



PUBLIC HEALTH DIVISION

June 30, 2024

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DIVISION**

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VIOLENT DEATHS IN WYOMING 2021-2022

WYOMING VIOLENT DEATH REPORTING SYSTEM – WYVDRS

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Stefan Johansson

Director, Wyoming Department of Health

Stephanie Sandoval, MHSA, MBA

Senior Administrator, Public Health Division

Alexia Harrist, MD, PhD

State Health Officer

ADDITIONAL INFORMATION AND COPIES MAY BE OBTAINED FROM:

Wyoming Violent Death Reporting System

122 West 25th St., 3rd Floor West

Cheyenne, WY 82002

(307) 777-8654 telephone

(307) 777-8653 fax

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VIOLENT DEATHS IN WYOMING 2021-2022 | 2

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Executive Summary

The Wyoming Violent Death Reporting System (WYVDRS) collects detailed information about all violent deaths in Wyoming resulting from suicide, homicide, unintentional firearm deaths, legal interventions, and deaths of undetermined intent which may have been the result of violence. The information is collected from a variety of sources including but not limited to Death Certificates (DC) from the Wyoming Vital Statistics Services, Law Enforcement (LE) agencies throughout the state, and from County Coroner and Medical Examiner (C/ME) reports. This report presents data for violent deaths that occurred in Wyoming from January 1, 2021, through December 31, 2022. We have combined two years of data because of the relatively few cases of violent deaths that occur in Wyoming in a single year. By combining the data over two years we are able to calculate more stable and precise mortality rates.

Violent Deaths

There were a total of 410 violent deaths in Wyoming from 2021 through 2022 resulting in an overall mortality rate of 35.3 violent deaths per 100,000 population. Of the 410 deaths, 334 occurred in males for a violent death mortality rate of 56.4 deaths per 100,000 males. There were a total of 76 violent deaths among females in Wyoming over 2021-2022 resulting in a violent death mortality rate of 13.5 deaths per 100,000 females, four times lower than males.

Suicide

Since 2015, Wyoming has ranked among the top three states for suicide rates in the nation. From 2018-2021, Wyoming had the highest rate of suicide in all fifty states. There were 352 suicides in Wyoming for the combined years of 2021-2022 for an overall rate of 30.4 suicide deaths per 100,000 population. The suicide mortality rate for men (49.5/100,000) in Wyoming was nearly five times that of females (10.4/100,000). American Indian/Alaska Native males had the highest suicide rate in the state at 54.1 suicide deaths per 100,000 males.

Firearms were used in 68% of all the suicides in Wyoming and were the most common method of suicide for both men and women. Intentional strangulation due to hanging was the second most common method, with intentional poisoning being third. Alcohol was found in the system of over half of the suicide victims for whom toxicology information was available.

Introduction

Methods

Case Definition

The Wyoming Violent Death Reporting System (WYVDRS) began in 2018 with a grant from the National Violent Death Reporting System (NVDRS) at the Centers for Disease Control and Prevention (CDC). NVDRS is a population-based active surveillance system that collects information on violent deaths that occur among both residents and nonresidents of U.S. states, the District of Columbia, and Puerto Rico.

The system uses the World Health Organization (WHO) definition of a violent death: *“a death resulting from the intentional use of physical force or power against oneself, another person, or against a group or community.”*¹

The case definition includes suicides, homicides, deaths from legal intervention (a subtype of homicide where the victim is killed by or died as a result of law enforcement acting in the line of duty), deaths of undetermined intent, and unintentional firearm fatalities. Deaths of undetermined intent are included because this category includes deaths with some evidence of intent, but without enough to definitively classify the death as purposeful. Unintentional firearm injury deaths are included because the category is likely to include some deaths that are intentional or of undetermined intent.

TABLE 1: ICD-10 External Causes of Death Codes for Manners of Death Meeting the NVDRS Case Definition. (NVDRS Web Coding Manual V6.0)

Manner of Death	Death <1 Year after Injury	Death >1 Year after Injury	Deaths any time after injury
Intentional Self-Harm (Suicide)	X60-X84	Y87.0	U03 (Attributable to Terrorism)
Assault (Homicide)	X85-X99, Y00-Y09	Y87.1	U01, U02 (Attributable to Terrorism)
Event of Undetermined Intent	Y10-Y34	Y87.2, Y89.9	N/A
Unintentional Exposure to Inanimate Mechanical Forces (Firearms)	W32–W34	Y86	N/A
Legal Interventions (excluding executions; Y35.5)	Y35.0-Y35.4, Y35.6, Y35.7	Y89.0	N/A

Analysis

The analysis for this report includes descriptive statistics, namely counts and percentages of violent death types and their characteristics. Rates for suicides are reported at the county level as well as across various demographic groupings. Demographic groupings include age, sex, race, ethnicity, and educational attainment. Rates were calculated by dividing the number of group-specific deaths by the total group-specific population (Crude Rates). Population estimates were obtained from bridged Wyoming population data from the National Center for Health Statistics. Rates are expressed per 100,000 persons. Crude rates are reported unless otherwise specified. Some percentages may not sum to 100.0 due to rounding.

Due to the relatively small number of violent deaths in Wyoming each year, this report will combine the data over the second two years of WYVDRS data collection. Specifically, this report covers all violent deaths from January 1, 2021, through December 31, 2022.

Data Restrictions

The calculation of rates was limited to instances where death counts were sufficiently large. Small numbers of events can vary considerably over time and could also pose concerns with respect to confidentiality and identifiable data. Several rules of thumb apply for what constitutes sufficiently large counts. Generally, rate calculations require a count of at least 5 to 20 events and a denominator of at least 100. In the rate calculations generated for this report, denominators were sufficiently large. Counts, however, varied considerably and could decrease substantially once parsed into specific demographic or geographic groupings. For this report, mortality rates were calculated for counts of 5 or more, but in instances with fewer events, mortality rates were suppressed. Data were captured for all violent deaths that occurred in Wyoming, regardless of state of residency. While the vast majority of all the deaths included in this report were Wyoming residents, there were thirty-two suicides and seven homicides that took place in Wyoming where the victim was not a Wyoming resident. Therefore, there may be some discrepancy between the numbers (counts and rates) recorded in this report and the official mortality counts and rates provided by the Wyoming Vital Statistics Services (VSS) which include deaths among Wyoming residents regardless of location of occurrence. Both sets of numbers are correct; however, WYVDRS may include some deaths that the Wyoming VSS doesn't and conversely VSS may include deaths not reported to WYVDRS.

Violent Deaths

A total of 410 violent deaths took place in Wyoming during 2021 and 2022. Please note that while all of these deaths took place in Wyoming, not all of the victims were Wyoming residents. There were thirty-two suicides and seven homicides that took place in 2021-2022 where the victim was NOT a resident of Wyoming. WYVDRS collects data and information about all violent deaths that occur within the boundaries of Wyoming regardless of the residential status of the victim. Therefore, the number of violent deaths enumerated by the WYVDRS may be different than the official numbers produced by the Wyoming Vital Statistics Services (VSS), which collects data on deaths of Wyoming residents only.

TABLE 2: Types of Violent Deaths by Year

	2021		2022	
	COUNT	CRUDE RATE	COUNT	CRUDE RATE
Suicide	189	32.6	163	28.0
Homicide	18	3.1	13	2.2
Legal Intervention	2	--	10	1.7
Unintentional Firearm Injury	6	1.0	1	--
Undetermined	3	--	5	0.9
TOTAL	218	37.6	192	33.0

Rates are per 100,000 and are not reported on counts less than 5 to avoid unstable estimates.

Victims of violent deaths in Wyoming included residents of the following states: Arizona, California, Colorado, Georgia, Idaho, Illinois, Louisiana, Minnesota, Missouri, Montana, Nebraska, New York, Ohio, Oklahoma, Oregon, South Carolina, South Dakota, Texas, Utah, Washington, and Wyoming.

Residents of Utah made up the most non-resident deaths with 6 deaths, followed by Texas with 5 deaths, and California, Colorado, and Montana which each had 4 deaths. All other states had 2 or fewer deaths in Wyoming during 2021-2022.

Demographics

TABLE 3: Manner of Death by Sex

	MALE	FEMALE
Suicide	293	59
Homicide	19	12
Legal Intervention	12	0
Unintentional Firearm Injury	6	1
Undetermined	4	4
TOTAL	334	76

Significantly more men than women were victims of violent death in Wyoming in 2021-2022. Males accounted for 81% of the total violent deaths that took place in Wyoming over this time period.

TABLE 4: Manner of Death by Race/Ethnicity

	White	Black	American Indian	Asian or Pacific Islander	Hispanic (Any Race)
Suicide	337	1	12	1	17
Homicide	25	4	2	0	6
Legal Intervention	9	2	1	0	2
Unintentional Firearm Injury	7	0	0	0	0
Undetermined	8	0	0	0	2
TOTAL	386	7	15	1	27

There were 386 violent deaths among Whites for a crude mortality rate of 36.0 per 100,000. The mortality rate for Blacks was 49.2 per 100,000 and for Hispanics was 21.7 per 100,000. The violent death mortality rate for American Indians was 46.1 per 100,000. The violent death mortality rate for Asian/Pacific Islanders was not calculated due to small numbers.

TABLE 5: Manner of Death by Age Group

	Suicide	Homicide	Legal Intervention	Unintentional Firearm	Undetermined
00-04	0	3	0	1	0
05-09	0	1	0	0	0
10-14	6	2	0	0	0
15-19	24	1	0	0	1
20-24	34	4	2	0	0
25-29	28	2	1	0	1
30-34	30	2	2	0	0
35-39	30	5	4	0	2
40-44	31	1	1	0	1
45-49	23	4	0	1	1
50-54	18	0	0	1	0
55-59	32	1	2	2	0
60-64	23	1	0	1	0
65-69	20	1	0	0	1
70-74	16	2	0	0	0
75-79	10	0	0	0	1
80-84	10	1	0	1	0
85+	17	0	0	0	0

Violent death affects Wyoming residents regardless of age. While the majority of violent deaths occurred in middle-aged adults, children/adolescents under 15 years of age were the victims in six suicides, six homicides, and one unintentional firearm death in Wyoming during 2021-2022.

TABLE 6: Manner of Death by Educational Attainment

	Suicide	Homicide	Legal Intervention	Unintentional Firearm	Undetermined
< 8th Grade	10	4	0	1	0
9th-12th Grade	38	8	3	0	2
High School or GED	156	11	7	1	3
Some College Credit	75	4	1	3	1
Associates	34	1	1	0	1
Bachelors	20	1	0	2	0
Graduate or Professional Degree	15	0	0	0	0
Unknown	4	2	0	0	1

Past research has shown that educational attainment can be somewhat protective against violent death.^{2,3} During 2021-2022 in Wyoming, 49.8% of all suicide and 74.2% of all homicide victims had a high school education or less, while only 16.8% of suicide and 0.65% homicide victims had some sort of college degree.

Suicide

Suicide has been and continues to be a significant cause of mortality in Wyoming. According to CDC Wonder, there were 190 suicides in Wyoming residents for a rate of 32.8 per 100,000 in 2021. In 2022, 155 Wyoming residents died by suicide for a rate of 26.7 per 100,000. Wyoming had the highest mortality rate by suicide in the United States in 2021 and the third highest rate in 2022. Only the states of Alaska and Montana have rates comparable to the rates seen in Wyoming. Remember that the data presented in this report include all suicides that took place in the state and not just among Wyoming residents.

Demographics

TABLE 7: Suicide: Sex by Race/Ethnicity

	MALE		FEMALE	
	COUNT	RATE	COUNT	RATE
White	281	51.3	56	10.8
Black	1	—	0	—
American Indian	9	54.1	3	—
Asian or Pacific Islander	1	—	0	—
Hispanic	14	21.5	3	—

Rates are not calculated on counts less than 5 to avoid unstable estimates. Hispanic cases include any race.

The overall suicide mortality rate for 2021-2022 in Wyoming was 30.4 per 100,000 population. The rate for males for was 49.5 per 100,000 males, while the rate for females was 10.4 per 100,000 females. The rate for Native American males was slightly higher than the rate for White males. The rate for Hispanic males was less than half the rate of White males. The rates for all non-White female groups were not calculated due to small numbers.

TABLE 8: Suicide: Sex by Age Group

	MALE		FEMALE	
	COUNT	RATE	COUNT	RATE
10-14	5	12.4	1	—
15-19	20	49.8	4	—
20-24	29	70.9	5	13.9
25-29	24	65.6	4	—
30-34	25	63.0	5	13.7
35-39	22	53.4	8	21.0
40-44	26	66.3	5	13.9
45-49	20	58.8	3	—
50-54	15	44.3	3	—
55-59	26	74.9	6	17.7
60-64	17	42.1	6	15.2
65-69	17	44.8	3	—
70-74	14	47.5	2	—
75-79	8	44.3	2	—
80-84	10	98.6	0	0.0
85+	15	197.7	2	—

Rates are not calculated on counts less than 5 to avoid unstable estimates.

The highest rates of suicide among male age groups were seen in the 80-84 and 85 and older groups. However, it should be pointed out that these two age groups have relatively small populations overall. By counts alone, the 20-24, 40-44, and 55-59 age groups had the highest overall numbers of suicides. For females, the 35-39 age group had the highest rate and number of suicides in 2021-2022.

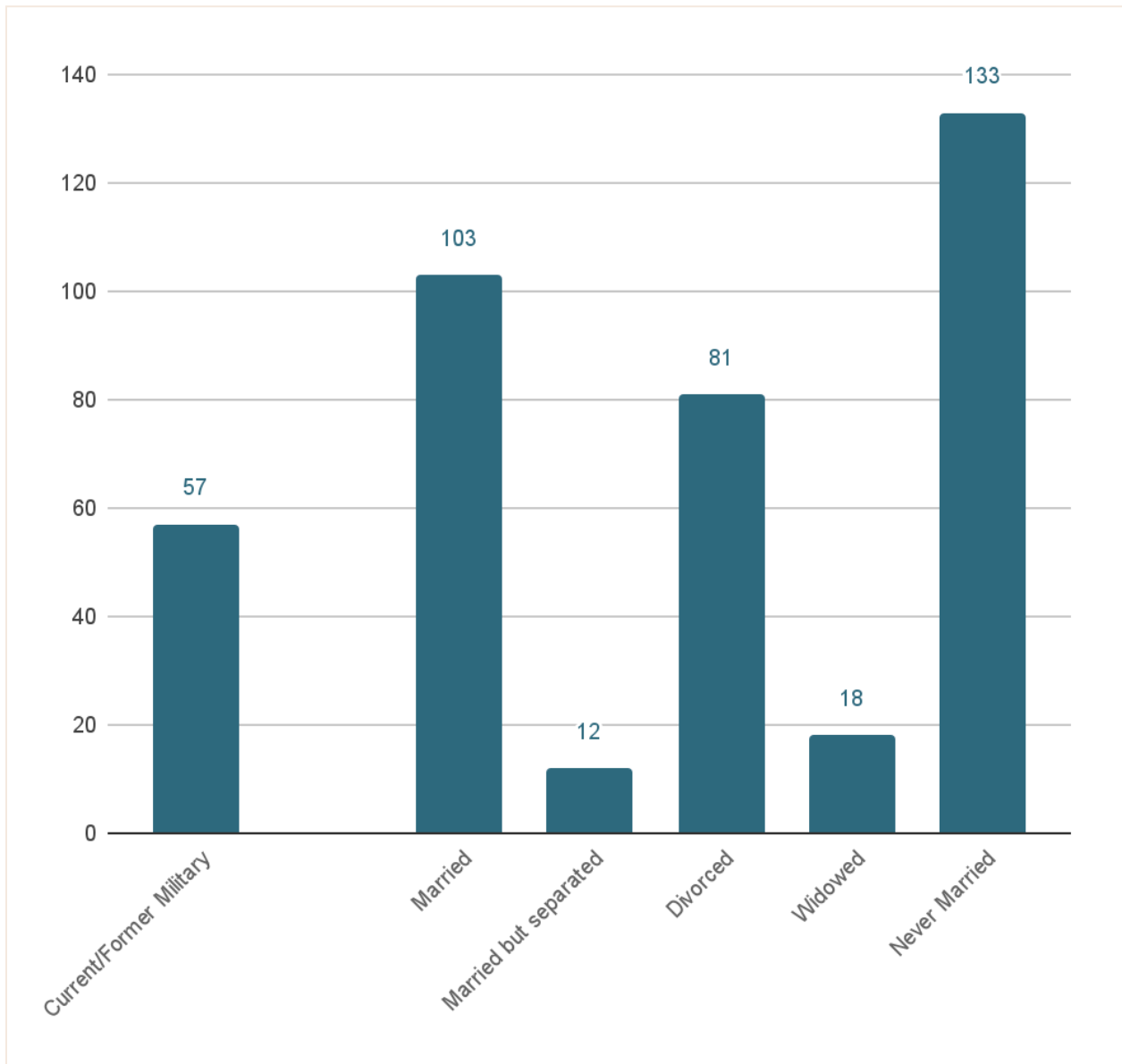
TABLE 9: Sex by Educational Attainment

	MALE		FEMALE	
	COUNT	RATE	COUNT	RATE
< 8th Grade	9	102.1	1	—
9th-12th Grade	32	115.7	6	62.2
High School or GED	132	92.2	24	43.2
Some College Credit	62	52.4	13	22.2
Associates	29	62.9	5	16.7
Bachelors	13	18.4	7	16.8
Graduate or Professional Degree	12	27.2	3	—
Unknown	4	—	0	—

Rates are not calculated on counts less than 5 to avoid unstable estimates.

For males, the suicide rates in 2021-2021 were highest among those with a less than a high school education. For females, the highest rate was among those with a 9-12th grade education. Having a college degree appeared to be associated with lower suicide rates, though males having only some college credit had a lower rate than those having an associates degree. For females the higher the education the less the risk for suicide.

CHART 1: Suicide by Other Demographic Variables



57 suicides occurred in Current or Former Military Veterans in 2021-2022, which is down from the 92 deaths seen in 2019-2020. Men who had never been married had the highest number of suicide deaths followed by married men, and then men who were divorced. Women who never married accounted for the highest number of deaths in females, with divorced women second and married women third.

Locality

TABLE 10: Suicide by County

2021-2022	COUNT	CRUDE RATE
Albany	23	30.6
Big Horn	8	34.4
Campbell	26	28.0
Carbon	15	51.2
Converse	12	43.9
Crook	<5	—
Fremont	24	30.5
Goshen	<5	—
Hot Springs	<5	—
Johnson	11	63.8
Laramie	52	25.8
Lincoln	7	17.4
Natrona	50	31.4
Niobrara	<5	—
Park	20	33.2
Platte	9	51.7
Sheridan	18	28.4
Sublette	5	28.7
Sweetwater	30	36.0
Teton	12	25.5
Uinta	11	26.7
Washakie	6	38.9
Weston	<5	—

Rates are not calculated on counts less than 5 to avoid unstable estimates.

As shown in Table 10, the highest suicide mortality rate in 2021-2022 belonged to Johnson County followed by Platte County and then Carbon County. The lowest rate in counties with at

least 5 suicides was seen in Lincoln County. The counties of Laramie and Natrona accounted for 29% of the total number of suicides in the state.

TABLE 11: Injury Location

	COUNT	PERCENT
Bridge	1	0.3
Cemetery, graveyard, or other burial ground	1	0.3
College/University including Dorms	1	0.3
Highway, freeway	6	1.7
Hospital or medical facility	1	0.3
Hotel/motel	10	2.8
House, apartment	244	69.3
Industrial or Construction area	1	0.3
Jail, prison, detention facility	5	1.4
Motor vehicle (excluding school bus, and public transportation)	46	13.1
Natural areas (e.g., field, river, woods)	25	7.1
Other	1	0.3
Other commercial establishment (e.g., grocery store, retail outlet, laundromat)	1	0.3
Park, playground, public use area	1	0.3
Parking lot/public parking garage	1	0.3
Public Transportation or Station	1	0.3
Street/road, sidewalk, alley	5	1.4
Supervised Residential Facility	1	0.3
Total	352	100.0

Nearly 70% of all suicides in Wyoming during 2019-2020 occurred in a house or apartment. Other common locations included motor vehicles (e.g., the victims car or truck), natural areas, and hotels or motels.

Method of Death

TABLE 12: Suicide: Means

Means (ICD-10 Code)	MALE	FEMALE	TOTAL
Intentional self-harm by Poisoning by drugs (X61-X64)	7	7	14
Intentional self-harm by liquids, vapors or gases (e.g. carbon monoxide) (X65-X69)	5	1	6
Intentional self-harm by Hanging /Strangulation (X70)	50	16	66
Intentional self-harm by drowning (X71)	1	0	1
Intentional self-harm by Firearms (X72-X74)	209	30	239
Intentional self-harm by Smoke, Fire, or Flames (X76)	1	0	1
Intentional self-harm by Sharp Object (X78)	3	0	3
Intentional self-harm by Jumping from high place (X80)	1	1	2
Intentional self-harm by Jumping or Lying before moving object (X81)	2	1	3
Intentional self-harm by Crashing motor vehicle (X82)	4	0	4
Intentional self-harm by unspecified means (X83-X84)	1	2	3
Intentional self-harm with undetermined intent (Y19-Y34)	3	0	3

Firearms were used in 68% of suicides that occurred in Wyoming during 2021-2022. Males were much more likely to use a firearm (71%) than females (51%), though it was still the leading method among women. Intentional hanging/strangulation was the next most used method with 17% of males and 27% of females using this method.

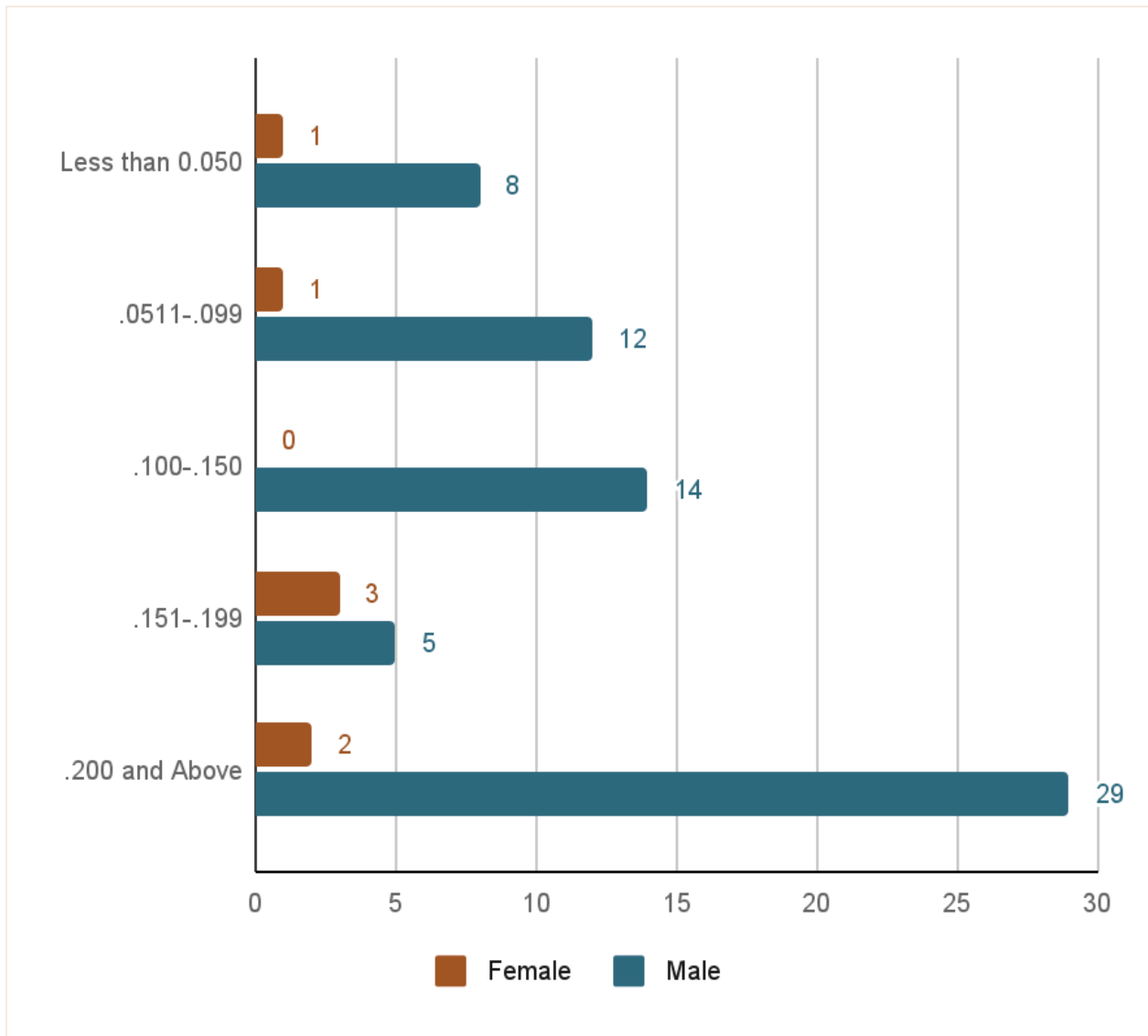
Toxicology

TABLE 13: Suicide: Sex by Substance Present

	MALE		FEMALE		TOTAL	
	COUNT	PERCENT	COUNT	PERCENT	COUNT	PERCENT
Alcohol	67	59.2	7	29.1	74	54.0
Amphetamines	19	16.8	5	20.8	24	17.5
Antidepressants	9	7.9	7	29.1	16	11.7
Anticonvulsants	4	3.5	2	8.3	6	4.4
Benzodiazepines	10	8.8	1	4.1	11	8.0
Marijuana	22	19.5	5	20.8	27	19.7
Opiates	14	12.4	7	29.1	21	15.3

Out of the 352 suicides in Wyoming over 2021-2022, toxicology reports were provided to the WYVDRS in 137 cases (113 Male & 24 Female). Alcohol was present in the system of 59% of male and 29% of female suicide victims with toxicology results. Marijuana, Amphetamines (including methamphetamine), Antidepressants, and Opiates were also found in the system of a number of suicide victims.

CHART 2: Alcohol Level (BAC) by Sex

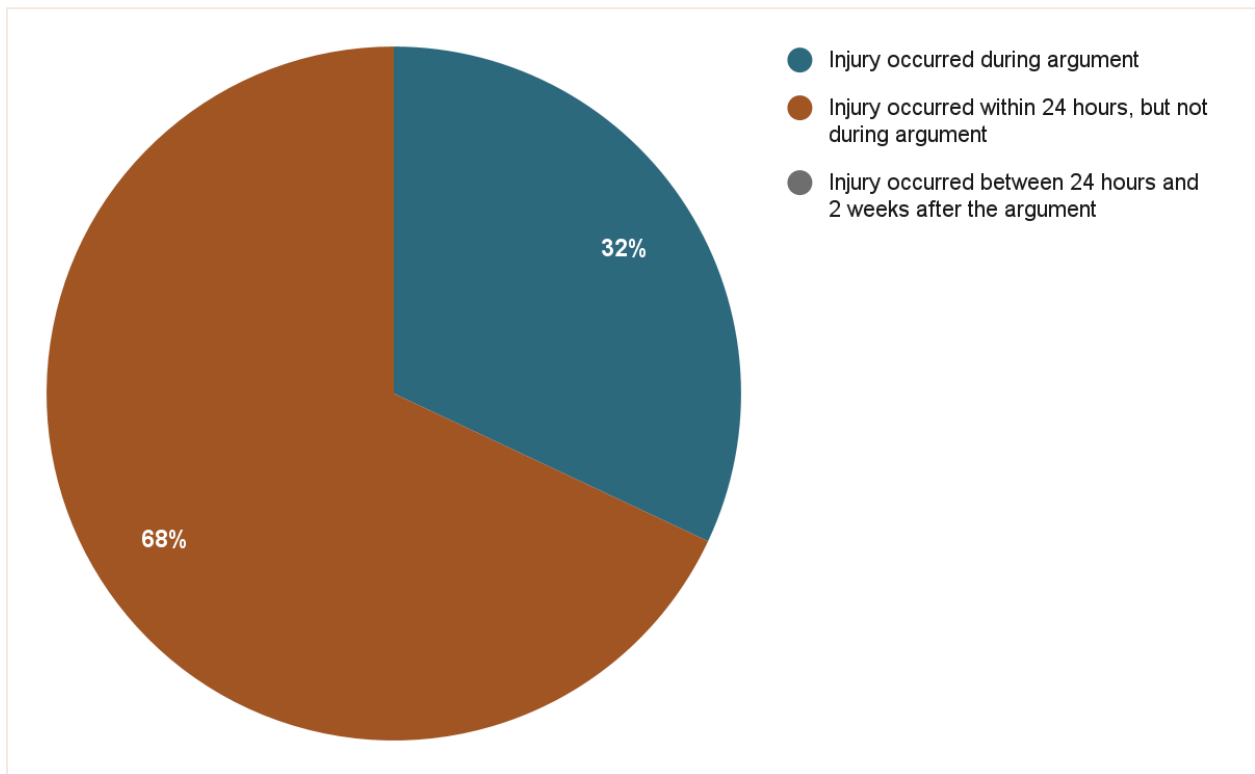


Toxicology reports indicated that alcohol was involved in 74 of the suicides with toxicology results in 2021-2022, with 67 male and 7 female victims having alcohol in their system at the time of death. As shown in Chart 2 above, males were more likely to have a greater blood alcohol content level than females. In fact, 43% of male victims were found to have BAC levels above 0.200, which is more than double the legal limit in Wyoming (.080).

Circumstances

NVDRS collects information about the specific circumstances that are noted in the investigative reports (i.e., C/ME or LE report) as being related to the violent death. For the vast majority of circumstances, inclusion in the investigation reports, and/or the occurrence before or right after the fatal injury (e.g., preceding or impending events), is sufficient to code a circumstance. These circumstances help NVDRS to identify, develop, and evaluate preventive interventions associated with specific circumstances.¹

CHART 3: Injury & Argument Timing



In over two-thirds of the cases in 2021-2022, the injury that led to the victim’s death took place within 24 hours of an argument. The other third of the fatal injuries occurred while the actual argument was taking place. None of the fatal injuries took place more than 24 hours after the reported argument.

CHART 4: Suicides by Month



The number of suicides that occurred each month fluctuated in both 2021 and 2022. For 2021, the highest months were August and November, while in 2022 the highest months were June and December. April was the lowest month in 2021 and July was lowest in 2022. According to the CDC major risk factors for suicide include, but are not limited to:

- Previous suicide attempts
- Social isolation
- Financial problems
- Job problems or loss
- Serious illness
- Mental illness, such as depression
- Criminal problems
- Impulsive or aggressive tendencies
- Legal problems
- Substance use disorder

CHART 5: Suicide by Occupation

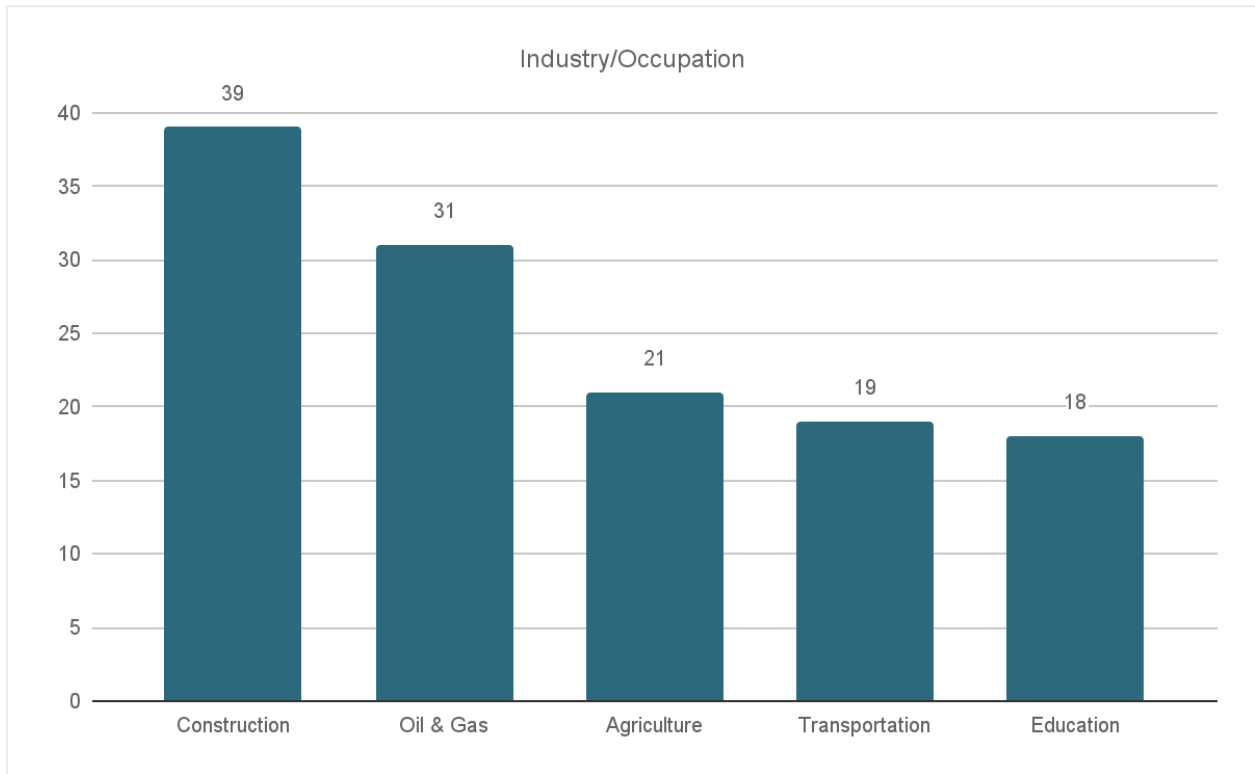


Chart 5 shows the five most common occupations of suicide victims in 2021-2022 in Wyoming. Construction occupations (e.g., carpenters, laborers, heavy equipment operators) had the highest number, followed by those working in oil & gas occupations (e.g., roustabouts, laborers, drillers). Agriculture workers (e.g., farmers and ranchers) were next, followed by Transportation workers (drivers, etc...), and finally Education occupations (e.g., teachers & administrators).

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Converse County Sheriff's Office
Crook County Sheriff's Office
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Goshen County Sheriff's Office
Hot Springs County Sheriff's Office
Johnson County Sheriff's Office
Laramie County Sheriff's Office
Lincoln County Sheriff's Office
Natrona County Sheriff's Office
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Park County Sheriff's Office
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