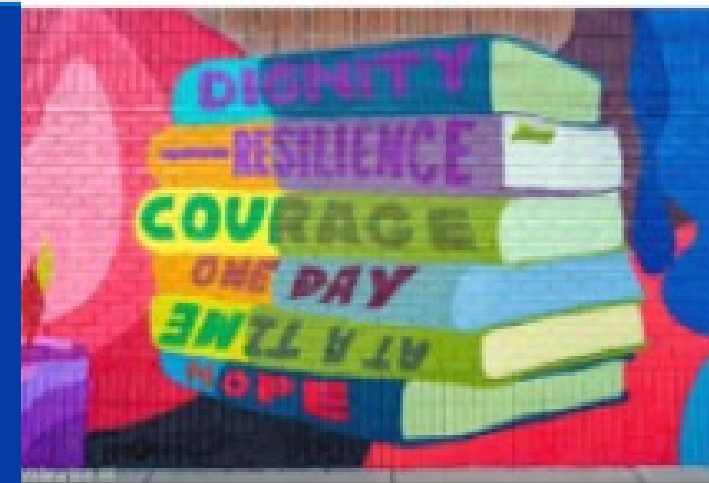


Michigan Monthly Overdose Update

April 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: May 2022-Apr 2023 vs. May 2021-Apr 2022

-0.2%	-2.9%	-6.4%
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

2020	2,738	27.5 per 100,000
2021	3,096	31.1 per 100,000

Data in Action

Wayne State University Center for Behavioral Health and Justice (WSU CBHJ) has implemented 15 harm reduction vending machines statewide, which distributed 8,551 naloxone cartons from Jan 2021- Mar 2023. WSU CBHJ also recently developed a [toolkit to guide jails in building and expanding existing naloxone distribution programs](#).

Overdose Trends

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

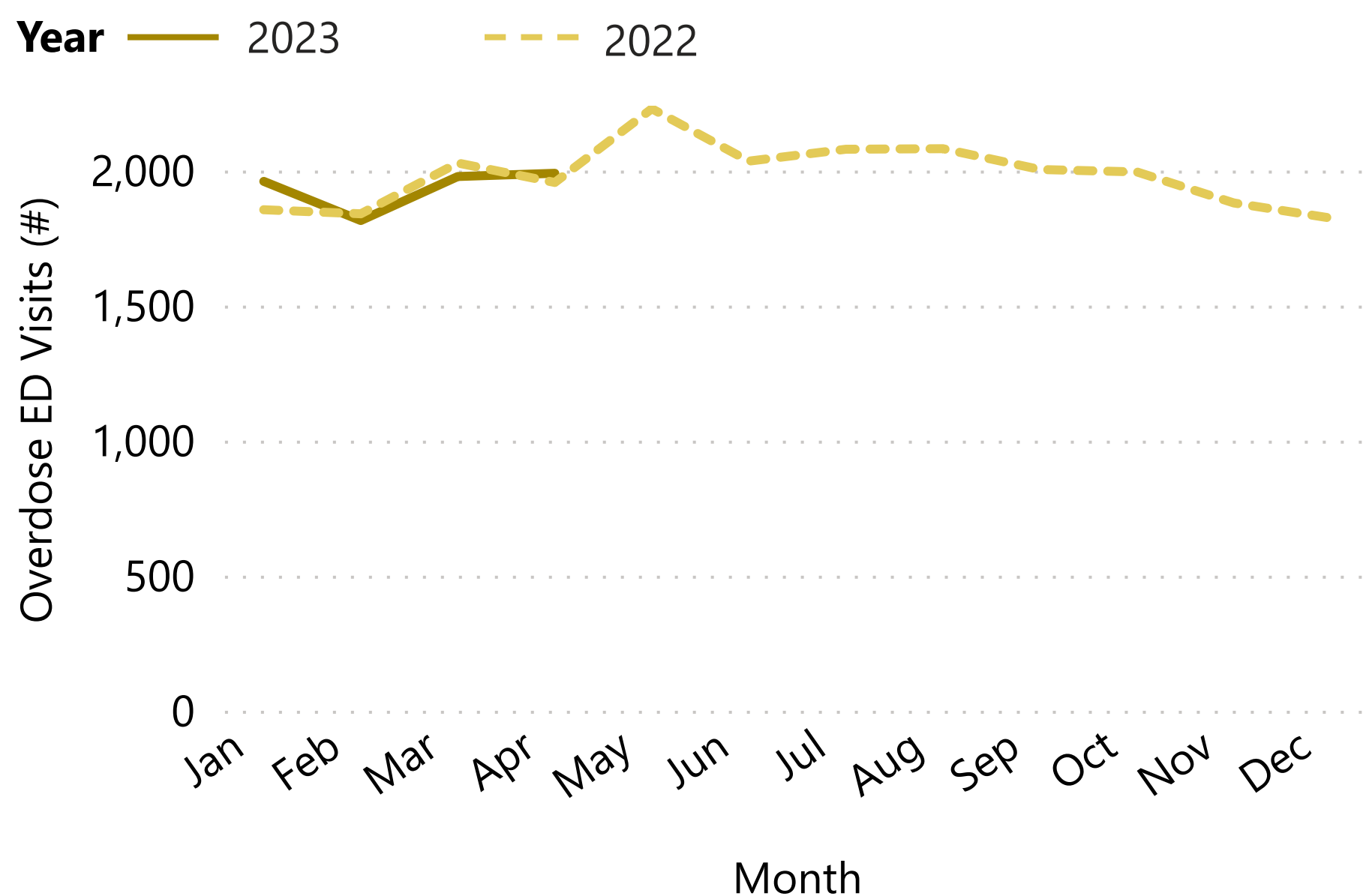
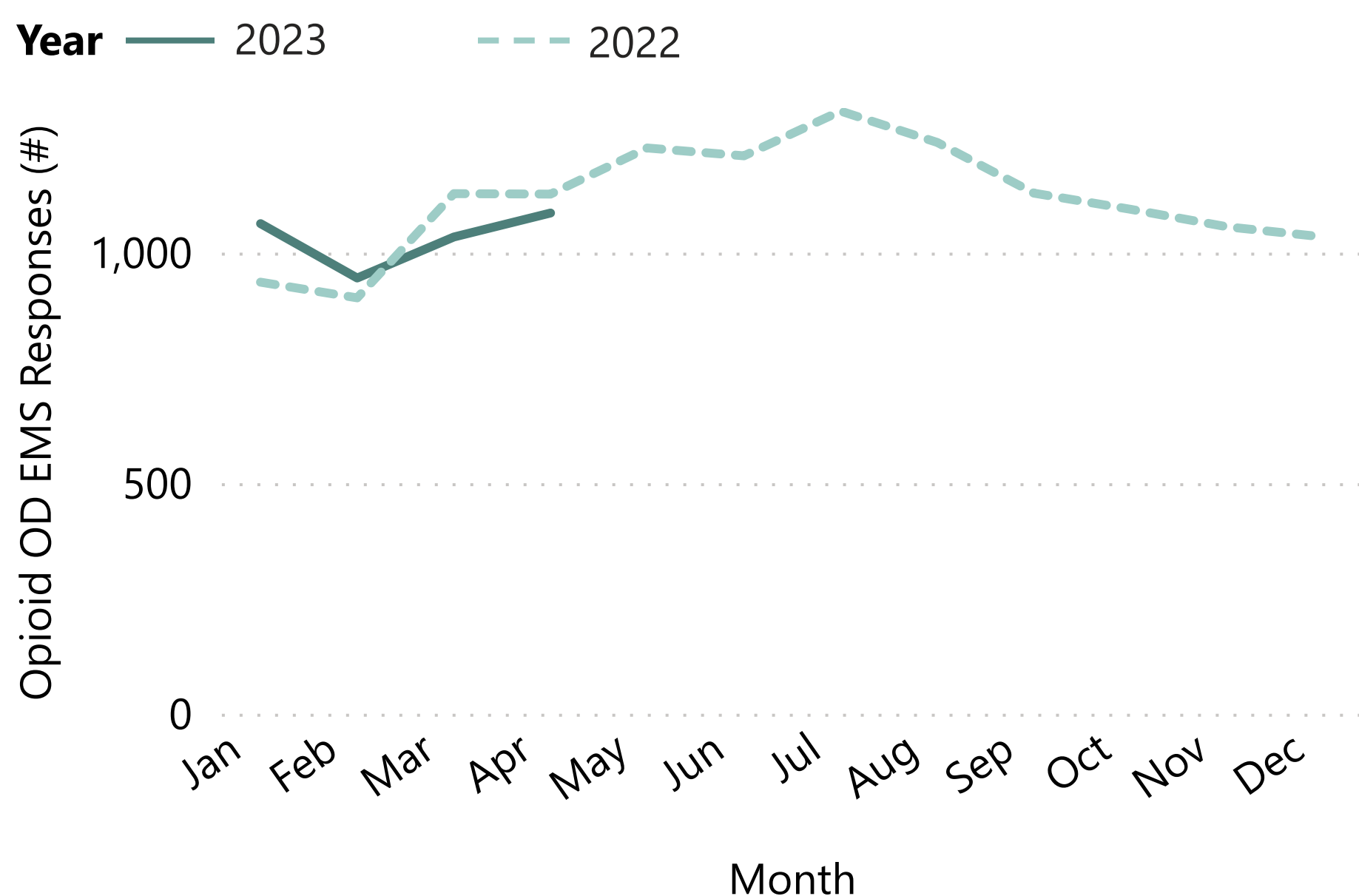


Figure 4. Probable Opioid Overdose EMS Responses Year-to-Date Compared To Previous Year



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

○ May 2021-Apr 2022 ● May 2022-Apr 2023

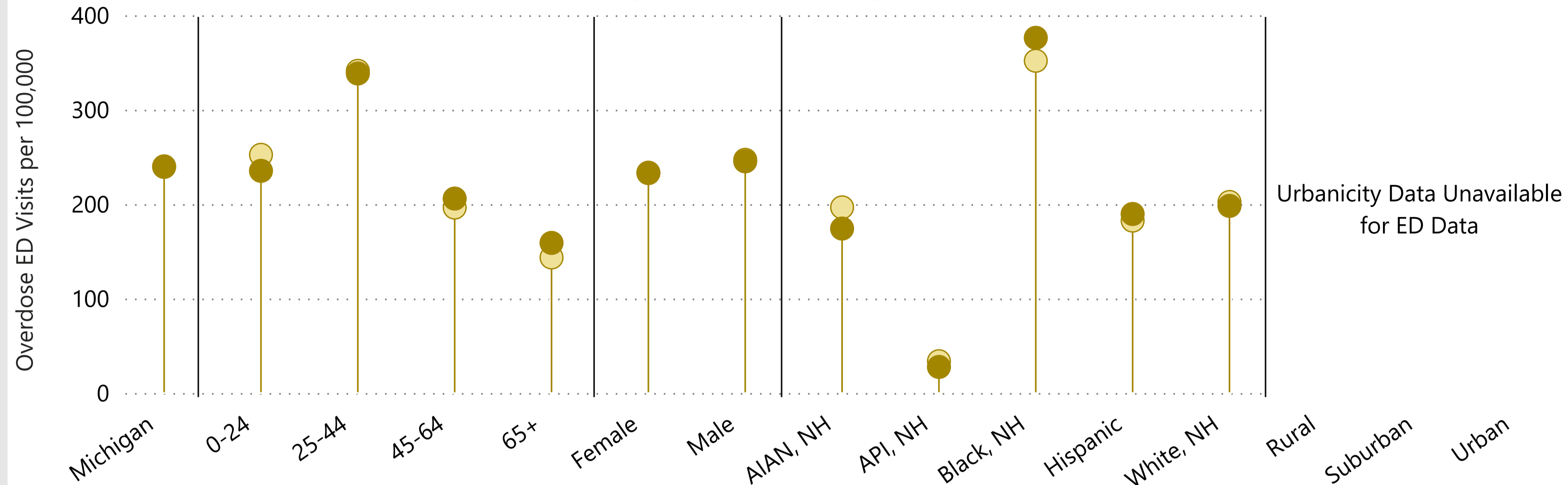


Table 1. Demographic Groups with Highest 12-Month Percent Change in ED Overdose Visits

May 2022-Apr 2023 v. May 2021-Apr 2022

Group	% Change
65+	+10.8%
Black, NH	+6.9%
45-64	+4.9%
Hispanic	+3.8%
Female	+0.2%

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

○ May 2021-Apr 2022 ● May 2022-Apr 2023

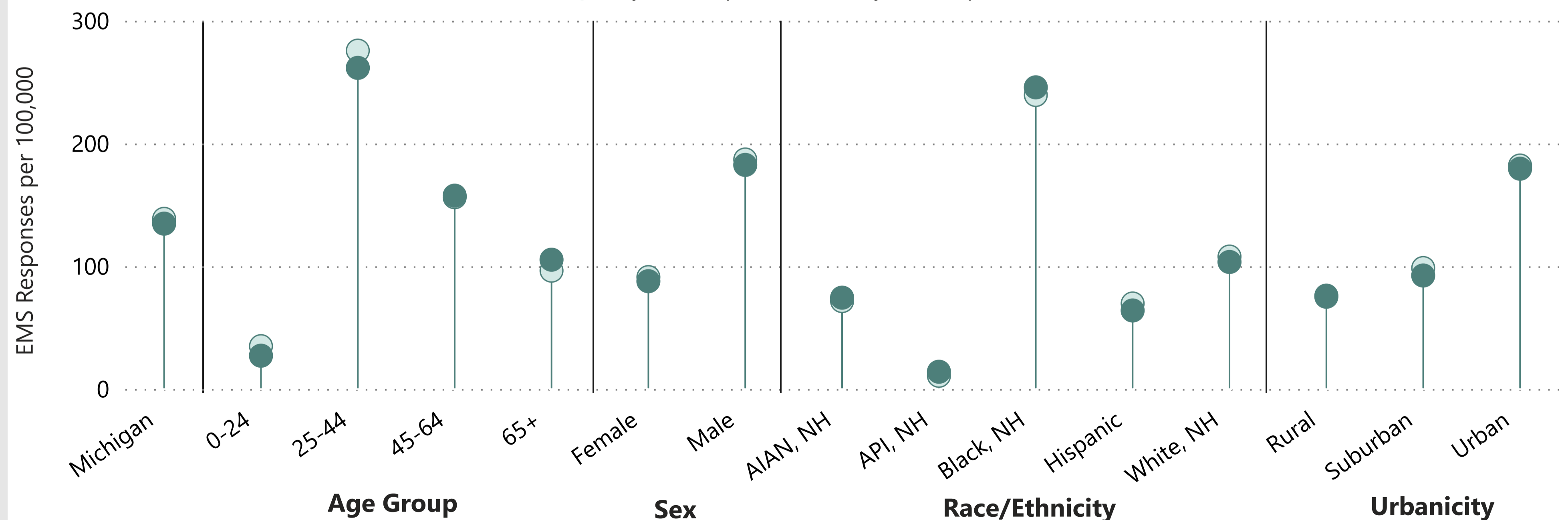


Table 2. Demographic Groups with Highest 12-Month Percent Change in Probable Opioid Overdose EMS Responses

May 2022-Apr 2023 v. May 2021-Apr 2022

Group	% Change
Asian and Pacific Islander, NH	+30.8%
65+	+9.3%
American Indian/Alaska Native, NH	+3.9%
Black, NH	+2.6%
45-64	+0.8%

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*

Oct 2021-Sep 2022

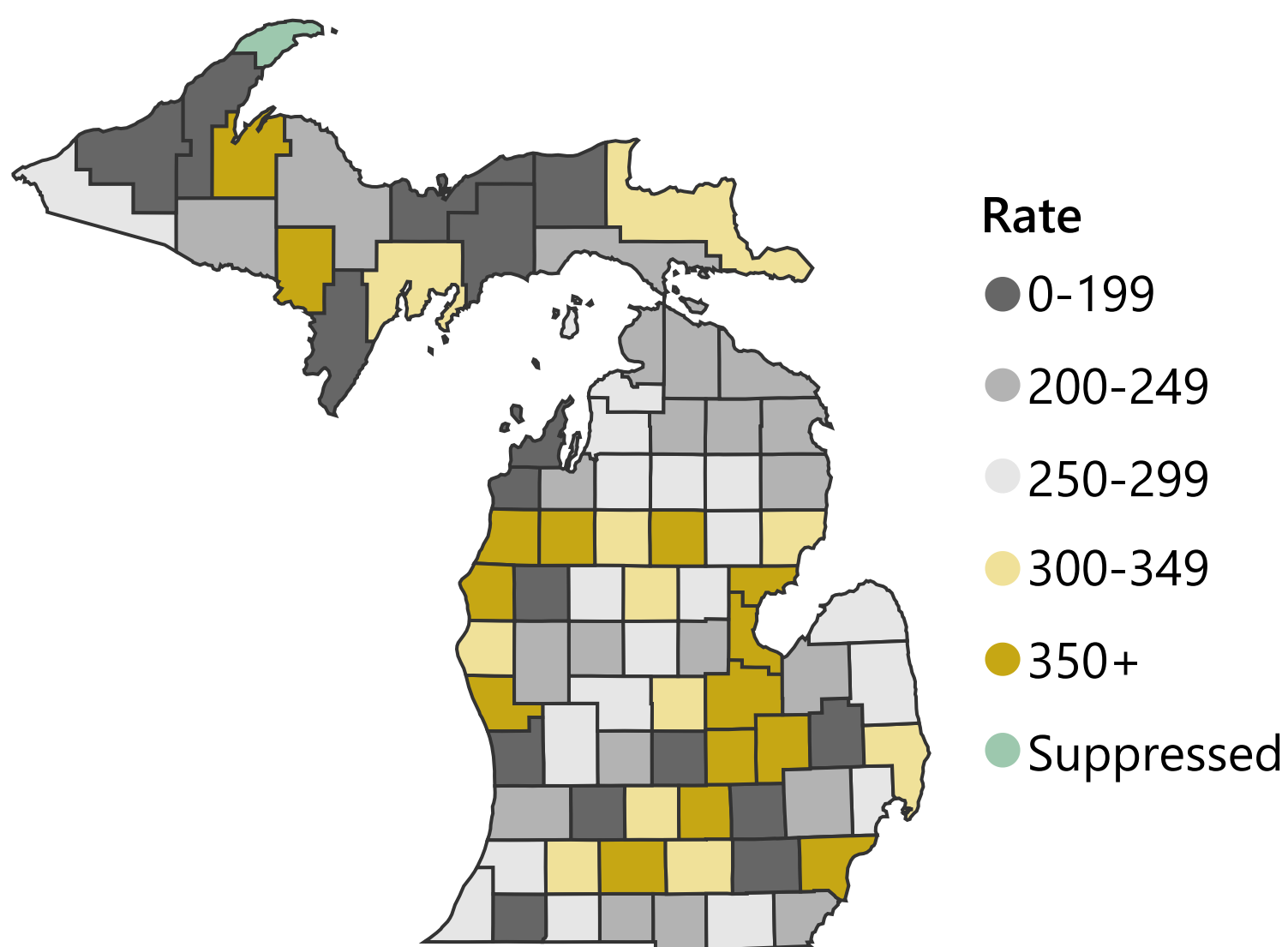


Figure 8. 12-Month Percent Change in All Drug Overdose ED Visit Rate by County of Residence*

Most recent vs. previous 12-month rate:
Oct 2021-Sep 2022 vs. Oct 2020-Sep 2021

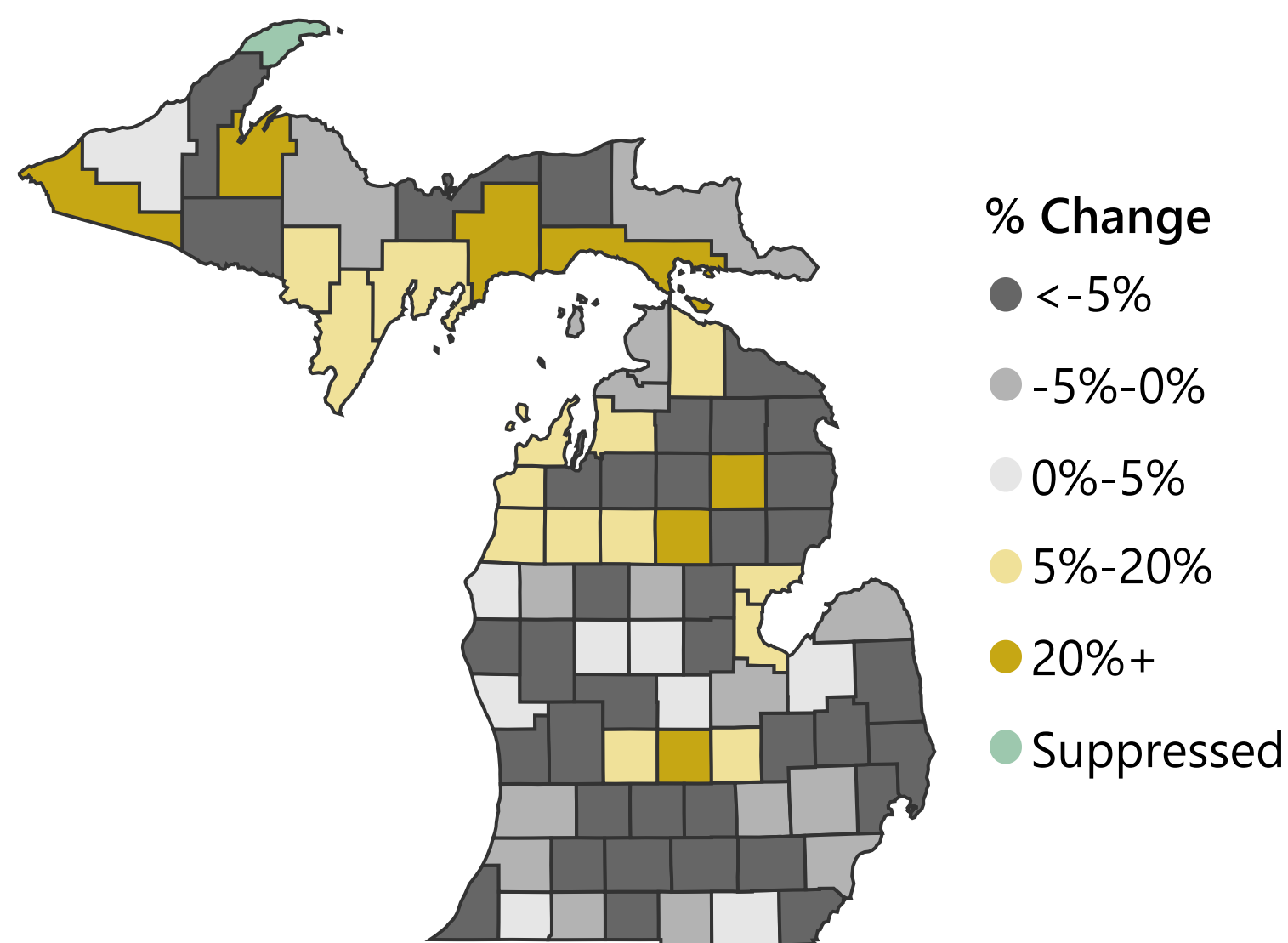


Figure 9. Probable Opioid Overdose EMS Response Rate per 100,000 by Region of Occurrence over Previous 12 Months

May 2022-Apr 2023

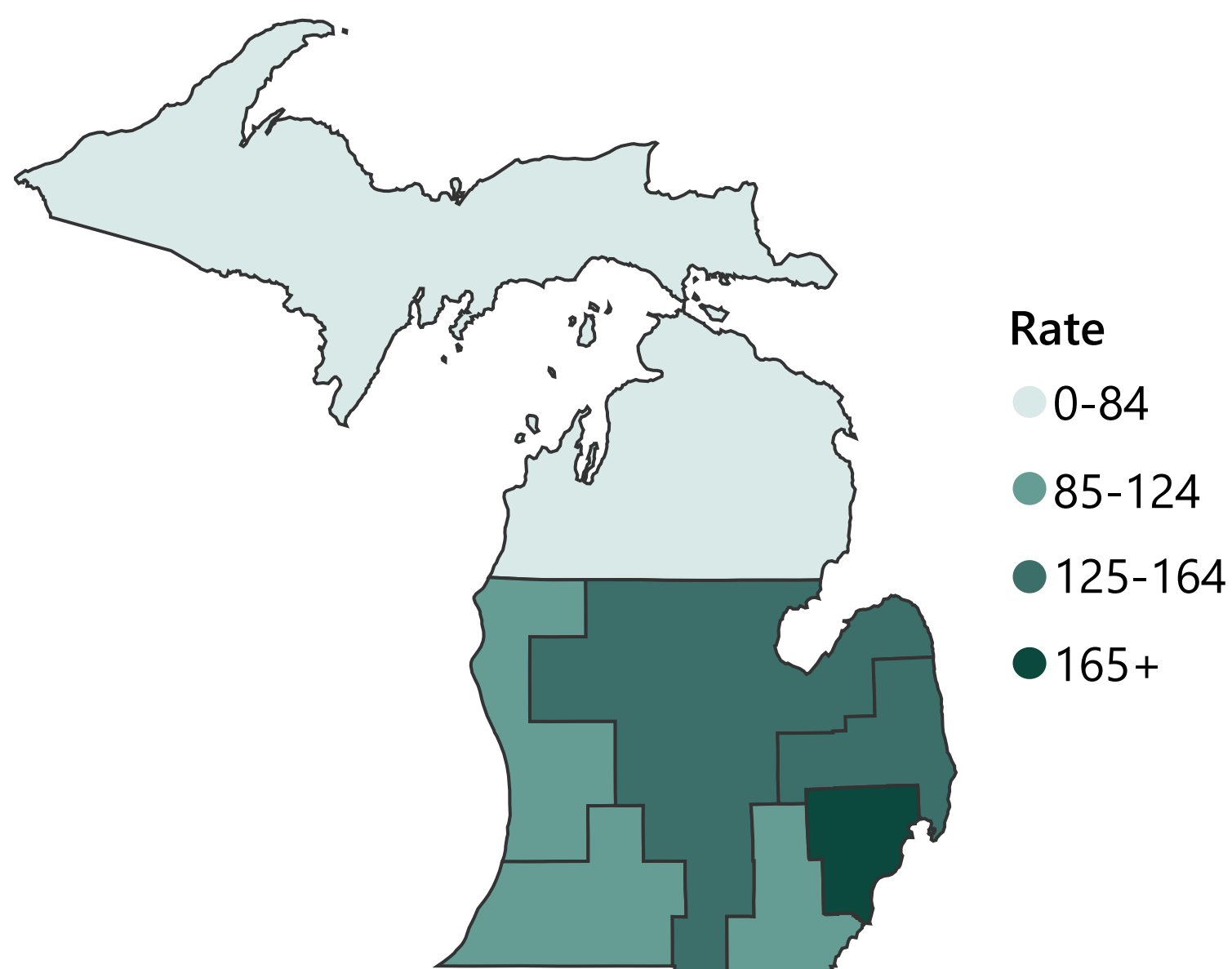
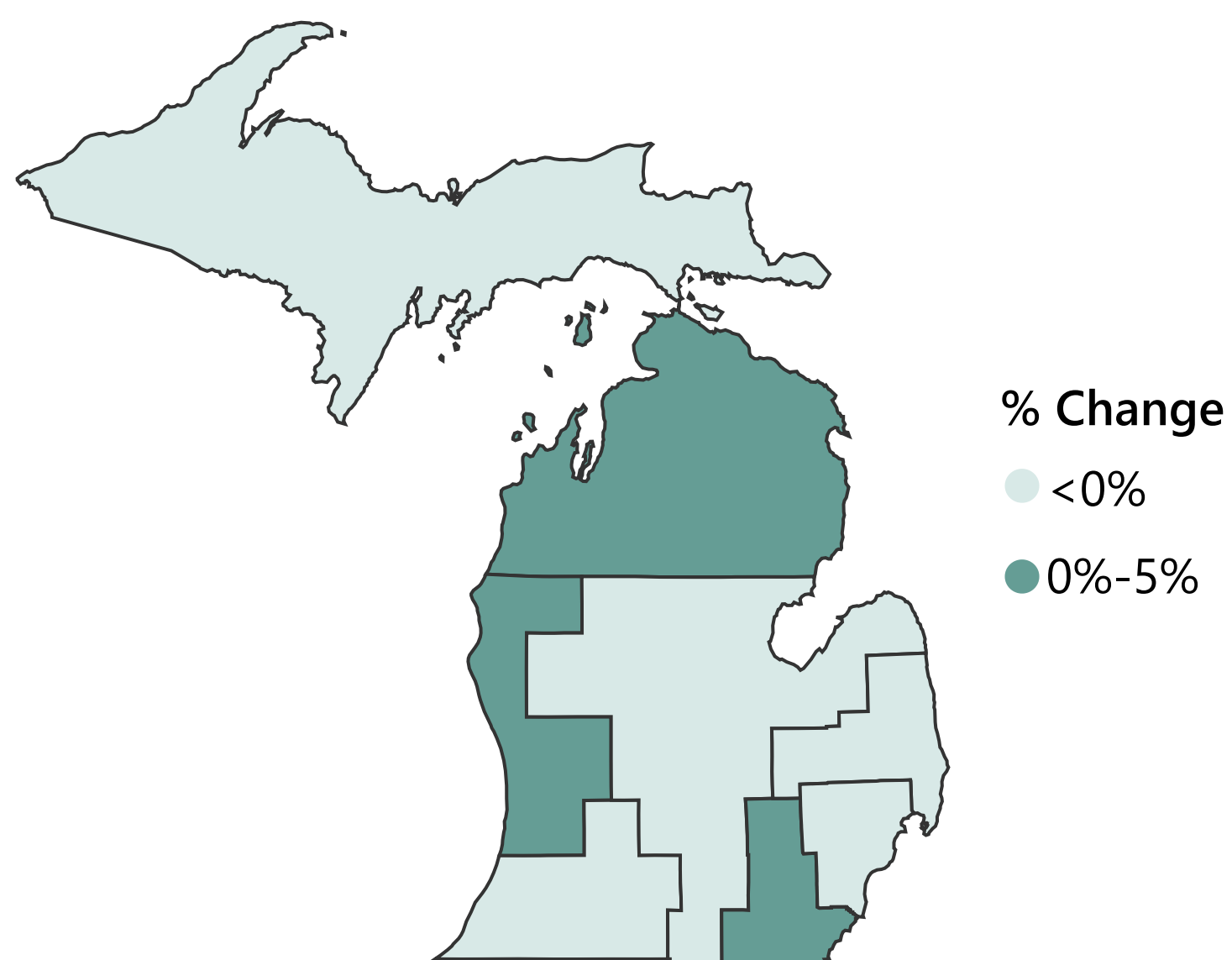


Figure 10. 12-Month Percent Change in Probable Opioid Overdose EMS Response Rate by Region of Occurrence

Most recent vs. previous 12-month rate:
May 2022-Apr 2023 vs. May 2021-Apr 2022



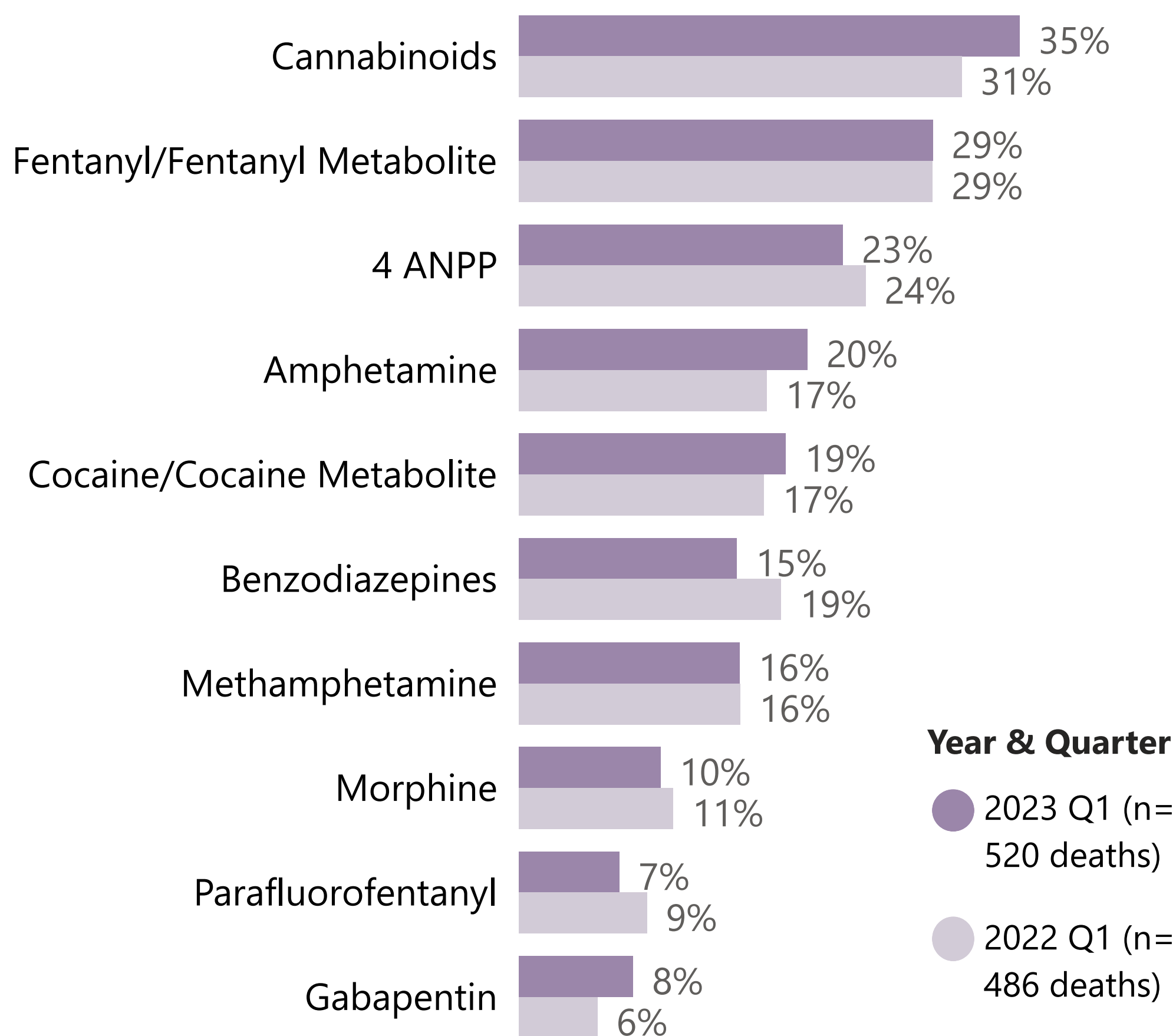
***Data Note:** ED data on this page have a [different source and timeframe](#). MSSS data are not stable at the county-level. **Abbreviations:** ED=Emergency Department, EMS=Emergency Medical Services. **Data Sources:** Michigan Inpatient, Outpatient Databases (MIDB/MODB) (ED), MiEMSIS (EMS). **Location:** 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)*

Jan - Mar 2023 vs Jan - Mar 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=279 deaths), (STORM)

Jan - Mar 2023

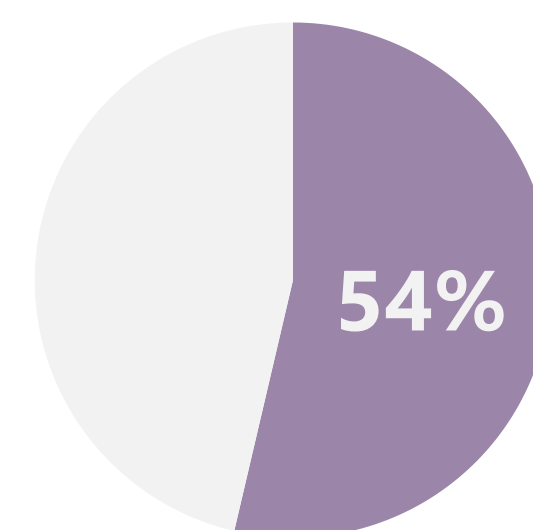


Figure 13. Most Common Drug Combinations in Polysubstance Death Samples (n=279 deaths), (STORM)

Jan - Mar 2023

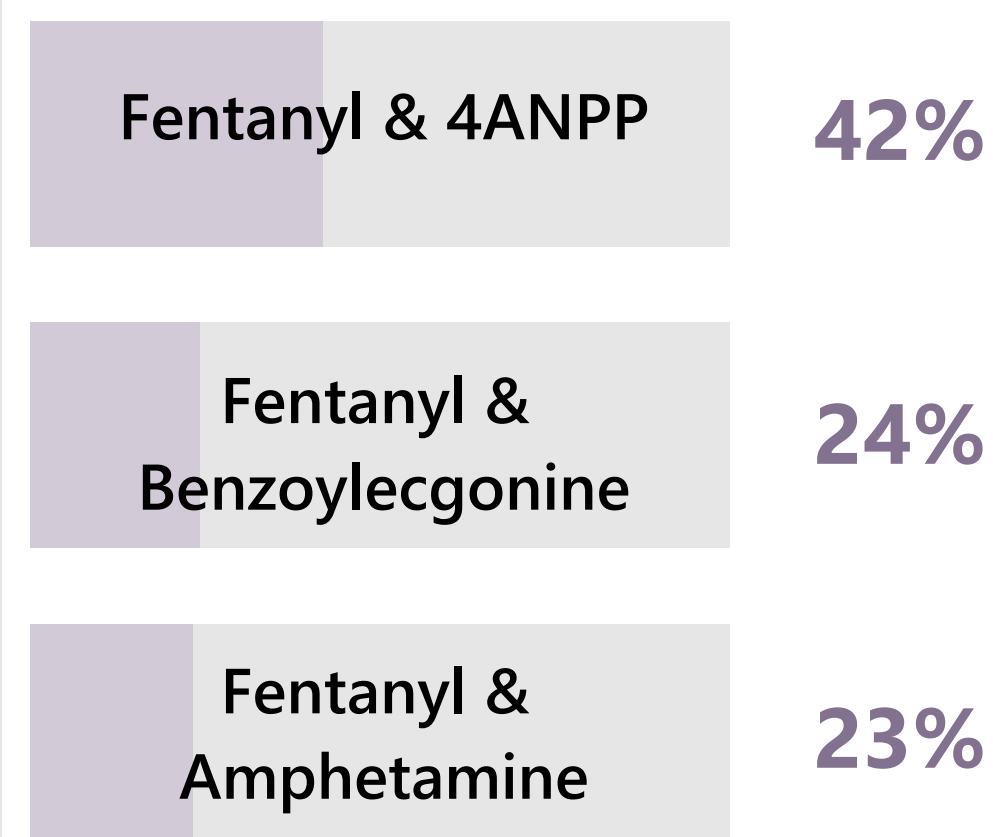
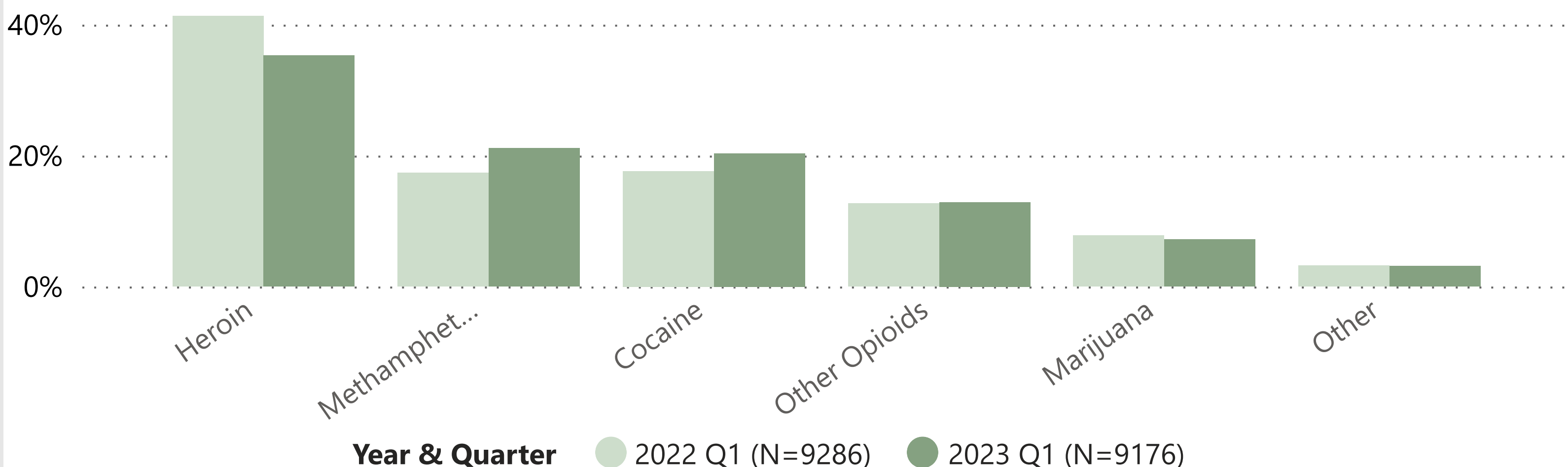


Figure 14. Drugs Self-Reported as Primary Substance of Use by Patients Entering Publicly Funded SUD Treatment (%), (TEDS)

Jan - Mar 2023 vs Jan - Mar 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 online case definition documentation .
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](#).