

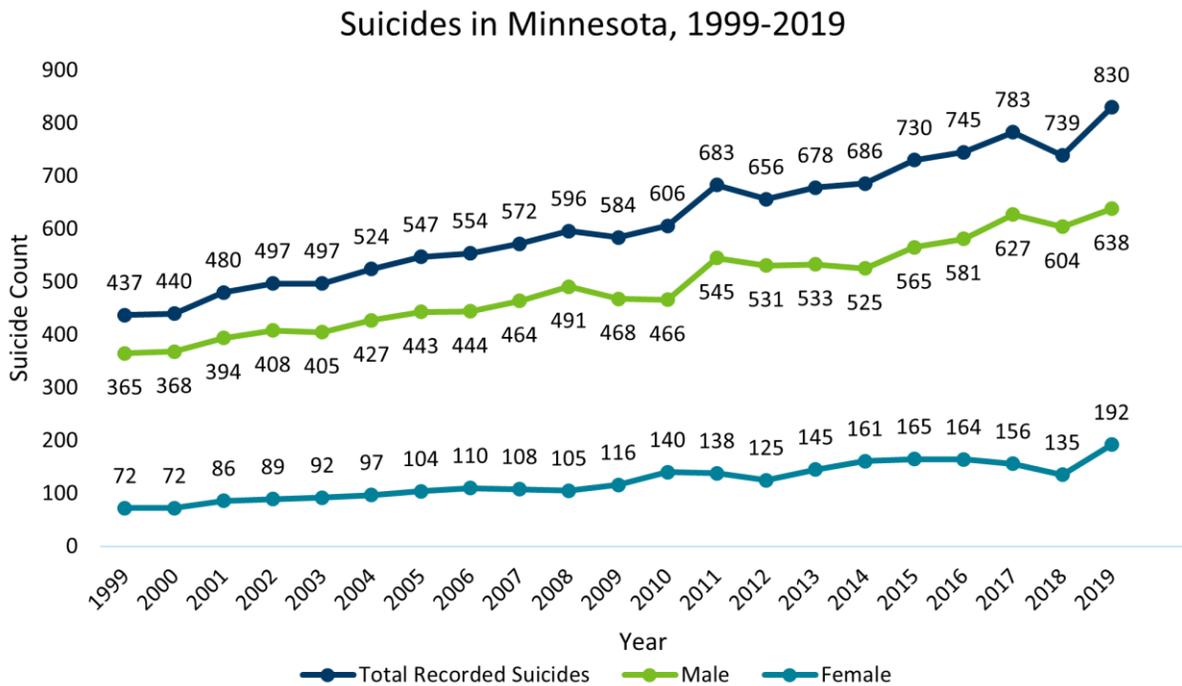


# Suicides in Minnesota Show Racial and Demographic Disparities

## Executive Summary

### Suicides in Minnesota Hit Record High in 2019, Disparities Persist

Suicide, or death by intentional self-harm, is the eighth leading cause of death in Minnesota<sup>1</sup>. With 830 suicides, the 2019 calendar year marks the highest annual count ever recorded in Minnesota, and continues a 20-year increasing trend.



## Notable Findings and Disparities

- American Indians were about 3-times more likely to die by suicide than other racial groups, with a suicide rate of 37.5 per 100,000.
- Males accounted for 77% of suicides in 2019 and were more likely to die using firearms.
- Females were most likely to die by poisoning or suffocation.
- The age group with the highest suicide rate is age 45-54 (20.5 per 100,000).

<sup>1</sup> CDC WONDER Underlying Cause of Death statistics <https://wonder.cdc.gov/Deaths-by-Underlying-Cause.html>

## Background

Suicide, or intentional self-harm, is the eighth leading cause of death in Minnesota.<sup>2</sup> Previous reports of suicides in Minnesota have documented a consistent, decade-long increasing trend in the number of suicides each year, similar to trends across the United States. While the immediate cause of each suicide is not always clear and varies from person to person, suicides are preventable and more study is required to identify patterns that will allow prevention efforts to be most effective. This report provides insight into some of those patterns to support prevention efforts.

## Minnesota's Suicide Prevention Efforts

Minnesota's suicide prevention efforts are based on the evidence that suicides are preventable, mental illness is treatable, and recovery is possible. The goals of the Minnesota Suicide Prevention Plan include:

- Supporting healthy and empowered individuals, families, and communities to increase protection from suicide risk.
- Coordinating the implementation of effective programs by clinical and community preventative services providers to promote wellness, build resilience, and prevent suicidal behaviors.
- Promoting suicide prevention as a core component of health care services.
- Increasing the timeliness and usefulness of data systems relevant to suicide prevention and improving the ability to collect, analyze and use this information for action.
- Sustaining suicide prevention efforts.

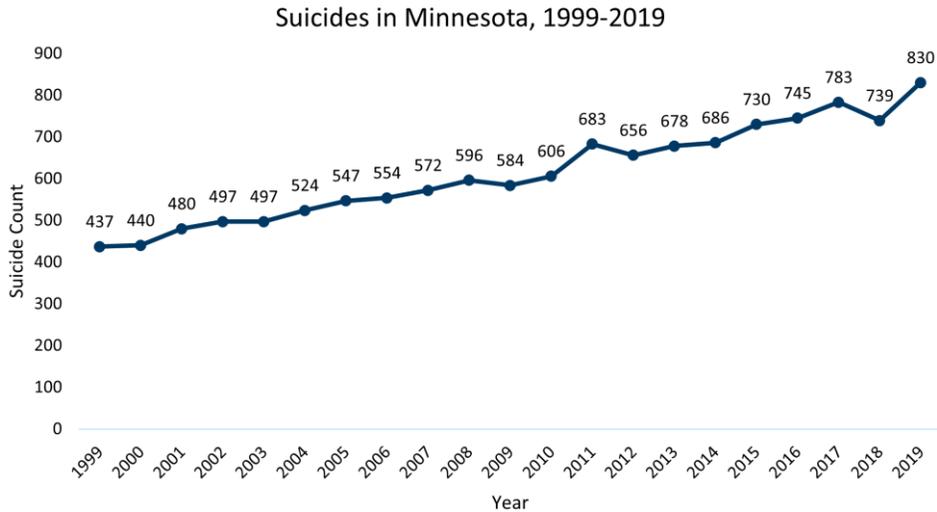
## Suicides in Minnesota, 1999-2019

In 2019, Minnesota had a record high number of suicides with 830, marking the first time more than 800 Minnesotans died by suicide. The lowest annual suicide count in Minnesota over the past 20 years was 437 in 1999. In the years since there have been only 3 instances where the number of suicides decreased from one year to the next. New records for suicides were set each year from 2005 to 2008, 2010, 2011, and 2015 through 2017.

---

<sup>2</sup> CDC WONDER Underlying Cause of Death statistics <https://wonder.cdc.gov/Deaths-by-Underlying-Cause.html>

**Figure 1. Suicides Reach New Annual High in 2019**

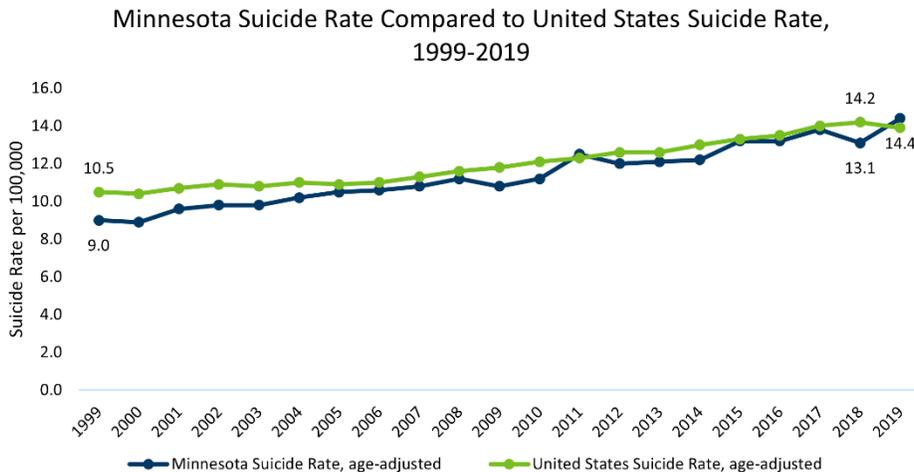


Furthermore, the rate of suicides per 100,000 people in Minnesota was higher in 2019 than ever before. Calculating the suicide rate allows for valid comparisons of suicide counts over time, controlling the influence of increasing (or decreasing) population sizes.

For example, consider the year 2000 when Minnesota had its lowest suicide rate in the past 20 years. Since 2000, Minnesota’s population has increased from about 4.9 million to 5.6 million. Had the 2000 rate of suicide been maintained (8.9 per 100,000), there would have been 502 suicides in 2019. The difference between this hypothetical scenario and reality is 328 suicides.

Further adjusting for changes in the age distribution of the population produces Figure 2 below. Using these rates, if Minnesota had maintained the rate of suicides in 2000 (8.9 per 100,000, the lowest in the past 20 years) there would have been approximately 3,000 fewer suicides.

**Figure 2. Suicide Rate Reached a New Annual High in 2019**



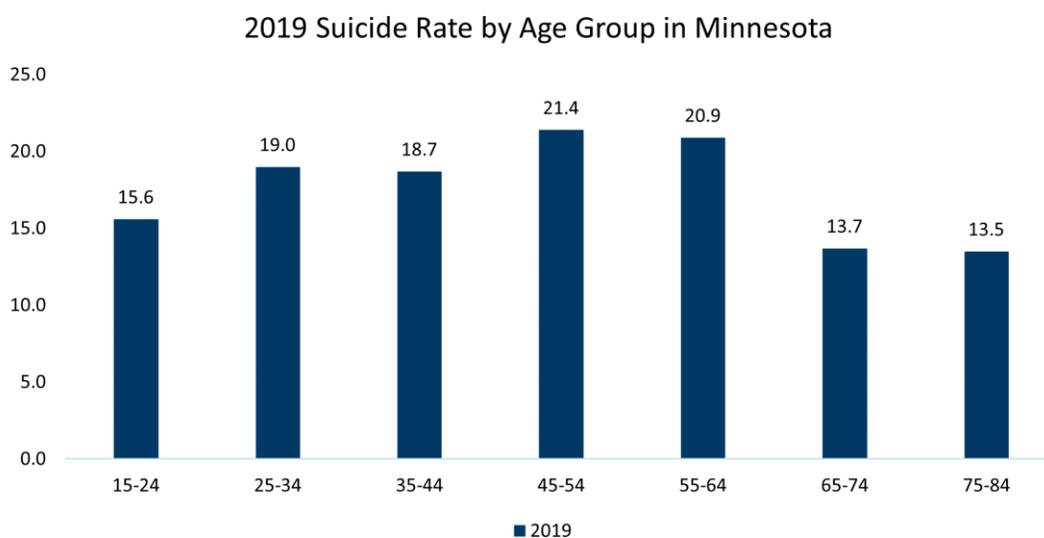
## Suicide Rates Vary by Age

The age of individuals who died from suicide in 2019 ranged from 10 to 91 years with an average of 45.3 years and a median of 45 years. The age group with the largest number of suicides was adults aged 55-64 years (158).

In 2019, adults aged 45-54 years had the highest rate of suicide (21.4 per 100,000) followed by adults aged 55-64 years (20.9 per 100,000). By contrast, adults over 65 years had a suicide rate of about 13.6.

Due to the differences in rates of suicide by age group, comparisons of other groups must be adjusted for the age of the population.

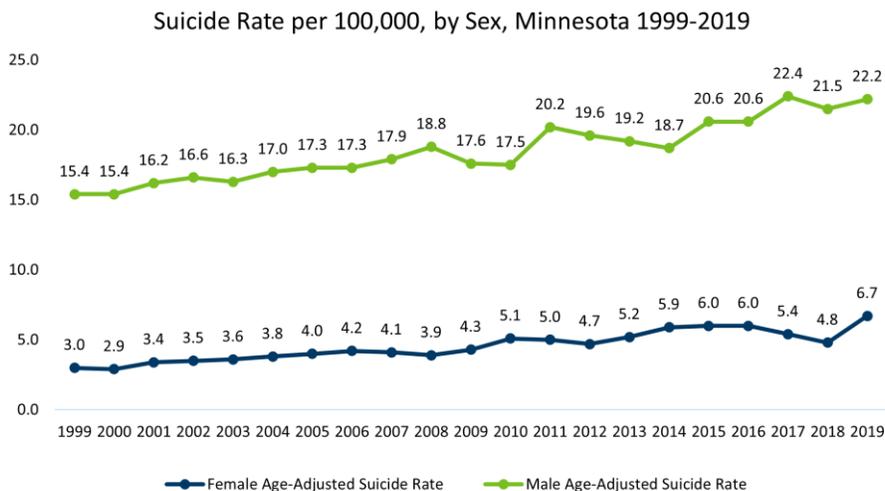
**Figure 3. Suicide rates differ by age, highest rates among 45-64 years**



## Male/Female Disparities in Suicide

Males have consistently had suicide rates between 3-5 times higher than those of females since 1999. (See Figure 4.) However, the 2019 suicide rate among females is more than double the rate of suicide in 2000 (6.7 vs. 2.9 per 100,000). Over that same timeframe, rates of male suicide increased from 15.3 to 21.8 per 100,000.

**Figure 4. Rate of suicides among males is 3-5 times higher than females.**



Rates were age-adjusted using the US 2000 Standard Population

## Racial and Ethnic Disparities in Suicide

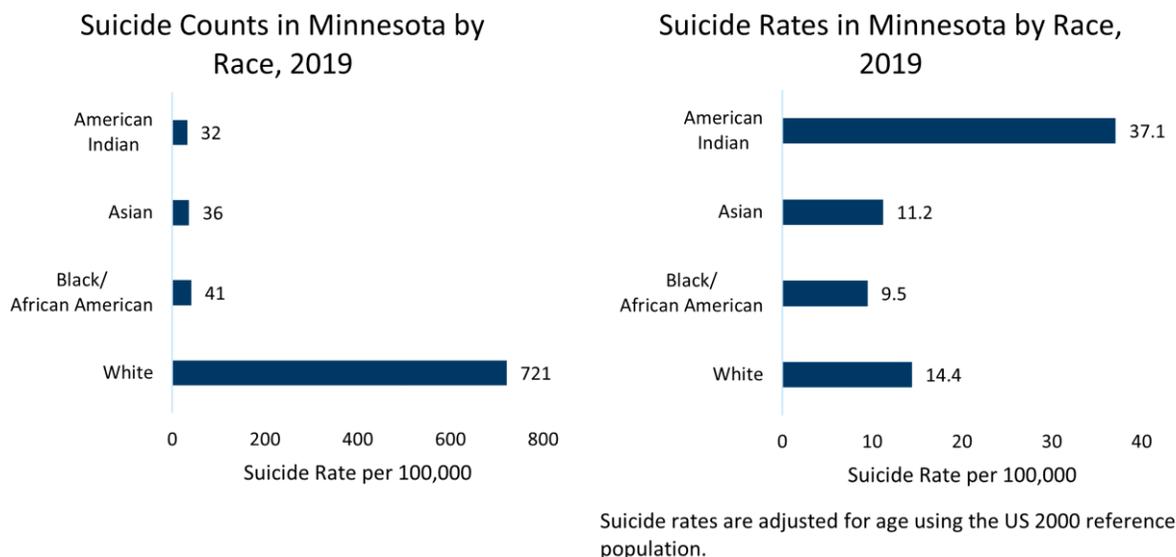
In 2019, suicides were not equally distributed among racial groups in Minnesota. White/Caucasian people represented 86% of suicides (703 out of 821), while making up 84% of all Minnesota residents<sup>3</sup>. American Indians represented 3.4% of all suicides but make up 2.2% of all residents.

When these patterns are translated to suicide rates these differences become starker. In the charts below it is clear that while the number of suicides in Whites is much higher than all other racial groups, the rate of suicide in American Indians is 2-4 times higher than that of other racial groups. Looking at the trend in suicide rates over time (data not shown), 2019 is not unique in this regard.

Regarding Hispanic ethnicity, Hispanic Minnesotans represented 19 (2.3%) suicides in 2019. This translates to an unadjusted suicide rate of 6.0 per 100,000. Non-Hispanics made up 802 (97.7%) of suicides, or 15.1 per 100,000 population.

<sup>3</sup> <https://www.census.gov/data/tables/time-series/demo/popest/2010s-state-detail.html>

**Figure 5. Whites represent the majority of suicides, but suicide rates are markedly higher in American Indians.**



## Mechanism of Suicide, preliminary

Mechanism of suicide was analyzed using the primary cause of death noted on death certificates because it provided more detail than CDC WONDER. As of the writing of this report, however, death certificate data was still considered preliminary.

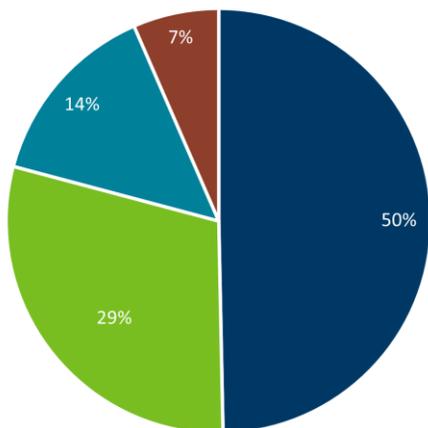
The most common mechanism of suicide in Minnesota in 2019 was intentional self-harm by firearm (354, 43%). Suffocation and poisoning made up 31% and 20% of suicides, respectively<sup>4</sup>. These 3 mechanism combined to make up 93.8% of all suicides in Minnesota.

However, males and females tended to use different mechanisms for suicide in 2019 as shown in the pair of charts below. Males were much more likely than females to use firearms (50% vs. 22%), whereas females were more likely to use poisoning than males (38% vs. 14%).

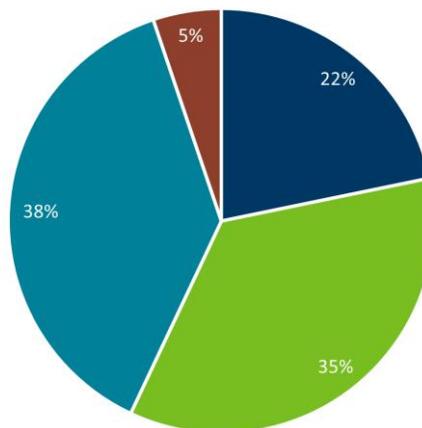
---

<sup>4</sup> Suffocation includes drowning, hanging, and other means of denying oxygen to the body. Poisoning includes both legal and illegal drugs, alcohol, household chemicals, carbon monoxide, and other means of ingesting or inhaling toxic substances.

Mechanism of Suicide, Males  
n=628



Mechanism of Suicide, Females  
n=193



- Firearm
- Suffocation
- Poisoning
- Other

## Conclusion

Suicide continues to be a growing problem in Minnesota. New records for suicides were set each year from 2005 to 2008, 2010, 2011, and 2015 through 2017, and 2019 has set another new record, continuing a troubling trend. Only a small portion of these increases are due to the growing Minnesota population, as shown by increasing suicide rates over time.

These suicides disproportionately affected males, American Indians, and people age 45-64. Males made up 76% of suicides and were twice as likely to die by firearm. American Indians represent a special population in the sense that they make up a small minority of overall suicides, but have rates of suicide (adjusted for population size) 3-4 times higher than other racial groups. These details and patterns can be used to guide prevention efforts and policy decisions.

Further concerning is that these counts and rates are likely an underestimate for a variety of reasons. Often it is not clear if the nature of death is accidental or suicide, i.e. whether the decedent intentionally ended their life. Individuals completing death certificates may default to considering a death accidental in the absence of clear intent. For example, if a person is found dead, alone in their home, with drug paraphernalia around them, this will likely be considered an accidental overdose unless a suicide note or other explicit sign of suicide is found.

All of this leads to the conclusion that suicide is a growing problem in Minnesota. For 20 years there has been an increasing trend in suicide, underscoring the need for significant interventions throughout society and across a variety of gender, racial, and age groups.

## Methodological Notes

### Data Sources

All data in this report except for the Mechanism section was gathered from CDC's WONDER reporting tool. Data begin in 1999 because International Classification of Diseases 10 (ICD-10) coding for mortality data was implemented in 1999.

([https://www.cdc.gov/nchs/icd/icd10cm\\_pcs\\_faq.htm](https://www.cdc.gov/nchs/icd/icd10cm_pcs_faq.htm)) Within WONDER, suicide was defined as the following ICD-10 codes: U03, X60-84, and Y87.

Age adjustments were made using the standard US 2000 population was used. Details on this population are available from CDC WONDER at

<https://wonder.cdc.gov/wonder/help/ucd.html#2000%20Standard%20Population>.

### Analysis of Racial Groups

Racial groups for this report were based on bridged race categories defined by CDC WONDER reporting tool. American Indian and Alaska Native are combined in a single category, though all suicides among individuals in those groups were identified as American Indian. However, there are expected to be a relatively low number of Alaska Natives in Minnesota so any effect on the rates of this group is expected to be small. All nationalities of Asian descent were included in the Asian category, as were Native Hawaiian and other Pacific Islanders, again for consistency with Census Bureau data. This includes the following nationalities, with associated suicide counts: Asian Indian (3), Chinese (1), Filipino (2), Japanese (1), Korean (3), Vietnamese (1), and Other Asian (24). Multi-race individuals were included in a single-race category according to the National Center for Health Statistics methodology. Details are available at

[https://www.cdc.gov/nchs/nvss/bridged\\_race.htm](https://www.cdc.gov/nchs/nvss/bridged_race.htm).

### Suggested Citation

Gingerich SB, Roesler J, Carter T. Suicides in Minnesota Show Racial and Demographic Disparities, 2019 Report. Saint Paul, MN: Minnesota Department of Health, January 2021.

Minnesota Department of Health  
Injury and Violence Prevention Section  
85 East 7<sup>th</sup> Place  
PO Box 64882  
St. Paul, MN 55164  
[stefan.gingerich@state.mn.us](mailto:stefan.gingerich@state.mn.us)  
[www.health.state.mn.us](http://www.health.state.mn.us)

January 28, 2021

*To obtain this information in a different format, call: 651-201-5484.*