

Hospital Discharge Data System (HDDS) for Drug Overdose Surveillance

The Tennessee Department of Health (TDH) uses the Hospital Discharge Data System (HDDS) to identify and track nonfatal drug overdoses treated in Tennessee hospitals. HDDS contains information about hospital visits reported by licensed hospitals across the state, including inpatient stays, emergency department visits, and other types of hospital care. The data include patient diagnoses and selected demographic information. HDDS is managed by TDH's Division of Population Health Assessment.

This document describes how TDH develops nonfatal overdose measures from HDDS and provides information to help users understand and interpret these measures. It includes definitions of the overdose indicators, information about available demographic variables, and important considerations about the strengths, limitations, and timeliness of the data.

These methods and definitions are used across TDH's nonfatal overdose surveillance activities and support public data products, including reports, downloadable datasets, and the Tennessee Drug Overdose Dashboard.

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About Hospital Discharge Data System (HDDS)

The Tennessee Department of Health (TDH), Division of Population Health Assessment, manages the Hospital Discharge Data System (HDDS). The TDH Overdose Surveillance Program uses HDDS data to identify and track nonfatal drug overdoses treated in Tennessee hospitals. This section provides more information about HDDS and how it is used for nonfatal overdose surveillance.

About Hospital Discharge Data System (HDDS)

Tennessee law requires hospitals licensed by the Tennessee Department of Health (TDH) to report patient-level information about hospital stays and visits to TDH. These records are collected through the Hospital Discharge Data System (HDDS) and include information such as patient diagnoses, procedures, charges, and demographics.

For nonfatal overdose surveillance, hospital encounters are grouped into two categories: inpatient stays and outpatient visits. **Inpatient stays** are hospitalizations in which a patient is admitted to the hospital, generally lasting longer than 24 hours. **Outpatient visits** are encounters generally lasting less than 24 hours and primarily include emergency department visits. They may also include observation stays of 23 hours or less, ambulatory surgeries, and certain diagnostic services, such as MRIs or CT scans.

Timeliness of Hospital Discharge Data

HDDS data are reported quarterly. Tennessee hospitals are required to submit discharge data to TDH within 60 days after the end of each quarter. After submission, the data undergo processing, quality review, and verification before they are finalized. TDH may have access to preliminary data during this process; however, these data are not used for public reporting because they are still being reviewed and may change.

As a result, there is a delay between when a hospital visit occurs and when HDDS data are finalized for overdose surveillance and public reporting. Final data are typically available more than a year after the end of a calendar year. For example, HDDS data for 2024 were finalized and made available in early 2026.

Identifying Nonfatal Drug Overdoses in Hospital Discharge Data

Hospitals use a standardized medical coding system called the International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM) to describe diagnoses and other information about a patient's hospital visit. These codes are included in HDDS and allow TDH to identify hospital visits involving a drug overdose and the type of drug involved.

TDH identifies nonfatal drug overdose encounters using ICD-10-CM poisoning codes. These codes provide information about the drug involved, the intent of the overdose, and whether the visit represents the initial treatment of the overdose or follow-up care. Nonfatal overdose measures

include overdoses classified as unintentional, intentional self-harm, assault, or undetermined intent. Visits for follow-up care or complications from a previous overdose are not included.

Considerations When Interpreting the Nonfatal Overdose Data

HDDS is an important source of information about nonfatal drug overdoses treated in Tennessee hospitals, but there are limitations to consider when interpreting these data.

Identification of specific drugs. ICD-10-CM codes do not identify every individual drug or substance. Some codes represent a broader class of drugs rather than a specific substance. As a result, some overdose indicators can only be reported by drug class. For example, kratom does not have a unique ICD-10-CM poisoning code and would likely be included within a broader category of sedatives, opioids, or unspecified drugs.

Identification of substances involved in an overdose. The drugs documented using diagnosis codes are not necessarily confirmed through toxicology testing. Testing may not be performed in every case and may not identify all substances involved. Information about the suspected drug or drugs may also come from the patient, the patient's symptoms, or the patient's response to treatment. For example, a positive response to naloxone may provide clinical evidence that an opioid was involved. As a result, the substances recorded in HDDS may not capture every substance involved in an overdose or may reflect the drug suspected at the time of treatment.

HDDS reflects what was known and recorded about an overdose during a hospital visit. Because the specific drugs involved may not always be known or confirmed, the data may not identify every substance involved in an overdose.

Tennessee Nonfatal Drug Overdose Definitions

Nonfatal overdose indicators are reported separately for **outpatient visits** and **inpatient stays**.

Inpatient stays are inpatient hospitalizations generally lasting longer than 24 hours while outpatient visits are those less than 24 hours.

Outpatient Visits include primarily emergency department visits, but also include any observation 23 hours or less, ambulatory surgeries or certain diagnostic services (such as MRIs or CT scans).

When interpreting these indicators, it is important to remember that they represent hospital encounters rather than individual people. A person with more than one overdose-related hospital encounter during a reporting period will be counted for each encounter. Overdose is determined by the International Classification of Disease, 10th revision, clinical modification (ICD-10-CM) codes. Tennessee's Hospital Discharge Data System (HDDS) includes up to 18 diagnosis fields.

The definitions and ICD-10-CM codes used to identify each overdose indicator are provided below.

Nonfatal Drug Overdose Indicators

Primary Criteria:

- Only Tennessee residents
- Only discharges from non-federal, acute care hospitals

Indicators exclude the following:

- Patients discharged as dead/deceased
- Late effects, adverse effects, and chronic poisonings due to the effects of drugs
- VA hospitals, rehabilitation centers, and psychiatric hospitals

Outpatient Visits Involving All Drug Overdose

- Outpatient visits that are billed with any of the following ICD-10-CM diagnosis codes, regardless of intent:
 - T36-50 (poisoning by drugs, medicaments, and biological substances)

Outpatient Visits Involving All Opioid Overdose

- Outpatient visits that are billed with any of the following ICD-10-CM diagnosis codes, regardless of intent:
 - T40.0X (poisoning by opium)
 - T40.2X (poisoning by other opioids)
 - T40.3X (poisoning by methadone)

- T40.4X (poisoning by synthetic narcotics)
- T40.60 (poisoning by unspecified narcotics) *OR*
- T40.69 (poisoning by other narcotics)
- T40.1X (poisoning by heroin)

Outpatient Visits Involving Fentanyl

- Outpatient visits that are billed with any of the following ICD-10-CM diagnosis codes, regardless of intent:
 - T40.41 (Poisoning by fentanyl)

Outpatient Visits Involving Heroin

- Outpatient visits that are billed with any of the following ICD-10-CM diagnosis codes, regardless of intent:
 - T40.1X (poisoning by heroin)

Outpatient Visits Involving All Stimulant Overdose

- Outpatient visits that are billed with any of the following ICD-10-CM diagnosis codes, regardless of intent:
 - T40.5X (poisoning by cocaine)
 - T43.60 (poisoning by unspecified psychostimulants)
 - T43.62 (poisoning by amphetamines)
 - T43.63 (poisoning by methylphenidate)
 - T43.64 (poisoning by ecstasy)
 - T43.65 (poisoning by methamphetamine)
 - T43.69 (poisoning by other psychostimulants)

Outpatient Visits Involving Amphetamine Overdose (including Methamphetamine)

- Outpatient visits that are billed with any of the following ICD-10-CM diagnosis codes, regardless of intent:
 - T43.65 (poisoning by methamphetamine)
 - T43.62 (poisoning by amphetamines)

Outpatient Visits Involving Cocaine

- Outpatient visits that are billed with any of the following ICD-10-CM diagnosis codes, regardless of intent:
 - T40.5X (poisoning by cocaine)

Outpatient Visits Involving Benzodiazepine

- Outpatient visits that are billed with any of the following ICD-10-CM diagnosis codes, regardless of intent:
 - T42.4 (Poisoning by benzodiazepine)

Inpatient Visits Involving All Drug Overdose

- Inpatient visits that are billed with any of the following ICD-10-CM diagnosis codes, regardless of intent:
 - T36-50 (poisoning by drugs, medicaments, and biological substances)

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 - T40.3X (poisoning by methadone)
 - T40.4X (poisoning by synthetic narcotics)
 - T40.60 (poisoning by unspecified narcotics) *OR*
 - T40.69 (poisoning by other narcotics)
 - T40.1X (poisoning by heroin)

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 - T43.65 (poisoning by methamphetamine)
 - T43.69 (poisoning by other psychostimulants)

Inpatient Visits Involving Amphetamine Overdose (including Methamphetamine)

- Inpatient visits that are billed with any of the following ICD-10-CM diagnosis codes, regardless of intent:

- T43.62 (poisoning by amphetamines)
- T43.65 (poisoning by methamphetamine)

Inpatient Visits Involving Cocaine

- Inpatient visits that are billed with any of the following ICD-10-CM diagnosis codes, regardless of intent:
 - T40.5X (poisoning by cocaine)

Inpatient Visits Involving Benzodiazepine

- Inpatient visits that are billed with any of the following ICD-10-CM diagnosis codes, regardless of intent:
 - T42.4 (Poisoning by benzodiazepine)

Demographic Information Available in HDDS

HDDS includes demographic information, such as age, race, and sex, that can be used to describe the characteristics of patients treated for nonfatal drug overdose.

Age

Age is determined based on the patient's date of birth and date of hospital admission. Nonfatal drug overdose have been grouped into standard age categories for reporting purposes including: < 18 years, 18-24 years, 25-34 years, 35-44 years, 45-54 years, 55-64 years, 65+ years.

Note: Age-adjustment is used for all nonfatal overdose rates except for those stratified by age. Age-adjusted rates are calculated using 2000 US standard population. The rate for a specific age group in a given population is multiplied by the proportion of people in the same age group in the 2000 U.S. standard population; adding across age groups yields the final age-adjusted rate.

Race

Race information is reported by hospitals to HDDS. For nonfatal surveillance, race is reported White, Black and Another Race. Due to small numbers, the 'Another Race' category combines patients reported as American Indian or Alaska Native, Asian, Native Hawaiian or Pacific Islander, or another race.

Sex

Sex is reported by the hospital to the hospital discharge data system. For surveillance purposes, sex is reported as male or female.

Public Data Products with Nonfatal Data

Nonfatal drug overdose information from the Hospital Discharge Data System is available through several public-facing resources maintained by the Overdose Surveillance Program. These resources provide access to overdose trends, indicator-specific data, reports, and downloadable datasets. Available years of data and level of detail vary by resource. The two places you can find all data products are:

Overdose Surveillance Website: <https://www.tn.gov/health/odsurveillance.html>

TN Data Portal: <https://healthdata.tn.gov/>

Drug Overdose Data Dashboard

- Tennessee's Overdose Data Dashboard provides interactive visualizations of nonfatal drug overdose data from HDDS. It displays the five most recent years of available data and allows users to explore trends by overdose indicator, demographic characteristics, and geography.
 - *The Data Dashboard can be found at the OIA Webpage listed above. This dashboard is best viewed on a computer screen; however, a mobile version is also available.*
 - *Demographic data included in the dashboard are available at the statewide and public health region level.*

Downloadable Data Sheets

- Downloadable data files are available for users who want to conduct additional analyses of nonfatal overdose data. The files include the data presented in the Tennessee Overdose Data Dashboard as well as additional historical data dating back to 2013. The same indicator definitions and methods used for TDH's nonfatal overdose surveillance are applied to the downloadable data.

Annual Reports

- The annual Drug Overdose Hospital Discharges in Tennessee Reports provide comprehensive summaries of finalized nonfatal drug overdose data, including statewide trends, demographic characteristics, geographic patterns, and substances involved. This report is published each year after the data are finalized. Archived reports and related products are available on the overdose surveillance website dating back to 2015.

Preliminary Nonfatal Overdose Data, Reports and Briefs

- Preliminary HDDS data are not used for overdose surveillance or public reporting. More timely nonfatal overdose trends are available through other TDH surveillance systems, including the Drug Overdose Reporting (DOR) system and syndromic surveillance (ESSENCE). These systems (HDDS, DOR, & HDDS) are separate and are not comparable.

Requesting Additional Data

The Overdose Surveillance Program makes overdose data publicly available whenever possible through reports, dashboards, and downloadable data files. However, some data cannot be released because they are not yet complete or because the level of details could identify individuals or compromise privacy.

If the information you need is not available through existing public data products, you may submit a request for additional aggregate overdose data.

Data request form: <https://tdhrc.health.tn.gov/redcap/surveys/?s=DHMKP9HDD4FAT43K>

Examples of data that may be available include:

- Aggregate counts of nonfatal overdose outpatient visits or inpatient stays by county of residence or public health region.
- Aggregate counts of nonfatal overdose outpatient visits or inpatient stays by geographic area and demographic characteristics (such as age, sex, or race/ethnicity), when disclosure rules allow.
- Aggregate counts by specific drug or drug class, when available in HDDS and when disclosure rules allow.
- Other summary statistics that do not identify individuals.

To protect privacy, small counts may be suppressed or combine, particularly for counties with small populations or less common demographic groups.

Because data requests may take time to review and fulfill, we recommend contacting the Overdose Surveillance Program (TDH.Analytics@tn.gov) before submitting a formal request. We can help determine whether the data are already publicly available, discuss whether your request can be fulfilled, and identify the most appropriate data source for your needs.

Additional Questions

Feel free to reach out to OIA directly for any questions at tdh.analytics@tn.gov