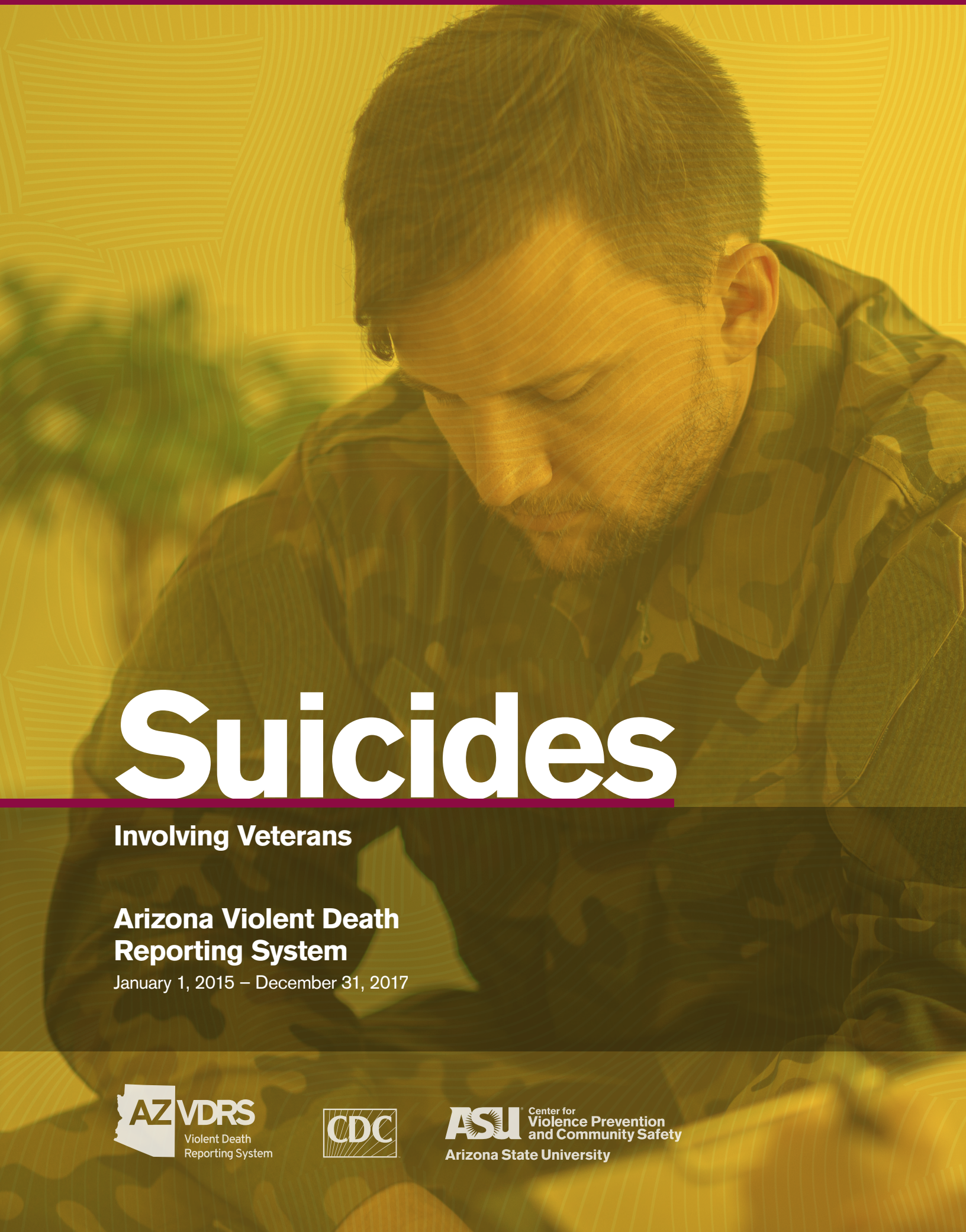


Suicides

Involving Veterans

Arizona Violent Death Reporting System

January 1, 2015 – December 31, 2017

AZVDRS Violent Death Reporting System

CDC

ASU Center for Violence Prevention and Community Safety
Arizona State University

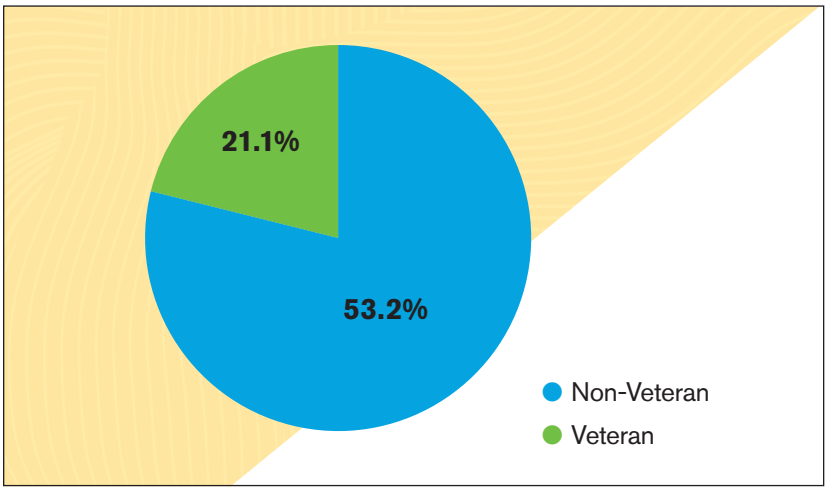
AZ VDRS
Violent Death Reporting System

The Arizona Violent Death Reporting System (AZ-VDRS) collects violent death data from multiple sources: death certificates issued by the Arizona Department of Health Services (ADHS), police reports obtained from investigating agencies, and autopsy reports from medical examiner offices. The purpose of this project is to assist stakeholders with strategic planning and prevention efforts aimed towards reducing the number of violent deaths that occur each year in Arizona. The data used for this report – *Suicides Involving Veterans* – were drawn from the compilation and analysis of three years of AZ-VDRS data, from January 1, 2015 through December 31, 2017.

AZ-VDRS recorded a total of 5,711 violent deaths for this period; circumstance data were available for 5,362 (93.9%) of the decedents. From these, we excluded 1,046 (19.5%) homicides and 638 (11.9%) violent deaths of undetermined manner, leaving 3,678 (68.6%) suicides for analysis. We further excluded 77 (2.1%) cases for which decedents' veteran status was unknown, after which our sample consisted of 3,601 suicides for which circumstance and veteran status data were available.

We determined veteran status using the indicator for military veteran on the official death certificate; we did not seek external validation, and thus, our data may overcount non-veterans as veterans. Use of this definition is consistent with NVDRS standards and with prior research.[1] Note that the term veteran may be defined differently elsewhere; for example, individuals who are ineligible for benefits based on discharge status may be excluded in other contexts. AZ-VDRS data analyses and rate calculations also may differ from those of other sources such as the ADHS when our respective analytic processes differ.

EXHIBIT 1:
PERCENTAGE OF SUICIDES BY VETERAN STATUS, 2015-2017 (N=3601)



- During 2015–2017, in Arizona, veterans comprised more than 1 in 5 (21.1%) of all suicide victims.

For example, AZ-VDRS counts *occurrent* deaths (those occurring within the state, regardless of legal residency) rather than *resident* deaths (those of Arizona residents, regardless of location where death occurs). AZ-VDRS analyses include only decedents for whom we have sufficient data from the sources noted above, including but not limited to official death certificates. As a result, AZ-VDRS and ADHS reports overlap; at the same time, these organizations can each offer unique insights reflecting their respective analytic strategies. For this report, there are no known systematic errors in the AZ-VDRS veteran status counts.

According to a report by the US Department of Veterans Affairs, veterans were about 41% more likely to be at risk of suicide mortality than the general US population . The US Census estimated that veterans accounted for more than 11% of Arizona's population, which was significantly higher than the national estimate of about 9% (December 2015). Taken together, veteran suicides represent a substantial problem for the nation, and Arizona in particular.

The **purpose** of this project is to assist stakeholders with strategic **planning** and **prevention** efforts aimed towards **reducing** the number of **violent deaths** that occur each year in **Arizona**

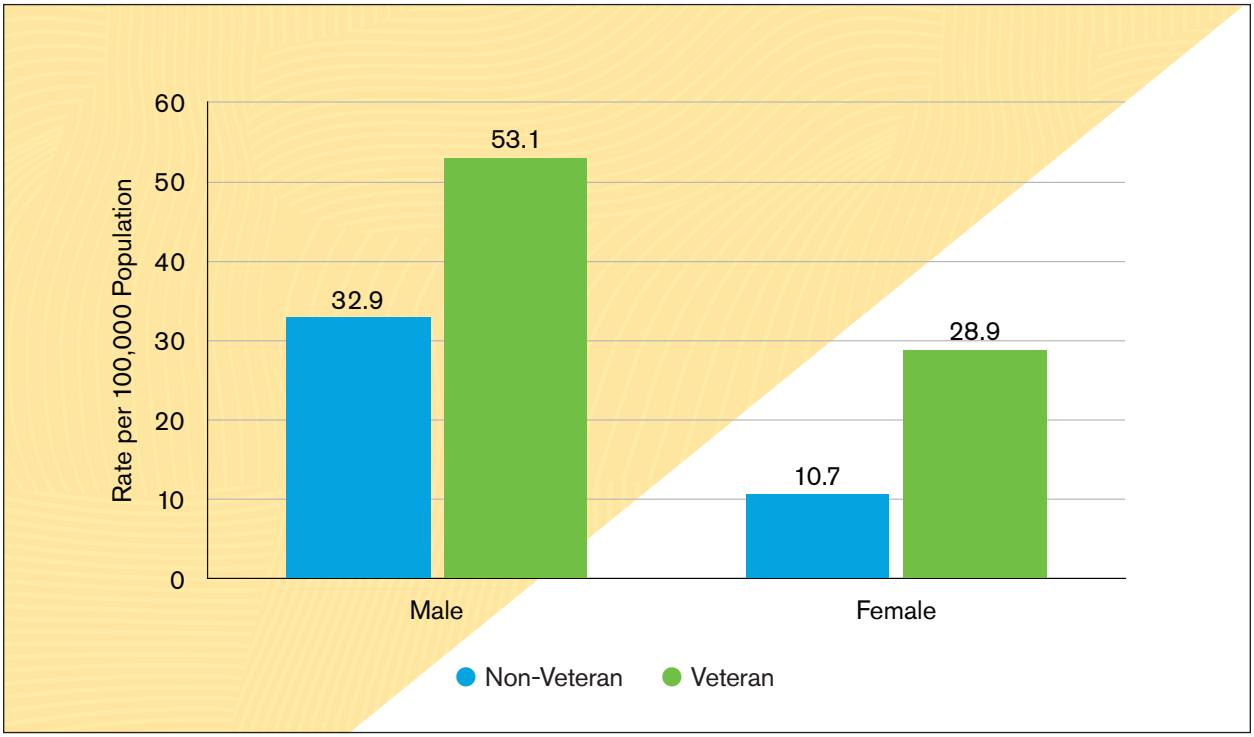
For population estimates, we relied on the American Community Survey (US Census) 5-year estimates for 2015, 2016, and 2017 to compute crude rates where rates are presented. Note that in all of the exhibits below, data and analyses represented are for the state of Arizona, 2015–2017, unless otherwise indicated.

This AZ-VDRS briefing is offered to assist with suicide prevention in Arizona. We also want to underscore the final words from the National Veteran Suicide Prevention Annual Report 2019[2]:

Suicide is a national issue, with rising rates of suicide in the general population. In addition, suicide rates are higher, and are rising faster, among veterans than among non-veteran adults. Every death by suicide is a tragedy that affects individuals and communities. Unfortunately, no one strategy in isolation has been shown to be effective in ending suicide. We must come together to address systematically the larger societal issues fueling the increased rates of suicide in our nation, keeping at the forefront of our minds that we prevent suicide through meaningful connection, one person at a time.

EXHIBIT 2:

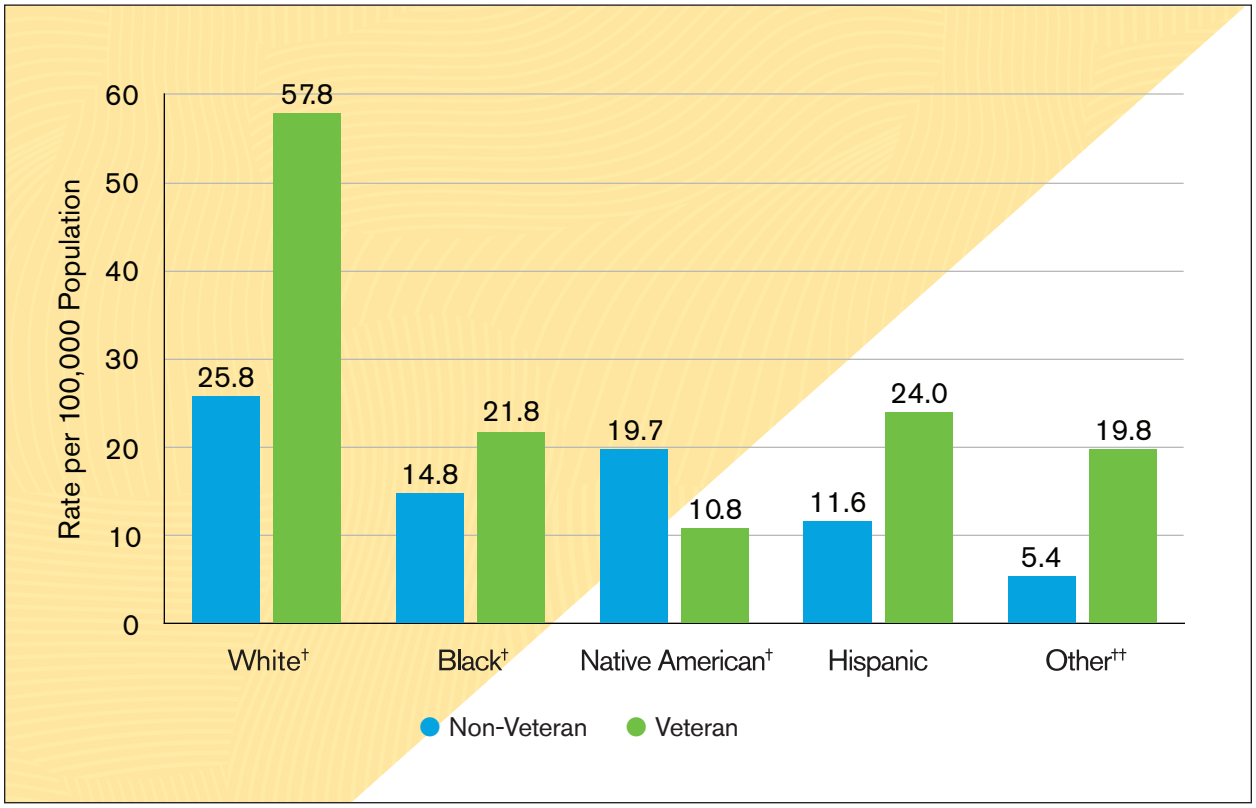
SUICIDE RATES PER 100,000 POPULATION BY SEX* AND VETERAN STATUS, 2015-2017 (N=3601)



- Overall suicide rates per 100,000 population were significantly higher for male victims, than for female victims (36.6, 11.0, (not shown).
- Males who were veterans were at significantly greater risk for committing suicide than males who were not veterans; during this period, the suicide rate for veterans was 61.4% greater than the rate for their non-veteran counterparts (53.1, 32.9).
- Female veterans were almost three times more likely to commit suicide than females who were not veterans (28.9, 10.7).

EXHIBIT 3:

SUICIDE RATES PER 100,000 POPULATION BY RACE/ETHNICITY* AND VETERAN STATUS, 2015–2017 (N=3601)

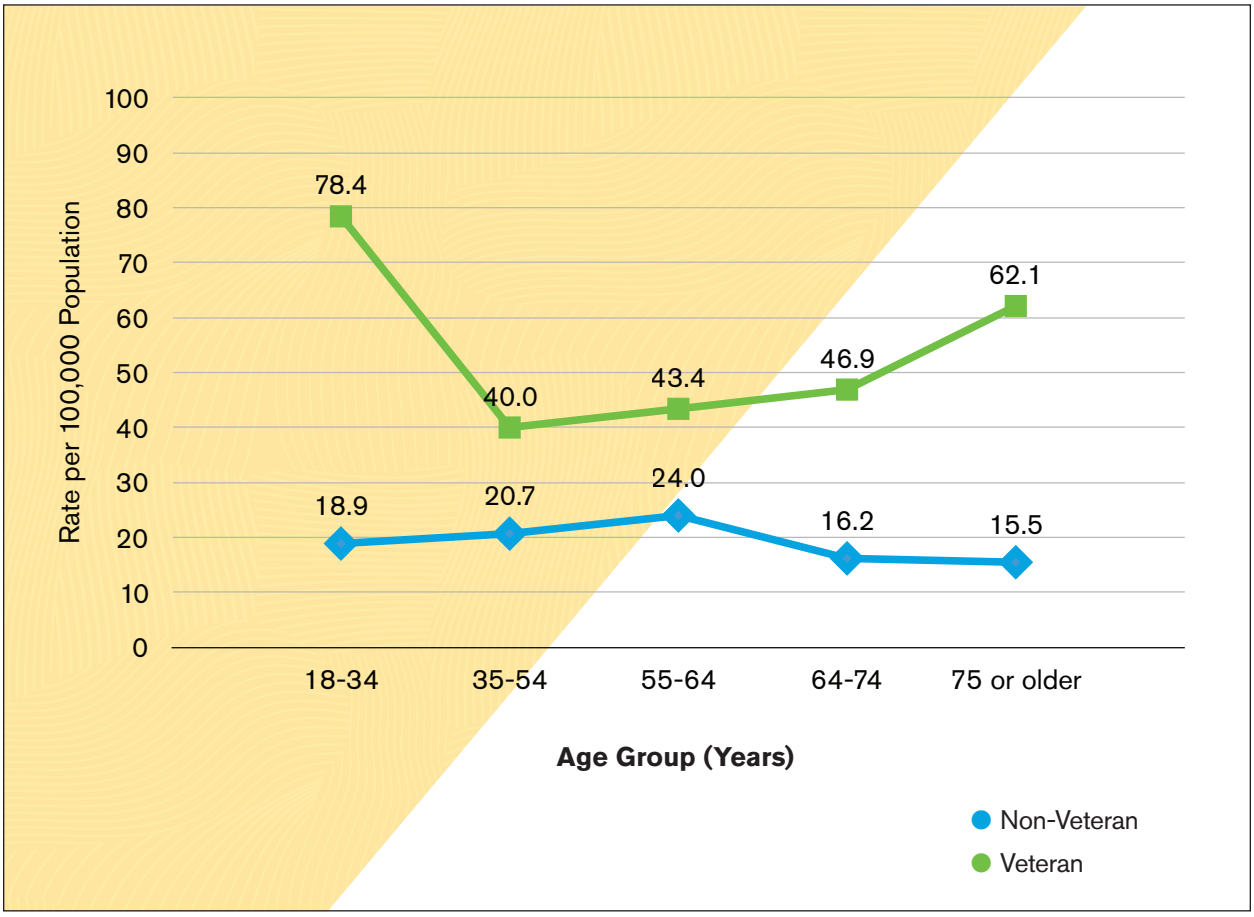


* Statistically significant at p ≤ .05
† Non-Hispanic/Latino
†† Includes Asian, Native Hawaiian, Pacific Islander, Other and Unspecified

- Across racial/ethnic groups, relative suicide rates for veterans and non-veterans differed significantly.
- The suicide risk was highest for white non-Hispanic veterans, with a rate of 57.8 per 100,000 population.
- Within most racial/ethnic groups, veterans were at greater risk of suicide than non-veterans; the exception was Native Americans, for whom the suicide rate for non-veterans was almost double the rate of veterans (19.7, 10.8).

EXHIBIT 4:

SUICIDE RATES PER 100,000 POPULATION BY AGE GROUP* AND VETERAN STATUS, 2015-2017 (N=3601)

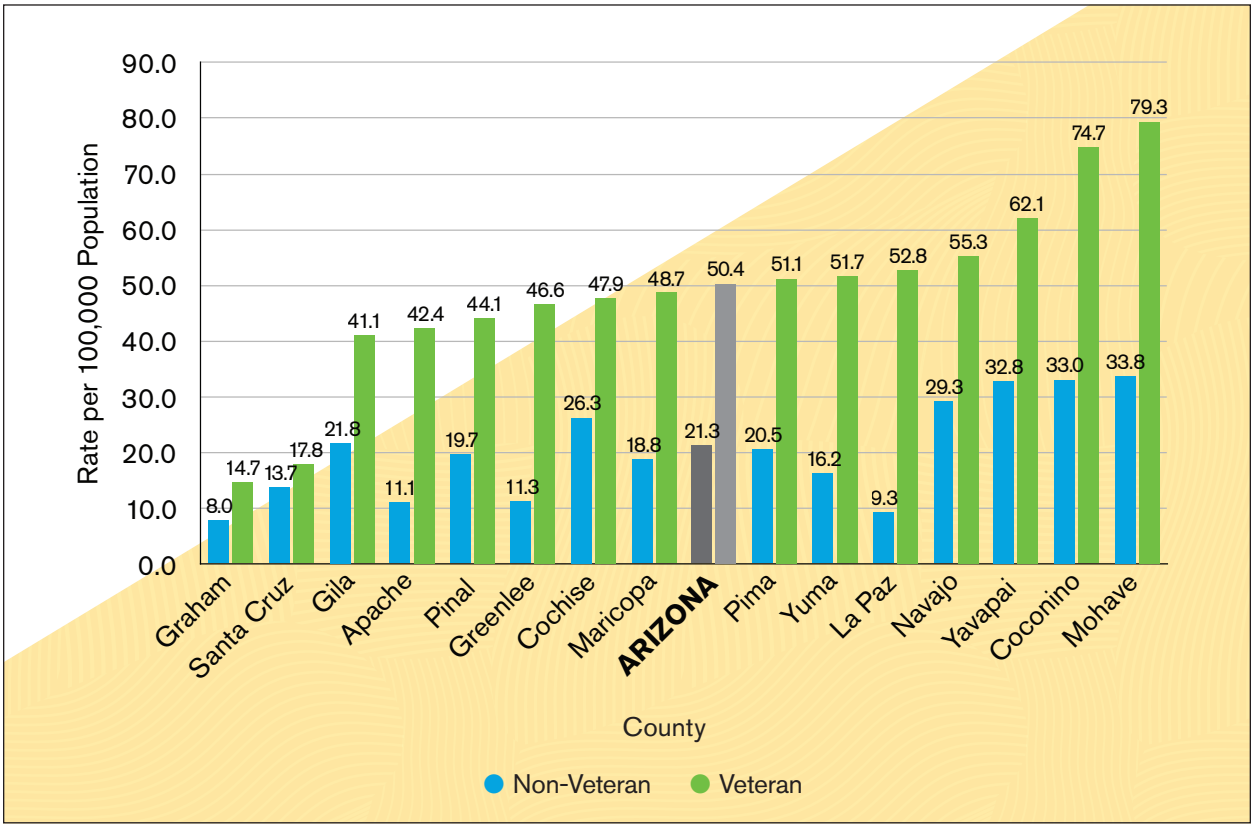


* Statistically significant at $p \leq .05$

- Across all age groups, non-veteran suicide rates remained relatively level, ranging from 15.5 for those 75 and older to a high of 24.0 for those ages 55–64; regardless of age group, the rate for non-veterans was never higher than that for veterans.
- Across all age groups, veterans ages 18–34 had the highest suicide rate (78.4); this rate was lower for those between ages 35–54 (40.0), then gradually increased with age to 62.1 for those 75 or older.

EXHIBIT 5:

SUICIDE RATES PER 100,000 POPULATION BY COUNTY* AND VETERAN STATUS, 2015-2017 (N=3601)



* Statistically significant at p ≤ .05

- In Arizona, during 2015-2017, the statewide suicide rate among veterans was almost twice that of non-veterans (50.4, 21.3 per 100,000 population).
- Suicide rates for veterans were substantially and significantly higher than rates for non-veterans in every Arizona county.
- In Santa Cruz County, the suicide rates for veterans and non-veterans were most similar, at 17.8 and 13.7, respectively.
- Mohave County (79.3) had the highest veteran suicide rate, followed closely by Coconino County (74.7); Graham and Santa Cruz had the lowest rates (14.7, 17.8).
- Apache, Greenlee, and La Paz counties each had a greater than 3-to-1 ratio of veteran to non-veteran suicide rates.

EXHIBIT 6:

EDUCATION COMPLETED, MARITAL STATUS, AND BIRTHPLACE AMONG SUICIDE VICTIMS AGES 18 AND OLDER BY VETERAN STATUS, 2015-2017 (N=3483)

	NON-VETERAN		VETERAN		TOTAL	
	n	%	n	%	N	%
Education Completed*						
<= 8th grade	80	2.9	11	1.4	91	2.6
9th – 12th grade	315	11.6	35	4.6	350	10.0
High school grad or GED	973	35.7	256	33.6	1229	35.3
Some college credit	553	20.3	192	25.2	745	21.4
Associate or bachelor's degree	570	20.9	183	24.0	753	21.6
Advanced degree	174	6.4	73	9.6	247	7.1
Unknown	57	2.1	11	1.4	68	2.0
Marital Status*						
Never married	1048	38.5	118	15.5	1166	33.5
Married	723	26.6	287	37.7	1010	29.0
Married, but separated	134	4.9	28	3.7	162	4.7
Divorced	654	24.0	228	30.0	882	25.3
Widowed	131	4.8	96	12.6	227	6.5
Single, unspecified	7	0.3	0	0.0	7	0.2
Unknown	25	0.9	<5	na	25	0.8
Birthplace*						
Arizona	728	26.7	103	13.5	831	23.9
Other US state or territory	1679	61.7	629	82.7	2308	66.3
Foreign country	268	9.8	18	2.4	286	8.2
Unknown	47	1.7	11	1.4	58	1.7

* Statistically significant at $p \leq .05$

Note: CDC reporting requirements require that counts less than 5 not be shown for reasons related to data reliability and identity protection. These counts can, however, be included in totals. Therefore, totals in each row may include values represented here only as <5.

Veteran suicide victims differed significantly from non-veteran victims with respect to education completed, marital status, and birthplace.

Veteran suicide victims were substantially more likely to have earned some college credit or a degree, compared to non-veterans (58.8%, 47.6%).

Veteran suicide victims were also significantly more likely than non-veteran victims to have been married, including married but separated (41.4%, 31.5%), or divorced (30.0%, 24.0%).

Non-veteran suicide victims were more than twice as likely as veteran victims to have never married (38.5%, 15.5%).

Veteran suicide victims were significantly more likely than non-veteran victims to have been born in a US state other than Arizona (82.7%, 61.7%).

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EXHIBIT 7:
LOCATIONS OF SUICIDE BY VETERAN STATUS, 2015-2017 (N=3601)

	NON-VETERAN		VETERAN		TOTAL	
	n	%	n	%	N	%
Location*						
House or apartment	2047	72.1	595	78.2	2642	73.4
Street/road, sidewalk, alley	118	4.2	26	3.4	144	4.0
Motor vehicle (excluding school bus, and public transportation)	150	5.3	33	4.3	183	5.1
Commercial establishment (e.g., bar, store, service station)	26	0.9	<5	na	26	0.8
Parking lot/public parking garage	58	2.0	21	2.8	79	2.2
Jail, prison, group home, shelter, other supervised residential facility	57	2.0	<5	na	57	1.6
Park, playground, public use area	40	1.4	14	1.8	54	1.5
Natural area (e.g., field, river, beach, woods)	145	5.1	31	4.1	176	4.9
Hotel/motel	88	3.1	20	2.6	108	3.0
Other	93	3.3	14	1.8	107	3.0
Unknown	18	0.6	<5	na	18	0.5

* Statistically significant at $p \leq .05$

Note: CDC reporting requirements require that counts less than 5 not be shown for reasons related to data reliability and identity protection. These counts can, however, be included in totals. Therefore, totals in each row may include values represented here only as <5.

- Among both veteran and non-veteran suicide victims, about 3 in 4 suicides were committed in private residences.
- Although locations where suicides occurred varied significantly among veteran and non-veteran victims, for any single location type, there were few substantive differences between them.
- Notably, less than 0.5% (n<5) committed suicide while in jail, prison, shelter, or other supervised facility, compared to about 2.0% of non-veteran suicide victims.

EXHIBIT 8:
METHODS OF DEATH BY VETERAN STATUS, 2015-2017 (N=3601)

	NON-VETERAN		VETERAN		TOTAL	
	n	%	n	%	N	%
Methods*						
Firearm	1517	53.4	609	80.0	2126	59.0
Sharp instrument	41	1.4	10	1.3	51	1.4
Blunt instrument	95	3.3	5	0.7	100	2.8
Hanging, strangulation, suffocation	713	25.1	74	9.7	787	21.9
Poisoning	441	15.5	59	7.8	500	13.9
Other[a]	33	1.2	<5	na	33	1.0
Unknown	0	0.0	0	0.0	0	0.0

* Statistically significant at $p \leq .05$

[a] Including, but not limited to falls, fire/burns, motor vehicles and drowning.

Note: CDC reporting requirements require that counts less than 5 not be shown for reasons related to data reliability and identity protection. These counts can, however, be included in totals. Therefore, totals in each row may include values represented here only as <5.

- Between veteran and non-veteran suicide victims, there were significant differences in the methods or causes of death.
- Notably, most veteran suicide victims used a firearm, compared to about half of non-veteran victims (80.0%, 53.4%).
- Veteran suicide victims also used hanging, strangulation, or suffocation (9.7%) or poisoning (7.8%) far less frequently than non-veteran suicide victims (25.1%, 15.5%, respectively).

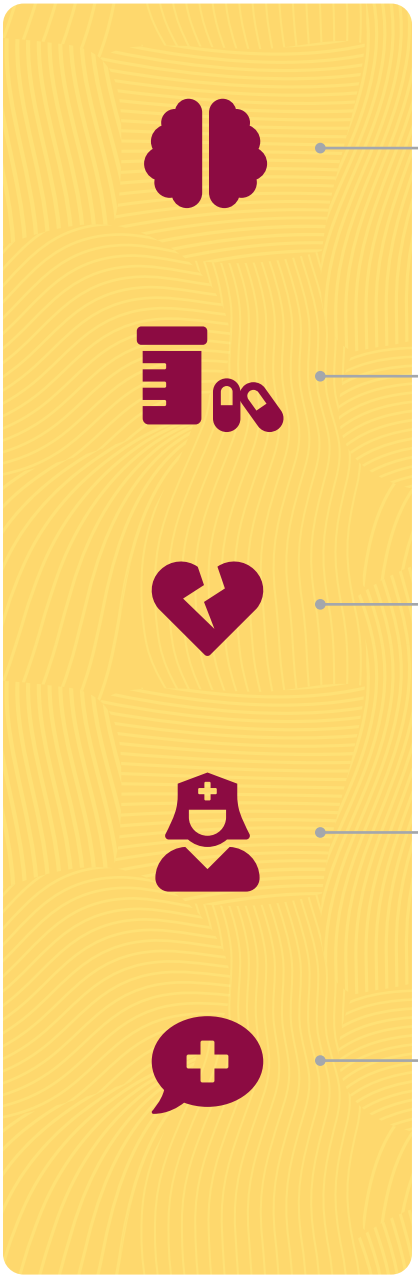
EXHIBIT 9:
CIRCUMSTANCES OF SUICIDE VICTIMS BY VETERAN STATUS, 2015–2017 (N=3601)

	NON-VETERAN		VETERAN		TOTAL	
	n	%	n	%	N	%
Mental Health Issues						
Current mental health problem*	1299	47.5	312	33.2	1611	43.8
Current depressed mood*	1106	40.4	262	27.8	1368	37.2
Ever treated for mental illness or substance misuse*	861	31.5	145	15.4	1006	27.4
Current treatment for mental illness or substance misuse*	628	22.9	113	12.0	741	20.1
*Total victims w/ one or more mental health factors**	1824	66.6	441	46.9	2265	61.6
Substance Abuse / Addiction						
Alcohol problem*	520	19.0	117	12.4	637	17.3
Other substance problem*	582	21.3	59	6.3	641	17.4
Other addiction (gambling, sexual, etc.)	21	0.8	<5	na	24	0.7
Total victims w/ one or more addiction factors*	939	34.3	155	16.5	1094	29.7
Interpersonal Issues						
Family relationship problem	291	10.6	39	4.1	330	9.0
Intimate partner problem*	766	28.0	129	13.7	895	24.3
Other relationship problem	61	2.2	8	0.9	69	1.9
Perpetrator of interpersonal violence in past month*	71	2.6	17	1.8	88	2.4
Victim of interpersonal violence in past month*	16	0.6	<5	na	17	0.5
Suicide of friend/family in past 5 years	54	2.0	12	1.3	66	1.8
Other death of friend/family*	151	5.5	51	5.4	202	5.5
*Total victims w/ one or more interpersonal factors**	1184	43.3	222	23.6	1406	38.2
Life Stressors						
Physical health problem*	606	22.1	321	34.1	927	25.2
Job problem*	308	11.3	41	4.4	349	9.5
Recent criminal related legal problem*	209	7.6	41	4.4	250	6.8
Other legal problems*	67	2.4	10	1.1	77	2.1
Financial problem*	289	10.6	49	5.2	338	9.2
School problem*	41	1.5	<5	na	44	1.2
Eviction or loss of home	112	4.1	23	2.4	135	3.7
*Total victims w/ one or more life stressor factors**	1275	46.6	421	44.7	1696	46.1
Suicidal History						
Previous attempts*	706	25.8	120	12.8	826	22.5
Disclosed intent to commit*	858	31.3	234	24.9	1092	29.7
Suicidal thoughts*	1338	48.9	339	36.0	1677	45.6
*Total victims w/ one or more historical factors**	1723	63.0	417	44.3	2140	58.2

* Statistically significant at $p \leq .05$

Note: Circumstance characteristics are not mutually exclusive, and any particular victim may have any number of circumstances present.

Selected Circumstance Findings



- Veteran suicide victims were less likely than non-veteran victims to have mental health and/or substance misuse issues reported; for example, one or more mental health-related circumstances were reported for 46.9% of veteran victims compared with 66.6% of non-veteran victims.
- Substance misuse problems, not including alcohol, were reported more than three times as often for non-veteran suicide victims as for veteran victims (21.3%, 6.3%).
- Interpersonal problems appeared to be a less significant factor for veteran suicide victims than for non-veteran victims; some form of interpersonal problem was reported for a little more than 1 in 5 veteran victims, and just over 2 in 5 non-veteran victims (23.6%, 43.3%)
- Conversely, a physical health problem was more likely to have been reported for veteran suicide victims than for non-veteran victims (34.1%, 22.1%).
- Suicide victims who were veterans were significantly less likely than non-veteran victims to be reported as having a history of attempting suicide (12.8%, 25.8%); in fact, veteran victims were less likely to have any prior indicators of suicide risk reported (44.3%, 63.0%, respectively).

Implications/Recommendations on Suicides Involving Military Veterans

Suicide among military veterans is a critical and emerging issue nationally, and this is of paramount concern in the State of Arizona, where AZ-VDRS findings show a significant and substantial influence of veteran status on the individual suicide risk. The proportion of veterans in the state population is higher than the national average. Given the geographic size and rural nature of much of the state, dispersion of resources becomes a critical component of responding to veteran suicides.

Our analyses showed that suicide victims who were veterans were less often reported to have had substance abuse and interpersonal problems or conflicts than non-veteran victims. Veteran and non-veteran victims were similar in their associations with life stressors in general, but veteran victims were more likely to have had serious physical health problems that may have contributed to the suicide—for as many as 1 in 3 veteran victims, this may have been the suicide trigger. This fact suggests that veterans with major physical health issues are in need of far more immediate and effective support throughout even prolonged periods of dealing with the physical and emotional trauma and challenges presented by physical impairment.

Most veteran suicide victims in our analyses were male. It may be a lingering cultural influence that men generally and veterans specifically are disinclined to reach out for help when experiencing mental and emotional distress; this suggests that early screening and treatment of both male and female veterans with risk factors for depression is particularly important for suicide prevention. More than 33% of all veteran suicide victims (not only males) in this report had been diagnosed with depression or dysthymia (depressed mood) prior to taking their own lives, yet only 12% were currently receiving treatment. Further, more than a third were known to have had suicidal thoughts and a quarter had disclosed their intent to commit suicide shortly before doing so. If we as a state and a nation are serious about preventing suicide among our veterans, increased support for mental health screening and treatment after diagnosis is needed urgently. Critically, we owe veteran men and women the highest standard of care and a rapid, effective response when they have disclosed suicidal thoughts and intentions or have survived actual attempts. The goal should be nothing less than the restoration of their potential for quality of life.

END NOTES

[1] Huguet, N., Kaplan, M. S., & McFarland, B. H. (2014). The effects of misclassification biases on veteran suicide rate estimates. *American journal of public health*, 104(1), 151-155.

[2] *National Veteran Suicide Prevention Annual Report 2019*. (September 2019). US Dept. of Veterans Affairs, Office of Mental Health and Suicide Prevention.

[3] AZ-VDRS estimates of suicide rates, particularly those of Native American males, may differ from rates reported by other death surveillance systems, due to important variations in data sources and coding protocols. For this reason, comparative analyses outside NVDRS and AZ-VDRS should be approached with caution.