

# Michigan Opioid-Involved Drug Poisoning (Overdose) Deaths

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## Abstract

The Michigan Environmental Public Health Tracking Program (MiTracking) created a dataset that includes deaths with an underlying cause of drug poisoning with at least one opioid for Michigan residents from 2004 through the most recent year available. Drug poisoning is often referred to as drug overdose. The data include four measures:

- (1) The number of deaths due to opioid-involved drug poisoning.
- (2) The crude rate of opioid-involved drug poisoning deaths per 100,000 population.
- (3) The age-adjusted rate of opioid-involved drug poisoning deaths per 100,000 population.
- (4) The percent of all drug poisoning deaths that did not specify the type of drug involved in the death.

Data are aggregated by year of death, county of residence (including City of Detroit separately), sex and age group.

This dataset is updated every year.

MiTracking obtained these data through a data sharing agreement with the Michigan Department of Health and Human Services Division for Vital Records and Health Statistics (MDHHS DVRHS).

All users are recommended to read and fully comprehend the metadata prior to data use. To access these data, visit the [MiTracking Data Portal](#).

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## Purpose

MiTracking developed this dataset to provide summary information on the number, characteristics and distribution of opioid-involved drug overdose deaths among Michigan residents. The data are helpful for public health professionals, researchers and the public.

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## Supplemental Information

The Michigan Resident Death Files include deaths of all Michigan residents, including deaths that occur both in- and out-of-state. The death certificate reports the address which is geocoded giving the county of residence. Unsuccessfully geocoded addresses are not assigned to any county but are still included in the total statewide count.

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## Keywords

Overdose; overdose deaths; overdose mortality; drug overdose; drug overdose deaths; drug overdose mortality; drug poisoning; drug poisoning deaths; drug poisoning mortality; opioid; opioids; opioid overdose; opioid overdose mortality; opioid overdose deaths; heroin; semisynthetic; drugs.

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### Bounding Coordinates

Geographically, all cases in this dataset occurred for residents of Michigan. This means that all cases were for residents within the latitude/longitude coordinates listed below.

- West Bounding Coordinate: -90.41813399999995.
- East Bounding Coordinate: -82.418394000000006.
- North Bounding Coordinate: 48.189534000000002.
- South Bounding Coordinate: 41.696088000000003.

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### Other Information on Data

- Level of Geographic Detail: Statewide, County and City of Detroit.
- Currentness Reference (when data were last updated): 3/13/2024.
- Frequency at which the data are updated: Annually.
- Data Status: Complete.

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### Completeness Report

Deaths with an unknown or missing value for county of residence, sex or age were excluded from the corresponding category, but included in the total. The sum of deaths within each category may be less than the total.

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### Data Processing Description

**Data Source:** DVRHS provided the Michigan Resident Death Files for years 2004 through the most recent year available.

**Inclusion Criteria:** All deaths of Michigan residents that met the following two criteria:

- An underlying cause of death ICD-10 code of X40-X44 (unintentional poisoning), X60-X64 (suicide poisoning), X85 (homicide poisoning), or Y10-Y14 (poisoning of undetermined intent).
- An opioid-related ICD-10 code in any of the multiple cause-of-death fields, including T40.0 (opium), T40.1 (heroin), T40.2 (natural and semisynthetic opioids), T40.3 (methadone), T40.4 (synthetic opioids) or T40.6 (unspecified opioids).

**Data Calculations:**

- Percent of overdose deaths with unspecified drugs by county was calculated by dividing the number of drug overdose deaths where the type of drug was not specified by the total number of drug overdose deaths and multiplying by 100.
- Counts of deaths were aggregated by year of death, county of residence, sex and age group (Groups: 0-14, 15-24, 25-34, 35-44, 45-54, 55-64 and 65+).
- To calculate crude and age-adjusted rates, bridged-race population denominators were obtained from National Center for Health Statistics. For years 2010-2021, Vintage 2020 postcensal population estimates were used.<sup>1</sup> For years 2004-2009, July 1, 2000-July 1, 2009, revised bridged-race intercensal population estimates were used (released 10/26/2012).<sup>2</sup> The release of postcensal population estimates ceased with the release of the Vintage 2020 estimates. Data for the year 2021 use the 2020 population estimate for the denominator.
- Direct age-standardization using the 2000 Standard United States Population as the reference population was used to calculate age-adjusted rates.
- Crude and age-adjusted rates are presented per 100,000 population per year.
- Data management and all analyses were performed using SAS Version 9.4 (©2002-2012, SAS Institute Inc.).

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### Access Constraints

There are no access constraints for data available through the MiTracking Data Portal. Where applicable, restricted data will only be released to users after a written request detailing the purpose of the request, intended use for the data and specifics on the security and privacy measures to be taken to safeguard patient privacy and prevent unauthorized access to or use of the data. For more information, contact the Michigan Overdose Data to Action (MODA) team at [MDHHS-MODASurveillance@michigan.gov](mailto:MDHHS-MODASurveillance@michigan.gov).

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### Use Constraints

All users are recommended to read and fully comprehend the metadata prior to data use. Efforts have been made to ensure the accuracy of the data. These data are supplied by DVRHS for submission to the MiTracking Program for the purposes of compiling, integrating and disseminating environmental hazard, exposure and health effects data. MDHHS specifically disclaims responsibility for any analyses, interpretations or conclusions made by those who access this information.

These data remain the property of MDHHS. They cannot be used for commercial purposes and shall not be used to engage in any method, act or practice which constitutes the solicitation or advertisement of goods, services or real estate to Michigan consumers.

Data users are prohibited from attempting to learn the identity of any person included in the data and from linking these data with any other data for the purpose of matching records to identify individuals.

Differences in rates over time or by area may reflect real changes, changes in reporting and classifying of overdose deaths or a combination of factors. Rates at the state and/or county level will not show the true drug overdose burden at a more local level (e.g., neighborhood) and are not geographically resolved enough to be linked with many types of environmental data. Data aggregated at the county level are based on the decedent's county of residence, not necessarily where the death occurred. The degree to which the type of drug involved in a drug poisoning death is specified in death data varies across years and counties within each year. Counts and rates of opioid-involved drug overdose deaths may be underestimated where there is a high percent of cases for which drug type was not specified.

For violent and unexpected deaths, and deaths without medical attendance within the last 48 hours, a medical examiner must investigate the cause and manner of death. In most cases, the cause of death for overdose deaths must be certified by a medical examiner in Michigan. However, differences in standards of practice between medical examiner jurisdictions may result in a differential classification of deaths due to drug overdose or other causes.

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#### **Data Limitations:**

MiTracking and its data partners have applied appropriate cell suppression rules imposed by the data providers and/or using guidance from the Centers for Disease Control and Prevention (CDC). Even at the county level it can be expected that the measures generated will often be based upon numbers too small to report or present without violating state and federal privacy guidelines and regulations. Staff have adhered to the cell suppression rules by suppressing all counts greater than 0 and less than 6 (the corresponding rates based on these small counts have also been suppressed). [Complementary \(or secondary\) suppression](#) of other counts and rates has also been completed to prevent any back calculation of primary-suppressed cells.

Additionally, counties where there was a high percent of drug overdose deaths where drug type was not specified have been suppressed. Counties were suppressed if >20% of all drug poisoning deaths were due to an unspecified drug. In reporting state-level opioid mortality data, the CDC has included only states with "good" or "very good" drug specificity ( $\geq 80\%$  and  $\geq 90\%$ , respectively).<sup>3,4</sup> Using this as guidance, Michigan requires at least 80% specificity to be included in reporting.

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#### **Security Handling Description**

If data are distributed, the use constraints specified in this metadata apply to all recipients of the data.

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#### **Distribution Liability**

The MiTracking Program is maintained, managed and operated by the Environmental Health Bureau (EHB) within MDHHS. In preparation of these data, every effort has been

made to offer the most current, correct, complete and clearly expressed information possible. Nevertheless, some errors in the data may exist. In particular, MDHHS disclaims any responsibility for source data, compilation and typographical errors and accuracy of the information that may be contained in these data.

These data do not represent the official legal version of source documents or data used to compile these data. MDHHS further reserves the right to make changes to these data at any time without notice.

It is strongly recommended that careful attention be paid to the contents of the metadata file associated with these data to evaluate dataset limitations, restrictions or intended uses. MDHHS shall not be held liable for improper or incorrect use of the data described and/or contained herein.

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If errors or otherwise inappropriate information is brought to our attention, a reasonable effort will be made to fix or remove it. Such concerns should be addressed to the MiTracking Program.

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## **Custom Order Process**

For more information or access to unrestricted or public use Michigan-specific mortality data, please contact the [Division for Vital Records and Health Statistics](#), Michigan Department of Health and Human Services, 333 South Grand Ave., Lansing, Michigan, 48933.

## Contact Information

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## References

1. *Documentation for Vintage 2020 Bridged-Race Postcensal Population Estimates for Calculating Vital Rates.*; 2021. Accessed May 28, 2024.  
[https://www.cdc.gov/nchs/data/nvss/bridged\\_race/Documentation-Bridged-PostcenV2020.pdf](https://www.cdc.gov/nchs/data/nvss/bridged_race/Documentation-Bridged-PostcenV2020.pdf)
2. *Documentation for Revised 2000-2009 Bridged-Race Intercensal Population Estimates for Calculating Vital Rates.*; 2012. Accessed May 28, 2024.  
[https://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Datasets/NVSS/bridgepop/2000\\_09/DocumentationRevisedBridgedIntercen2000\\_09.pdf](https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Datasets/NVSS/bridgepop/2000_09/DocumentationRevisedBridgedIntercen2000_09.pdf)
3. Wilson N. Drug and Opioid-Involved Overdose Deaths — United States, 2017–2018. *MMWR Morbidity and Mortality Weekly Report*. 2020;69(11). doi:<https://doi.org/10.15585/mmwr.mm6911a4>