

Nonfatal Drug Overdose Dashboard Guidance

Contents

Nonfatal Drug Overdose Dashboard Guidance.....	1
Information on Nonfatal Drug Overdose Data	2
Why is the data important?	2
Where does the data come from?	2
Who/what is included in the data?	2
Who/what is not included in the data?	2
How are nonfatal drug overdoses identified?.....	2
How far back does the data go?.....	3
What else should I know about the data?	3
Limitations of the data	3
Further data considerations.....	3
Equity.....	3
Race and ethnicity data.....	4
Using the Nonfatal Drug Overdose Dashboard	4
General Information.....	4
How often will the data be updated?	4
What are the different measure types used in this dashboard?	4
Why is some data not shown?	5
How is geography information determined?.....	5
Navigating the Dashboard.....	5
Section 1: Selecting data filters.....	5
Section 2: Trends over time	6
Section 3: Demographics.....	6
Section 4: Geography	7
What should I do if I still have questions?	8
Appendix I: Case Definitions for Nonfatal Drug Overdose	9
Appendix II: State Community Health Services Advisory Committee (SCHSAC) regions	12

Information on Nonfatal Drug Overdose Data

Why is the data important?

Data collection and analysis of hospital visits for nonfatal drug overdose helps us to better understand how drug overdose is impacting the life of Minnesotans. This information can then be used to inform programs and policies related to overdose and substance use with the hopes of improving and saving lives.

Where does the data come from?

The data being used in this dashboard comes from hospital discharge data. The Minnesota Department of Health (MDH) receives approximately 95% of hospital discharge data every three months from our partners at the Minnesota Hospital Association. The data covers all 87 counties and can include reports from all 123 acute care hospitals in the state. The data also includes some hospitals located in North Dakota.

Who/what is included in the data?

- Minnesota residents who were treated at Minnesota and North Dakota hospitals
- All emergency department visits and inpatient hospitalizations
- Nonfatal drug overdoses of unintentional (i.e., accidental) or undetermined intent

Who/what is not included in the data?

- Nonfatal drug overdoses occurring out in the community
- Nonfatal drug overdoses treated by Emergency Medical Services (EMS) and not transported to a hospital
- Nonfatal drug overdoses treated at federally funded facilities (like Veteran's Affairs or Indian Health Service), stand-alone psychiatric facilities, and other out-of-state facilities
- Nonfatal drug overdoses related to self-harm. For access to this data, please visit the [Hospital-Treated Suicidal and Self-Harm Injury Dashboard](https://www.health.state.mn.us/communities/injury/midas/selfharm.html) (<https://www.health.state.mn.us/communities/injury/midas/selfharm.html>).

How are nonfatal drug overdoses identified?

MDH uses the Centers for Disease Control and Prevention (CDC) [Drug Overdose Surveillance and Epidemiology](https://www.cdc.gov/drugoverdose/nonfatal/pdf/22_DOSE_FS_508.pdf) (https://www.cdc.gov/drugoverdose/nonfatal/pdf/22_DOSE_FS_508.pdf) definition to identify hospital visits related to a nonfatal drug overdose. To do this, *International Classification of Diseases, Tenth Revision, Clinical Modification* (ICD-10-CM) codes are used. ICD-10-CM codes are what medical professionals use for clinical diagnosis and insurance billing purposes. There are many ICD-10-CM codes for drug overdose. For a full list of the ICD-10-CM

codes that are used to identify the nonfatal overdose data shown in this dashboard, see [Appendix I](#) below.

How far back does the data go?

Nonfatal drug overdose data is available from 2016 onward. At the end of 2015, the ICD-10-CM started to be used. A different version, the ICD-9-CM, was used before that. Because of this change to how visits are identified, it is very difficult to compare trends to earlier years.

What else should I know about the data?

Limitations of the data

Hospital discharge data are primarily used for billing purposes, not for public health purposes, so it is important to consider the limitations. The following are limitations of the data source:

- **ICD-10-CM diagnosis code sometimes lack detail.** For example, using a code for ‘unspecified opioids’ does not help us understand what type of opioid was involved in an overdose.
- **All drug overdoses are suspected drug overdoses.** Drugs that are suspected to be involved in hospital visits are often self-reported by the patient or determined by presenting symptoms at the hospital. Toxicology tests are not typically run to determine the specific drug types involved. It is important to interpret drug-specific trends with caution.

Further data considerations

- **Drug categories are non-exclusive.** For example, a nonfatal overdose involving a synthetic opioid would also be counted as an ‘All opioid’ overdose and an ‘All drug’ overdose.
- **Data are de-duplicated prior to analysis.** This means that a hospital visit for drug overdose is only counted once. For example, if a patient went to the emergency department and then was later hospitalized, this visit would represent one nonfatal hospital visit for drug overdose.

Equity

Our opportunities for better health begin where we live, learn, work, and play. Social determinants of health are the conditions within a home, family, school, and community that can impact a person’s ability to be healthy. These conditions of life are connected to differences in health outcomes, especially when it comes to treatment of substance use, chronic pain, mental health, and trauma.

For more information, visit the [Social Determinants of Substance Use & Overdose Prevention \(https://www.health.state.mn.us/communities/opioids/prevention/socialdeterminants.html\)](https://www.health.state.mn.us/communities/opioids/prevention/socialdeterminants.html).

Although it is only one of the first steps in making sure that everyone has a fair chance to live a healthy life, it is important that communities have access to data. Data helps us to identify

differences by comparing health outcomes between population groups, instead of only examining the population on its own.

The goal of the *Nonfatal Drug Overdose Dashboard* is to provide the public with equitable and timely access to data on hospital-treated nonfatal drug overdose. To accomplish this, the dashboard allows the user to look at the data for different population groups (county, age group, gender, and race/ethnicity). The dashboard also allows the user to look at nonfatal drug overdose by counts, rates, and percentages which help to make fair comparisons between groups.

Race and ethnicity data

In the hospital discharge data, the collection of race and ethnicity information has not always been consistent. However, it has been improving over the past several years. In 2016, 23% of hospital-treated nonfatal drug overdoses had missing race and ethnicity data. By 2021, the proportion of visits with missing race and ethnicity data had decreased to 2%. This context is important to keep in mind when looking at historical trends by race or ethnicity of the patient.

Table 1. Percent (%) of nonfatal hospital visits for drug overdose with missing race and ethnicity data, 2016-2021

Year	2016	2017	2018	2019	2020	2021
Percent missing	23%	7%	3%	1%	1%	2%

Using the Nonfatal Drug Overdose Dashboard

The *Nonfatal Drug Overdose Dashboard* includes data and visualizations of state, regional, and county-level trends on Minnesotans who received treatment at a hospital for a nonfatal drug overdose.

General Information

How often will the data be updated?

The *Nonfatal Drug Overdose Dashboard* will be updated every three months. The most recent data shared in the dashboard are often provisional and may change as additional cases are finalized in the hospital discharge data.

What are the different measure types used in this dashboard?

- **Count** is the frequency of an event that occurred – for example, the number of nonfatal drug overdoses.
- **Rate** is a measure of frequency with which an event occurs in a defined population over time. The rates in the *Nonfatal Drug Overdose Dashboard* are shown as a number per 1,000 residents. Rates are important when looking at trends in drug overdose. For example,

because the total number of American Indian and Black Minnesotans is relatively small compared to the number of white Minnesotans, you need to look at rates of drug overdose in those groups, rather than the count alone, to make a fair comparison.

- **All rates in the dashboard are age-adjusted** (i.e., standardized). Health outcomes, like drug overdose, occur at different rates in different age groups. Standardizing rates allows us to account for age and make even more meaningful comparisons.
- **All rates in the dashboard are standardized to the Minnesota population in 2020.** All population data comes from the U.S. Census Bureau population estimates and were retrieved from CDC WONDER.
- **Proportion** is a comparison of a part to the whole. The proportions in the *Nonfatal Drug Overdose Dashboard* are shown as a percentage.

Why is some data not shown?

- **Data suppression** is used to protect patient privacy. Data are suppressed if the count ranges from one through four.
- **Unstable rates** means that the rate is unstable or difficult to interpret because the count of visits is small. For this dashboard, the rates are not calculated if the count is less than 20.
- **Rates for most recent year of data** are not calculated until the full year of data is received.

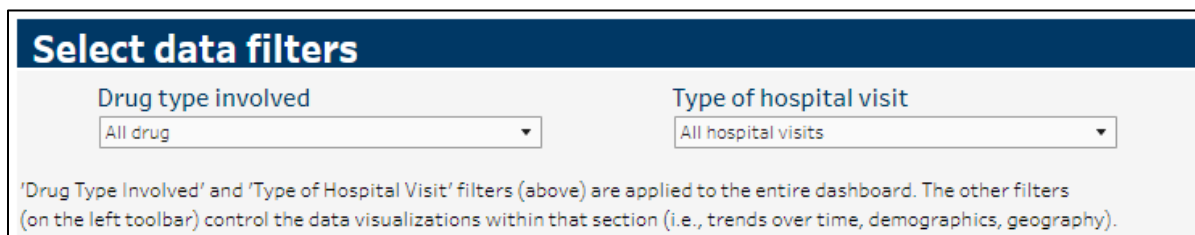
How is geography information determined?

County is based off where the patient lived at the time of their hospital visit. It is not based off where the actual drug overdose occurred or what hospital they were treated at.

Navigating the Dashboard

Section 1: Selecting data filters

Data filters allow you to view the data in different ways. By filtering the data, you can look at the specific data to best answer questions about nonfatal drug overdose in your community.



The first section has two data filters – ‘Drug type involved’ and ‘Type of hospital visit.’ These two filters are applied to all sections of the dashboard. For example, if you choose ‘All opioid’ for ‘Drug type involved,’ the entire dashboard will show data for nonfatal ‘All opioid’ overdoses.

Section 2: Trends over time

What questions can be answered with the data in the ‘Trends over time’ section?

- How have trends in nonfatal drug overdose changed over time?
- What do trends in nonfatal drug overdose look like right now?

What data filters are in the ‘Trends over time’ section?

- The data filters on the left of the section are only applied to the ‘Trends over time’ section.
- Data filters available in this section are year; data view (year, quarter, month); county; age group; gender; and race or ethnicity.
- Under ‘How have trends in nonfatal drug overdose changed over time?’ and ‘What do trends in nonfatal drug overdose look like right now?’ the text (below) will automatically update based on what data filters you have chosen.

How have trends in nonfatal All drug overdose changed over time?

In **2021**, there were **11,506** nonfatal **hospital visits** for **All drug** overdose among **all Minnesotans**.

Among this population, the rate of nonfatal **All Drug** overdose was **2.0 per 1,000 residents**.

What data visualization are in the ‘Trends over time’ section?

- Number of nonfatal overdoses by year, quarter, or month.

Any other tips for the ‘Trends over time’ section?

- Hover over the bars in the data visualization to see the exact counts.
- If this section is empty, this means there were no nonfatal overdoses among the selected population during that time.

Section 3: Demographics

What questions can be answered with the data in the ‘Demographics’ section?

- Who is being most impacted by nonfatal drug overdose?

What data filters are in the ‘Demographics’ section?

- The data filters on the left of the section are only applied to the ‘Demographics’ section.
- Data filters available in this section are year; measure type (count, rate, proportion); county; age group; gender; and race or ethnicity.

- Under ‘Who is being most impacted by nonfatal overdose?’ the text (see below) will automatically update based on what data filters you have chosen

Who is being most impacted by nonfatal All drug overdose?

Among **all residents that lived in Minnesota:**

Male, White, 30-34-year-old residents

experienced the greatest number of nonfatal overdoses in **2021**

What data visualization are in the ‘Demographics’ section?

- Number, rate, or proportion of nonfatal overdoses by age group (for a selected year).
- Number, rate, or proportion of nonfatal overdoses by gender (for a selected year).
- Number, rate, or proportion of nonfatal overdose by race or ethnicity (for a selected year).

Any tips for the ‘Demographics’ section?

- Use the ‘Measure Type’ filter to view the count, rate (per 1,000 residents), or percentage of nonfatal overdoses.

Section 4: Geography

What questions can be answered with the data in the ‘Geography’ section?

- What are the trends in nonfatal drug overdose in my community?

What data filters are in the ‘Geography’ section?

- The data filters on the left of the section are only applied to the ‘Geography’ section.
- Data filters available in this section are year; measure type (count or rate); and county.

What data visualization are in the ‘Geography’ section?

- Map that shows the number or rate of nonfatal overdose by *State Community Health Services Advisory Committee* (SCHSAC) regions. More information on SCHSAC regions can be found in [Appendix II](#) below.

Any tips for the ‘Geography’ section?

- Use the ‘Measure Type’ filter to view the count or rate (per 1,000 residents) of nonfatal overdoses.
- If you select a county using the ‘County’ data filter, the table will update to show data for the region the county belongs to.

What should I do if I still have questions?

If you still have questions about the dashboard or have any additional data needs, please reach out to health.drugodepi@state.mn.us.

Appendix I: Case Definitions for Nonfatal Drug Overdose

All Drug

- **T36-T50** Poisoning by drugs, medicaments, and biological substances, accidental (unintentional) or undetermined, initial encounter

All Opioid

- **T40.0X1A** Poisoning by opium, accidental (unintentional), initial encounter
- **T40.0X4A** Poisoning by opium, undetermined, initial encounter
- **T40.1X1A** Poisoning by heroin, accidental (unintentional), initial encounter
- **T40.1X4A** Poisoning by heroin, undetermined, initial encounter
- **T40.2X1A** Poisoning by other opioids, accidental (unintentional), initial encounter
- **T40.2X4A** Poisoning by other opioids, undetermined, initial encounter
- **T403.X1A** Poisoning by synthetic narcotics, accidental (unintentional), initial encounter **replaced on 10/1/2020**
- **T403.X4A** Poisoning by synthetic narcotics, undetermined, initial encounter **replaced on 10/1/2020**
- **T40.411A** Poisoning by fentanyl or fentanyl analogs, accidental (unintentional), initial encounter **added on 10/1/2020**
- **T40.414A** Poisoning by fentanyl or fentanyl analogs, undetermined, initial encounter **added on 10/1/2020**
- **T40.421A** Poisoning by tramadol, accidental (unintentional), initial encounter **added on 10/1/2020**
- **T40.424A** Poisoning by tramadol, undetermined, initial encounter **added on 10/1/2020**
- **T40.601A** Poisoning by unspecified narcotics, accidental (unintentional), initial encounter
- **T40.604A** Poisoning by unspecified narcotic, undetermined, initial encounter
- **T40.691A** Poisoning by other narcotics, accidental (unintentional), initial encounter
- **T40.694A** Poisoning by other narcotics, undetermined, initial encounter

Stimulants

- **T40.5X1A** Poisoning by cocaine, accidental (unintentional), initial encounter
- **T40.5X4A** Poisoning by cocaine, undetermined, initial encounter
- **T43.601A** Poisoning by unspecified psychostimulants, accidental (unintentional), initial encounter
- **T43.604A** Poisoning by unspecified psychostimulants, undetermined, initial encounter
- **T43.611A** Poisoning by caffeine, accidental (unintentional), initial encounter

- **T43.614A** Poisoning by caffeine, undetermined, initial encounter
- **T43.621A** Poisoning by amphetamines, accidental (unintentional), initial encounter
- **T43.624A** Poisoning by amphetamines, undetermined, initial encounter
- **T43.621A** Poisoning by methylphenidate, accidental (unintentional), initial encounter
- **T43.624A** Poisoning by methylphenidate, undetermined, initial encounter
- **T43.641A** Poisoning by ecstasy, accidental (unintentional), initial encounter
- **T43.644A** Poisoning by ecstasy, undetermined, initial encounter
- **T43.691A** Poisoning by other psychostimulants, accidental (unintentional), initial encounter
- **T43.694A** Poisoning by other psychostimulants, undetermined, initial encounter

Heroin

- **T40.1X1A** Poisoning by heroin, accidental (unintentional), initial encounter
- **T40.1X4A** Poisoning by heroin, undetermined, initial encounter

Opioids (excluding heroin)

- **T40.0X1A** Poisoning by opium, accidental (unintentional), initial encounter
- **T40.0X4A** Poisoning by opium, accidental (unintentional), initial encounter
- **T40.2X1A** Poisoning by other opioids, accidental (unintentional), initial encounter
- **T40.2X4A** Poisoning by other opioids, undetermined, initial encounter
- **T403.X1A** Poisoning by synthetic narcotics, accidental (unintentional), initial encounter
replaced on 10/1/2020
- **T403.X4A** Poisoning by synthetic narcotics, undetermined, initial encounter **replaced on 10/1/2020**
- **T40.411A** Poisoning by fentanyl or fentanyl analogs, accidental (unintentional), initial encounter **added on 10/1/2020**
- **T40.414A** Poisoning by fentanyl or fentanyl analogs, undetermined, initial encounter **added on 10/1/2020**
- **T40.421A** Poisoning by tramadol, accidental (unintentional), initial encounter **added on 10/1/2020**
- **T40.424A** Poisoning by tramadol, undetermined, initial encounter **added on 10/1/2020**
- **T40.601A** Poisoning by unspecified narcotics, accidental (unintentional), initial encounter
- **T40.604A** Poisoning by unspecified narcotic, undetermined, initial encounter
- **T40.691A** Poisoning by other narcotics, accidental (unintentional), initial encounter
- **T40.694A** Poisoning by other narcotics, undetermined, initial encounter

Synthetic Opioids

- **T403.X1A** Poisoning by synthetic narcotics, accidental (unintentional), initial encounter **replaced on 10/1/2020**
- **T403.X4A** Poisoning by synthetic narcotics, undetermined, initial encounter **replaced on 10/1/2020**
- **T40.411A** Poisoning by fentanyl or fentanyl analogs, accidental (unintentional), initial encounter **added on 10/1/2020**
- **T40.414A** Poisoning by fentanyl or fentanyl analogs, undetermined, initial encounter **added on 10/1/2020**
- **T40.421A** Poisoning by tramadol, accidental (unintentional), initial encounter **added on 10/1/2020**
- **T40.424A** Poisoning by tramadol, undetermined, initial encounter **added on 10/1/2020**

Amphetamine

- **T43.621A** Poisoning by amphetamines, accidental (unintentional), initial encounter
- **T43.624A** Poisoning by amphetamines, undetermined, initial encounter

Cocaine

- **T40.5X1A** Poisoning by cocaine, accidental (unintentional), initial encounter
- **T40.5X4A** Poisoning by cocaine, undetermined, initial encounter

Benzodiazepine

- **T42.4X1A** Poisoning by benzodiazepines, accidental (unintentional), initial encounter
- **T42.4X4A** Poisoning by benzodiazepines, undetermined, initial encounter

Appendix II: State Community Health Services Advisory Committee (SCHSAC) regions

Northwest

- Beltrami
- North Country (Clearwater, Hubbard, Lake of the Woods)
- Polk-Norman-Mahnomen

Northeast

- Aitkin-Itasca-Koochiching
- Carlton-Cook-Lake-St. Louis

West Central

- Horizon (Douglas, Grant, Pope, Stevens, Traverse)
- Partnership4Health (Becker, Clay, Otter Tail, Wilkin)

Central

- Benton
- Cass
- Chisago
- Crow Wing
- Isanti
- Kanabec
- Mille Lacs
- Morrison-Todd-Wadena
- Pine
- Sherburne
- Stearns
- Wright

Metro

- Anoka
- Bloomington
- Carver
- Dakota
- Edina

- Hennepin
- Minneapolis
- Richfield
- Scott
- St. Paul-Ramsey
- Washington

Southwest

- Countryside (Big Stone, Chippewa, Lac qui Parle, Swift, Yellow Medicine)
- Des Moines Valley (Cottonwood, Jackson)
- Kandiyohi-Renville
- Nobles
- Southwest (Lincoln, Lyon, Murray, Pipestone, Rock, Redwood)

South Central

- Blue Earth
- Brown-Nicollet
- Faribault-Martin
- Le Sueur-Waseca
- Meeker-McLeod-Sibley
- Watonwan

Southeast

- Dodge-Steele
- Fillmore-Houston
- Freeborn
- Goodhue
- Mower
- Olmsted
- Rice
- Wabasha
- Winona

NONFATAL DRUG OVERDOSE DASHBOARD GUIDANCE

Minnesota Department of Health
Injury and Violence Prevention Section
health.drugodepi@state.mn.us
www.health.state.mn.us

03/13/2023