



Death by Suicide Ottawa County, MI

2010-2022

Ottawa County suicide data for deaths reported in 2022 is considered provisional while Vital Records data are finalized. Substantial changes to 2022 data in this report are not expected; however, data from recent years may vary slightly from previous reports due to updates and finalization of Vital Records data. At the time of publication, 2022 suicide data for Michigan and the United States were considered provisional.

This report contains small numbers. Because the number of events overall and within subgroups may change considerably from year to year, caution should be taken when interpreting this data and when using it to build and inform programming.

Table of Contents

Overview of Suicide.....	3
Number and Rate of Suicides.....	5
Characteristics of People Who Died by Suicide (All Ages), 2010-2022.....	7
Death by Suicide by County Quadrants.....	17
Means of Death by Suicide.....	19
Teen Death by Suicide, 2010-2022.....	21
References.....	27
Methods.....	28
Resources	31

Overview: Suicide in Ottawa County

- In 2022, 36 Ottawa County residents died by suicide.
- Over the last 33 years, suicides in Ottawa County have been increasing, even after accounting for population increases; however, over the last six years the rate of suicide (per 100,000 people) has stabilized, and there is little evidence of a recent increase or decrease in the rate of suicide in Ottawa County.
- Since 2000, Ottawa County suicide rates have been consistently lower than Michigan and the United States.
- Groups of people in Ottawa County with higher suicide rates compared to Ottawa County overall are:
 - Veterans
 - Males
 - People 50 years and older
 - White, non-Hispanic people
 - Residents of the northwest and southwest quadrants of the County
- Veteran deaths by suicide in Ottawa County decreased from 2021 to 2022, from eight to three deaths, respectively.
- From 2010-2022, most veteran suicides were among those 50 years and older.
- Ottawa County suicide rates are similar to Michigan for 10-19, 40-49, 50-59, and 60-69 year age groups.
- The most common means of death by suicide is the use of a firearm, especially among males and people 70+ years of age.
- Over the last decade, about three teen suicides occurred each year. In 2022, there were three teen suicides – one in a teen 13-16 years of age and two among teens 17-19 years of age. In 2021, one teen suicide occurred.

Overview: Suicide in the United States and Michigan

Background

Suicide continues to be a leading cause of death in the United States and in Michigan, with a substantial social and financial toll on the community. The considerable impact of suicide has led the Centers for Disease Control and Prevention (CDC)¹ and the World Health Organization (WHO)² to recognize suicide as a public health priority. As a public health priority, Healthy People 2030 has set a goal to reduce suicide by 10% over the next decade.³

Statistics

In the United States, suicide rates increased from 2000-2018, decreased for two years from 2019-2020, and then increased 4.1% in 2021.⁴ In 2021, suicide was among the top 9 leading causes of death for people aged 10-64 years. Suicide was the second leading cause of death for people 10-14 and 20-34 years of age.⁵

Similar to the United States, suicide rates in Michigan have also increased (up 16% from 2012-2021).⁶ Suicide is the second leading cause of death among youth and young adult age groups (10-14 and 20-34 years old) in Michigan.⁷

At-Risk Populations

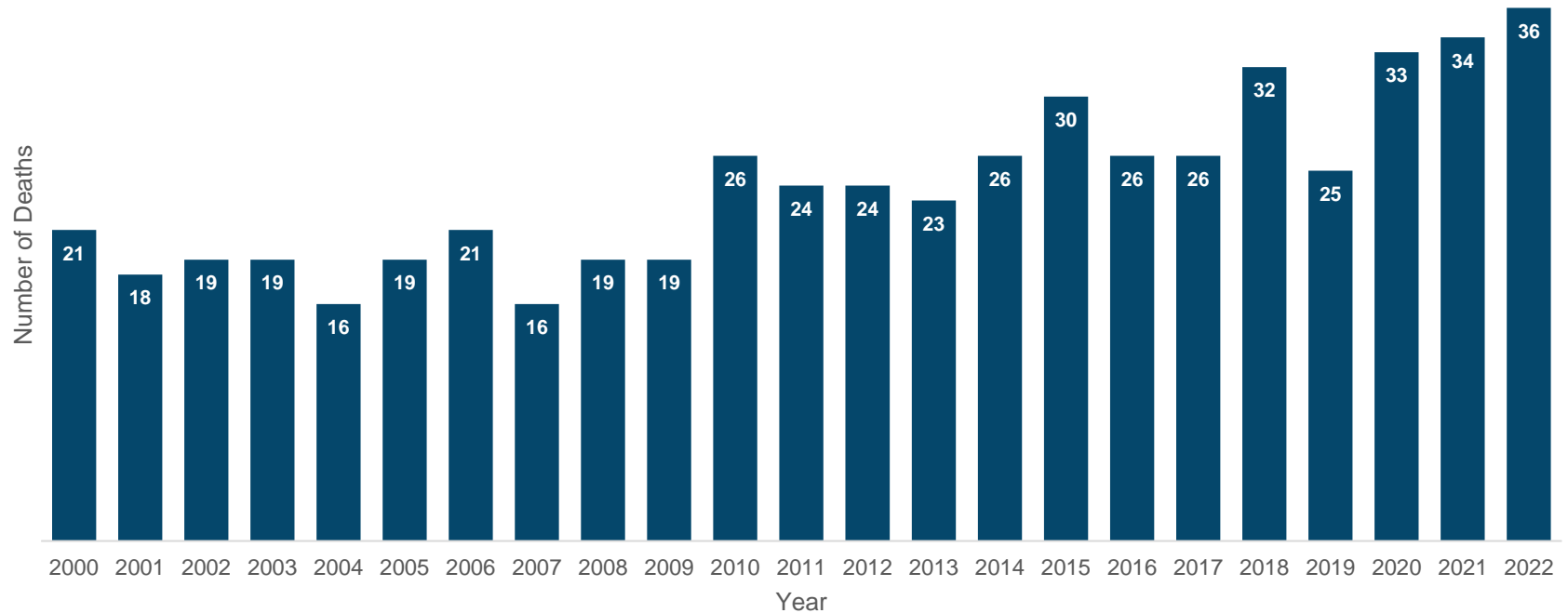
According to the CDC, veterans, people who live in rural areas, sexual and gender minorities, middle-aged adults, people of color, and tribal populations may be at higher risk for factors associated with suicide.⁸

Similar risk factors are noted in Michigan with males, adults aged 20-39 and 50-59 years of age, tribal populations, people of color, lesbian, gay, bisexual, and transgender (LGBT) youth, and veterans at increased risk of death by suicide.⁶

Prevention

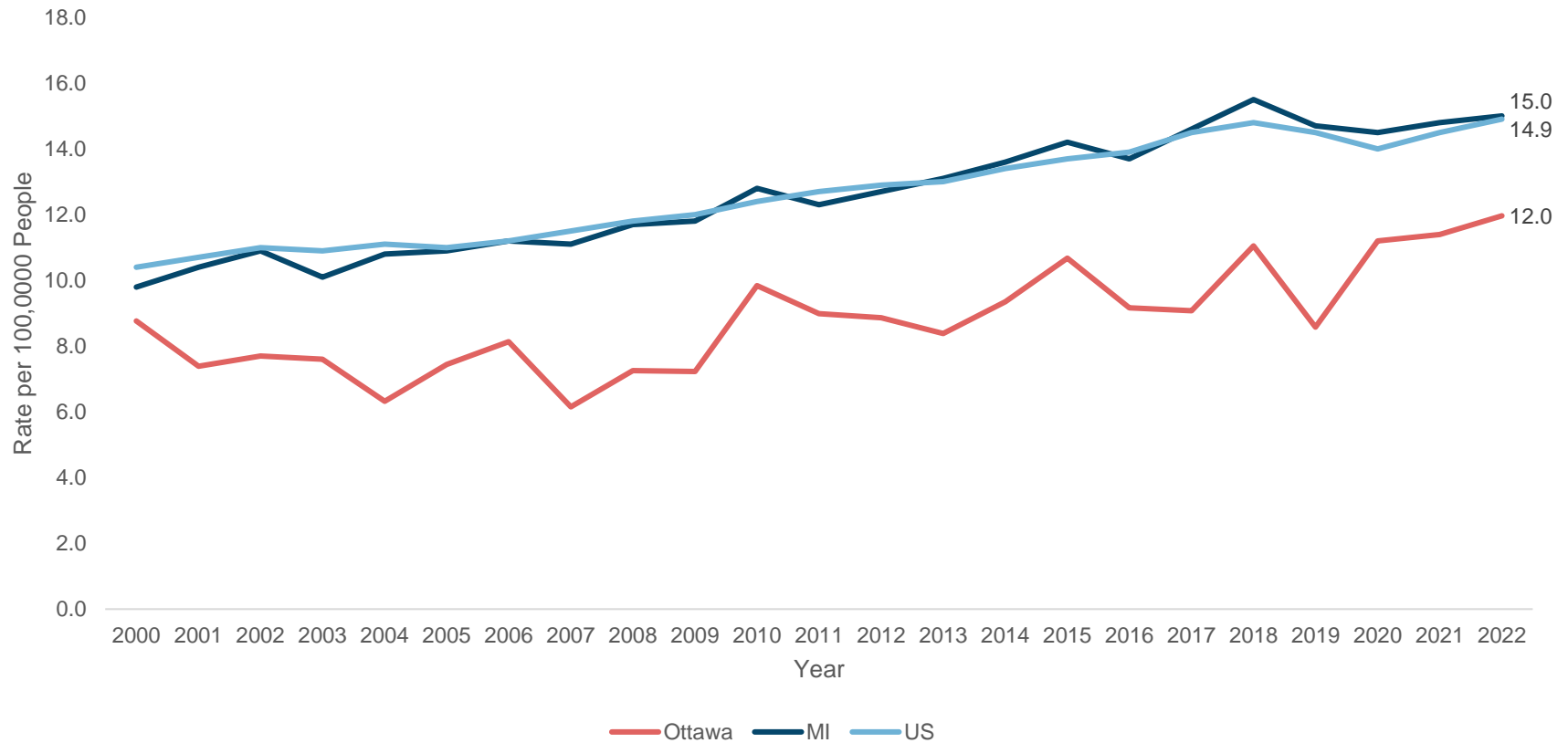
The CDC and State of Michigan have both provided strategic frameworks or recommendations for addressing suicide. Recommended prevention efforts from both organizations include comprehensive approaches, broad partnerships and collaboration, and prioritization of data and research.^{9,10}

Number of Deaths by Suicide, Ottawa County, 2000-2022



In 2022, 36 Ottawa County residents died by suicide, more than any previous year going back to 2000. Over the last two decades the number of suicides has increased; however, the population of Ottawa County has also seen rapid and sustained growth.¹¹ To account for changes in population growth and to allow for comparison between groups, a suicide rate is used. The Ottawa County rate of suicide over time is illustrated on the next slide and includes comparisons to the United States and Michigan.

Death by Suicide Rates from 2000-2022



Note: Prior to 2010, most years had fewer than 20 deaths by suicide reported among Ottawa County residents, which may reduce the stability of rates calculated for those years.

While the rate of death by suicide remains lower in Ottawa County than in Michigan and the United States, data indicate that as of 2022, there is a statistically significant increase in the annual number of suicides in Ottawa County over the past 33 years (1990-1999 not displayed here). Although a long-term increasing trend exists, over the last six years, no upward or downward trend was detected, suggesting that the overall suicide rate has been stabilizing in Ottawa County.

Among the largest counties in Michigan, Ottawa County continues to be one of the fastest growing. From 2020-2022 Ottawa County experienced the largest percent growth (1.34%) of the top ten most populous counties in Michigan.¹² To account for population changes, it is best to utilize the rate of suicide, rather than the number of suicides to monitor or detect changes over time.

Characteristics of People
Who Died by Suicide (All Ages)
Ottawa County, MI

2010-2022

Characteristics of People Who Died by Suicide, 2022

Age Group	Count	%	Means	Count	%	Month	Count	%
<20	3	8%	Firearm	14	39%	January	1	3%
20-29	7	19%	Hanging	13	36%	February	3	8%
30-39	8	22%	OD/Poison	8	22%	March	5	14%
40-49	6	17%	Asphyxia	0	0%	April	4	11%
50-59	5	14%	Drowning	0	0%	May	2	6%
60-69	7	19%	Other	1	3%	June	3	8%
70-79	0	0%	TOTAL	36	100%	July	1	3%
80+	0	0%				August	5	14%
TOTAL	36	100%				September	5	14%
						October	0	0%
Race/Ethnicity	Count	%	Marital Status	Count	%	November	2	6%
White, non-Hispanic	31	86%	Divorced	5	14%	December	5	14%
Hispanic	3	8%	Married	14	39%	TOTAL	36	100%
Asian	0	0%	Never Married	16	44%			
Black	2	6%	Separated	0	0%	Quadrant*	Count	%
Other	0	0%	Widowed	1	3%	NW	13	36%
TOTAL	36	100%	Unknown	0	0%	NE	8	22%
			TOTAL	36	100%	SW	8	22%
						SE	7	19%
Sex	Count	%	Veteran	Count	%	TOTAL	36	100%
Male	28	78%	Yes	3	8%			
Female	8	22%	No	33	92%			
TOTAL	36	100%	Unknown	0	0%			
			TOTAL	36	100%			

In 2022, most deaths by suicide were among people younger than 50 years of age, White, non-Hispanic people, and males. The most common death by suicide means was the use of a firearm, followed closely by hanging. People that were never married made up 44% of suicides. In 2022, Ottawa County saw three veteran deaths, lower than the eight deaths recorded in 2021. The number of deaths by suicide varied each month, with the most deaths (five each month) occurring in March, August, September, and December. Residents that lived in the northwest (NW) quadrant of Ottawa County experienced the highest proportion of suicides by quadrant.

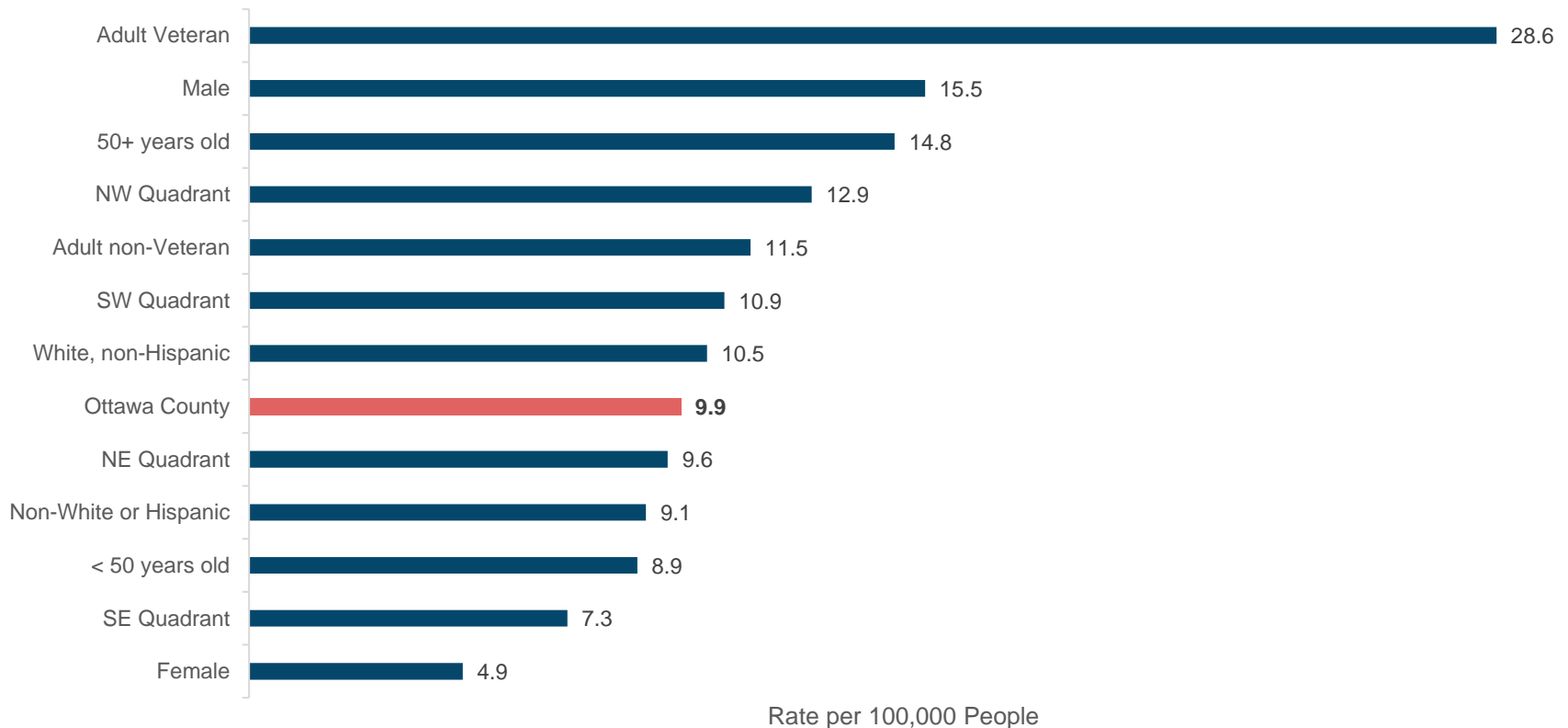
Characteristics of People Who Died by Suicide, 2010-2022

Age Group	Count	%	Means	Count	%	Month	Count	%
<20	35	10%	Firearm	152	42%	January	25	7%
20-29	57	16%	Hanging	103	28%	February	25	7%
30-39	42	12%	OD/Poison	66	18%	March	29	8%
40-49	70	19%	Asphyxia	3	1%	April	38	10%
50-59	83	23%	Drowning	6	2%	May	41	11%
60-69	47	13%	Other	35	10%	June	24	7%
70-79	21	6%	TOTAL	365	100%	July	25	7%
80+	10	3%				August	30	8%
TOTAL	365	100%				September	34	9%
						October	35	10%
						November	27	7%
						December	32	9%
						TOTAL	365	100%
Race/Ethnicity	Count	%	Marital Status	Count	%	Quadrant*	Count	%
White, non-Hispanic	320	88%	Divorced	61	17%	NW	93	26%
Hispanic	28	8%	Married	149	41%	NE	55	15%
Asian	7	2%	Never Married	112	31%	SW	137	38%
Black	7	2%	Separated	1	0%	SE	77	21%
Other	3	1%	Widowed	42	12%	TOTAL	362	100%
TOTAL	365	100%	Unknown	0	0%			
			TOTAL	365	100%			
Sex	Count	%	Veteran	Count	%			
Male	275	75%	Yes	51	14%			
Female	90	25%	No	314	86%			
TOTAL	365	100%	Unknown	0	0%			
			TOTAL	365	100%			

Note: Three decedents were not assigned to a quadrant due to missing address information.

From 2010-2022, 365 people have died by suicide in Ottawa County. Most deaths by suicide were among people younger than 60 years of age, White, non-Hispanic people, and males. The most common death by suicide means was the use of a firearm, followed by hanging and overdose (OD) or poisoning. People that were married made up 41% of all deaths by suicide from 2010-2022, followed by people that were never married (31%). Veterans made up 14% of deaths, contributing 51 suicide deaths over the last 13 years. A slightly higher proportion of suicide deaths occurred in the spring (April-May), consistent with some research that suggests that spring months may be associated with elevated rates of suicide.¹³ Residents that lived in the southwest (SW) quadrant of Ottawa County experienced the highest proportion of suicides by quadrant. See the Methods section for more information about selecting the 2010-2022 time-period for demographics.

Groups With a Higher Burden of Death by Suicide, 2010-2022

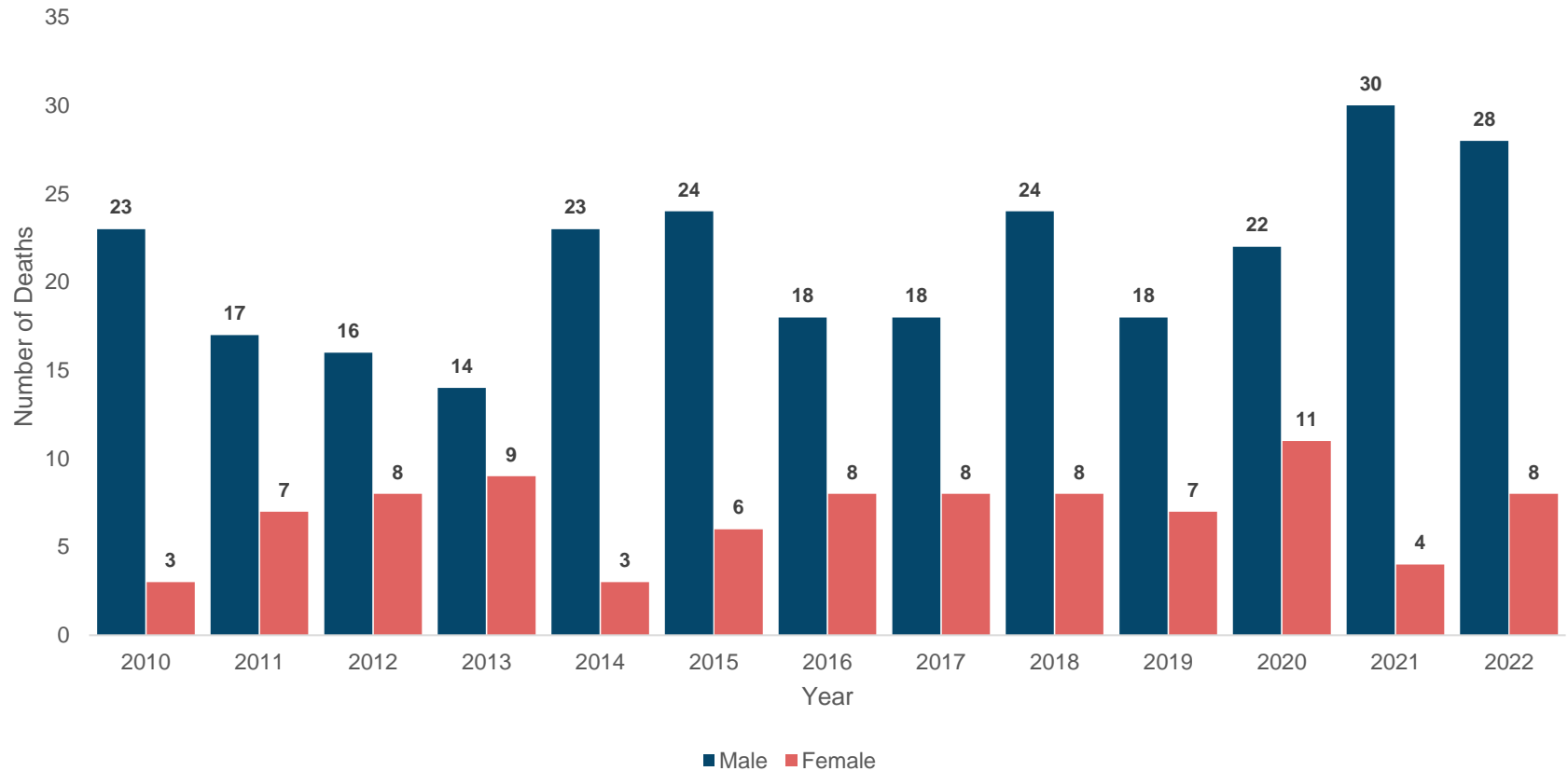


Note: Other racial minority groups are not displayed due to rate instability, a result of too few events to reach statistical stability.

Rates of deaths by suicide that occurred over the last 13 years are illustrated above to show which groups bore more of the suicide burden compared to other groups and Ottawa County overall. Veterans have the highest rate of suicide compared to any other group (28.6 deaths per 100,000 people). The veteran suicide rate in Ottawa County from 2010-2022 is similar to the 2020 national veteran suicide rate of 31.7 deaths per 100,000 people.¹⁴ Other groups with higher rates of suicide compared to Ottawa County overall include males, people aged 50+, people living in the northwest (NW) and southwest (SW) quadrants and White, non-Hispanic people.

Suicide prevention programs tailored to veterans, males, people aged 50+, and possibly to people living on the west side of the County may have a larger impact on reducing suicide rates in Ottawa County.

Sex of Persons Who Died by Suicide, 2010-2022



Most deaths by suicide (75%) among Ottawa County residents from 2010-2022 were among males, similar to Michigan and the Nation.^{9,15} The variation among sexes is likely due to males selecting more lethal means than females. Although more males *die* by suicide, in the United States both male and female adults report *suicidal ideation* at comparable rates.¹⁵ In Ottawa County, teen girls report suicidal ideation at almost twice the rate of teen boys.¹⁶

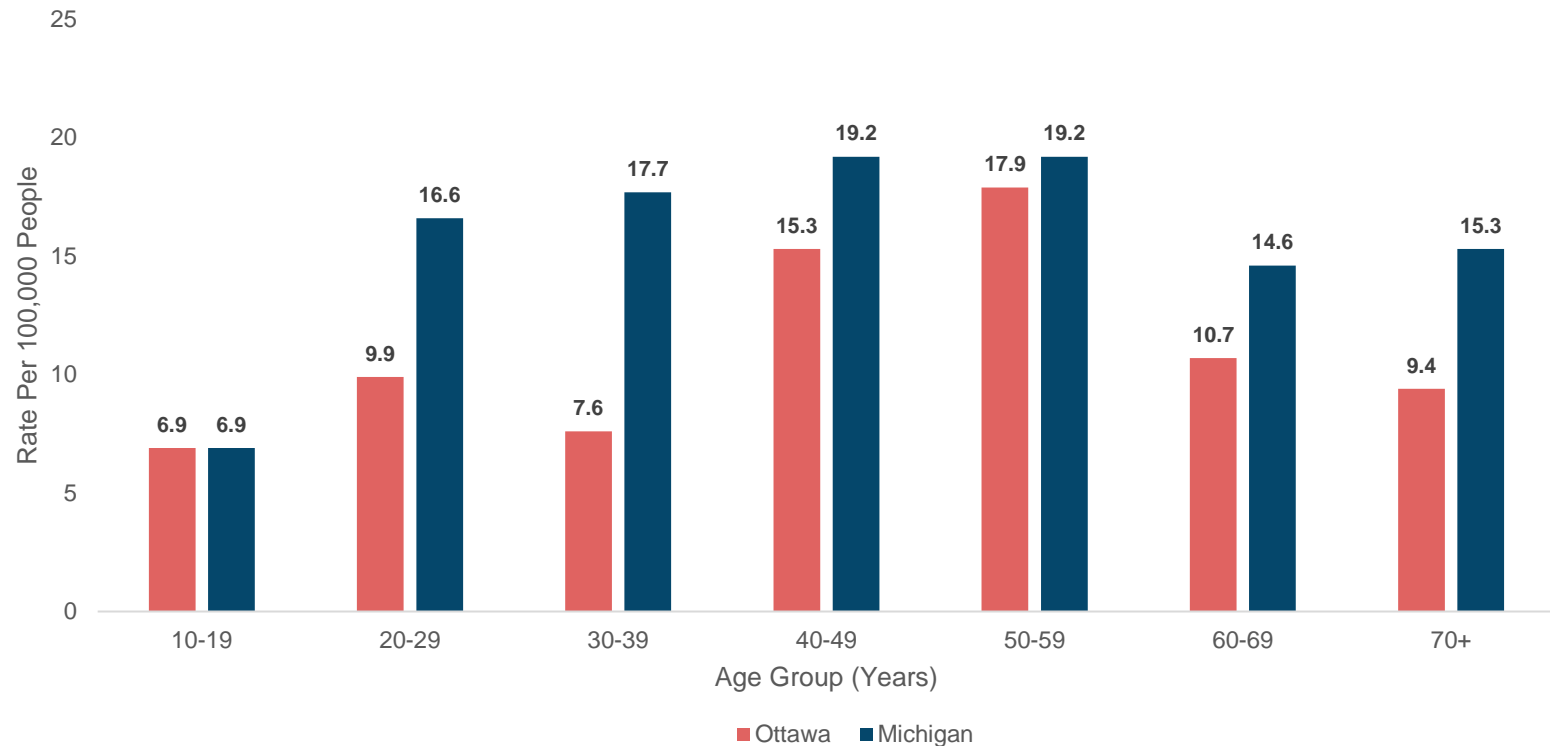
Age of Persons Who Died by Suicide, 2010-2022

Year	<20	20-29	30-39	40-49	50-59	60-69	70-79	80+	Total
2010	1	5	1	6	8	3	1	1	26
2011	2	2	2	4	7	3	3	1	24
2012	1	7	2	5	6	2	0	1	24
2013	2	3	3	7	5	2	1	0	23
2014	3	6	3	4	8	1	0	1	26
2015	5	3	4	3	7	4	2	2	30
2016	4	4	3	3	6	4	2	0	26
2017	2	4	1	6	5	6	2	0	26
2018	6	6	4	8	4	2	1	1	32
2019	2	0	3	6	8	2	4	0	25
2020	3	6	2	4	7	7	3	1	33
2021	1	4	6	8	7	4	2	2	34
2022	3	7	8	6	5	7	0	0	36
Total	35	57	42	70	83	47	21	10	365

In Ottawa County from 2010-2022, the 50-59 and 40-49 age groups experienced more suicide deaths than any other age group, contributing 83 and 70 deaths respectively. Because the underlying population in each age group displayed on this slide varies, suicide rates should be used to account for population differences. See slide 13 for more information on the rate of suicide by age group in Ottawa County.

Most years from 2010-2022 the 30-39 age group experienced four or fewer suicides. However, in 2021 six suicides were reported, and in 2022 eight suicides were reported. For the 30-39 age group, 2021 and 2022 represent the two years with the highest number of annual suicides compared to any year 2010-2022. This age group will be monitored for any potential emerging trends.

Suicide Rates by Age, 2010-2020

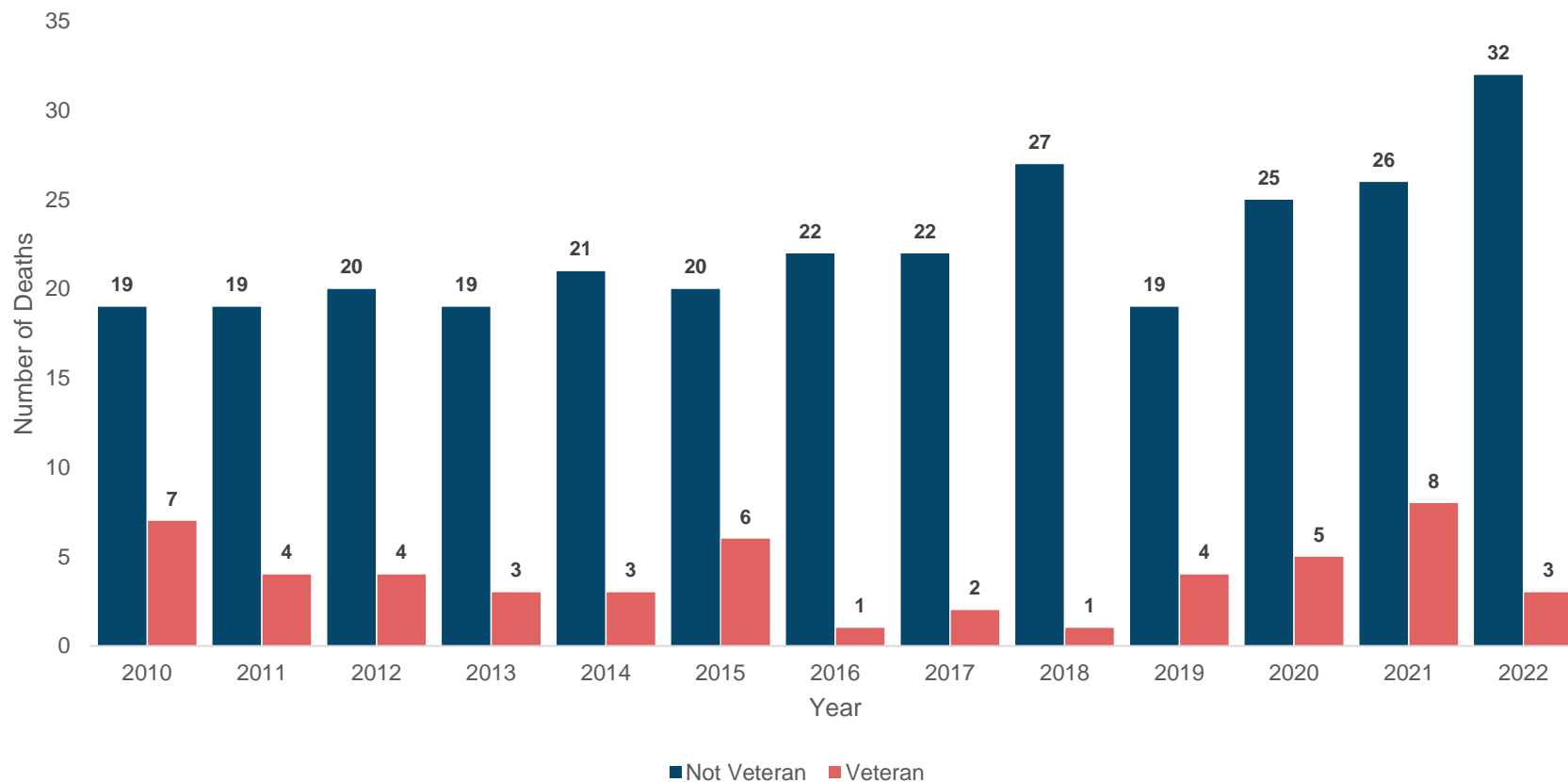


Note: To directly compare Ottawa County and Michigan, data was obtained from CDC Wonder, limiting the latest year of data to 2020.

From 2010-2020, the highest rate of suicide in Ottawa County was among people aged 50-59 years of age, followed by those aged 40-49 and people 60-69 years of age. Rates of suicide among Ottawa County residents aged 20-29, 30-39, and 70+ were similar, ranging from 7.6 to 9.9 deaths per 100,000 people. The lowest rate of suicide in Ottawa County was among people 10-19 years of age at 6.9 deaths per 100,000 people. In Ottawa County, there were no deaths by suicide reported among people in the <10 age group.

Comparing Ottawa County and Michigan, Ottawa County suicide rates are lower than Michigan among the 20-29, 30-39, and 70+ age groups. Ottawa County suicide rates for people 10-19, 40-49, 50-59, and 60-69 years of age are similar to Michigan rates. The 10-19 age group was the only age group in Ottawa County with an equal suicide rate to Michigan (6.9 per 100,000). See the Methods section for more details on statistical comparisons of age groups.

Veteran Status of Persons Who Died by Suicide, 2010-2022

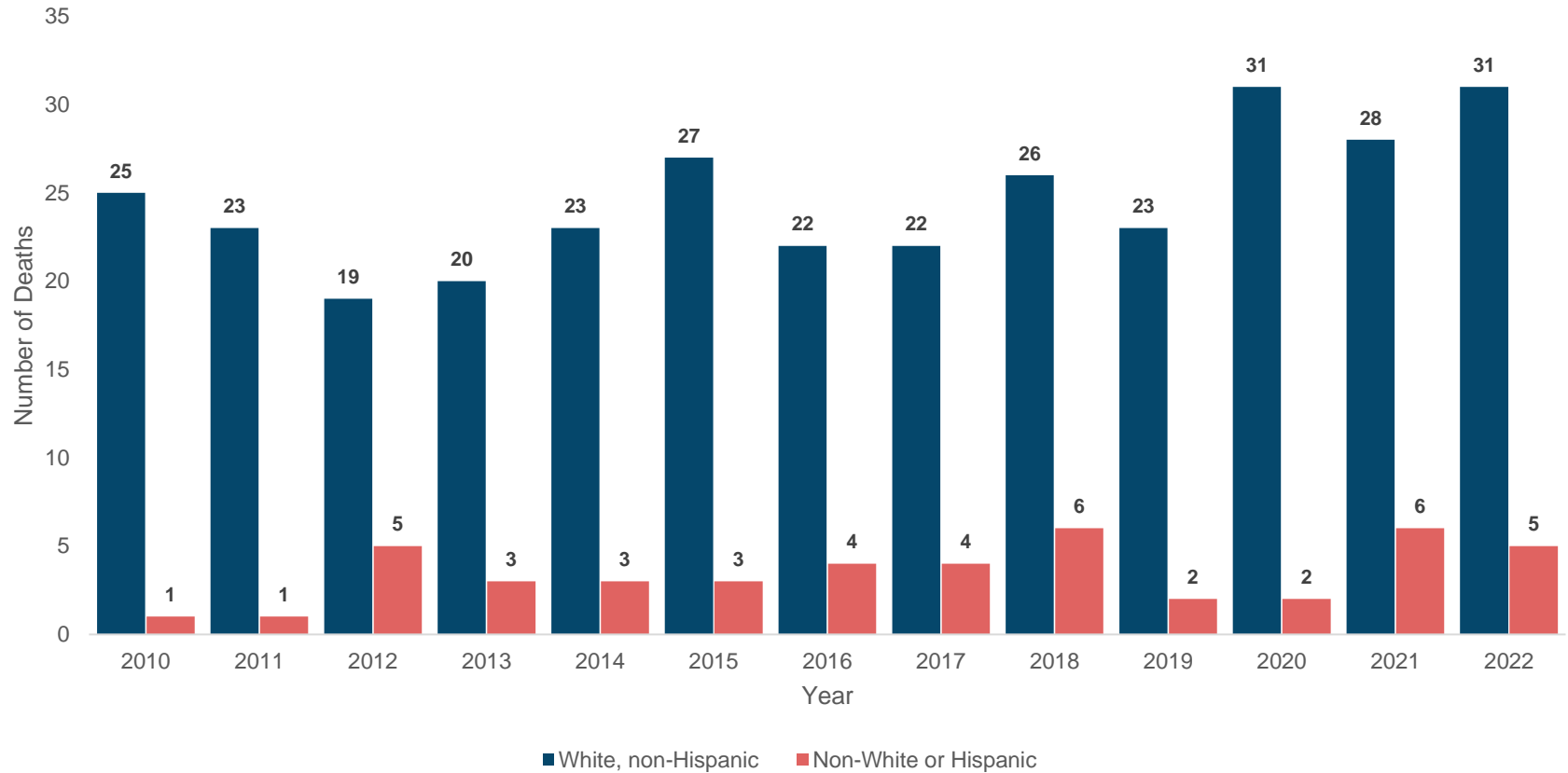


Note: Only decedents 18 years old and older were included in the figure above.

In 2022, three veterans died by suicide in Ottawa County, a lower number than the eight veteran suicides that occurred in 2021. About 12,310 veterans were living in Ottawa County in 2022, or 5.5% of the population; veterans accounted for 8% of all suicides in 2022, a decrease from 2021.

Veterans are substantially affected by suicide at the national level. In the United States in 2020, about 17 veterans died each day by suicide.¹⁴

Race/Ethnicity of Those Who Died by Suicide, 2010-2022



Over the last 13 years most deaths by suicide occurred among White, non-Hispanic people. In 2022, there were fewer (5) deaths by suicide among racial or ethnic minority groups than in 2021 (6). The rate of suicide in White, non-Hispanic people is slightly higher than the County overall and higher than non-White or Hispanic people (slide 10).

Characteristics of Veterans Who Died by Suicide, 2010-2022

Age Group	Count	%	Month	Count	%
<20	0	0%	January	2	4%
20-29	4	8%	February	6	12%
30-39	4	8%	March	2	4%
40-49	5	10%	April	5	10%
50-59	9	18%	May	8	16%
60-69	12	24%	June	2	4%
70-79	10	20%	July	5	10%
80+	7	14%	August	5	10%
TOTAL	51	100%	September	5	10%
			October	4	8%
			November	3	6%
			December	4	8%
			TOTAL	51	100%
Sex	Count	%	Quadrant*	Count	%
Male	50	98%	NW	13	26%
Female	1	2%	NE	7	14%
TOTAL	51	100%	SW	20	40%
			SE	10	20%
			TOTAL	50	100%
Race/Ethnicity	Count	%	*Of residence		
White, non-Hispanic	49	96%			
Hispanic	1	2%			
Asian	0	0%			
Black	1	2%			
Other	0	0%			
TOTAL	51	100%			
Means	Count	%			
Firearm	30	59%			
All Other Means	21	41%			
TOTAL	51	100%			

*One veteran decedent was not assigned to a quadrant due to missing address.

Note: Only decedents 18 years old and older were included in the table above.

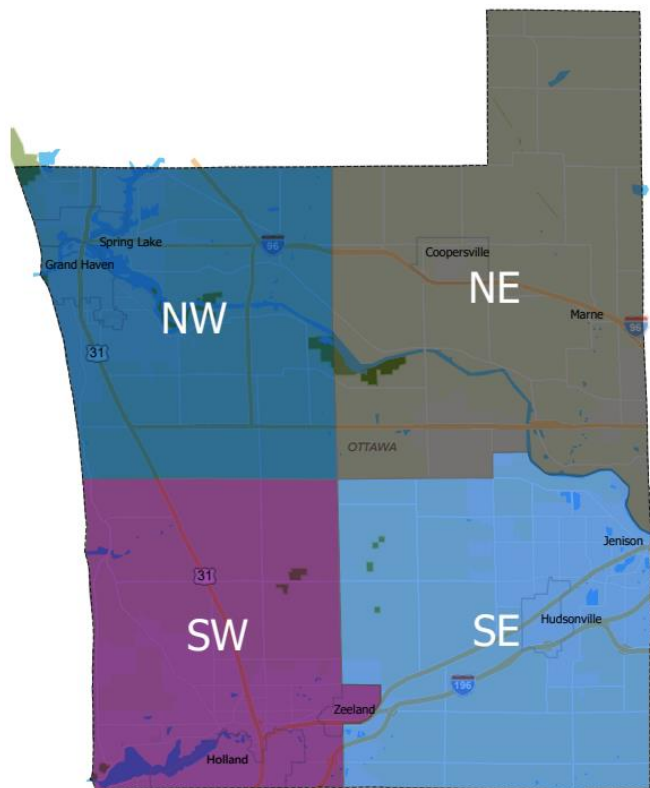
Most veterans who died by suicide from 2010-2022 were aged 50+, male, White, non-Hispanic, and used a firearm as the means of death by suicide. The Ottawa County data shown here also suggest that more veterans died by suicide in May compared to any other month over the last 13 years. Further review of Ottawa County veterans' dates of death in May and June found no evidence of clustering around Memorial Day. Many veterans who died by suicide lived in the northwest (NW) or southwest (SW) quadrants.

Research has found that spring months may be associated with higher rates of suicide.¹³ The same finding may be true in Ottawa County among the general population and among veterans, highlighting spring as a potential time period for more aggressive suicide prevention and promotion of mental health awareness.

Death by Suicide
by County Quadrants
Ottawa County, MI

2010-2022

Death by Suicide Rates by County Quadrant, 2010-2022



Quadrant	Number of Deaths by Suicide	Percent of Deaths by Suicide (%)	Quadrant Percent of Population (%)	Crude Rate (per 100,000 people)
NW	93	25.7	19.9	12.9
NE	55	15.2	15.9	9.6
SW	137	37.8	34.9	10.9
SE	77	21.3	29.3	7.3
Ottawa County	362	100.0	100.0	9.9

Note: Three decedents were not assigned to a quadrant due to missing address information.

Combined, the NW and SW County quadrants contain about 55% of the Ottawa County population. However, from 2010 to 2022, 230 suicide deaths (63.5%) occurred in the NW (25.7%) and SW (37.8%) quadrants. The outsized number of suicides in the west County quadrants resulted in suicide rates of 12.9 per 100,000 in the NW quadrant and 10.9 per 100,000 in the SW quadrant, both slightly higher than the suicide rate for Ottawa County overall (9.9 per 100,000).

Over the last 12 years statistically significant upward or downward trends in the death by suicide rate were not detected in any of the four quadrants. See the Methods section for more information about selecting the 2011-2022 time-period.

Means of Death by Suicide Ottawa County, MI

2010-2022

Means of Death by Suicide, 2010-2020

Demographic	Michigan			Ottawa		
	Firearm	Suffocation	Poisoning	Firearm	Suffocation	Poisoning
Race/Ethnicity						
White, non-Hispanic	51.0%	27.0%	16.3%	42.2%	27.8%	23.2%
Hispanic	40.4%	43.3%	10.3%	*	57.9%	*
Sex						
Female	*	*	*	17.7%	27.8%	46.8%
Male	56.6%	27.6%	9.7%	49.8%	31.2%	13.0%
Age Group (years)						
10-19	38.4%	49.1%	6.9%	*	54.5%	*
20-29	47.1%	37.1%	9.2%	47.8%	30.4%	*
30-39	41.7%	37.2%	14.4%	50.0%	*	*
40-49	44.2%	29.7%	19.4%	*	*	*
50-59	*	*	*	38.6%	28.6%	25.7%
60-69	59.2%	15.7%	18.7%	30.3%	33.3%	30.3%
70+	73.4%	10.0%	12.4%	70.4%	*	*
Overall						
Overall	50.3%	27.8%	15.7%	41.2%	30.3%	22.1%

Note: To directly compare Ottawa County and Michigan, data was obtained from CDC Wonder, limiting the latest year of data to 2020. Due to CDC Wonder suppression standards, percents that are the result of less than 10 events are displayed as *. Also, if suppression of a single cell allows back calculation of the suppressed value, other cells in the group are also suppressed to protect confidentiality.

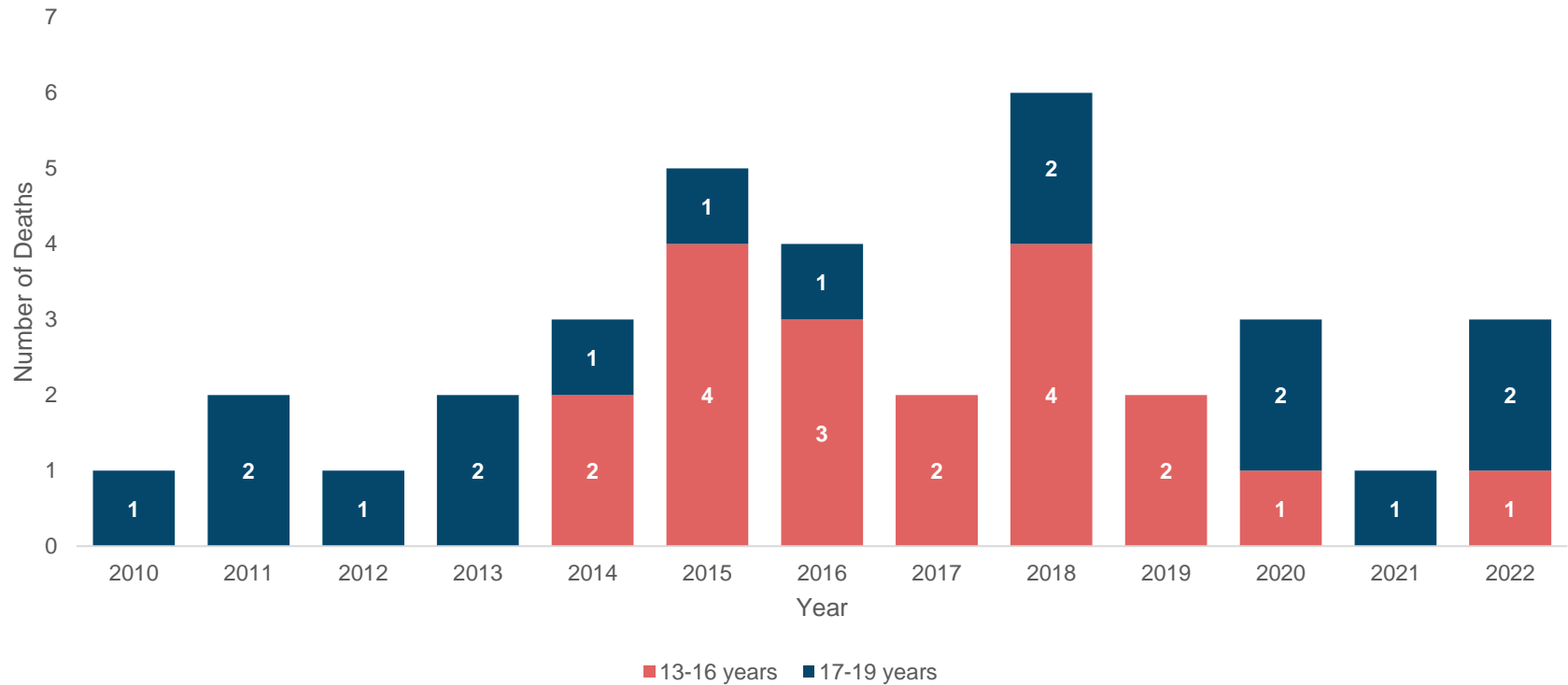
Firearms accounted for 41.2% of Ottawa County deaths by suicide from 2010 to 2020. Males used firearms as a means more frequently than females (49.8% vs 17.7%). Although a larger proportion of decedents used some other means such as suffocation or poisoning, firearms contributed the largest proportion of any single means of death by suicide from 2010-2020. The rate of death by suicide using a firearm in 2022 in Ottawa County was 4.7 per 100,000 residents, lower than the United States rate of 7.0 per 100,000 in 2020 (data not displayed here).¹⁷ Four demographic groups in Ottawa County may have contributed a higher percent of deaths using a specific means. Compared to Ottawa County overall, a higher proportion of people aged 70+ used a firearm (70.4%), a higher proportion of Hispanic people died by suffocation (57.9%), a higher proportion of people aged 10-19 years died by suffocation (54.5%), and a higher proportion of females died by poisoning (46.8%).

Teen Death by Suicide Ottawa County, MI

2010-2022

Teen is defined as a person 13-19 years of age.

Suicide Fatalities Among Ottawa County Teens, 2010-2022



From 2010 to 2022, 35 suicide fatalities occurred among Ottawa County teens. Generally, the number of teen suicides increased each year from 2010 to 2017, peaking in 2018 with six deaths. Suicides in Ottawa County among teens 13-16 years of age occurred every year from 2014-2020 and in 2022. No suicide deaths among Ottawa residents younger than 13 years of age were recorded in the last 13 years.

Ottawa County annual rates of teen suicide were not calculated due to small numbers that would result in rate instability. The rate of teen suicide in Michigan in 2021 was 8.8 per 100,000 persons, lower than the United States teen suicide rate of 9.1 per 100,000 persons.⁷

Characteristics of Teens Who Died by Suicide, 2010-2022

Age Group	Count	%
13-16	19	54%
17-19	16	46%
TOTAL	35	100%

Race/Ethnicity	Count	%
White, non-Hispanic	24	69%
Hispanic	5	14%
Asian	2	6%
Black	3	9%
Other	1	3%
TOTAL	35	100%

Sex	Count	%
Male	19	54%
Female	16	46%
TOTAL	35	100%

Means	Count	%
Firearm	7	20%
Hanging	19	54%
OD/Poison	5	14%
Asphyxia	0	0%
Drowning	2	6%
Other	2	6%
TOTAL	35	100%

Month	Count	%
January	1	3%
February	2	6%
March	4	11%
April	6	17%
May	4	11%
June	2	6%
July	2	6%
August	0	0%
September	2	6%
October	3	9%
November	5	14%
December	4	11%
TOTAL	35	100%

Quadrant*	Count	%
NW	7	20%
NE	9	26%
SW	15	43%
SE	4	11%
TOTAL	35	100%

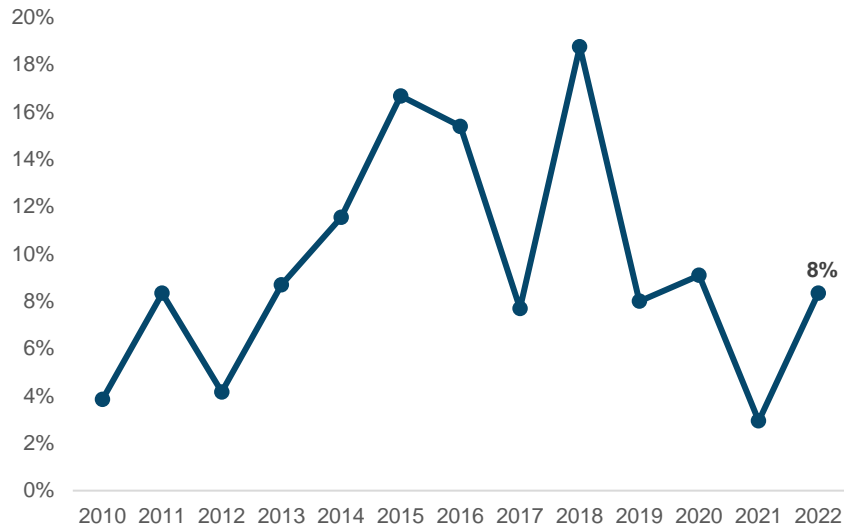
*Of residence

From 2010-2022, most teen deaths by suicide were among White, non-Hispanic teens and those living in the southwest (SW) quadrant of Ottawa County.

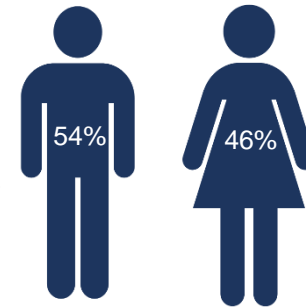
A larger proportion of teen suicides occurred in the spring months of March, April, and May and in the winter months of November and December. Teen suicides are less common in the summer, and over the last 13 years, no teen suicides occurred in August.

Summary of Teens Who Died by Suicide, 2010-2022

Proportion of Ottawa County Suicides Occurring in Teens, 2010-2022



Teen Suicides by Sex, 2010-2022



Means of Death Among Teen Suicide Decedents, Ottawa County 2010-2022

	Females %	Males %	Total %
Means of Death			
Hanging	62.5	47.4	54.3
Firearm	6.3	31.6	20.0
OD/Poison	18.8	10.5	14.3
Other	12.5	10.5	11.4

Generally, the percentage of Ottawa County suicides in teens has decreased since 2018, with teens making up 8% of all suicides in 2022. Since 2010, male teens account for 54% of teen suicides and females have accounted for 46%. The most common means of death by suicide for both male and female teens is hanging, but males tend to use a firearm more often than females, and females tend to use overdose (OD)/poison more often than males.

Depression and Suicidal Behaviors Reported by Teens

	Ottawa County	Michigan*	United States*
	2021	2021	2021
I stopped doing some usual activities during the past 12 months because I felt so sad or hopeless almost everyday for two weeks or more in a row	31.4%	40.3%	42.3%
During the past 12 months, I have seriously thought about attempting suicide	19.5%	19.0%	22.2%
During the past 12 months, I have made a plan about how to attempt suicide	13.2%	16.9%	17.6%
I attempted suicide one or more times in the past 12 months	7.8%	9.0%	10.2%

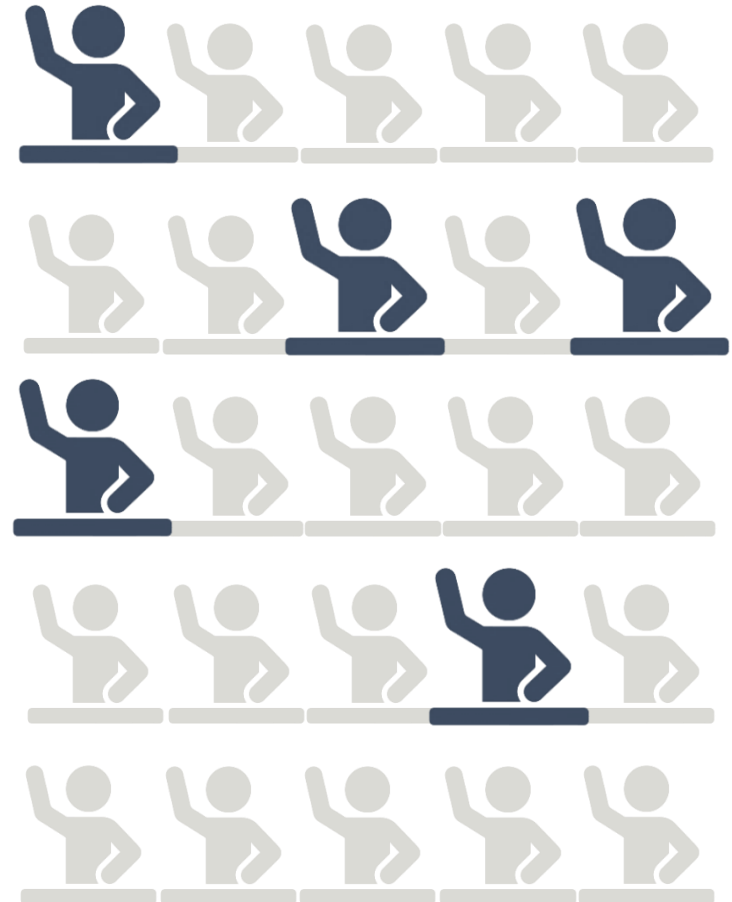
*Data is sourced from the 2021 Youth Risk Behavior Survey (YRBS).

The proportion of Ottawa County teens reporting feeling depressed, seriously thinking about suicide, or making a plan to attempt suicide in the past 12 months has been increasing since 2007 and remained elevated in 2019 and 2021, as did suicide attempt.¹⁶ Although small changes in these outcomes were observed between 2019 and 2021, none were statistically different, suggesting that teens' mental health and suicidal behavior were similar before and during the COVID-19 pandemic. Compared to Michigan teens and teens at the national level, a lower proportion of Ottawa County teens reported depression, making a plan to attempt suicide, and suicide attempt. In general, the percent of Ottawa County teens reporting suicidal ideation was similar to the percent reported by Michigan teens, and slightly lower than teens at the national level. However, national data shows that teen mental health issues and suicidal behavior were elevated at various times during the pandemic,¹⁸ particularly Emergency Department visits for suspected suicide attempts among adolescent girls.¹⁹

In each classroom of 25 students...

5
seriously thought
about
**taking their
own life***

and **2** made one or more
attempts*



*Source: 2021 Ottawa County Youth Assessment Survey, "Q53: During the past 12 months, did you ever seriously think about attempting suicide?"
"Q55: During the past 12 months, how many times did you attempt suicide?"

References

1. <https://www.cdc.gov/suicide/strategy/index.html>
2. <https://www.who.int/news-room/fact-sheets/detail/suicide>
3. <https://health.gov/healthypeople/objectives-and-data/browse-objectives/mental-health-and-mental-disorders/reduce-suicide-rate-mhmd-01/data>
4. <https://www.cdc.gov/nchs/data/databriefs/db464.pdf>
5. <https://www.cdc.gov/suicide/facts/index.html>
6. <https://www.michigan.gov/mdhhs/-/media/Project/Websites/mdhhs/Doing-Business-with-MDHHS/Boards-and-Commissions/MSPC/2023-Meeting-Packets/Suicide-Commission-Annual-Report-2023-v3.pdf?rev=2d0b7e2013814ed596bdce4f2a8180b4&hash=FD04844D6AF2F9A07B64E5ADF84BF5C1>
7. <https://wonder.cdc.gov/>
8. <https://www.cdc.gov/suicide/facts/disparities-in-suicide.html>
9. https://www.michigan.gov/-/media/Project/Websites/mdhhs/Folder2/Folder2/2022_Suicide_Prevention_Commission_Annual_Report.pdf?rev=4a45b773f6f343e3b23d737b1f557042
10. https://www.cdc.gov/suicide/pdf/SuicidePrevention_StrategicPlan-508.pdf
11. <https://content.govdelivery.com/accounts/MIOTTAWA/bulletins/31a23ff>
12. <https://content.govdelivery.com/accounts/MIOTTAWA/bulletins/352e991>
13. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3315262/>
14. <https://www.mentalhealth.va.gov/docs/data-sheets/2022/2022-National-Veteran-Suicide-Prevention-Annual-Report-FINAL-508.pdf>
15. <https://www.nimh.nih.gov/health/statistics/suicide>
16. http://www.ottawacountyyouth.org/wp-content/uploads/reports/2021/2021_YAS_Report.pdf
17. <https://www.cdc.gov/mmwr/volumes/71/wr/pdfs/mm7108a5-H.pdf>
18. <https://www.cdc.gov/mmwr/volumes/71/su/pdfs/su7103a3-H.pdf>
19. <https://www.cdc.gov/mmwr/volumes/70/wr/pdfs/mm7024e1-H.pdf>

Note: References displayed on this page link to third party data that could become unavailable in the future. OCDPH is not responsible for content found at these links.

Methods

Definitions

- Suicides are deaths with the manner of death listed as suicide on the death certificate.
- Teen suicide is defined as any death by suicide among a person aged 13-19 years.
- County quadrants are used in this report to highlight geographical differences in suicide rates. The boundaries for each quadrant are generally 96th Avenue (north to south) and Fillmore Avenue (east to west). Quadrant boundaries deviate slightly in Zeeland, where the city is placed in the SW quadrant, and in Georgetown, where the area north of the Grand River but south of Fillmore (if Fillmore extended directly east) is included in the NE quadrant. This method has two purposes: 1) it utilizes natural recognizable boundaries such as city limits and rivers, and 2) it incorporates census tract boundaries which can be used to determine an underlying population and calculate a rate. Those that died by suicide were assigned a quadrant based on residence. See slide 18 for a map of quadrant boundaries.

Analytical Methods

- Deaths counted in this report are by residence of the decedent, not location of death.
- Rates are unadjusted (crude); the unit for rates in this report is the number of events per 100,000 people.
- Because death by suicide is a relatively rare event each year in Ottawa County, multiple years are often combined to improve statistical stability, particularly for rates over time.
- Ottawa County data for deaths occurring prior to 2010 was obtained from CDC Wonder.
- Because detailed demographic data prior to 2010 were not available when developing this report, many figures and illustrations included herein show detailed data from 2010-2022.
- Michigan and United States suicide rate data was obtained from CDC Wonder.
- Population data evaluating age categories, sex, and means from 1990 – 2020 were obtained from CDC Wonder. These estimates are bridged-race populations estimates of the July 1 resident population from 1990-1999 bridged-race intercensal population estimates (released by NCHS on 7/26/2004); revised bridged-race 2000-2009 intercensal population estimates (released by NCHS on 10/26/2012); and bridged-race Vintage 2020 (2010-2020) postcensal population estimates (released by NCHS on 9/22/2021). Available on CDC WONDER Online Database. Accessed at <http://wonder.cdc.gov/bridged-race-v2020.html>.
- Population data when evaluating age categories, sex, and means from 2021 - 2022 were obtained from CDC Wonder. Single-race Population Estimates, United States, 2020-2022. The 2020-2022 postcensal series of estimates of the July 1 resident population are based on the modified Blended Base produced by the US Census Bureau in lieu of the April 1, 2020 decennial population count, released by the Census Bureau on June 22, 2023. Accessed at <http://wonder.cdc.gov/single-race-v2022.html>.

Methods (continued)

Analytical Methods (continued)

- Population data when evaluating county rates and quadrant rates utilized American Community Survey (ACS) 5-year estimates.
- Veteran population data (slide 15) utilized American Community Survey (ACS) 5-year estimates [S2101: VETERAN STATUS - Census Bureau Table](#).
- The p-value was compared to an alpha level of .05 to determine statistical significance for all statistical tests and trend analyses.
- Suicide rates from 2010-2020 were compared to Michigan suicide rates to determine if Ottawa County rates by age decade were higher, lower or similar to the State for the given time period (slide 13). This was done by obtaining 95% confidence intervals (CI) for Ottawa County and Michigan by age decade from CDC Wonder and comparing the 95% CIs for each age group to assess if Ottawa County's 95% CI was higher, lower, or overlapping (indicating no difference) with the 95% CI for Michigan.
- To evaluate differences between demographic groups for means of death by suicide (slide 20), the proportion of total deaths from 2010-2020 for each demographic group by means was downloaded from CDC Wonder for Michigan and Ottawa County. General statements about certain demographic groups being higher than the County overall were not statistically evaluated.
- Decedents with Hispanic origin listed on the death certificate were classified as Hispanic. Decedents without Hispanic origin listed on the death certificate were classified under the race listed on the death certificate.

Trend Analysis

Overall (1990-2022): Ottawa County death by suicide trend was assessed from 1990-2022 using Poisson regression with annual population offset to accommodate for population changes. Year was associated with a positive increase in the annual number of suicides ($p < .001$). Joinpoint regression analysis was also conducted to assess Ottawa County annual suicide rates from 1990-2022. Joinpoint regression analysis results were consistent with Poisson regression methods, showing a statistically significant increase in the rate of suicide over the time period of interest ($p < .001$).

Trends for Different Time Periods

2000-2022: Using the Poisson regression method referenced above, but limiting to 2000-2022, Year was significantly associated with an annual increase in the number of suicides ($p < .001$).

2010-2022: Using the Poisson regression method referenced above, but limiting to 2010-2022, Year was significantly associated with an annual increase in the number of suicides ($p < .001$).

2017-2022: Using the Poisson regression method referenced above, but limiting to 2017-2022, Year was not significantly associated with an annual increase in the number of suicides ($p = .060$).

Methods (continued)

Trend Analysis (continued)

Sex

Male: Ottawa County death by suicide trend was assessed from 1999-2022 using joinpoint regression analysis. Deaths by suicide were grouped into three-year time periods to accommodate for small numbers.

- The final joinpoint model selected for male included zero joinpoints which indicated that year was significantly associated with an annual increase in the number of suicides ($p = .009$).

Female: Ottawa County death by suicide trend was assessed from 2002-2022* using joinpoint regression analysis deaths by suicide were grouped into three-year time periods to accommodate for small numbers.

- The final joinpoint model selected for female included zero joinpoints which indicated that year was not significantly associated with an annual increase/decrease in the number of suicides ($p = .300$).

*The first three-year time period (1999-2001) was excluded from the analysis for females due to data being unavailable in CDC Wonder due to low death by suicide counts for females during this time period.

Quadrant: Ottawa County death by suicide trend was assessed from 2011-2022 analyzing quadrant of residence using joinpoint regression analysis. Deaths by suicide were grouped into two-year time periods to accommodate for small numbers. Decedents were assigned to a specific quadrant based on the census tract they resided in at the time of death.

- The final joinpoint model selected for the NE quadrant included zero joinpoints indicating that year was not significantly associated with an annual increase/decrease in number of suicides ($p = .489$).
- The final joinpoint model selected for the NW quadrant included zero joinpoints indicating that year was not significantly associated with an annual increase/decrease in number of suicides ($p = .969$).
- The final joinpoint model selected for the SE quadrant included zero joinpoints indicating that year was not significantly associated with an annual increase/decrease in number of suicides ($p = .842$).
- The final joinpoint model selected for the SW quadrant included zero joinpoints indicating that year was not significantly associated with an annual increase/decrease in number of suicides ($p = .127$).

Resources

If you need help for yourself or someone else, please contact:

Ottawa County Community Mental Health Crisis Line

Talk: **866-512-4357** or TTY **711**

National Suicide Prevention Lifeline

Talk or Text: **988**

Chat: <https://988lifeline.org/>

Veterans Crisis Line

Talk: **DIAL 988 then PRESS 1**

Text: **838255**

211

Call: 211

Online at: <https://mi211.org/>

For more Information about the
Ottawa County Suicide Prevention Coalition,
please visit the following websites:

Ottawa County Suicide Prevention Website:

www.miottawa.org/suicideprevention

2022 Ottawa County Suicide Prevention Coalition Strategic Plan:

<https://miottawa.org/Health/OCHD/pdf/Suicide-Prevention-Coalition-Strategic-Plan-2022.pdf>



Ottawa County Community Mental Health Crisis Line 866-512-4357
National Suicide Prevention Lifeline - Dial 988
Crisis Text Line - Text START to 741 - 741

www.miottawa.org/SuicidePrevention