

# EMS Responses to Opioid Overdoses with Cocaine Involvement in Michigan, 2019-2022

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## Summary

The illicit drug supply has changed with the onset of the COVID-19 pandemic. On April 6, 2022, the Drug Enforcement Agency (DEA) issued a letter describing a national uptick in “mass overdoses,” where three or more people experienced an overdose at the same time, writing: “Many of the victims of these mass overdose events thought they were ingesting **cocaine** and had no idea they were in fact ingesting **fentanyl**.”<sup>1</sup>

This data brief highlights a recent trend in Michigan EMS data—an **increase in opioid overdoses involving cocaine**. Polysubstance drug overdoses can indicate intentional use of opioids and stimulants together or sequentially; they can also indicate psychostimulants being “laced” with one or more opioids being sold as psychostimulants, causing unintentional polysubstance use or accidental opiate use.

## Key Findings

In Michigan, comparing the rates of EMS responses to probable opioid overdose by cocaine involvement,<sup>2</sup> from 2020 to 2022, **suggests increasing use of opioids and cocaine together** (intentional or unintentional) (Figures 1-3). Here’s how the years compared:

- The 2022 rate of EMS responses to probable opioid overdose without cocaine involvement was slightly lower than the 2020 rate (2022/2020 rate ratio<sup>3</sup>: 0.91 [95% confidence interval: 0.88, 0.93]).
- The 2022 rate of EMS responses to probable opioid overdose with cocaine involvement was 45% greater than the 2020 rate (2022/2020 rate ratio: 1.45 [95% confidence interval: 1.33, 1.57]).

Since early 2022, there has been an increase in EMS responses to multiple opioid overdose events in Michigan.<sup>4</sup> Statewide in 2021, there was an average of three EMS responses to multiple opioid overdose events per week, with a weekly maximum of seven events; in 2022, the weekly average of EMS responses to multiple opioid overdose events was four, with a weekly maximum of ten events (Figure 4). In 2022, 94.1% of multiple opioid overdose events took place in the Southeast or Southwest Lower Peninsula of Michigan.

In 2021, 20.5% (27/132) of EMS narratives for these multiple opioid overdose events mentioned patients taking what they thought was cocaine and experiencing an opioid overdose. In 2022, this increased to 24.2% (53/219) of EMS responses to multiple opioid overdose events mentioning cocaine (Figure 4).

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<sup>1</sup> [DEA Letter-Polydrug Incidents-April 6 2022-Web 0.pdf](#)

<sup>2</sup> Subset of EMS responses to probable opioid overdose where “cocaine” is found in patient care narrative and/or where first responder assigns a primary/secondary impression of cocaine poisoning ICD-10 code. See Technical Notes for full definitions.

<sup>3</sup> Rate ratios compare the risk of an event among one group with the risk among another group; a rate ratio of 1.0 signifies equal risk between groups, while < 1.0 signifies decreased risk; > 1.0, increased risk.

<sup>4</sup> “Multiple opioid overdose” refers to events where two or more people experience an opioid overdose at the same time, after using the same or similar drugs.

## Takeaways for Organizations

**Get the message out—drugs sold as cocaine can contain fentanyl, which can cause an opioid overdose.** Fentanyl is deadly and widespread in the illicit drug supply. Central nervous system (CNS) stimulants such as cocaine and CNS depressants such as opioids, when used together, can be a lethal combination, masking the effect of a single drug and leading to overdose. For example, if the stimulant is faster-acting and wears off first, the full effect of the opiate can cause a person to stop breathing.<sup>5</sup>

**Educate about the signs of opioid overdose and how to use naloxone to reverse an opioid overdose.** People intending to use cocaine may not know the signs of an opioid overdose or how to use naloxone. Beyond naloxone training, prepare bystanders to use CPR, rescue breathing, and/or chest compression in cases where naloxone is not available or is not working yet to sustain life until EMS arrives.

**Distribute naloxone—organizations can [request free naloxone from MDHHS](#) to increase capacity.**

- Connect individuals with more ways to access naloxone: order online at [nextdistro.org/Michigan](https://nextdistro.org/Michigan) and have it delivered at no cost; get it at a pharmacy ([Naloxone Standing Order](#), no prescription required); or contact a [Syringe Service Program](#) for naloxone, fentanyl test strips, sterile needles, testing for HIV and Hepatitis C, and other life-saving resources.
- Support and expand the EMS Leave-Behind Naloxone Program, providing life-saving medication to people who have experienced an overdose. As of April 2022, 22 out of 59 Medical Control Authorities in Michigan are participating in the EMS Leave-Behind Naloxone Program.

**Distribute fentanyl test strips to check drugs.** Purchase [directly from BTNX](#) or connect with [Syringe Service Programs in Michigan](#).

**Promote harm reduction messages.** “Assume overdose risk no matter what drug you’re using, and practice as much harm reduction as possible, as consistently as possible: Go slow. Use less. Test your product. If you’re using alone, double down on other strategies. Have someone check on you. Smoke or snort instead of inject. If you’re using in a group, stagger your use so someone is always alert. Know the signs of an overdose. Carry naloxone and know how to use it. Look out for each other!”<sup>6</sup>

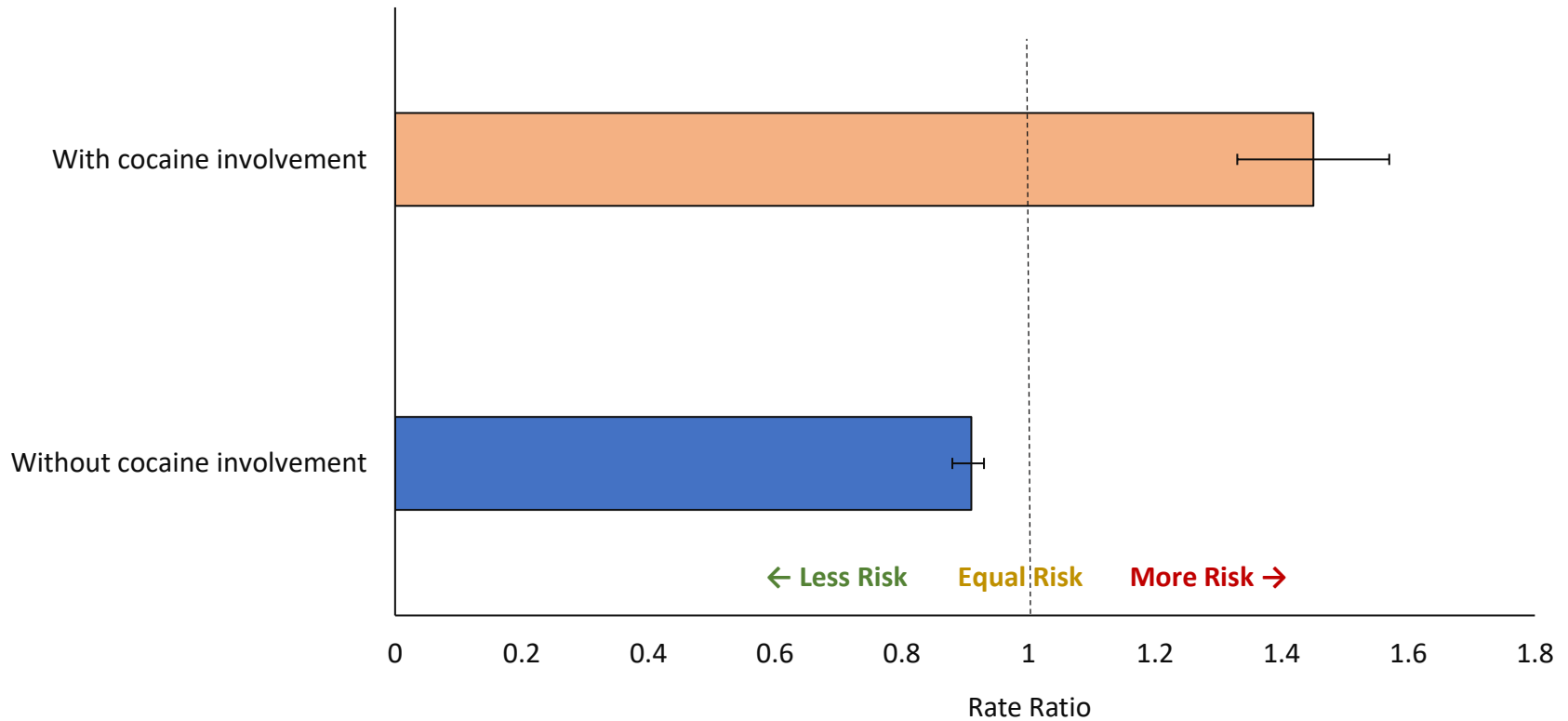
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<sup>5</sup> [TripSit Factsheets - Cocaine](#)

<sup>6</sup> [Overdose Prevention Factsheet](#), Drug Overdose Prevention and Education Project, San Francisco, CA

Data

Figure 1. Rate Ratio<sup>3</sup> of EMS Responses to Probable Opioid Overdose by Cocaine Involvement, Among All EMS Responses in Michigan, 2020 to 2022\*



\*Error bars represent 95% confidence intervals for rate ratios. Where confidence intervals do not overlap, there is significant ( $p < 0.05$ ) difference between groups.

Figure 2. Count of EMS Responses to Probable **Opioid Overdose** in Michigan by Month, January 2019 - December 2022

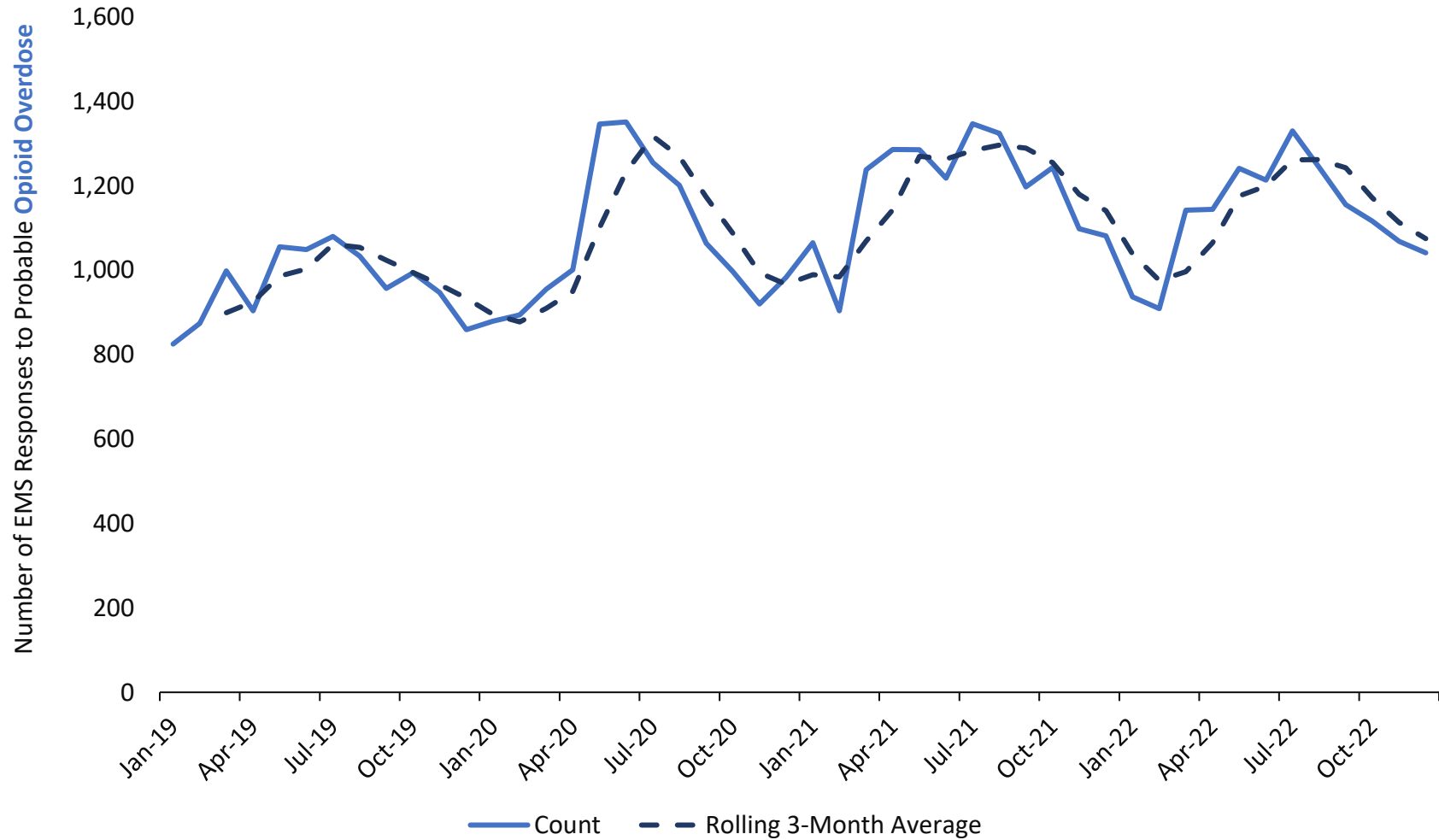


Figure 3. Count of EMS Responses to Probable Opioid Overdose with **Cocaine Involvement** in Michigan by Month, January 2019 - December 2022

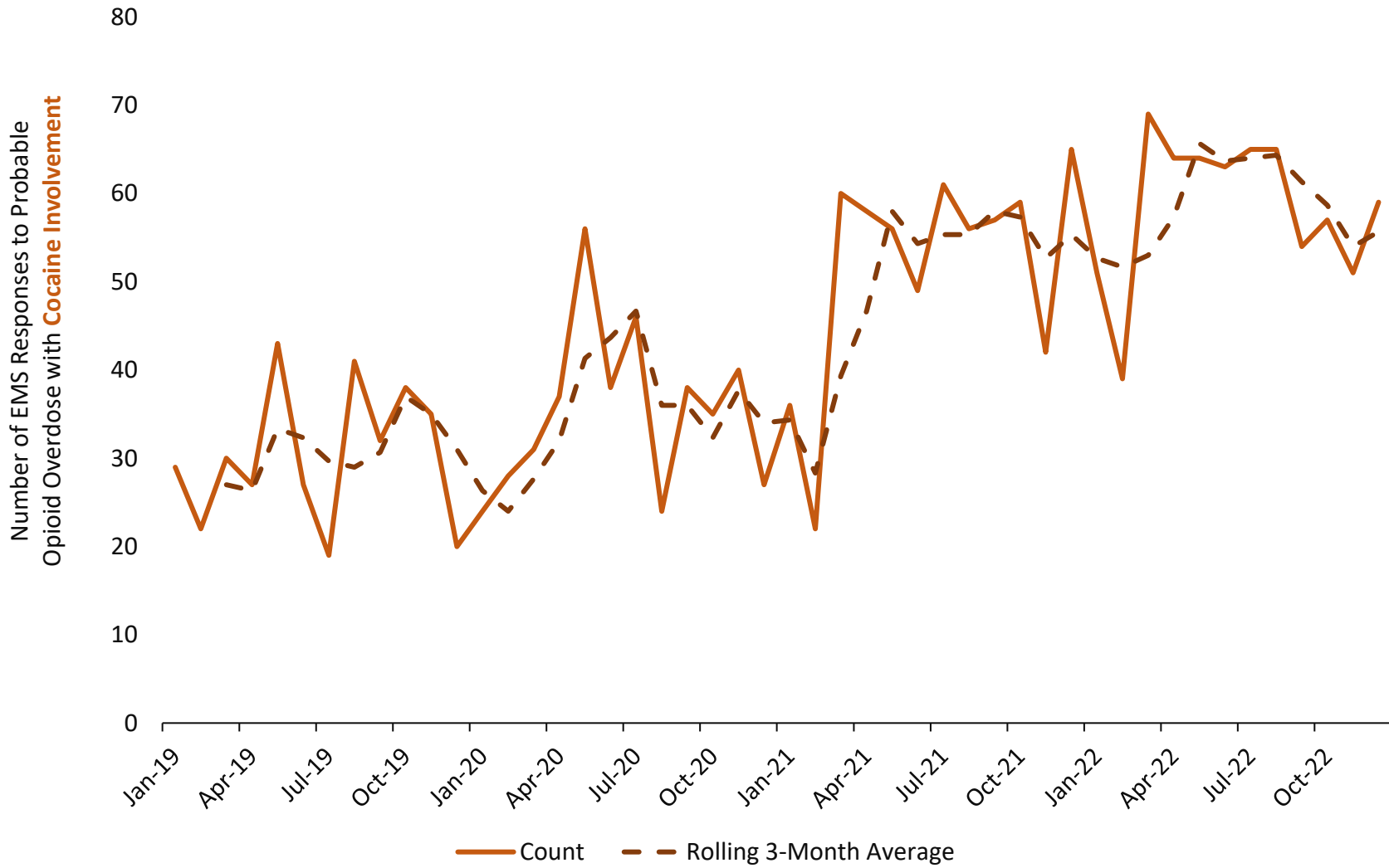
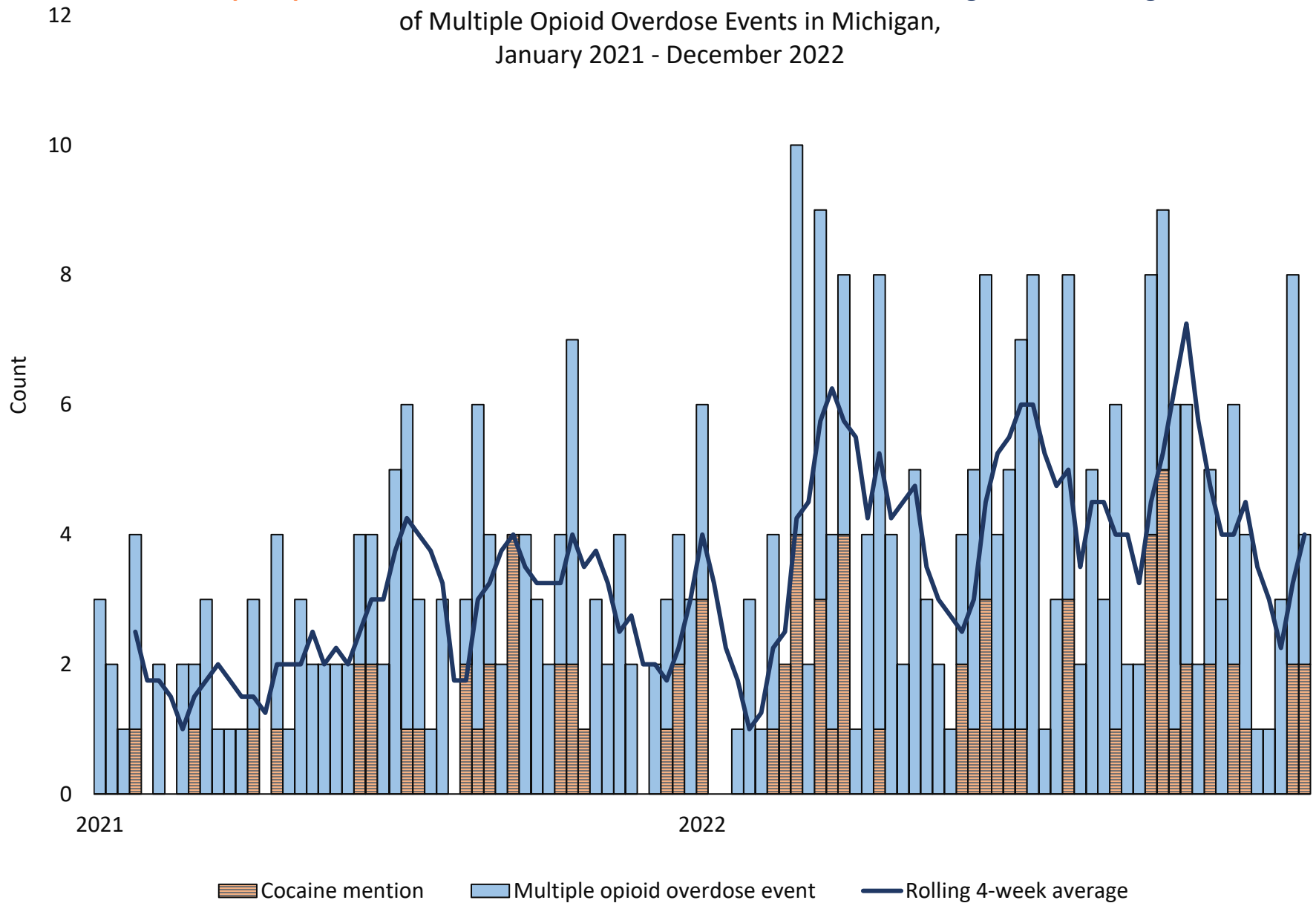


Figure 4. Weekly Count of EMS Responses to **Multiple Opioid Overdose Events**, **Multiple Opioid Overdose Events with Mention of Cocaine**, and **Rolling 4-Week Average** of Multiple Opioid Overdose Events in Michigan, January 2021 - December 2022



## Resources

Listed below are resources that can help connect individuals struggling with substance use disorder or otherwise at risk for overdose to programs that can help.

If you or someone you know uses drugs:

- Practicing safer drug use (safety practices that prevent overdose deaths) can help save a life. More information is available in [Safer Drug Use during the COVID-19 Outbreak](#).
- [Access resources to support the mental and physical health](#) of those with substance use disorder during the COVID-19 pandemic.
- Contact your primary care provider before you run low on necessary medications. If you need access to a medical provider, contact your nearest [Federally Qualified Health Center](#) for support.

If you or someone you know would like to seek substance use disorder treatment:

- Treatment centers continue to operate during COVID-19. [Find a center near you](#).

## Technical Notes

### Data Sources

- Figure 1-3: 2019-2022 Michigan Emergency Medical Services Information System (MiEMSIS), Michigan Department of Health and Human Services Bureau of EMS, Trauma, and Preparedness.
- Figure 4: Biospatial Data Platform, 2022.

### Statistical Notes

For Figure 1, rate ratios and 95% confidence intervals were calculated using Microsoft Excel; the rate denominators are all EMS responses in Michigan within a year.

### Definitions

#### *EMS Response to Probable Opioid Overdose*

Opioid overdoses are estimated using data from the Michigan Emergency Medical Services Information System (MiEMSIS), which collects data on all EMS responses in Michigan. Responses are designated as probable opioid overdoses based on vital signs, provider impressions, initial complaint, medications administered, procedures performed, and information in the patient care narrative. The Michigan case definition is available online: [Michigan EMS case definition 1.13.2022 746082 7.pdf](#)

#### *EMS Response to Probable Opioid Overdose with Cocaine Involvement*

Among EMS responses to probable opioid overdose, the patient care narrative is searched for “cocaine” and common misspellings, without negating words (i.e., withdrawal, detoxing, no signs of cocaine use, etc.). The primary and secondary impression fields are also searched for any cocaine poisoning ICD-10 codes (poisoning by cocaine, initial encounter for accidental, intentional, assault, or undermined intent: T40.5, T40.5X1A, T40.5X2A, T40.5X3A, T40.5X4A). If either of these were true—cocaine mention in narrative or cocaine poisoning diagnosis in primary or secondary impression—the EMS response was classified as a probable opioid overdose with cocaine involvement. The purpose of this definition is to capture cocaine use with symptoms of an opioid overdose, an indicator of intentional or unintentional polysubstance use.

#### *EMS Response to Multiple Opioid Overdose Event*

Raw data was downloaded from Biospatial, a platform for MiEMSIS data, deduplicated (so individual EMS runs would only appear once), and flagged:

- if events occurred in the same X,Y point location, date, and hour;
- if events matched zip code, date, and were within 0 seconds to 20 minutes of one another;
- if events matched zip code, date, and hour;
- or if keywords like “double overdose” or “multiple patients” were in the narrative.

Flagged records were manually reviewed to remove false positives and to confirm that flagged events were actually multiple opioid overdose events.

### **Limitations**

- Because of a data system transition (National EMS Information System 2, or NEMSIS2, to NEMSIS3), 2019 marks the beginning of the most complete EMS data for reporting in Michigan.
- The EMS responses to probable opioid overdose case definition may not capture all opioid overdoses.
- Manual adjudication of a statewide random sample indicated that 9% of cases designated as opioid overdoses by this case definition were not true opioid overdoses.
- An individual can appear in the dataset more than once if they had more than one overdose encounter with EMS in the given timeframe; thus, records are deduplicated before analysis such that individual EMS runs are only represented once.
- The data represent EMS responses to probable opioid overdoses that occurred (i.e., were responded to) in Michigan and may not necessarily have occurred among residents of Michigan.
- ‘Cocaine involvement’ is a broad term, capturing current and past use, paraphernalia descriptions, intentional polysubstance use, and unintentional polysubstance use (i.e., mistaking another substance as cocaine). This definition may miss some cases of cocaine/opioid overdoses while including other cases that do not truly fit the criteria.
- Search criteria for multiple opioid overdose events may not capture all double, triple, quadruple, etc., overdoses while misclassifying other events.