CDC

National Center for Health Statistics

National Vital Statistics System

Provisional Drug Overdose Death Counts

UPDATE 8/14/2024: The Monthly Provisional Drug Overdose Death Counts report provides estimates for the United States and jurisdictions within 4 months after the date of death. Some states may have longer than usual delays in submitting drug overdose deaths. In particular, North Carolina is experiencing substantial delays in the resolution of pending records by the medical examiner's office. Recent trends may underestimate the death count in affected states and this potential impact should be considered when comparing results for states to previous months. Please see the **Technical Notes** of the dashboard for more information on adjustments for delayed reporting.

This data visualization presents provisional counts for drug overdose deaths based on a current flow of mortality data in the National Vital Statistics System. Counts for the most recent final annual data are provided for comparison. National provisional counts include deaths occurring within the 50 states and the District of Columbia as of the date specified and may not include all deaths that occurred during a given time period. Provisional counts are often incomplete and causes of death may be pending investigation (see Technical notes) resulting in an underestimate relative to final counts. To address this, methods were developed to adjust provisional counts for reporting delays by generating a set of predicted provisional counts (see Technical notes).

The provisional data presented in this visualization include: (a) the reported and predicted provisional counts of deaths due to drug overdose occurring nationally and in each jurisdiction; (b) a U.S. map of the percentage changes in provisional drug overdose deaths for the current 12 month-ending period compared with the 12-month period ending in the same month of the previous year, by jurisdiction; and (c) the reported and predicted provisional counts of drug overdose deaths involving specific drugs or drug classes occurring nationally and in selected jurisdictions. The reported and predicted provisional counts represent the numbers of deaths due to drug overdose occurring in the 12-month periods ending in the month indicated. These counts include all seasons of the year and are insensitive to variations by seasonality. Deaths are reported by the jurisdiction in which the death occurred.

Several data quality metrics, including the percent completeness in overall death reporting, percentage of deaths with cause of death pending further investigation, and the percentage of drug overdose deaths with specific drugs or drug classes reported are included to aid in interpretation of provisional data as these measures are related to the accuracy of provisional counts (see Technical notes). Reporting of the specific drugs and drug classes involved in drug overdose deaths varies by jurisdiction, and comparisons of death rates involving specific drugs across selected jurisdictions should not be made (see Technical notes). Provisional data presented in this visualization will be updated on a monthly basis as additional records are received.

Options

Select a dashboard:

12 Month-ending Provisional Counts and Percent Change of Drug Overdose Deaths ⌄

[Update Dashboard]

Download Datasets:

- CSV Format ⬚
- Data.CDC.gov (Export to CSV, JSON, XLS, XML)

12 Month-ending Provisional Number and Percent Change of Drug Overdose Deaths

Based on data available for analysis on: September 1, 2024

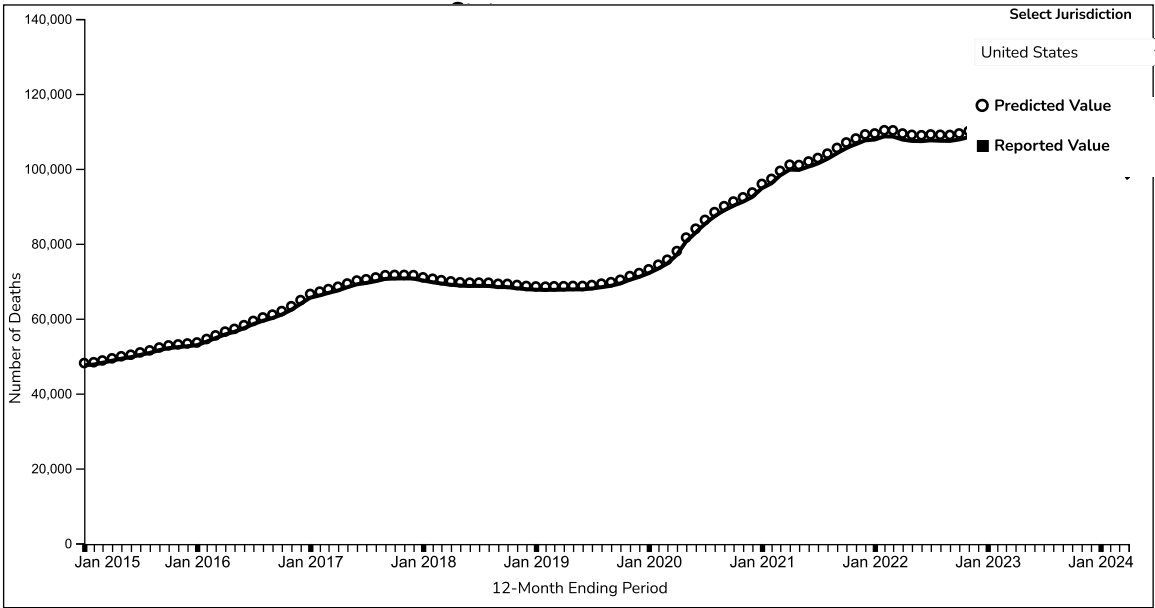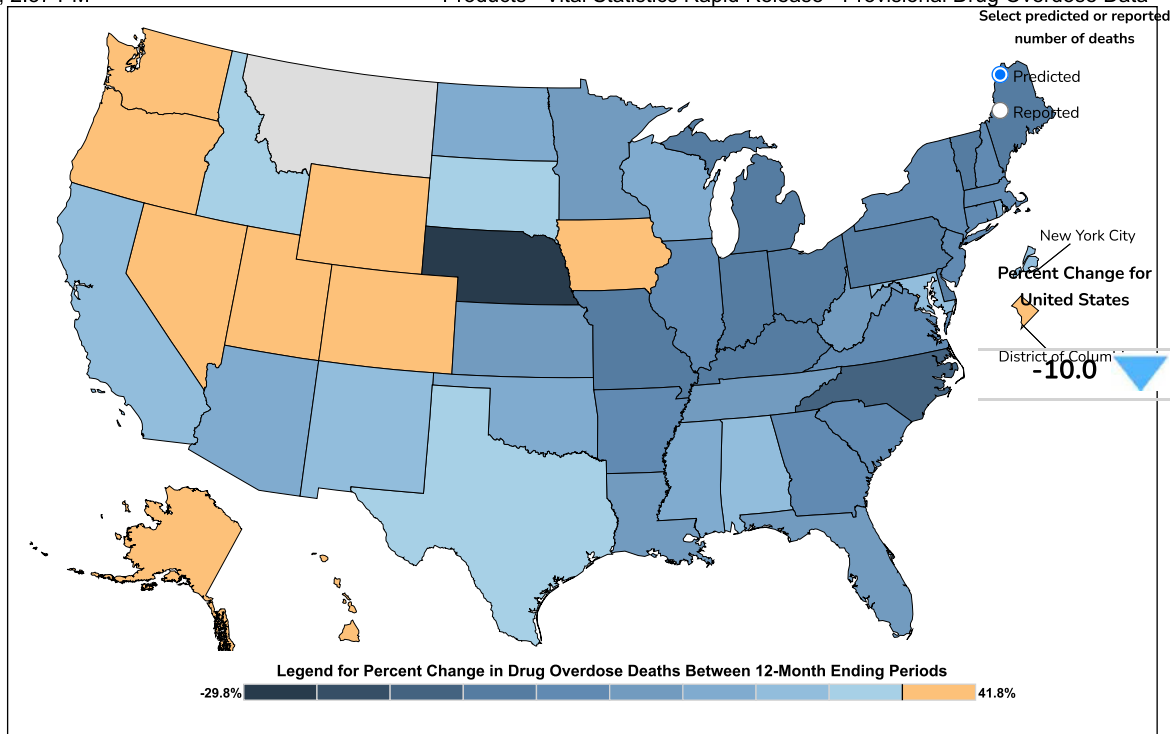### Figure 1a. 12 Month-ending Provisional Counts of Drug Overdose Deaths: United

Figure 1b. Percent Change in Predicted 12 Month-ending Count of Drug Overdose Deaths, by Jurisdiction: April 2023 to April 2024

Legend for Percent Change in Drug Overdose Deaths Between 12-Month Ending Periods

-29.8% ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 41.8%

NOTES: *Reported* provisional counts for 12-month ending periods are the number of deaths received and processed for the 12-month period ending in the month indicated. Drug overdose deaths are often initially reported with no cause of death (pending investigation), because they require lengthy investigation, including toxicology testing. Reported provisional counts may not include all deaths that occurred during a given time period. Therefore, they should not be considered comparable with final data and are subject to change. *Predicted* provisional counts represent estimates of the number of deaths adjusted for incomplete reporting (see **Technical Notes**). Deaths are classified by the reporting jurisdiction in which the death occurred. Percent change refers to the relative difference between the reported or predicted provisional numbers of deaths due to drug overdose occurring in the 12-month period ending in the month indicated compared with the 12-month period ending in the same month of the previous year. Drug overdose deaths are identified using ICD–10 underlying cause-of-death codes: X40–X44, X60–X64, X85, and Y10–Y14.

 ⯈ Data Table for Figure 1a. 12 Month-ending Provisional Counts of Drug Overdose Deaths

 ⯈ Data Table for Figure 1b: Percent Change in 12 Month-ending Count of Drug Overdose Deaths, by Jurisdiction

Technical notes

Nature and sources of data

Provisional drug overdose death counts are based on death records received and processed by the National Center for Health Statistics (NCHS) as of a specified cutoff date. The cutoff date is generally the first Sunday of each month. National provisional estimates include deaths occurring within the 50 states and the District of Columbia. NCHS receives the death records from state vital registration offices through the Vital Statistics Cooperative Program.

The timeliness of provisional mortality surveillance data in the National Vital Statistics System (NVSS) database varies by cause of death. The lag time (i.e., the time between when the death occurred and when the data are available for analysis) is longer for drug overdose deaths compared with other causes of death ([1]). Thus, provisional estimates of drug overdose deaths have traditionally been reported 6 months after the date of death. **Given recent improvements in data timeliness, starting in February 2022, the 6-month lag was shortened to 4 months.**

The reporting lag was shorted from 6 months to 4 months after years of monitoring the improving timeliness of death reporting and a recent comparison of predicted estimates calculated using the 4-month and 6-month lags. Estimates produced with the 6-month and 4-month lags had a difference of less than 0.2% for national predicted drug overdose death counts. State predicted drug overdose death counts differed by an average of 0.1% (ranging from 0.0 to 0.5%). National predicted counts for deaths involving opioids had a difference of 0.1%, while state predicted counts had an average difference of 0.3% (ranging from 0.3 to 2.9%).

Provisional death counts presented in this data visualization are for "12-month ending periods," defined as the number of deaths occurring in the 12-month period ending in the month indicated. For example, the 12-month ending period in June 2017 would include deaths occurring from July 1, 2016, through June 30, 2017. The 12-month ending period counts include all seasons of the year and are insensitive to reporting variations by seasonality. Counts for the 12-month period ending in the same month of the previous year are shown for comparison. These provisional counts of drug overdose deaths and related data quality metrics are provided for public health surveillance and monitoring of emerging trends. Provisional drug overdose death data are often incomplete, and the degree of completeness varies by jurisdiction and 12-month ending period. Consequently, the numbers of drug overdose deaths are underestimated based on provisional data relative to final data and are subject to random variation. Methods to adjust provisional counts have been developed to provide *predicted* provisional counts of drug overdose deaths (2) , accounting for delayed reporting (see Percentage of records pending investigation and Adjustments for delayed reporting).

Provisional data are based on available records that meet certain data quality criteria at the time of analysis and may not include all deaths that occurred during a given time period. Therefore, they should not be considered comparable with final data and are subject to change.

Cause-of-death classification and definition of drug deaths

Mortality statistics are compiled in accordance with World Health Organization (WHO) regulations specifying that WHO member nations classify and code causes of death with the current revision of the *International Statistical Classification of Diseases and Related Health Problems* (ICD). ICD provides the basic guidance used in virtually all countries to code and classify causes of death. It provides not only disease, injury, and poisoning categories but also the rules used to select the single underlying cause of death for tabulation from the several diagnoses that may be reported on a single death certificate, as well as definitions, tabulation lists, the format of the death certificate, and regulations on use of the classification. Causes of death for data presented in this report were coded according to ICD guidelines described in annual issues of Part 2a of the NCHS Instruction Manual (3).

Drug overdose deaths are identified using underlying cause-of-death codes from the Tenth Revision of ICD (ICD–10): X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined). Drug overdose deaths involving selected drug categories are identified by specific multiple cause-of-death codes. Drug categories presented include: heroin (T40.1); natural opioid analgesics, including morphine and codeine, and semisynthetic opioids, including drugs such as oxycodone, hydrocodone, hydromorphone, and oxymorphone (T40.2); methadone, a synthetic opioid (T40.3); synthetic opioid analgesics other than methadone, including drugs such as fentanyl and tramadol (T40.4); cocaine (T40.5); and psychostimulants with abuse potential, which includes methamphetamine (T43.6). Opioid overdose deaths are identified by the presence of any of the following multiple cause-of-death codes: opium (T40.0); heroin (T40.1); natural opioid analgesics (T40.2); methadone (T40.3); synthetic opioid analgesics other than methadone (T40.4); or other and unspecified narcotics (T40.6). This latter category includes drug overdose deaths where 'opioid' is reported without more specific information to assign a more specific ICD–10 code (T40.0–T40.4) (4,5). Among deaths with an underlying cause of drug overdose, the percentage with at least one drug or drug class specified is defined as that with at least one ICD–10 multiple cause-of-death code in the range T36–T50.8. Two additional categories were added based on CDC's Opioid Overdose Indicator Support Toolkit (6): drug overdose deaths involving natural, semi-synthetic, or synthetic opioids, including methadone (T40.2–T40.4); drug overdose deaths involving natural and semi-synthetic opioids, and methadone (T40.2–T40.3). These new categories, which are a combination of existing categories, are not displayed on the default figure to facilitate ease of display of the main drug categories, but are accessible through the drop-down box that allows for selection of specific drug categories.

Drug overdose deaths may involve multiple drugs; therefore, a single death might be included in more than one category when describing the number of drug overdose deaths involving specific drugs. For example, a death that involved both heroin and fentanyl would be included in both the number of drug overdose deaths involving heroin and the number of drug overdose deaths involving synthetic opioids other than methadone.

Selection of specific states and other jurisdictions to report

Provisional counts are presented by the jurisdiction in which the death occurred (i.e., the reporting jurisdiction). Data quality and timeliness for drug overdose deaths vary by reporting jurisdiction. Provisional counts are presented for reporting jurisdictions based on measures of data quality: the percentage of records where the manner of death is listed as "pending investigation," the overall completeness of the data, and the percentage of drug overdose death records with specific drugs or drug classes recorded. These criteria are defined below.

Percentage of records pending investigation

Drug overdose deaths often require lengthy investigations, and death certificates may be initially filed with a manner of death "pending investigation" and/or with a preliminary or unknown cause of death. When the percentage of records reported as "pending investigation" is high for a given jurisdiction, the number of drug overdose deaths is likely to be underestimated. For jurisdictions reporting fewer than 1% of records as "pending investigation", the provisional number of drug overdose deaths occurring in the fourth quarter of 2015 was approximately 5% lower than the final count of drug overdose deaths occurring in that same time period. For jurisdictions reporting greater than 1% of records as "pending investigation" the provisional counts of drug overdose deaths may underestimate the final count of drug overdose deaths by as much as 30%. Thus, jurisdictions are included in Figure 2 if 1% or fewer of their records in NVSS are reported as "pending investigation," for the six most recent 12-month ending periods. For jurisdictions not meeting quality measures for all periods starting with January 2015, predicted values are shown for all data points that meet percent completeness and drug specificity thresholds with reported values only shown for months where all three data quality measures were met. As a result, estimates are shown for selected reporting periods before the most recent 6 months and there may be gaps in the trends. Values for records pending investigation are updated with each monthly release and reflect the most current data available.

Percent completeness

NCHS receives monthly counts of the estimated number of deaths from each jurisdictional vital registration offices (referred to as "control counts"). This number represents the best estimate of how many deaths occurred in a given jurisdiction in each month. Death records in the NVSS database must have both demographic and coded cause-of-death information. The percent completeness is obtained by dividing the number of death records in the NVSS database for each jurisdiction for each 12-month period by the control counts and multiplying by 100. For more information on completeness, see Technical Notes of the Vital Statistics Rapid Release Program. Jurisdictions are included in Figure 2 if the percent completeness was consistently 90% or higher following a 6-month lag for the 12-month ending periods included in the dashboard.

Drug specificity

The percentage of death records in which a specific drug or drug class is identified as involved in a drug overdose death varies by jurisdiction (7). Selected jurisdictions consistently had 90% or more of drug overdose death certificates mentioning at least one specific drug for all of the 12-month ending periods included in the dashboard. Provisional counts of drug overdose deaths where a specific drug or drug class is reported on the death certificate are presented for the United States and for jurisdictions meeting this threshold. Additionally, as a data quality metric, the percentage of drug overdose death records where at least one drug or drug class is recorded is presented.

Improvements in Data Quality

In order for information on drug-specific overdose deaths to be reported by jurisdiction in the NCHS Vital Statistics Rapid Release Monthly Provisional Drug Overdose Death dashboard, states have been required to meet a set of timeliness and quality criteria consistently for each time point in the long-term trend line shown (starting with January 2015). In 2018, improvements in timeliness and data quality prompted a re-evaluation of the length of time that data quality requirements have had to be met for states to be included in "Figure 2. 12 Month-ending Provisional Number of Drug Overdose Deaths by Drug or Drug Class." As a result of this re-evaluation, additional states were added to "Figure 2. 12 Month-ending Provisional Number of Drug Overdose Deaths by Drug or Drug Class" as they met the new data quality and timeliness requirements. Some states may also drop out of the figure for a given month if they fall below data quality criteria.

As the timeliness and data quality of the drug overdose mortality data improve, the list of included jurisdictions will be re-examined to determine whether additional jurisdictions should be included or excluded based on the criteria described above. Due to reporting variations by jurisdiction, comparisons across selected jurisdictions should not be made. Data quality measures are shown for all jurisdictions in the below table. Values are updated with each monthly release and reflect the most current data available.

Data Quality Measures for All Jurisdictions

Adjustments for delayed reporting

Provisional counts of drug overdose deaths are underestimated relative to final counts. The degree of underestimation is determined primarily by the percentage of records with the manner of death reported as "pending investigation" and tends to vary by reporting jurisdiction, year, and month of death. Specifically, the number of drug overdose deaths will be underestimated to a larger extent in jurisdictions with higher percentages of records reported as "pending investigation," and this percentage tends to be higher in more recent months.

Methods were developed to adjust provisional counts for reporting delays related to temporal factors (i.e., 12 month-ending period) and the percentage of records that are reported with manner of death "pending investigation" (2). Briefly, these methods involve developing 'multiplication factors' based on the degree of underreporting in provisional data compared with final data. For example, if provisional counts of drug overdose deaths were historically 90% complete relative to final data, then the multiplication factor in this instance would be 1.1. The reported provisional counts can be multiplied by this factor to generate a set of *predicted* provisional counts that adjust for reporting delays.

The 12 month-ending period and the percentage of records with manner of death reported as "pending investigation" were used to predict the degree of underreporting in provisional data relative to final. Results from these models were used to generate a set of multiplication factors that could be applied to the reported provisional counts of drug overdose deaths to estimate *predicted* provisional counts. These predicted provisional counts may represent a more accurate picture of recent trends by accounting for reporting delays related to the percentage of records in provisional data with manner of death "pending investigation." It is important to note that flat or declining numbers of drug overdose deaths (either reported or predicted) could be due to incomplete data, true decreases in the number of deaths, or a combination of the two. True declines or plateaus in the numbers of drug overdose deaths across the U.S. cannot be ascertained until final data become available.

Timeliness of drug overdose death reporting has improved in recent years. Adjustments for delayed reporting are based on final data from 2019. Relative to final data, 12-month ending provisional counts of drug overdose deaths for 2019 were 98.3% to 99.2% complete after a 6-month lag. The degree of underestimation was largest for 12-month periods ending in October and November. Completeness was slightly higher in 2019 than in 2018. With improvements in reporting and completeness, predicted values will be closer to reported values and the completeness of reported drug overdose death counts may be higher than in prior years. Adjustments are typically updated once the prior year of data are finalized. Given atypically high death counts and temporary changes to reporting through 2020 and 2021, adjustments will continue to be based on 2019 final data.

Coefficients from these updated models were used to update the multiplication factors applied to the reported provisional counts of drug overdose deaths. Model results for each of the ten drug outcomes of interest are presented below.

Table 1. Completeness of 12-month ending provisional counts of drug overdose deaths relative to final counts from 2019 after six-month lag, by reporting jurisdiction and ending month

Reporting jurisdiction	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
United States	99.3	98.8	98.7	98.8	98.4	98.3	98.1	97.9	97.9	98.2	98.8	99.7
Alabama	95.6	96.2	98.9	96.3	95.7	99.5	98.7	96.5	97.3	98.5	99.8	99.8
Alaska	100	100	86.7	100	100	100	100	100	92.9	100	100	100
Arizona	98.3	99.2	99.4	100	97.1	99.3	96.5	96.9	96.8	98.7	98.9	99.7

Reporting jurisdiction	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Arkansas	100	100	100	100	99.5	100	100	100	96.7	100	98.7	100
California	89.2	90.4	91.9	89.5	88.5	90.9	89.2	91.7	92.2	90.3	90.9	93.7
Colorado	100	98.9	97.6	99.8	100	98.8	100	98.6	98.7	100	100	100
Connecticut	84.3	91.3	93.1	93.5	95.6	90.4	92.1	90	92.6	88.2	93.4	90
Delaware	100	100	93.1	100	93.7	95.7	96.7	93	86.6	92.2	77.3	91.6
District of Columbia	100	100	98.9	95.7	100	99.6	100	97.1	98.8	99.6	100	100
Florida	96.5	96.6	97.4	96.6	94	94.2	93.7	95.5	95.1	94.2	97.4	98.2
Georgia	94.9	94.4	94.1	97.2	92.1	90.3	90.5	90.6	90.4	89.6	91.5	95
Hawaii	78.2	89.9	93.6	88.9	100	94.9	94.7	95.4	95	100	93.9	98.2
Idaho	100	100	100	100	100	100	91.7	100	95.7	95.7	100	100
Illinois	95.7	99.4	98.3	97.3	97.7	99.6	98.7	98.2	98.7	96.5	96.8	97.9
Indiana	97.1	98.3	99.1	99.1	97.2	99.3	97.9	97.1	98.9	94.2	97.2	99.9
Iowa	96.4	100	100	96.7	96	100	100	100	100	100	100	100
Kansas	98.8	99.7	100	94.9	98.7	94.4	93.5	98.4	95.7	93.4	97.3	95.8
Kentucky	98.8	98.5	100	98.9	98.5	99.1	100	97.8	99.2	99.2	100	99.8
Louisiana	99.5	98.9	100	98.7	99.6	96.7	100	99.2	100	98.1	99.4	99.3
Maine	100	100	100	100	100	100	100	100	100	100	96.2	100
Maryland	98.5	100	100	99.3	99.8	100	100	99.9	98.9	99.5	99.3	99.3
Massachusetts	99.8	98.6	97	100	100	98.9	99.1	99.5	99.5	99.1	98.4	98.7
Michigan	90.3	95.1	90.9	91.5	89.4	94.5	94.5	80.8	91.9	97.1	96.9	97.9
Minnesota	99.8	100	98.1	98.7	100	100	100	100	100	100	100	100
Mississippi	79.9	75.8	79	94	92.2	94.2	92.9	91.1	91.9	96.7	86.3	97.8
Missouri	97.5	97.7	99.1	99	97.4	97.3	100	99.9	100	100	99.8	100
Montana	91.3	96	83.3	90.9	100	66.7	85.4	96.2	90	100	81.5	95.6
Nebraska	100	93.8	100	100	100	100	100	100	100	100	100	100
Nevada	98.4	96.7	100	97	100	97.2	97	98.6	99.3	99.7	100	99.5
New Hampshire	6.9	21.7	50.6	76.7	97	100	95.8	94.2	91.9	100	97.4	100
New Jersey	90.1	93.2	92.3	91.4	94.8	94.8	91.3	97.5	96.5	97.4	97.3	98.6
New Mexico	86.2	96.6	84.1	92.1	91	90.2	97.7	96.4	95.8	95	97.1	98.8
New York[1]	76.8	84.5	80.3	79.5	79.2	81.3	80.1	86.3	86.2	81.5	69.7	75.9
New York City	97.3	95	95.1	98.1	95.9	99.7	100	99.4	98.9	99.2	99.9	89.2
North Carolina	74.9	74.1	72.4	74.3	71.5	72.9	79.3	66.2	59.6	54.8	63.2	75.2
North Dakota	100	100	100	92.2	100	100	94.4	98.2	100	100	100	100
Ohio	97.7	97.6	94.2	95.2	93.7	95.2	95.6	95	97	98.5	98.9	98.5
Oklahoma	100	97.5	95.9	100	95.2	100	94.8	94.1	99.4	100	100	98.5
Oregon	94.6	97.7	91.8	90.1	95.1	94.6	91.9	93.1	93.4	90.9	94.1	87.2
Pennsylvania	95.8	94.3	95.3	92.9	95.5	97.1	95.2	94.3	94.1	93.3	95.3	97.3
Rhode Island	100	97	100	100	100	100	100	100	100	100	100	100
South Carolina	90.5	97.3	95.1	92.2	88.7	97.9	93.2	94	97	90.7	90.1	96.6
South Dakota	75	100	100	100	100	98.9	100	100	100	100	100	100
Tennessee	84.6	83.5	90.4	88.3	90	93.1	97.1	96.2	95.5	95.4	96.6	98.2
Texas	68.5	75.8	86.6	96.8	92.7	95.3	95.1	97	96.2	96.3	96.8	98.5

Reporting jurisdiction	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Utah	88.7	97.9	100	100	96.1	96	100	100	100	100	99.8	100
Vermont	100	100	100	100	100	100	100	100	100	100	100	100
Virginia	99.2	98.4	99.2	98	97.7	95.6	96.7	94.8	99.8	99.4	98.8	100
Washington	93.3	92.6	89.5	94.9	96.4	90.2	91.9	91.2	86.8	79.1	75.3	77
West Virginia	73.7	78.2	83.7	82.9	75.1	87.4	93	92.6	89.9	83.7	86.4	84.5
Wisconsin	92.4	94.4	96.4	97.5	94.2	95.9	93.9	99.4	95.2	96.9	99	98.4
Wyoming	100	100	100	100	66.7	100	100	98	100	100	100	100

[1]Excludes New York City.

NOTE: Completeness of weekly provisional data is shown with a 6-month lag following the 12-month period ending in the month indicated.

SOURCE: NCHS, National Vital Statistics System, 2019.

Coefficients from these updated models were used to update the multiplication factors applied to the reported provisional counts of drug overdose deaths. Model results for each of the ten drug outcomes of interest are presented below.

Table 2. Model results of the completeness of provisional data by month-ending and percent pending: Drug overdose deaths and deaths involving any opioid. Values are estimated coefficients (robust standard errors).

Model Parameters	Drug overdose	Any opioids (T40.0-T40.4, T40.6)	Natural, semi-synthetic, and synthetic opioids, including methadone (T40.2-T40.4)	Natural & semi-synthetic opioids and methadone (T40.2-T40.3)
Intercept	100.7 (0.1)	100.6 (0.1)	100.6 (0.1)	100.5 (0.1)
Feb	-0.1 (0.1)	-0.1 (0.1)	-0.1 (0.1)	-0.1 (0.1)
Mar	-0.2 (0.1)	-0.2 (0.1)	-0.3 (0.1)	-0.3 (0.1)
Apr	-0.1 (0.1)	-0.2 (0.1)	-0.2 (0.1)	-0.3 (0.1)
May	-0.3 (0.1)	-0.3 (0.1)	-0.3 (0.1)	-0.5 (0.1)
Jun	-0.5 (0.1)	-0.5 (0.1)	-0.6 (0.1)	-0.7 (0.1)
Jul	-0.8 (0.1)	-0.9 (0.1)	-1 (0.1)	-1 (0.1)
Aug	-1.1 (0.1)	-1.2 (0.1)	-1.3 (0.1)	-1.3 (0.1)
Sep	-0.9 (0.1)	-1 (0.1)	-1.2 (0.1)	-1.2 (0.1)
Oct	-0.8 (0.1)	-0.9 (0.1)	-1 (0.1)	-1 (0.1)
Nov	-0.5 (0.1)	-0.6 (0.1)	-0.6 (0.1)	-0.6 (0.1)
Dec	0 (0.1)	0 (0.1)	-0.1 (0.1)	-0.1 (0.1)
Percent Pending	-9.3 (0.1)	-9 (0.1)	-9.4 (0.1)	-9.3 (0.1)

SOURCE: NCHS, National Vital Statistics System, 2016-2019.

Table 3. Model results of the completeness of provisional data by month-ending and percent pending: deaths involving specific drugs and drug classes. Values are estimated coefficients (robust standard errors).

Model Parameters	Heroin (T40.1)	Natural & semi-synthetic opioids (T40.2)	Methadone (T40.3)	Synthetic opioids, excl. methadone (T40.4)	Cocaine (T40.5)	Psychostim. w/ abuse potential (T43.6)

Model Parameters	Heroin (T40.1)	Natural & semi-synthetic opioids (T40.2)	Methadone (T40.3)	Synthetic opioids, excl. methadone (T40.4)	Cocaine (T40.5)	Psychostim. w/ abuse potential (T43.6)
Intercept	100.5 (0.1)	100.6 (0.1)	100.2 (0.1)	100.4 (0.1)	100.7 (0.1)	100.5 (0.1)
Feb	0 (0.1)	0 (0.1)	-0.4 (0.2)	-0.1 (0.1)	-0.2 (0.2)	-0.1 (0.1)
Mar	-0.2 (0.1)	-0.3 (0.1)	-0.2 (0.2)	-0.2 (0.1)	-0.4 (0.2)	-0.4 (0.1)
Apr	-0.3 (0.1)	-0.4 (0.1)	-0.1 (0.2)	-0.2 (0.1)	-0.6 (0.2)	-0.3 (0.1)
May	-0.3 (0.1)	-0.5 (0.1)	-0.2 (0.2)	-0.2 (0.1)	-0.8 (0.2)	-0.4 (0.1)
Jun	-0.5 (0.1)	-0.9 (0.1)	-0.2 (0.2)	-0.3 (0.1)	-1.1 (0.2)	-0.5 (0.1)
Jul	-0.7 (0.1)	-1.1 (0.1)	-0.7 (0.2)	-0.7 (0.1)	-1.7 (0.2)	-0.9 (0.1)
Aug	-1.1 (0.1)	-1.4 (0.1)	-1.1 (0.2)	-1 (0.1)	-1.8 (0.2)	-1.1 (0.1)
Sep	-0.7 (0.1)	-1.3 (0.1)	-1.2 (0.2)	-0.8 (0.1)	-1.3 (0.2)	-0.7 (0.1)
Oct	-1.1 (0.1)	-1.1 (0.1)	-1 (0.2)	-0.8 (0.1)	-1 (0.2)	-0.7 (0.1)
Nov	-0.6 (0.1)	-0.7 (0.1)	-0.4 (0.2)	-0.5 (0.1)	-0.6 (0.2)	-0.4 (0.1)
Dec	0 (0.1)	-0.1 (0.1)	0.2 (0.2)	0 (0.1)	-0.1 (0.2)	0.1 (0.1)
Percent Pending	-7.5 (0.1)	-9.3 (0.1)	-9.1 (0.1)	-8.7 (0.1)	-9.1 (0.1)	-10.2 (0.1)

SOURCE: NCHS, National Vital Statistics System, 2016-2019.

Differences between final and provisional data

There may be slight differences between provisional and final data for a given data year (e.g., 2021). Final drug overdose death data published annually through NCHS statistical reports (8) and CDC WONDER are typically tabulated by state of residence and limited to residents of the United States. Provisional data, such as the Drug Overdose Death Counts released through the Vital Statistics Rapid Release (VSRR) program, include all deaths that occurred within the 50 states and the District of Columbia, including foreign residents. As such, provisional counts include approximately 400-500 additional drug overdose death records where the decedents were not US residents. Provisional data are tabulated by state of occurrence to capture the burden on the place where the deaths occur, and to correspond to the various data quality metrics that are provided.

Additionally, in July/August following the end of a given data year, the final file is 'closed' in order to produce the historical and public use files and reports. After it is considered closed, the final file is no longer updated, even if additional updates or records are received from the jurisdictions. The result is that some records that are in the final annual file may still list an unknown cause of death or manner of death indicating 'pending investigation.' The provisional data continues to be updated as additional cause of death information is received, and the counts may increase in response to these changes. As a result, provisional drug overdose death counts published in the VSRR for the 2022 data year (i.e., 12-month ending period in Dec 2022) may differ from the counts published using the 2022 final data. The size of the discrepancy is typically small (approximately 500 additional drug overdose death records in the provisional data that were 'pending investigation' or had an unknown cause of death in the final data).

Source

NCHS, National Vital Statistics System. Estimates for 2023 and 2024 are based on provisional data. Estimates for 2015-2022 are based on final data (available from: https://www.cdc.gov/nchs/nvss/mortality_public_use_data.htm).

References

1. Spencer MR, Ahmad F. Timeliness of death certificate data for mortality surveillance and provisional estimates. National Center for Health Statistics. 2016.

2. Rossen LM, Ahmad FB, Spencer MR, Warner M, Sutton P. Methods to adjust provisional counts of drug overdose deaths for underreporting. Vital Statistics Rapid Release; no 6. Hyattsville, MD: National Center for Health Statistics. August 2018. Available from: https://www.cdc.gov/nchs/data/vsrr/report006.pdf 📄

3. National Vital Statistics System. Instructions for classifying the underlying cause of death. In: NCHS instruction manual; Part 2a. Published annually.

4. Slavova S, O'Brien DB, Creppage K, et al. Drug Overdose Deaths: Let's Get Specific. Public Health Reports. 2015;130(4):339-342.

5. Rudd RA, Seth P, David F, Scholl L. Increases in Drug and Opioid-Involved Overdose Deaths—United States, 2010–2015. MMWR Morb Mortal Wkly Rep 65(5051):1445–52. 2016.

6. CDC Opioid Overdose Indicator Support Toolkit Version 2.0 The Prescription Drug Overdose: Data-Driven Prevention Initiative (DDPI), National Center for Injury Prevention and Control.

7. Warner M, Paulozzi LJ, Nolte KB, Davis GG, Nelson LS. State variation in certifying manner of death and drugs involved in drug intoxication deaths. Acad Forensic Pathol 3(2)231–7. 2013.

8. Spencer MR, Miniño AM, Warner M. Drug overdose deaths in the United States, 2001–2021. NCHS Data Brief, no 457. Hyattsville, MD: National Center for Health Statistics. 2022. DOI: https://dx.doi.org/10.15620/cdc:122556 ↗

Suggested citation

Ahmad FB, Cisewski JA, Rossen LM, Sutton P. Provisional drug overdose death counts. National Center for Health Statistics. 2024.

Designed by LM Rossen, A Lipphardt, FB Ahmad, JM Keralis, and Y Chong: National Center for Health Statistics.

Last Reviewed: September 11, 2024