



Suicides

Involving Native Americans

**Arizona Violent Death
Reporting System**

January 1, 2015 – December 31, 2017





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, police reports obtained from investigating agencies, and autopsy reports from medical examiner offices. The purpose of this project is to support stakeholders in strategic planning and prevention efforts aimed toward reducing the number of violent deaths that occur each year in Arizona. The data used for this report – *Suicides Involving Native Americans* – 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 5,292 (92.7%) of the decedents. We analyzed suicide

data exclusively (n=3632; 68.6% of all violent deaths with circumstance data), excluding data for homicides (n=1030; 19.5%) and deaths with undetermined or unintentional causes (n=630; 11.9%).

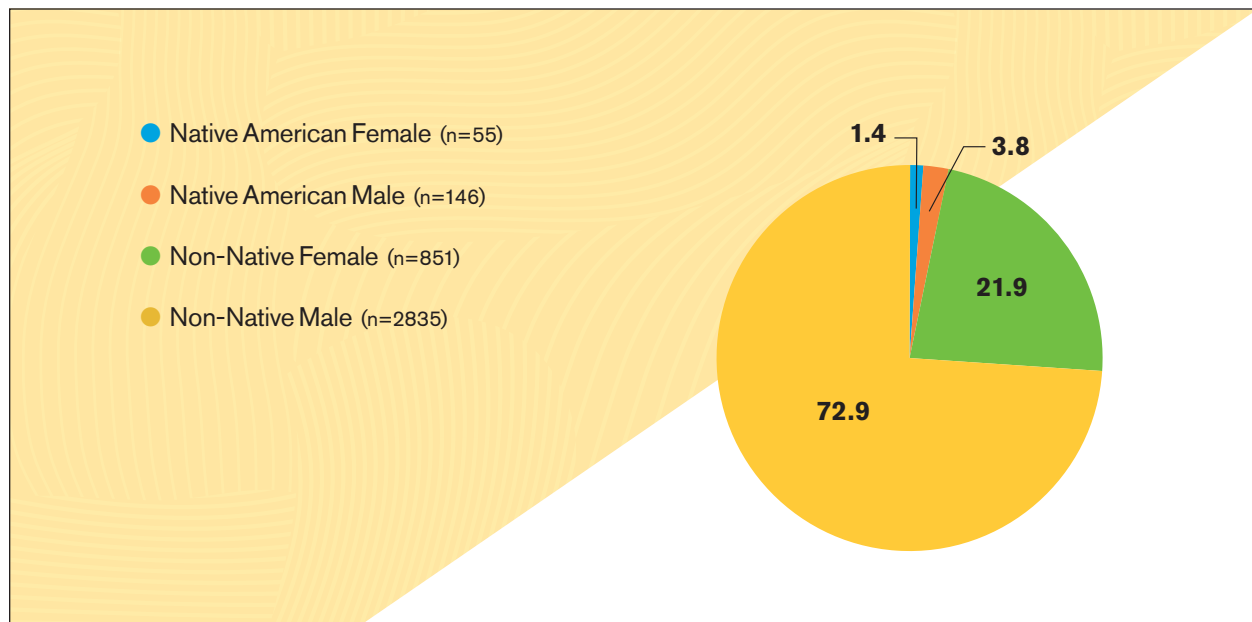
The AZ-VDRS identified Native American/American Indian decedents by relying upon race/ethnicity information obtained from the data sources noted above. The US Census treats American Indian and Alaska Native (AIAN) as one distinct racial group for categorizing, collecting, and reporting data for both the Census and the American Community Survey (ACS); the CDC also uses this classification. The AZ-VDRS has, therefore, adopted this same data collection classification for calculating and reporting counts and rates. For this report, we prioritized the AIAN classification when multiple races including AIAN were reported for a given individual. For example, if a person was reported as both AIAN and White/non-Hispanic, that individual would be classified as AIAN. This definition strategy is consistent with prior work and published guidelines used with US Census, ACS, and NVDRS data.¹

For 2015-2017 in
ARIZONA
about
1 in 3
Native American
suicide victims were
FEMALE



For 2015-2017, in Arizona, about 1 in 3 Native American suicide victims were female, and about 1 in 4 non-Native suicide victims were female.

EXHIBIT 1:
PERCENTAGE OF SUICIDES BY SEX AND NATIVE AMERICAN STATUS,
2015–2017 (N=3,887)



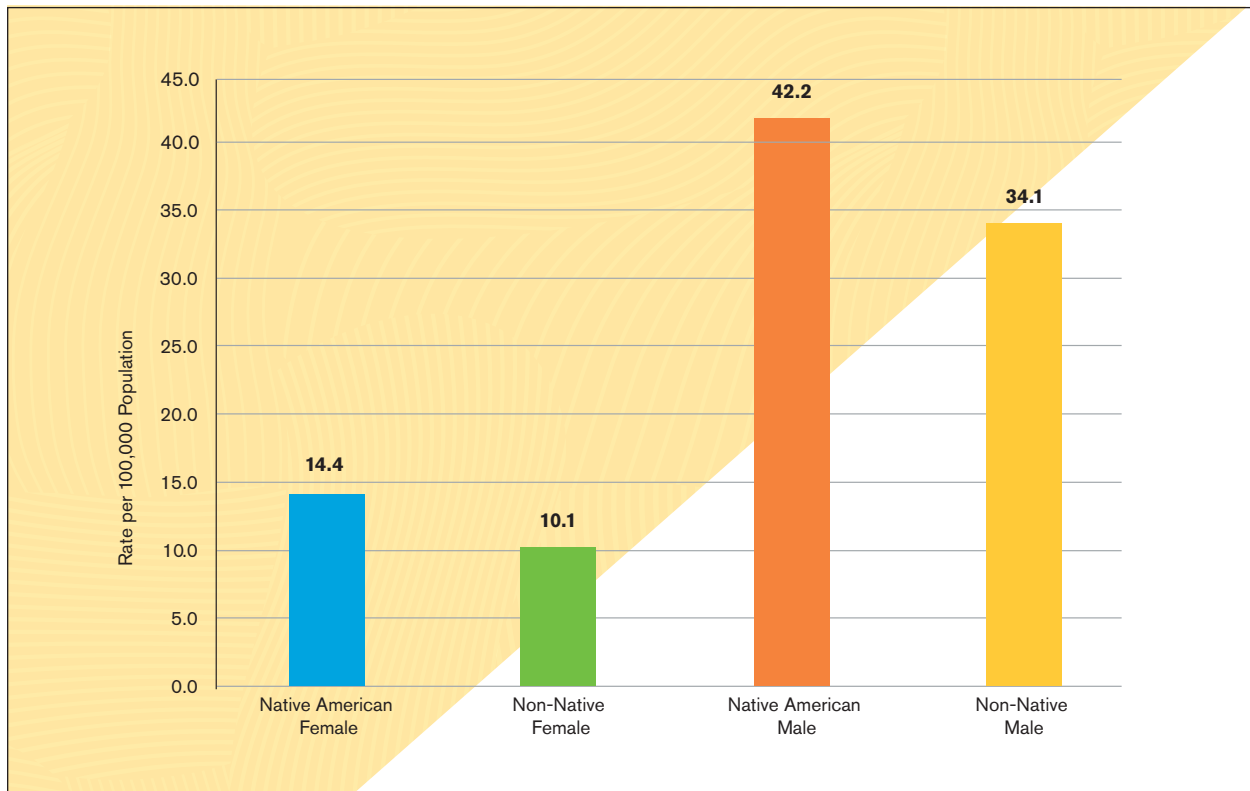
Note also that AZ-VDRS data analyses and rate calculations may differ from those of other sources, such as the Arizona Department of Health Services (ADHS). This happens when our respective analytic processes differ. For example, AZ-VDRS counts *occurent* deaths (those occurring in-state, regardless of the decedent's legal residency), while others, including ADHS, may count *resident* deaths (those of Arizona residents, regardless of where death occurred). For this reason, at first glance, AZ-VDRS and other

organizations' results may appear to differ. Rather, the organizations are each offering unique insights that reflect their respective analytic strategies.

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

EXHIBIT 2:

SUICIDE RATES PER 100,000 POPULATION BY SEX AND NATIVE AMERICAN STATUS*, 2015–2017 (N=3,887)

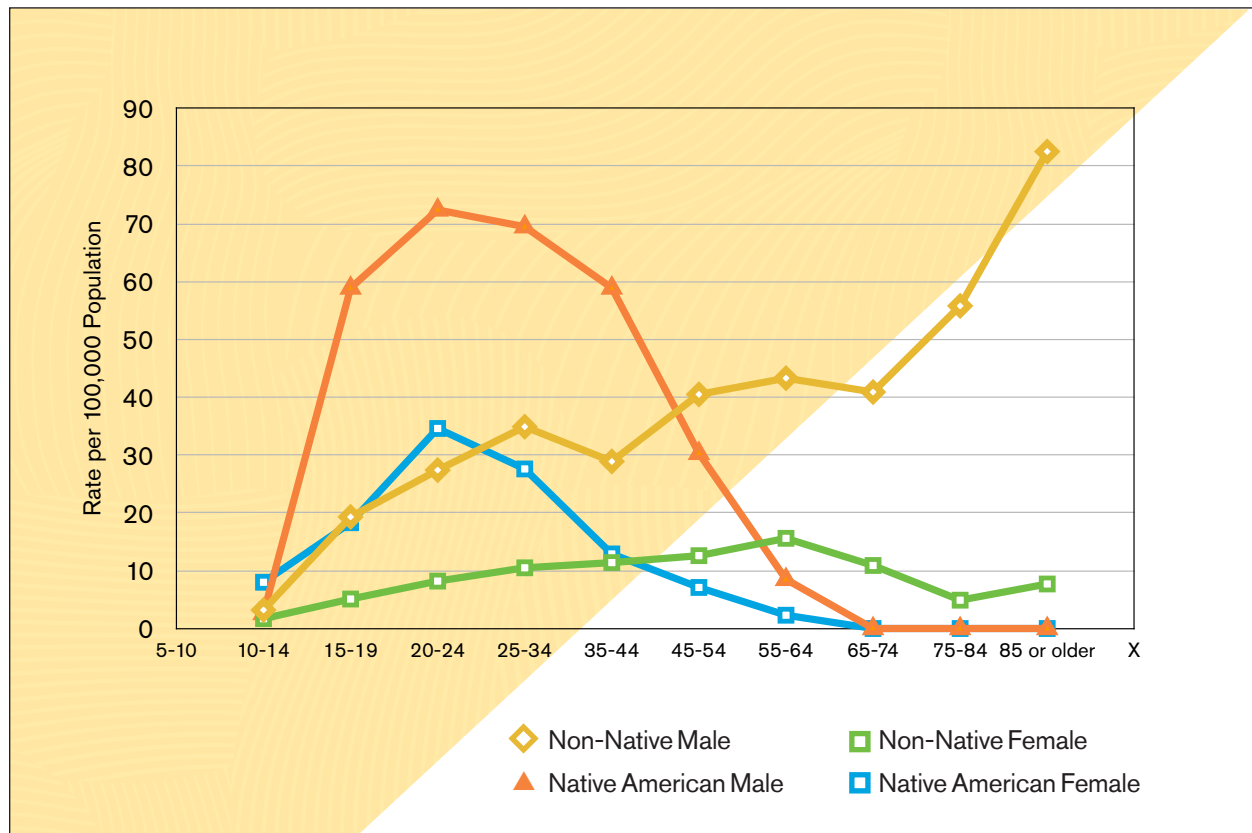


* Statistically significant at $p \leq .05$

- For 2015–2017, in Arizona, overall suicide rates per 100,000 population² were more than three times higher for male victims than for female victims (31.9 vs. 9.8; AZ-VDRS data, not shown).³
- Although not nearly as pronounced, the suicide rate for Native American females was significantly higher than for non-Native females (10.8 vs. 9.8).
- For males, suicide rates were significantly higher among the non-Native population than among the Native American population (32.3 and 22.5).

EXHIBIT 3:

SUICIDE RATES PER 100,000 POPULATION BY AGE GROUP*, SEX AND NATIVE AMERICAN STATUS, 2015–2017 (N=3,887)

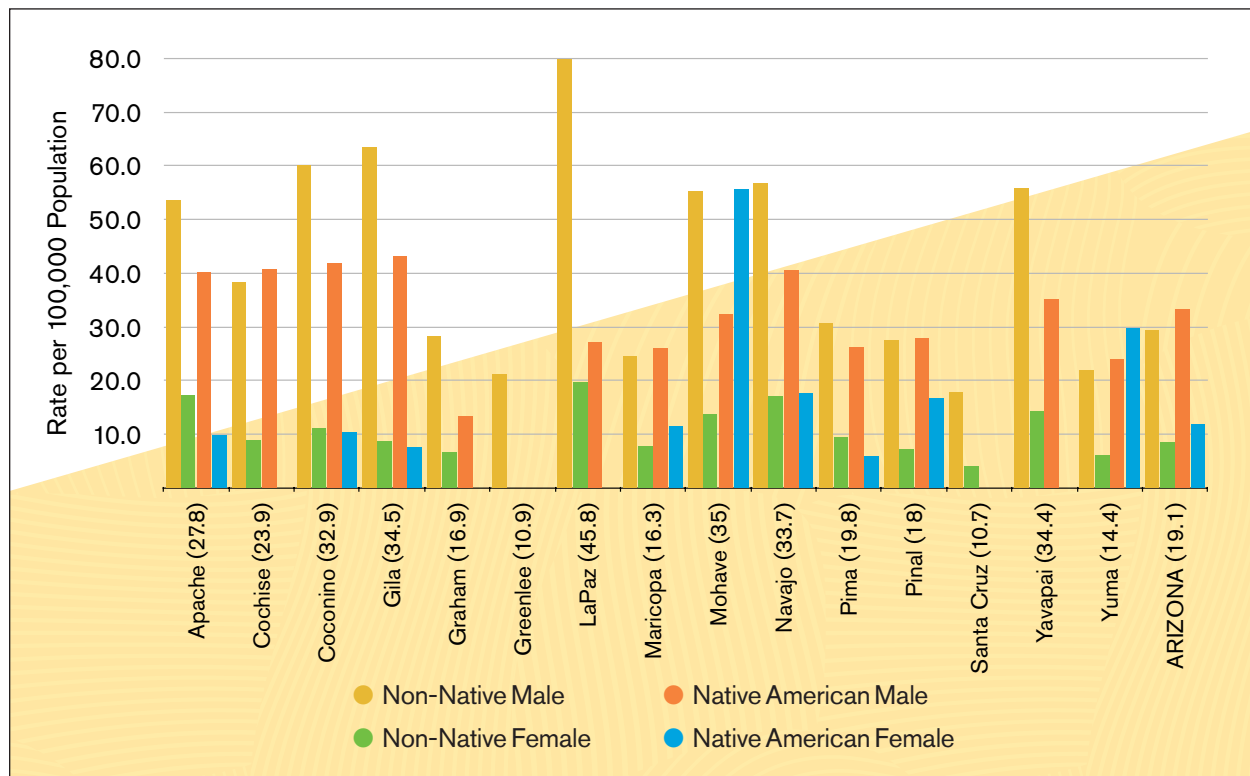


* Statistically significant at $p \leq .05$

- For 2015-2017, among Native American males in Arizona, suicide rate per 100,000 population was highest (39.7) for the young adult group aged 20-24, closely followed by those aged 25-34 years (37.7).
- The highest suicide rates among Native American females were also among the 20-24 (24.7) the 25-34 (23.2) age groups.
- Among non-Native American males, the oldest age groups (75-84 and 85 and older) were at greatest risk, with rates of 51.4 and 79.6, respectively.
- The highest suicide rate for non-Native American females was among 55-64-year olds (15.0) and that for Native American females was among 45-54-year olds (12.3).

EXHIBIT 4:

SUICIDE RATES PER 100,000 POPULATION BY COUNTY* AND NATIVE AMERICAN STATUS, 2015–2017 (N=3,632)



*Statistically significant at $p \leq .05$

- For 2015-2017, Arizona's statewide suicide rate was 17.9 per 100,000 population.
- For Native American males during this period, suicide rates were highest in Cochise (40.8), Mohave (32.5), Pinal (28.0), and La Paz (27.1) counties.
- For Native American females during this period, AZ-VDRS data showed no reported suicides for Cochise, Graham, Greenlee, La Paz, Santa Cruz, and Yavapai counties.
- For Native American females, Mojave reported the highest suicide rate (55.8, significantly higher than for other counties); Yuma (29.7) and Pinal (16.8) also had suicide rates significantly above the statewide average for Native American females (9.0; see Exhibit 2 above).



EXHIBIT 5:

EDUCATION COMPLETED, MARITAL STATUS, VETERAN STATUS, AND BIRTHPLACE AMONG SUICIDE VICTIMS AGED 18 OR OLDER BY SEX AND NATIVE AMERICAN STATUS, 2015-2017 (N=3,632)

	NON-NATIVE MALE		NON-NATIVE FEMALE		NATIVE AMERICAN MALE		NATIVE AMERICAN FEMALE		TOTAL	
	n	%	n	%	n	%	n	%	n	%
Education Completed*										
<= 8th grade	73	2.8	10	1.2	6	8.1	<5	na	89	2.6
9th - 12th grade	272	10.4	49	6.1	23	31.1	8	22.2	352	10.0
High school/GED grad	938	36.0	245	30.6	30	40.5	13	36.1	1226	34.9
Some college credit	544	20.9	179	22.3	13	17.6	7	19.4	743	21.1
Associate or bachelor degree	515	19.8	233	29.1	<5	na	5	13.9	753	21.5
Advanced degree	179	6.9	70	8.7	<5	na	<5	na	249	7.1
Unknown	84	3.2	15	1.9	<5	na	<5	na	99	2.8
Marital Status*										
Never married	877	33.7	206	25.7	55	74.3	23	63.9	1161	33.0
Married	762	29.3	240	30.0	9	12.2	7	19.4	1018	29.0
Married but separated	120	4.6	38	4.7	<5	na	<5	na	158	4.6
Divorced	635	24.4	243	30.3	6	8.1	<5	na	884	25.2
Widowed	161	6.2	65	8.1	<5	na	<5	na	226	6.5
Single, unspecified	7	0.3	<5	na	<5	na	<5	na	7	0.3
Unknown	43	1.7	7	0.9	<5	na	<5	na	50	1.4
Veteran Status*										
Non-veteran	1837	70.5	749	93.5	72	97.3	35	97.2	2693	76.6
Veteran	710	27.3	35	4.4	<5	na	<5	na	745	21.3
Unknown	58	2.2	17	2.1	<5	na	<5	na	75	2.1
Birthplace*										
Arizona	566	21.7	170	21.2	63	85.1	30	83.3	829	23.6
Other US state/ territory	1754	67.3	544	67.9	11	14.9	6	16.7	2315	65.8
Foreign country	215	8.3	71	8.9	<5	na	<5	na	286	8.1
Unknown	70	2.7	16	2.0	<5	na	<5	na	86	2.4

* 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.

Demographic Findings



- For 2015-2017, in Arizona, Native American suicide victims differed significantly from suicide victims of other races/ethnicities with respect to completed education, marital status, veteran status, and place of birth.



- When compared to non-Native male and female victims, Native American male and female suicide victims were substantially less educated, with about 18% of Native American males and about 34% of Native American females having completed some college or a college degree, compared to 47.6% of non-Native male and 60.1% of non-Native female suicide victims.



- Native American suicide victims were more than twice as likely to have never been married, compared to their non-Native counterparts (69.1% vs 28.2%, respectively).



- Native American suicide victims were less likely to have been military veterans, with less than 3% of both male and female victims being veterans (not shown), compared to 27.3% of non-Native male victims and 4.4% of non-Native female victims.



- Not surprisingly, the vast majority of Native American suicide victims in Arizona had been born in the state—85.1% of male victims and 83.3% of female victims, compared to 21.7% non-Native male and 21.2% female victims.

EXHIBIT 6:

LOCATION OF INJURY BY SEX AND NATIVE AMERICAN STATUS, 2015-2017 (N=3,632)

	NON-NATIVE MALE		NON-NATIVE FEMALE		NATIVE AMERICAN MALE		NATIVE AMERICAN FEMALE		TOTAL	
	n	%	n	%	n	%	n	%	n	%
Location*										
House or apartment	1935	72.1	663	80.1	49	62.8	23	56.1	2670	73.5
Street/road, sidewalk, alley	122	4.5	14	1.7	6	7.7	<5	na	142	3.9
Motor vehicle (excluding school bus and public transportation)	144	5.4	36	4.3	<5	na	<5	na	180	5.1
Commercial establishment (e.g., bar, store, service station)	27	1.0	<5	na	<5	na	<5	na	27	0.9
Parking lot/public parking garage	65	2.4	12	1.4	<5	na	<5	na	77	2.1
Jail, prison, group home, shelter, other supervised residential facility	47	1.8	9	1.1	<5	na	<5	na	56	1.6
Park, playground, public use area	49	1.8	<5	na	<5	na	<5	na	49	1.5
Natural area (e.g., field, river, beaches, woods)	142	5.3	22	2.7	6	7.7	8	19.5	178	4.9
Hotel/motel	69	2.6	38	4.6	<5	na	<5	na	107	3.0
Other	76	2.8	21	2.5	9	11.5	5	12.2	111	3.1
Unknown	9	0.3	7	0.8	<5	na	<5	na	16	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.

- For 2015-2017, in Arizona, nearly three-quarters of all suicides occurred in private residences; this location was chosen by 80.1% of non-Native female victims and by 56.1% of Native American female victims; 72.1% of non-Native male victims and 62.8% of Native American male victims had made this same choice.
- Native American females were far more likely than all others to self-inflict injury in a natural area; about 1 in 5 (19.5%) did so, compared to about 8% of Native American males, 5.3% non-Native males, and 2.7% of non-Native females.

EXHIBIT 7:

METHODS OF DEATH BY SEX AND NATIVE AMERICAN STATUS, 2015–2017 (N=1030)

	NON-NATIVE MALE		NON-NATIVE FEMALE		NATIVE AMERICAN MALE		NATIVE AMERICAN FEMALE		TOTAL	
	n	%	n	%	n	%	n	%	n	%
Method										
Firearm	1775	66.1	336	40.6	20	25.6	5	12.2	2136	58.8
Sharp Instrument	38	1.4	13	1.6	<5	na	<5	na	51	1.5
Blunt Instrument	73	2.7	16	1.9	6	7.7	<5	na	95	2.7
Hanging, strangulation, suffocation	538	20.0	186	22.5	43	55.1	27	65.9	794	21.9
Poisoning	233	8.7	270	32.6	<5	na	5	12.2	508	14.1
Other ^a	28	1.0	7	0.8	<5	na	<5	na	35	1.0

* 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.

- For 2015-2017, in Arizona, non-Native suicide victims were significantly more likely than Native American suicide victims to use a firearm to self-inflict injury. Non-Native male victims used a firearm 66.1% of the time, compared to 25.6% Native American males. Non-Native females used a firearm more than three times as often as Native American females (40.6% vs. 12.2%).
- Hangings, strangulations, and suffocations were significantly more likely to be the type of method used for Native American suicides than for non-Native suicides. More than half (55.1%) of Native American male victims chose this method, compared to about 20% of non-Native male victims. These suicide methods were almost three times more commonly used by Native American female suicide victims than by non-Native female victims (65.9% vs. 22.5%).
- Poisoning is a method of suicide primary employed by Non-Native females, with just over 32% of non-native females committing suicide by poisoning.

EXHIBIT 8:**CIRCUMSTANCES OF SUICIDE VICTIMS IN ARIZONA, NATIVE AMERICAN STATUS, 2015-2017 (N=3,632)**

	NON-NATIVE MALE (N=2685)		NON-NATIVE FEMALE (N=828)		NATIVE AMERICAN MALE (N=78)		NATIVE AMERICAN FEMALE (N=41)		TOTAL (N=3632)	
	n	%	n	%	n	%	n	%	n	%
Mental Health										
Current Mental Health Problem*	1088	40.5	509	61.5	24	30.8	16	39.0	1637	45.1
Current Depressed Mood*	1017	37.9	336	40.6	18	23.1	11	26.8	1382	38.1
Ever Treated for Mental Illness or Substance Misuse*	648	24.1	351	42.4	14	17.9	8	19.5	1021	28.1
Current Treatment for Mental Illness or Substance Misuse*	457	17.0	279	33.7	9	11.5	6	14.6	751	20.7
Any Mental Health Problem*	1622	60.4	625	75.5	38	48.7	18	43.9	2303	63.4
Substance Abuse / Addiction										
Alcohol Problem*	473	17.6	140	16.9	31	39.7	9	22.0	653	18.0
Other Substance Problem*	455	16.9	174	21.0	24	30.8	6	14.6	659	18.1
Other Addiction (gambling, sexual, etc.)	15	0.6	9	1.1	0	0.0	<5	NA	>24	0.7
Any Addiction Problem*	800	29.8	267	32.2	44	56.4	12	29.3	1123	30.9
Interpersonal										
Family Relationship Problem*	220	8.2	95	11.5	12	15.4	7	17.1	334	9.2
Intimate Partner Problem	679	25.3	194	23.4	22	28.2	13	31.7	908	25.0
Other Relationship Problem	50	1.9	18	2.2	<5	NA	0	0.0	>68	1.9
Perpetrator of Interpersonal Violence in Past Month*	78	2.9	8	1.0	<5	NA	<5	NA	>86	2.5
Victim of Interpersonal Violence in Past Month*	6	0.2	9	1.1	<5	NA	0	0.0	>15	0.5
Suicide of Friend/Family in Past 5 Years*	39	1.5	24	2.9	<5	NA	<5	NA	>63	1.8
Other Death of Friend/Family	158	5.9	43	5.2	<5	NA	<5	NA	>201	5.6
Any Interpersonal Problem	1035	38.5	329	39.7	36	46.2	20	48.8	1420	39.1

EXHIBIT 8 (CONTINUED):

CIRCUMSTANCES OF SUICIDE VICTIMS IN ARIZONA, NATIVE AMERICAN STATUS, 2015-2017 (N=3,632)

	NON-NATIVE MALE (N=2685)		NON-NATIVE FEMALE (N=828)		NATIVE AMERICAN MALE (N=78)		NATIVE AMERICAN FEMALE (N=41)		TOTAL (N=3632)	
	n	%	n	%	n	%	n	%	n	%
Life Stressor										
Physical Health Problem*	714	26.6	225	27.2	8	10.3	4	9.8	951	26.2
Job Problem*	288	10.7	64	7.7	<5	NA	0	0.0	>352	9.7
Recent Criminal-Related Legal Problem*	215	8.0	33	4.0	<5	NA	<5	NA	>248	6.9
Other Legal Problems	53	2.0	22	2.7	<5	NA	<5	NA	>75	2.2
Financial Problem	254	9.5	85	10.3	<5	NA	<5	NA	>339	9.5
School Problem	28	1.0	14	1.7	<5	NA	<5	NA	>42	1.2
Eviction or Loss of Home	95	3.5	39	4.7	<5	NA	<5	NA	>134	3.8
Any Life Stressor*	1319	49.1	381	46.0	17	21.8	8	19.5	1725	47.5
Suicide Event										
History of Suicide Attempts*	501	18.7	306	37.0	17	21.8	13	31.7	837	23.0
Disclosed Intent to Complete Suicide*	825	30.7	243	29.3	22	28.2	21	51.2	1111	30.6
History of Suicidal Thoughts*	1213	45.2	438	52.9	40	51.3	18	43.9	1709	47.1
Any Indication of Suicide*	1523	56.7	573	69.2	50	64.1	29	70.7	2175	59.9

* Statistically significant at $p < .05$

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

- Native American victims were significantly less likely to have reported mental health diagnoses or treatment history. For example, about 44% of Native American females had some form of diagnosed mental health problem, compared to more than 75% of non-Native female suicide victims.
- Alcohol and substance abuse were significant factors for both male and female Native American suicide victims, compared to non-Native victims.
- There were few significant differences in interpersonal problems across the groups.
- Life stressors were less influential in Native Americans, than in non-Natives. For example, physical health problems were cited in 1 in 19 Native American suicides and more than 1 in 4 for non-Native.
- Native American females were substantially more likely to disclose their intent to commit suicide than all others, with more than half (51.2%) disclosing to someone close to them shortly before their suicide, compared to about 30% for all others.

Conclusions

Our analysis of the data available indicates significant differences in demographic characteristics between Native American and non-Native victims. Our analysis found that only a very few Native American suicide victims, and especially female victims, had any college education, compared with non-Native male and female victims (17.6% vs. 47.6% for males, and 33.3% vs. 60.1%, respectively). Further, among Native American suicide victims, about 74% of males and 64% of females had never been married; comparatively, among non-Native suicide victims, 34% of males and 26% of females had never been married. None of these distinctions can be causally linked to the likelihood or increased risk of a suicide, but merely offer a description of differences between the Native American and non-Native suicide victims in Arizona.

Other differences in the circumstances surrounding suicides of Native and non-Native victims are of importance for considering suicide prevention policies and strategies. For example, during 2015-2017, non-Native victims—66% of males and 41% of females—were most often killed with firearms. However, a firearm was only involved in about one-quarter or fewer of Native American suicides. Among Native American victims, hanging/strangulation/suffocation was the most common mechanism used in the suicide. Specifically, 55.1% of Native American males and 65.9% of Native American females died by hanging, suffocation, or strangulation. Comparing these findings to non-Native victims, who use firearms most frequently (66.1% and 40.1%, respectively), suicide prevention efforts aimed at firearm access may not have as substantial an impact among Native Americans.

The distinct differences in the characteristics of the Native American victims and the circumstances of

their deaths deserves particular attention.

An increased allocation of resources and effort should be invested in better understanding these circumstances and the kinds of suicide prevention strategies that could be most effective in helping this vulnerable population.

The information presented here is factual and accurate. This report does have important limitations, however, and these should be considered when using this information to support policy and strategic decision making.

AZ-VDRS analysis relies on the completeness and accuracy of certain information related to every suicide committed in Arizona—that is, the data reflecting the circumstances of each incident and the characteristics of each victim. The quality of these data depends on the quality of our law enforcement partnerships and those partners' participation in sharing data. When reviewing the findings reported here, decision makers should consider the comparatively low rate of tribal law enforcement participation in the data-gathering process. AZ-VDRS continues to be challenged by this problem.

Our analysis and reporting of violent death data is most effective for developing prevention strategies and for directing resources where they are most needed when all law enforcement partners are willing and able to provide full, unredacted investigative case files and supplemental reports for review and data abstraction.

The thorough understanding and interpretation of a given death, decedent, and in turn, our understanding of the respective mortality risks of each population group depends heavily on these sources. Currently, the majority of analyses regarding the circumstances of violent deaths with Native American victims depend solely on medical examiners' reports, which results in substantial limitations to the depth and breadth of information about Native American suicides. This problem is exasperated by the fact that there are serious limitations to the medical examiner (ME) data from tribal entities. Specifically, some cases are not made available in their entirety, and others lack important details. Beyond some of the limitations with ME data regarding deaths on tribal lands, there are substantial shortfalls with law enforcement data as well.

The issue of non-participation among law enforcement agencies for tribal-related deaths is further complicated by the fact that some tribal communities operate their own agencies, while others rely on the support of the Federal Bureau of Investigation (FBI) or other non-participating federal agencies. Given more complete law enforcement data from tribal communities, we might find that the facts differ significantly.

Improved participation and data quality from tribal partners would allow for more reliable or valid results, given issues with available data. We could see important changes in these results, but without the pertinent information, the nature of those differences can only be speculated. Nonetheless, based on the data available, we know that Native American victims are different in important ways from non-Native victims. This is likely due to a myriad of inter-related influences.

Although certain socio-demographic and geographical differences might explain some of the findings observed, the issue is almost certainly more complicated than this. The low number of Native American violent deaths, as well as the low population denominators for Native Americans, may explain some of what appear to be substantial differences; these findings appear to be subject to substantial variation based on relatively small numbers.

In summary, important and meaningful socio-demographic differences, such as those reported here, are indeed likely to exist for Native American victims, although the nature and possible causality of those differences are still elusive, given the limited availability of in-depth law enforcement data. Therefore, we recommend considering the findings in this report in combination with data from additional reliable sources to inform decision making.

END NOTES

- ¹ Leavitt, R. A., Ertl, A., Sheats, K., Petrosky, E., Ivey-Stephenson, A., & Fowler, K. A., 2018, Suicides Among American Indian/Alaska Natives—National Violent Death Reporting System, 18 States, 2003–2014, *Morbidity and Mortality Weekly Report*, 67(8), 237. See also Tian, N., Zack, M., Fowler, K. A., & Hesdorffor, D. C., 2019, Suicide Timing in 18 States of the United States from 2003–2014, *Archives of Suicide Research*, 23(2), 261–272. For more on NVDRS data, also see Karch, D. L., Logan, J., & Patel, N., (2011), Surveillance for violent deaths—National deaths reporting systems, 16 states, 2008, *Morbidity and Mortality Weekly Report: Surveillance Summaries*, 60(10), 1–49; see also, Karch, D. L., Barker, L., & Strine, T. W., (2006), Race/ethnicity, substance abuse, and mental illness among suicide victims in 13 US states: 2004 data from the National Violent Death Reporting System, *Injury Prevention*, 12(supp 2), ii22–ii27.
- ² US Census Bureau, American Fact Finder: 2013–2017 American Community Survey 5-Year Estimates. For the purposes of this report, Arizona's population is 6.81 million, and rates per 100,000 are based on 3-year incident counts and annual averages.
- 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.
- ⁴ U.S. Department of Health and Human Services (HHS) Office of the Surgeon General and National Action Alliance for Suicide Prevention. 2012 National Strategy for Suicide Prevention: Goals and Objectives for Action. Washington, DC: HHS, September 2012
- ⁵ Zero Suicide model : <http://zerosuicide.edc.org/>

SUGGESTED CITATION:

Suicides Involving Native Americans, 2015–2017. (August, 2020). Arizona State University, Center for Violence Prevention and Community Safety. Arizona Violent Death Reporting System.