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Characteristics of Completed Suicides Among Maine Residents Who Served in the Military, 2015 to 2021¹

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Introduction

This report uses data from the Maine Violent Death Reporting System to examine characteristics of completed suicides among Maine residents who died in Maine and who ever served in the military.

The Maine Violent Death Reporting System reviews and abstracts data on all suicides, homicides, and deaths of undetermined intent that occur within the State of Maine. Maine residents who die by suicide outside of the State of Maine are not captured by the Maine Violent Death Reporting System.

Data are collected from a decedent's death certificate, and law enforcement and medical examiner records pertaining to their death. Only information contained and reported in these documents is collected, and as such, these data likely represent *minimum* counts/occurrences.

Between 2015 and 2021, 1,728 Mainers died by suicide. Of these, 337 had a history of military service. Four individuals with an unknown military service history were excluded from the following analysis. This report does not differentiate active duty from other service status due to small subsample sizes. Characteristics of suicides were not broken out by age and sex due to small samples sizes of the subgroups.

Considerations

- This document contains data related to suicide among individuals who served in the military, a topic which may be uncomfortable for some readers.
- The Maine Violent Death Reporting System does not collect information on an individual's status as a federally qualified veteran, only whether they had served in the military.
- Maine residents who died by suicide outside of the State of Maine, are captured in that jurisdiction's data, and are not represented here.

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² Please email jamie.a.wren@maine.edu with any questions regarding this report.

A Note on Relative Risk

“Relative risk” measures the risk of an outcome occurring in one group as compared to another. A relative risk of 1.5 measuring an outcome between Group A and B means that Group A is one and one-half times more likely than Group B to experience that outcome. Alternatively, if Group A has a relative risk of 0.5 compared to Group B, that means Group A has half the amount of risk as Group B. For example, when comparing the risk of being diagnosed with post-traumatic stress disorder between individuals with and without a history of military service, we find a relative risk of 4.5. This means that individuals with a history of military service are four and half times more likely to be diagnosed with post-traumatic stress disorder than those with no history of military service (see Table 2).

Relative risk is abbreviated RR in this report and is presented with 95% confidence intervals. Statistically significant values are **bolded**.

Results

Figure 1 displays the 1,724 suicides that occurred among Maine residents from 2015 to 2021, by their history of military service. During this time, one in five Mainers who died by suicide had a record of current or previous military service (20% vs. 80%).

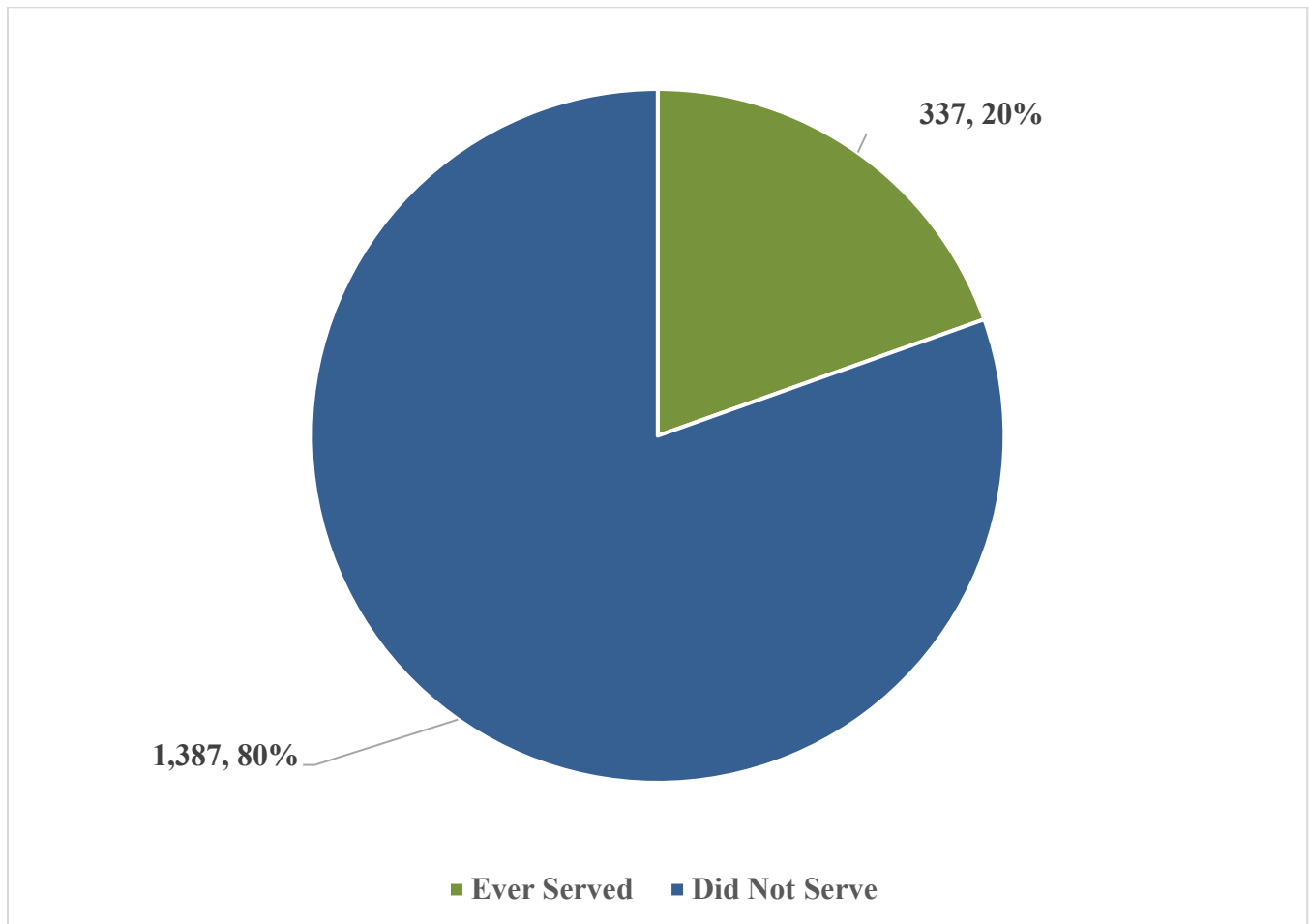


Figure 1. Maine residents who died by suicide by history of military service, 2015 to 2021

Figure 2 displays the trends in suicides among Maine residents, comparing those who served in the military with those who did not. The number of individuals who served in the military has fluctuated over the data years, with a low of 32 in 2016, and high of 60 in 2018. Since 2019, however, the number has remained stable.

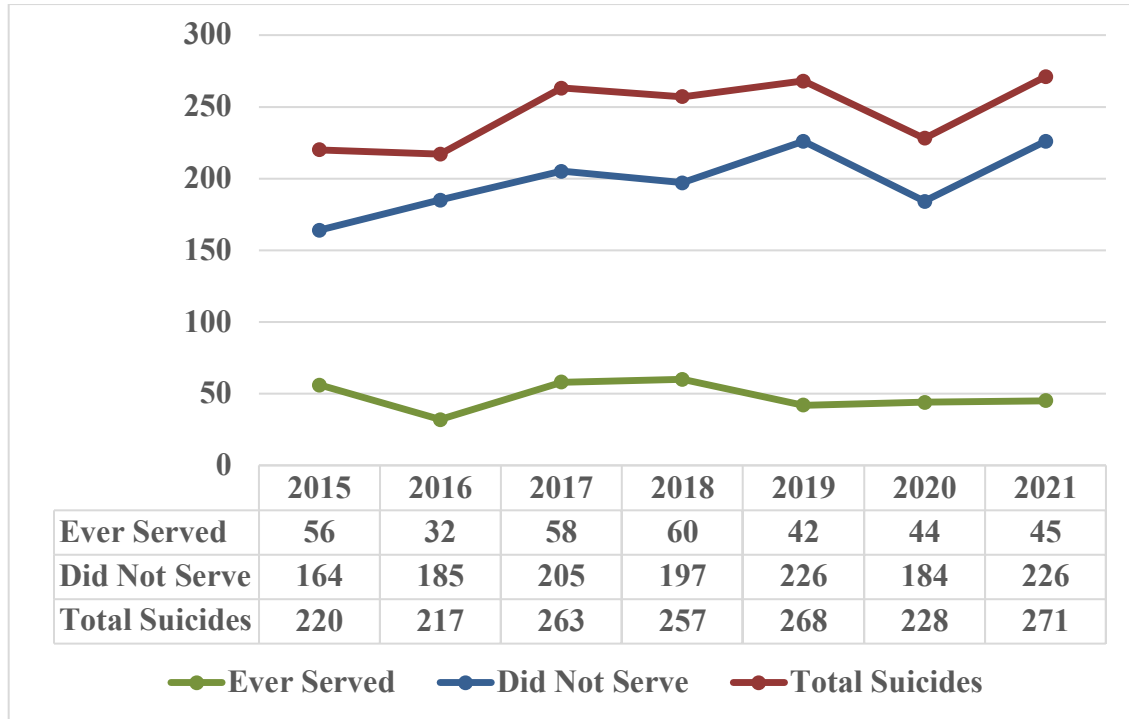


Figure 2. Number Maine residents who died by suicide history of military service and year, 2015 to 2021

Demographics

Figure 3 displays the proportion of males and females who died by suicide by their history of military service. Individuals who died by suicide and had served in the military were significantly more likely to be male, making up 96% of these decedents (**RR=1.26 (1.12 – 1.42)**).

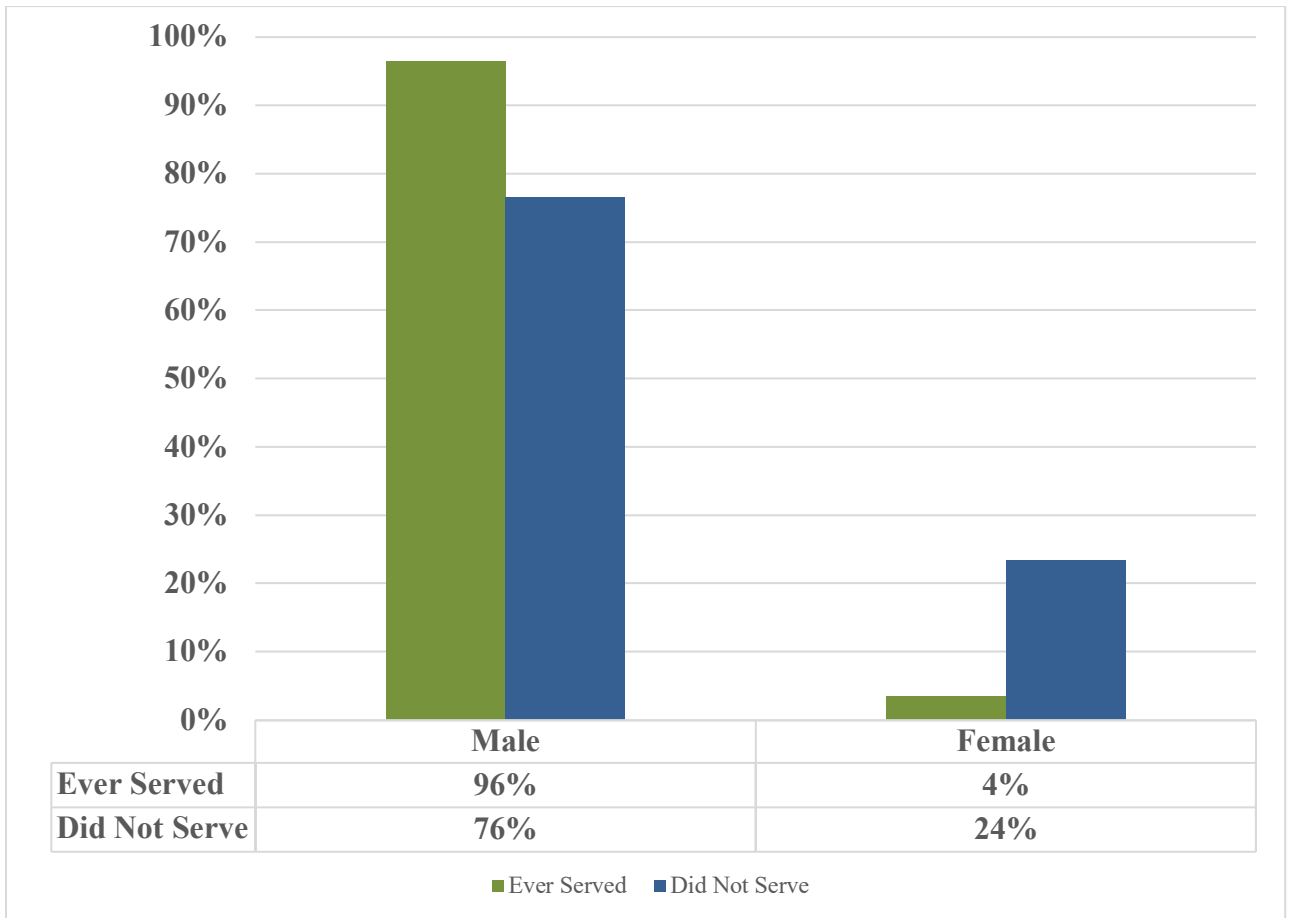


Figure 3. Proportion of Maine residents who died by suicide by history of military service and sex, 2015 to 2021

Figure 4 displays the age distribution of individuals who had a history of military service compared to those who did not. Decedents with a military service history were older, with an average age of 62.7 years compared to 46.8 years among those who did not serve. Those with a history of military service were 3.32 times more likely than those who never served to be 65 or older (**RR= 3.32, CI 2.74 - 4.04**).

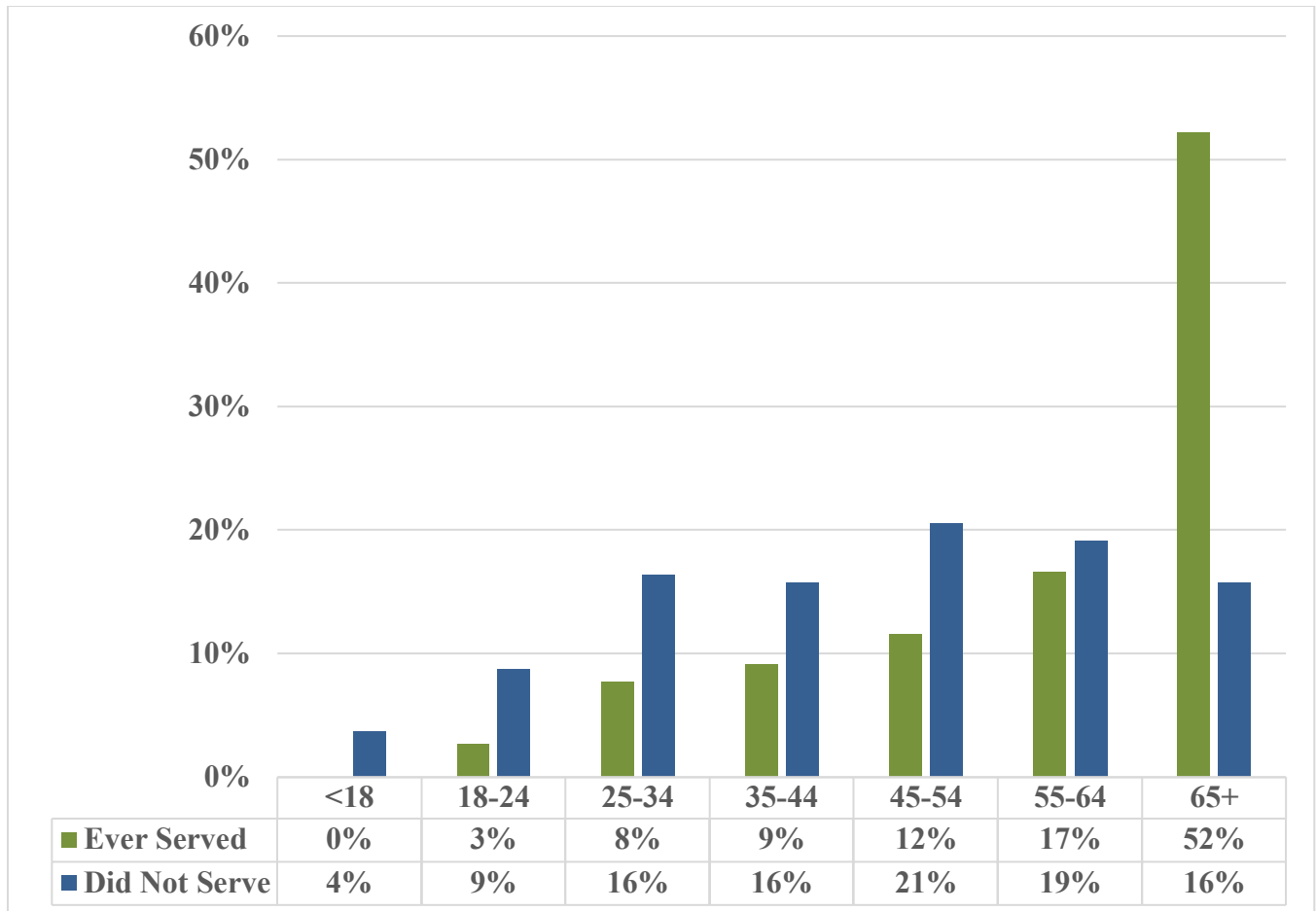


Figure 4. Age distribution of Maine residents who died by suicide by history of military, 2015 to 2021

Table 1 displays the level of education attained by individuals who had a history of military service compared to those who did not. When compared with individuals with no history of service, those who served in the military were significantly more likely to have achieved a high school diploma as their terminal degree (55% vs. 46%), and only slightly less likely have some level of education beyond high school (38% vs. 40%).

Table 1. Educational attainment by military service history

Educational Attainment	Ever Served in the Military n= 337 (%)	Did Not Serve in the Military n= 1,387 (%)	Relative Risk and 95% Confidence Interval
Less than high school diploma	19 (6%)	184 (13%)	0.42 (0.27 - 0.68)
High school diploma	187 (55%)	634 (46%)	1.21 (1.04 - 1.42)
Education beyond high school	129 (38%)	557 (40%)	0.95 (0.79 - 1.15)

Table 2 displays the marital status at the time of death for individuals who had a known military service history compared with those who did not. Individuals with a history of military service were significantly more likely to be married (37% vs. 30%), significantly more likely be widowed (15% vs. 5%), and less likely to be divorced (23% vs. 28%), but the difference in divorce rates was not statistically significant.

Table 2. Marital status at time of death by military service history

Marital Status	Ever Served in the Military n= 337 (%)	Did Not Serve in the Military n= 1,387 (%)	Relative Risk and 95% Confidence Interval
Married	126 (37%)	420 (30%)	1.23 (1.02 - 1.50)
Divorced	93 (28%)	313 (23%)	1.22 (0.97 - 1.53)
Widowed	49 (15%)	67 (5%)	3.01 (2.09 - 4.33)
Never married	65 (19%)	539 (39%)	0.50 (0.39 - 0.64)

Table 3 displays the proportion of Maine suicide decedents by county of residence. From 2015 to 2021, Cumberland, Penobscot, and York counties saw the highest percentage of suicides among individuals who served in the military, at 15% each. Cumberland and York counties had nearly equal proportions of suicides among those without a history of military service, while Penobscot County saw a lower proportion of suicides among those without a history of service (10% vs. 15%). Statistical differences between these groups are not reported for county of residence due to the small sample sizes.

Table 3. Percent of completed suicides among Maine residents by county of residence and history of military service, 2015 to 2021

County of Residence	Ever Served n=337	Did Not Serve n=1,387	Percent of Total Maine Residence 2020 ³
Androscoggin	5%	9%	8%
Aroostook	6%	5%	5%
Cumberland	15%	16%	22%
Franklin	3%	3%	2%
Hancock	4%	4%	4%
Kennebec	11%	9%	9%
Knox	3%	4%	3%
Lincoln	4%	3%	3%
Oxford	4%	5%	4%
Penobscot	15%	10%	11%
Piscataquis	3%	2%	1%
Sagadahoc	2%	3%	3%
Somerset	5%	5%	4%
Waldo	3%	4%	3%
Washington	4%	3%	2%
York	15%	16%	15%
Unknown	0%	<1%	0%

³Maine - Census Bureau Profile. <https://data.census.gov/profile/Maine?g=040XX00US23#populations-and-people>

Characteristics of Suicides Among Those Who Served in the Military

Figure 5 displays the proportion of suicides from 2015 to 2021 that involved a firearm. Individuals with a history of military service were 1.43 times more likely to die by firearm than who with no service history, 73% vs. 51%, and this was statistically significant (**RR= 1.43, CI: 1.24 to 1.65**).

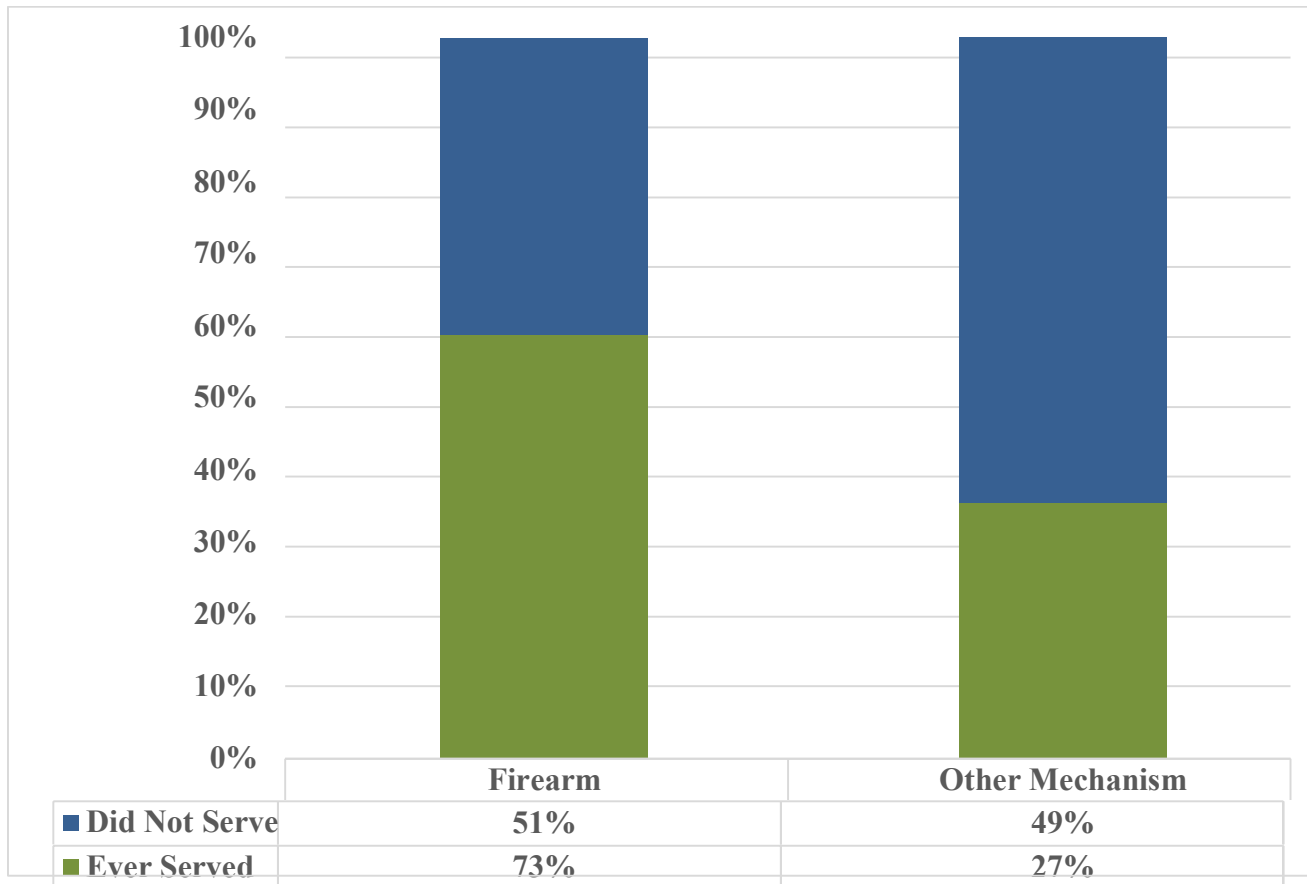


Figure 5. Proportion of completed suicides involving a firearm among individuals who served in the military, 2015 to 2021

Table 4 lists circumstances reported for completed suicides among individuals who served in the military compared with those never served. Data from years 2015 to 2021 are aggregated. The column on the far right reports the amount of increased (greater than 1) or decreased risk (less than 1) for a particular circumstance among those who served. Differences in risk between the groups that are statistically significant are bolded.

Table 4. Reported circumstances among Maine residents who died by suicide, 2015 to 2021

Circumstance	Ever Served in the Military n= 337 (100%)	Did Not Serve in the Military n= 1,387 (100%)	Relative Risk and 95% Confidence Interval
Died in their residence	265 (78%)	939 (68%)	1.16 (1.01 - 1.32)
Physical health problem contributed to death	143 (42%)	284 (20%)	2.07 (1.70 - 2.52)
Physical health problem crisis ⁴	41 (12%)	135 (10%)	1.25 (0.89 - 1.77)
Reported by self/other to be in depressed mood before death	161 (48%)	691 (50%)	0.96 (0.81 - 1.13)
Had any formal mental health diagnosis	142 (42%)	638 (46%)	0.92 (0.77 - 1.09)
Receiving mental health or substance use treatment at the time of death	66 (20%)	361 (26%)	0.75 (0.58 - 0.97)
History of ever receiving mental health or substance use treatment	107 (32%)	552 (40%)	0.80 (0.65 - 0.98)
Diagnosed with depression	92 (27%)	475 (34%)	0.80 (0.64 - 0.99)
Diagnosed with post-traumatic stress disorder	33 (10%)	30 (2%)	4.53 (2.77 - 7.90)
Have a documented substance use disorder	24 (7%)	215 (16%)	0.46 (0.30 - 0.70)
Have a documented alcohol use disorder	57 (17%)	253 (18%)	0.93 (0.70 - 1.23)
Alcohol use suspected at time of injury	51 (15%)	222 (16%)	0.95 (0.70 - 1.28)
Released from hospital within 30 days of death	20 (6%)	43 (3%)	1.91 (1.13 - 3.24)
Have a history of suicidal thoughts	106 (31%)	487 (35%)	0.90 (0.73 - 1.10)
Left a suicide note	103 (31%)	487 (35%)	0.87 (0.71 - 1.07)
Have a history of suicide attempts	46 (14%)	245 (18%)	0.77 (0.57 - 1.05)
Disclosed intent within 30 days of death	80 (24%)	322 (23%)	1.02 (0.80 - 1.30)
Disclosed to intimate partner	34 (10%)	141 (10%)	0.99 (0.69 - 1.44)
Intimate partner problem contributed to death	61 (18%)	381 (27%)	0.66 (0.51 - 0.86)
Intimate partner problem was a crisis	30 (9%)	184 (13%)	0.67 (0.46 - 0.98)
Any relationship problem	92 (27%)	587(42%)	0.65 (0.52 - 0.80)
Argument within two weeks of death contributed to death	42 (12%)	205 (15%)	0.84 (0.61 - 1.17)
Non-suicide death of family/friend contributed to death	32 (9%)	82 (6%)	1.61 (1.07 - 2.41)

⁴ A crisis is defined as an acute exacerbation of a given circumstance within two weeks prior to death. For example, a physical health problem crisis might be that the decedent was recently diagnosed with a terminal illness or experienced a major medical event.

Individuals who served in the military were significantly *more* likely to:

- Have died in their own home (78% vs. 68%)
- Experienced a physical health problem that contributed to their death (42% vs. 20%)
- Have been diagnosed with post-traumatic stress disorder (10% vs. 2%)
- Have been released from a hospital setting within 30 day of their death (6% vs 3%)
- Experienced a non-suicide related death of a family member or friend (9% vs. 6%)

Individuals who served in the military were significantly *less* likely to:

- Be receiving mental health or substance use treatment at the time of their death (20% vs. 26%)
- Have ever received mental health or substance use treatment (32% vs. 40%)
- Have been diagnosed with depression (27% vs. 34%)
- Have a documented substance use disorder (7% vs. 16%)
- Experienced an intimate partner problem that contributed to their death (18% vs. 27%)
- Experienced an intimate partner problem crisis that contributed to their death (9% vs. 13%)
- Experienced any type of relationship problem that contributed to their death (27% vs. 42%)

Conclusions

Among Maine residents who died by suicide from 2015 to 2021, 1 in 5 had a history of military service. Individuals with a history of military service were more likely to be male, older, have a high school education, be married or widowed, die by firearm, die in their residence, experience a physical health problem, be diagnosed with post-traumatic stress disorder, and have experienced a non-suicide death of a family member or friend that contributed to their death.

Individuals with a history of military service were less likely than those without a history of service to have less than high school education, never have been married, be receiving, or have ever received, treatment for mental health or substance use, be diagnosed with depression, have a substance use disorder, experience an intimate partner problem or crisis related to an intimate partner problem, and have experienced any type of relationship problem that contributed to their death.

The circumstances presented in this report may be helpful to use in suicide prevention programming, and in discussions with those who interact with individuals who served in the military to raise awareness of risk factors for suicide.