SDVDRS
South Dakota Violent Death Reporting System

2021 Data Report

South Dakota Department of Health

SOUTH DAKOTA
DEPARTMENT OF HEALTH

South Dakota Violent Death Reporting System

The South Dakota Violent Death Reporting System (SD-VDRS) is a Centers for Disease Control and Prevention (CDC)-funded, statewide anonymous surveillance system that collects information on suicides, homicides, legal intervention, deaths of undetermined intent, and unintentional firearm-related deaths. SD-VDRS collects information from death certificates, coroner reports and law enforcement reports. The goal of this system is to understand and aid in the prevention of violent deaths. This report summarizes the occurrence of violent deaths where the injury occurred in South Dakota, regardless of residency, from 2020 to 2021.

Violent Deaths

In South Dakota, there were 255 people who died as a result of violence in 2020 and 257 people who died in 2021. Of the 512 violent deaths, 78% were suicide, 19% homicide, 2% undetermined intent, and 1% were unintentional firearm deaths (Figure 1). Firearms were the leading mechanism of death (49%), followed by hanging, strangulation, or suffocation (31%), and poisoning (8%) (Figure 2).
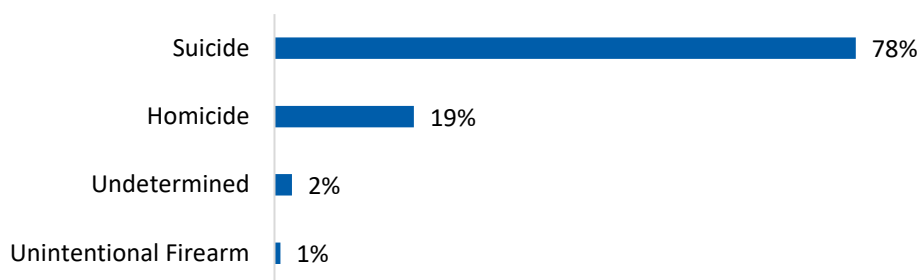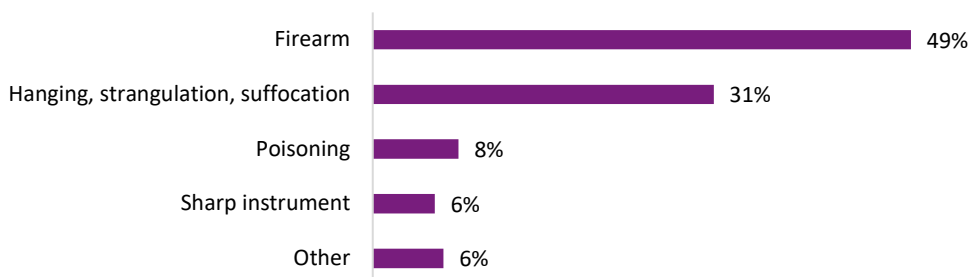
Figure 1: Violent Deaths by Manner, 2020-2021

Figure 2: Violent Deaths by Mechanism, 2020-2021

Violent Death Demographics

Males made up 78% of violent deaths and were 3.4 times more likely to die from violence as females (43.8 vs 13.0 per 100,000, respectively). The largest proportion of violent deaths were among the White population (64%), followed by the American Indian population (29%). The American Indian violent death rate was 4.2 times higher than the White death rate (92.2 vs 21.7 per 100,000, respectively). South Dakota adults aged 20-29 years (51.1 per 100,000), followed closely by adults aged 30-39 years (42.8 per 100,000), had the highest violent death rates by age group (Figure 3).

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Figure 3: Violent Deaths by Age Group, 2020-2021
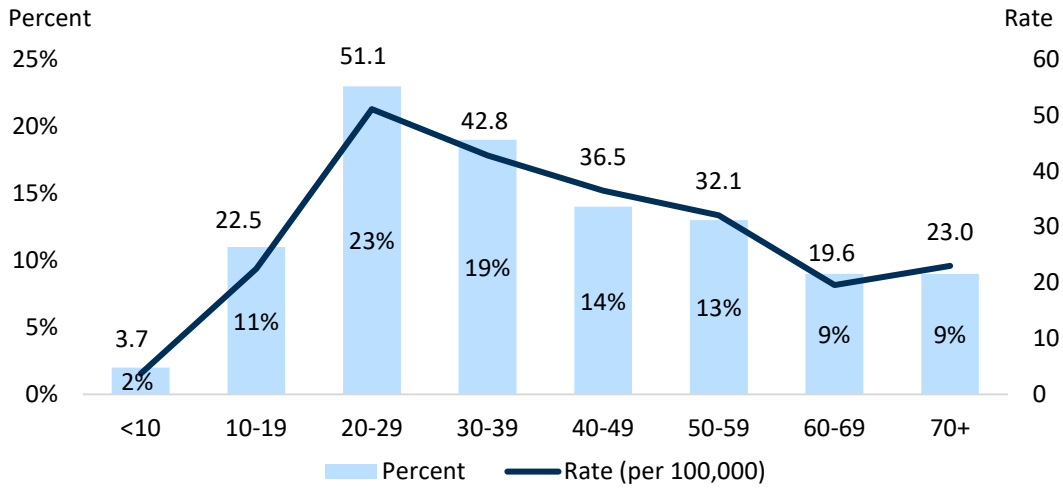
Violent Deaths by County of Injury

The figure below shows violent death rates by county of injury. Among counties with stable rates for comparison (≥20 deaths), the counties with the highest rates of violent deaths (per 100,000) included Oglala Lakota (83.2), Pennington (47.9), Codington (35.3), and Minnehaha (23.0).

Figure 4: Count of Violent Deaths by County, 2020-2021
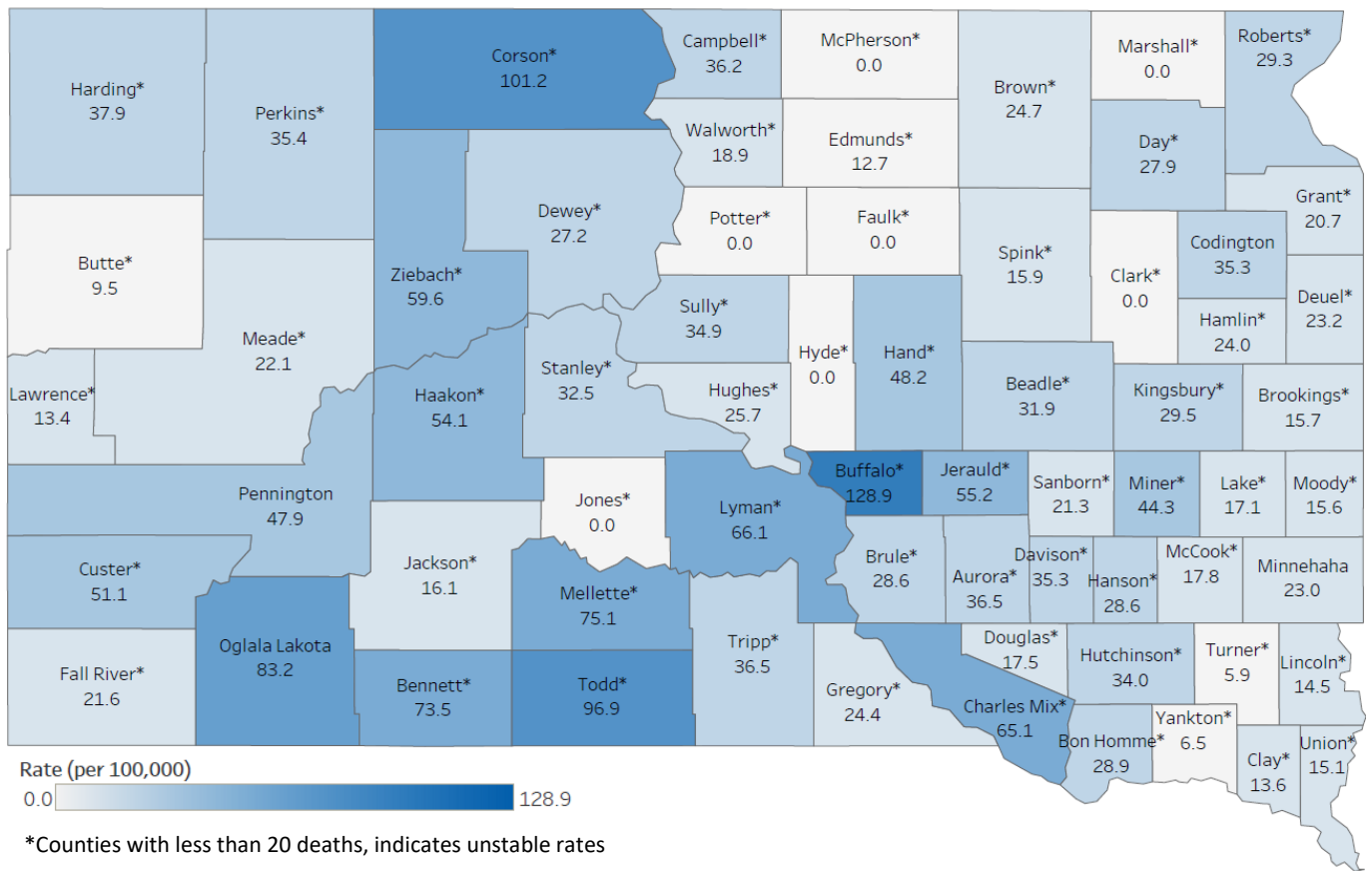
*Counties with less than 20 deaths, indicates unstable rates

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Suicide Deaths

Suicide deaths make up the largest proportion of violent deaths in South Dakota. In South Dakota, there were 193 suicide deaths in 2020 and 207 suicide deaths in 2021 that were captured in SD-VDRS. Of the 400 suicide deaths, the most common method used was firearm (49%), followed by hanging, strangulation, or suffocation (39%), and poisoning (9%).

Suicide Demographics

Males made up 78% of suicide deaths and were 3.5 times more likely than females to die by suicide (34.6 vs 9.9 per 100,000, respectively). The age groups with the highest rate of suicide deaths were adults aged 20-29 years (39.9 per 100,000), followed by adults aged 30-39 years (29.7 per 100,000).

Figure 5: Suicide Deaths by Age Group, 2020-2021
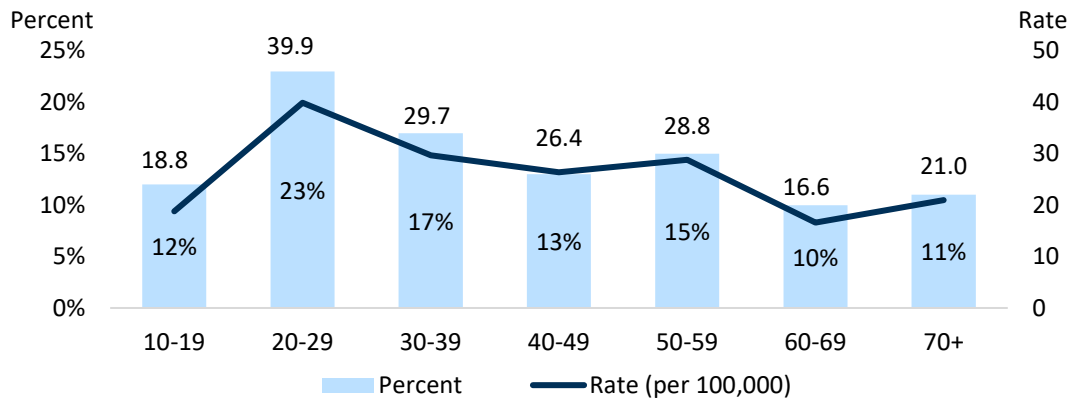
The largest proportion of suicide deaths were among the White population (71%), followed by the American Indian population (23%). The American Indian suicide death rate was 3 times higher than the White death rate (56.1 vs 18.7 per 100,000, respectively). Within the American Indian population, 88% of suicide deaths were among individuals aged 39 years and younger and the highest suicide rates were among ages 10-39 years (Figure 6).

Figure 6: Age-Specific Suicide Rates (per 100,000) by Race, 2020-2021


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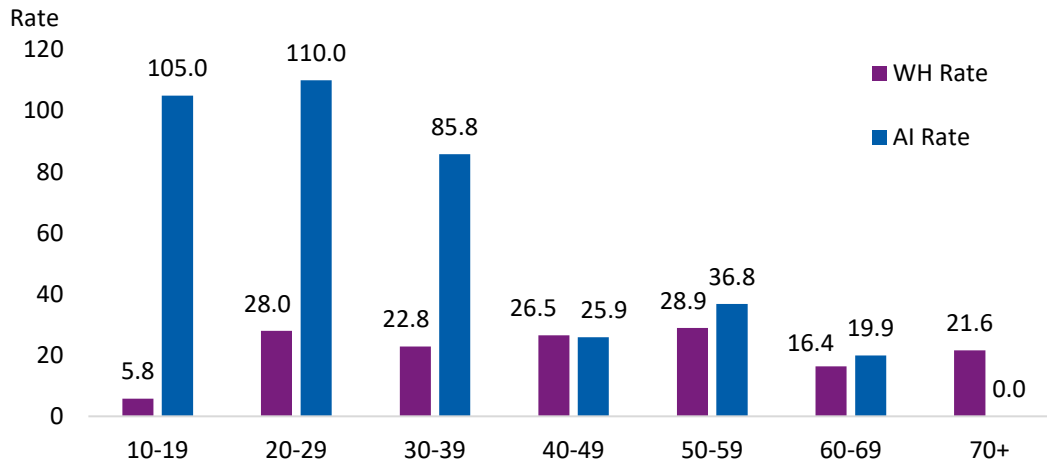
Location of Injury and Death

For individuals who died by suicide, the injury most often occurred in a house or apartment, either the decedent's residence or another person's residence (74%). By location of death, most deaths occur in a residence (63%), followed by hospital/emergency department (14%).

Circumstances

SD-VDRS collects information about circumstances that are reported or perceived in the investigative reports as being related to the violent death. Of the 400 suicide deaths, 71% had a circumstance documented by coroners and/or law enforcement. The most common circumstances documented were current depressed mood (28%), mental health diagnosis (28%), history of suicidal thoughts (22%), and history of mental health/substance use treatment (20%) (Figure 7). Note: persons who died by suicide may have had multiple circumstances and it is possible that circumstances could have been present and not diagnosed, known, or reported.

Figure 7: Suicide Circumstances, 2020-2021
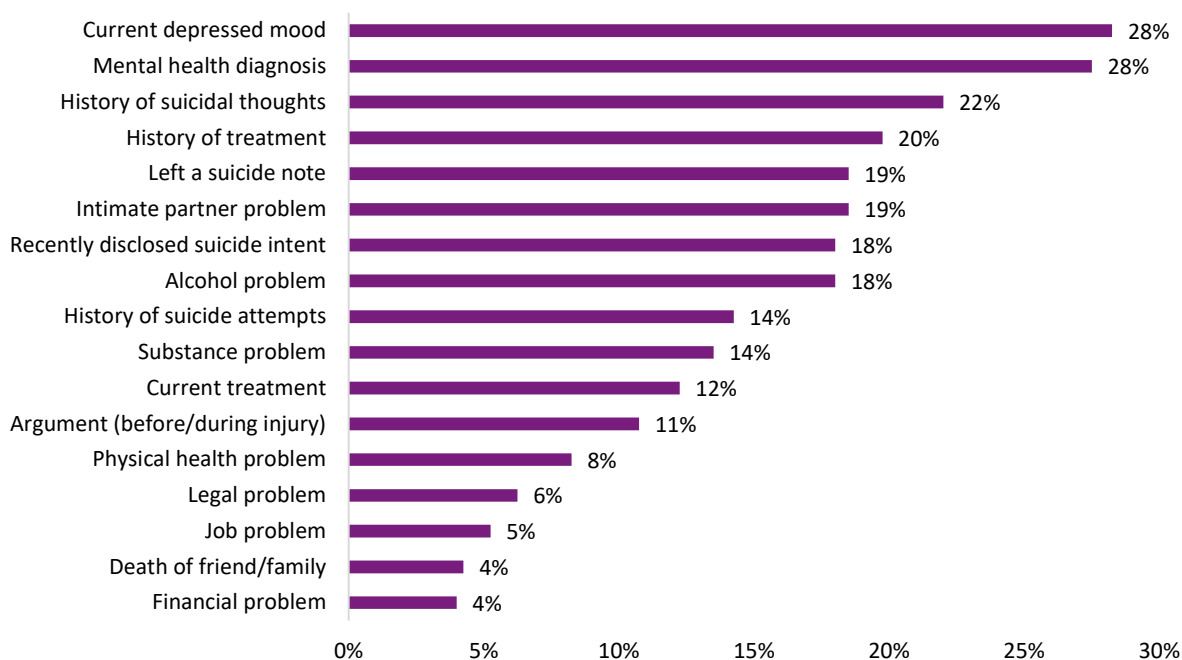
Differences in circumstances reported by demographics for the 400 suicide deaths can be seen in Table 1. Females had higher instances of mental health and substance use problems reported compared to males. Females also had higher instances of suicide attempts and thoughts reported compared to males.

By race, the White population had higher instances of mental health problems reported, but the American Indian population had a slightly higher percentage of substance problems reported.

By age group, individuals aged 40-59 years had higher instances of mental health diagnosis, current/history of mental health/substance use treatment, and alcohol problems reported. Individuals aged 20-39 years had higher instances of substance abuse problems reported. Individuals aged 20-49 years had higher instances of intimate partner problems. Individuals aged 10-39 years had higher instances of suicide attempt history, whereas individuals aged 20-49 years had higher instances of

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history suicidal thoughts. For job and financial problems, individuals aged 40-59 years had the highest instances. Individuals aged 10-19 years had higher instances of school problems. Individuals aged 60 years and older had higher instances of physical health problems reported. Among ages 60 years and older, the most common physical health problems reported included other health conditions (40%), acute/chronic pain (25%), stroke (15%), Alzheimer's/dementia (15%), and cancer (15%).

Table 1: Suicide Circumstances by Demographics, 2020-2021 (N=400)

Circumstance	Female	Male	White	Am. Indian	10-19 Years	20-29 Years	30-39 Years	40-49 Years	50-59 Years	60-69 Years	70+ Years
Mental health diagnosis	45%	23%	33%	12%	17%	24%	28%	35%	37%	24%	28%
Current depressed mood	34%	27%	32%	17%	15%	30%	31%	35%	40%	18%	19%
Current treatment	25%	9%	16%	0%	7%	11%	12%	19%	20%	5%	9%
History of treatment	36%	15%	24%	7%	17%	18%	18%	29%	28%	11%	14%
Alcohol problem	22%	17%	20%	17%	13%	15%	19%	27%	23%	21%	7%
Substance problem	17%	12%	13%	17%	13%	23%	22%	15%	5%	3%	0%
Intimate partner problem	23%	17%	20%	11%	11%	24%	29%	29%	17%	3%	2%
Argument (before/during injury)	9%	11%	11%	8%	4%	11%	18%	25%	10%	0%	0%
History of suicide attempt	28%	11%	15%	14%	17%	18%	18%	15%	13%	8%	2%
History of suicidal thoughts	25%	21%	23%	19%	17%	24%	24%	31%	22%	18%	14%
Recently disclosed suicide intent	22%	17%	20%	14%	13%	25%	13%	29%	17%	11%	12%
Left a suicide note	20%	18%	22%	4%	9%	20%	21%	31%	17%	13%	14%
Legal problem	2%	7%	6%	6%	2%	12%	6%	6%	5%	3%	5%
Physical health problem	10%	8%	11%	1%	0%	2%	0%	8%	12%	16%	33%
Job problem	3%	6%	7%	1%	0%	3%	9%	10%	10%	3%	0%
Financial problem	2%	4%	5%	1%	0%	2%	4%	10%	8%	3%	0%
Non-suicide death of friend/family	2%	5%	6%	0%	0%	4%	1%	6%	7%	11%	2%
School problem	2%	1%	1%	2%	7%	2%	0%	0%	0%	0%	0%

Mental Health Diagnosis

Of the 400 suicide deaths, 28% had a known mental health diagnosis reported at the time of death. Of those with a known mental health diagnosis, the most common diagnoses were depression (82%), anxiety (20%), bipolar disorder (9%), schizophrenia (7%), post-traumatic stress disorder (6%), and other diagnosis (8%). Note: individuals could have had multiple diagnosis and it is possible that other circumstances could have been present and not diagnosed, known, or reported.

Toxicology Results

Of the suicide deaths with an available toxicology report (54%), 61% had a positive toxicology result for one or more substances. The most common substances present at the time of death were alcohol (66%), marijuana (18%), amphetamines (16%), antidepressants (14%), opiates (11%), and benzodiazepines (11%).

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Homicide Deaths

From 2020-2021, there were 96 homicide deaths that were captured in SD-VDRS, 53 deaths in 2020 and 43 deaths in 2021. In South Dakota, 93% of homicide cases were a single homicide, 5% were multiple homicides, and 2% were a single homicide followed by suicide. Homicide deaths most often occurred in a house or apartment (61%) or a street, road, sidewalk, or alley (20%). Firearms (52%) and sharp instruments (22%) were the most common homicide methods.

Homicide Demographics

Males made up 76% of homicide deaths and were 3.1 times more likely than females to die by homicide (8.1 vs 2.6 per 100,000, respectively). Homicide rates were highest among the following age groups: 20-29-year-olds (9.4 per 100,000), 30-39-year-olds (10.9 per 100,000), and 40-49-year-olds (8.1 per 100,000).

Figure 8: Homicide Deaths by Age Group, 2020-2021
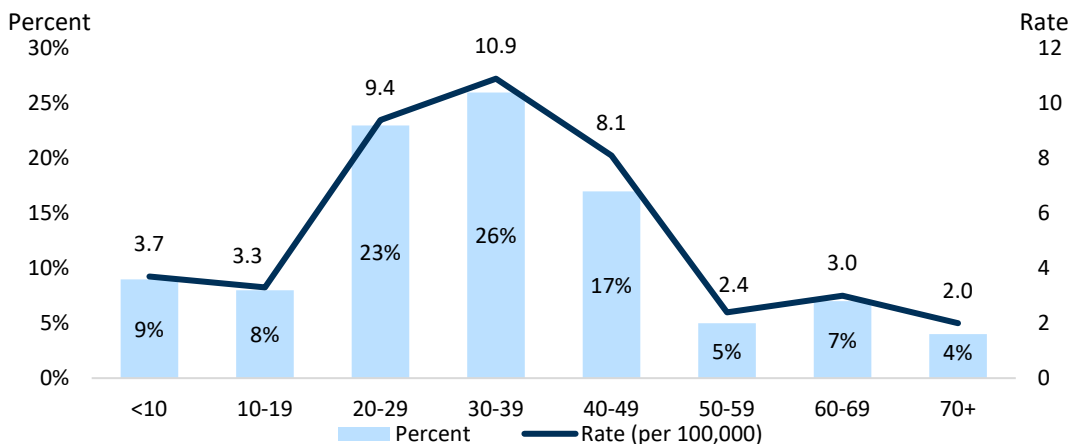
The largest proportion of homicides were among the American Indian population (53%), followed by the White population (38%). American Indian homicide rates were 13.3 times higher than White homicide rates (31.8 vs 2.4 per 100,000) (Figure 9).

Figure 9: Homicide Deaths by Race, 2020-2021

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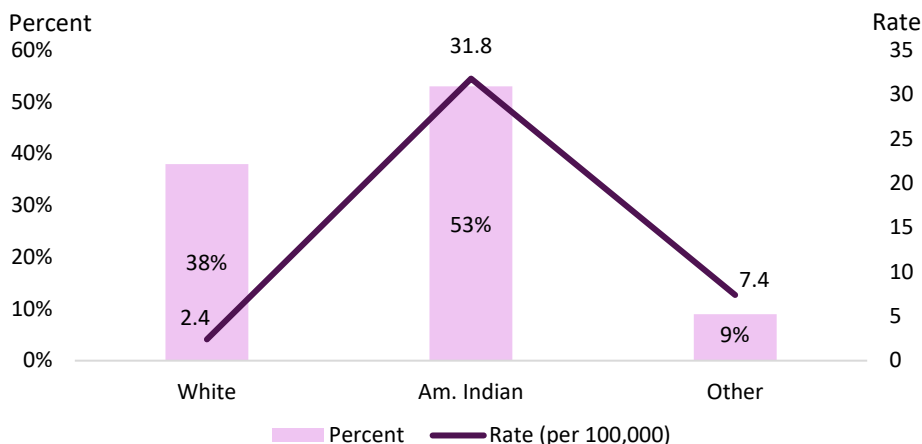
Circumstances

Of the 96 homicide deaths, 72% had a circumstance documented by coroners and/or law enforcement. The most common circumstances documented were arguments (21%), crime/criminal activity (20%), physical fight (10%), drug involvement (9%), and abuse/neglect led to death (9%). Crime and criminal activity included gang-related, robbery, drug trade, stalking, assault/homicide, and witness intimidation/elimination. Note: persons who died by homicide may have had multiple circumstances and it is possible that circumstances could have been present and not diagnosed, known, or reported.

*Figure 10: Homicide Circumstances, 2020-2021*
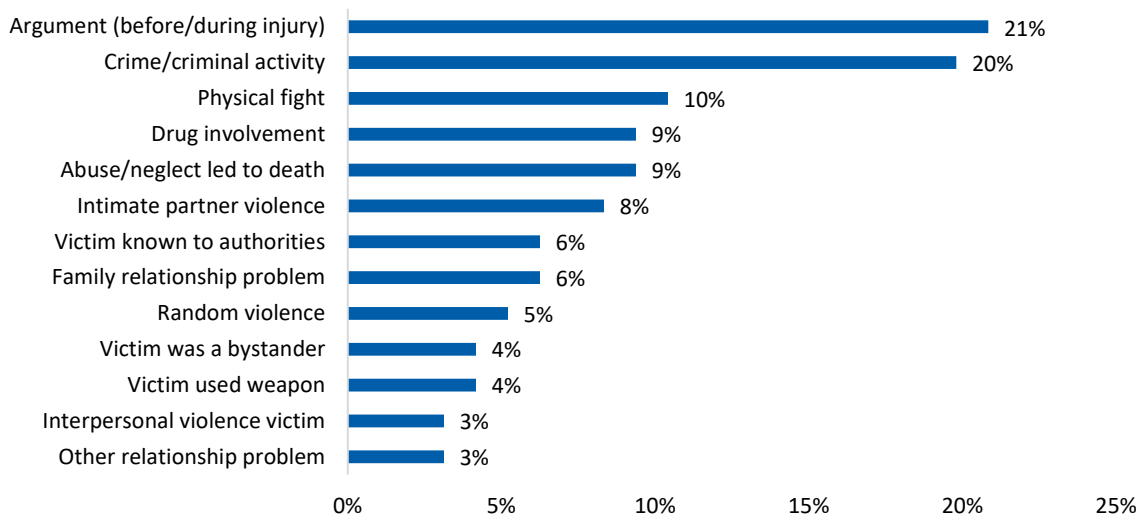
Toxicology Results

Of the homicide deaths with an available toxicology report (69%), 70% had a positive toxicology result for one or more substances. The most common substances present at the time of death were alcohol (52%), amphetamine (48%), marijuana (35%), opiate (22%), and benzodiazepines (11%).

Suspect Information

There was available information on 80 homicide suspects (note: homicide cases can include more than one suspect). Most homicide suspects knew their victim (61%), whereas 10% were strangers and 29% were an unknown/not specified relationship.

Figure 11: Victim to Suspect Relationship, 2020-2021

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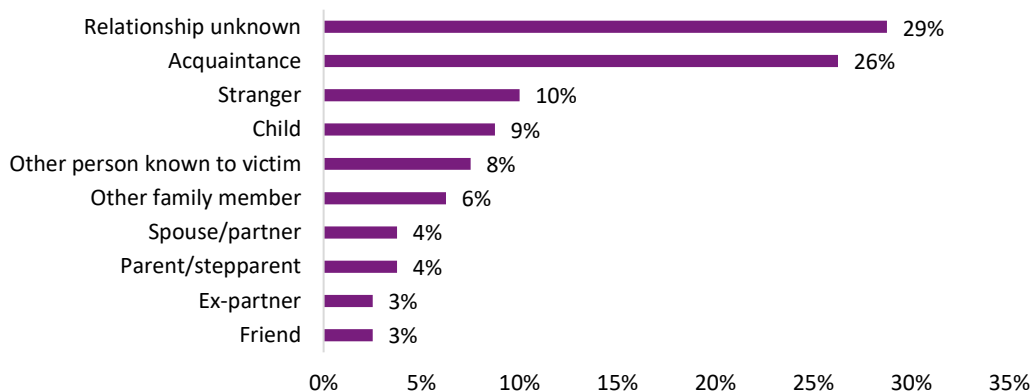
Of the 80 homicide suspects, 84% were male. By race, 28% of suspects were White, 28% American Indian, and 18% Black. The largest proportion of suspects were aged 20-29 years (29%), followed by ages 30-39 years (26%) (Figure 12).

Figure 12: Homicide Suspects by Age Group, 2020-2021
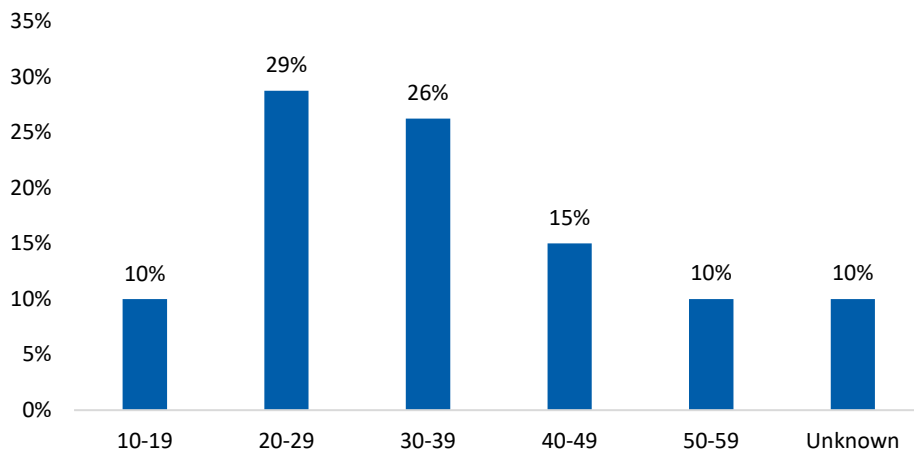
Some of the most common suspect circumstances were recent contact with law enforcement (23%), substance use suspected (18%), and alcohol use suspected (16%).

Figure 13: Homicide Suspect Circumstances, 2020-2021

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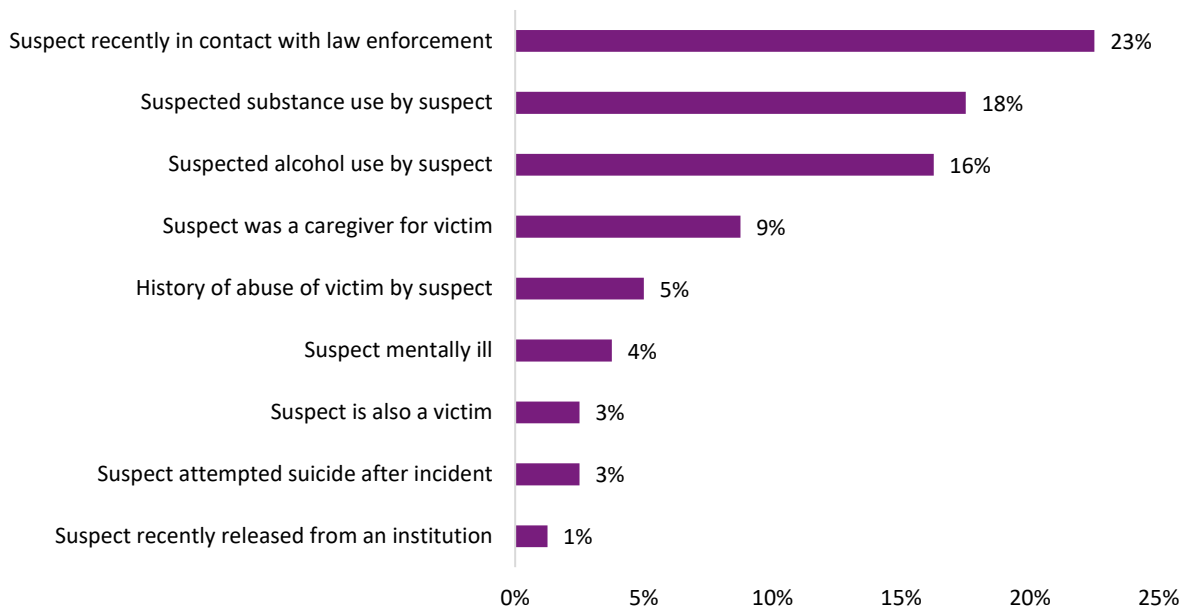
Methods

This report presents statistics on violent deaths during the period 2020 to 2021. The data set used in this report was generated in September 2023 and reflects the data at that point in time. Changes made to the data set after this time could change the data reported in future reports.

Case Identification

Violent deaths are identified according to International Classification of Diseases, Tenth Revision (ICD-10) codes and categorized as suicide, homicide, undetermined, unintentional firearm, legal intervention, or terrorism-related death (Table 2). For a violent death to meet case criteria, the initial injury must have occurred in South Dakota, regardless of residency or location of death.

Table 2: ICD-10 Codes that Define Violent Death Cases

Manner of Death	ICD-10 Code
Suicide	X60-X84, Y87.0
Homicide	X85-X99, Y00-Y09, Y87.1
Undetermined Intent	Y10-Y34, Y87.2, Y89.9
Unintentional Firearm	W32-W34, Y86
Legal Intervention	Y35.0-Y35.4, Y35.6-Y35.7, Y89.0
Terrorism	U01-U03

Data Collection and Abstraction

Violent death data are captured by data abstractors using multiple data sources that include:

- Death Certificates – obtained from the South Dakota Electronic Vital Records System
- Coroner Reports – obtained from the county coroner
- Law Enforcement Reports – obtained from law enforcement agencies across the state

Data is requested and received electronically, or a hard copy is obtained. Data is then de-identified and manually entered into the National Violent Death Reporting System (NVDRS) by the abstraction team.

Data Limitations

The SD-VDRS strives to collect comprehensive and quality data, but there are data collection challenges. These various challenges might result in incomplete information surrounding deaths. Therefore, this report may underestimate some given circumstances.

Acknowledgements

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We deeply appreciate the contributions of coroners and law enforcement professionals throughout South Dakota that have provided information to the SD-VDRS. This work would not be possible without these key data partners.

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