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Suicides in Massachusetts

2016

January 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 2016 and found the following:

- In 2016, 638 suicides occurred in Massachusetts. This number was greater than the number of deaths due to motor vehicles (N=387) and homicides (N=147) combined.
- In 2016, the rate of suicide in Massachusetts was 9.4/100,000 persons. This rate has increased an average of 2.2% per year since 2006. There were approximately 40% more suicides in 2016 than in 2006.
- The majority (77.0%) of suicide victims were male (n=491). However, rates for both males and females have increased since 2006. From 2006 to 2016, the rate of suicides increased 42.3% for males and 5.0% for females.
- The majority of suicides that occurred in 2016 were among individuals 45-64 years old (n=249, 39.0%).
- The most prevalent means of suicide for males were hanging/suffocation (47.7%) and firearm (26.7%), which combined accounted for 74.4% of male suicides.
- For females, the most prevalent means of suicide were hanging/suffocation (43.5%) and poisoning/overdose (38.1%), which combined accounted for 81.6% of female suicides.
- Males (n=131) accounted for 93.6% of firearm suicides (n=140). Handguns (N=112, 80.0%) were the most common type of firearm used in suicides.
- For poisoning suicides, opiates (n=59, 50.9%) and antidepressants (n=41, 35.3%) were the most common classes of drugs used.¹
- 32.0% of female suicide victims (n=47) and 14.5% of male suicide victims (n=71) were known to have a prior suicide attempt.
- 63.9% of female suicide victims (n=94) and 36.3% of male suicide victims (n=178) 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 116 victims who died from poisoning.

Introduction

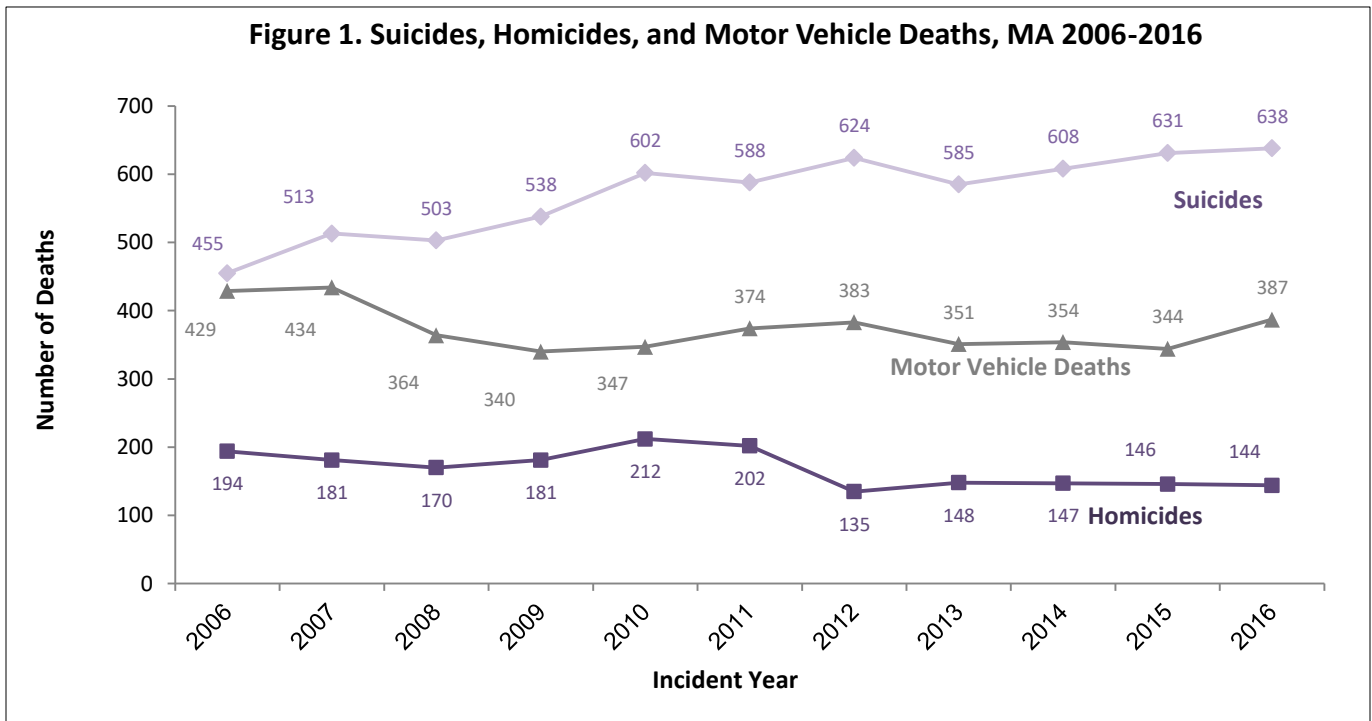
In 2014, the Legislature passed Chapter 284 of the Acts of 2014: An Act to reduce gun violence. This law included a requirement for the Massachusetts Department of Public Health (DPH) to collect, record, and analyze data on all suicides in the Commonwealth.

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 2016. 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 2016 firearm suicides from DCJIS that has been used to improve the reporting on information related to firearm suicides.

Suicide Data 2016

From January 1, 2016 to December 31, 2016, there were 638 suicides (9.4/100,000) that occurred in the Commonwealth of Massachusetts. Of the 638 suicide deaths, 491 of the victims were male (14.9/100,000, 77.0%) and 147 victims were female (4.2/100,000, 23.0%).



Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health; Fatality Analysis Reporting System (FARS, data accessed 10/23/2019), National Highway Traffic Safety Administration

- The number of suicide deaths was 1.6 times higher than the number of motor vehicle traffic-related deaths (N=387) and 4.4 times higher than homicides (N=144) in 2016.
- Massachusetts has a lower age-adjusted rate of suicide (8.9/100,000) compared to the rest of the U.S. The age-adjusted rate of suicide for the U.S. in 2016 was 13.4/100,000.²
- Since 2006, suicide rates increased an average of 2.2% per year. There were approximately 40% more suicides in 2016 than in 2006. This increase mirrors an increase in the U.S. age-adjusted suicide rate, which also increased an average of 2.2% per year since 2006.²

² Source: Centers for Disease Control and Prevention, WISQARS – Fatal Injuries Report, 1999-2016, for National, Regional, and States
Suicides in Massachusetts 2016: Data Report

SUICIDE RATES DEMOGRAPHICS

Figure 2A. Male Suicide Rate, MA 2006-2016

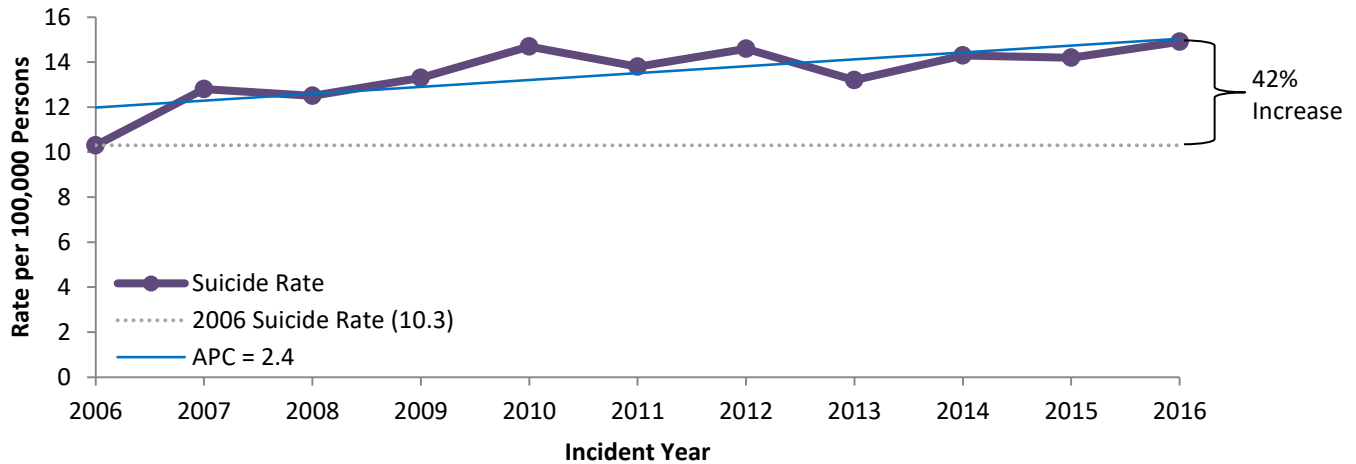
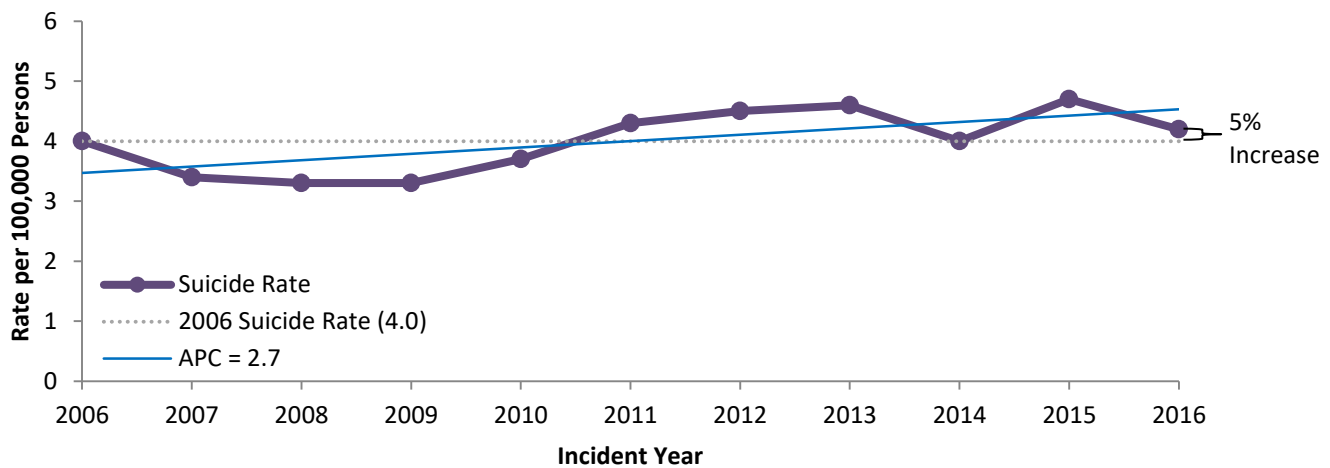
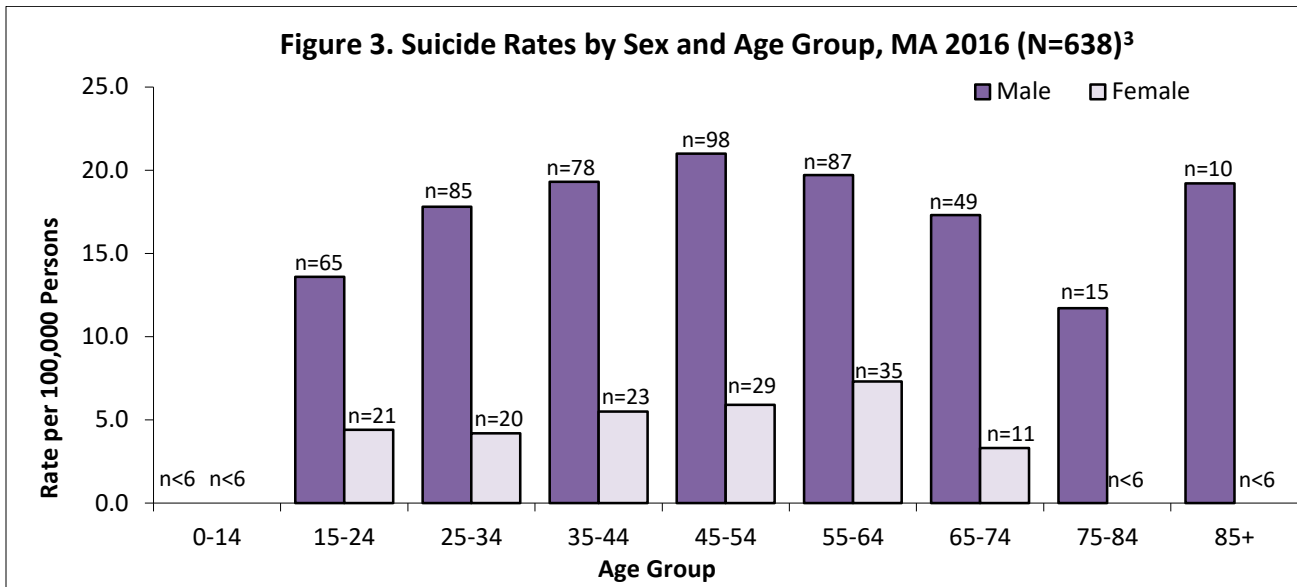


Figure 2B. Female Suicide Rate, MA 2006-2016

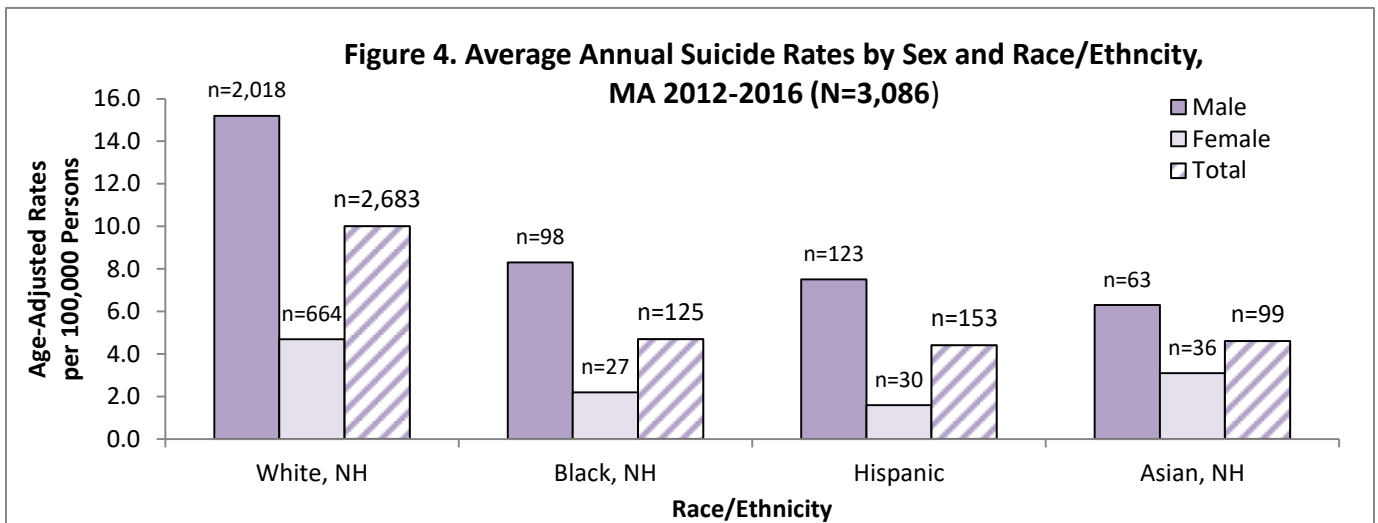


- While the majority of deaths by suicide occurred in males, there have been overall increases in the rates of suicide among both men and women.
- Although suicide rates for both males and females have fluctuated from year to year, the modeled average annual percent change (APC) in suicide rates between 2006 and 2016 was similar for men (2.4% per year) and women (2.7% per year).
- When comparing suicide rates for 2006 and 2016, the net change in suicide rates among males increased by 42% (from 10.3 to 14.9); among females, it increased by 5% (from 4.0 to 4.2).



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

- 39.0% of suicides that occurred in 2016 were among individuals age 45-64 years (n=249). Between 2006 and 2016, the rate of suicides in this group increased an average of 2.1% per year.
- The age group with the highest rate of suicide for males was individuals age 45-54 years (21.0/100,000 persons, n=98).
- The age group with the highest rate of suicide for females was individuals age 55-64 years (7.3/100,000 persons, n=35).

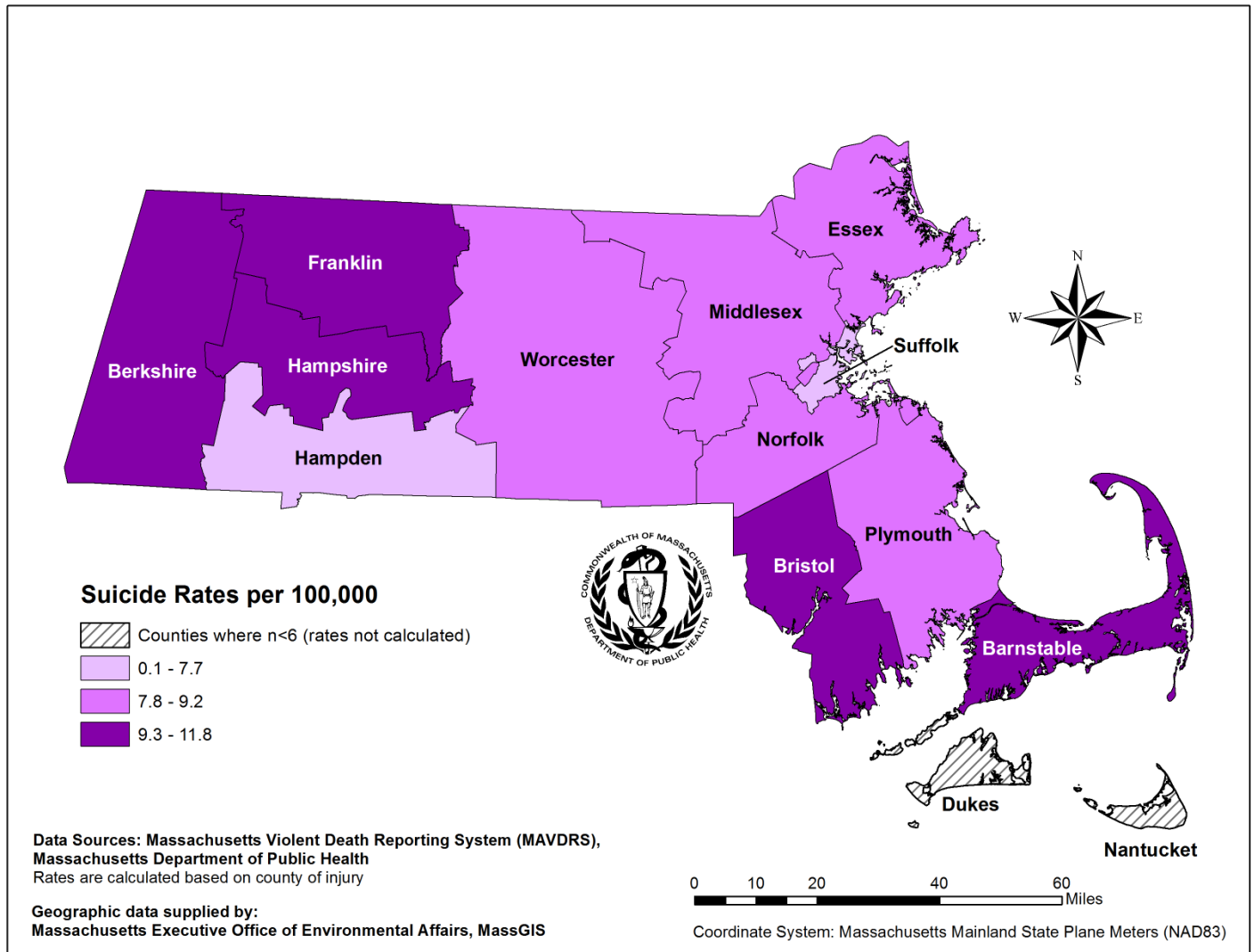


- For 2012-2016, the average annual age-adjusted suicide rate was highest among white, non-Hispanic males (15.2/100,000 persons, n=2,018).
- Similarly, white, non-Hispanic females had a higher average annual age-adjusted rate (4.7/100,000 persons, n=664) of suicide compared to black, non-Hispanic and Hispanic females.

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

Suicides by County

Figure 5. Rate of Suicides by County, MA 2016⁴

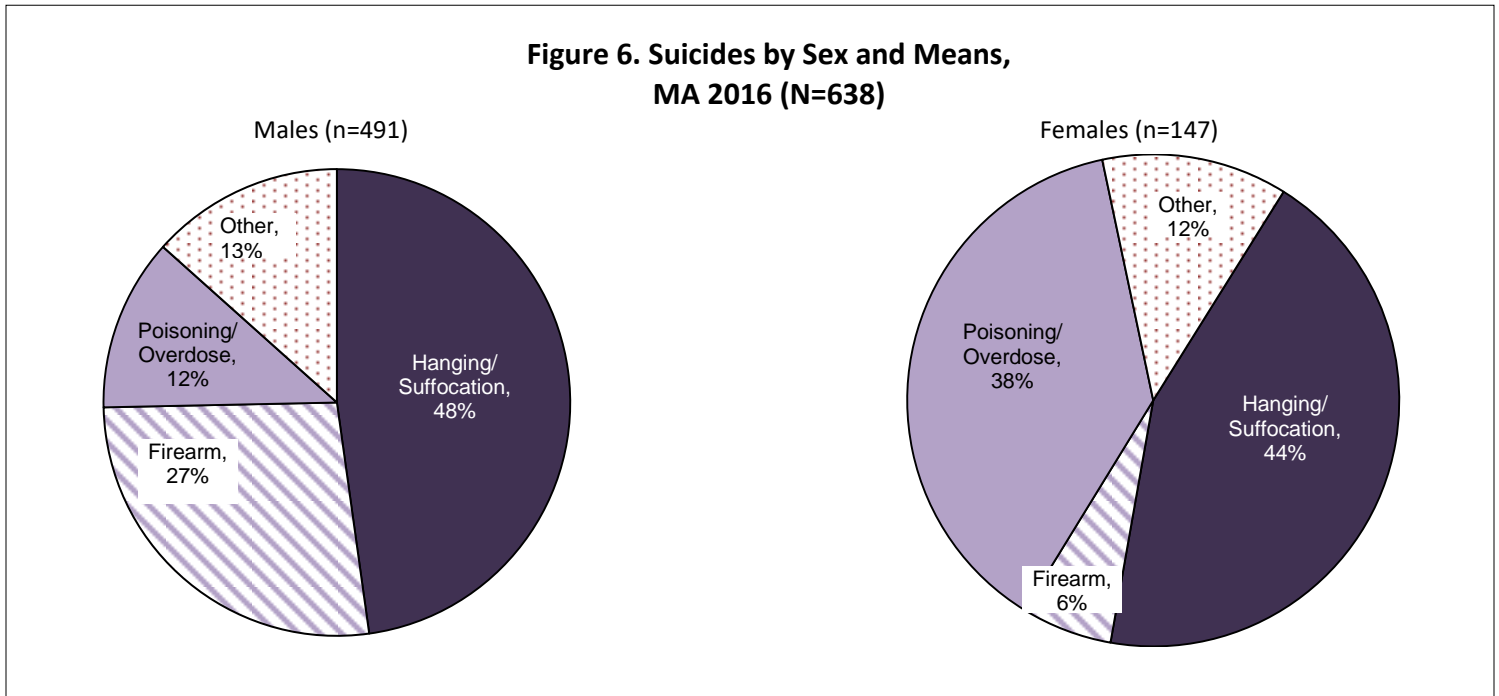


- In 2016, Berkshire (11.8/100,000, n=15), Hampshire (11.8/100,000, n=19), and Bristol (11.7/100,000, n=65) counties had the highest rates of suicide and Middlesex County had the highest number of suicides (n=147, 9.2/100,000).
- The county with the lowest measurable rate in 2016 was Suffolk County (7.4/100,000, n= 59).

⁴ Rates are calculated based on county of injury.

The Means of Suicide and Source of the Means of Suicide

Chapter 111 M.G.L, Section 232, (i) and (ii) specify that this report contain 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 2016.



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

Means of Suicide	Male			Female			Total		
	N	Percent	Rate per 100,000	N	Percent	Rate per 100,000	N	Percent	Rate per 100,000
Hanging/Suffocation	234	47.7	7.1	64	43.5	1.8	298	46.7	4.4
Firearm	131	26.7	4.0	9	6.1	0.3	140	21.9	2.1
Poisoning/overdose	60	12.2	1.8	56	38.1	1.6	116	18.2	1.7
Sharp Instrument	21	4.3	0.6	5	3.4	--	26	4.1	0.4
Fall	15	3.1	0.5	8	5.4	0.2	23	3.6	0.3
Other Means	30	6.1	0.9	5	3.4	--	35	5.5	0.5
Total	491	100.0	14.9	147	100.0	4.2	638	100.0	9.4

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

- The most prevalent methods of suicide in 2016 were hanging/suffocation (n=298, 46.7%), firearm (n=140, 21.9%) and poisoning/overdose (n=116, 18.2%).
- Hanging/suffocation (n=234) and firearm (n=131) were the most common methods for males.
- Hanging/suffocation (n=64) and poisoning/overdose (n=56) were the most common methods for females.

The Means of Suicide and Source of the Means of Suicide

Means	n	%
Firearm	140	100.0
Handgun	112	80.0
<i>Semi-Automatic Pistol</i>	59	
<i>Revolver</i>	46	
<i>Other/Unknown Type</i>	7	
Rifle	14	10.0
<i>Bolt Action</i>	<6	
<i>Lever Action</i>	<6	
<i>Pump Action</i>	<6	
<i>Automatic</i>	<6	
<i>Semi-automatic</i>	<6	
<i>Unknown Type</i>	<6	
Shotgun	14	10.0
<i>Bolt Action</i>	<6	
<i>Pump Action</i>	<6	
<i>Single Shot</i>	<6	
<i>Double Barrel</i>	<6	
<i>Semi-Automatic</i>	<6	
<i>Unknown Type</i>	<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 2016, the rate for the U.S. was 6.7/100,000 compared to 2.1/100,000 for MA.
- There were three types of firearms used in firearm-related suicides in 2016: handguns, rifles, and shotguns.
- The most common type of firearm used was handgun (n=112, 80.0%).
- The majority of victims who died from firearm-related suicides were male (n=131, 93.6%).

Means	Male	Female	Total
Hanging/Suffocation	234	64	298
Rope/Clothing Line	93	13	106
Belt/Strap	45	9	54
Cord/Cable/Wire	35	11	46
Plastic Bag/Plastic Bag + Gas	13	8	21
Sheet/Curtain	<20	<6	21
Dog Leash	<6	<6	7
Clothing/Shoelace	14	10	24
Other Specified Means	<6	<6	6
Not Specified	8	5	13

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=106, 35.6%), belt/strap (n=54, 18.1%) and cord/cable/wire (n=46, 15.4%).
- For both men and women, the most common ligature used was a rope/clothing line (males: n=93, 39.7%, females: n=13, 20.3%).
- Twenty-one victims used plastic bags as a means of suffocation, either alone or in conjunction with a gas such as helium or propane.

⁵ Data suppressed for counts less than 6 for select variables. Some values greater than 6 have also been suppressed when it would allow for a value of less than 6 to be calculated.

The Means of Suicide and Source of the Means of Suicide

Table 4. Source of Means of Poisoning Suicides: Number, MA 2016 ^{6,7}			
Means	Male	Female	Total
Poisoning			
Substance Classes	113	148	261
Alcohol	6	9	15
Amphetamine	0	<6	<6
Anticonvulsant	<6	<6	9
Antidepressant	12	29	41
Antipsychotic	<6	<10	10
Barbiturates	<6	<6	<6
Benzodiazepines	11	24	35
Carbon Monoxide	19	0	19
Cocaine	<6	<6	<6
Opiate	25	34	59
Other Substance Class	28	36	64
<i>Acetaminophen</i>	0	9	9
<i>Diphenhydramine</i>	8	7	15
<i>Other/Unknown Substance</i>	20	20	40

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 261 different substances included as the cause of death in 116 poisoning suicides.
- The most common classes of substances used in poisoning suicides were opiates, which accounted for 22.6% of all substances used, and antidepressants, which accounted for 15.7% of all substances used.

Table 5. Source of Means of Sharp Instrument Suicides: Number, MA 2016 ⁷	
Means	Total
Sharp Instrument	26
Knife	16
Razor Blade/Box Cutter	<6
Multiple/Other/Not Specified	<6

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

- The most prevalent sharp instrument used in suicides was a knife (n=16, 61.5%).

⁶ The substances listed have been identified as the cause of death of victims (n=116); 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 116 victims who died from poisoning.

⁷ Data suppressed for counts less than 6 for select variables. Some values greater than 6 have also been suppressed when it would allow for a value of less than 6 to be calculated.

The Means of Suicide and Source of the Means of Suicide

Table 6. Source of Means of Fall Suicides: Number, MA 2016⁸	
Means	Total
Fall	22
Residential Building/Dorm	11
Bridge	<6
Parking Garage	<6
Health Care Facility	<6
Other/Unknown	<6

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

- In 2016, residential buildings (n=11, 50.0%) were most often utilized in suicides resulting from falling/jumping from a height.

Table. 7. Source of Means of Other Suicides: Number, MA 2016⁸	
Means	Total
Other Means	36
Drowning	12
Fire/Burn	<6
Train	10
Motor Vehicle	9
Other/Unknown	<6

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

- The most prevalent methods of suicide in the other category were those involving drowning (n=12, 33.3%) and train (n=10, 27.8%).

⁸ Data suppressed for counts less than 6 for select variables. Some values greater than 6 have also been suppressed when it would allow for a value of less than 6 to be calculated.

The Relationship between the Owner of the Means and the Decedent

Firearm Suicides	140	100.0
Relationship	N	%
Self	60	42.9
Other known person*	13	9.3
Unknown	67	47.9

**Includes family, friend, other known person*

Source: MAVDRS, MA 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 2016, of the 140 firearm suicides, 73 had documented information on the relationship of the firearm owner to the decedent. In 42.9% of suicides by firearm, it was known that the decedent was the owner of the firearm, and in 9.3%, 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 2016, 44% 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

Length of Time from Firearm Purchase to Death	N	%
Victim was Gun Owner	60	100.0
Less than 1 year	10	16.7
Between 1 and 5 years	13	21.7
Over 5 years	23	38.3
Unknown	14	23.3

Source: MAVDRS, MA Department of Public Health

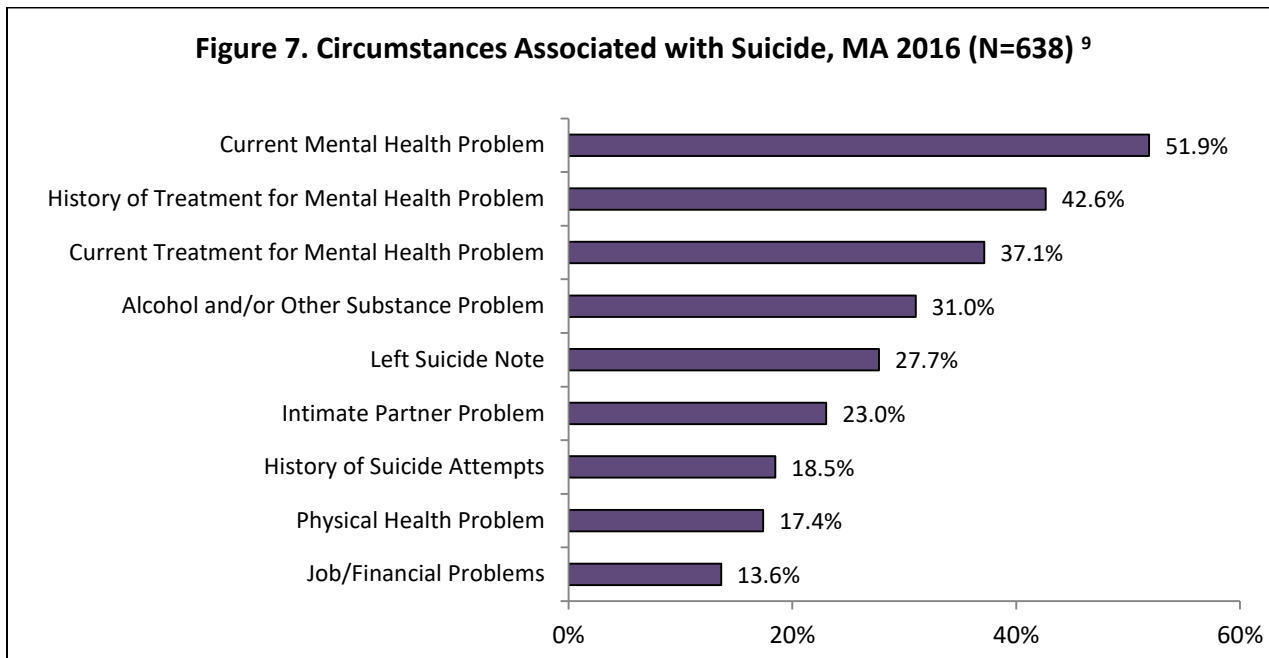
MAVDRS was able to obtain information on the length of time between the purchase of the means and the death of the decedent for firearm suicides where the victim was the owner of the firearm. Information on the length of time from purchase to death was known for 76.7% of firearm suicides where the victim owned the firearm. In 16.7% of these, the victim had owned the gun for less than a year, 21.7% of victims had owned the firearm between 1 and 5 years, and in 38.3% of victims, the victim had owned the firearm for over 5 years.

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

For suicides by firearm or poisoning, additional data is collected to determine whether the means was 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 140 firearm suicides in 2016, none were known to be stolen. MAVDRS is working to improve on the completeness of this variable and determine whether or not a firearm was legally obtained and owned.

In 2016, there were less than six known illicit substances that 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



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 the 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. 94.8% of suicide victims had at least one circumstance identified during case-review (n=605), and 84.2% had multiple circumstances known (n=537). 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=638).

- 51.9% of suicide victims had a documented current mental health problem, such as depression, anxiety disorder, schizophrenia, or post-traumatic stress disorder.
- 37.1% were currently receiving treatment for a mental health or substance abuse problem, and 42.6% had history of treatment for a mental health or substance abuse problem.
- 31.0% had a known alcohol or other substance abuse problem.
- 23.0% experienced an intimate partner problem prior to their death such as divorce, break-up, jealousy, or conflict. In 2016, there were <6 intimate partner violence related homicide/suicide cases.
- 18.5% had a known history of suicide attempts.

⁹ Circumstances are not mutually exclusive and will not add up to 100%.

Past Suicide Attempts

Information on past suicide attempts is obtained from the medical examiner file and police reports. This information may come from the decedent's family, friends, or psychiatric/hospital records. 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. Also, 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 be present in records.

	Victims with Prior Suicide Attempt			Total Suicides	Percent of Total
	Male	Female	Total		
Total	71	47	118	638	18.5%
Firearm	7	0	7	140	5.0%
Hanging/Suffocation	34	22	56	298	18.8%
Poisoning	24	18	42	116	36.2%
All other means	6	7	13	84	15.5%

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

- Of the 638 suicide victims in 2016, 118 (18.5%) had a previous suicide attempt. Females had a higher percentage (32.0%) of prior suicide attempts than males (14.5%).
- Among hanging/suffocation victims, 14.5% of male victims (n=34) and 34.4% of female victims (n=22) had prior suicide attempts.
- Among poisoning victims, 40.0% of male victims (n=24) and 32.1% of female victims (n=18) had prior suicide attempts.

Past Mental Health Treatment of the Decedent

Table 11. Means of Suicide Victims with History of Treatment for Mental Health or Substance Abuse Problem, MA 2016¹⁰					
	Victims with History of Treatment			Total Suicides	Percent of Total
	Male	Female	Total		
Total	178	94	272	638	42.6%
Firearm	>25	<6	34	140	24.3%
Hanging/Suffocation	93	36	129	298	43.3%
Poisoning	33	40	73	116	62.9%
All other means	21	15	36	84	42.9%

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

- Of the 638 suicide victims in 2016, 272 (42.6%) were noted to have a history of treatment for a mental health or substances abuse problem. Females had a higher percentage (63.9%) of a history of treatment than males (36.3%).
- Among hanging/suffocation victims, 39.7% of male victims (n=93) and 56.3% of female victims (n=36) had a history of treatment for a mental health or substance abuse problem.
- Among poisoning victims, 55.0% of male victims (n=33) and 71.4% of female victims (n=40) had a history of treatment for a mental health or substance abuse problem.

¹⁰ Data suppressed for counts less than 6 for select variables. Some values greater than 6 have also been suppressed when it would allow for a value of less than 6 to be calculated.

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, better access to emergency medical care and behavioral health services, and over a 10-year history of state suicide prevention funding.

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 works in partnership with these agencies as well as the Department of Elementary and Secondary Education, the Department of Corrections, our own 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 the Program.

The SPP also funds 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 their 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 to 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.

We prefer to introduce system-wide approaches to suicide that include appropriate levels of training, protocols to follow, and postvention strategies to minimize further deaths if a suicide occurs. Schools, DYS, community mental health centers, and hospital systems are some examples of systems with which we are working.

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 8 health care and behavioral health care systems. Since this time, in the fall of 2017, the 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.

In May of 2019, over 500 participants attended each of the two days of our annual conference. Participants were from clinical settings, schools, law enforcement, policy makers, survivors, those who had attempted suicide in the past, and service providers.

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

Conclusion

Suicide is a public health problem, and Massachusetts continues to collect data on these deaths to better inform prevention efforts. 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 77.0% of suicides. 39.0% of suicides occurred in persons ages 45-64 in 2016. The means most commonly used in suicides are hanging/suffocation (46.7%), firearm (21.9%), and poisoning/overdose (18.2%). For suicides by hanging, rope/clothing line was the most common ligature (35.6%). For suicides by firearm, handguns (80.0%) were the most common type of firearm used. For suicides by poisoning, opiates (22.6%) and antidepressants (15.7%) were the most common class of substance used. 18.5% of suicide victims had made a prior suicide attempt. 42.6% 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 of 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.