



Death by Overdose Ottawa County, MI

2010-2023

2023 Ottawa County overdose death data is provisional. Changes are unlikely but possible as Vital Records are finalized.

Because some numbers in this report are small, interpret with caution.

Table of Contents

Overview of Overdose.....	3
Number and Rate of Overdoses.....	5
Characteristics of People Who Died by Overdose (All Ages), 2010-2023.....	7
Death by Overdose by County Quadrants.....	15
Drug Types Involved in Death by Overdose.....	17
Overdose Prevention Activities in Ottawa County and the Region.....	21
References.....	22
Definitions.....	23
Methods.....	24

Overview: Overdose Deaths in Ottawa County

- 32 Ottawa County residents died from overdose in 2023.
- Overdose death rates have increased over the last 25 years but have stabilized since 2017.
- Since 2000, Ottawa County overdose death rates remain consistently lower than Michigan and the United States.
- Higher overdose rates are seen in
 - Military service members
 - Males
 - People 50 years and older
 - White, non-Hispanic people
 - Residents of the northwest and southwest quadrants of the County
- Ottawa County death by overdose rates are lower than Michigan among all age groups (2018-2022).
- Since 2017, opioid deaths have decreased, psychostimulant deaths (mainly methamphetamine) have increased, and heroin deaths have decreased.
- Cocaine-related deaths surged in 2023.
- 69% of 2023 overdose deaths involved polysubstance use, the highest in 14 years.

Overview: Overdose Deaths in the US and Michigan

Background

In 2022, overdose remained an ongoing public health crisis in the United States¹ and in Michigan², impacting families, communities, workplaces, and the economy.³

Statistics

The U.S. overdose death rate nearly quadrupled from 2002-2022. It remained stable from 2021 to 2022 (32.4 per 100,000 people and 32.6 per 100,000 people, respectively),⁴ with a provisional decrease in 2023 (31.3 per 100,000).⁵

Michigan's overdose death rate decreased 2%, from 30.8 per 100,000 people in 2021 to 29.9 per 100,000 people in 2022.⁶ Provisional 2023 data shows no significant change in overdose death rates in Michigan (28.5 per 100,000).⁵

At-Risk Populations

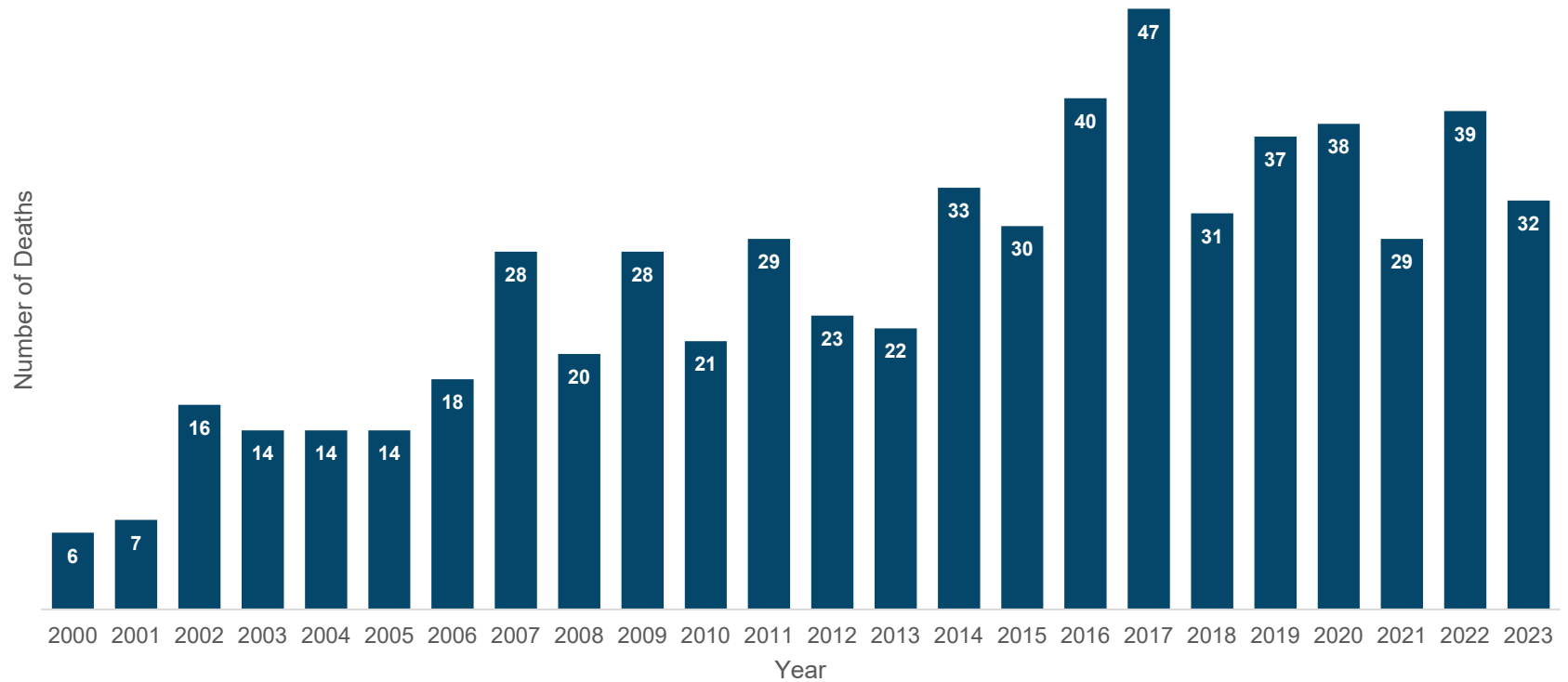
According to the Centers for Disease Control and Prevention (CDC), from 2021-2022, overdose deaths increased for all races and Hispanic-origin ethnic groups, except Native Hawaiian or Other Pacific Islander non-Hispanic and White non-Hispanic people. Overdose death rates also increased for those age 35 and older.⁴

In Michigan, July 2022 – June 2023, males, Black people, Non-Hispanic people, and people 35-44 years of age were most affected.⁷

Prevention

The CDC and the State of Michigan recommend promoting health equity, addressing underlying causes, fostering partnerships, and prioritizing evidence-based action to prevent overdose.^{1,8}

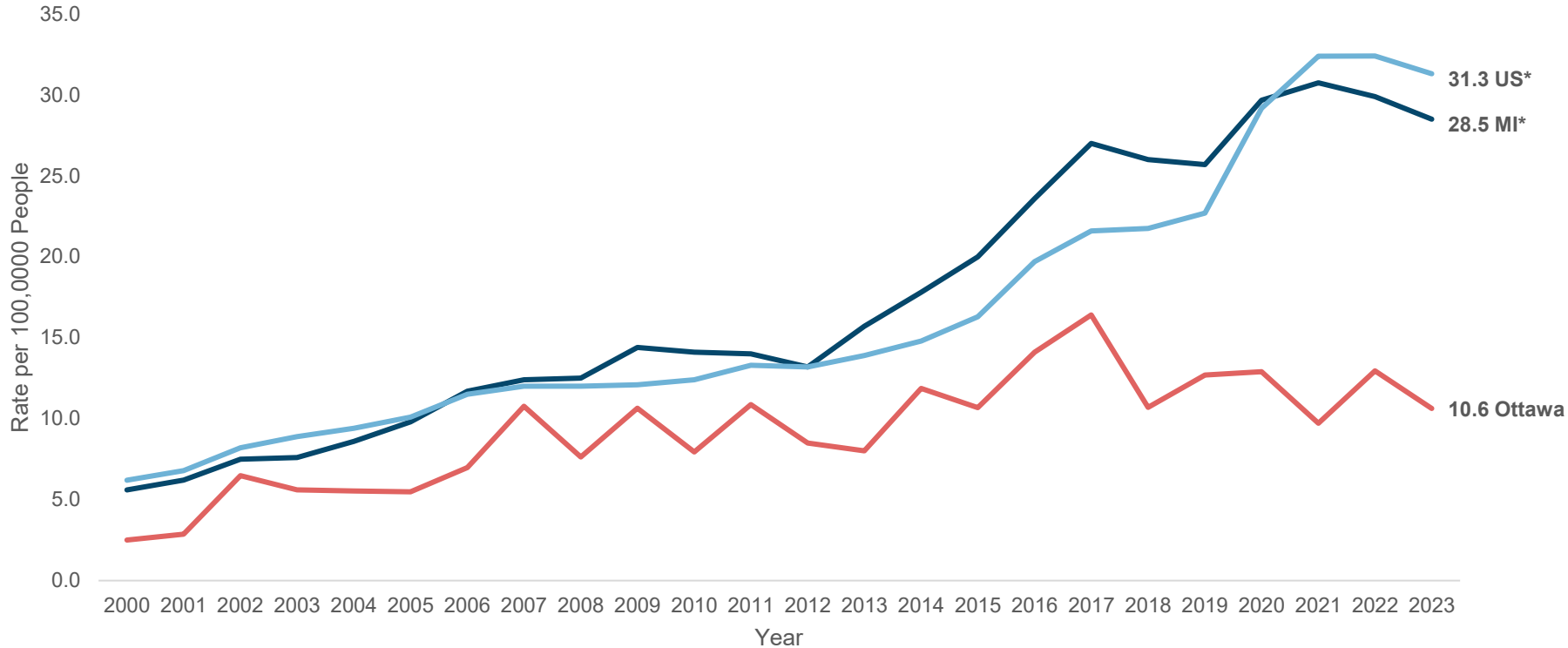
Number of Deaths by Overdose, Ottawa County, 2000-2023



Note: Annual death counts displayed here may differ slightly from drug overdose data provided by the State of Michigan at these links: <https://mi-suddr.com/>, <https://mitracking.state.mi.us/>

In 2023, 32 Ottawa County residents died by overdose, fewer than the 39 deaths observed in 2022. Since 2000, the number of overdose deaths has increased; however, the population of Ottawa County has also seen rapid and sustained growth.⁹ To account for changes in population growth and to allow for comparison between groups, an overdose death rate is used. The Ottawa County rate of overdose deaths over time is illustrated on the next slide and includes comparisons to the United States and Michigan.

Death by Overdose Rates from 2000-2023



*Data is sourced from the National Vital Statistics System. US and MI overdose death rates for 2023 are provisional <https://www.cdc.gov/nchs/nvss/vsrr/mortality-dashboard.htm#>.

Notes: Prior to 2007, most years had fewer than 20 deaths by overdose reported among Ottawa County residents, which may reduce the stability of rates calculated for those years; Rates are calculated per 100,000 people because it's a large, round number that makes comparing rates across different size groups easier, especially when the numbers are small.

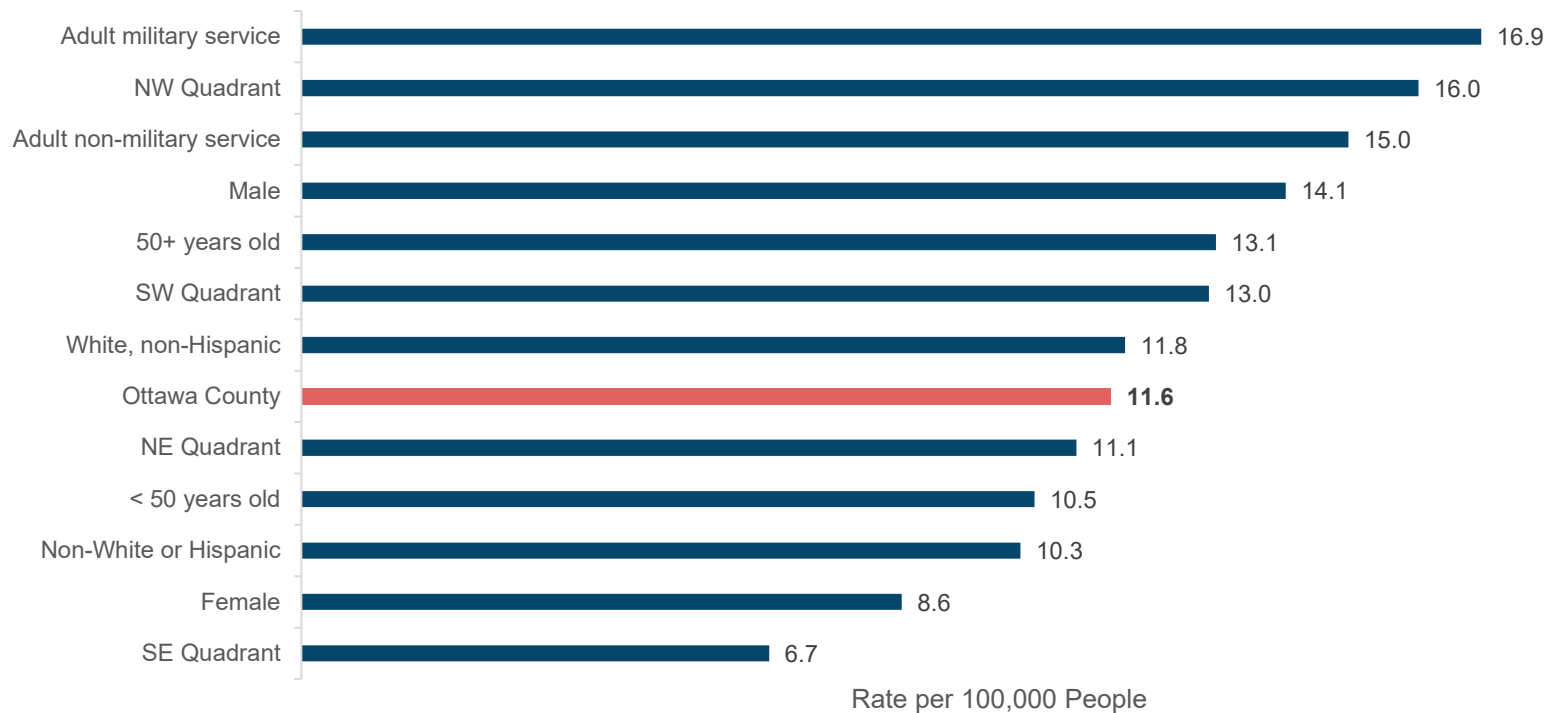
While the rate of death by overdose remains lower in Ottawa County than in Michigan and the United States, data indicate that as of 2023, there is a statistically significant increase in the annual number of overdose deaths in Ottawa County over the past 25 years (1999 not displayed here). Although a long-term increasing trend exists, since 2017, no upward or downward trend was detected, suggesting that the overall overdose death rate has been stabilizing in Ottawa County.

Among the largest counties in Michigan, Ottawa County continues to be one of the fastest growing. From 2020-2023, Ottawa County experienced the largest percent growth (2.18%) of the top ten most populous counties in Michigan.¹⁰ To account for population changes, it is best to utilize the rate of overdose deaths, rather than the number of overdose deaths to monitor or detect changes over time.

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

2010-2023

Groups With a Higher Burden of Death by Overdose, 2010-2023



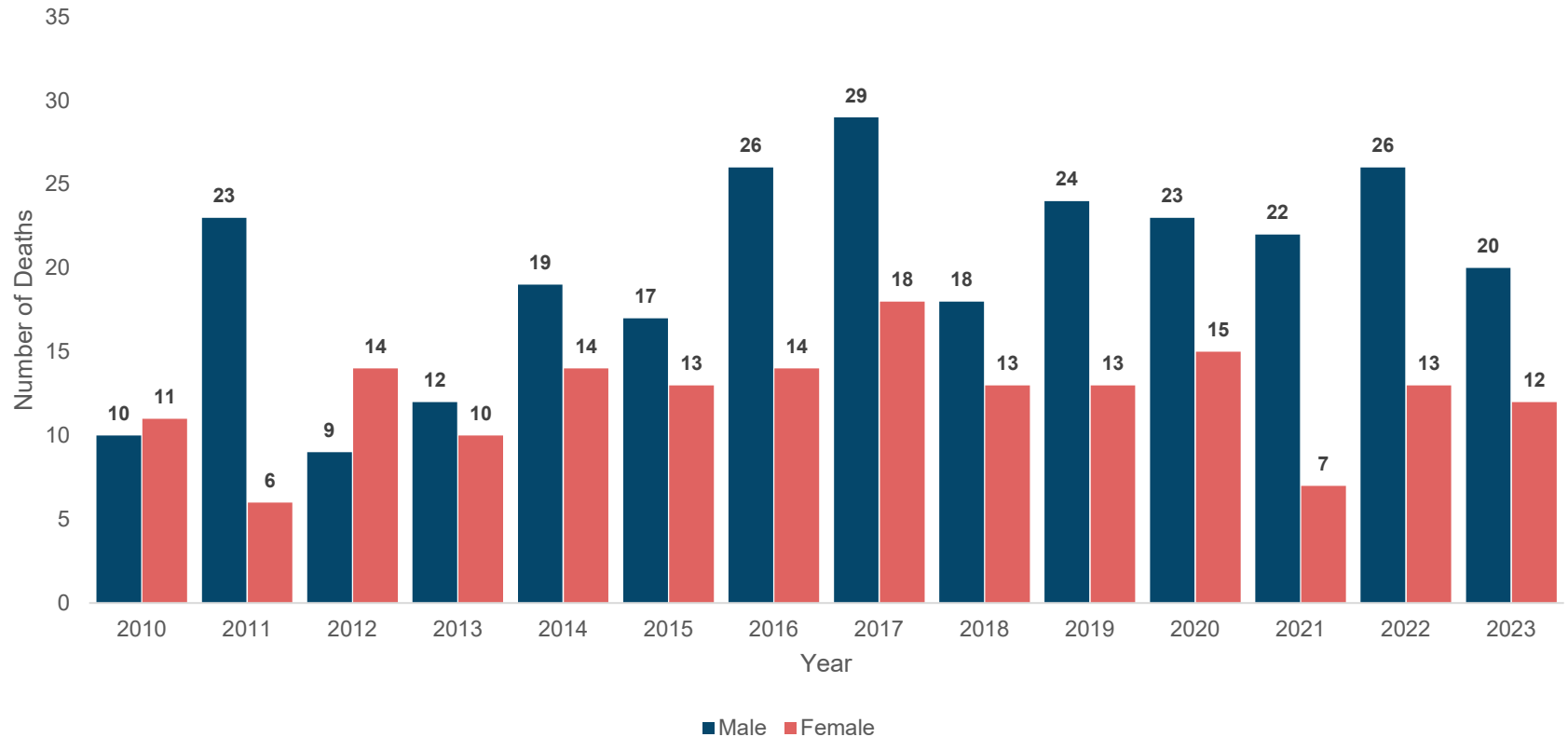
Note: Other racial minority groups are not displayed due to rate instability due to too few events to reach statistical stability.

How to read: Deaths per 100,000 people in each group; for example, if there were 100,000 adult military service members in Ottawa County, 16.9 of them died by overdose from 2010-2023.

Rates of deaths by overdose in the last 14 years are shown above and compare which groups had more deaths by overdose compared to other groups and compared to all of Ottawa County. Rates are reported per 100,000 people in each group.

Military service members had the highest rate of death by overdose compared to any other group. Other groups with higher rates of overdose deaths compared to the County overall include residents living in the northwest (NW) quadrant of the county, adults who are not military service members, males, those aged 50+, residents of the southwest (SW) quadrant, and White, non-Hispanic people.

Sex of Persons who Died by Overdose, 2010-2023



Every year since 2013, more males have died by overdose than females. Although not displayed here, from 2000-2023 there was a long-term statistically significant increase in the overdose death rate among males. From 2010-2023, the overdose death rate among males was 1.6 times higher than the rate among females.

Michigan and the United States have reported a similar trend by sex, with males consistently bearing more of the overdose death burden than females.^{4,7}

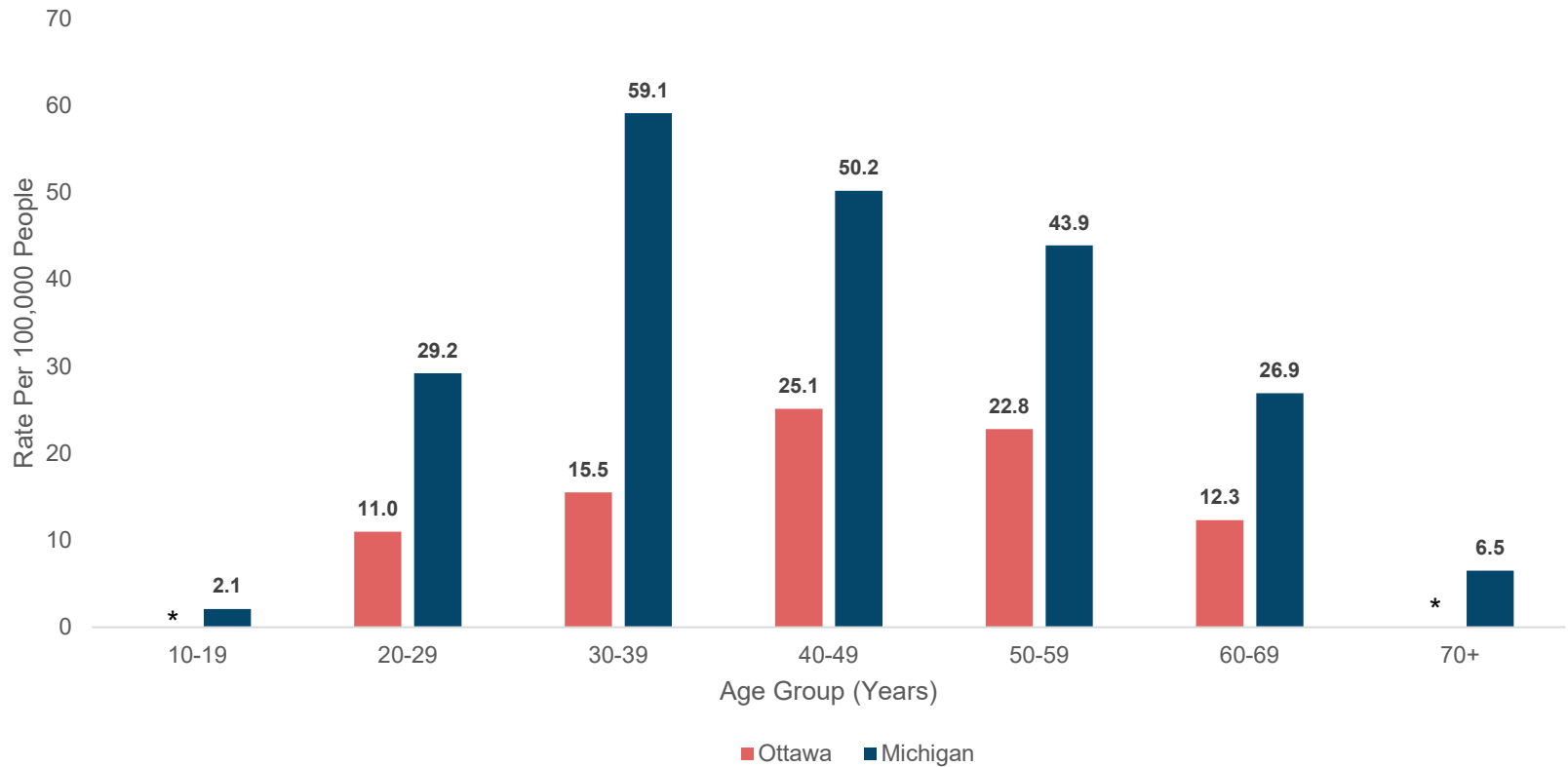
Age of Persons who Died by Overdose, 2010-2023

Year	<20	20-29	30-39	40-49	50-59	60-69	70-79	80+	Total
2010	1	6	1	8	2	2	0	1	21
2011	1	4	8	8	5	3	0	0	29
2012	0	4	2	7	8	1	0	1	23
2013	0	5	2	4	8	3	0	0	22
2014	1	3	12	6	10	0	0	1	33
2015	2	1	5	7	7	5	1	2	30
2016	2	9	7	4	9	8	1	0	40
2017	0	13	8	13	4	7	1	1	47
2018	2	10	7	5	4	2	1	0	31
2019	0	4	4	9	13	6	1	0	37
2020	0	3	10	10	11	3	1	0	38
2021	1	3	6	9	7	3	0	0	29
2022	4	5	7	11	4	6	1	1	39
2023	0	2	10	6	9	3	1	1	32
Total	14	72	89	107	101	52	8	8	451

In Ottawa County from 2010-2023, the 40-49 and 50-59 age groups experienced more deaths by overdose than any other age group, with 107 and 101 deaths, respectively. Because the underlying population in each age group displayed on this slide varies, overdose death rates should be used to account for population differences. Generally, overdose death rates among all age groups are similar, while the youngest and oldest age groups tend to have lower overdose death rates (slide 13).

Fourteen (14) teen overdose deaths occurred over the last 14 years. Among these 14 teen overdose deaths, 7 (50%) were ruled suicides, a statistically higher proportion compared to people aged 20+. Among those aged 20+, only 14% of overdose deaths were ruled as suicides. This data suggests that teens may be more likely to utilize overdose as a means of suicide than adults.

Overdose Rates by Age, 2018-2022



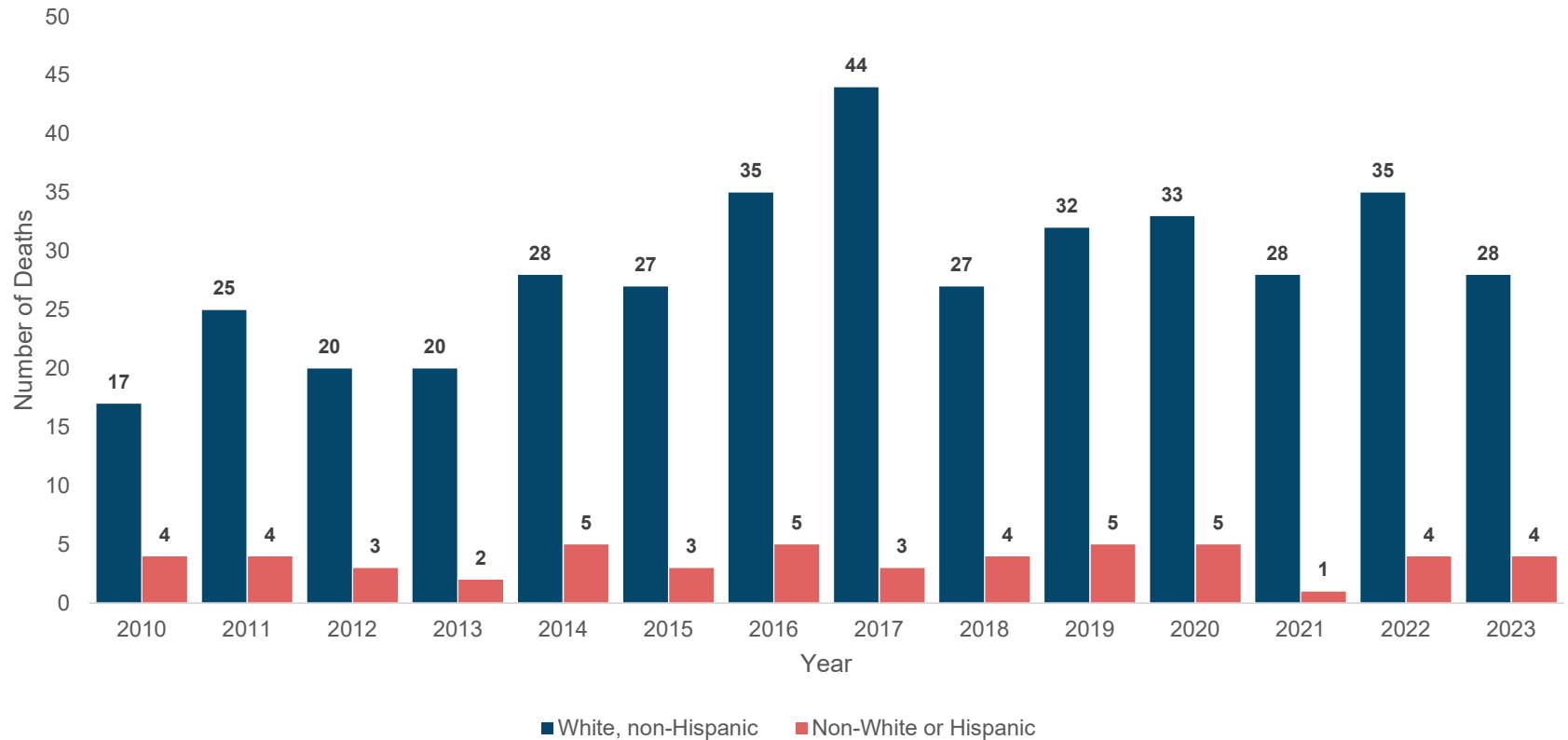
Note: To directly compare Ottawa County and Michigan, data was obtained from CDC Wonder, limiting the latest year of data to 2022.

*Data suppressed due to confidentiality constraints in order to protect personal privacy. Suppression standards are applied when counts are less than 20.

From 2018-2022, the highest rate of death by overdose in Ottawa County was among people aged 40-49 years, followed by those aged 50-59 and people 30-39 years of age. The lowest rate of death by overdose in Ottawa County was among people 20-29 years of age at 11.0 deaths per 100,000 people followed by people 60-69 years of age (12.3 per 100,000). Rates of death by overdose among people 10-19 years of age and 70+ years of age are not displayed due to a low number of events that requires suppression. The overdose death rate for the 20-29 age group is statistically lower than the 40-49 and 50-59 age groups.

Comparing Ottawa County and Michigan, Ottawa County death by overdose rates are statistically lower than Michigan among all age groups. See the Methods section for more details on statistical comparisons of age groups.

Race/Ethnicity of People Who Died by Overdose, 2010-2023

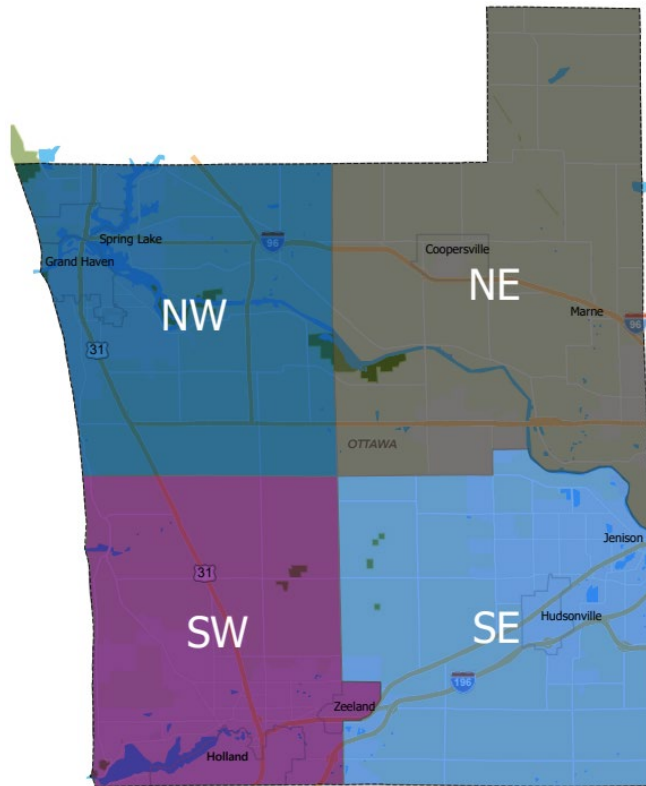


Over the last 14 years most deaths by overdose occurred among White, non-Hispanic people. In 2023, four (4) overdose deaths among racial or ethnic minority groups were observed, the same as in 2022 (4). Using data from 2010-2023, the rate of overdose deaths in White, non-Hispanic people is slightly higher than the County overall and higher than non-White or Hispanic people (slide 10).

Death by Overdose
by County Quadrants
Ottawa County, MI

2010-2023

Death by Overdose Rates by County Quadrant, 2010-2023



Quadrant	Number of Deaths by Overdose	Percent of Deaths by Overdose (%)	Quadrant Percent of Population (%)	Crude Rate (per 100,000 people)
NW	124	27.8	19.9	16.0
NE	69	15.5	16.0	11.1
SW	176	39.5	34.8	13.0
SE	77	17.3	29.3	6.7
Ottawa County	446	100.0	100.0	11.6

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

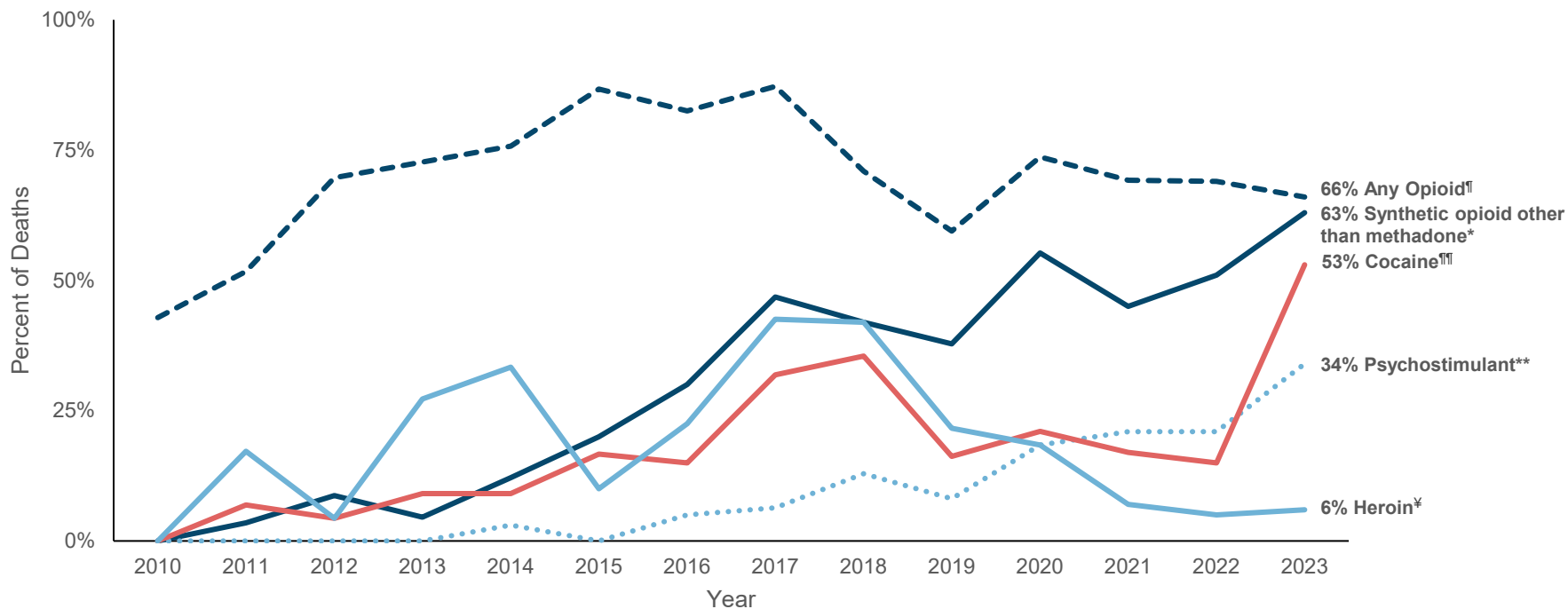
Combined, the NW and SW quadrants of the County contain about 55% of the Ottawa County population. However, from 2010 to 2023, 300 overdose deaths (67.3%) occurred in the NW (27.8%) and SW (39.5%) quadrants. The outsized number of overdose deaths in the west county quadrants resulted in overdose death rates of 16.0 per 100,000 in the NW quadrant and 13.0 per 100,000 in the SW quadrant, both higher than the overdose rate for Ottawa County overall (11.6 per 100,000).

Over the last 14 years statistically significant upward or downward trends in the death by overdose rate were not detected in any of the four quadrants. Although not statistically significant, the death by overdose rate has steadily been increasing in the SW quadrant since 2010.

Drug Types Involved in Death by Overdose Ottawa County, MI

2010-2023

Drug Types Involved in Deaths by Overdose, 2010-2023



*Synthetic opioids include, but are not limited to, fentanyl, fentanyl analogs (e.g., carfentanyl), and tramadol. Methadone cases included in the Any Opioid category.

**Psychostimulants with abuse potential are not opioids and include such drugs as amphetamine and methamphetamine.

¶ All opioid substances including heroin, methadone, and synthetic opioids.

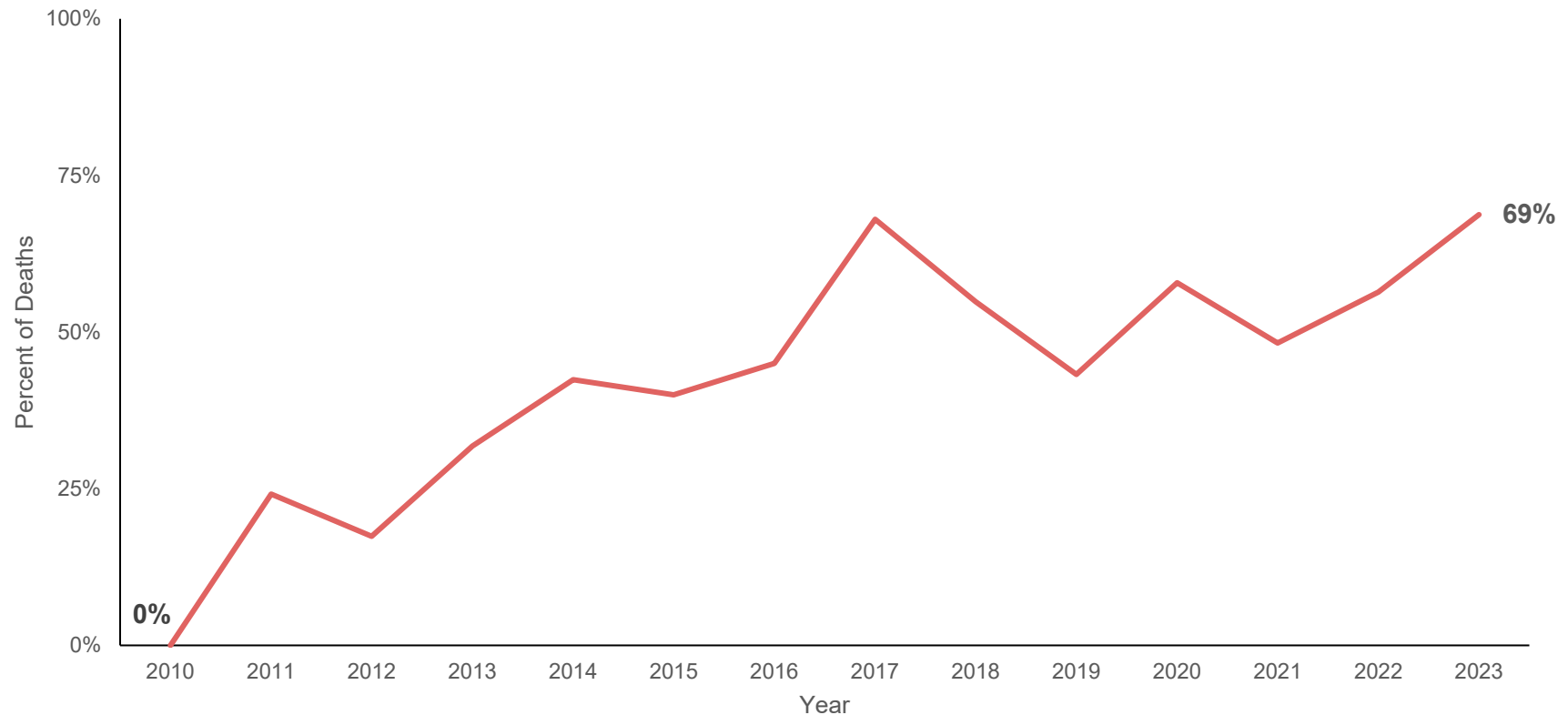
¶¶ Cocaine is not an opioid substance.

¥ Heroin is a non-synthetic opioid.

Over the last 14 years the proportion of overdose deaths involving synthetic opioids other than methadone has continued to increase, as have deaths involving psychostimulants with abuse potential (usually methamphetamine). However, the proportion of overdose deaths involving any opioid decreased slightly from 69% in 2022 to 66% in 2023. The proportion of overdose deaths involving cocaine increased substantially from 15% in 2022 to 53% in 2023. Psychostimulants with abuse potential also increased from 21% in 2022 to 34% in 2023.

Similar increasing trends in overdose deaths involving synthetic opioids other than methadone, psychostimulants with abuse potential, and cocaine are noted at the national level as well.⁴

Polysubstance Involved Deaths by Overdose, 2010-2023



Over the last 14 years the proportion of overdose deaths involving polysubstance use, defined as the use of more than one drug, either intentionally or unintentionally¹³ has increased in Ottawa County. The proportion of overdose deaths involving polysubstance use increased from 56% in 2022 to 69% in 2023.

Preliminary 2023 data shows that in the United States nearly half (46.9%) of overdose deaths involved multiple drugs (polysubstance use).¹⁴

Drug Use Reported by Teens

	Ottawa County	Michigan*	United States*
Issue Area	2023	2021	2021
I have used methamphetamines (also called speed, crystal, crank, ice, chalk, fire, or glass)	1.3%	1.2%	1.8%
I have used heroin (also called smack, junk, or China White)	1.1%	1.2%	1.3%
I have used cocaine (any form of cocaine, such as powder, crack, or freebase)	1.3%	2.1%	2.5%
During the past 30 days, I have used a needle to inject an illegal drug into my body	0.9%	N/A	N/A
Ever injected any illegal drugs (used a needle to inject drug into their body, one or more times during their life)	N/A	1.5%	1.4%

*At the time of publication, 2023 YRBSS data for the United States and Michigan was unavailable.

The proportion of Ottawa County teens reporting ever using methamphetamines, heroin, or cocaine in their lifetime remains low and has been decreasing since 2005. Lifetime use reported by Ottawa County teens for methamphetamines is slightly above Michigan but remains lower than the United States. Lifetime use reported by Ottawa County teens for heroin and cocaine remains lower than Michigan and the United States.¹⁵ Almost 7% of Ottawa County teens reported it would be sort of easy or very easy to get a drug like cocaine, LSD, heroin, or methamphetamine and 12% believe there is no or slight risk to using methamphetamine (meth, crank, ice, chalk, fire or glass).¹⁶

Lifetime and current prescription drug use reported among Ottawa County teens have been decreasing since 2013. However, teens are reporting first time prescription drug use at younger ages.

Overdose Prevention Activities in Ottawa County and the Region

The Ottawa County Opiate Overdose Taskforce

The Opiate Taskforce is a collaboration of healthcare professionals, treatment providers, law enforcement, individuals in recovery, and community members with a vision to minimize the impacts of the opioid and polysubstance crisis in Ottawa County. This is done by educating professionals and community members, increasing Narcan (naloxone) distribution and accessibility, advocating for increased access to treatment, and focusing on the safe storage and disposal of medications.

For more information on prevention and treatment, please visit:

<https://www.miottawa.org/Health/CMH/services.htm>

The Grand Rapids Red Project (Regional)

The Red Project is a regional non-profit dedicated to improving health, reducing risk, and preventing HIV. The organization provides a range of services, including overdose prevention.

To learn more about the Red Project, please visit:

<https://redproject.org/>

Definitions

Indicator	Definition	ICD-10 Codes/Detailed Explanation
Overdose deaths	All poisoning deaths involving any drug or substance, all causes of death, all manners of death except natural.	Underlying cause of death, determined from the field designated as such, or, where missing, from the first-listed multiple cause of death field: X40-44, X60-64, X85, Y10-14.
Overdose deaths involving any opioid	All poisoning deaths involving opioid pain relievers, all causes of death, all manners of death except natural.	Underlying cause of death, determined from the field designated as such, or, where missing, from the first-listed multiple cause of death field: X40-44, X60-64, X85, Y10-14 AND opioid in all other causes of death: T40.0, T40.1, T40.2, T40.3, T40.4, T40.6.
Overdose deaths involving heroin (heroin is an opioid)	All poisoning deaths involving heroin, all causes of death, all manners of death except natural.	Underlying cause of death, determined from the field designated as such, or, where missing, from the first-listed multiple cause of death field: X40-44, X60-64, X85, Y10-14 AND heroin in all other causes of death: T40.1.
Overdose deaths involving synthetic opioid other than methadone	All poisoning deaths involving a synthetic opioid other than methadone, all causes of death, all manners of death except natural.	Underlying cause of death, determined from the field designated as such, or, where missing, from the first-listed multiple cause of death field: X40-44, X60-64, X85, Y10-14 AND any synthetic opioid other than methadone in all other causes of death: T40.4.
Overdose deaths involving cocaine (cocaine is not an opioid)	All poisoning deaths involving cocaine, all causes of death, all manners of death except natural.	Underlying cause of death, determined from the field designated as such, or, where missing, from the first-listed multiple cause of death field: X40-44, X60-64, X85, Y10-14 AND cocaine in all other causes of death: T40.5.
Overdose deaths involving psychostimulants with abuse potential (psychostimulants are not opioids)	All poisoning deaths involving psychostimulants with abuse potential, all causes of death, all manners of death except natural.	Underlying cause of death, determined from the field designated as such, or, where missing, from the first-listed multiple cause of death field: X40-44, X60-64, X85, Y10-14 AND psychostimulant with abuse potential in all other causes of death: T43.6.

Adapted from New York State Department of Health

Methods

Definitions

- Drug overdose deaths include events with an underlying cause of death code of X40-X44, X60-X64, X85, or Y10-Y14. Alcohol poisoning deaths are not included in this report.
- County quadrants are used in this report to highlight geographical differences in overdose death 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 overdose were assigned a quadrant based on residence. See slide 16 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 overdose 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 prior to 2010 were 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 2010-2023.
- Michigan and United States overdose death rate data from 2010-2022 was obtained from CDC Wonder. Provisional reported overdose death rates for Michigan and United States in 2023 were obtained from the National Center for Health Statistics (NCHS) [National Vital Statistics System](#).
- Population data evaluating age and sex categories 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>.

Methods (continued)

Analytical Methods (continued)

- Population data when evaluating age and sex categories from 2021 - 2023 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>.
- Population data when evaluating county rates and quadrant rates utilized American Community Survey (ACS) 5-year estimates.
- Decedents with “Yes” listed on the death certificate for “Ever in the U.S. Armed Forces” were classified as Military Service members and may also be referred to as Veterans within this report. Only those decedents that were 18 years old or older at the time of death were classified as a Military Service member or not.
- The p-value was compared to an alpha level of .05 to determine statistical significance for all statistical tests and trend analyses.
- Overdose death rates from 2018-2022 were compared to Michigan overdose death 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.
- 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.
- The proportion of overdose deaths ruled as suicides from 2010-2023 for teens and adults were compared using Fisher’s Exact test. A statistically significant difference (p-value = .002) was found between the two groups with the proportion of teens being higher than adults (slide 12).

Trend Analysis

Overall (1999-2023): Ottawa County death by overdose trend was assessed from 1999-2023 using Poisson regression with annual population offset to accommodate for population changes. Year was significantly associated with an annual increase in the number of overdose deaths ($p < .001$). Joinpoint regression analysis was also conducted to assess Ottawa County annual overdose death rates from 1999-2023. Joinpoint regression analysis results were consistent with Poisson regression methods, showing a statistically significant increase in the rate of death by overdose over the given time-period ($p < .001$).

Methods (continued)

Trends for Different Time Periods

2010-2023: Using the Poisson regression method referenced above, but limiting to 2010-2023, Year was not significantly associated with an annual increase in the number of overdose deaths ($p = .183$).

2017-2023: Using the Poisson regression method referenced above, but limiting to 2017-2023, Year was not significantly associated with an annual increase in the number of overdose deaths ($p = .175$).

Sex

Male Overall (2000-2023): Ottawa County death by overdose trend was assessed from 2000-2023 using joinpoint regression analysis. Deaths by overdose were grouped into three-year time periods to accommodate for small numbers.

- The final joinpoint model selected for males included zero joinpoints indicating that year was significantly associated with an annual increase in number of overdose deaths ($p = .015$).

Male Recent (2009-2023): Ottawa County death by overdose trend was assessed from 2009-2023 using joinpoint regression analysis. Deaths by overdose 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 not significantly associated with an annual increase or decrease in the number of overdose deaths ($p = .401$).

Female Overall (2000-2023): Ottawa County death by overdose trend was assessed from 2000-2023 using joinpoint regression analysis.

Deaths by overdose were grouped into three-year time periods to accommodate for small numbers.

- The final joinpoint model selected for females included zero joinpoints indicating that year was not significantly associated with an annual increase in number of overdose deaths ($p = .061$).

Female Recent (2009-2023): Ottawa County death by overdose trend was assessed from 2009-2023 using joinpoint regression analysis deaths by overdose 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 or decrease in the number of suicides ($p = .901$).

Methods (continued)

Trend Analysis (continued)

Quadrant: Ottawa County death by overdose trend was assessed from 2010-2023 analyzing quadrant of residences using joinpoint regression analysis. Deaths by overdose 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 overdose deaths ($p = .748$).
- 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 overdose deaths ($p = .997$).
- 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 overdose deaths ($p = .242$).
- The final joinpoint model selected for the SW quadrant included zero joinpoints indicating that year was not significantly associated with an annual increase in number of overdose deaths ($p = .092$).