake of a youth suicide

Through Inter-agency Service Agreements (ISAs), the Program funds activities specific to the populations served by the Executive Office of Elder Affairs, the Department of Mental Health and the Department of Veterans' Services' SAVE Program (Statewide Advocacy for Veterans Empowerment).

The SAVE Program is comprised of workers (returning veterans or family members of returning veterans) who reach out to military personnel coming back from Iraq and Afghanistan to provide education on available services and benefits and to screen for behavioral health issues. They are highly mobile and attend veterans' gatherings all across the state. SAVE is not limited to working only with returning veterans. They can serve any veteran. Despite the age differences when dealing with Vietnam War veterans, for example, they still command credibility due to their military experience.

The SPP at DPH works collaboratively with these public agencies as well as the Department of Elementary and Secondary Education, the Department of Corrections, DPH's Bureau of Substance Addiction Services, the Office of Emergency Services, the Department of Children and Families, the Department of Youth Services (DYS),

County Sheriff's Departments, and the MA National Guard. An especially significant and close partner is the Department of Mental Health, which provides senior management staff participation in all aspects of suicide prevention efforts.

Funding is also provided to the statewide MA Coalition for Suicide Prevention and its prevention activities. The Coalition develops and supports ten Regional Coalitions covering the entire Commonwealth. These Regional Coalitions provide local networking to assure that prevention services reach all areas of the Commonwealth.

Community Coalitions are given technical assistance and some Program funding in the ir initial stages to support development. Some coalitions, like Needham, Newton, Nantucket, and New Bedford, were formed in response to one or more youth suicides. After a year or two of operation, these coalitions usually expand to include activities addressing suicide across the lifespan.

A primary strategy for preventing suicide is raising public awareness that suicide is preventable. Gatekeeper training teaches everyone how to recognize signs of suicide and instills confidence in talking about suicide.

As behavioral health professionals are not required to complete suicide prevention or intervention as part of their licensing, the SPP has been offering trainings to help behavioral health professionals better identify someone who is suicidal and treat their suicidality. Additionally, education and screening training for other health professionals help them to identify at risk individuals in their practices.

In 2015, the SPP was awarded the Garrett Lee Smith Grant from SAMHSA for youth suicide prevention work with ages 10-24. This grant provided the opportunity to implement Zero Suicide in selected health care and behavioral health care systems. Zero Suicide is an aspirational goal that focuses on a continuous quality improvement model through implementing systems change. Two health care systems were provided funding from the grant to implement Zero Suicide in their system: Berkshire Medical Center and Heywood Health Care System. To expand this approach, a Learning Collaborative was formed in the fall of 2016 to include an additional eight health care and behavioral health care systems. In the fall of 2017, the Massachusetts Department of Mental Health was one of five states awarded the adult version of this grant called the National Strategy for Suicide Prevention. With combined efforts between DMH and DPH, a second learning collaborative was formed with a focus on Cape Cod and the Islands. Fifteen health and behavioral health care agencies participated in the Cape and Islands Zero Suicide Learning Collaborative, which ended in the fall of 2019.

The SPP at DPH provides technical assistance to interagency prevention policy initiatives to assure that the most current suicide prevention strategies are employed.

Conclusion

Suicide is a major public health problem. Massachusetts has one of the lowest suicide rates in the country and can continue to improve upon this work. Suicides have been tracked in the Massachusetts Violent Death Reporting System since 2003 and have been increasing. Suicides have been increasing for both sexes, although males have a higher rate and make up 77.8% of suicides. 37.5% of suicides occurred in persons ages 45-64 in 2017. The means most commonly used in suicides are hanging/suffocation (50.6%), firearm (23.3%), and poisoning/overdose (15.7%). For suicides by hanging/suffocation, rope/clothing lines (29.6%) were the most common ligature used. For suicides by firearm, handguns (75.0%) were the most common type of firearm used. For suicides by poisoning/overdose, antidepressants (50.9%) were the most common class of substance used. 15.6% of suicide victims had made a prior suicide attempt. 45.6% had a history of treatment for a mental health or substance abuse problem.

MAVDRS will continue working with other data partners on capturing additional data required by the legislature and improving data quality of existing data fields.

The Suicide Prevention Program at DPH frequently uses all the data available at DPH, including MAVDRS, to help inform its ongoing prevention efforts and new strategies. This data helps the Program target efforts towards populations with the greatest needs.