

DHSS Fatal Drug Overdose Dashboard Companion Guide

Bureau of Health Care Analysis and Data Dissemination

Table of Contents

Purpose of the Fatal Drug Overdose Dashboard	2
Data Sources.....	2
Measures of Overdose Incidence.....	2
Definitions.....	3
Years of Potential Life Lost.....	4
How to download as a PDF	4
Navigating the Dashboard	5
Dashboard Graphics and Trends	6
Suggested Citation for the Dashboard	13

Fatal Drug Overdose Dashboard Companion Guide

Purpose of the Fatal Drug Overdose Dashboard

Drug overdoses, both fatal and nonfatal, have become an epidemic nationally as well as in Missouri over the past decade. This dashboard shows Missouri's overdose data, trends and demographic patterns to increase public awareness and guide overdose prevention. This dashboard can be used by community members, organizations and leaders to:

- Raise awareness about the current state of fatal drug overdoses in Missouri.
- Identify counties and regions affected by fatal drug overdose.
- Identify characteristics of individuals at higher risk of experiencing a fatal drug overdose.
- Guide overdose prevention and policy development.

Data Sources

Fatal data: Missouri Vital Statistics Death Certificate Data. County-level data reflects the deceased individual's county of residence. *

National Data: CDC WONDER (Wide-ranging Online Data for Epidemiological Research) is used for calculating Years of Potential Life Lost (YPLL).

Provisional data will be updated as it becomes available. There is a lag in the availability of data due to the time it takes to receive death certificate information. Provisional data can be found here: <https://health.mo.gov/data/opioids/index.php>

Measures of Fatal Drug Overdose Incidence

Counts: The number of overdose deaths in a given period.

Rates: Rates on this dashboard are crude rates, reflected per 100,000 residents. This means that these rates are not age-adjusted for specific age groups with a higher prevalence of deaths (typically the 65 and older population). Crude rates are displayed because drug overdose affects all ages, with the majority being in the middle-aged population. Additionally, rates with numerators less than 20 are considered unreliable due to the small counts. Rates are calculated by dividing the number of drug overdose deaths among residents who live in the selected area by the total number of residents in the same location and multiplying the result by 100,000.

Rates provide a more standardized comparison between populations of different sizes. For example, Boone County and St. Charles County have considerably different populations. However, their rates for drug overdose mortality are very similar despite the difference in population and counts. If a county had a rate of 26.1 for a specific year, that would indicate that for every 100,000 residents, 26.1 individuals died of drug overdose.

Data Suppression: Counties with fewer than five overdose-related deaths are suppressed to protect confidentiality.

Definitions

All Drug: A death from any drug-involved overdose. Deaths caused solely by alcohol are not included in this definition.

Other Drug: A drug-related death without a specified opioid presence. Unspecified drug deaths usually fall into this category. Some examples of these substances include marijuana, benzodiazepines, and antidepressants.

Non-Opioid Stimulants: A death from a stimulant-involved (i.e., cocaine and/or amphetamines) overdose. This excludes stimulant-involved deaths that also had opioids present.

Opioid: A death from an opioid-involved overdose. This includes deaths in which drugs like heroin, fentanyl and/or prescription opioids were listed as contributing causes on the death certificate.

Non-Heroin Opioid: An opioid-involved death in which heroin was not present. These deaths usually include synthetic opioids such as fentanyl, as well as prescription opioids such as oxycodone.

Heroin: An opioid-involved death in which heroin was present.

Stimulant and Opioid: An opioid death where stimulants were also present.

Synthetic Opioid: Opioids (excluding methadone) that are made in a laboratory and include drugs such as tramadol and fentanyl.

Drug Definitions:

(All drug classifications are based off ICD-10 codes from death certificates.)

All Drug: A death from any drug-involved overdose. Deaths caused solely by alcohol are not included in this definition.

Other: A drug-related death without a specified opioid presence. Unspecified drug deaths typically fall into this category.

Non-Opioid Stimulants: A death from a stimulant-involved (i.e. cocaine and/or amphetamines) overdose. This excludes stimulant-involved deaths that also had opioids present.

Opioid: A death from an opioid-involved overdose. This includes deaths in which drugs like heroin, fentanyl, and/or opioid prescription drugs were present.

Non-Heroin: An opioid-involved death in which heroin was not present. These deaths can include synthetic opioids such as fentanyl as well as prescription opioids such as oxycodone.

Heroin: An opioid-involved death in which heroin was present.

Stimulant and Opioid: An opioid-involved death in which stimulants were also present.

Non-Opioid Stimulants

Heroin

For details about drug definitions, hover here.

Years of Potential Life Lost

The years of potential life lost (YPLL) calculation estimates the number of years of life lost due to premature deaths. On this dashboard, years of potential life lost due to drug overdose can be broken out by drug type. Any person who dies at age 75 or above is not considered to have died prematurely and would be excluded from YPLL calculations.

For example, at an individual level, an 18-year-old who dies from a drug overdose would receive a YPLL of 57 (75-18). This means that this individual lost 57 years of potential life to a drug overdose.

How to download as a PDF

To download the dashboard as a PDF file, scroll to the bottom of the page and locate the “Download PDF” button.

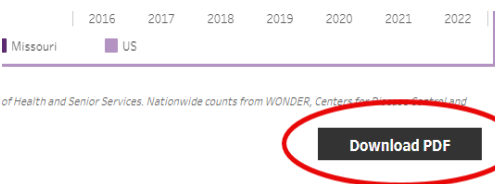
When you “Download PDF”, you will be provided with the following customization options for how you would like to export the dashboard to a PDF format.

You can include either the current view of the dashboard, specific sheets from the dashboard or specific sheets from the workbook.

For scaling, you can choose automatic or your desired percentage.

Letter is the standard page size, but this can be customized to other page sizes such as legal, note, ledger, etc.

Lastly, the PDF can be oriented in portrait or landscape.



The screenshot shows a dashboard interface with a timeline from 2016 to 2022. Below the timeline, there are two legend items: 'Missouri' and 'US'. A red circle highlights a 'Download PDF' button. Below this, a 'Download PDF' modal is open, showing customization options: 'Include' (This View), 'Scaling' (Automatic), 'Page Size' (Letter), and 'Orientation' (Portrait). A 'Download' button is at the bottom right of the modal.

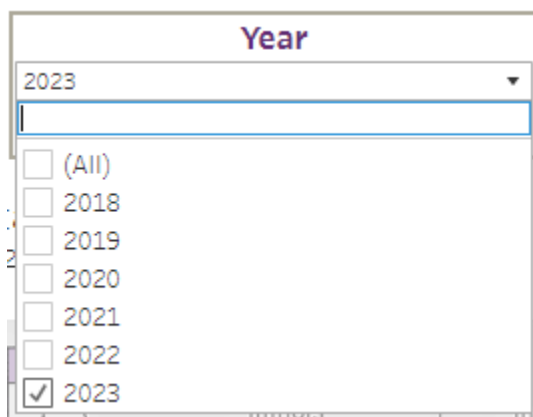
Download PDF	
Include	This View
Scaling	Automatic
Page Size	Letter
Orientation	Portrait
Download	

Navigating the Dashboard

Filters

Year

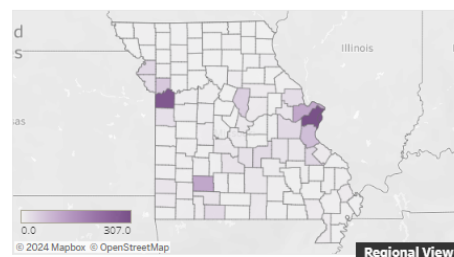
Data can be filtered by one year at a time or multiple years. Selecting multiple years can provide more reliable rates for counties with small counts. This filter will adjust the year for the indicators shown on the right:



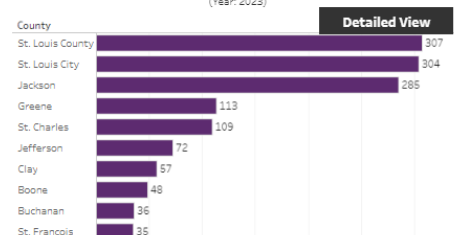
A dropdown menu titled "Year" with a list of years from 2018 to 2023. The year 2023 is selected and checked with a blue box.

Year
2023
(All)
2018
2019
2020
2021
2022
☒ 2023

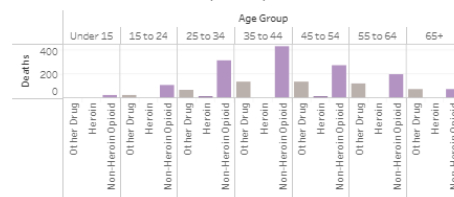
All Drug Overdose Mortality Counts in Missouri
(Year: 2023)



Top 10 Counties with the Highest All Drug Overdose Mortality Counts
(Year: 2023)

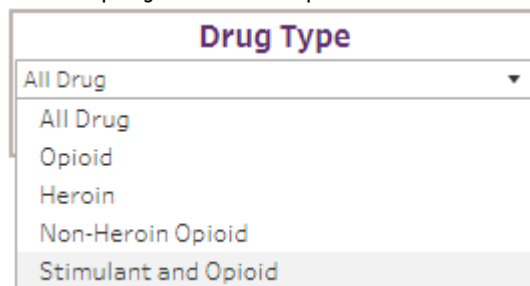


Missouri Resident Overdose Deaths by Age & Type
(Year: 2023)



Drug Type

The drug type filter enables you to select indicators to display data for specific or all drug types. Drug types include opioid, Heroin, non-Heroin opioid and stimulant and opioid. This filter can be applied to all the indicators shown on the dashboard.



A dropdown menu titled "Drug Type" with a list of drug types: All Drug, Opioid, Heroin, Non-Heroin Opioid, and Stimulant and Opioid. The "All Drug" option is selected.

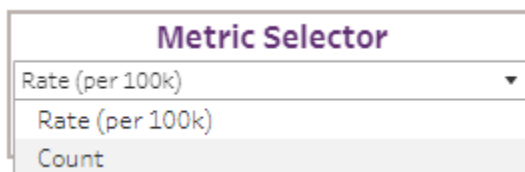
Drug Type
All Drug
Opioid
Heroin
Non-Heroin Opioid
Stimulant and Opioid

Metric Selector

The metric selector filter can show data in counts or rates.

Counts: The number of overdose deaths in each period selected.

Rates: Rates on this dashboard are crude rates reflected per 100k. Rates with numerators less than 20 are unreliable. Crude rates do not adjust for age within a population.



A dropdown menu titled "Metric Selector" with a list of metrics: Rate (per 100k), Rate (per 100k), and Count. The "Rate (per 100k)" option is selected.

Metric
Rate (per 100k)
Rate (per 100k)
Count

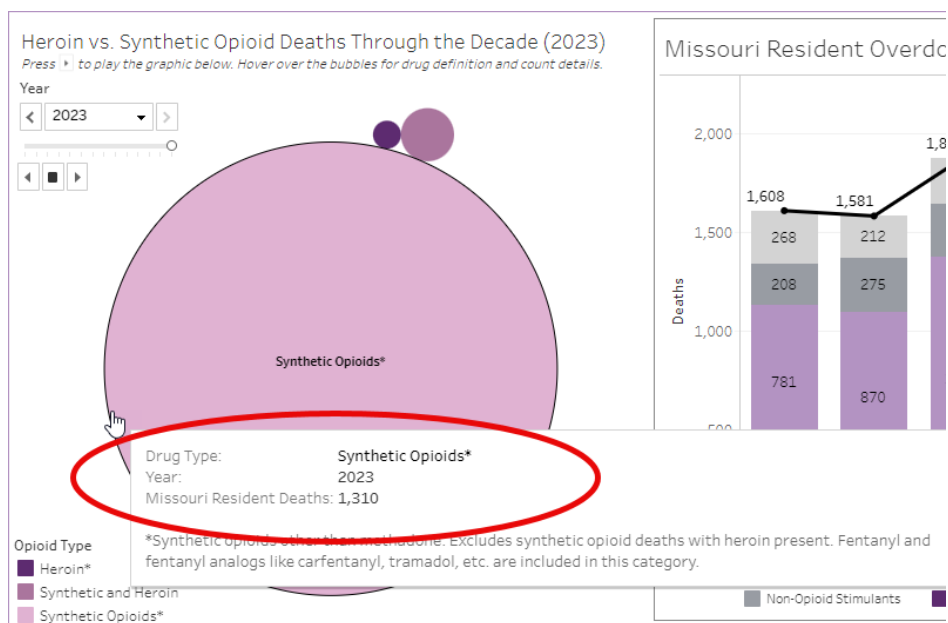
Dashboard Graphics and Trends

Heroin vs Synthetic Opioids Through the Decade

This dynamic graphic can be viewed through the decade by clicking the circled forward button in the top right corner.

This will display the shift from Heroin to synthetic opioids throughout the decade as synthetic opioids have taken over as the primary cause of drug overdose deaths. Fentanyl deaths do not have a designated ICD-10 code, so the best way to capture Fentanyl deaths from death certificates is synthetic opioids, as those deaths do have an ICD-10 code. Fentanyl is a synthetic opioid and makes up most of the synthetic opioid category. Other synthetic opioids include hydrocodone and oxycodone.

The tooltip in this graphic shows the drug type, year and counts for Missouri resident deaths due to the selected drug. This graphic communicates the shift from Heroin to Synthetic Opioids over time.

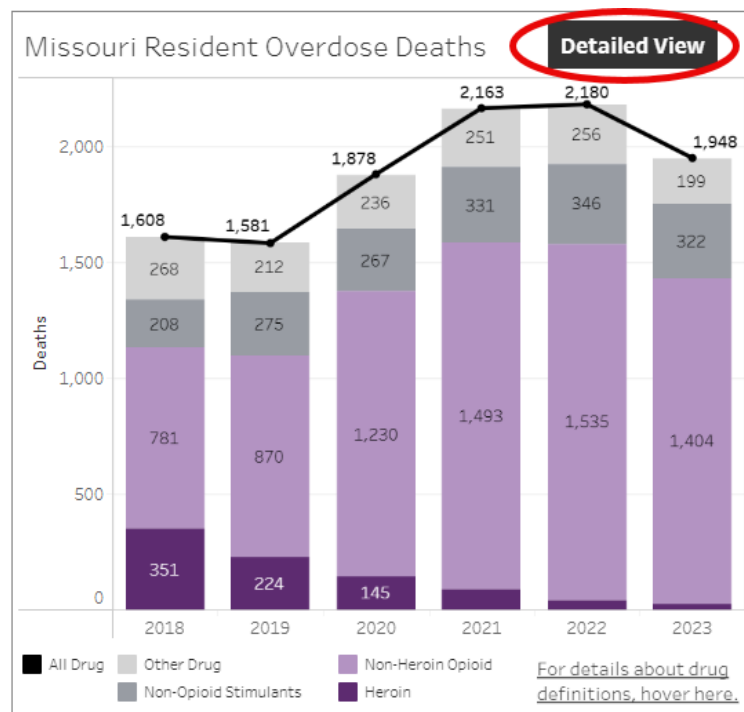


Missouri Resident Overdose Deaths Graph

The black trend line on this graph shows total drug overdose deaths from each year. Each color on the graph represents a drug type.

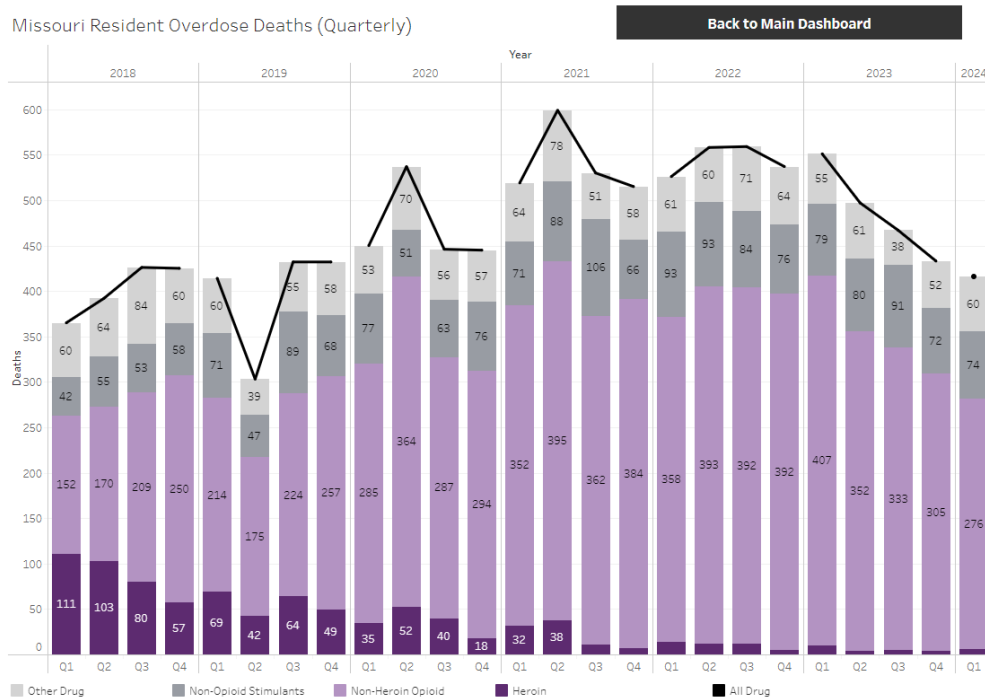
- Black (trend line): All Drug
- Light grey: Other Drug
- Dark grey: Non-Opioid Stimulants
- Light purple: Non-Heroin Opioids
- Dark purple: Heroin

The drug types listed on this graph are mutually exclusive. This means that each drug overdose death is only counted for one drug type, even if multiple drugs were present. The priority goes as follows: Heroin, non-Heroin opioids, non-opioid stimulants and other drug. For example, if a death certificate stated the cause of death to be both Heroin and synthetic opioids, that death would be classified as Heroin rather than being counted in two different categories.



When hovering over the graph, the tooltip displays total drug overdose counts and the statewide rate. This tooltip on the main dashboard page will also show the quarterly breakdown for each year without having to open the detailed view.

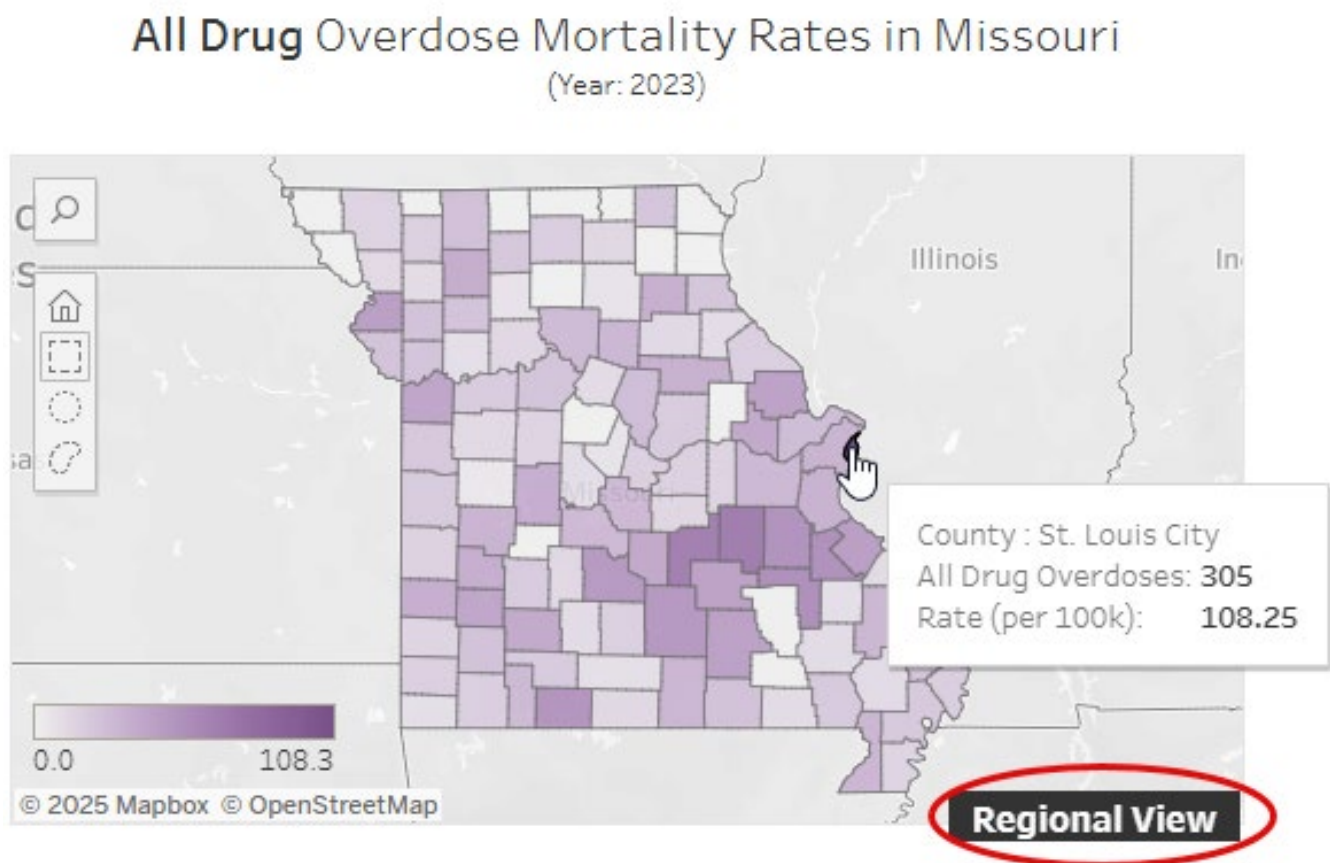
To view provisional data, click “detailed view” (circled). The detailed view with quarterly data will display the most up-to-date provisional data. The tooltip for provisional data indicates that the year's information is provisional and may change, marked by an asterisk (*).



Overdose Mortality Counts Map

The map can distinguish which counties or regions are affected by drug overdose mortality. The darker color indicates higher counts or rates of drug overdose mortality. To display this data to show regions, click on “Regional View” (circled).

Hover over or click on the desired county to look at a specific county’s drug overdose counts and rates. You will see a pop-up box displaying county-level data on the bottom right of your cursor.

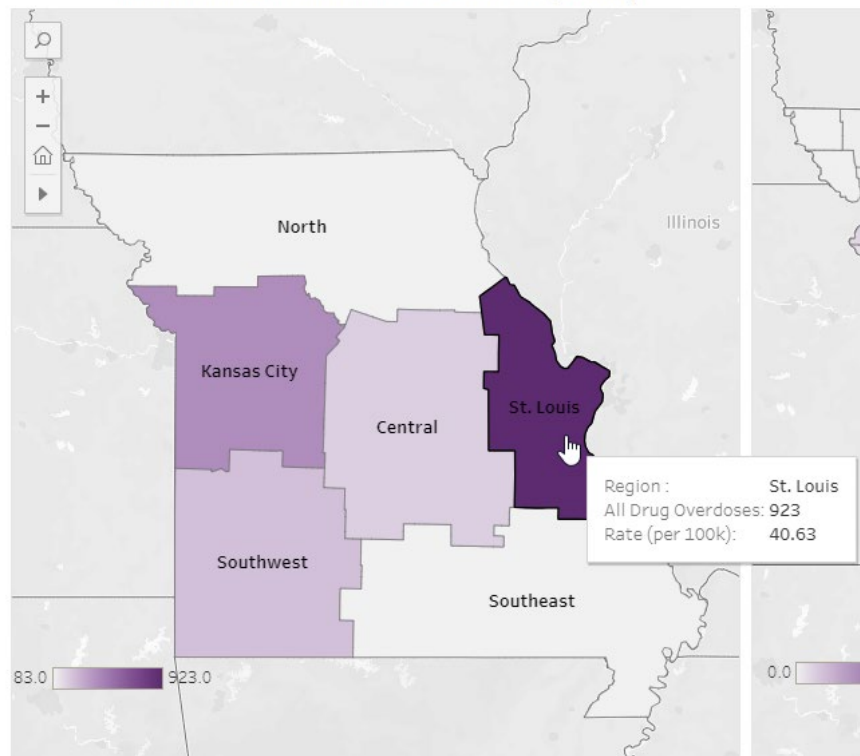


This tooltip is also available in “Regional View.”

County and regional level data can also be viewed in bar graphs, making it easy to compare geographies and counts/rates of drug overdose mortality in those communities. Clicking on a region or county will filter all other data on this view.

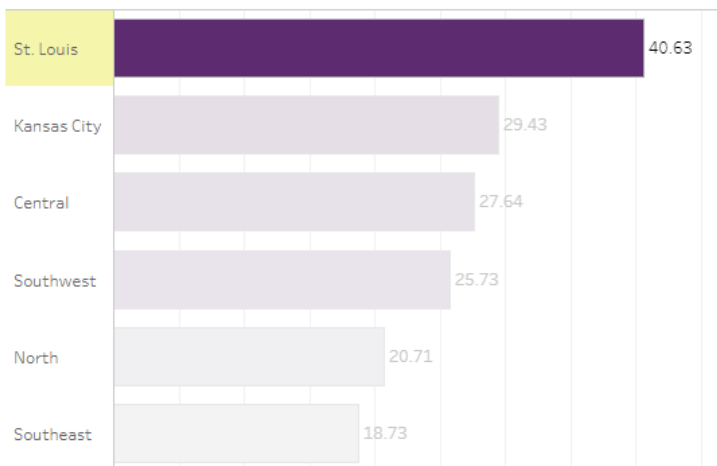
All Drug Overdose Mortality Counts by Region

Click on a region below to filter the rest of the dashboard. (Year: 2023)



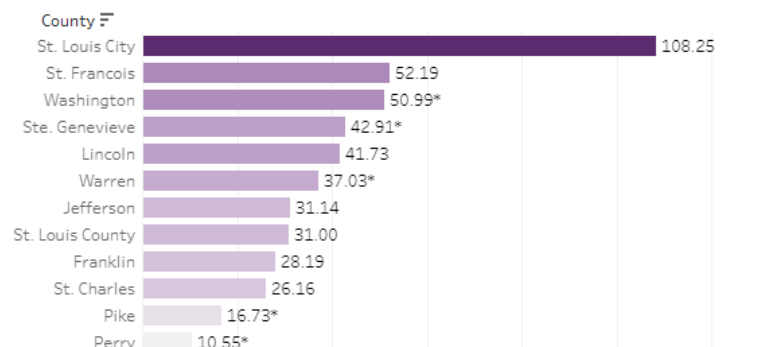
All Drug Overdose Mortality Rates by Region

(Year: 2023)



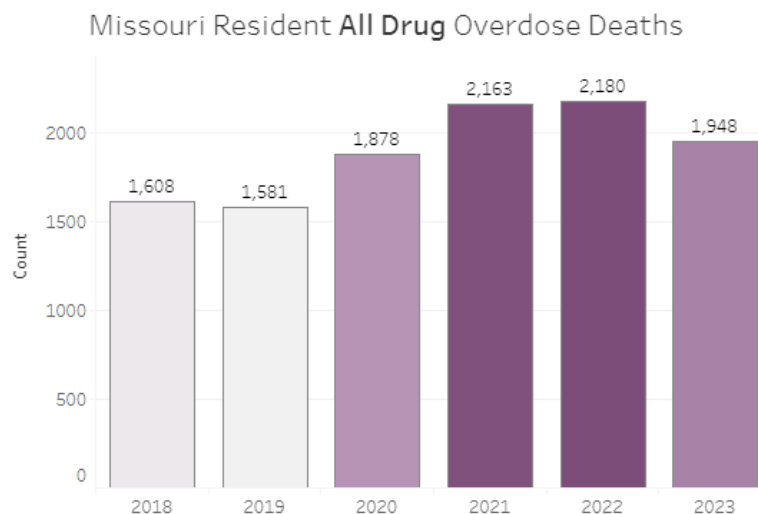
All Drug Overdose Mortality Rates by County in the St. Louis Region

Colored by Total Count (Year: 2023)



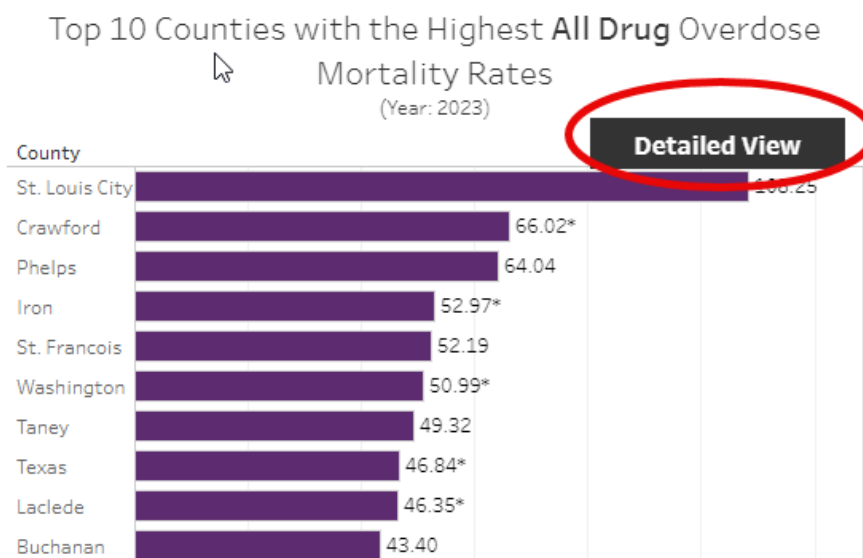
Missouri Resident All Drug Overdose Death Graph

This graph can be customized by drug type and metric filter. The default setting is all drug types by counts. The options for drug type include all drug, opioid, Heroin, non-Heroin opioid and stimulant and opioid. The data can be displayed in counts or rates. Counts and rates will change based on the drug type and metrics selected.



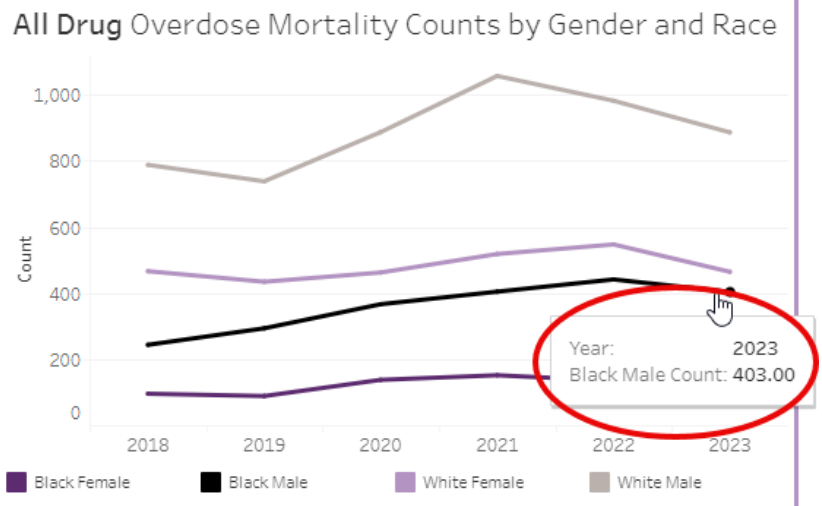
Top 10 Counties

This graph can be filtered by year and drug type and can be displayed in counts or rates. The detailed (circled) view will show all the other counties and their counts or rates of drug overdose. For this graph, selecting multiple years can provide more reliable rates for counties with small counts. Counts and rates will change based on the drug type and metrics selected.



Overdose Mortality Counts by Gender and Race

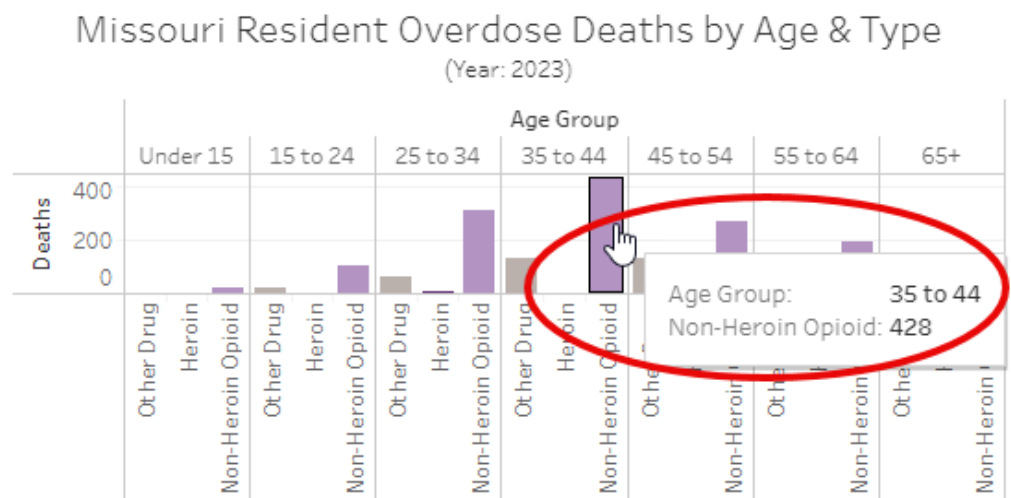
This graph compares the following demographics: Black female, Black male, White female and White male. This graph can be filtered by year, drug type and metric. The dark purple line represents Black female, the black line for Black male, light purple for White female and light grey for White male.



As circled in the picture, the tooltips can show the exact number of deaths for each race/gender in the chosen year.

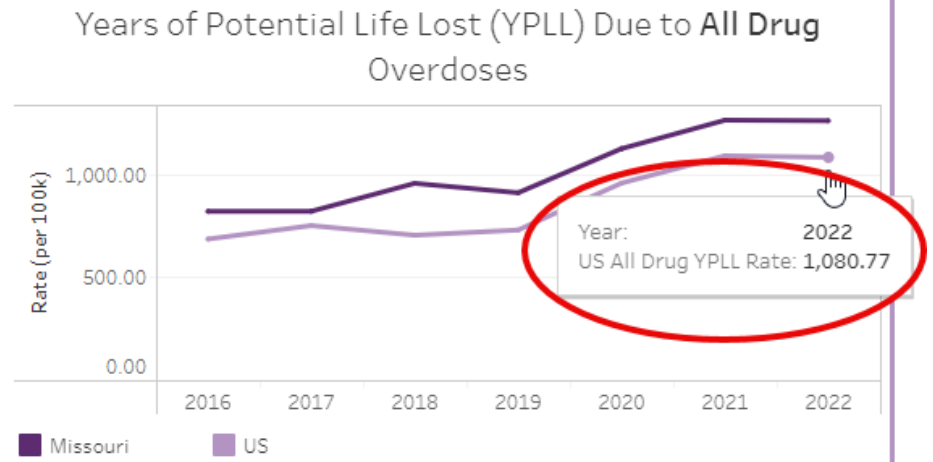
Missouri Resident Overdose Deaths by Age & Type

This graph shows data by year, age group and drug type. The drug categories are other drug, Heroin and non-Heroin opioid. This graph can be viewed in a single year or multiple years. It does not change by drug type or metric. Only counts are displayed. As circled in the picture, the tooltip shows the exact number of deaths per age and drug group by hovering with the cursor.



Years of Potential Life Lost (YPLL) Due to All Drug Overdoses

The years of potential life lost (YPLL) calculation estimates the number of life years lost to premature deaths. On this dashboard, years of potential life lost due to drug overdose can be broken out by drug type. The dark purple line represents the Missouri YPLL, and the light purple line represents the US YPLL. In this graph, YPLL is displayed as a rate per 100,000.



As circled in the picture, the tooltip on this graph can show the exact YPLL rate for each year.

The years of potential life lost (YPLL) calculation estimates the number of years of life lost due to premature deaths. On this dashboard, years of potential life lost due to drug overdose can be broken out by drug type. Any person who dies at age 75 or above is not considered to have died prematurely and would be excluded from YPLL calculations.

For example, at an individual level, an 18-year-old who dies from a drug overdose would receive a YPLL of 57 (75-18), meaning there were 57 years of potential life lost due to drug overdose for that individual.

YPLL is usually reported as a count (or rate) for a geographic area or a demographic group and involves summing the individual years of life lost.

Suggested Citation for the Dashboard

Missouri Department of Health and Senior Services. (Year). The Death Toll. Final Data. Bureau of Health Care Analysis and Data Dissemination. [Visit the Drug Overdose Dashboard](#)

In text: (MO DHSS, 2024)

If using provisional data, include a disclaimer that the data is provisional and subject to change.