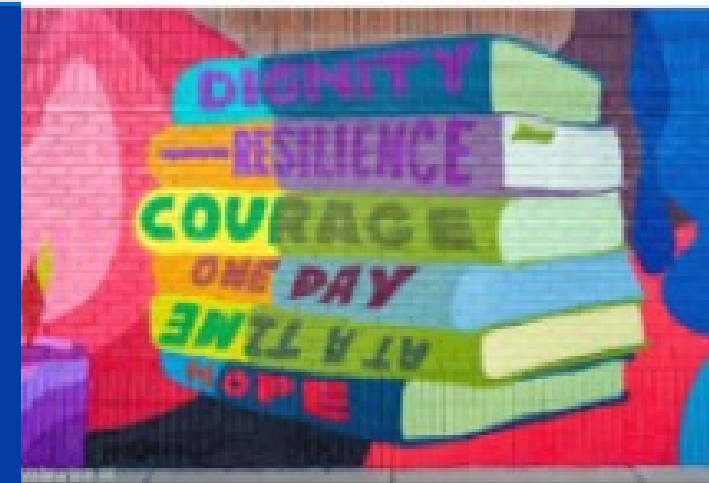


# Michigan Monthly Overdose Update

## December 2023



This report overviews recent substance use and overdose trends and patterns in Michigan and is created by the Michigan Overdose Data to Action (MODA) program. Emergency department (ED), emergency medical services (EMS), substance use disorder (SUD) treatment, and rapid toxicology data are included. See "Data Notes" page for more detail.

**Report distribution:** These reports are sent to subscribers of "Drug Poisoning Surveillance" on [GovDelivery](https://www.govdelivery.com/subscribers/drug-poisoning-surveillance).

### Fast Facts

**Figure 1. 12-Month Percent Change**

Most recent vs. previous 12-month rate: Jan 2023-Dec 2023 vs. Jan 2022-Dec 2022

<b>-4.0%</b>	<b>-9.2%</b>	<b>-1.8%</b>
All Drug Overdose ED Visits	Probable Opioid Overdose EMS Responses	EMS Responses Mentioning Methamphetamine

**Figure 2. Fatal Drug Overdoses**

Counts and rates of all drug overdose deaths, finalized 12 months after year-end

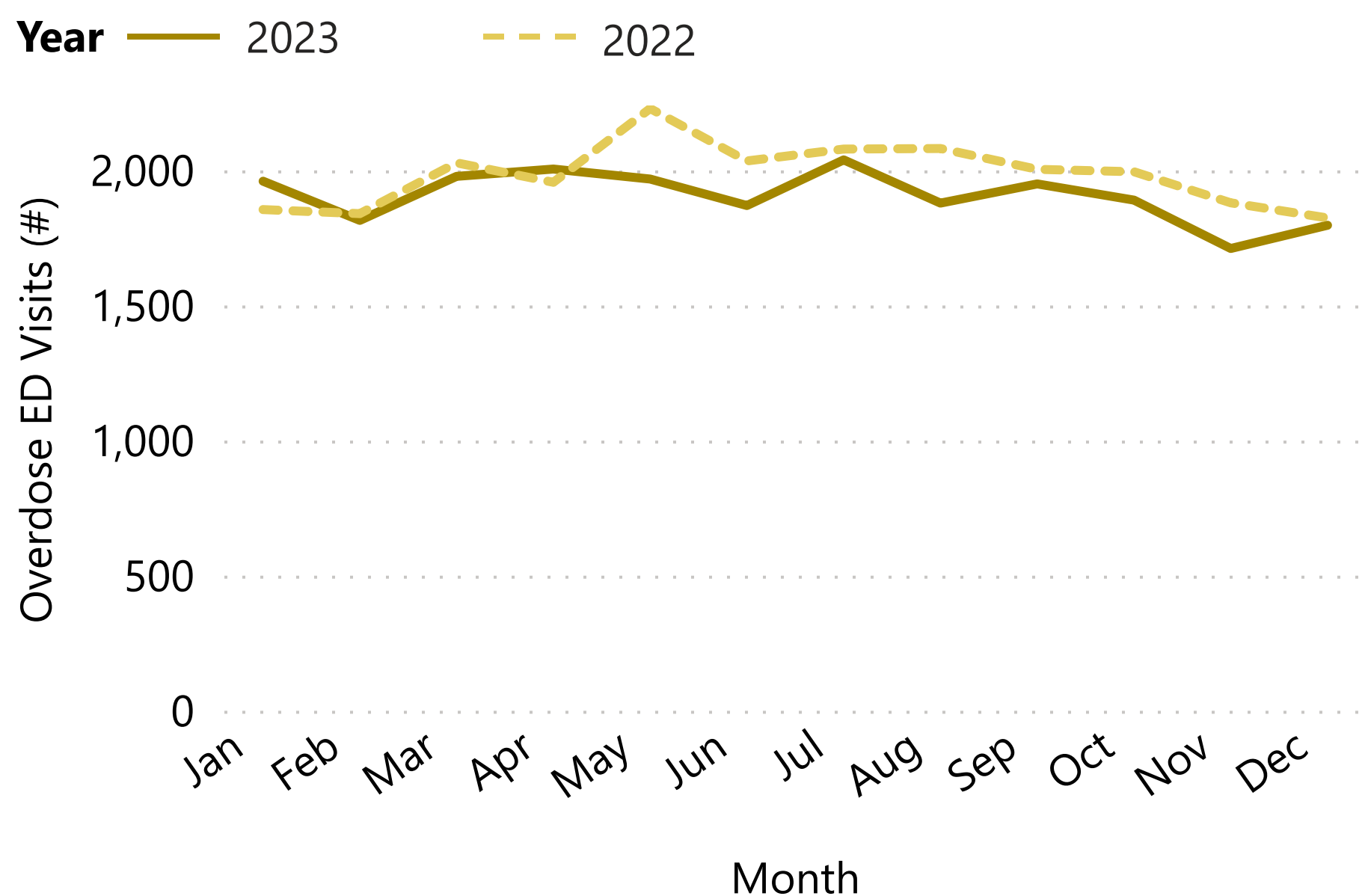
<b>2021</b>	<b>3,096</b>	<b>30.8</b> per 100,000
<b>2022</b>	<b>2,998</b>	<b>29.9</b> per 100,000

### Data in Action

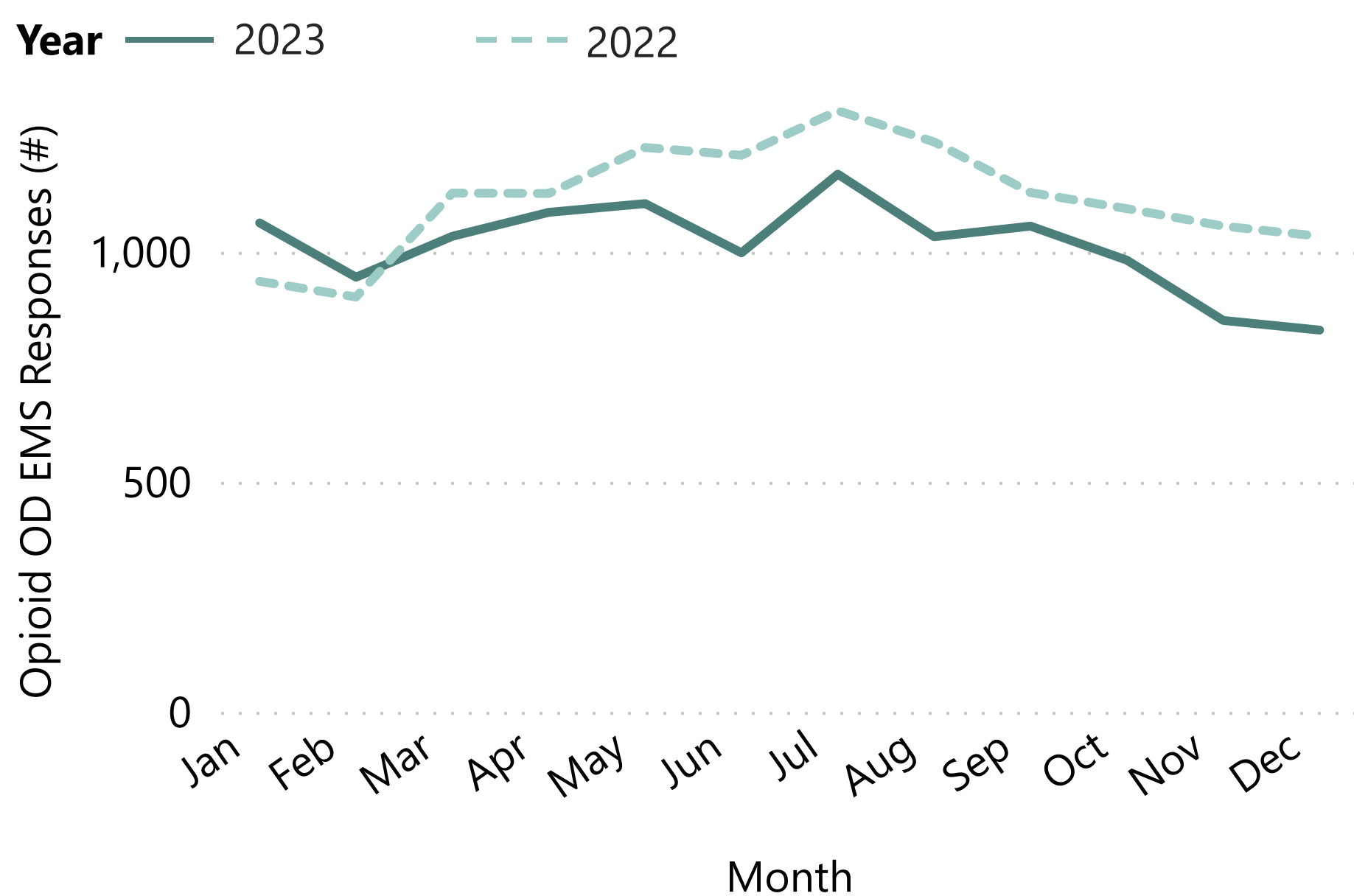
The MDHHS Emergency Medical Services (EMS) program is working with Medical Control Authorities (MCAs) to expand the EMS Naloxone Leave Behind Program. 38 of 59 (64%) MCAs currently participate in the program. EMS is adopting a new protocol which addresses opioid overdose and treatment guidelines for individuals experiencing withdrawal.

### Overdose Trends

**Figure 3. All Drug Overdose ED Visits Year-to-Date Compared To Previous Year**



**Figure 4. Probable Opioid Overdose EMS Responses Year-to-Date Compared To Previous Year**

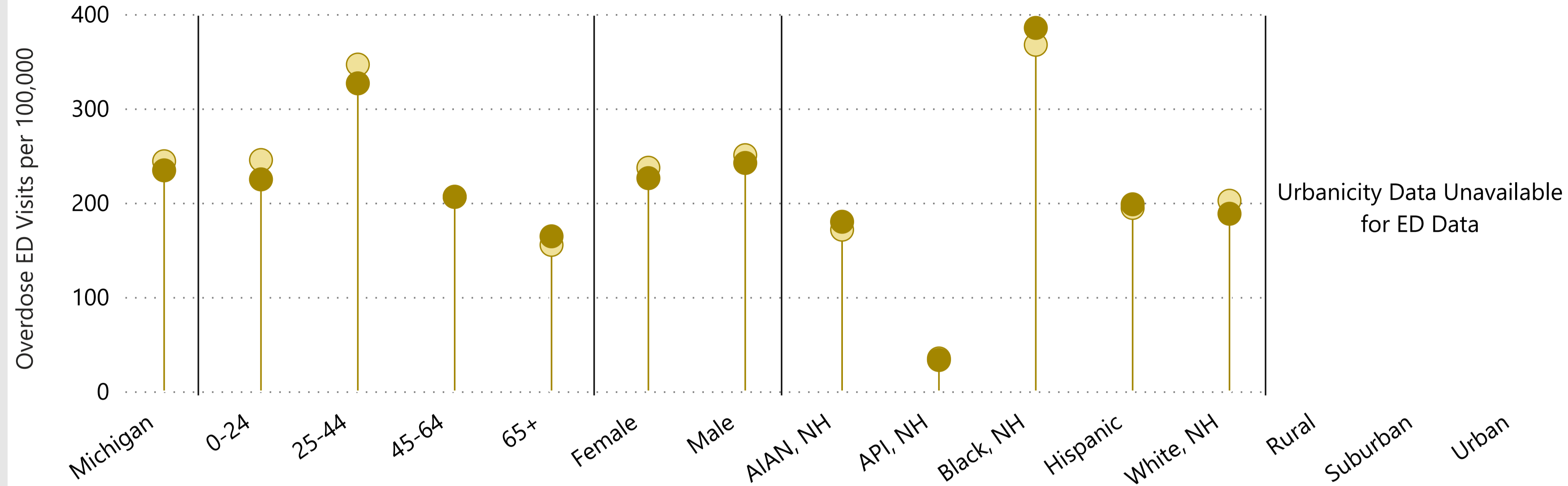


**Data Sources:** MI Syndromic Surveillance System (MSSS) (ED), MI EMS Information System (MiEMIS) (EMS), Michigan Resident Death Files (Death).

# Demographic Patterns

**Figure 5. All Drug Overdose ED Visit Rate per 100,000 by Demographic Group**

● Jan 2022-Dec 2022 ● Jan 2023-Dec 2023



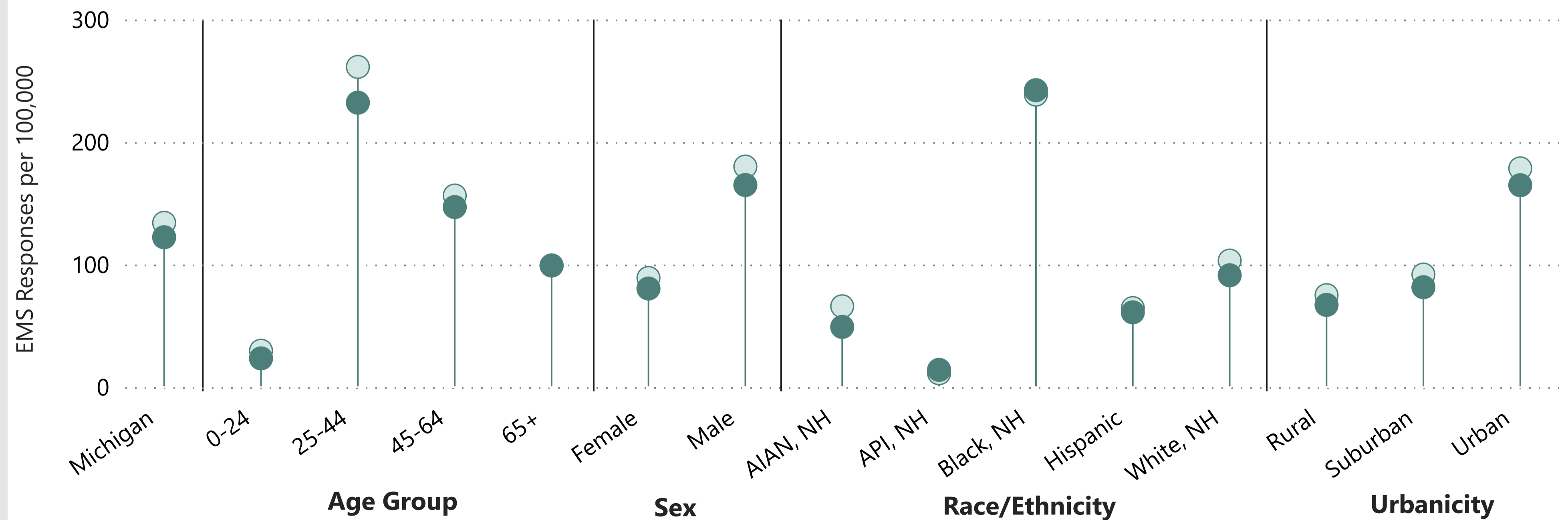
**Table 1. Demographic Groups with Highest 12-Month Percent Change in ED Overdose Visits**

Jan 2023-Dec 2023 v. Jan 2022-Dec 2022

Group	% Change
65+	+5.9%
American Indian/Alaska Native, NH	+4.9%
Black, NH	+4.9%
Hispanic	+2.0%

**Figure 6. Probable Opioid Overdose EMS Response Rate per 100,000 by Demographic Group**

● Jan 2022-Dec 2022 ● Jan 2023-Dec 2023



**Table 2. Demographic Groups with Highest 12-Month Percent Change in Probable Opioid Overdose EMS Responses**

Jan 2023-Dec 2023 v. Jan 2022-Dec 2022

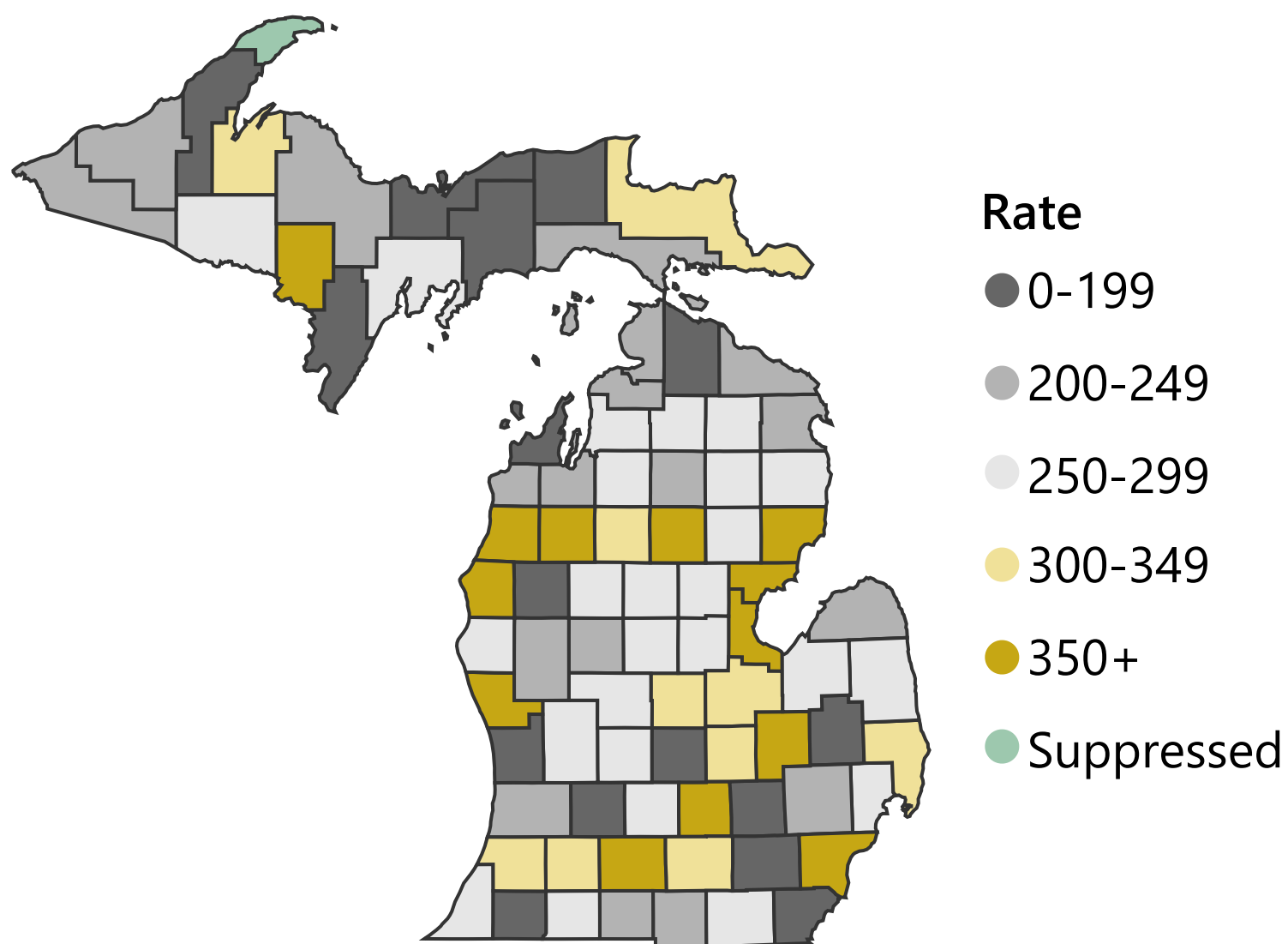
Group	% Change
Asian and Pacific Islander, NH	+24.4%
Black, NH	+1.5%

**Abbreviations:** ED=Emergency Department, EMS=Emergency Medical Services, AIAN=American Indian or Alaska Native, NH=non-Hispanic, API=Asian or Pacific Islander. **Data Sources:** MSSS (ED), MiEMSIS (EMS). **Data Missingness:** On average, approximately 24% of ED overdose data and 11% of EMS meth/opioid data are missing race/ethnicity information.

# Geographic Patterns

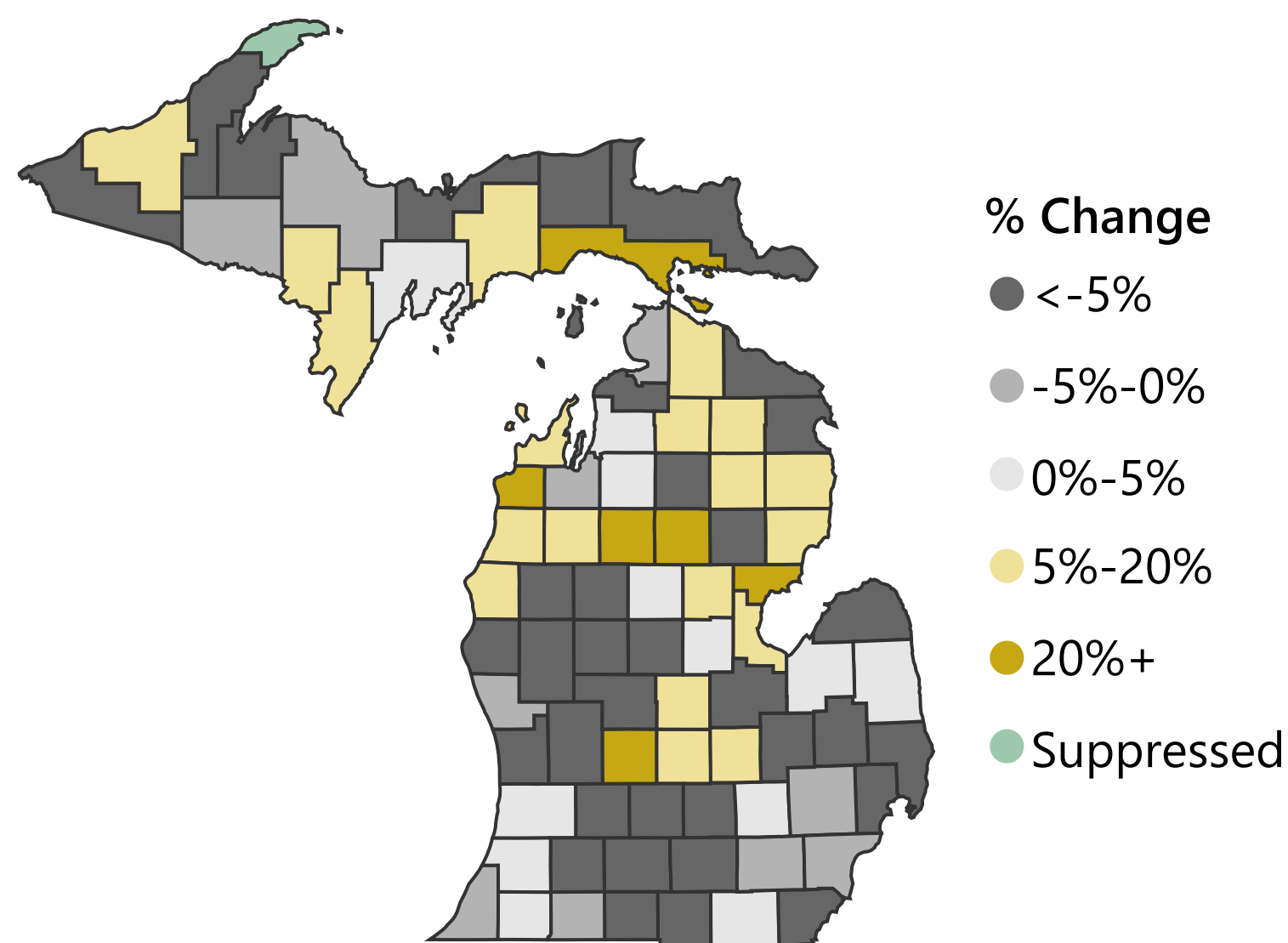
**Figure 7. All Drug Overdose ED Visit Rate per 100,000 by County of Residence over Previous 12 Months\***

Jan 2022-Dec 2022



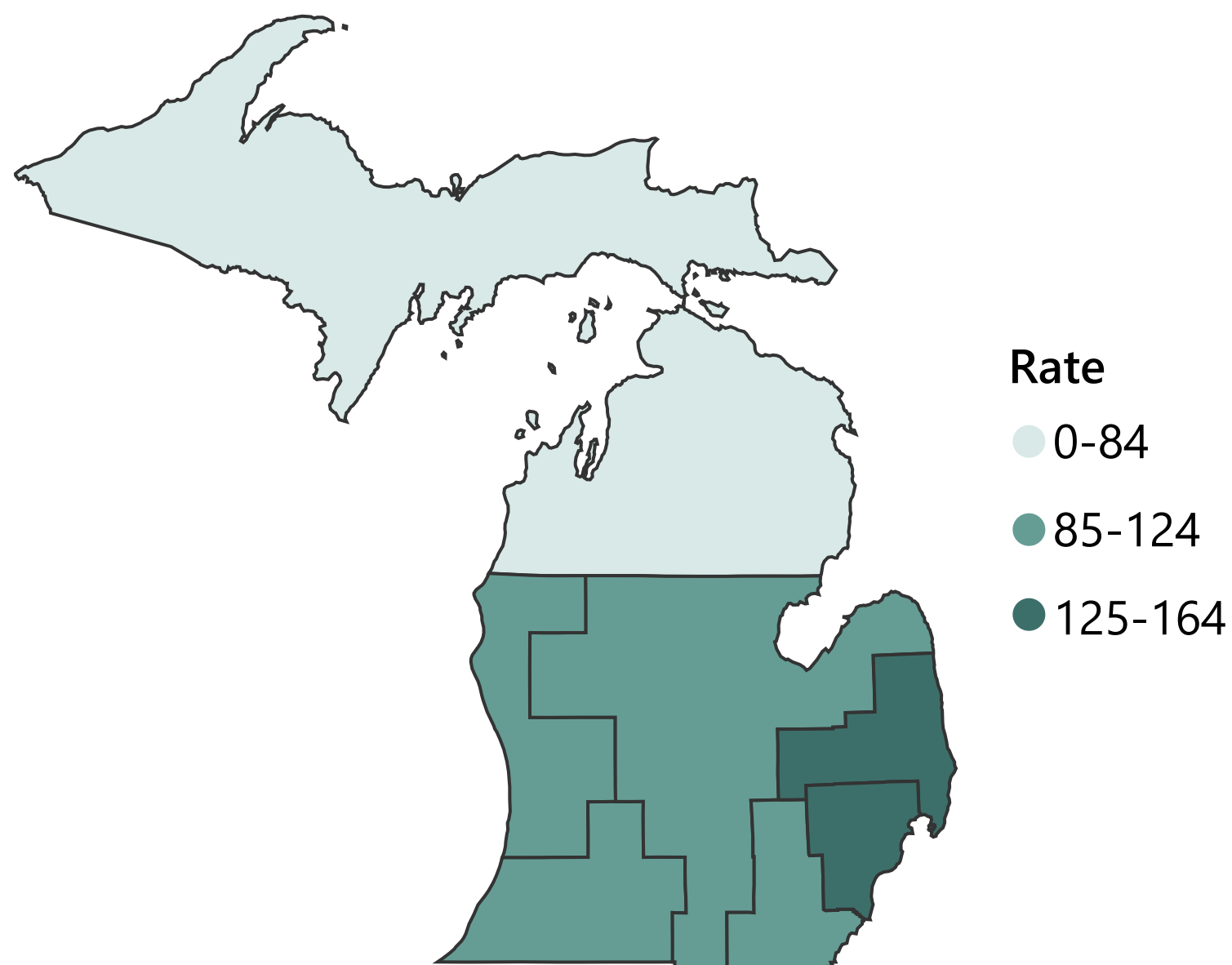
**Figure 8. 12-Month Percent Change in All Drug Overdose ED Visit Rate by County of Residence\***

Most recent vs. previous 12-month rate:  
Jan 2022-Dec 2022 vs. Jan 2021-Dec 2021



**Figure 9. Probable Opioid Overdose EMS Response Rate per 100,000 by Region of Occurrence over Previous 12 Months**

Jan 2023-Dec 2023



**Figure 10. 12-Month Percent Change in Probable Opioid Overdose EMS Response Rate by Region of Occurrence**

Most recent vs. previous 12-month rate:  
Jan 2023-Dec 2023 vs. Jan 2022-Dec 2022



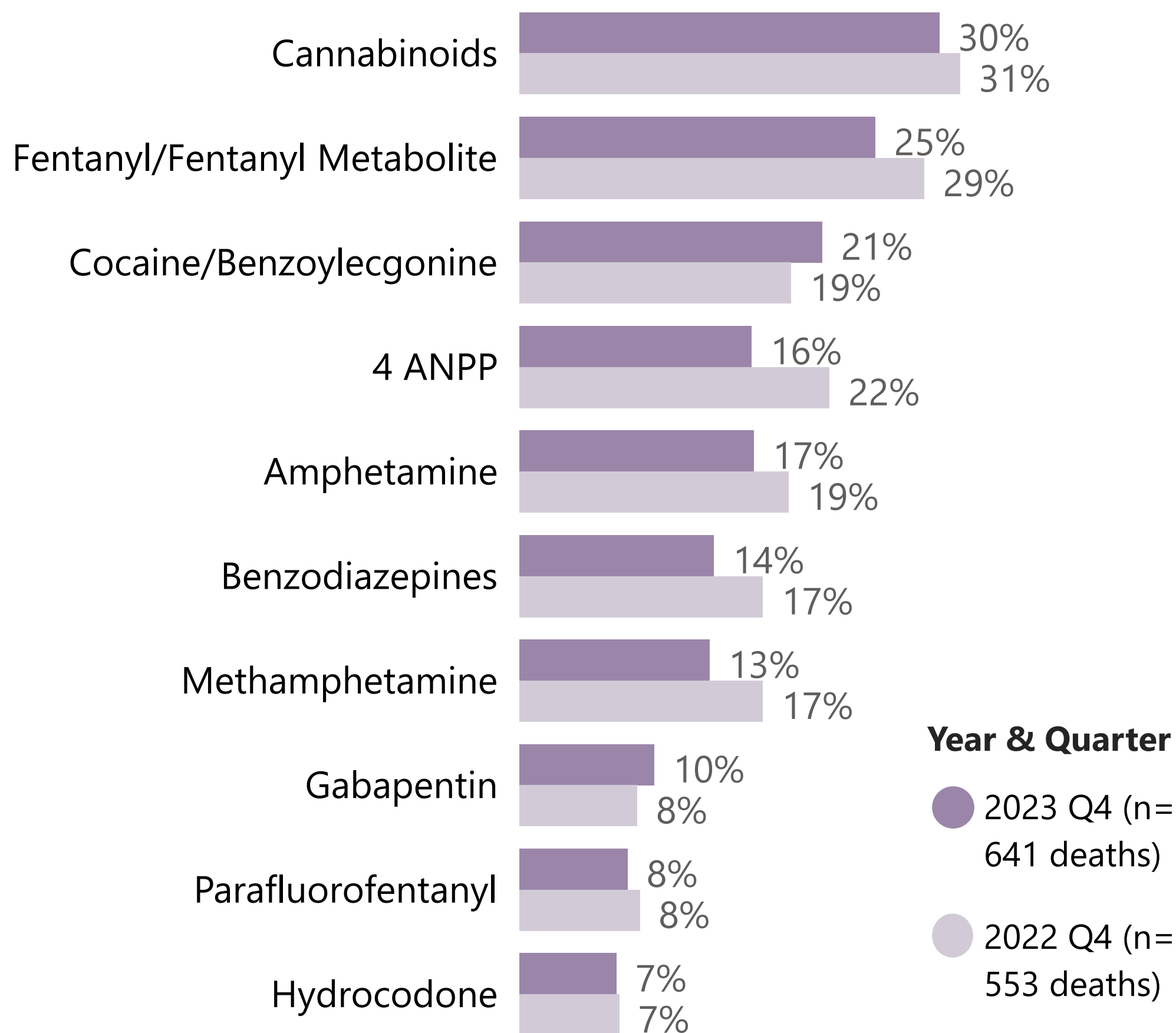
**\*Data Note:** ED data on this page have a [different source and timeframe](#). MSSS data are not stable at the county-level. **Abbreviations:** ED=Emergency Department, EMS=Emergency Medical Services. **Data Sources:** Michigan Inpatient, Outpatient Databases (MIDB/MODB) (ED), MiEMIS (EMS). **Location:** ED map is based on patient's residence; EMS map is based on overdose location due to missingness (22.5%) of EMS residence information. **Regions:** [Prepaid Inpatient Health Plan \(PIHP\)](#) regions were used in figures 7/8, as county-level rates cannot be calculated based on overdose location. The PIHP regional grouping was chosen as PIHPs provide SUD treatment services. Regions 7-9 are combined.

# Drug-Specific Patterns

Figures 11-13 data are from toxicology testing of deaths submitted to the [Swift Toxicology of Overdose-Related Mortality \(STORM\)](#) project. Figure 14 data are from SUD treatment admissions collected by the Treatment Episode Dataset (TEDS). These data are not reflective of the entire substance-using population in Michigan; see data notes on page 5. Three-month estimates are provided to highlight emerging drug trends.

**Figure 11. Top Ten Substances Found in Death Sample Toxicology Testing (STORM)\***

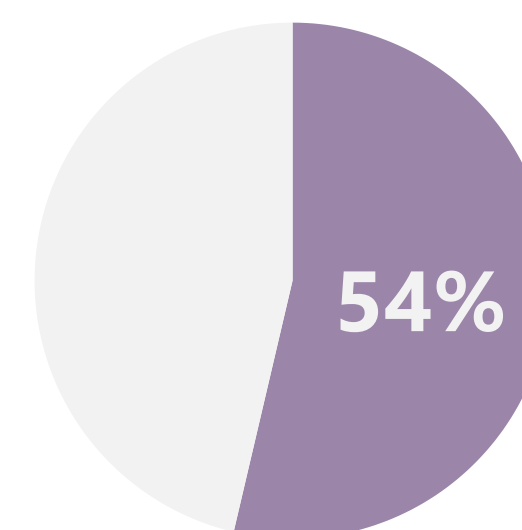
Oct - Dec 2023 vs Oct - Dec 2022



\*STORM tests for drug presence at time of death and cannot determine if the substance caused the death.

**Figure 12. Postmortem Samples Positive for Multiple Substances (n=344 deaths), (STORM)**

Oct - Dec 2023



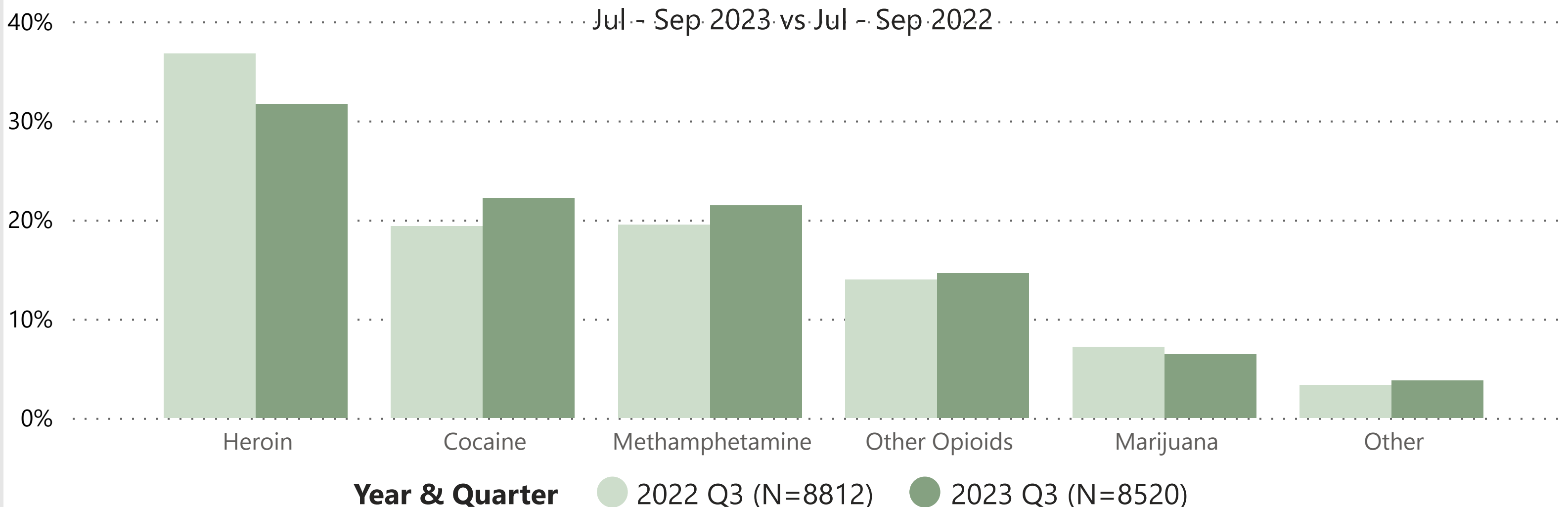
**Figure 13. Most Common Drug Combinations in Polysubstance Death Samples (n=344 deaths), (STORM)**

Oct - Dec 2023



**Figure 14. Drugs Self-Reported as Primary Substance of Use by Patients Entering Publicly Funded SUD Treatment (%), (TEDS)**

Jul - Sep 2023 vs Jul - Sep 2022



# Data Notes

**Table 3. Data Sources/Case Definitions**

Data Point	Source (Owner)	Case Definition
Drug Overdose ED Visits (Figures 1, 3, 5, Table 1)	MSSS (MDHHS)	ED visits with a drug poisoning International Classification of Disease, 10th Revision, Clinical Modification (ICD-10-CM) diagnosis code (T36-T50), limited to initial visits among Michigan residents.
Opioid Overdose EMS Responses (Figures 1, 4, 5, 6, 9 10, Table 2)	MiEMSIS (MDHHS)	Identified through a likelihood formula that utilizes: provider impression, chief complaint, case narrative, respiratory rate, Glasgow Coma Scale, medications administered, and procedures performed. For more information, see <a href="#">online case definition documentation</a> .
Methamphetamine EMS Responses (Figure 1)	MiEMSIS (MDHHS)	EMS responses in which the narrative or chief complaint mentions methamphetamine use; may capture meth-related emergencies and/or history of meth use. Excludes responses to emergencies related to meth-lab accidents.
Drug Overdose ED Visits (Figures 7, 8)	MIDB/MODB (Michigan Health and Hospital Association)	ED visits with a drug poisoning ICD-10-CM diagnosis code (T36-T50), limited to initial visits among Michigan residents.
Death Data (Figure 2)	Michigan Resident Death Files (MDHHS)	Deaths of Michigan residents with a drug poisoning underlying cause of death ICD-10 code (X40-X44, X60-X64, X85, Y10-Y14).
Toxicology Testing (Figures 11-13)	STORM (Western Michigan University)	Deaths were included in the figure if they were sent to the STORM project and were positive for the noted drug(s) in toxicology testing.
Self-Reported Substance of Use (Figure 14)	Treatment Episode Dataset (MDHHS)	Numerator in the percentage calculations is the number of patients self-reporting the noted drug as their primary substance of use (PSU) when entering treatment. Denominator is all SUD treatment episode admissions, excluding those for alcohol as the PSU. Limited to Michigan residents.

## Statistical Methods

**Rate Calculation:** All rates presented are crude rates. Rates are suppressed when numerator is between 1-5 for statistical stability purposes. Denominators in rates are National Center for Health Statistics bridged-race 2020 population estimates (vintage 2020). **Geographic Considerations:** ED rates by county were calculated based on patient residence. EMS rates were not calculated at the county-level due to high missingness of residence information in EMS records. EMS rates were instead aggregated at the region level, with geography based on the location of overdose incident.

## Limitations

**Event Data:** EMS, ED, and treatment data represent events, not individuals; individuals may be in data multiple times in timeframe. **Data Location:** ED data is based on resident location, while EMS data is based on incident location; this should be considered when interpreting map data. **STORM:** [STORM data](#) are based on a subset of deaths from participating medical examiner (ME) offices. Western Michigan, Sparrow, and Genesee ME offices are the primary participants and cover 19 counties. Trends seen in STORM are not generalizable to all of Michigan. **Treatment Episodes:** Treatment data is based on publicly-funded treatment program admissions; it is not reflective of the entire substance-using population in Michigan. **Drug Specificity:** ED data are limited to all drug overdoses due to lack of drug specific diagnosis data in MiCelerity; EMS data are limited to opioid overdoses based on available case definition.

**Title Page Mural:** For National Recovery Month in September 2021, Muralmatics, a Lansing-based firm, created a mural (in part, featured on the first page) at the [National Council on Alcoholism and Drug Dependence](#) (NCADD) in Detroit, Michigan to symbolize the impact of the drug overdose crisis. Photograph taken by [Val Waller Photography](#).