Suicide among Children in Montana, 2013-2022

Key Findings

- 137 Montana youth (aged 10 to 17) died by suicides from 2013 to 2022.
- The suicide rate among Montana's children was significantly higher than the national child suicide rate.
- The majority of Montana's children who died by suicide did so using a firearm.
- More children died by suicide during 2021 and 2022 than in previous years.
- Anyone who is in crisis and wants help should call, text, or chat 988.

Montana Suicide and Crisis Lifeline is available 24 / 7 at 988.

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Introduction

The Rocky Mountain states have some of the highest rates of suicide in the country.[1] Montana, in particular, has an exceptionally high suicide rate. Several factors may contribute to the high suicide rate in the Rocky Mountains: the high altitude may negatively impact a person's mood by decreasing the oxygen available to the brain, the low population density may limit a person's social connectedness and economic opportunity, and the high rate of firearm ownership may increase the likelihood of completing suicide. A 2018 review of studies evaluating high altitude as risk factor for suicide found that although the studies support an association between altitude and suicide rates, they do not provide sufficient data to estimate the effects of altitude alone and there are likely many other factors that play more important roles.[2]

Especially concerning is the increasing suicide rate among children over the past decade.[3] Since social isolation is a risk factor for suicide, many have wondered if social restrictions brought on by the COVID-19 pandemic have contributed to the increasing suicide rate among children.[4] This report examines the suicides among children in Montana from 2013 to 2022 and compares Montana's child suicide rate to the national child suicide rate.

Methods

Data used in this report come from the Montana Office of Vital Records (OVR) and from the National Center for Fatality Review and Prevention (CFRP) and were limited to Montana residents aged 10-17 years. Data ascertained from CFRP only include deaths where the child also died in Montana which included 132 of the 137 deaths.

Age-specific suicide rates with 95% confidence intervals were calculated using US Census bridged race data through 2020 and single race data for 2021 and 2022.[5,6] Comparable national rates were obtained from CDC WONDER.[1] A rate was considered to be significantly different than the national rate if its confidence interval did not include that national rate. American Indian residents were identified as those who were classified as American Indian or Alaska Native (AI/AN) on the death certificate according to the race bridging procedure of the National Center for Health Statistics (NCHS).[7]

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Firearm suicides were identified as having an ICD-10 underlying cause of death code of X72 – X74. Counties were designated as small metropolitan, micropolitan, or rural according to the 2013 NCHS Urban-Rural Classification scheme. Carbon, Cascade, Golden Valley, Missoula, and Yellowstone Counties were classified as small metropolitan; Flathead, Gallatin, Jefferson, Lewis and Clark, and Silver Bow Counties were classified as micropolitan; and all other counties in Montana were classified as rural. For the national data, the metropolitan counties included only small metropolitan counties to be more comparable to the size of metropolitan counties in Montana.

Results

There were 137 suicides among Montana residents aged 10 to 17 years from 2013 to 2022 (Table 1). Of these 137 children, 21% were American Indian or Alaska Native, 69% were male, and 47% were residents of a rural county. More than half (56%) of Montana children used a firearm to complete suicide (Figure 1). Among child suicide deaths with a completed Fatality Review (132), 42% had a disability, 35% had a history of substance abuse, 23% experienced a recent death of a friend or family member, and 30% talked about suicide before their death (Table 1).

The 2013-2022 suicide rate among Montana's children was 13.2 per 100,000 population, nearly three times the national rate of 4.7 (Figure 2).

Figure 1. Percent of Suicide Deaths by Method among Children in the US and MT, 2013-2022

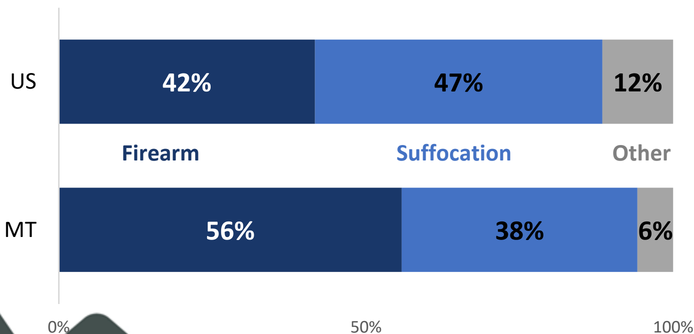
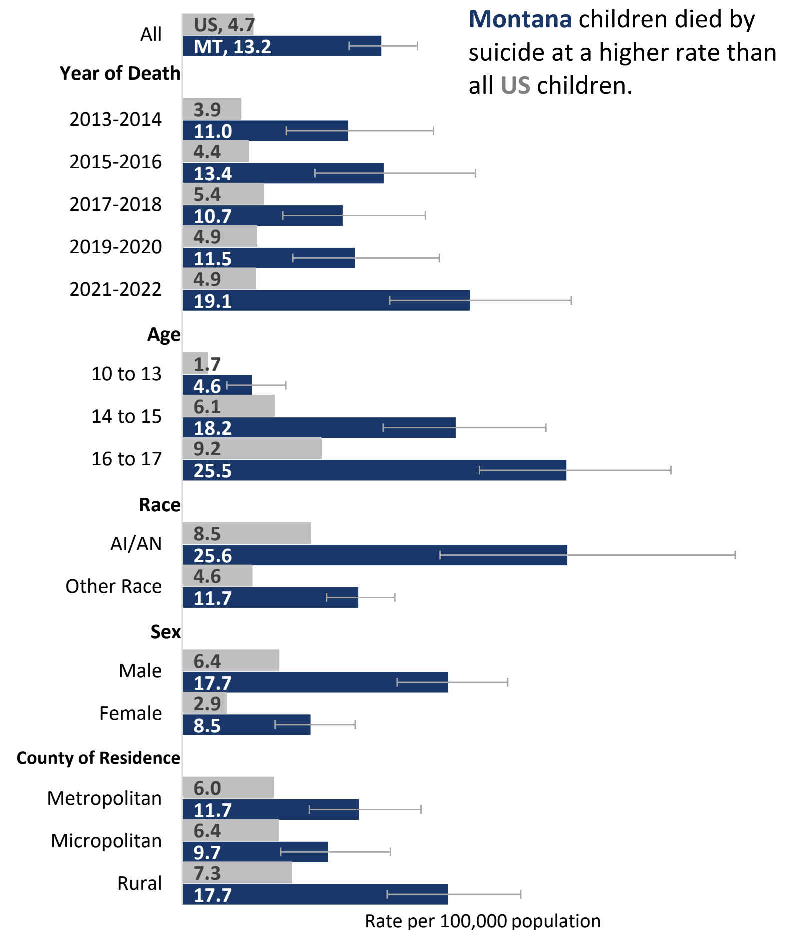


Figure 2. Suicide Rate among Children Ages 10-17, Montana Resident Occurrences and U.S. Residents, 2013-2022.



Suicide rates were also calculated within more specific age ranges and other demographic characteristics. The child suicide rate in Montana was significantly higher than the national rate within all of these subcategories (Figure 2). While the national child suicide rate remained relatively stable for all years, the child suicide rate in Montana increased 67% from 2019/2020 to 2021/2022. Even though the number of child suicides in Montana in 2021/2022 was nearly twice as high as previous years, the overlap in confidence intervals across all time periods indicates there are no statistical differences.

Discussion

The suicide rate among children in Montana was nearly three times the national child suicide rate from 2013 to 2022 (Figure 2). The suicide rate among

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adults in Montana was also higher, but not quite double, the national adult suicide rate during this same time period.[1] This shows that Montana's high suicide rate is disproportionately affecting children.

It is difficult to determine from the results of this analysis what is driving the high child suicide rate in Montana. Access to firearms may be a contributing factor since firearms account for a higher proportion of suicide deaths among MT children than among all children in the U.S. (Figure 1). Social isolation associated with the COVID-19 pandemic may also be a factor in Montana's high child suicide rate since there were more child suicides in Montana during 2021 and 2022 than there were in earlier years (Table 1). There was also a large difference in child suicide rates between metropolitan counties and rural counties in Montana but a much smaller difference between metropolitan and rural counties in the US overall (Figure 2). Perhaps the social isolation and lack of access to mental health care associated with living in Montana's rural counties may be a contributing factor as well.

The Youth Risk Behavior Survey, a school based survey of high school students, revealed that depression and other mental health problems are very common among Montana teens. In 2021, 41% of high school students in Montana reported feeling

Table 1. Number of Children Ages 10-17 who Died by Suicide, Montana Resident, 2013-2022

Demographics*	Number	%	Risk Factors†	Number	%
All	137	100	Substance Abuse	46	35
Years: 2013-2014	22	16	Maltreatment	32	24
2015-2016	27	20	Death of Friend or Family Member	30	23
2017-2018	22	16	Talked about Suicide	39	30
2019-2020	24	18	History of Prior Self-harm	26	20
2021-2022	42	31	History of Running Away	13	10
Race: AI/AN	29	21	Depression**	20	15
All other Races	108	79	Other Mental Health Condition¥	22	17
Sex: Male	94	69	Displayed Severe Emotional Distress	12	9
Female	43	31	Behavioral Change	21	16
County: Metropolitan	42	31	Crisis within 30 days of Death	21	16
Micropolitan	30	22	**Protective Factors†**		
Rural	65	47	Involved in Sports	18	14
Has a Disability†	56	42	Involved in Other Activities	16	12

* Data come from the Montana Office of Vital Records and include data collected on the death certificate.

† Data come from the CFRP and only includes deaths with a completed review at the time of this report. Total number of deaths used to calculate % for these measures was 132.

**Includes children who have been diagnosed by a professional with a depressive disorder.

¥Includes children who have been diagnosed by a professional with any of the following: anxiety, bipolar, eating disorder, substance use disorder, conduct disorder, or another mental health condition.

sad or hopeless almost every day for 2 or more weeks in a row during the past year.[8] In the same year, 22% of students reported they “seriously considered attempting suicide” and 18% reported that they had made a plan about how they would attempt suicide.[8] Undiagnosed or untreated mental health conditions may also be a contributing factor as less than 20% of children who died by suicide were reported to have a previous diagnosis for depression or other mental health conditions (Table 1). The U.S. Surgeon General released an advisory on youth mental health in 2021 detailing the need to protect youth mental health and making recommendations for actions that can be taken by all sectors of society: young people, family and caregivers, schools, healthcare, media and entertainment companies, social media, and community organizations.[9] Many valuable resources for supporting youth mental health are available at the Surgeon General’s youth mental health website.

Parents, teachers, and other adults who interact with youth can also help by being watchful for certain risk factors for suicide. Changes in eating or sleeping patterns, mood changes such as irritability, anger, or withdrawal, and recent traumatic events can be warning signs for suicide. Of the 132 children with data from the CFRP, 35% had a history of substance abuse, 23% experienced a recent death in their family or friends, and 30% talked about suicide before completing suicide (Table 1). If an adult notices risk factors for suicide, they can help by remaining calm, asking the child if he or she is thinking about suicide, listening carefully, providing reassurance, and seeking professional help.[10]

References

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