

ANNUAL SURVEILLANCE REPORT OF DRUG-RELATED RISKS AND OUTCOMES

UNITED STATES, 2017



**Centers for Disease
Control and Prevention**
National Center for Injury
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EXECUTIVE SUMMARY



The Current Drug Overdose Epidemic in the United States

Drug overdose deaths in the United States more than tripled from 1999 to 2015. The current epidemic of drug overdoses began in the 1990s, driven by increasing deaths from prescription opioids that paralleled a dramatic increase in the prescribing of such drugs for chronic pain. In 2008, the number of deaths involving prescription opioids exceeded the number of deaths from heroin and cocaine combined. Since 2010, however, the U.S. has also seen sharp increases in deaths from heroin, synthetic opioids such as fentanyl, cocaine, and methamphetamine. In addition to deaths, overdoses from drugs both prescription and illicit are responsible for parallel increasing trends in nonfatal emergency department and hospital admissions.

Morbidity and mortality statistics, however, fail to capture the full extent of the problem with substance use disorders in the United States. Survey data indicate that tens of millions of Americans misuse prescription opioids, sedatives, tranquilizers, and stimulants. Others use illicit drugs such as heroin, fentanyl, cocaine, and methamphetamine. Most persons using heroin have had a history of misusing prescription opioids first.

The problem with misuse of prescription drugs of various kinds is related to high levels of prescribing of such medications. For example, in 2016 prescribers wrote 66.5 opioid and 25.2 sedative prescriptions for every 100 Americans.

The purpose of this first annual surveillance report is to summarize the latest information available on the national level for various health outcomes, health behaviors, and prescribing patterns related to the drug problem in the United States. The most recent year of information available is different for different outcomes. The emphasis is on national information, but some state information is also presented. This document is intended to serve as a resource for persons charged with addressing this ongoing national problem. It will be updated annually.

This report presents information on four types of outcomes from the four different data sources:

- 1 Opioid prescribing, 2006-2016, from QuintilesIMS Health®
- 2 Drug use, misuse, and substance use disorder, 2014-2015, from the National Survey on Drug Use and Health (NSDUH), a product of the Substance Abuse and Mental Health Services Administration
- 3 Nonfatal overdose hospitalizations and emergency department (ED) visits, 2014, from the Healthcare Cost and Utilization Project (HCUP), a product of the Agency for Healthcare Research and Quality (AHRQ)

- 4 Drug overdose mortality, 1999-2015, from the National Vital Statistics System (NVSS) Mortality Component, maintained by the National Center for Health Statistics, CDC

Opioid Prescribing

Doctors wrote 72.4 opioid prescriptions per 100 persons in 2006. This rate increased 4.1% annually from 2006 to 2008 and 1.1% annually from 2008 to 2012. It then decreased 4.9% annually from 2012 through 2016, reaching a rate of 66.5 per 100 persons in 2016. That year, 19.1 per 100 persons received one or more opioid prescriptions, with the average patient receiving 3.5 prescriptions.

Between 2006 and 2016, the annual prescribing rate per 100 persons for high-dosage opioid prescriptions (≥ 90 morphine milligram equivalents (MME)/day) decreased from 11.5 to 6.1, an overall 46.8% reduction and an average annual percentage change of 6.6%. The rate leveled off between 2006 and 2009, then decreased 9.3% annually from 2009 to 2016.

Drug Use, Misuse, and Substance Use Disorder

During 2015, an estimated 47.7 million persons in the United States aged 12 years or older used illicit drugs or misused prescription drugs, a rate of 17.8 per 100 persons. This estimate includes use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine, and the misuse of prescription drugs. Estimated rates of use of illicit drugs in the past year by drug type were: 0.3 per 100 persons for heroin, 1.8 for cocaine, and 0.6 for methamphetamine. Estimated rates for prescription drug misuse by drug type were: 4.7 per 100 persons for prescription pain relievers, 2.3 for tranquilizers, 2.0 for stimulants, and 0.6 for sedatives.

Nonfatal Overdose Hospitalizations and Emergency Department (ED) Visits

An estimated 259,665 hospitalizations for nonfatal, unintentional drug poisoning occurred in 2014. Opioid poisoning accounted for 20.4% (53,000) of these hospitalizations. Heroin was specified as the involved opioid for 21.7% (11,475) of opioid hospitalizations. Cocaine accounted for 13,265, and methamphetamines for 8,290 hospitalizations.

An estimated 418,313 emergency department (ED) visits for nonfatal, unintentional drug poisoning occurred in 2014. Opioids accounted for 22.1% (92,262) of these ED visits. Heroin was specified as the involved opioid for 58.5% (53,930) of opioid ED visits. Cocaine accounted for 6,424 and methamphetamines for 11,012 visits.

Drug Overdose Mortality

A record number of drug overdose deaths occurred in 2015: 52,404. While a death may involve more than one drug, prescription or illicit opioids were involved in 63.1% of these deaths. Among opioid-involved deaths, the most common category was heroin (12,989 deaths), followed by prescription opioids that were natural or semi-synthetic (12,727 deaths), synthetic opioids other than methadone (a category that includes primarily prescription or illicit fentanyl) (9,580 deaths), and methadone (3,301 deaths). Cocaine was involved in 6,784 deaths. Overall, 84.2% of drug overdose deaths were unintentional.

The steady increase in mortality rates for natural or semi-synthetic opioids (e.g., hydrocodone, oxycodone) seen from 1999 to 2010 has now started to level off. The rapid increase in heroin deaths that began in 2011 continued through 2015. The rapid increase in synthetic opioids other than methadone (the category containing fentanyl), first noted in 2014, continued through 2015. Death rates involving cocaine have seen increasing trends from 2010 to 2015.

Limitations

This report has some limitations. Because four distinct data sources were used, terminology and definitions are not completely standardized throughout the report. Further, the most recent year of available data varied across the data sources. Collectively, these factors limit comparability of information across sections. In addition, this report does not address polysubstance use (i.e., the consumption of more than one drug over a defined period, simultaneously or at different times for either therapeutic or recreational purposes). For a detailed description of the data sources, definitions, and caveats please refer to the technical notes.



Conclusions

The data from these four sources suggest the following conclusions:

- 1** Through 2015, drug overdose remained a large and growing public health crisis in the United States;
- 2** Prescription opioid pain relievers were formerly driving the crisis, but by 2015 they shared equal measure with heroin, synthetic opioids other than methadone (mostly illicit fentanyl), and—increasingly—cocaine and methamphetamines;
- 3** The leveling off and declines in opioid prescribing rates since 2012 and high-dose prescribing rates since 2009 suggest that healthcare providers have responded, becoming more cautious in their opioid prescribing practices; and
- 4** Additional measures are now urgently needed to address a diverse and evolving array of drug types.

RESULTS OF THE 2017 SURVEILLANCE REPORT



Opioid Prescribing

Data on opioid prescribing estimates from QuintilesIMS Health® were presented for the following outcomes:

- Annual national estimates of total number and rate for patients who had at least one prescription filled for opioids by age and gender, United States, 2014-2016 ([Table 1a](#)).
- National total number and rate of opioid prescriptions and morphine milligram equivalents (MME) dosage dispensed per 100 persons annually, United States, 2014-2016 ([Table 1b](#)).
- Rates of opioid prescriptions dispensed per 100 persons by dosage, type, and state, United States, 2014-2016 ([Table 1c](#)).
- Trend analysis of opioid prescribing rate and dosage, United States, 2006-2016 ([Table 1d](#)).
- Trends in opioid prescribing rate and dosage, United States, 2006-2016 ([Figure 1a-1d](#)).

All rates presented are per 100 population. For more detailed information, including definitions, please refer to the table footnotes and technical notes.

Annual estimates of prescribing rates for all opioids, high-dosage opioids (≥ 90 MME), and days of supply per prescription in the United States during 2006-2016 are reported in the Appendix ([Supplemental Table 1](#)). In addition, average daily MME per prescription, total MME per prescription, MME per capita, and average days' supply per prescription are also presented.

Patient-Level Opioid Prescribing Rates, United States, 2014-2016 ([Table 1a](#))

- A total of 61,862,364 patients had at least one prescription for opioids filled or refilled in 2016. The total rate was 19.1 patients per 100 persons.
- Among males, the rate was 16.4; among females, it was 21.8 in 2016.
- Rates per 100 persons by age group were 28.9 for persons aged ≥ 65 years, 25.3 for persons aged 45-54 years, 15.1 for persons aged 20-24 years, and 11.6 for persons aged 15-19 years in 2016.

Opioid Prescribing Rates and Amount of Opioids Prescribed, United States, 2014-2016

Prescribing Rates ([Table 1b](#))

- A total of 214,881,622 opioid prescriptions were dispensed by retail pharmacies in 2016. The total opioid prescribing rate was 66.5 per 100 persons.
- The long-acting or extended-release (LA/ER) (i.e., slower acting medications with a longer duration of pain-relieving action) opioid prescribing rate was 6.3 per 100 persons in 2016.
- Annual prescribing rates of ≥ 30 days' supply was 27.3 per 100 persons in 2016; annual prescribing rates of < 30 days' supply was 39.2 in 2016.

- Average number of opioid prescriptions was 3.5 per patient in 2016.
- Average days' supply per prescription was 18.1 days in 2016.

Prescribing Dosages (Table 1b)

- 193,655,422,929 morphine milligram equivalents (MME) (i.e., a calculation of the total amount of opioids prescribed accounting for differences in drug type and strength) were prescribed in 2016.
- The amount of opioids prescribed was 599.3 MME per person in 2016.
- Average MME per prescription was 901.2 in 2016.
- Average daily MME per prescription was 47.1 in 2016.
- Daily dosage per prescription in 2016:
 - Low-dosage (< 50 MME/day) prescribing rate was 48.9 per 100 persons.
 - High-dosage (\geq 90 MME/day) prescribing rate was 6.1 per 100 persons.

Opioid Prescribing Rates and Amount of Opioids Prescribed by 50 States and the District of Columbia, 2014-2016 (Table 1c)

- Opioid prescribing rates ranged from 32.5 in the District of Columbia to 121.0 per 100 persons in Alabama in 2016.
 - States with the highest opioid prescribing rates were Alabama (121.0), Arkansas, (114.6), Tennessee (107.5), Mississippi (105.6), and Louisiana (98.1).
 - States with the lowest opioid prescribing rates were Minnesota (46.9), California (44.8), New York (42.7), Hawaii (41.9), and District of Columbia (32.5).
- LA/ER opioid prescribing rates ranged from 2.2 in the District of Columbia to 12.7 per 100 persons in Delaware in 2016.
 - States with the highest LA/ER opioid prescribing rates were Delaware (12.7), Tennessee (11.0), Oklahoma (10.4), Maine (10.3), and Alabama (9.9).
 - States with the lowest LA/ER opioid prescribing rates were Hawaii (4.7), California (4.1), Illinois (4.1), Texas (3.8), and District of Columbia (2.2).
- High-dosage opioid prescribing rates (\geq 90 MME/day) ranged from 1.7 in the District of Columbia to 12.0 per 100 persons in Delaware in 2016.
 - States with the highest high-dosage opioid prescribing rates (\geq 90 MME/day) were Delaware (12.0), Utah (10.1), Nevada (10.0), Maine (9.9), and Tennessee (9.8).
 - States with the lowest high-dosage opioid prescribing rates (\geq 90 MME/day) were North Dakota (3.6), Minnesota (3.6), Illinois (3.3), Texas (3.0), and District of Columbia (1.7).

Trends in Opioid Prescribing Rates and Amount of Opioids Prescribed, 2006-2016

Annual prescribing rates by dosage

All opioids

- Between 2006 and 2016, the annual prescribing rate per 100 persons decreased from 72.4 to 66.5 for all opioids, an overall 8.1% reduction (**Supplemental Table 1**). The rate initially increased annually by 4.1% from 2006 to 2008 ($p < 0.05$), increased another 1.1% from 2008 to 2012 ($p < 0.05$), and then decreased annually by 4.9% from 2012 through 2016 ($p < 0.05$) (**Table 1d** and **Figure 1a**).

High-dosage opioids (≥ 90 MME/day)

- Between 2006 and 2016, the annual prescribing rate per 100 persons decreased from 11.5 to 6.1 for high-dosage opioid prescriptions, an overall 46.8% reduction ([Supplemental Table 1](#)). The rate leveled off between 2006 and 2009, then annually decreased by 9.3% from 2009 to 2016 ($p < 0.05$) ([Table 1d](#) and [Figure 1a](#)).

Annual prescribing rates by days of supply per prescription (≥ 30 days and < 30 days)

≥ 30 days' supply

- From 2006 through 2016, the annual prescribing rate per 100 persons increased from 17.6 to 27.3 for prescriptions with ≥ 30 days of supply, an overall 55.1% increase ([Supplemental Table 1](#)). The rate increased annually by 9.9% from 2006 through 2010 ($p < 0.05$) and by 2.9% from 2010 through 2013 ($p < 0.05$), and then annually decreased by 1.3% between 2013 and 2016 ($p < 0.05$) ([Table 1d](#) and [Figure 1b](#)).

< 30 days' supply

- During 2006-2016, the annual prescribing rate per 100 persons decreased from 54.7 to 39.2 for prescriptions with < 30 days' supply, an overall 28.4% reduction ([Supplemental Table 1](#)). The rate leveled off from 2006 through 2008, then decreased annually by 1.2% between 2008 and 2012 ($p < 0.05$), and further decreased annually by 7.3% from 2012 to 2016 ($p < 0.05$) ([Table 1d](#) and [Figure 1b](#)).

Average daily dosage (MME/day) per prescription

- Between 2006 and 2016, average daily MME per prescription decreased from 59.7 to 47.1 for all opioids, an overall 21.0% reduction ([Supplemental Table 1](#)). The rate decreased annually by 1.0% from 2006 to 2010 ($p < 0.05$), 4.7% from 2010 to 2013 ($p < 0.05$), and 1.7% from 2013 to 2016 ($p < 0.05$) ([Table 1d](#) and [Figure 1c](#)).

Average days of supply per prescription

- Between 2006 and 2016, average days of supply increased from 13.3 to 18.1 days per prescription, an overall 35.7% increase ([Supplemental Table 1](#)). The rate increased annually by 4.4% from 2006 to 2008 ($p < 0.05$), 3.4% from 2008 to 2011 ($p < 0.05$), and 2.5% from 2011 to 2016 ($p < 0.05$) ([Table 1d](#) and [Figure 1d](#)).



Drug Use, Misuse, and Substance Use Disorder

Self-reported data for persons in the United States aged 12 years or older are presented from the 2015 National Survey on Drug Use and Health (NSDUH):

- Self-reported prevalence of illicit drug use in past month, persons 12+ years old, heroin and cocaine: Numbers in Thousands, United States, 2014 ([Table 2a](#))
- Self-reported prevalence of illicit drug use and prescription drug misuse in past month, persons 12+ years old: Numbers in Thousands, United States, 2015 ([Table 2b](#))
- Self-reported prevalence of illicit drug use in past year, persons 12+ years old, heroin and cocaine: Numbers in Thousands, United States, 2014 ([Table 2c](#))
- Self-reported prevalence of illicit drug use and prescription drug misuse in past year, persons 12+ years old: Numbers in Thousands, United States, 2015 ([Table 2d](#))
- Self-reported prevalence of prescription drug use (including misuse) in past year, persons 12+ years old, by drug type: Numbers in Thousands, United States, 2015 ([Table 2e](#))
- Self-reported prevalence of past year initiation of illicit drug use, persons 12+ years old, heroin, cocaine, and methamphetamine: Numbers in Thousands, United States, 2014 and 2015 ([Table 2f](#))
- Self-reported prevalence of past year initiation of prescription drug misuse, persons 12+ years old, by prescription drug type: Numbers in Thousands, United States, 2015 ([Table 2g](#))
- Self-reported prevalence of substance use disorder in past year, persons 12+ years old, heroin and cocaine: Numbers in Thousands, United States, 2014 ([Table 2h](#))
- Self-reported prevalence of substance use disorder in past year persons 12+ years old, by drug type: Numbers in Thousands, United States, 2015 ([Table 2i](#))

All rates are per 100 population and the results of the 2015 analysis are highlighted in this report. For more detailed information, including definitions, please refer to the table footnotes and the technical notes.

All Illicit Drug Use and Prescription Drug Misuse

Estimated prevalence for using illicit drugs includes use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine. Prescription drug misuse includes misuse of prescription psychotherapeutics (i.e., prescription pain relievers, stimulants, sedatives, and tranquilizers).

- During 2015, an estimated 47,730,000 persons in the U.S. aged 12 years or older used illicit drugs or misused prescription drugs in the past year, with an estimated rate of 17.8 per 100 persons ([Table 2d](#)).
 - Among males, the estimated rate was 20.5; among females, it was 15.3.
 - The estimated rate was 37.5 in persons aged 18-25 years and 26.5 in persons aged 26-34 years.
 - By race and ethnicity, the estimated rates were 20.7 for non-Hispanic blacks, 17.9 for non-Hispanic whites, and 17.2 for Hispanics.
- By U.S. Census region, the estimated rates of illicit drug use/prescription drug misuse in 2015 were 20.9 per 100 persons in the West, 18.6 in the Northeast, 16.8 in the Midwest, and 16.1 in the South ([Table 2d](#)).
- By county type and urbanization, the estimated rate of illicit drug use/prescription drug misuse in 2015 was 19.0 per 100 persons in large metropolitan counties; the estimated rate was 10.8 in non-metropolitan, completely rural counties ([Table 2d](#)).

Opioids

Estimated prevalence for opioids includes use of heroin and misuse of prescription pain relievers (e.g., oxycodone, hydrocodone). Estimates are provided for the prevalence of past year initiation of drug use and misuse and the prevalence of past year substance use disorder, for heroin and prescription pain relievers.

Heroin

- During 2015, an estimated 828,000 persons in the U.S. aged 12 years or older used heroin in the past year, with an estimated rate of 0.3 per 100 persons (**Table 2d**).
 - Among males, the estimated rate was 0.4; among females, it was 0.2.
 - The estimated rate was 0.8 in persons aged 26-34 years and 0.6 in persons aged 18-25 years.
 - By race and ethnicity, the estimated rates were 0.4 for non-Hispanic blacks, and 0.3 for non-Hispanic whites and for Hispanics.
- By U.S. Census region, the estimated rates of heroin use in 2015 were 0.5 per 100 persons in the Northeast, 0.4 in the West, 0.3 in the Midwest, and 0.2 in the South (**Table 2d**).
- By county type and urbanization, the estimated rate of heroin use in 2015 was 0.4 per 100 persons both in small metropolitan counties with a population of less than 250,000 and non-metropolitan, urbanized counties; the estimated rate was 0.1 per 100 persons in non-metropolitan, completely rural counties (**Table 2d**).
- An estimated 135,000 persons in the U.S. aged 12 years or older initiated use of heroin during 2015, with an estimated rate of 0.1 per 100 persons (**Table 2f**).
- During 2015, an estimated 591,000 persons in the U.S. aged 12 years or older had a substance use disorder involving heroin, with an estimated rate of 0.2 per 100 persons (**Table 2i**).

Prescription Pain Relievers (e.g., oxycodone, hydrocodone)

- During 2015, an estimated 12,462,000 persons aged 12 years or older in the U.S. misused prescription pain relievers in the past year, with an estimated rate of 4.7 per 100 persons (**Table 2d**).
 - Among males, the estimated rate was 5.3; among females, it was 4.0.
 - The estimated rate was 8.5 in persons aged 18-25 years and 7.4 in persons aged 26-34 years.
 - By race and ethnicity, the estimated rates were 5.0 for Hispanics, 4.8 for non-Hispanic whites, and 4.4 for non-Hispanic blacks.
- By U.S. Census region, the estimated rates of prescription pain relievers misuse in 2015 were 5.3 per 100 persons in the West, 4.6 in the South, 4.4 in the Midwest, and 4.2 in the Northeast (**Table 2d**).
- By county type and urbanization, the estimated rate of prescription pain relievers misuse in 2015 was 4.9 per 100 persons both in small metropolitan counties with a population of less than 250,000 and non-metropolitan, urbanized counties; the estimated rate was 3.2 per 100 persons in non-metropolitan, completely rural counties (**Table 2d**).
- An estimated 2,126,000 persons in the U.S. aged 12 years or older initiated misuse of prescription pain relievers during 2015, with an estimated rate of 0.8 per 100 persons (**Table 2g**).
- During 2015, an estimated 2,038,000 persons in the U.S. aged 12 years or older had a substance use disorder involving prescription pain relievers, with an estimated rate of 0.8 per 100 persons (**Table 2i**).

Stimulants

Estimated prevalence for stimulants includes use of cocaine and methamphetamine and misuse of prescription stimulants. Estimates are provided for the prevalence of past year initiation of drug use and misuse and the prevalence of past year substance use disorder, for cocaine, methamphetamine, and prescription stimulants.

Cocaine

- During 2015, an estimated 4,828,000 persons in the U.S. aged 12 years or older used cocaine in the past year, with an estimated rate of 1.8 per 100 persons (**Table 2d**).
 - Among males, the estimated rate was 2.4; among females, it was 1.3.
 - The estimated rate was 5.4 in persons aged 18-25 years and 3.2 in persons aged 26-34 years.
 - By race and ethnicity, the estimated rates were 2.4 for non-Hispanic blacks, 1.8 for non-Hispanic whites, and 1.7 for Hispanics.
- By U.S. Census region, the estimated rates of cocaine use in 2015 were 2.2 per 100 persons in the Northeast, 2.1 in the West, 1.7 in the South, and 1.4 in the Midwest (**Table 2d**).
- By county type and urbanization, the estimated rate of cocaine use in 2015 was 2.0 per 100 persons in large metropolitan counties; the estimated rate was 0.8 per 100 persons in non-metropolitan, completely rural counties (**Table 2d**).
- An estimated 968,000 persons in the U.S. aged 12 years or older initiated use of cocaine during 2015, with an estimated rate of 0.4 per 100 persons (**Table 2f**).
- During 2015, an estimated 896,000 persons in the U.S. aged 12 years or older had a substance use disorder involving cocaine, with an estimated rate of 0.3 per 100 persons (**Table 2i**).

Methamphetamine

- During 2015, an estimated 1,713,000 persons in the U.S. aged 12 years or older used methamphetamine in the past year, with an estimated rate of 0.6 per 100 persons (**Table 2d**).
 - Among males, the estimated rate was 0.9; among females, it was 0.4.
 - The estimated rate was 1.1 in persons aged 26-34 years and in persons 35-39 years, and 1.0 in persons aged 45-49 years.
 - By race and ethnicity, the estimated rates were 0.7 for non-Hispanic whites, 0.6 for Hispanics, and 0.4 for non-Hispanic blacks.
- By U.S. Census region, the estimated rates of methamphetamine use in 2015 were 1.2 per 100 persons in the West, 0.6 in the South, 0.4 in the Midwest, and 0.2 in the Northeast (**Table 2d**).
- By county type and urbanization, the estimated rate of methamphetamine use in 2015 was 1.3 per 100 persons in non-metropolitan, less urbanized counties; the estimated rate was 0.5 per 100 persons in large metropolitan counties (**Table 2d**).
- An estimated 225,000 persons in the U.S. aged 12 years or older initiated use of methamphetamine during 2015, with an estimated rate of 0.1 per 100 persons (**Table 2f**).
- During 2015, an estimated 872,000 persons in the U.S. aged 12 years or older had a substance use disorder involving methamphetamine, with an estimated rate of 0.3 per 100 persons (**Table 2i**).

Prescription Stimulants

- During 2015, an estimated 5,251,000 persons in the U.S. aged 12 years or older misused prescription stimulants in the past year, with an estimated rate of 2.0 per 100 persons (**Table 2d**).
 - Among males, the estimated rate was 2.3; among females, it was 1.6.
 - The estimated rate was 7.3 in persons aged 18-25 years and 3.4 in persons aged 26-34 years.
 - By race and ethnicity, the estimated rates were 2.4 for non-Hispanic whites, 1.5 for Hispanics, and 0.7 for non-Hispanic blacks.
- By U.S. Census region, the estimated rates of prescription stimulant misuse in 2015 were 2.2 per 100 persons in the Midwest, 2.1 in the Northeast, 2.0 in the South, and 1.6 in the West (**Table 2d**).
- By county type and urbanization, the estimated rate of prescription stimulant misuse in 2015 was 2.3 per 100 persons in non-metropolitan, urbanized counties; the estimated rate was 0.7 per 100 persons in non-metropolitan, completely rural counties (**Table 2d**).

- An estimated 1,260,000 persons in the U.S. aged 12 years or older initiated misuse of prescription stimulants during 2015, with an estimated rate of 0.5 per 100 persons ([Table 2g](#)).
- During 2015, an estimated 426,000 persons in the U.S. aged 12 years or older had a substance use disorder involving prescription stimulants, with an estimated rate of 0.2 per 100 persons ([Table 2i](#)).

Other Drugs

Estimated prevalence for other drugs includes misuse of prescription sedatives and prescription tranquilizers. Estimates are provided for the prevalence of past year initiation of drug misuse and the prevalence of past year substance use disorder, for prescription sedatives and prescription tranquilizers.

Prescription Sedatives

- During 2015, an estimated 1,511,000 persons in the U.S. aged 12 years or older misused prescription sedatives in the past year, with an estimated rate of 0.6 per 100 persons ([Table 2d](#)).
 - Among females, the estimated rate was 0.7; among males, it was 0.5.
 - The estimated rate was 0.9 in persons aged 26-34 years and 0.8 both in persons 18-25 years and in persons 55-59 years.
 - By race and ethnicity, the estimated rates were 0.7 for non-Hispanic whites, 0.4 for Hispanics, and 0.2 for non-Hispanic blacks.
- By U.S. Census region, the estimated rates of prescription sedative misuse in 2015 were 0.6 per 100 persons in the Northeast, South, and West; the estimated rate was 0.4 per 100 persons in the Midwest ([Table 2d](#)).
- By county type and urbanization, the estimated rate of prescription sedatives misuse in 2015 was 0.8 per 100 persons in non-metropolitan, urbanized counties; the estimated rate was 0.1 per 100 persons in non-metropolitan, completely rural counties ([Table 2d](#)).
- An estimated 425,000 persons in the U.S. aged 12 years or older initiated misuse of prescription sedatives in 2015, with an estimated rate of 0.2 per 100 persons ([Table 2g](#)).
- During 2015, an estimated 154,000 persons in the U.S. aged 12 years or older had a substance use disorder involving prescription sedatives, with an estimated rate of 0.1 per 100 persons ([Table 2i](#)).

Prescription Tranquilizers

- During 2015, an estimated 6,050,000 persons in the U.S. aged 12 years or older misused prescription tranquilizers in the past year, with an estimated rate of 2.3 per 100 persons ([Table 2d](#)).
 - Among males, the estimated rate was 2.4; among females, it was 2.1.
 - The estimated rate was 5.4 in persons aged 18-25 years and 3.5 in persons aged 26-34 years.
 - By race and ethnicity, the estimated rates were 2.6 for non-Hispanic whites, 2.0 for Hispanics, and 1.5 for non-Hispanic blacks.
- By U.S. Census region, the estimated rates of prescription tranquilizer misuse were 2.6 per 100 persons in the South, 2.3 in the Northeast, 2.1 in the West, and 1.9 in the Midwest ([Table 2d](#)).
- By county type and urbanization, the estimated rate of prescription tranquilizer misuse in 2015 was 2.7 per 100 persons in non-metropolitan, urbanized counties; the estimated rate was 1.2 per 100 persons in non-metropolitan, completely rural counties ([Table 2d](#)).
- An estimated 1,437,000 persons in the U.S. aged 12 years or older initiated misuse of prescription tranquilizers during 2015, with an estimated rate of 0.5 per 100 persons ([Table 2g](#)).
- During 2015, an estimated 688,000 persons in the U.S. aged 12 years or older had a substance use disorder involving prescription tranquilizers, with an estimated rate of 0.3 per 100 persons ([Table 2i](#)).



Nonfatal Overdose Hospitalizations and Emergency Department (ED) Visits

Data on unintentional, nonfatal, drug-related poisonings for all persons in the U.S. are presented from 2014 survey data from the Healthcare Cost and Utilization Project (HCUP):

- Estimated number and age-adjusted rates of hospitalizations overall and by individual drugs by demographic characteristics ([Table 3a](#))
- Estimated number and age-adjusted rates of emergency department visits overall and by individual drugs by demographic characteristics ([Table 3b](#))
- Information on primary payer for drug-related poisoning hospitalizations and ED visits ([Table 3c](#))

As poisoning-related hospitalizations and ED visits may involve more than one type of drug, and external cause of injury codes were used in addition to principal diagnosis codes, the categories of unintentional, drug-related poisoning are not mutually exclusive. All rates are per 100,000 population and age-adjusted, except the rates for age. For more detailed information, including definitions, please refer to the table footnotes and the technical notes.

Rates of hospitalizations ([Supplemental Table 2a](#)) and emergency department visits ([Supplemental Table 2b](#)) due to unintentional, nonfatal, drug-related overdoses for 2014 that are not age-adjusted are presented in the Appendix.

All Drugs

Hospitalizations

- During 2014, an estimated 259,665 hospitalizations occurred for all unintentional, drug-related poisonings in the U.S., with an estimated age-adjusted rate of 79.2 per 100,000 ([Table 3a](#)).
 - Among females, the age-adjusted rate was 87.0; among males, it was 71.2.
 - The rate was 120.5 in persons aged 45-54 years and 105.0 in persons aged 55-64 years.
- By region, age-adjusted hospitalization rates for all unintentional, drug-related poisonings were 84.7 in the Midwest, 82.3 in the South, 81.7 per 100,000 in the Northeast, and 68.0 in the West ([Table 3a](#)).
- By urbanization, age-adjusted hospitalization rates for all unintentional, drug-related poisonings were 87.9 in small metropolitan areas and 72.3 in large fringe metropolitan areas ([Table 3a](#)).

Emergency Department (ED) Visits

- During 2014, an estimated 418,313 ED visits occurred for all unintentional, drug-related poisonings in the U.S., with an estimated age-adjusted rate of 133.7 per 100,000 ([Table 3b](#)).
 - Among males, the age-adjusted rate was 127.9; among females, it was 139.5.
 - The rate was 221.8 in persons aged 15-19 years and 211.3 in persons aged 20-24 years.
- By region, age-adjusted ED visit rates for all unintentional, drug-related poisonings were 154.0 per 100,000 in the Northeast, 153.7 in the Midwest, 128.5 in the West, and 117.0 in the South. ([Table 3b](#)).
- By urbanization, age-adjusted ED visit rates for all unintentional, drug-related poisonings were 161.4 in micropolitan (i.e., town/city; nonmetro) areas and 106.5 per 100,000 in large central metropolitan areas ([Table 3b](#)).

Opioids

All Opioids

Hospitalizations

- During 2014, an estimated 53,000 hospitalizations occurred for unintentional, opioid-related poisonings in the U.S., with an estimated age-adjusted rate of 15.6 per 100,000 ([Table 3a](#)).
 - Among males, the age-adjusted rate was 15.7; among females, it was 15.4.
 - The rate was 28.9 in persons aged 55-64 years and 25.0 in persons aged 45-54 years.
- By region, age-adjusted hospitalization rates for unintentional, opioid-related poisonings were 17.8 per 100,000 in the Northeast, 15.9 in the Midwest, 15.3 in the South, and 14.4 in the West ([Table 3a](#)).
- By urbanization, age-adjusted hospitalization rates for unintentional, opioid-related poisonings were 17.3 in medium metropolitan areas and 13.5 in noncore areas (not metropolitan or micropolitan) ([Table 3a](#)).

Emergency Department (ED) Visits

- During 2014, an estimated 92,262 ED visits occurred for unintentional, opioid-related poisonings in the U.S., with an estimated age-adjusted rate of 28.9 per 100,000 ([Table 3b](#)).
 - Among males, the age-adjusted rate was 36.3; among females, it was 21.6.
 - The rate was 71.1 in persons aged 20-24 years and 70.0 in persons aged 25-34 years.
- By region, age-adjusted ED visit rates for unintentional, opioid-related poisonings were 49.9 per 100,000 in the Northeast, 37.9 in the Midwest, 20.9 in the South, and 19.0 in the West ([Table 3b](#)).
- By urbanization, age-adjusted ED visit rates for unintentional, opioid-related poisonings were 35.9 in large fringe metropolitan areas and 20.5 in noncore areas (not metropolitan or micropolitan areas) ([Table 3b](#)).

Heroin

Hospitalizations

- During 2014, an estimated 11,475 hospitalizations occurred for unintentional, heroin-related poisonings in the U.S., with an estimated age-adjusted rate of 3.6 per 100,000 ([Table 3a](#)).
 - Among males, the age-adjusted rate was 5.0; among females, it was 2.1.
 - The rate was 9.8 in persons aged 25-34 years and 9.6 in persons aged 20-24 years.
- By region, age-adjusted hospitalization rates for unintentional, heroin-related poisonings were 6.2 per 100,000 in the Northeast, 5.1 in the Midwest, 2.4 in the South, and 2.2 in the West ([Table 3a](#)).
- By urbanization, age-adjusted hospitalization rates for unintentional, heroin-related poisonings were 4.7 in large fringe metropolitan areas and 1.6 in noncore areas (not metropolitan or micropolitan areas) ([Table 3a](#)).

Emergency Department (ED) Visits

- During 2014, an estimated 53,930 ED visits occurred for unintentional, heroin-related poisonings in the U.S., with an estimated age-adjusted rate of 17.1 per 100,000 ([Table 3b](#)).
 - Among males, the age-adjusted rate was 24.0; among females, it was 10.2.
 - The rate was 53.5 in persons aged 20-24 years and 51.5 in persons aged 25-34 years.
- By region, age-adjusted ED visit rates for unintentional, heroin-related poisonings were 37.7 per 100,000 in the Northeast, 24.8 in the Midwest, 9.9 in the South, and 7.0 in the West ([Table 3b](#)).
- By urbanization, age-adjusted ED visit rates for unintentional, heroin-related poisonings were 25.5 in large fringe metropolitan areas and 6.1 in noncore areas (not metropolitan or micropolitan areas) ([Table 3b](#)).

Methadone

Hospitalizations

- During 2014, an estimated 4,580 hospitalizations occurred for methadone-related poisonings in the U.S., with an estimated age-adjusted rate of 1.4 per 100,000 (**Table 3a**).
 - Among males, the age-adjusted rate was 1.5; among females, it was 1.2.
 - The rate was 2.9 in persons aged 55-64 years and 2.5 in persons aged 45-54 years.
- By region, age-adjusted hospitalization rates for unintentional, methadone-related poisonings were 1.7 per 100,000 in the Northeast, 1.4 in the West, 1.3 in the South, and 1.2 in the Midwest (**Table 3a**).
- By urbanization, age-adjusted hospitalization rates for methadone-related poisonings were 1.5 per 100,000 in large central and medium metropolitan areas and 1.1 large fringe metropolitan and in noncore areas (not metropolitan or micropolitan areas) (**Table 3a**).

Emergency Department (ED) Visits

- During 2014, an estimated 2,921 ED visits occurred for unintentional, methadone-related poisonings in the U.S., with an estimated age-adjusted rate of 0.9 per 100,000 (**Table 3b**).
 - Among males, the age-adjusted rate was 1.0; among females, it was 0.8.
 - The rate was 1.6 in persons aged 25-34 years and 1.4 in persons aged 35-44 years.
- By region, age-adjusted ED visit rates for unintentional, methadone-related poisonings were 1.2 in the West, 1.0 per 100,000 in the Northeast, 0.8 in the South, and 0.7 in the Midwest (**Table 3b**).
- By urbanization, age-adjusted ED visit rates for unintentional, methadone-related poisonings were 1.1 per 100,000 in large central metropolitan areas and noncore areas (not metropolitan or micropolitan) and 0.6 in large fringe metropolitan areas (**Table 3b**).

Other Opioids (e.g., unspecified opioids, opium)

Hospitalizations

- During 2014, an estimated 37,125 hospitalizations occurred for other unintentional, opioid-related poisonings in the U.S., with an estimated age-adjusted rate of 10.7 per 100,000 (**Table 3a**).
 - Among males, the age-adjusted rate was 9.2; among females, it was 12.1.
 - The rate was 23.7 in persons aged 55-64 years and 19.6 in persons aged 65 years or older.
- By region, age-adjusted hospitalization rates for other opioid-related poisonings were 11.6 in the South, 10.8 in the West, 10.0 per 100,000 in the Northeast, and 9.7 in the Midwest, (**Table 3a**).
- By urbanization, age-adjusted hospitalization rates for other opioid-related poisonings were 12.3 in micropolitan areas (i.e., town/city; nonmetro) and 9.6 per 100,000 in large fringe metropolitan areas (**Table 3a**).

Emergency Department (ED) Visits

- During 2014, an estimated 35,690 ED visits occurred for other unintentional, opioid-related poisonings in the U.S., with an estimated age-adjusted rate of 11.0 per 100,000 (**Table 3b**).
 - Among males, the age-adjusted rate was 11.4; among females, it was 10.6.
 - The rate was 17.2 in persons aged 25-34 years and 16.8 in persons aged 20-24 years.
- By region, age-adjusted ED visit rates for other unintentional, opioid-related poisonings were 12.6 per 100,000 in the Midwest, 11.3 in the Northeast, 10.9 in the West and 10.2 in the South (**Table 3b**).
- By urbanization, age-adjusted ED rates for other unintentional, opioid-related poisonings were 14.1 in medium metropolitan areas and 8.5 in large central metropolitan areas (**Table 3b**).

Stimulants

Cocaine

Hospitalizations

- During 2014, an estimated 13,265 hospitalizations occurred for unintentional, cocaine-related poisonings in the U.S., with an estimated age-adjusted rate of 4.0 per 100,000 (**Table 3a**).
 - Among males, the age-adjusted rate was 5.5; among females, it was 2.6.
 - The rate was 10.8 in persons aged 45-54 years and 7.2 in persons aged 55-64 years.
- By region, age-adjusted hospitalization rates for cocaine-related poisonings were 7.5 per 100,000 in the Northeast, 4.3 in the South, 3.3 in the Midwest, and 1.5 in the West (**Table 3a**).
- By urbanization, age-adjusted hospitalization rates for cocaine-related poisonings were 6.9 per 100,000 in large central metropolitan areas and 1.4 in noncore areas (not metropolitan or micropolitan areas) (**Table 3a**).

Emergency Department (ED) Visits

- During 2014, an estimated 6,424 ED visits occurred for unintentional, cocaine-related poisonings in the U.S., with an estimated age-adjusted rate of 2.1 per 100,000 (**Table 3b**).
 - Among males, the age-adjusted rate was 2.9; among females, it was 1.3.
 - The rate was 3.8 in persons aged 25-34 years and 3.4 in persons aged 35-44 years.
- By region, age-adjusted ED visit rates for unintentional, cocaine-related poisonings were 2.7 in the South, 2.1 per 100,000 in the Northeast, 1.8 in the Midwest, and 1.4 in the West (**Table 3b**).
- By urbanization, age-adjusted ED visit rates for unintentional, cocaine-related poisonings were 2.6 per 100,000 in large central metropolitan areas and 1.3 in micropolitan areas and noncore areas (not metropolitan or micropolitan areas) (**Table 3b**).

Methamphetamine

Hospitalizations

- During 2014, an estimated 8,290 hospitalizations occurred for unintentional, methamphetamine-related poisonings in the U.S., with an estimated age-adjusted rate of 2.7 per 100,000 (**Table 3a**).
 - Among males, the age-adjusted rate was 3.5; among females, it was 1.9.
 - The rate was 6.2 in persons aged 25-34 years and 4.5 in persons aged 20-24 years.
- By region, age-adjusted hospitalization rates for unintentional, methamphetamine-related poisonings were 4.7 in the West, 2.5 in the South, 2.0 in the Midwest, and 1.1 per 100,000 in the Northeast (**Table 3a**).
- By urbanization, age-adjusted hospitalization rates for unintentional, methamphetamine-related poisonings were 3.4 in small metropolitan areas and 2.0 per 100,000 in large fringe metropolitan areas (**Table 3a**).

Emergency Department (ED) Visits

- During 2014, an estimated 11,012 ED visits occurred for unintentional, methamphetamine-related poisonings in the U.S., with an estimated age-adjusted rate of 3.6 per 100,000 (**Table 3b**).
 - Among males, the age-adjusted rate was 4.4; among females, it was 2.8.
 - The rate was 8.2 in persons aged 20-24 years and 7.0 in persons aged 25-34 years.
- By region, age-adjusted ED visit rates for unintentional, methamphetamine-related poisonings were 5.1 in the West, 3.7 in the Midwest, 3.2 in the South, and 2.2 per 100,000 in the Northeast (**Table 3b**).
- By urbanization, age-adjusted ED visit rates for unintentional, methamphetamine-related poisonings were 5.0 in noncore areas (not metropolitan or micropolitan areas) and 2.3 in per 100,000 in large fringe metropolitan areas (**Table 3b**).

Primary Source of Payment for Medically Attended, Nonfatal, Unintentional Drug Overdoses (Table 3c)

- During 2014, 30.3% of hospitalizations for all unintentional drug-related poisonings listed Medicaid as the primary source of payment; 31.0% listed Medicare, and 23.0% listed private insurance.
- During 2014, 35.5% of ED visits for all unintentional drug-related poisonings listed Medicaid as the primary source of payment; 16.0% listed Medicare, and 27.4% listed private insurance.



Drug Overdose Mortality

Statistics on drug overdose deaths for all persons in the U.S. are presented from the National Vital Statistics System, mortality files:

- Number and age-adjusted rates of all drug overdose deaths and by selected drugs by demographic characteristics and intent in 2015 (Table 4a)
- Number and age-adjusted rates of all drug overdose deaths and by selected drugs by demographic characteristics and intent in 2014 (Table 4b)
- Trends in age-adjusted rates of drug overdose deaths and drug overdose deaths involving any opioid, of all intents and of unintentional intent, by year, 1999–2015 (Figure 2a)
- Trends in drug overdose deaths involving natural and semi-synthetic opioids, methadone and synthetic opioids other than methadone, heroin, and selected stimulants, 1999–2015 (Figure 2b)
- Drug overdose deaths by age category and drug class, 2015 (Figure 2c)
- Age-adjusted rates of drug overdose deaths, by state, 2014 (Figure 2d)
- Age-adjusted rates of drug overdose deaths, by state, 2015 (Figure 2e)

Rates are calculated per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. For more detailed information, including definitions, please refer to table footnotes and the technical notes.

Data supporting Figures 2a-2c and 2e are presented in Supplemental Tables supporting Figure 2a, 2b, 2c, and 2d in the Appendix.

All Drug Overdose Deaths

- During 2015, a total of 52,404 persons in the United States died from drug overdoses; the age-adjusted rate was 16.3 (per 100,000).
 - Among males, the rate was 20.8; among females, it was 11.8.
 - The rate was 30.0 in persons aged 45–54 years and 28.3 in persons aged 35–44 years.
 - By race and ethnicity, the death rate was 21.1 in non-Hispanic whites, 12.2 in non-Hispanic blacks, and 7.7 in Hispanics.
- By region, age-adjusted death rates from drug overdoses were 19.8 per 100,000 in the Northeast, 17.8 in the Midwest, 15.5 in the South, and 13.9 in the West.
- By urbanization, age-adjusted death rates from drug overdoses were 18.3 in medium metropolitan areas and 14.8 per 100,000 in large central metropolitan areas.
- In 2015, a total of 44,126 persons in the U.S. died from unintentional drug overdoses; the age-adjusted rate was 13.8 per 100,000. A total of 2,979 persons died of drug overdoses of undetermined intent; the age-adjusted rate was 0.9.

Opioid Overdose Deaths

- During 2015, a total of 33,091 persons in the United States died from drug overdoses involving opioids (e.g., oxycodone, hydrocodone, heroin); the age-adjusted rate was 10.4 (per 100,000).
 - Among males, the rate was 13.7; among females, it was 7.1.
 - The rate was 19.4 in persons aged 25-34 years and 18.4 in persons aged 35-44 years.
 - By race and ethnicity, the death rate was 13.9 in non-Hispanic whites, 6.6 in non-Hispanic blacks, and 4.6 in Hispanics.
- By region, age-adjusted death rates from drug overdoses involving opioids were 13.6 per 100,000 in the Northeast, 12.2 in the Midwest, 9.8 in the South, and 7.4 in the West.
- By urbanization, age-adjusted death rates from drug overdoses involving opioids were 11.8 in medium metropolitan areas and 9.4 per 100,000 in large central metropolitan areas.
- In 2015, a total of 29,382 persons in the U.S. died from unintentional drug overdoses involving opioids; the age-adjusted rate was 9.3 per 100,000. A total of 1,857 persons died of drug overdoses of undetermined intent involving opioids; the age-adjusted rate was 0.6.

Prescription Opioid Overdose Deaths

- During 2015, a total of 15,281 persons in the United States died from drug overdoses involving prescription opioids (e.g., oxycodone, hydrocodone); the age-adjusted rate was 4.7 (per 100,000).
 - Among males, the rate was 5.4; among females, it was 4.0.
 - The rate was 9.5 in persons aged 45-54 years and 8.4 in persons aged 35-44 years.
 - By race and ethnicity, the death rate was 6.4 in non-Hispanic whites, 2.6 in non-Hispanic blacks, and 1.8 in Hispanics.
- By region, age-adjusted death rates from drug overdoses involving prescription opioids were 5.2 in the South, 4.5 per 100,000 in the Northeast and West, and 4.2 in the Midwest.
- By urbanization, age-adjusted death rates from drug overdoses involving prescription opioids were 5.9 in noncore areas and 4.1 per 100,000 in large central metropolitan areas.
- In 2015, a total of 12,923 persons in the U.S. died from unintentional drug overdoses involving prescription opioids; the age-adjusted rate was 4.0 per 100,000. A total of 985 persons died of drug overdoses of undetermined intent involving prescription opioids; the age-adjusted rate was 0.3.

Natural and Semi-synthetic Opioid Overdose Deaths

- During 2015, a total of 12,727 persons in the United States died from drug overdoses involving natural and semi-synthetic opioids (e.g., oxycodone, hydrocodone, morphine); the age-adjusted rate was 3.9 (per 100,000).
 - Among males, the rate was 4.4; among females, it was 3.4.
 - The rate was 8.1 in persons aged 45-54 years and 6.9 in persons aged 35-44 years.
 - By race and ethnicity, the death rate was 5.3 in non-Hispanic whites, 2.1 in non-Hispanic blacks, and 1.5 in Hispanics.
- By region, age-adjusted death rates from drug overdoses involving natural and semi-synthetic opioids were 4.4 per 100,000 in the South, 3.8 in the West, 3.6 in the Northeast, and 3.4 in the Midwest.
- By urbanization, age-adjusted death rates from drug overdoses involving natural and semi-synthetic opioids were 5.1 per 100,000 in noncore areas and 3.3 in large central metropolitan areas.
- In 2015, a total of 10,621 persons in the U.S. died from unintentional drug overdoses involving natural and semi-synthetic opioids; the age-adjusted rate was 3.3 per 100,000. A total of 807 persons died of drug overdoses of undetermined intent involving natural and semi-synthetic opioids; the age-adjusted

rate was 0.3.

Methadone Overdose Deaths

- During 2015, a total of 3,301 persons in the United States died from drug overdoses involving methadone; the age-adjusted rate was 1.0 (per 100,000).
 - Among males, the rate was 1.2; among females, it was 0.8.
 - The rate was 2.0 in persons aged 45-54 years and 1.8 in persons aged 35-44 years.
 - By race and ethnicity, the death rate was 1.4 in non-Hispanic whites, 0.6 in non-Hispanic blacks, and 0.5 in Hispanics.
- By region, age-adjusted death rates from drug overdoses involving methadone were 1.1 per 100,000 in the Northeast, and 1.0 in the Midwest, the South, and the West.
- By urbanization, age-adjusted death rates from drug overdoses involving methadone were 1.2 per 100,000 in medium metropolitan and noncore areas and 0.9 in large fringe metropolitan areas.
- In 2015, a total of 2,955 persons in the U.S. died from unintentional drug overdoses involving methadone; the age-adjusted rate was 0.9 per 100,000. A total of 237 persons died of drug overdoses of undetermined intent involving methadone; the age-adjusted rate was 0.1.

Synthetic Opioids (other than Methadone) Overdose Deaths

- During 2015, a total of 9,580 persons in the United States died from drug overdoses involving synthetic opioids other than methadone (e.g., fentanyl, tramadol); the age-adjusted rate was 3.1 (per 100,000).
 - Among males, the rate was 4.2; among females, it was 1.9.
 - The rate was 6.6 in persons aged 25-34 years and 5.6 in persons aged 35-44 years.
 - By race and ethnicity, the death rate was 4.2 in non-Hispanic whites, in non-Hispanic blacks, 2.1 and Hispanics, 0.9.
- By region, age-adjusted death rates from drug overdoses involving synthetic opioids other than methadone were 5.6 per 100,000 in the Northeast, 3.9 in the Midwest, 2.8 in the South, and 0.9 in the West.
- By urbanization, age-adjusted death rates from drug overdoses involving synthetic opioids other than methadone were 3.9 per 100,000 in large fringe metropolitan areas and 2.4 in large central metropolitan areas.
- In 2015, a total of 8,609 persons in the U.S. died from unintentional drug overdoses involving synthetic opioids other than methadone; the age-adjusted rate was 2.8 per 100,000. A total of 544 persons died of drug overdoses of undetermined intent involving synthetic opioids other than methadone; the age-adjusted rate was 0.2.

Heroin Overdose Deaths

- During 2015, a total of 12,989 persons in the United States died from drug overdoses involving heroin; the age-adjusted rate was 4.1 (per 100,000).
 - Among males, the rate was 6.3; among females, it was 2.0.
 - The rate was 9.7 in persons aged 25-34 years and 7.4 in persons aged 35-44 years.
 - By race and ethnicity, the death rate was 5.4 in non-Hispanic whites, 3.1 in non-Hispanic blacks, and 2.3 in Hispanics.
- By region, age-adjusted death rates from drug overdoses involving heroin were 6.3 per 100,000 in the Northeast, 6.1 in the Midwest, 3.2 in the South, and 2.4 in the West.
- By urbanization, age-adjusted death rates from drug overdoses involving heroin were 5.0 per 100,000 in large fringe metropolitan areas and 2.1 in noncore areas.
- In 2015, a total of 12,284 persons in the U.S. died from unintentional drug overdoses involving heroin; the age-adjusted rate was 3.9 per 100,000. A total of 586 persons died of drug overdoses of

undetermined intent involving heroin; the age-adjusted rate was 0.2.

Selected Stimulant Overdose Deaths

Cocaine Overdose Deaths

- During 2015, a total of 6,784 persons in the United States died from drug overdoses involving cocaine; the age-adjusted rate was 2.1 (per 100,000).
 - Among males, the rate was 3.1; among females, it was 1.2.
 - The rate from cocaine was 4.3 in persons aged 45-54 years and 3.8 in persons aged 35-44 years.
 - By race and ethnicity, the death rate was 4.0 in non-Hispanic blacks, 2.2 in non-Hispanic whites, and 1.3 in Hispanics.
- By region, age-adjusted death rates from drug overdoses involving cocaine were 3.3 per 100,000 in the Northeast, 2.5 in the Midwest, 2.2 in the South, and 0.9 in the West.
- By urbanization, age-adjusted death rates from drug overdoses involving cocaine were 2.7 per 100,000 in large central metropolitan areas and 0.9 in noncore areas.
- In 2015, a total of 6,467 persons in the U.S. died from unintentional drug overdoses involving cocaine; the age-adjusted rate was 2.0 per 100,000. A total of 208 persons died of drug overdoses of undetermined intent involving cocaine; the age-adjusted rate was 0.1.

Psychostimulants with Abuse Potential Overdose Deaths

- In 2015, a total of 5,716 persons in the United States died from drug overdoses involving psychostimulants with abuse potential (i.e., methamphetamine, 3,4-methylenedioxy-methamphetamine (MDMA, Ecstasy)); the age-adjusted rate was 1.8 (per 100,000).
 - Among males, the rate was 2.5; among females, it was 1.1.
 - The death rate from psychostimulants with abuse potential was 3.5 in persons aged 45-54 years and 3.3 in persons aged 35-44 years.
 - By race and ethnicity, the death rate was 2.2 in non-Hispanic whites, 0.8 in non-Hispanic blacks, and 1.4 in Hispanics.
- By region, age-adjusted death rates from drug overdoses involving psychostimulants with abuse potential were 3.9 per 100,000 in the West, 1.5 in the South, 1.1 in the Midwest, and 0.5 in the Northeast.
- By urbanization, age-adjusted death rates from drug overdoses involving psychostimulants with abuse potential were 2.3 per 100,000 in noncore areas and 1.2 in large fringe metropolitan areas.
- In 2015, a total of 5,307 persons in the U.S. died from unintentional drug overdoses involving psychostimulants with abuse potential; the age-adjusted rate was 1.7 per 100,000. A total of 174 persons died of drug overdoses of undetermined intent involving psychostimulants with abuse potential; the age-adjusted rate was 0.05.

Mortality Trends

Age-adjusted rates of drug overdose deaths and drug overdose deaths involving any opioid, for all intents and unintentional intent, by year, United States, 1999–2015 (Figure 2a)

- The age-adjusted rate of drug overdose deaths increased from 6.1 per 100,000 population in 1999 to 16.3 in 2015 ($p < 0.05$). Unintentional drug overdose death rates increased from 4.0 per 100,000 in 1999 to 13.8 in 2015 ($p < 0.05$).
- The rate of drug overdose deaths involving any type of opioid increased from 2.9 per 100,000 in 1999 to 10.4 in 2015 ($p < 0.05$). Unintentional drug overdose death rates involving any type of opioid increased from 2.1 per 100,000 in 1999 to 9.3 per 100,000 in 2015 ($p < 0.05$).
- During 1999 to 2015, rate increases for overall drug overdoses, unintentional drug overdoses, drug

overdoses of all intents involving any opioid, and unintentional drug overdoses involving any opioid were largest from 2013 to 2015.

- The rate increased on average from 2013 to 2015 by 9% per year for overall drug overdose deaths ($p<0.05$), 11% per year for unintentional drug overdose deaths ($p<0.05$), 15% per year for drug overdose deaths involving any opioid ($p<0.05$), and 16% for unintentional drug overdoses involving any opioid ($p<0.05$).

Drug overdose deaths involving natural and semi-synthetic opioids, methadone, and synthetic opioids other than methadone, United States, 1999–2015 (Figure 2b)

- The age-adjusted rate of drug overdose deaths involving natural and semi-synthetic opioids increased from 1.0 per 100,000 population in 1999 to 3.9 in 2015.
 - Rates for drug overdose deaths involving natural and semi-synthetic opioids increased on average 12% per year from 1999 to 2010 ($p<0.05$), then remained stable from 2010 to 2015 ($p=0.34$).
- For drug overdoses involving methadone, the rate increased from 0.3 per 100,000 in 1999 to 1.8 in 2006 ($p<0.05$), then declined to 1.0 in 2015.
 - Rates for drug overdose deaths involving methadone increased on average 50% per year from 1999 to 2002 ($p<0.05$), 23% per year from 2002 to 2006 ($p<0.05$), then declined an average of 7% per year from 2006 to 2015 ($p<0.05$).
- For drug overdoses involving synthetic opioids other than methadone, the rate increased from 0.3 per 100,000 in 1999 to 3.1 in 2015.
 - Rates for drug overdose deaths involving synthetic opioids other than methadone increased on average 18% per year from 1999 to 2006 ($p<0.05$), remained stable from 2006 to 2013 ($p=0.25$), then increased on average 81% per year from 2013 to 2015 ($p<0.05$).

Drug overdose deaths involving heroin, United States, 1999–2015 (Figure 2b)

- The age-adjusted rate of drug overdose deaths involving heroin increased from 0.7 per 100,000 in 1999 to 4.1 in 2015.
 - Rates for drug overdose deaths involving heroin remained stable from 1999 to 2005 ($p=0.91$), increased on average 11% per year from 2005 to 2010 ($p<0.05$), and then increased on average 31% per year from 2010 to 2015 ($p<0.05$).

Drug overdose deaths involving stimulants, United States, 1999–2015 (Figure 2b)

- The age-adjusted rate of drug overdose deaths involving cocaine increased from 1.4 per 100,000 in 1999 to 2.1 in 2015.
 - Rates for drug overdose deaths involving cocaine increased on average 11% per year from 1999 to 2006 ($p<0.05$), decreased on average 15% per year from 2006 to 2010 ($p<0.05$), then increased an average of 9% per year from 2010 to 2015 ($p<0.05$).
- The age-adjusted rate of drug overdose deaths involving psychostimulants with abuse potential increased from 0.2 per 100,000 in 1999 to 1.8 in 2015.
 - Rates for drug overdose deaths involving psychostimulants with abuse potential increased on average 20% per year from 1999 to 2005 ($p<0.05$), remained stable from 2005 to 2008 ($p=0.40$), then increased an average of 23% per year from 2008 to 2015 ($p<0.05$).

Drug overdose deaths by age category and drug class, United States, 2015 (Figure 2c)

- Among persons ages 15 to 24 years, the rate of drug overdose deaths involving heroin was 3.8 per 100,000; those involving synthetic opioids other than methadone was 2.3; those involving natural and semi-synthetic opioids was 1.6; and those involving methadone was 0.5.

- Among persons ages 25 to 34 years, the rate of drug overdose deaths involving heroin was 9.7 per 100,000; those involving synthetic opioids other than methadone was 6.6; those involving natural and semi-synthetic opioids was 5.3; and those involving methadone was 1.7.
- Among persons ages 35 to 44 years, the rate of drug overdose deaths involving heroin was 7.4 per 100,000; those involving natural and semi-synthetic opioids was 6.9; those involving synthetic opioids other than methadone was 5.6; and those involving methadone was 1.8.
- Among persons ages 45 to 54 years, the rate of drug overdose deaths involving natural and semi-synthetic opioids was 8.1 per 100,000; those involving heroin was 5.6; those involving synthetic opioids other than methadone was 4.6; and those involving methadone was 2.0.
- Among persons ages 55 to 64 years, the rate of drug overdose deaths involving natural and semi-synthetic opioids was 6.4 per 100,000; those involving heroin was 3.4; those involving synthetic opioids other than methadone was 2.9; and those involving methadone was 1.6.
- Rates of drug overdose deaths involving cocaine were 4.3 per 100,000 among 45 to 54 year olds, 3.8 among 35 to 44 year olds, 3.6 per 100,000 among 25 to 34 year olds, 2.9 among 55 to 64 year olds, 1.0 among 15 to 24 year olds, and 0.4 among persons 65 and older.
- Rates of deaths involving psychostimulants with abuse potential were 3.5 per 100,000 among 45 to 54 year olds, 3.3 among 35 to 44 year olds, 3.0 among 25 to 34 year olds, 2.3 among 55 to 64 year olds, 0.9 among 15 to 24 year olds, and 0.3 among persons 65 years and older.

Age-adjusted rates of drug overdose deaths, by state, 2015 (Figure 2e)

- Rates of drug overdose deaths ranged from 6.9 per 100,000 in Nebraska to 41.5 in West Virginia in 2015.
 - States with the highest drug overdose death rates were West Virginia (41.5 per 100,000), New Hampshire (34.3), Ohio (29.9), Kentucky (29.9), and Rhode Island (28.2).
 - States with the lowest drug overdose death rates were Nebraska (6.9 per 100,000), South Dakota (8.4), North Dakota (8.6), Texas (9.4), and Iowa (10.3).

This report has some notable limitations. In order to comprehensively describe drug use and outcomes in the U.S., four distinct data sources were used. While attempted when possible, terminology and definitions were not standardized throughout the entire the report. Further, the most recent year of available data varied. Collectively, these factors limit comparability of information across sections. Consumers of the report should carefully review the technical notes and footnotes to ensure correct interpretation of results, especially when comparing information across sections.

In the mortality section, it should be noted that in approximately 20% of drug overdose deaths, the involved drugs were not specified. Although this lack of specificity varies over time and across states, in 2015, 17% of drug overdose deaths lacked information about which drugs were involved. Also, records with unknown age were not included in estimates by age group, but were included in overall estimates.

Finally, the report does not address polysubstance use (i.e., the consumption of more than one drug over a defined period, simultaneously or at different times for either therapeutic or recreational purposes) nor does it explore the need for or receipt of substance use treatment. While these topics are important, they were beyond the scope of this report.



CDC's Opioid Overdose Surveillance, Prevention, and Research Efforts

Opioid-involved overdose deaths, including prescription opioids and illicit opioids, have more than quadrupled since 1999. The opioid overdose epidemic, which killed over 33,000 Americans in 2015, is comprised of two interrelated waves. The first includes deaths that are due to prescription opioids, and the second is due to a rapidly increasing number of deaths due to illicit opioids, such as heroin or illicitly manufactured fentanyl (IMF) and fentanyl analogues. Increasingly, fentanyl is being sold as or mixed with heroin or cocaine, or being found in counterfeit pills.

CDC plays a vital role in strengthening public health surveillance of opioids at the state and federal levels to inform and enhance prevention activities. Through its Overdose Prevention in States effort, CDC maximizes its expertise and use of scientific data to inform response efforts. CDC funds multiple programs whose activities align with the integration of public health strategies to address the epidemic. Programs include the following:

- 1 Enhanced State Opioid Overdose Surveillance (ESOOS) – funds 32 states and Washington, DC
 - a Increase the timeliness of nonfatal opioid overdose reporting in order to serve as an early warning system to detect sharp increases (i.e., potential outbreaks) or decreases (i.e., rapidly identify successful intervention efforts)
 - b Increase the timeliness of fatal opioid overdose and associated risk factor reporting
 - c Disseminate surveillance findings to key stakeholders working to prevent or respond to opioid overdoses
- 2 Prevention for States (PFS) – funds 29 states
 - a Enhance and maximize prescription drug monitoring programs (PDMPs)
 - b Implement community or insurer mechanism or health systems interventions
 - c Evaluate the impact of prescription opioid-related state policies
- 3 Data-Driven Prevention Initiative (DDPI) – funds 13 states and Washington, DC
 - a Improve data collection and analysis around opioid misuse, abuse, and overdose
 - b Develop strategies that impact behavior driving prescription opioid abuse
 - c Work with communities to develop more comprehensive opioid overdose prevention programs

Additionally, CDC's *Guideline for Prescribing Opioids for Chronic Pain*¹, which was released in March 2016, serves as a useful resource to providers treating chronic pain for adult patients outside of end-of-life, palliative, and active cancer care. Its 12 recommendations allow patients and clinicians to determine risks and benefits of opioid therapy and to determine optimal ways to manage pain. These recommendations include consideration of nonopioid options that may be more effective at treating chronic pain, such as physical therapy. Tools and resources, such as the Opioid Guideline App, which contains a morphine milligram equivalent calculator, help disseminate information contained in the guideline and make it easier for physicians to make better informed decisions about prescribing. More information can be found at <https://www.cdc.gov/drugoverdose/prescribing/resources.html>.

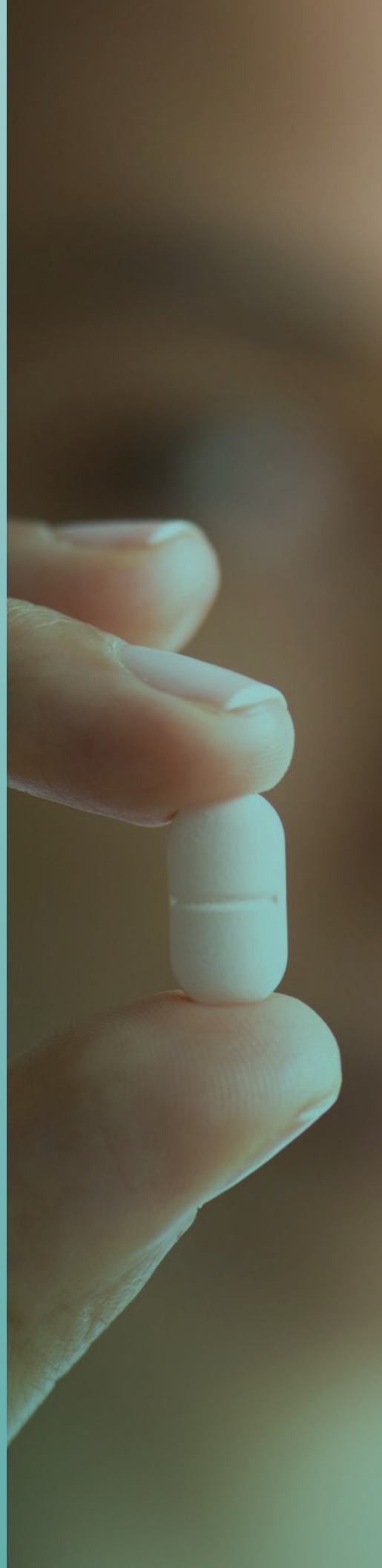
CDC also funds cutting-edge research on ways to prevent opioid use disorder and overdose. For example, research priorities include identifying factors that increase risk for morbidity and mortality, evaluating the impact of state policies and strategies on prescribing behavior and health outcomes, and understanding best practices for dissemination and implementation of evidence-based guidelines and recommendations in practice.

Finally, CDC believes this epidemic requires a partnership across sectors. In addition to the critical partnership with states and other federal agencies, CDC has been working side-by-side with law enforcement agencies, such as the Drug Enforcement Administration (DEA) and the High Intensity Drug Trafficking Areas (HIDTAs). Working together, these sectors can improve surveillance activities and data sharing, engage critical stakeholders, provide guidance on prevention and response activities, and evaluate the effectiveness of strategies. In particular, collaborations can lead to identification of hot spots to strengthen enforcement activities as well as life-saving public health interventions and treatments, such as increasing access to naloxone and linkage to treatment for substance use disorder.

Urgent work remains to end the opioid overdose epidemic in the United States. Additional measures are now needed to address a diverse and evolving array of drug types. Improving drug overdose surveillance, empowering and equipping states with the resources and information they need, improving ways that opioids are prescribed through clinical practice guidelines, and forming critical partnerships are at the heart of the CDC Injury Center's work to combat the overdose epidemic.



TECHNICAL NOTES



**Centers for Disease
Control and Prevention**
National Center for Injury
Prevention and Control

TECHNICAL NOTES



Data Sources, Definitions and Analysis

This report uses the most recent available data from four sources. Information on opioid prescribing practices were obtained from QuintilesIMS Health® Transactional Data Warehouse (TDW) and the Total Patient Tracker (TPT). Estimated prescribing rates focus on information from 2016, but data are presented in tables from 2014-2016, and prescribing trends are also presented during 2006-2016. Substance use and misuse information was obtained from the Substance Abuse and Mental Health Services Administration's (SAMHSA) 2014 and 2015 National Survey on Drug Use and Health (NSDUH). Information on hospitalizations and emergency department visits for nonfatal, unintentional drug-related poisonings were obtained from the Healthcare Cost and Utilization Project's (HCUP) National Inpatient Sample (NIS) and Nationwide Emergency Department Sample (NEDS) 2014 surveys. Mortality rates were obtained from the National Vital Statistics System's (NVSS) 2014 and 2015 mortality file, and trends were presented from 1999-2015.

Data on demographic characteristics (age, sex, race and ethnicity, and geographic region) were standardized across all data sources to the extent possible.

Prescribing Rates

Data Source

Data on opioid prescribing was derived from the QuintilesIMS Health® Transactional Data Warehouse (TDW) and the Total Patient Tracker (TPT). TDW provided estimates of the number of opioid prescriptions dispensed in the United States, while TPT provided national estimates of the total number of unique patients who had at least one opioid prescription dispensed during the year examined. Each were obtained from approximately 59,400 retail (non-hospital) pharmacies, representing 90% of all retail prescriptions in the United States. A prescription was an initial or refill prescription dispensed at a retail pharmacy in the sample, and paid for by commercial insurance, Medicaid, Medicare, or cash or its equivalent. Prescription counts were total dispensed prescriptions (TRx), not adjusted for the number of days' supply.

Opioid prescriptions, including codeine, fentanyl, hydrocodone, hydromorphone, methadone, morphine, oxycodone, oxymorphone, propoxyphene, tapentadol, tramadol and Butrans® (buprenorphine), were identified using the National Drug Code. Cough and cold formulations containing opioids were not included. Formulations of buprenorphine, an opioid partial agonist primarily used for treatment of opioid use disorder, were not included, with the exception of Butrans®, a transdermal buprenorphine formulation used for pain. In addition, methadone dispensed through methadone maintenance treatment programs were not included in QuintilesIMS TDW data.

Definitions

- **Days' supply:** Number of days of supply for the prescription of a specific drug.
- **Long-acting (LA) or extended-release (ER) opioids** are slower acting medications with a longer duration of pain-relieving action, including the following branded and generic drug products:

- Extended release, oral dosage forms containing:
 - Hydromorphone
 - Morphine
 - Oxycodone
 - Oxymorphone
 - Tapentadol
- Fentanyl and buprenorphine containing transdermal delivery systems
- Methadone tablets and solutions that are indicated for use as analgesics
- **Morphine milligram equivalent (MME):** For a comparison of opioids doses, a tool was developed to equate the many different opioids into one standard value. This standard value is based on morphine and its potency, referred to as morphine milligram equivalent (MME). MME helps determine the potency of patients' opioid doses and is useful if converting from one opioid to another. This measure provides the amount of opioids dispensed (i.e., dosage).
- **Morphine milligram equivalent per day (MME/Day)**
 - $MME/Day = \text{Strength per Unit} \times (\text{Number of Units} / \text{Days' Supply}) \times \text{MME conversion factor}$
 - The “Number of Units” and “Days' Supply” comes from the prescription. Strength per Unit and MME conversion factor is determined by the National Drug Code.
 - Examples:
 - 10 mg oxycodone tablets X (120 tablets/ 30 days) X 1.5 = 60 MME/day
 - 25 µg/hr. fentanyl patch X (10 patches/ 30 days) X 7.2 = 60 MME/day
- **High-dose prescription** is defined as prescriptions with a dosage greater than or equal to 90 MME/day.
 - Examples of a dosage at 90 MME/day:
 - 90 mg of hydrocodone (9 tablets of hydrocodone/acetaminophen 10/325)
 - 60 mg of oxycodone (~2 tablets of oxycodone sustained-release 30 mg)
 - ~20 mg of methadone (4 tablets of methadone 5 mg)
- **Strength per unit:** For combination drugs, “strength” refers to the strength of the controlled substance component of the drug per unit specified in UOM (Unit of Measure).

This report provides information on opioid prescribing rates, high-dose prescribing rates, prescribing rates by days of supply (≥ 30 days and < 30 days), morphine milligram equivalents (MME) per person, average daily MME per prescription, and average days of supply per prescription.

Statistical Analysis

Annual opioid prescribing rates were calculated by dividing the total number of opioid prescriptions dispensed in a given year, or state, as appropriate, by the census population each year. All rates are per 100 persons.

Annual resident population denominator estimates were obtained from the Population Estimates Program, U.S. Census Bureau. For population data, [2000–2010 Intercensal Estimates of the Resident Population for Counties and States](#) were used for 2006–2010 rate calculations; [2010–2016 Postcensal Estimates of the Resident Population for Counties and National](#) were used for 2011–2016.

Temporal trends of national opioid prescribing rates and amounts of opioids prescribed from 2006 to 2016 were evaluated by applying joinpoint regression methodology.² This modeling approach simultaneously identified statistically significant trends as well as shifts in trends that occur within a time series. A maximum of 2 joinpoints was allowed, and the permutation method was used for model selection. The most parsimonious models were selected to report the estimated annual percent change (APC) for each

time segment detected and the average annual percent change (AAPC) for the full study period. The terms increasing or decreasing were used to describe the trend when APC for each time segment was statistically significantly different from 0 ($p < 0.05$); otherwise, level was used. Year categories presented in Table 1d represented year groupings as determined by joinpoint regression.

Illicit Drug Use, Prescription Drug Misuse, and Substance Use Disorder

Data Source

The National Survey on Drug Use and Health (NSDUH) is an annual face-to-face household survey administered by the Substance Abuse and Mental Health Services Administration.³ NSDUH includes questions about substance use behavior, substance use initiation, substance use disorders, substance use treatment, and mental health. NSDUH collects data from non-institutionalized persons, aged 12 years and older. Non-institutionalized persons include residents living in some group settings (e.g., shelters, boarding houses, college dormitories). NSDUH excludes persons with no fixed address (e.g., active duty military personnel, persons in jails, persons living in nursing homes, homeless persons not living in shelters).

Sampling and Data Collection

NSDUH collects data using a state-based, multistage area probability sample.³ Each state is stratified into sampling regions of approximately equal population sizes. Census tracts are selected within sampling regions, census block groups are selected within census tracts, area segments are selected within census block groups, and dwelling units are selected within area segments. A maximum of two residents per dwelling unit, 12 years of age or older, are selected to participate in the interview. Because NSDUH collects information from self-reports of substance use behavior, these data might be subject to under- or over-reporting biases. NSDUH employs various methods to minimize these potential biases, assuring confidentiality of responses and using computer-assisted self-interviewing to maintain privacy. NSDUH data reflect prevalence estimates for the entire U.S. non-institutionalized population, accounting for the survey's complex sample design.

Modifications to the Prescription Drug Questions in the 2015 NSDUH

Distinct from prior years, the 2015 NSDUH changed the framing of specific questions from “nonmedical use” to “misuse” of prescription drugs.⁴ In addition, the phrasing of these questions was changed from “for the experience or feeling it caused” to “in any way that a doctor did not direct you to use them.” The time frame accounted for in questions about prescription drugs also was modified, including past year misuse instead of lifetime misuse. A new set of questions was included in the 2015 NSDUH to acquire self-reported data for any past year prescription drug use, in addition to misuse. Additionally, methamphetamine use was removed from the broader category of prescription stimulants, creating a distinct set of questions focused on methamphetamine. Although the aim of these changes was to improve measurement validity, data from prior years are not comparable with data gathered using the new and revised questions included in the 2015 NSDUH.

Definitions

This report provides NSDUH prevalence estimates of misuse and overall use (including use as directed by a doctor and misuse) for the following prescription drug categories, together referred to by NSDUH as “prescription psychotherapeutics”:

- **Prescription pain relievers** include opioids (e.g., oxycodone, hydrocodone).
- **Prescription tranquilizers** include drugs intended to reduce anxiety, specifically benzodiazepines (e.g.,

alprazolam; lorazepam), or to quell muscle spasms, specifically muscle relaxants (e.g., carisoprodol).

- **Prescription stimulants** include drugs prescribed for treatment of attention-deficit hyperactivity disorder (e.g., dextroamphetamine, methylphenidate) or obesity (e.g., benzphetamine; phentermine).
- **Prescription sedatives** include drugs that are intended to manage sleep disorders, such as zolpidem, eszopiclone, zaleplon, benzodiazepine sedatives (e.g., temazepam, triazolam), and barbiturates (e.g., butabarbital, secobarbital).

This report also provides NSDUH prevalence estimates of use for the following illicit substances:

- Heroin
- Cocaine
- Methamphetamine

In specific tables in this report, estimates are provided for the combination of illicit drug use and prescription drug misuse. NSDUH defines a broad category of “illicit drug use” to include the misuse of prescription drugs and the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine. This report avoids defining use of illicit drugs and misuse of prescription drugs collectively with a label of “illicit drug use” to keep misuse of prescription drugs distinct from the use of illicit drugs and to maintain consistency with other data sources included.

Census regions were defined by the following jurisdictions:

- **Northeast:** Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont
- **Midwest:** Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin
- **South:** Alabama, Arkansas, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia
- **West:** Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming

Patient residence was determined according to categories of 2013 National Center for Health Statistics Urban-Rural Classification Scheme for Counties.⁵ Metropolitan and nonmetropolitan categories were subdivided into the following categories.

- **Large metropolitan statistical areas (MSAs)** (large metropolitan) had a total population of 1 million or more.
- **Small metropolitan areas** had a total population of:
 - 250,000 to fewer than 1 million.
 - Less than 250,000.
- **Nonmetropolitan** counties were classified according to the aggregate size of their urban population. Nonmetropolitan areas include counties in micropolitan statistical areas and counties outside of both metropolitan and micropolitan statistical areas.
 - These nonmetropolitan categories were categorized as
 - “urbanized”

- “less urbanized”
- “completely rural”

The terms “urbanized,” “less urbanized,” and “completely rural” for counties were not based on the relative proportion of the county population in urbanized areas, but rather on the absolute size of the population in urbanized areas. For example, some counties classified as “less urbanized” had over 50 percent of the county population residing in urbanized areas, but this percentage represented fewer than 20,000 persons in the county.

Substance Use Disorder was defined as meeting criteria for illicit drug dependence or abuse based on definitions found in the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV).⁶

The prevalence estimates included in this report include the numbers of persons engaging in specific behaviors (with numbers in the thousands), the rates of these behaviors per 100 persons, and standard errors of the estimated rates. Estimates are suppressed if they were determined to be unreliable due to small sample size.

Statistical Analysis

No statistical analysis were conducted; instead, estimates were obtained from NSDUH’s 2015 published report.⁷ Information on heroin use and dependence stratified by age, race/ethnicity, U.S. census region, county type, and urbanization were provided by SAMHSA.

Nonfatal Overdose Hospitalizations and Emergency Department (ED) Visits

Data Sources

Information on medically attended, nonfatal overdose rates were obtained from the Healthcare Cost and Utilization Project (HCUP). Drug-related inpatient hospitalizations were obtained from HCUP’s 2014 National Inpatient Sample (NIS). The NIS uses a stratified systematic random sampling design to produce nationally representative estimates of hospital discharges in the United States. It is the largest publicly available all-payer database in the U.S. and was conducted in 44 states plus the District of Columbia in 2014. The sample included approximately 20% of discharges from U.S. community hospitals, excluding rehabilitation and long-term acute care facilities. The sample was stratified by the following hospital characteristics: U.S. census division, urban or rural location, teaching status, ownership, and bed size.

Discharge data for emergency department (ED) visits were obtained from the Nationwide Emergency Department Sample (NEDS), which is a stratified sample of billing records designed to produce national representative estimates of hospital-based ED visits in the United States. In 2014, data were obtained from 945 hospitals located in 33 States and the District of Columbia, approximating a 20% stratified sample of U.S. hospital-based EDs. The sample was drawn from non-Federal, short-term, general, and other specialty hospitals and stratified by the following hospital characteristics: geographic region, trauma center designation, urban or rural location, teaching status, and hospital ownership.

Definitions

The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) diagnosis injury codes were used to classify drug-related poisonings. Principal diagnosis codes and first valid cause of external injury or e-codes were used to define the following unintentional drug poisonings:

- **All drug poisoning** included the following codes: 960-979 (poisoning by drugs, medicinal, and biological substances) or first listed cause of injury E850-E858 (accidental poisoning by drugs, medicinal substances, and biologicals).
- **Opioid drug poisoning** included: 965.00 (poisoning by opium), 965.01 (poisoning by heroin), 965.02 (poisoning by methadone), 965.09 (poisoning by other opiates and related narcotics) or E850.0 (accidental poisoning by heroin), E850.1 (accidental poisoning by methadone), or E850.2 (accidental poisoning by other opiates and related narcotics).
- **Heroin poisoning** was defined by 965.01 (poisoning by heroin) or E850.0 (accidental poisoning by heroin).
- **Methadone poisoning** was defined by 965.02 (poisoning by methadone) or E850.1 (accidental poisoning by methadone).
- **Other opioids** was defined by 965.09 (poisoning by other opiates and related narcotics), 965.00 (poisoning by opium) or E850.2 (accidental poisoning by other opiates and related narcotics).
- **Cocaine** was defined by 970.81 or E854.3 (accidental poisoning by central nervous system stimulants) or E855.2 (accidental poisoning by local anesthetics convert).
- **Methamphetamine** was defined by 969.72 or E854.2 (accidental poisoning by psychostimulants).

As poisoning-related hospitalizations and ED visits may involve more than one type of drug, and external cause of injury codes were used in addition to principal diagnosis codes, the categories of unintentional, drug-related poisoning presented are not mutually exclusive.

Information about patients' race and ethnicity was not available for ED visits so it was not included in any HCUP analysis.

Statistical Analysis

Data were weighted to provide national estimates of annual numbers and rates per 100,000 population. Rates were based on U.S. population estimates according to sex, age, U.S. census region and 2013 urbanization status.^{8,9} Age-adjusted rates were standardized to the U.S. census population estimates for 2000 by the direct method. Estimates were considered unreliable and not reported if the relative standard error was >30% or the standard error = 0. All statistical analysis accounted for the complex sampling design and were performed using SAS Version 9.3 (SAS Institute, Cary, North Carolina).

To minimize the possibility of duplicate counting within this section or across other sections of this report, some records were excluded. Hospital transfers and hospital admissions that occurred directly from the ED were excluded because each would be included in the hospitalization data. In-hospital deaths were excluded from the ED visits and hospitalization estimates because these would be included in the mortality section.

Mortality Rates

Data Source

Mortality data were obtained from the Mortality Component of the National Vital Statistics System. Data are based on information about underlying and multiple causes of death from death certificates filed in the 50 states and the District of Columbia.¹⁰ Drug overdose deaths were analyzed using the multiple cause of death query system from CDC WONDER.⁹

Definitions

Drug overdose deaths were identified using the *International Classification of Diseases, Tenth Revision* (ICD-10), based on the ICD-10 underlying cause-of-death codes X40–44 (unintentional), X60–64 (suicide), X85 (homicide), or Y10–Y14 (undetermined intent).

Among deaths with drug overdose as the underlying cause, the type of drugs involved in the deaths were indicated by the following ICD-10 multiple cause-of-death codes (i.e., T-codes):

- **Heroin** (T40.1)
- **Natural/semisynthetic opioids** (T40.2), which includes drugs such as hydrocodone and oxycodone
- **Methadone** (T40.3)
- **Synthetic opioids other than methadone** (T40.4), which includes drugs such as fentanyl and tramadol
- **Deaths involving any opioid** (T40.0 (opium), T40.1, T40.2, T40.3, T40.4 and T40.6 (other and unspecified narcotics)), which includes drugs such as those listed above, as well as opioids where the type of opioid was not specified
- **Deaths involving a prescription opioid** (T40.2) natural and semi-synthetic opioids and (T40.3) methadone
- **Cocaine** (T40.5)
- **Psychostimulants with abuse potential** (T43.6), which includes such drugs as methamphetamine, and 3,4-methylenedioxy-methamphetamine (MDMA).

As drug overdose deaths may involve more than one type of drug, some deaths are included in the rates in more than one subcategory. Therefore, categories of drug overdose deaths presented are not mutually exclusive. Additionally, in 2015, approximately 17% of drug overdose deaths do not specify which drugs were involved.

Census regions were defined by the following jurisdictions:

- **Northeast:** Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont
- **Midwest:** Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin
- **South:** Alabama, Arkansas, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia
- **West:** Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming

Decedent's residence was determined according to categories of 2013 National Center for Health Statistics Urban-Rural Classification Scheme for Counties.⁵

- **Large central metro:** Counties in metropolitan statistical areas (MSAs) of ≥ 1 million population that 1) contain the entire population of largest principal city of the MSA, or 2) have their entire population contained in the largest principal city of the MSA, or 3) contain at least 250,000 inhabitants of any principal city of the MSA
- **Large fringe metro:** Counties in MSAs of ≥ 1 million population that did not qualify as large central metro counties
- **Medium metro:** Counties in MSAs of populations of 250,000–999,999
- **Small metro:** Counties in MSAs of populations less than 250,000
- **Micropolitan** (nonmetropolitan counties): Counties in micropolitan statistical areas
- **Noncore** (nonmetropolitan counties): Nonmetropolitan counties that did not qualify as micropolitan

All records with Hispanic origin not stated were not included in estimates by Hispanic origin, but were included in the overall estimates. Data for Hispanic origin should be interpreted with caution; studies comparing Hispanic origin on death certificates and on census surveys have shown inconsistent reporting on Hispanic ethnicity.¹¹

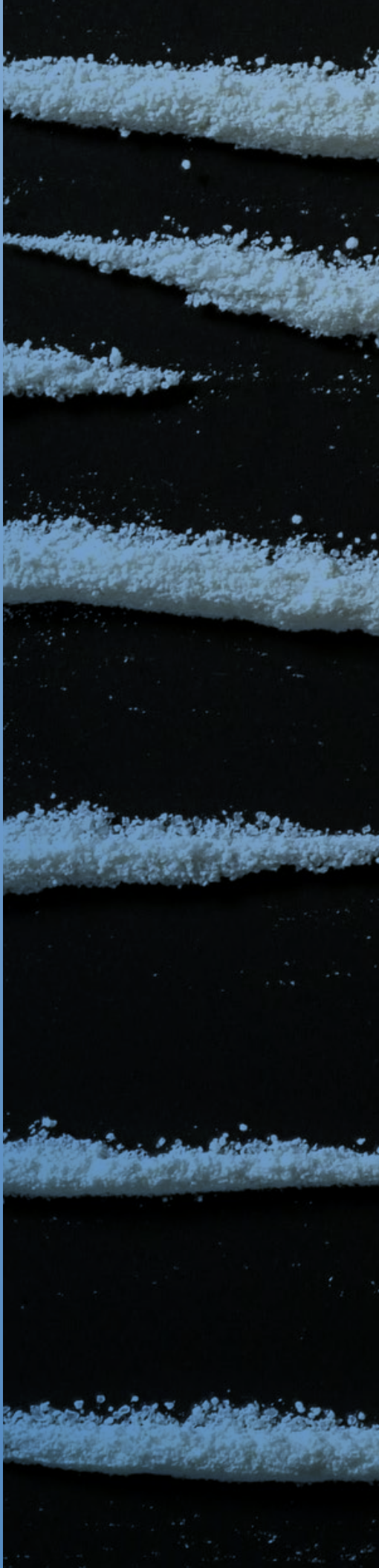
Statistical Analysis

Rates were calculated per 100,000 resident population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. Significance testing for trends over time was performed with Joinpoint software from the National Cancer Institute.² Significance tests used a Monte Carlo Permutation method.¹² The most parsimonious models were selected to report the estimated annual percent change (APC) for each time segment detected that was statistically significantly different from 0 ($p < 0.05$); otherwise, the terms level or stable was used.

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TABLES



**Centers for Disease
Control and Prevention**
National Center for Injury
Prevention and Control

TABLE 1A

Annual national estimates of total number and rate^a for patients who had at least one prescription filled for opioids by age and gender — United States, 2014 – 2016

Age Group (Year)	Gender	2014		2015		2016	
		Number	Rate	Number	Rate	Number	Rate
All ages	Total	65,816,625	20.7	64,950,261	20.2	61,862,364	19.1
	Male	27,715,340	17.7	27,366,942	17.3	26,066,116	16.4
	Female	38,101,284	23.6	37,583,319	23.1	35,796,248	21.8
0 - 14	Total	1,558,274	2.6	1,243,200	2.0	1,235,397	2.0
	Male	820,554	2.6	660,444	2.1	650,608	2.1
	Female	737,720	2.5	582,756	2.0	584,789	2.0
15 - 19	Total	2,700,180	12.8	2,575,134	12.2	2,456,537	11.6
	Male	1,192,243	11.1	1,136,272	10.5	1,084,518	10.0
	Female	1,507,937	14.7	1,438,862	14.0	1,372,019	13.3
20 - 24	Total	3,987,865	17.4	3,761,297	16.6	3,388,088	15.1
	Male	1,519,718	13.0	1,433,424	12.3	1,284,936	11.2
	Female	2,468,147	22.1	2,327,873	21.1	2,103,152	19.3
25 - 34	Total	9,831,819	22.6	9,599,848	21.8	8,872,198	19.9
	Male	3,741,093	17.1	3,657,012	16.4	3,350,037	14.8
	Female	6,090,726	28.3	5,942,836	27.3	5,522,161	25.0
35 - 44	Total	9,994,970	24.7	9,806,536	24.2	9,169,202	22.7
	Male	4,167,350	20.7	4,088,681	20.3	3,801,843	18.9
	Female	5,827,620	28.7	5,717,855	28.1	5,367,359	26.4
45 - 54	Total	11,832,805	27.3	11,596,348	26.9	10,824,755	25.3
	Male	5,196,648	24.3	5,083,190	23.9	4,730,762	22.4
	Female	6,636,158	30.2	6,513,158	29.8	6,093,993	28.1
55 - 64	Total	11,778,335	29.4	12,008,466	29.4	11,677,591	28.2
	Male	5,326,170	27.6	5,435,716	27.6	5,296,001	26.5
	Female	6,452,165	31.1	6,572,749	31.1	6,381,590	29.7
≥ 65	Total	14,132,376	30.6	14,359,433	30.1	14,238,597	28.9
	Male	5,751,565	28.3	5,872,203	27.9	5,867,411	26.9
	Female	8,380,811	32.4	8,487,230	31.8	8,371,185	30.5

Source: QuintilesIMS® Total Patient Tracker, 2016 Enhanced.

^a Rate per 100 persons adjusted to the U.S. census population.

TABLE 1B

National total number and rate^a of opioid prescriptions (Rx) and morphine milligram equivalent (MME) dispensed per 100 persons annually — United States, 2014 – 2016

Prescribing Opioids	2014		2015		2016	
	Rx Number	Rate ^a	Rx Number	Rate	Rx Number	Rate
U. S. Census population	318,563,456		320,896,618		323,127,513	
Total patients who had opioid Rx filled	65,816,624	20.7	64,950,261	20.2	61,862,364	19.1
Rx						
All opioids	240,993,021	75.6	226,819,924	70.6	214,881,622	66.5
LA/ER opioids ^b	21,962,468	6.9	21,460,029	6.7	20,394,389	6.3
Days of supply per Rx						
< 30 days	150,436,127	47.2	136,405,883	42.5	126,546,618	39.2
≥ 30 days	90,556,893	28.4	90,414,041	28.2	88,335,004	27.3
Average opioid Rx per patient	3.7		3.5		3.5	
Average days of supply per Rx	17.2		17.7		18.1	
MME						
Total MME	215,925,435,233		205,835,493,929		193,655,422,929	
MME per capita	677.8		641.4		599.3	
Average MME per Rx	896.0		907.5		901.2	
Average daily MME per Rx	48.9		48.1		47.1	
Daily dosage per Rx						
< 50 MME	175,598,424	55.1	165,655,722	51.6	158,045,552	48.9
≥ 50 but < 90 MME	42,778,329	13.4	39,740,347	12.4	37,087,169	11.5
≥ 90 MME (high-dose)	22,616,268	7.1	21,423,855	6.7	19,748,901	6.1

Source: QuintilesIMS® Transactional Data Warehouse.

Abbreviation: MME, morphine milligram equivalents; Rx, prescription.

^a Rate per 100 persons adjusted to the U.S. census population.

^b LA/ER represents opioids that are long acting (LA) or extended release (ER).

TABLE 1C

Rates^a of opioid prescriptions dispensed per 100 persons by dosage, type, and state
— United States, 2014 - 2016

State	2014					2015					2016				
	Opioid Type		Daily Dosage Per Rx (MME ^b /Day)			Opioid Type		Daily Dosage Per Rx (MME/Day)			Opioid Type		Daily Dosage Per Rx (MME/Day)		
	All	LA/ER ^c	< 50	50 but 90	≥ 90	All	LA/ER	< 50	50 but 90	≥ 90	All	LA/ER	< 50	50 but 90	≥ 90
Alabama	135.3	10.8	109.3	15.4	10.5	125.1	10.4	100.1	15.2	9.8	121.0	9.9	97.5	14.7	8.8
Alaska	62.7	8.1	37.5	15.4	9.8	60.8	8.3	35.5	15.5	9.8	58.9	8.1	34.8	14.7	9.5
Arizona	79.8	9.3	52.2	16.4	11.2	75.6	9.1	49.3	15.7	10.6	70.2	8.5	46.2	14.4	9.6
Arkansas	123.2	7.7	94.0	19.7	9.5	117.2	7.9	89.6	18.3	9.3	114.6	7.9	89.4	16.7	8.5
California	52.9	4.8	38.6	9.4	4.9	47.9	4.5	35.2	8.1	4.6	44.8	4.1	33.4	7.3	4.1
Colorado	69.6	7.2	45.9	16.4	7.4	65.2	7.1	45.2	13.6	6.5	59.8	6.5	41.7	12.5	5.6
Connecticut	66.1	7.7	42.4	14.7	9.0	62.4	7.3	40.1	14.2	8.1	55.9	6.6	36.4	12.3	7.2
Delaware	91.1	14.4	55.0	19.6	16.5	84.5	13.2	55.0	16.2	13.3	79.2	12.7	52.1	15.1	12.0
District of Columbia	40.1	2.9	33.3	4.2	2.6	35.8	2.6	29.9	3.9	2.0	32.5	2.2	27.4	3.4	1.7
Florida	71.5	7.8	50.9	12.5	8.1	67.2	7.4	47.6	12.4	7.2	66.6	7.4	47.0	12.4	7.2
Georgia	83.8	6.2	65.2	12.3	6.3	79.5	6.0	61.2	12.2	6.1	77.8	5.9	59.8	12.1	6.0
Hawaii	47.8	5.5	32.8	8.7	6.3	44.5	5.0	30.6	8.2	5.7	41.9	4.7	29.4	7.3	5.2
Idaho	87.5	9.5	56.1	21.7	9.7	82.0	9.3	53.0	19.8	9.1	77.6	8.8	50.9	18.5	8.3
Illinois	62.3	4.2	47.9	10.8	3.6	59.1	4.2	46.4	9.2	3.5	56.8	4.1	45.2	8.3	3.3
Indiana	96.7	8.6	73.9	14.9	8.0	89.2	7.9	68.2	13.6	7.4	83.9	7.3	64.6	12.5	6.8
Iowa	72.3	6.1	55.8	11.5	5.1	68.6	6.2	52.5	11.0	5.1	64.0	5.8	49.5	9.8	4.6
Kansas	86.6	8.0	59.1	18.9	8.5	80.7	8.0	54.4	17.6	8.7	76.9	7.6	52.3	16.4	8.1
Kentucky	109.9	7.5	84.2	18.0	7.7	102.6	7.1	78.8	16.9	7.0	97.2	6.6	75.3	15.5	6.4
Louisiana	108.9	6.2	85.3	17.3	6.2	100.4	5.9	78.7	16.1	5.7	98.1	5.9	76.7	15.2	6.2
Maine	82.4	11.2	55.5	14.9	12.0	76.5	11.0	50.2	14.6	11.7	66.9	10.3	44.9	12.2	9.9
Maryland	67.7	8.2	45.0	14.2	8.5	63.1	8.1	41.5	13.7	7.9	58.7	7.8	38.7	12.5	7.6
Massachusetts	59.7	6.0	40.9	12.7	6.0	54.1	5.7	37.8	10.8	5.5	47.1	5.2	33.4	9.1	4.6
Michigan	98.0	8.4	78.5	11.8	7.7	90.5	8.3	72.3	10.7	7.5	84.9	7.8	68.4	9.8	6.7
Minnesota	56.7	5.6	40.8	11.5	4.3	52.2	5.4	37.0	11.2	4.0	46.9	4.9	33.5	9.8	3.6

Source: QuintilesIMS[®] Transactional Data Warehouse.

^a Rate per 100 persons adjusted to the U.S. census population.

^b MME = morphine milligram equivalents.

^c LA/ER represents opioids that are long acting (LA) or extended release (ER).

TABLE 1C

Rates^a of opioid prescriptions dispensed per 100 persons by dosage, type, and state
— United States, 2014 - 2016

CONTINUED

State	2014					2015					2016				
	Opioid Type		Daily Dosage Per Rx (MME ^b /Day)			Opioid Type		Daily Dosage Per Rx (MME/Day)			Opioid Type		Daily Dosage Per Rx (MME/Day)		
	All	LA/ER ^c	< 50	50 but 90	≥ 90	All	LA/ER	< 50	50 but 90	≥ 90	All	LA/ER	< 50	50 but 90	≥ 90
Mississippi	116.3	7.1	93.6	16.2	6.5	111.0	7.1	90.2	14.5	6.3	105.6	7.0	86.6	13.0	6.0
Missouri	90.8	7.2	65.8	17.3	7.7	84.6	7.2	60.7	16.2	7.7	80.4	7.0	58.1	14.9	7.3
Montana	80.1	9.5	53.8	16.7	9.6	73.4	9.0	49.4	15.0	9.0	69.8	8.1	48.3	13.8	7.7
Nebraska	70.2	6.2	51.5	13.4	5.3	65.5	6.1	48.2	12.2	5.1	62.8	5.9	46.5	11.4	4.9
Nevada	90.3	9.3	57.9	20.5	12.0	85.6	9.2	55.3	19.0	11.3	80.7	8.7	53.0	17.7	10.0
New Hampshire	79.6	11.4	48.8	18.4	12.4	74.8	10.8	45.7	17.4	11.7	64.3	9.7	39.9	14.7	9.7
New Jersey	57.3	6.7	37.1	11.2	8.9	56.1	6.6	36.9	10.8	8.5	52.6	6.3	34.5	10.3	7.8
New Mexico	71.6	6.6	50.7	13.8	7.1	70.0	6.3	50.0	13.0	7.0	65.1	5.6	47.2	11.9	6.0
New York	44.0	4.9	31.0	7.3	5.7	45.2	5.0	32.0	7.6	5.7	42.7	4.8	30.1	7.3	5.3
North Carolina	93.8	9.0	66.5	18.4	8.9	88.4	8.8	61.9	18.0	8.6	82.5	8.4	57.8	16.9	7.8
North Dakota	58.1	6.8	41.8	11.6	4.8	53.0	6.4	38.7	10.2	4.2	47.8	5.7	35.7	8.5	3.6
Ohio	89.5	7.0	68.3	14.7	6.6	82.7	6.5	62.8	14.0	5.9	75.3	5.9	57.4	12.7	5.2
Oklahoma	111.0	10.8	75.7	23.7	11.6	104.5	10.9	72.0	21.7	10.9	97.9	10.4	68.0	20.3	9.5
Oregon	92.0	10.6	61.2	20.0	10.8	84.3	9.7	56.0	18.7	9.5	76.3	8.5	51.7	16.8	7.9
Pennsylvania	79.9	8.4	56.6	13.9	9.4	75.6	8.2	53.5	13.2	8.9	69.5	7.7	49.3	12.1	8.1
Rhode Island	72.8	6.4	53.8	12.3	6.7	65.8	6.1	48.8	10.5	6.5	60.3	5.6	44.9	9.6	5.9
South Carolina	101.3	7.7	74.5	18.7	8.1	95.1	7.5	69.5	17.6	8.0	89.4	7.2	65.6	16.2	7.6
South Dakota	61.8	6.1	45.5	11.0	5.2	59.1	6.1	43.4	10.6	5.1	54.8	5.7	41.1	9.2	4.5
Tennessee	121.4	13.0	83.6	24.4	13.4	114.9	12.1	78.8	24.6	11.5	107.5	11.0	74.2	23.5	9.8
Texas	67.1	3.9	53.5	10.4	3.2	59.9	3.9	49.8	7.0	3.1	57.6	3.8	47.9	6.7	3.0
Utah	78.9	8.1	49.1	18.7	11.2	74.5	8.1	46.0	17.8	10.7	70.4	7.8	44.2	16.2	10.1
Vermont	50.4	7.3	33.9	9.3	7.2	60.1	9.2	39.4	11.9	8.8	58.6	9.3	38.8	10.9	8.9
Virginia	73.6	6.4	53.5	12.9	7.1	68.2	6.2	49.2	12.3	6.7	63.4	5.8	46.2	11.0	6.2
Washington	74.3	8.1	50.3	16.4	7.7	69.8	7.8	47.0	15.7	7.2	64.9	7.1	44.1	14.4	6.3
West Virginia	126.4	8.6	99.1	16.7	10.7	111.5	8.3	87.2	14.6	9.7	96.0	7.5	75.7	12.3	8.0
Wisconsin	71.9	8.5	49.9	14.0	8.0	67.6	8.2	46.2	13.7	7.7	62.2	7.5	43.1	12.4	6.6
Wyoming	80.9	8.7	54.1	18.0	8.8	75.4	8.4	49.9	16.7	8.8	71.1	8.1	47.6	15.3	8.2

Source: QuintilesIMS[®] Transactional Data Warehouse.^a Rate per 100 persons adjusted to the U.S. census population.^b MME = morphine milligram equivalents.^c LA/ER represents opioids that are long acting (LA) or extended release (ER).

TABLE 1D

Trend analysis of opioid prescribing — United States, 2006-2016

Opioid prescribing	2006	2016	Average APC (95% CI)	Trend 1		Trend 2		Trend 3	
	Prescribing Rate per 100 persons ^a			Years ^b	APC (95% CI)	Years	APC (95% CI)	Years	APC (95% CI)
All opioid Rx	72.4	66.5	-0.8 (-1.1 to -0.4)	2006-2008	4.1 (2.8 to 5.4) ^c	2008-2012	1.1 (0.5 to 1.7) ^c	2012-2016	-4.9 (-5.3 to -4.5) ^c
High-dosage Rx ^d	11.5	6.1	-6.6 (-7.4 to -5.8)	2006-2009	0 (-2.5 to 2.5)	2009-2016	-9.3 (-10 to -8.5) ^c		
Days of supply ≥ 30	17.6	27.3	4.3 (3.8 to 4.9)	2006-2010	9.9 (9.2 to 10.5) ^c	2010-2013	2.9 (1.3 to 4.6) ^c	2013-2016	-1.3 (-2.1 to -0.5) ^c
Days of supply < 30	54.7	39.2	-3.2 (-3.6 to -2.8)	2006-2008	1.3 (-0.1 to 2.7)	2008-2012	-1.2 (-1.9 to -0.5) ^c	2012-2016	-7.3 (-7.7 to -6.8) ^c
Number									
Average daily MME per Rx	59.7	47.1	-2.3 (-2.4 to -2.3)	2006-2010	-1 (-1 to -0.9) ^c	2010-2013	-4.7 (-4.8 to -4.5) ^c	2013-2016	-1.7 (-1.8 to -1.7) ^c
Average days of supply per Rx	13.3	18.1	3.1 (3 to 3.3)	2006-2008	4.4 (4 to 4.8) ^c	2008-2011	3.4 (3 to 3.7) ^c	2011-2016	2.5 (2.4 to 2.6) ^c

Source: QuintilesIMS® Transactional Data Warehouse.

Abbreviation: APC, annual percent change; MME, morphine milligram equivalents; Rx, prescription.

^a Rate per 100 persons adjusted to the U.S. census population.

^b Year category presented in each trend represent year groupings as determined by joinpoint regression.

^c Indicates that the Annual Percent Change (APC) was significantly different from zero at the alpha = 0.05 level.

^d High-dose prescriptions were defined as opioid prescriptions resulting in a daily dosage of ≥ 90 MME.

TABLE 2A

Self-reported prevalence of illicit drug use in past month, persons 12+ years old, heroin and cocaine: Numbers in Thousands — United States, 2014^a

Socio-demographic Characteristic	Heroin			Cocaine		
	Number ^b	Rate ^c	SE	Number	Rate	SE
All	435	0.2	0.02	1530	0.6	0.04
Sex						
Male	284	0.2	0.04	991	0.8	0.07
Female	151	0.1	0.02	539	0.4	0.04
Age (in years)						
12-17	16	0.1	0.02	39	0.2	0.04
18-25	82	0.2	0.05	473	1.4	0.11
≥ 26	337	0.2	0.03	1,018	0.5	0.05
26-34	172	0.5	0.09	376	1.0	0.14
≥ 35	165	0.1	0.02	642	0.4	0.05
35-39	28	0.1	0.08	164	0.8	0.19
40-44	32	0.2	0.08	105	0.5	0.14
≥ 45	105	0.1	0.03	NA	NA	NA
45-49	NA	NA	NA	119	0.6	0.13
50-54	NA	NA	NA	194	0.8	0.23
55-59	NA	NA	NA	40	0.2	0.08
60-64	NA	NA	NA	17	0.1	0.08
≥ 65	NA	NA	NA	3	0.0	0.00
Race and Hispanic origin						
White, non-Hispanic	270	0.2	0.02	938	0.6	0.05
Black, non-Hispanic	108	0.3	0.10	190	0.6	0.12
Hispanic	43	0.1	0.04	281	0.7	0.11
U.S. Census region of residence						
Northeast	152	0.3	0.07	393	0.8	0.11
Midwest	92	0.2	0.05	238	0.4	0.07
South	109	0.1	0.02	440	0.4	0.06
West	82	0.1	0.04	459	0.7	0.10
County Type^d						
Large metropolitan	301	0.2	0.03	1008	0.7	0.06
Small metropolitan	121	0.2	0.03	436	0.6	0.07
250K -- 1 Million Population	91	0.2	0.04	314	0.6	0.09
< 250K Population	29	0.1	0.05	122	0.5	0.11
Non-metropolitan	14	0.0	0.02	87	0.2	0.05
Urbanized	4	0.0	0.02	36	0.2	0.08
Less Urbanized	10	0.1	0.03	39	0.2	0.07
Completely Rural	—	—	—	11	0.3	0.16

Source: Center for Behavioral Health Statistics and Quality. (2016). 2015 National Survey on Drug Use and Health. Substance Abuse and Mental Health Services Administration, Rockville, MD.

NA = data not available

^a Prevalence estimates are rounded to the nearest tenth of a percent, and total estimates are rounded to the nearest thousand. Because of this rounding, some prevalence estimates equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

^b Numbers in thousands of individuals.

^c Rates per 100 persons. NSDUH presents these as prevalence estimates in the form of percentages, rounded to the nearest tenth of a percent.

^d Use of 2013 Rural-Urban Continuum Codes for the creation of the county type variables.

TABLE 2B

Self-reported prevalence of illicit drug use and prescription drug misuse^a in past month, persons 12+ years old: Numbers in Thousands — United States, 2015^b

Socio-demographic Characteristic	All Illicit Drug Use ^c and Prescription Drug Misuse ^a			Prescription Pain Relievers			Prescription Tranquilizers			Prescription Stimulants			Prescription Sedatives			Heroin			Cocaine			Methamphetamine		
	Number ^d	Rate ^e	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE
All	27,080	10.1	0.17	3,775	1.4	0.06	1,874	0.7	0.04	1,653	0.6	0.04	446	0.2	0.02	329	0.1	0.02	1,876	0.7	0.05	897	0.3	0.03
Sex																								
Male	16,164	12.5	0.27	2,110	1.6	0.10	974	0.8	0.06	877	0.7	0.05	153	0.1	0.02	238	0.2	0.03	1,234	1.0	0.08	631	0.5	0.06
Female	10,915	7.9	0.19	1,665	1.2	0.07	900	0.7	0.05	776	0.6	0.05	293	0.2	0.03	91	0.1	0.01	641	0.5	0.05	266	0.2	0.03
Age (in years)																								
12-17	2,193	8.8	0.27	276	1.1	0.11	162	0.7	0.09	117	0.5	0.07	21	0.1	0.03	5	0.0	0.01	53	0.2	0.05	13	0.1	0.02
18-25	7,797	22.3	0.42	829	2.4	0.13	582	1.7	0.13	757	2.2	0.15	86	0.2	0.05	88	0.3	0.05	580	1.7	0.14	128	0.4	0.07
≥ 26	17,090	8.2	0.19	2,670	1.3	0.07	1,130	0.5	0.05	779	0.4	0.04	340	0.2	0.03	236	0.1	0.02	1,243	0.6	0.06	757	0.4	0.04
26-34	5,901	15.4	0.47	820	2.1	0.19	400	1.0	0.13	433	1.1	0.15	115	0.3	0.07	116	0.3	0.06	464	1.2	0.16	174	0.5	0.08
≥ 35	11,188	6.6	0.21	1,850	1.1	0.08	730	0.4	0.05	346	0.2	0.03	224	0.1	0.03	120	0.1	0.02	779	0.5	0.06	582	0.3	0.05
35-39	2,067	10.6	0.60	298	1.5	0.23	158	0.8	0.15	65	0.3	0.11	23	0.1	0.07	43	0.2	0.09	180	0.9	0.20	113	0.6	0.16
40-44	1,714	8.5	0.50	341	1.7	0.26	131	0.7	0.14	65	0.3	0.11	52	0.3	0.10	19	0.0	0.06	135	0.7	0.16	107	0.5	0.15
≥ 45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	58	0.0	0.02	NA	NA	NA	NA	NA	NA
45-49	1,790	8.6	0.53	387	1.9	0.26	145	0.7	0.15	82	0.4	0.11	57	0.3	0.09	NA	NA	NA	70	0.3	0.09	138	0.7	0.18
50-54	1,917	8.3	0.73	281	1.2	0.26	98	0.4	0.15	78	0.3	0.13	23	0.1	0.05	NA	NA	NA	230	1.0	0.26	120	0.5	0.18
55-59	1,681	8.0	0.73	242	1.1	0.30	47	0.2	0.13	34	0.2	0.10	--	--	--	NA	NA	NA	102	0.5	0.18	75	0.4	0.14
60-64	1,152	6.2	0.69	182	1.0	0.30	57	0.3	0.15	22	0.1	0.09	8	0.0	0.04	NA	NA	NA	42	0.2	0.12	10	0.1	0.05
≥ 65	866	1.9	0.30	119	0.3	0.08	93	0.2	0.08	--	--	--	61	0.1	0.06	NA	NA	NA	19	0.0	0.04	19	0.0	0.04
Race and Hispanic origin																								
White, non-Hispanic	17,396	10.2	0.22	2,441	1.4	0.07	1,405	0.8	0.06	1,327	0.8	0.05	345	0.2	0.03	237	0.1	0.02	1,096	0.6	0.05	592	0.3	0.04
Black, non-Hispanic	4,023	12.5	0.56	432	1.3	0.19	136	0.4	0.09	36	0.1	0.03	50	0.2	0.06	33	0.1	0.05	439	1.4	0.25	85	0.3	0.10
Hispanic	3,999	9.2	0.39	688	1.6	0.17	239	0.5	0.09	172	0.4	0.06	41	0.1	0.03	50	0.1	0.04	255	0.6	0.09	157	0.4	0.09

Source: Center for Behavioral Health Statistics and Quality. (2016). 2015 National Survey on Drug Use and Health. Substance Abuse and Mental Health Services Administration, Rockville, MD.

— Low precision, no estimate reported; NA = data not available

^a Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

^b Prevalence estimates are rounded to the nearest tenth of a percent, and total estimates are rounded to the nearest thousand. Because of this rounding, some prevalence estimates

equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

^c Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

^d Numbers in thousands of individuals.

^e Rates per 100 persons. NSDUH presents these as prevalence estimates in the form of percentages, rounded to the nearest tenth of a percent.

^f Use of 2013 Rural-Urban Continuum Codes for the creation of the county type variables.

TABLE 2B

Self-reported prevalence of illicit drug use and prescription drug misuse^a in past month, persons 12+ years old: Numbers in Thousands — United States, 2015^b

CONTINUED

Socio-demographic Characteristic	All Illicit Drug Use ^c and Prescription Drug Misuse ^a			Prescription Pain Relievers			Prescription Tranquilizers			Prescription Stimulants			Prescription Sedatives			Heroin			Cocaine			Methamphetamine		
	Number ^d	Rate ^e	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE
U.S. Census region of residence																								
Northeast	5,104	10.7	0.39	605	1.3	0.12	312	0.7	0.09	312	0.7	0.09	100	0.2	0.06	109	0.2	0.05	411	0.9	0.12	62	0.1	0.05
Midwest	5,473	9.7	0.32	806	1.4	0.13	330	0.6	0.07	393	0.7	0.08	80	0.1	0.04	65	0.1	0.03	289	0.5	0.08	102	0.2	0.04
South	8,800	8.8	0.28	1,499	1.5	0.10	896	0.9	0.08	645	0.6	0.07	147	0.1	0.03	69	0.1	0.02	720	0.7	0.08	375	0.4	0.06
West	7,703	12.2	0.41	865	1.4	0.13	336	0.5	0.06	302	0.5	0.06	119	0.2	0.05	87	0.1	0.04	456	0.7	0.10	358	0.6	0.10
County Type^f																								
Large metropolitan	15,905	10.7	0.24	1,980	1.3	0.08	955	0.6	0.05	890	0.6	0.05	230	0.2	0.03	188	0.1	0.02	1,208	0.8	0.07	461	0.3	0.05
Small metropolitan	8,071	9.9	0.30	1,246	1.5	0.11	663	0.8	0.07	530	0.6	0.06	136	0.2	0.04	99	0.1	0.03	487	0.6	0.07	276	0.3	0.06
250K -- 1 Million Population	5,563	9.9	0.34	731	1.3	0.11	453	0.8	0.10	349	0.6	0.07	107	0.2	0.06	53	0.1	0.03	387	0.7	0.09	167	0.3	0.07
< 250K Population	2,508	9.8	0.60	515	2.0	0.24	210	0.8	0.11	181	0.7	0.14	29	0.1	0.04	45	0.2	0.06	100	0.4	0.09	110	0.4	0.10
Non-metropolitan	3,103	8.4	0.37	549	1.5	0.14	256	0.7	0.10	233	0.6	0.10	80	0.2	0.06	42	0.1	0.04	181	0.5	0.09	160	0.4	0.09
Urbanized	1,568	10.4	0.67	227	1.5	0.19	94	0.6	0.14	127	0.8	0.16	47	0.3	0.11	24	0.2	0.07	98	0.7	0.16	61	0.4	0.15
Less Urbanized	1,266	7.4	0.50	260	1.5	0.20	131	0.8	0.14	102	0.6	0.15	30	0.2	0.08	16	0.1	0.06	79	0.5	0.14	92	0.5	0.14
Completely Rural	269	5.9	0.74	62	1.3	0.47	31	0.7	0.40	4	0.1	0.06	3	0.1	0.07	2	0.1	0.05	3	0.1	0.06	8	0.2	0.10

Source: Center for Behavioral Health Statistics and Quality. (2016). 2015 National Survey on Drug Use and Health. Substance Abuse and Mental Health Services Administration, Rockville, MD.

— Low precision, no estimate reported; NA = data not available

^a Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

^b Prevalence estimates are rounded to the nearest tenth of a percent, and total estimates are rounded to the nearest thousand. Because of this rounding, some prevalence estimates

equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

^c Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

^d Numbers in thousands of individuals.

^e Rates per 100 persons. NSDUH presents these as prevalence estimates in the form of percentages, rounded to the nearest tenth of a percent.

^f Use of 2013 Rural-Urban Continuum Codes for the creation of the county type variables.

TABLE 2C

Self-reported prevalence of illicit drug use in past year, persons 12+ years old, heroin and cocaine: Numbers in Thousands — United States, 2014^a

Socio-demographic Characteristic	Heroin			Cocaine		
	Number ^b	Rate ^c	SE	Number	Rate	SE
All	914	0.3	0.03	4,553	1.7	0.07
Sex						
Male	622	0.5	0.05	2,965	2.3	0.11
Female	292	0.2	0.03	1,588	1.2	0.08
Age (in years)						
12-17	28	0.1	0.03	168	0.7	0.09
18-25	268	0.8	0.09	1,604	4.6	0.23
≥ 26	618	0.3	0.03	2,782	1.4	0.08
26-34	346	0.9	0.13	1,140	3.0	0.23
≥ 35	272	0.2	0.03	1,641	1.0	0.08
35-39	78	0.4	0.11	394	2.0	0.28
40-44	66	0.3	0.10	303	1.5	0.22
≥ 45	127	0.1	0.03	NA	NA	NA
45-49	NA	NA	NA	261	1.3	0.22
50-54	NA	NA	NA	352	1.5	0.31
55-59	NA	NA	NA	193	0.9	0.24
60-64	NA	NA	NA	59	0.3	0.17
≥ 65	NA	NA	NA	79	0.2	0.10
Race and Hispanic origin						
White, non-Hispanic	647	0.4	0.03	2,916	1.7	0.08
Black, non-Hispanic	115	0.4	0.10	565	1.8	0.25
Hispanic	119	0.3	0.07	817	1.9	0.20
U.S. Census region of residence						
Northeast	324	0.7	0.10	1,077	2.3	0.17
Midwest	191	0.3	0.06	739	1.3	0.14
South	253	0.3	0.04	1,444	1.5	0.12
West	145	0.2	0.05	1,292	2.1	0.16
County Type^d						
Large metropolitan	541	0.4	0.04	2,902	1.9	0.10
Small metropolitan	326	0.4	0.05	1,352	1.7	0.13
250K -- 1 Million Population	240	0.4	0.06	936	1.7	0.15
< 250K Population	86	0.4	0.11	416	1.8	0.24
Non-metropolitan	47	0.1	0.03	298	0.8	0.09
Urbanized	25	0.2	0.05	135	0.8	0.16
Less Urbanized	21	0.1	0.04	141	0.8	0.12
Completely Rural	1	0.0	0.01	23	0.6	0.24

Source: Center for Behavioral Health Statistics and Quality. (2016). 2015 National Survey on Drug Use and Health. Substance Abuse and Mental Health Services Administration, Rockville, MD.

NA = data not available

^a Prevalence estimates are rounded to the nearest tenth of a percent, and total estimates are rounded to the nearest thousand. Because of this rounding, some prevalence estimates equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

^b Numbers in thousands of individuals.

^c Rates per 100 persons. NSDUH presents these as prevalence estimates in the form of percentages, rounded to the nearest tenth of a percent.

^d Use of 2013 Rural-Urban Continuum Codes for the creation of the county type variables.

TABLE 2D

Self-reported prevalence of illicit drug use^a and prescription drug misuse^b in past year, persons 12+ years old: Numbers in Thousands — United States, 2015^c

Socio-demographic Characteristic	All Illicit Drug Use and Prescription Drug Misuse			Prescription Pain Relievers			Prescription Tranquilizers			Prescription Stimulants			Prescription Sedatives			Heroin			Cocaine			Methamphetamine		
	Number ^d	Rate ^e	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE
All	47,730	17.8	0.23	12,462	4.7	0.11	6,050	2.3	0.08	5,251	2.0	0.07	1,511	0.6	0.04	828	0.3	0.03	4,828	1.8	0.07	1,713	0.6	0.04
Sex																								
Male	26,576	20.5	0.35	6,924	5.3	0.17	3,148	2.4	0.12	3,027	2.3	0.10	596	0.5	0.05	548	0.4	0.05	3,069	2.4	0.12	1,166	0.9	0.08
Female	21,154	15.3	0.26	5,538	4.0	0.14	2,903	2.1	0.09	2,224	1.6	0.08	915	0.7	0.07	280	0.2	0.03	1,758	1.3	0.07	547	0.4	0.04
Age (in years)																								
12-17	4,346	17.5	0.37	969	3.9	0.19	394	1.6	0.13	491	2.0	0.14	102	0.4	0.06	21	0.1	0.03	153	0.6	0.08	40	0.2	0.04
18-25	13,102	37.5	0.49	2,979	8.5	0.26	1,847	5.4	0.22	2,537	7.3	0.27	265	0.8	0.08	217	0.6	0.08	1,876	5.4	0.26	329	0.9	0.10
≥ 26	30,281	14.6	0.26	8,513	4.1	0.14	3,782	1.8	0.09	2,223	1.1	0.06	1,143	0.5	0.05	591	0.3	0.04	2,799	1.3	0.08	1,344	0.6	0.06
26-34	10,174	26.5	0.60	2,818	7.4	0.34	1,342	3.5	0.24	1,316	3.4	0.24	337	0.9	0.12	293	0.8	0.11	1,221	3.2	0.24	406	1.1	0.13
≥ 35	20,107	11.9	0.28	5,696	3.4	0.15	2,440	1.4	0.10	907	0.5	0.05	806	0.5	0.06	298	0.2	0.04	1,579	0.9	0.08	938	0.6	0.06
35-39	3,705	19.0	0.75	1,065	5.5	0.44	455	2.3	0.28	316	1.6	0.25	134	0.7	0.16	61	0.3	0.10	397	2.0	0.30	223	1.1	0.23
40-44	2,964	14.8	0.66	979	4.9	0.43	434	2.2	0.29	143	0.7	0.15	107	0.5	0.15	41	0.2	0.07	273	1.4	0.24	156	0.8	0.17
≥ 45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	196	0.2	0.04	NA	NA	NA	NA	NA	NA
45-49	3,051	14.7	0.68	941	4.5	0.38	340	1.6	0.22	147	0.7	0.15	106	0.5	0.13	NA	NA	NA	172	0.8	0.14	205	1.0	0.21
50-54	3,556	15.4	0.95	874	3.8	0.48	476	2.1	0.37	190	0.8	0.22	111	0.5	0.18	NA	NA	NA	330	1.4	0.31	198	0.9	0.22
55-59	2,976	14.1	0.93	793	3.8	0.50	299	1.4	0.30	79	0.4	0.16	163	0.8	0.23	NA	NA	NA	281	1.3	0.35	105	0.5	0.16
60-64	1,888	10.1	0.88	434	2.3	0.41	180	1.0	0.32	22	0.1	0.09	36	0.2	0.12	NA	NA	NA	80	0.4	0.17	13	0.1	0.06
≥ 65	1,967	4.2	0.41	609	1.3	0.21	256	0.6	0.13	9	0.0	0.02	150	0.3	0.10	NA	NA	NA	46	0.1	0.05	38	0.1	0.06
Race and Hispanic origin																								
White, non-Hispanic	30,534	17.9	0.29	8,128	4.8	0.14	4,381	2.6	0.10	4,019	2.4	0.09	1,183	0.7	0.06	526	0.3	0.03	3,090	1.8	0.08	1,173	0.7	0.06
Black, non-Hispanic	6,625	20.7	0.67	1,400	4.4	0.36	484	1.5	0.16	212	0.7	0.09	76	0.2	0.07	128	0.4	0.16	760	2.4	0.32	132	0.4	0.12
Hispanic	7,474	17.2	0.49	2,156	5.0	0.28	877	2.0	0.21	651	1.5	0.13	166	0.4	0.09	146	0.3	0.07	744	1.7	0.16	262	0.6	0.10

Source: Center for Behavioral Health Statistics and Quality. (2016). 2015 National Survey on Drug Use and Health. Substance Abuse and Mental Health Services Administration, Rockville, MD.

NA = data not available

^a Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

^b Prevalence estimates are rounded to the nearest tenth of a percent, and total estimates are rounded to the nearest thousand. Because of this rounding, some prevalence estimates

equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

^c Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

^d Numbers in thousands of individuals.

^e Rates per 100 persons. NSDUH presents these as prevalence estimates in the form of percentages, rounded to the nearest tenth of a percent.

^f Use of 2013 Rural-Urban Continuum Codes for the creation of the county type variables.

TABLE 2D Self-reported prevalence of illicit drug use^a and prescription drug misuse^b in past year, persons 12+ years old: Numbers in Thousands — United States, 2015^c

CONTINUED

Socio-demographic Characteristic	All Illicit Drug Use and Prescription Drug Misuse			Prescription Pain Relievers			Prescription Tranquilizers			Prescription Stimulants			Prescription Sedatives			Heroin			Cocaine			Methamphetamine		
	Number ^d	Rate ^e	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE
U.S. Census region of residence																								
Northeast	8,914	18.6	0.54	2,007	4.2	0.26	1,099	2.3	0.18	986	2.1	0.15	293	0.6	0.11	232	0.5	0.08	1,057	2.2	0.17	119	0.2	0.07
Midwest	9,530	16.8	0.44	2,487	4.4	0.22	1,064	1.9	0.15	1,260	2.2	0.14	250	0.4	0.06	152	0.3	0.04	816	1.4	0.15	234	0.4	0.06
South	16,096	16.1	0.38	4,653	4.6	0.20	2,567	2.6	0.14	1,965	2.0	0.11	568	0.6	0.07	224	0.2	0.05	1,658	1.7	0.11	632	0.6	0.07
West	13,190	20.9	0.54	3,315	5.3	0.26	1,320	2.1	0.15	1,039	1.6	0.12	399	0.6	0.10	221	0.4	0.07	1,296	2.1	0.16	728	1.2	0.13
County Type^f																								
Large metropolitan	28,398	19.0	0.32	7,021	4.7	0.17	3,281	2.2	0.11	2,991	2.0	0.09	848	0.6	0.06	477	0.3	0.05	3,023	2.0	0.11	796	0.5	0.06
Small metropolitan	14,042	17.2	0.40	3,767	4.6	0.19	1,953	2.4	0.14	1,629	2.0	0.11	469	0.6	0.07	243	0.3	0.04	1,319	1.6	0.10	552	0.7	0.08
250K -- 1 Million Population	9,694	17.3	0.47	2,505	4.5	0.21	1,367	2.4	0.17	1,053	1.9	0.13	311	0.6	0.09	148	0.3	0.05	955	1.7	0.12	380	0.7	0.10
< 250K Population	4,348	17.0	0.74	1,261	4.9	0.36	586	2.3	0.25	576	2.2	0.22	158	0.6	0.12	95	0.4	0.09	365	1.4	0.19	171	0.7	0.13
Non-metropolitan	5,290	14.4	0.47	1,674	4.6	0.27	817	2.2	0.21	632	1.7	0.15	193	0.5	0.10	109	0.3	0.06	485	1.3	0.14	365	1.0	0.13
Urbanized	2,504	16.5	0.86	742	4.9	0.40	411	2.7	0.36	349	2.3	0.28	122	0.8	0.19	67	0.4	0.12	263	1.7	0.23	117	0.8	0.19
Less Urbanized	2,292	13.5	0.64	786	4.6	0.45	350	2.1	0.29	250	1.5	0.21	67	0.4	0.12	37	0.2	0.09	185	1.1	0.21	220	1.3	0.22
Completely Rural	494	10.8	1.20	145	3.2	0.59	56	1.2	0.42	32	0.7	0.17	4	0.1	0.07	6	0.1	0.07	37	0.8	0.40	28	0.6	0.25

Source: Center for Behavioral Health Statistics and Quality. (2016). 2015 National Survey on Drug Use and Health. Substance Abuse and Mental Health Services Administration, Rockville, MD.

NA = data not available

^a Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

^b Prevalence estimates are rounded to the nearest tenth of a percent, and total estimates are rounded to the nearest thousand. Because of this rounding, some prevalence estimates

equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

^c Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

^d Numbers in thousands of individuals.

^e Rates per 100 persons. NSDUH presents these as prevalence estimates in the form of percentages, rounded to the nearest tenth of a percent.

^f Use of 2013 Rural-Urban Continuum Codes for the creation of the county type variables.

TABLE 2E

Self-reported prevalence of prescription drug use (including misuse^a) in past year, persons 12+ years old, by drug type: Numbers in Thousands, United States, 2015^b

Socio-demographic Characteristic	Prescription Pain Relievers			Prescription Tranquilizers			Prescription Stimulants			Prescription Sedatives		
	Number ^c	Rate ^d	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE
All	97,499	36.4	0.32	39,317	14.7	0.23	17,212	6.4	0.13	18,564	6.9	0.16
Sex												
Male	44,017	33.9	0.43	14,624	11.3	0.28	8,461	6.5	0.18	7,219	5.6	0.22
Female	53,482	38.8	0.45	24,693	17.9	0.34	8,751	6.3	0.18	11,345	8.2	0.23
Age (in years)												
12-17	5,650	22.7	0.41	1,069	4.3	0.20	1,820	7.3	0.25	602	2.4	0.15
18-25	12,148	34.8	0.47	4,212	12.1	0.33	4,906	14.1	0.37	1,339	3.8	0.18
≥ 26	79,701	38.3	0.39	34,035	16.4	0.29	10,486	5.0	0.15	16,623	8.0	0.20
Race and Hispanic origin												
White, non-Hispanic	65,958	38.7	0.40	30,271	17.8	0.31	12,815	7.5	0.17	14,192	8.3	0.22
Black, non-Hispanic	12,277	38.3	0.85	2,920	9.1	0.51	1,252	3.9	0.32	1,576	4.9	0.38
Hispanic	13,141	30.2	0.71	4,472	10.3	0.45	2,121	4.9	0.29	1,825	4.2	0.32
U.S. Census region of residence												
Northeast	16,055	33.6	0.68	7,333	15.3	0.54	2,894	6.1	0.31	3,181	6.7	0.35
Midwest	20,347	35.9	0.58	7,796	13.8	0.40	3,758	6.6	0.27	3,446	6.1	0.32
South	37,908	37.8	0.55	16,129	16.1	0.40	7,072	7.1	0.24	7,610	7.6	0.29
West	23,188	36.8	0.71	8,058	12.8	0.50	3,488	5.5	0.28	4,326	6.9	0.33
County Type^e												
Large metropolitan	51,813	34.7	0.42	20,702	13.9	0.32	9,546	6.4	0.19	9,863	6.6	0.22
Small metropolitan	31,532	38.6	0.60	12,835	15.7	0.40	5,544	6.8	0.23	6,034	7.4	0.30
250K -- 1 Million Population	21,692	38.7	0.75	9,008	16.1	0.47	3,765	6.7	0.26	4,108	7.3	0.37
< 250K Population	9,840	38.5	0.95	3,827	15.0	0.72	1,779	7.0	0.43	1,926	7.5	0.51
Non-metropolitan	14,154	38.5	0.75	5,780	15.7	0.60	2,122	5.8	0.33	2,667	7.3	0.40
Urbanized	6,218	41.0	1.26	2,444	16.1	0.93	988	6.5	0.57	1,177	7.8	0.65
Less Urbanized	6,245	36.7	1.06	2,610	15.3	0.84	887	5.2	0.46	1,162	6.8	0.53
Completely Rural	1,690	37.0	2.05	726	15.9	1.81	248	5.4	0.99	328	7.2	1.29

Source: Center for Behavioral Health Statistics and Quality. (2016). 2015 National Survey on Drug Use and Health. Substance Abuse and Mental Health Services Administration, Rockville, MD.

^a Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

^b Prevalence estimates are rounded to the nearest tenth of a percent, and total estimates are rounded to the nearest thousand. Because of this rounding, some prevalence estimates equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

^c Numbers in thousands of individuals.

^d Rates per 100 persons. NSDUH presents these as prevalence estimates in the form of percentages, rounded to the nearest tenth of a percent.

^e Use of 2013 Rural-Urban Continuum Codes for the creation of the county type variables.

TABLE 2F

Self-reported prevalence of past year initiation of illicit drug use, persons 12+ years old, heroin, cocaine, and methamphetamine: Numbers in Thousands — United States, 2014 and 2015^a

Socio-demographic Characteristic	2014						2015								
	Heroin			Cocaine			Heroin			Cocaine			Methamphetamine		
	Number ^b	Rate ^c	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE
All	212	0.1	0.01	766	0.3	0.02	135	0.1	0.01	968	0.4	0.03	225	0.1	0.01
Age (in years)															
12-17	13	0.1	0.03	117	0.5	0.08	11	0.0	0.02	112	0.5	0.07	24	0.1	0.03
18-25	75	0.2	0.04	501	1.4	0.11	57	0.2	0.04	663	1.9	0.15	91	0.3	0.06
≥ 26	124	0.1	0.02	148	0.1	0.02	68	0.0	0.01	193	0.1	0.02	110	0.1	0.01

Source: Center for Behavioral Health Statistics and Quality. (2016). 2015 National Survey on Drug Use and Health. Substance Abuse and Mental Health Services Administration, Rockville, MD.

^a Prevalence estimates are rounded to the nearest tenth of a percent, and total estimates are rounded to the nearest thousand. Because of this rounding, some prevalence estimates equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

^b Numbers in thousands of individuals.

^c Rates per 100 persons. NSDUH presents these as prevalence estimates in the form of percentages, rounded to the nearest tenth of a percent.

TABLE 2G

Self-reported prevalence of past year initiation of prescription drug misuse^a, persons 12+ years old, by prescription drug type: Numbers in Thousands — United States, 2015^b

Socio-demographic Characteristic	Prescription Pain Relievers			Prescription Tranquilizers			Prescription Stimulants			Prescription Sedatives		
	Number ^c	Rate ^d	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE
All	2,126	0.8	0.04	1,437	0.5	0.04	1,260	0.5	0.03	425	0.2	0.02
Sex												
Male	916	0.7	0.05	633	0.5	0.05	631	0.5	0.04	155	0.1	0.03
Female	1,210	0.9	0.06	803	0.6	0.05	629	0.5	0.04	270	0.2	0.04
Age (in years)												
12-17	415	1.7	0.13	210	0.8	0.09	276	1.1	0.11	46	0.2	0.04
18-25	596	1.7	0.12	489	1.4	0.11	600	1.7	0.14	86	0.2	0.04
≥ 26	1,114	0.5	0.05	738	0.4	0.04	384	0.2	0.03	293	0.1	0.03

Source: Center for Behavioral Health Statistics and Quality. (2016). 2015 National Survey on Drug Use and Health. Substance Abuse and Mental Health Services Administration, Rockville, MD.

^a Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

^b Prevalence estimates are rounded to the nearest tenth of a percent, and total estimates are rounded to the nearest thousand. Because of this rounding, some prevalence estimates equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

^c Numbers in thousands of individuals.

^d Rates per 100 persons. NSDUH presents these as prevalence estimates in the form of percentages, rounded to the nearest tenth of a percent.

TABLE 2H

Self-reported prevalence of substance use disorder^a in past year, persons 12+ years old, heroin and cocaine: Numbers in Thousands — United States, 2014^b

Socio-demographic Characteristic	Heroin			Cocaine		
	Number ^c	Rate ^d	SE	Number	Rate	SE
All	586	0.2	0.02	913	0.3	0.03
Age (in years)						
12-17	18	0.1	0.03	27	0.1	0.03
18-25	168	0.5	0.07	185	0.5	0.07
≥ 26	400	0.2	0.03	702	0.3	0.04

Source: Center for Behavioral Health Statistics and Quality. (2016). 2015 National Survey on Drug Use and Health. Substance Abuse and Mental Health Services Administration, Rockville, MD.

^a Substance Use Disorder is defined as meeting criteria for illicit drug or alcohol dependence or abuse. Dependence or abuse is based on definitions found in the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV).

^b Prevalence estimates are rounded to the nearest tenth of a percent, and total estimates are rounded to the nearest thousand. Because of this rounding, some prevalence estimates equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

^c Numbers in thousands of individuals.

^d Rates per 100 persons. NSDUH presents these as prevalence estimates in the form of percentages, rounded to the nearest tenth of a percent.

TABLE 21

Self-reported prevalence of substance use disorder^a in past year persons 12+ years old, by drug type: Numbers in Thousands — United States, 2015^b

Socio-demographic Characteristic	All Illicit Drug Use ^c and Prescription Drug Misuse			Prescription Pain Relievers			Prescription Tranquilizers			Prescription Stimulants			Prescription Sedatives			Heroin			Cocaine			Methamphetamine		
	Number ^d	Rate ^e	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE
All	7,737	2.9	0.08	2,038	0.8	0.04	688	0.3	0.02	426	0.2	0.02	154	0.1	0.01	591	0.2	0.02	896	0.3	0.03	872	0.3	0.03
Age (in years)																								
12-17	855	3.4	0.17	122	0.5	0.07	77	0.3	0.06	38	0.2	0.04	26	0.1	0.03	6	0.0	0.01	31	0.1	0.04	22	0.1	0.03
18-25	2,530	7.2	0.26	427	1.2	0.11	234	0.7	0.08	159	0.5	0.06	22	0.1	0.02	155	0.4	0.06	229	0.7	0.08	156	0.4	0.07

Source: Center for Behavioral Health Statistics and Quality. (2016). 2015 National Survey on Drug Use and Health. Substance Abuse and Mental Health Services Administration, Rockville, MD.

^a Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

^b Prevalence estimates are rounded to the nearest tenth of a percent, and total estimates are rounded to the nearest thousand. Because of this rounding, some prevalence estimates

equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

^c Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

^d Numbers in thousands of individuals.

^e Rates per 100 persons. NSDUH presents these as prevalence estimates in the form of percentages, rounded to the nearest tenth of a percent.

TABLE 3A

Estimated number^{ab} and age-adjusted rate per 100,000 population of drug poisoning-related hospitalizations by selected substances — United States, 2014

Socio-demographic Characteristic	All drug poisonings ^c			All Opioid poisonings ^d			Heroin poisonings ^e			Methadone poisonings ^f			Poisoning by other opioids ^g			Cocaine poisonings ^h			Methamphetamine poisonings ⁱ		
	Number	Rate ^j	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE
All Visits	259,665	79.2	0.56	53,000	15.6	0.18	11,475	3.6	0.09	4,580	1.4	0.05	37,125	10.7	0.14	13,265	4.0	0.13	8,290	2.7	0.07
Sex																					
Male	114,590	71.2	0.64	25,880	15.7	0.25	8,080	5.0	0.14	2,460	1.5	0.07	15,445	9.2	0.18	8,990	5.5	0.2	5,405	3.5	0.12
Female	145,075	87.0	0.7	27,120	15.4	0.24	3,395	2.1	0.09	2,120	1.2	0.06	21,680	12.1	0.2	4,275	2.6	0.11	2,885	1.9	0.08
Age groups (years)																					
0-14	7,950	13.0	0.75	560	0.9	0.11	k	k	k	105	0.2	0.04	435	0.7	0.09	140	0.2	0.05	355	0.6	0.08
15-19	15,645	74.2	2.17	935	4.4	0.35	350	1.7	0.2	65	0.3	0.09	520	2.5	0.26	140	0.7	0.13	470	2.2	0.24
20-24	19,260	84.0	1.74	3,600	15.7	0.63	2,205	9.6	0.49	180	0.8	0.13	1,230	5.4	0.35	445	1.9	0.2	1,030	4.5	0.34
25-34	42,725	98.1	1.74	8,755	20.1	0.59	4,260	9.8	0.41	750	1.7	0.14	3,790	8.7	0.35	1,850	4.2	0.25	2,700	6.2	0.31
35-44	39,420	97.3	1.75	6,970	17.2	0.54	1,730	4.3	0.26	740	1.8	0.16	4,510	11.1	0.4	2,350	5.8	0.4	1,700	4.2	0.25
45-54	52,360	120.5	2.03	10,860	25.0	0.68	1,695	3.9	0.28	1,095	2.5	0.19	8,110	18.7	0.55	4,685	10.8	0.7	1,260	2.9	0.21
55-64	42,085	105.0	1.81	11,585	28.9	0.72	985	2.5	0.2	1,155	2.9	0.2	9,495	23.7	0.65	2,885	7.2	0.57	570	1.4	0.15
≥65	40,220	87.1	1.38	9,735	21.1	0.58	230	0.5	0.08	490	1.1	0.11	9,035	19.6	0.55	770	1.7	0.15	205	0.4	0.07
U.S. Census region of residence																					
Northeast	47,920	81.7	1.41	10,690	17.8	0.49	3,510	6.2	0.27	990	1.7	0.14	6,240	10.0	0.32	4,410	7.5	0.51	575	1.1	0.1
Midwest	57,800	84.7	1.3	11,250	15.9	0.42	3,345	5.1	0.25	865	1.2	0.1	7,070	9.7	0.29	2,340	3.3	0.21	1,300	2.0	0.14
South	101,450	82.3	0.92	19,610	15.3	0.29	2,900	2.4	0.12	1,575	1.3	0.07	15,170	11.6	0.25	5,325	4.3	0.21	2,925	2.5	0.12
West	52,495	68.0	0.99	11,450	14.4	0.35	1,720	2.2	0.13	1,150	1.4	0.1	8,645	10.8	0.3	1,190	1.5	0.12	3,490	4.7	0.2

^a Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS), 2014, Agency for Healthcare Research and Quality (AHRQ).

^b In-hospital deaths and patients who transferred from another hospital were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

^c Includes ICD-9-CM principal diagnosis code of 960-979 (Poisoning by Drugs, Medicinal, and Biological Substances) or first listed cause of injury E850-E858 (Accidental Poisoning by Drugs, Medicinal Substances, and Biologicals).

^d Includes ICD-9-CM principal diagnosis code of 965.00, 965.01, 965.02, 965.09 or first listed cause of injury E850.0, E850.1, E850.2.

^e Includes ICD-9-CM principal diagnosis code of 965.01 or first listed cause of injury E850.0.

^f Includes ICD-9-CM principal diagnosis code of 965.02 or first listed cause of injury E850.1.

^g Includes ICD-9-CM principal diagnosis code of 965.09, 965.00 or first listed cause of injury E850.2.

^h Includes ICD-9-CM principal diagnosis code of 970.81 or first listed cause of injury E854.3 or E855.2.

ⁱ Includes ICD-9-CM principal diagnosis code of 969.72 or first listed cause of injury E854.2.

^j Rates calculated per 100,000 population. Age-adjusted to the 2000 U.S. standard population using the vintage year population of the data.

^k The relative standard error was >30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

TABLE 3A

Estimated number^{ab} and age-adjusted rate per 100,000 population of drug-poisoning related hospitalizations by selected substances — United States, 2014

CONTINUED

Socio-demographic Characteristic	All drug poisonings ^c			All Opioid poisonings ^d			Heroin poisonings ^e			Methadone poisonings ^f			Poisoning by other opioids ^g			Cocaine poisonings ^h			Methamphetamine poisonings ⁱ		
	Number	Rate ^j	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE
2013 Urbanization																					
Large Central Metropolitan	78,000	77.2	1.26	15,515	14.9	0.36	3,950	3.8	0.17	1,585	1.5	0.09	10,045	9.7	0.27	7,080	6.9	0.35	2,795	2.8	0.14
Large Fringe Metropolitan	58,605	72.3	1.2	12,740	15.3	0.39	3,510	4.7	0.21	910	1.1	0.09	8,350	9.6	0.28	2,290	2.8	0.17	1,490	2.0	0.13
Medium Metropolitan	57,540	85.2	1.78	12,070	17.3	0.5	2,340	3.6	0.2	1,025	1.5	0.12	8,760	12.2	0.39	2,050	3.0	0.18	1,750	2.8	0.17
Small Metropolitan	25,790	87.9	2.38	4,860	15.7	0.66	730	2.6	0.24	400	1.4	0.16	3,745	11.8	0.55	620	2.2	0.22	925	3.4	0.3
Micropolitan	23,375	85.4	1.71	4,595	15.6	0.58	525	2.0	0.21	390	1.3	0.16	3,690	12.3	0.5	575	2.3	0.25	720	2.9	0.25
Not Metropolitan or Micropolitan	14,085	74.0	1.97	2,760	13.5	0.65	250	1.6	0.23	205	1.1	0.19	2,310	10.8	0.58	255	1.4	0.2	460	2.8	0.31
Unknown	2,270	0.0	0	460	0.0	0	170	0.0	0	65	0.0	0	225	0.0	0	395	0.0	0	150	0.0	0

^a Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS), 2014, Agency for Healthcare Research and Quality (AHRQ).

^b In-hospital deaths and patients who transferred from another hospital were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

^c Includes ICD-9-CM principal diagnosis code of 960-979 (Poisoning by Drugs, Medicinal, and Biological Substances) or first listed cause of injury E850-E858 (Accidental Poisoning by Drugs, Medicinal Substances, and Biologicals).

^d Includes ICD-9-CM principal diagnosis code of 965.00, 965.01, 965.02, 965.09 or first listed cause of injury E850.0, E850.1, E850.2.

^e Includes ICD-9-CM principal diagnosis code of 965.01 or first listed cause of injury E850.0.

^f Includes ICD-9-CM principal diagnosis code of 965.02 or first listed cause of injury E850.1.

^g Includes ICD-9-CM principal diagnosis code of 965.09, 965.00 or first listed cause of injury E850.2.

^h Includes ICD-9-CM principal diagnosis code of 970.81 or first listed cause of injury E854.3 or E855.2.

ⁱ Includes ICD-9-CM principal diagnosis code of 969.72 or first listed cause of injury E854.2.

^j Rates calculated per 100,000 population. Age-adjusted to the 2000 U.S. standard population using the vintage year population of the data.

^k The relative standard error was >30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

TABLE 3B

Estimated number^{ab} and age-adjusted rate per 100,000 population of drug-poisoning related emergency department visits by selected substances
— United States, 2014

Socio-demographic Characteristic	All drug poisonings ^c			All Opioid poisonings ^d			Heroin poisonings ^e			Methadone poisonings ^f			Poisoning by other opioids ^g			Cocaine poisonings ^h			Methamphetamine poisonings ⁱ			
	Number	Rate ^j	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	
All Visits	418,313	133.7	1.95	92,262	28.9	0.99	53,930	17.1	0.84	2,921	0.9	0.04	35,690	11.0	0.21	6,424	2.1	0.1	11,012	3.6	0.1	
Sex																						
Male	199,999	127.9	2.32	57,655	36.3	1.4	38,035	24.0	1.21	1,554	1.0	0.06	18,242	11.4	0.28	4,462	2.9	0.17	6,752	4.4	0.15	
Female	218,313	139.5	1.8	34,607	21.6	0.64	15,894	10.2	0.51	1,367	0.8	0.06	17,448	10.6	0.23	1,962	1.3	0.07	4,260	2.8	0.1	
Age groups (years)																						
0-14	70,984	116.2	4.12	2,263	3.7	0.23	^k	^k	^k	95	0.2	0.03	2,126	3.5	0.22	472	0.8	0.09	2,244	3.7	0.22	
15-19	46,755	221.8	7.19	4,170	19.8	1.16	1,796	8.5	0.79	64	0.3	0.08	2,321	11.0	0.63	226	1.1	0.17	1,318	6.3	0.45	
20-24	48,443	211.3	8.91	16,294	71.1	4.96	12,276	53.5	4.35	231	1.0	0.16	3,848	16.8	0.89	589	2.6	0.23	1,873	8.2	0.58	
25-34	80,785	185.5	9.12	30,478	70.0	5.72	22,411	51.5	4.99	675	1.6	0.16	7,503	17.2	0.9	1,662	3.8	0.39	3,051	7.0	0.43	
35-44	53,233	131.3	5.42	14,410	35.6	2.68	8,703	21.5	2.15	558	1.4	0.16	5,177	12.8	0.68	1,369	3.4	0.38	1,376	3.4	0.27	
45-54	50,116	115.3	4.44	12,328	28.4	1.91	5,869	13.5	1.45	575	1.3	0.15	5,929	13.6	0.61	1,250	2.9	0.41	734	1.7	0.15	
55-64	34,075	85.0	2.73	8,061	20.1	1.01	2,458	6.1	0.62	488	1.2	0.16	5,132	12.8	0.56	703	1.8	0.23	321	0.8	0.1	
≥65	33,922	73.4	2	4,258	9.2	0.42	375	0.8	0.14	236	0.5	0.07	3,655	7.9	0.37	152	0.3	0.06	95	0.2	0.05	
U.S. Census region of residence																						
Northeast	83,450	154.0	7.14	27,462	49.9	4.48	20,570	37.7	3.93	585	1.0	0.12	6,356	11.3	0.67	1,105	2.1	0.17	1,125	2.2	0.16	
Midwest	100,900	153.7	4.26	24,944	37.9	2.32	16,162	24.8	1.93	433	0.7	0.09	8,437	12.6	0.52	1,127	1.8	0.16	2,377	3.7	0.21	
South	137,841	117.0	2.66	25,100	20.9	0.96	11,802	9.9	0.75	975	0.8	0.07	12,393	10.2	0.31	3,128	2.7	0.23	3,694	3.2	0.14	
West	96,122	128.5	2.93	14,756	19.0	0.67	5,396	7.0	0.41	929	1.2	0.1	8,504	10.9	0.35	1,063	1.4	0.15	3,816	5.1	0.28	

^a Weighted national estimates from HCUP Nationwide Emergency Department Sample (NEDS), 2014, Agency for Healthcare Research and Quality (AHRQ).

^b Persons who were hospitalized, died, or transferred to another facility were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

^c includes ICD-9-CM principal diagnosis code of 960-979 (Poisoning by Drugs, Medicinal, and Biological Substances) or first listed cause of injury E850-E858 (Accidental Poisoning by Drugs, Medicinal Substances, and Biologicals).

^d includes ICD-9-CM principal diagnosis code of 965.00, 965.01, 965.02, 965.09 or first listed cause of injury E850.0, E850.1, E850.2.

^e includes ICD-9-CM principal diagnosis code of 965.01 or first listed cause of injury E850.0.

^f includes ICD-9-CM principal diagnosis code of 965.02 or first listed cause of injury E850.1.

^g includes ICD-9-CM principal diagnosis code of 965.09, 965.00 or first listed cause of injury E850.2.

^h includes ICD-9-CM principal diagnosis code of 970.81 or first listed cause of injury E854.3 or E855.2.

ⁱ includes ICD-9-CM principal diagnosis code of 969.72 or first listed cause of injury E854.2.

^j Rates calculated per 100,000 population. Age-adjusted to the 2000 U.S. standard population using the vintage year population of the data.

^k The relative standard error was >30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

TABLE 3B

**Estimated number^{ab} and age-adjusted rate per 100,000 population of drug-poisoning related emergency department visits by selected substances
— United States, 2014**

CONTINUED

Socio-demographic Characteristic	All drug poisonings ^c			All Opioid poisonings ^d			Heroin poisonings ^e			Methadone poisonings ^f			Poisoning by other opioids ^g			Cocaine poisonings ^h			Methamphetamine poisonings ⁱ		
	Number	Rate ^j	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE
2013 Urbanization																					
Large Central Metropolitan	104,834	106.5	3.14	22,862	22.2	1.13	13,122	12.7	0.86	1,170	1.1	0.09	8,672	8.5	0.34	2,619	2.6	0.22	3,155	3.1	0.19
Large Fringe Metropolitan	89,713	117.9	4.63	27,093	35.9	2.87	19,012	25.5	2.54	485	0.6	0.07	7,658	9.8	0.44	1,196	1.6	0.13	1,697	2.3	0.14
Medium Metropolitan	111,082	170.9	4.96	23,438	35.8	2.05	13,468	20.8	1.67	625	1.0	0.09	9,425	14.1	0.55	1,514	2.4	0.17	2,919	4.6	0.23
Small Metropolitan	40,317	142.2	5.82	7,143	24.6	2.24	3,330	11.7	1.73	222	0.8	0.12	3,600	12.2	0.71	430	1.5	0.21	1,199	4.3	0.33
Micropolitan	41,919	161.4	3.42	6,776	26.0	1.4	3,084	12.3	1.14	178	0.7	0.13	3,529	13.0	0.55	316	1.3	0.18	1,069	4.4	0.32
Not Metropolitan or Micropolitan	26,890	153.1	3.47	3,720	20.5	1.02	975	6.1	0.7	207	1.1	0.18	2,537	13.2	0.66	208	1.3	0.19	804	5.0	0.43
Unknown	3,557			1,230	0.0	0	938	0.0	0	k	k	k	269	0.0	0	k	k	k	168	0.0	0

^a Weighted national estimates from HCUP Nationwide Emergency Department Sample (NEDS), 2014, Agency for Healthcare Research and Quality (AHRQ).

^b Persons who were hospitalized, died, or transferred to another facility were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

^c includes ICD-9-CM principal diagnosis code of 960-979 (Poisoning by Drugs, Medicinal, and Biological Substances) or first listed cause of injury E850-E858 (Accidental Poisoning by Drugs, Medicinal Substances, and Biologicals).

^d includes ICD-9-CM principal diagnosis code of 965.00, 965.01, 965.02, 965.09 or first listed cause of injury E850.0, E850.1, E850.2.

^e includes ICD-9-CM principal diagnosis code of 965.01 or first listed cause of injury E850.0.

^f includes ICD-9-CM principal diagnosis code of 965.02 or first listed cause of injury E850.1.

^g includes ICD-9-CM principal diagnosis code of 965.09, 965.00 or first listed cause of injury E850.2.

^h includes ICD-9-CM principal diagnosis code of 970.81 or first listed cause of injury E854.3 or E855.2.

ⁱ includes ICD-9-CM principal diagnosis code of 969.72 or first listed cause of injury E854.2.

^j Rates calculated per 100,000 population. Age-adjusted to the 2000 U.S. standard population using the vintage year population of the data.

^k The relative standard error was >30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

TABLE 3C

Estimated number^{ab} and percent of drug-poisoning related hospitalization and emergency department visits by primary payer — United States, 2014

	All drug poisonings ^c		All Opioid poisonings ^d		Heroin poisonings ^e		Methadone poisonings ^f		Poisoning by other opioids ^g		Cocaine poisonings ^h		Methamphetamine poisonings ⁱ															
	Hospitalizations	ED visits	Hospitalizations	ED visits	Hospitalizations	ED visits	Hospitalizations	ED visits	Hospitalizations	ED visits	Hospitalizations	ED visits	Hospitalizations	ED visits														
Total	259,665	418,313	53,000	92,262	11,475	53,930	4,580	2,921	37,125	35,690	13,265	6,424	8,290	11,012														
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%														
Payer																												
Medicare	80,525	31.0	66,835	16.0	20,185	38.1	11,989	13.0	1,135	9.9	3,281	6.1	1,440	31.4	566	19.4	17,645	58.7	8,170	29.0	2,555	19.3	651	10.1	1,030	12.4	625	5.7
Medicaid	78,780	30.3	148,359	35.5	15,610	29.5	33,702	36.5	5,045	44.0	21,612	40.1	1,775	38.8	1,378	47.2	8,875	29.5	10,826	38.5	6,240	47.0	2,428	37.8	3,295	39.7	3,737	33.9
Private	59,630	23.0	114,638	27.4	9,735	18.4	18,730	20.3	2,565	22.4	9,773	18.1	615	13.4	343	11.7	6,580	21.9	8,659	30.8	1,465	11.0	1,044	16.3	1,450	17.5	3,050	27.7
Uninsured	31,735	12.2	68,179	16.3	5,805	11.0	22,676	24.6	2,390	20.8	15,804	29.3	620	13.5	547	18.7	2,830	9.4	6,406	22.8	2,590	19.5	1,927	30.0	2,085	25.2	2,924	26.6
Other	8,495	3.3	19,396	4.6	1,555	2.9	^j		320	2.8	^j		130	2.8	^j		1,105	3.7	1,552	5.5	390	2.9	365	5.7	400	4.8	637	5.8

^a Weighted national estimates from HCUP National Inpatient Survey (NIS) and Nationwide Emergency Department Sample (NEDS), 2014, Agency for Healthcare Research and Quality (AHRQ).

^b Persons who were hospitalized, died, or transferred to another facility were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

^c includes ICD-9-CM principal diagnosis code of 960-979 (Poisoning by Drugs, Medicinal, and Biological Substances) or first listed cause of injury E850-E858 (Accidental Poisoning by Drugs, Medicinal Substances, and Biologicals).

^d includes ICD-9-CM principal diagnosis code of 965.00, 965.01, 965.02, 965.09 or first listed cause of injury E850.0, E850.1, E850.2.

^e includes ICD-9-CM principal diagnosis code of 965.01 or first listed cause of injury E850.0.

^f includes ICD-9-CM principal diagnosis code of 965.02 or first listed cause of injury E850.1.

^g includes ICD-9-CM principal diagnosis code of 965.09, 965.00 or first listed cause of injury E850.2.

^h includes ICD-9-CM principal diagnosis code of 970.81 or first listed cause of injury E854.3 or E855.2.

ⁱ includes ICD-9-CM principal diagnosis code of 969.72 or first listed cause of injury E854.2.

^j The relative standard error was >30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

TABLE 4A

**Number and age-adjusted rates^a of all drug overdose deaths^b and selected drugs by sex, race and Hispanic origin^c, Census region^d, urbanization^e, and intent
— United States, 2015**

Socio-demographic Characteristic	Drug overdose deaths involving:																											
	Drug overdose deaths, overall			Any opioid ^d			Natural and semi- synthetic opioids ^g			Methadone ^h			Synthetic opioids other than methadone ⁱ			Prescription opioids ^j			Heroin ^k			Cocaine ^l			Psychostimulants with abuse potential ^m			
	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	
All	52,404	16.3	0.072	33,091	10.4	0.058	12,727	3.9	0.035	3,301	1.0	0.018	9,580	3.1	0.032	15,281	4.7	0.039	12,989	4.1	0.037	6,784	2.1	0.026	5,716	1.8	0.024	
Sex																												
Male	32,957	20.8	0.116	21,671	13.7	0.095	7,117	4.4	0.054	1,939	1.2	0.028	6,560	4.2	0.053	8,617	5.4	0.059	9,881	6.3	0.064	4,885	3.1	0.045	3,971	2.5	0.041	
Female	19,447	11.8	0.087	11,420	7.1	0.067	5,610	3.4	0.046	1,362	0.8	0.023	3,020	1.9	0.035	6,664	4.0	0.05	3,108	2.0	0.037	1,899	1.2	0.028	1,745	1.1	0.027	
Age group (years)																												
0-14	144	0.2	0.02	83	0.1	0.015	48	0.1	0.011	13	..*	..*	14	..*	..*	61	0.1	0.013	..*	..*	..*	..*	..*	..*	..*	11	..*	..*
15-19	772	3.7	0.132	506	2.4	0.107	136	0.6	0.055	53	0.3	0.034	143	0.7	0.057	184	0.9	0.064	208	1.0	0.068	70	0.3	0.04	82	0.4	0.043	
20-24	3,463	15.2	0.259	2,576	11.3	0.223	579	2.5	0.106	148	0.7	0.053	856	3.8	0.129	702	3.1	0.117	1,441	6.3	0.167	372	1.6	0.085	334	1.5	0.08	
25-34	11,880	26.9	0.247	8,568	19.4	0.21	2,327	5.3	0.109	735	1.7	0.061	2,896	6.6	0.122	2,906	6.6	0.122	4,292	9.7	0.148	1,571	3.6	0.09	1,307	3.0	0.082	
35-44	11,505	28.3	0.264	7,484	18.4	0.213	2,819	6.9	0.131	739	1.8	0.067	2,289	5.6	0.118	3,390	8.4	0.143	3,012	7.4	0.135	1,549	3.8	0.097	1,357	3.3	0.091	
45-54	12,974	30.0	0.264	7,595	17.6	0.202	3,479	8.1	0.137	843	2.0	0.067	1,982	4.6	0.103	4,100	9.5	0.148	2,439	5.6	0.114	1,861	4.3	0.1	1,513	3.5	0.09	
55-64	8,901	21.8	0.231	5,089	12.4	0.175	2,602	6.4	0.125	642	1.6	0.062	1,167	2.9	0.084	3,101	7.6	0.136	1,407	3.4	0.092	1,166	2.9	0.084	946	2.3	0.075	
≥65	2,760	5.8	0.11	1,188	2.5	0.072	736	1.5	0.057	127	0.3	0.024	232	0.5	0.032	835	1.7	0.061	184	0.4	0.028	194	0.4	0.029	164	0.3	0.027	
Race and Hispanic origin^c																												
White, non-Hispanic	41,720	21.1	0.106	27,056	13.9	0.087	10,774	5.3	0.053	2,725	1.4	0.027	7,995	4.2	0.048	12,894	6.4	0.058	10,050	5.4	0.055	4,225	2.2	0.035	4,324	2.2	0.035	
Black, non-Hispanic	5,070	12.2	0.174	2,741	6.6	0.127	878	2.1	0.074	247	0.6	0.038	883	2.1	0.072	1,060	2.6	0.08	1,310	3.1	0.087	1,690	4.0	0.099	316	0.8	0.044	
Hispanic	4,117	7.7	0.122	2,507	4.6	0.093	780	1.5	0.053	235	0.5	0.03	524	0.9	0.042	961	1.8	0.059	1,299	2.3	0.065	697	1.3	0.049	725	1.4	0.051	

Source: National Vital Statistics System, Mortality File, CDC WONDER. SE = standard error.

^a Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. *Rates are suppressed when based on <20 deaths.

^b Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD-10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined). Because deaths might involve more than one drug, some deaths are included in more than one category. On death certificates, the specificity of drugs involved with deaths varies over time. In 2015, approximately 17% of drug overdose deaths did not include information on the specific type of drug(s) involved.

^c Data for Hispanic origin should be interpreted with caution; studies comparing Hispanic origin on death certificates and on census surveys have shown inconsistent reporting on Hispanic ethnicity.

^d Census regions are defined by the following jurisdictions: Region 1: Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; Region 2: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; Region 3: Alabama, Arkansas, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; Region 4: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

^e Categories of 2013 NCHS Urban-Rural Classification Scheme for Counties (http://www.cdc.gov/nchs/data/series/sr_02/sr02_166.pdf):

Large central metro: Counties in metropolitan statistical areas (MSAs) of ≥1 million population that 1) contain the entire population of largest principal city of the MSA, or 2) have their entire population contained in the largest principal city of the MSA, or 3) contain at least 250,000 inhabitants of any principal city of the MSA; Large fringe metro: Counties in MSAs of ≥1 million population that did not qualify as large central metro counties; Medium metro: Counties in MSAs of populations of 250,000–999,999; Small metro: Counties in MSAs of populations less than 250,000; Micropolitan (nonmetropolitan counties): counties in micropolitan statistical areas; Noncore (nonmetropolitan counties): nonmetropolitan counties that did not qualify as micropolitan.

^f Drug overdose deaths, as defined, that involve opium (T40.0), heroin (T40.1), natural and semi-synthetic opioids (T40.2), methadone (T40.3), synthetic opioids other than methadone (T40.4) and other and unspecified narcotics (T40.6).

^g Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2).

^h Drug overdose deaths, as defined, that involve methadone (T40.3).

ⁱ Drug overdose deaths, as defined, that involve synthetic opioids other than methadone (T40.4).

^j Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2) and methadone (T40.3).

^k Drug overdose deaths, as defined, that involve heroin (T40.1).

^l Drug overdose deaths, as defined, that involve cocaine (T40.5).

^m Drug overdose deaths, as defined, that involve psychostimulants with abuse potential (T43.6).

TABLE 4A

Number and age-adjusted rates^a of all drug overdose deaths^b and selected drugs by sex, race and Hispanic origin^c, Census region^d, urbanization^e, and intent — United States, 2015

CONTINUED

Socio-demographic Characteristic	Drug overdose deaths, overall		Drug overdose deaths involving:																								
			Any opioid ^d			Natural and semi- synthetic opioids ^g			Methadone ^h			Synthetic opioids other than methadone ⁱ			Prescription opioids ^j			Heroin ^k			Cocaine ^l			Psychostimulants with abuse potential ^m			
	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE
U.S. Census region of residence^d																											
Northeast	11,096	19.8	0.192	7,576	13.6	0.16	2,095	3.6	0.081	643	1.1	0.045	3,071	5.6	0.103	2,605	4.5	0.091	3,461	6.3	0.109	1,861	3.3	0.079	274	0.5	0.03
Midwest	11,785	17.8	0.167	8,011	12.2	0.139	2,302	3.4	0.073	673	1.0	0.04	2,548	3.9	0.08	2,848	4.2	0.081	3,959	6.1	0.099	1,680	2.5	0.063	706	1.1	0.043
South	18,613	15.5	0.115	11,747	9.8	0.092	5,374	4.4	0.062	1,228	1.0	0.03	3,303	2.8	0.049	6,282	5.2	0.067	3,722	3.2	0.053	2,564	2.2	0.043	1,724	1.5	0.036
West	10,910	13.9	0.136	5,757	7.4	0.099	2,956	3.8	0.07	757	1.0	0.035	658	0.9	0.034	3,546	4.5	0.077	1,847	2.4	0.056	679	0.9	0.034	3,012	3.9	0.072
2013 Urbanization^e																											
Large Central Metropolitan	15,325	14.8	0.122	9,679	9.4	0.097	3,438	3.3	0.057	1,069	1.0	0.032	2,509	2.4	0.049	4,276	4.1	0.064	4,496	4.4	0.066	2,786	2.7	0.051	2,003	2.0	0.044
Large Fringe Metropolitan	13,032	16.5	0.147	8,683	11.2	0.122	2,870	3.5	0.067	734	0.9	0.035	2,947	3.9	0.072	3,444	4.2	0.074	3,778	5.0	0.082	1,617	2.1	0.052	909	1.2	0.039
Medium Metropolitan	11,982	18.3	0.171	7,618	11.8	0.138	3,071	4.7	0.086	755	1.2	0.043	2,255	3.5	0.076	3,664	5.6	0.094	2,736	4.3	0.083	1,462	2.3	0.061	1,378	2.1	0.058
Small Metropolitan	4,720	16.8	0.251	2,729	9.9	0.194	1,193	4.2	0.126	265	1.0	0.061	686	2.5	0.1	1,404	5.0	0.136	868	3.2	0.111	419	1.5	0.077	533	2.0	0.087
Micropolitan	4,512	17.5	0.268	2,730	10.8	0.211	1,248	4.8	0.14	281	1.1	0.067	753	3.0	0.113	1,457	5.6	0.151	778	3.2	0.117	360	1.4	0.078	517	2.0	0.091
Noncore	2,833	16.2	0.316	1,652	9.6	0.245	907	5.1	0.177	197	1.2	0.089	430	2.6	0.127	1,036	5.9	0.191	333	2.1	0.116	140	0.9	0.074	376	2.3	0.12
Intent																											
Unintentional	44,126	13.8	0.067	29,382	9.3	0.055	10,621	3.3	0.033	2,955	0.9	0.017	8,609	2.8	0.03	12,923	4.0	0.036	12,284	3.9	0.036	6,467	2.0	0.026	5,307	1.7	0.023
Undetermined	2,979	0.9	0.017	1,857	0.6	0.013	807	0.3	0.009	237	0.1	0.005	544	0.2	0.007	985	0.3	0.009	586	0.2	0.008	208	0.1	0.005	174	0.05	0.004
Suicide	5,206	1.5	0.022	1,803	0.5	0.013	1,287	0.4	0.010	107	0.02	0.003	415	0.1	0.007	1,359	0.4	0.011	92	0.03	0.004	100	0.03	0.004	216	0.1	0.004

Source: National Vital Statistics System, Mortality File, CDC WONDER. SE = standard error.

^a Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. *Rates are suppressed when based on <20 deaths.

^b Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD-10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined). Because deaths might involve more than one drug, some deaths are included in more than one category. On death certificates, the specificity of drugs involved with deaths varies over time. In 2015, approximately 17% of drug overdose deaths did not include information on the specific type of drug(s) involved.

^c Data for Hispanic origin should be interpreted with caution; studies comparing Hispanic origin on death certificates and on census surveys have shown inconsistent reporting on Hispanic ethnicity.

^d Census regions are defined by the following jurisdictions: Region 1: Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; Region 2: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; Region 3: Alabama, Arkansas, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; Region 4: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

^e Categories of 2013 NCHS Urban-Rural Classification Scheme for Counties (http://www.cdc.gov/nchs/data/series/sr_02/sr02_166.pdf):

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^f Drug overdose deaths, as defined, that involve opium (T40.0), heroin (T40.1), natural and semi-synthetic opioids (T40.2), methadone (T40.3), synthetic opioids other than methadone (T40.4) and other and unspecified narcotics (T40.6).

^g Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2).

^h Drug overdose deaths, as defined, that involve methadone (T40.3).

ⁱ Drug overdose deaths, as defined, that involve synthetic opioids other than methadone (T40.4).

^j Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2) and methadone (T40.3).

^k Drug overdose deaths, as defined, that involve heroin (T40.1).

^l Drug overdose deaths, as defined, that involve cocaine (T40.5).

^m Drug overdose deaths, as defined, that involve psychostimulants with abuse potential (T43.6).

TABLE 4B

**Number and age-adjusted rates^a of all drug overdose deaths^b and selected drugs by sex, race and Hispanic origin^c, Census region^d, urbanization^e, and intent
— United States, 2014**

Socio-demographic Characteristic	Drug overdose deaths involving:																											
	Overall drug overdoses			Any opioid ^f			Natural and semi-synthetic opioids ^g			Methadone ^h			Synthetic opioids other than methadone ⁱ			Prescription opioids ^j			Heroin ^k			Cocaine ^l			Psychostimulants with abuse potential ^m			
	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	
All	47,055	14.7	0.069	28,647	9.0	0.054	12,159	3.8	0.035	3,400	1.1	0.019	5,544	1.8	0.024	14,838	4.6	0.038	10,574	3.4	0.034	5,415	1.7	0.024	4,298	1.4	0.021	
Sex																												
Male	28,812	18.3	0.109	18,420	11.7	0.088	6,732	4.2	0.052	2,009	1.3	0.029	3,465	2.2	0.038	8,332	5.2	0.058	8,160	5.2	0.059	3,880	2.4	0.04	3,020	1.9	0.036	
Female	18,243	11.1	0.084	10,227	6.3	0.064	5,427	3.3	0.046	1,391	0.9	0.024	2,079	1.3	0.028	6,506	3.9	0.05	2,414	1.6	0.032	1,535	1.0	0.026	1,278	0.8	0.023	
Age group (years)																												
0-14	109	0.2	0.017	64	0.1	0.013	42	0.1	0.011	14	—*	—*	10	—*	—*	55	0.1	0.012	—*	—*	—*	—*	—*	—*	—*	11	—*	—*
15-19	658	3.1	0.122	416	2.0	0.097	133	0.6	0.055	50	0.2	0.034	70	0.3	0.04	177	0.8	0.063	180	0.9	0.064	35	0.2	0.028	50	0.2	0.034	
20-24	3,140	13.7	0.245	2,290	10.0	0.209	593	2.6	0.106	191	0.8	0.06	444	1.9	0.092	754	3.3	0.12	1,272	5.6	0.156	299	1.3	0.075	290	1.3	0.074	
25-34	10,055	23.1	0.23	7,028	16.2	0.193	2,115	4.9	0.106	796	1.8	0.065	1,474	3.4	0.088	2,776	6.4	0.121	3,493	8.0	0.136	1,165	2.7	0.078	963	2.2	0.071	
35-44	10,134	25.0	0.248	6,338	15.6	0.197	2,644	6.5	0.127	768	1.9	0.068	1,264	3.1	0.088	3,257	8.0	0.141	2,398	5.9	0.121	1,219	3.0	0.086	995	2.5	0.078	
45-54	12,263	28.2	0.255	6,987	16.1	0.192	3,488	8.0	0.136	854	2.0	0.067	1,359	3.1	0.085	4,127	9.5	0.148	2,030	4.7	0.104	1,621	3.7	0.093	1,221	2.8	0.08	
55-64	8,122	20.3	0.225	4,452	11.1	0.166	2,437	6.1	0.123	629	1.6	0.063	742	1.9	0.068	2,916	7.3	0.135	1,064	2.7	0.081	912	2.3	0.075	668	1.7	0.064	
≥65	2,568	5.6	0.11	1,070	2.3	0.071	706	1.5	0.057	98	0.2	0.021	181	0.4	0.029	775	1.7	0.06	136	0.3	0.025	161	0.3	0.027	99	0.2	0.022	
Race and Hispanic origin^c																												
White, non-Hispanic	37,945	19.0	0.1	23,574	12.0	0.081	10,308	5.0	0.051	2,845	1.4	0.028	4,685	2.4	0.036	12,549	6.2	0.057	8,253	4.4	0.05	3,351	1.7	0.031	3,307	1.7	0.03	
Black, non-Hispanic	4,323	10.5	0.162	2,298	5.6	0.118	814	2.0	0.07	256	0.6	0.04	449	1.1	0.052	1,017	2.5	0.078	1,044	2.5	0.079	1,409	3.4	0.092	215	0.5	0.035	
Hispanic	3,504	6.7	0.116	2,107	4.0	0.089	727	1.4	0.053	228	0.5	0.031	302	0.6	0.033	906	1.8	0.06	1,049	1.9	0.061	525	1.0	0.045	530	1.0	0.044	

Source: National Vital Statistics System, Mortality File, CDC WONDER. SE = standard error.

^a Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. *Rates are suppressed when based on <20 deaths.

^b Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD-10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined). Because deaths might involve more than one drug, some deaths are included in more than one category. On death certificates, the specificity of drugs involved with deaths varies over time. In 2014, approximately 19% of drug overdose deaths did not include information on the specific type of drug(s) involved.

^c Data for Hispanic origin should be interpreted with caution; studies comparing Hispanic origin on death certificates and on census surveys have shown inconsistent reporting on Hispanic ethnicity.

^d Census regions are defined by the following jurisdictions: Region 1: Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; Region 2: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; Region 3: Alabama, Arkansas, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; Region 4: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

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^f Drug overdose deaths, as defined, that involve opium (T40.0), heroin (T40.1), natural and semi-synthetic opioids (T40.2), methadone (T40.3), synthetic opioids other than methadone (T40.4) and other and unspecified narcotics (T40.6).

^g Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2).

^h Drug overdose deaths, as defined, that involve methadone (T40.3).

ⁱ Drug overdose deaths, as defined, that involve synthetic opioids other than methadone (T40.4).

^j Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2) and methadone (T40.3).

^k Drug overdose deaths, as defined, that involve heroin (T40.1).

^l Drug overdose deaths, as defined, that involve cocaine (T40.5).

^m Drug overdose deaths, as defined, that involve psychostimulants with abuse potential (T43.6).

TABLE 4B

**Number and age-adjusted rates^a of all drug overdose deaths^b and selected drugs by sex, race and Hispanic origin^c, Census region^d, urbanization^e, and intent
— United States, 2014**

CONTINUED

Socio-demographic Characteristic	Drug overdose deaths involving:																										
	Overall drug overdoses			Any opioid ^f			Natural and semi-synthetic opioids ^g			Methadone ^h			Synthetic opioids other than methadone ⁱ			Prescription opioids ^j			Heroin ^k			Cocaine ^l			Psychostimulants with abuse potential ^m		
	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE
U.S. Census region of residence^d																											
Northeast	9,077	16.1	0.172	5,961	10.7	0.141	1,851	3.3	0.078	587	1.0	0.044	1,485	2.7	0.071	2,337	4.1	0.087	2,755	5.1	0.098	1,439	2.6	0.07	223	0.4	0.029
Midwest	10,647	16.0	0.159	6,917	10.5	0.129	2,205	3.3	0.072	675	1.0	0.041	1,319	2.0	0.057	2,749	4.1	0.08	3,385	5.2	0.091	1,308	2.0	0.055	525	0.8	0.036
South	16,777	14.0	0.11	10,074	8.5	0.086	5,101	4.2	0.06	1,298	1.1	0.03	2,087	1.8	0.04	6,103	5.1	0.066	2,733	2.4	0.046	2,003	1.7	0.038	1,224	1.1	0.031
West	10,554	13.7	0.135	5,695	7.4	0.099	3,002	3.9	0.072	840	1.1	0.038	653	0.8	0.033	3,649	4.7	0.079	1,701	2.2	0.055	665	0.9	0.034	2,326	3.1	0.064
2013 Urbanization^e																											
Large Central Metropolitan	13,714	13.5	0.116	8,301	8.1	0.091	3,214	3.1	0.056	985	1.0	0.031	1,330	1.3	0.036	3,992	3.9	0.063	3,793	3.7	0.061	2,231	2.2	0.047	1,555	1.5	0.039
Large Fringe Metropolitan	11,676	14.8	0.139	7,550	9.7	0.113	2,739	3.4	0.066	772	1.0	0.036	1,626	2.1	0.053	3,368	4.2	0.074	3,171	4.2	0.076	1,350	1.8	0.048	694	0.9	0.035
Medium Metropolitan	10,486	16.0	0.16	6,378	9.9	0.126	2,883	4.4	0.084	809	1.2	0.044	1,255	2.0	0.057	3,518	5.4	0.092	2,114	3.4	0.074	1,124	1.7	0.053	981	1.5	0.049
Small Metropolitan	4,396	15.6	0.242	2,447	8.8	0.181	1,168	4.1	0.123	314	1.1	0.065	476	1.7	0.082	1,417	5.0	0.136	662	2.5	0.097	318	1.1	0.065	393	1.5	0.076
Micropolitan	4,138	16.0	0.256	2,442	9.6	0.2	1,277	4.9	0.141	308	1.2	0.072	537	2.1	0.095	1,509	5.8	0.154	567	2.3	0.1	273	1.1	0.069	418	1.7	0.083
Noncore	2,645	15.0	0.303	1,529	8.9	0.234	878	5.0	0.173	212	1.2	0.089	320	1.9	0.109	1,034	5.9	0.19	267	1.7	0.104	119	0.7	0.065	257	1.5	0.098
Intent																											
Unintentional	38,718	12.1	0.063	25,037	7.9	0.051	10,015	3.1	0.032	3,026	0.9	0.017	4,745	1.5	0.022	12,418	3.9	0.036	10,009	3.2	0.033	5,152	1.6	0.023	3,965	1.2	0.02
Undetermined	2,823	0.9	0.017	1,720	0.5	0.013	830	0.2	0.009	232	0.1	0.004	396	0.1	0.007	1,000	0.3	0.01	453	0.1	0.006	169	0.1	0.004	154	0.05	0.004
Suicide	5,433	1.6	0.023	1,843	0.5	0.013	1,296	0.4	0.011	137	0.04	0.004	395	0.1	0.006	1,398	0.4	0.012	93	0.01	0.002	82	0.01	0.003	164	0.04	0.004

Source: National Vital Statistics System, Mortality File, CDC WONDER. SE = standard error.

^a Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. *Rates are suppressed when based on <20 deaths.

^b Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD-10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined). Because deaths might involve more than one drug, some deaths are included in more than one category. On death certificates, the specificity of drugs involved with deaths varies over time. In 2014, approximately 19% of drug overdose deaths did not include information on the specific type of drug(s) involved.

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^f Drug overdose deaths, as defined, that involve opium (T40.0), heroin (T40.1), natural and semi-synthetic opioids (T40.2), methadone (T40.3), synthetic opioids other than methadone (T40.4) and other and unspecified narcotics (T40.6).

^g Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2).

^h Drug overdose deaths, as defined, that involve methadone (T40.3).

ⁱ Drug overdose deaths, as defined, that involve synthetic opioids other than methadone (T40.4).

^j Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2) and methadone (T40.3).

^k Drug overdose deaths, as defined, that involve heroin (T40.1).

^l Drug overdose deaths, as defined, that involve cocaine (T40.5).

^m Drug overdose deaths, as defined, that involve psychostimulants with abuse potential (T43.6).

FIGURES



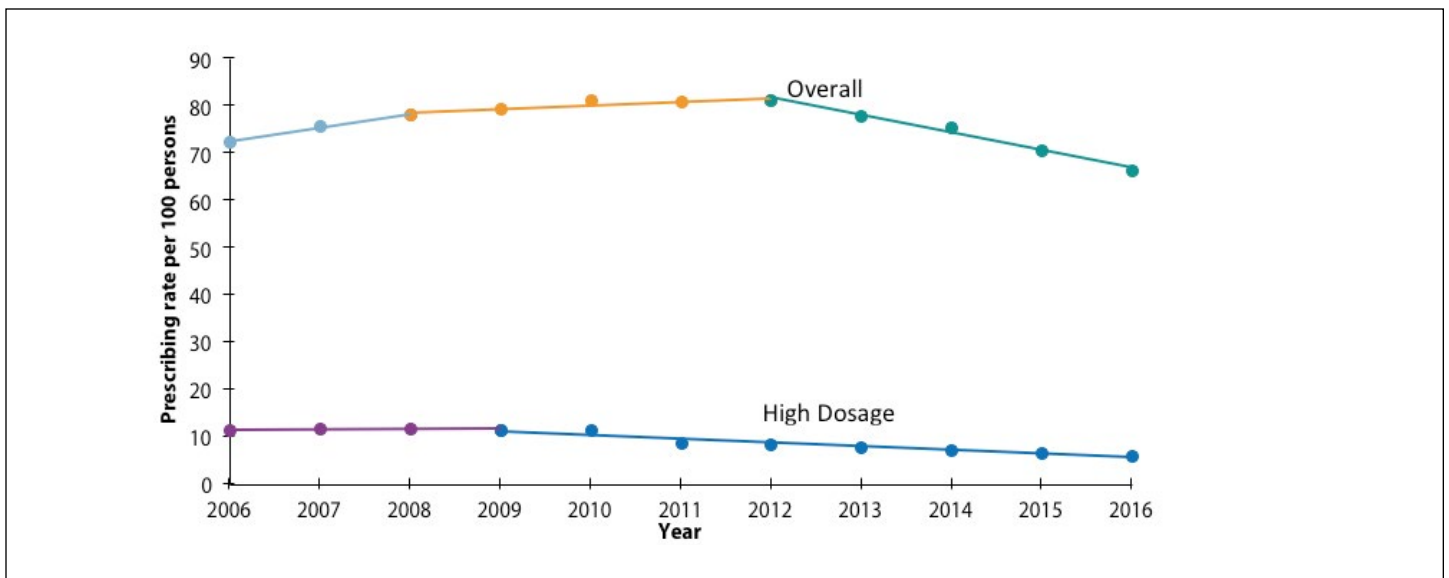
**Centers for Disease
Control and Prevention**
National Center for Injury
Prevention and Control

FIGURE 1A Trends in opioid prescribing — United States, 2006-2016

Annual prescribing rates by overall and high-dosage (≥ 90 MME/day) prescriptions

Between 2006 and 2016, the annual prescribing rate per 100 persons decreased from 72.4 to 66.5 for all opioids, an overall 8.1% reduction. The annual percent change increased by 4.1% from 2006 to 2008 ($p < 0.05$), then increased another 1.1% from 2008 to 2012 ($p < 0.05$), and then annually decreased by 4.9% from 2012 through 2016 ($p < 0.05$).

Between 2006 and 2016, the annual prescribing rate per 100 persons decreased from 11.5 to 6.1 for high-dosage opioid prescriptions, an overall 46.8% reduction (Supplemental Table 1). The rate leveled off between 2006 and 2009, then annually decreased by 9.3% from 2009 to 2016 ($p < 0.05$).



Source: QuintilesIMS® Transactional Data Warehouse.

High-dose prescriptions were defined as opioid prescriptions resulting in a daily dosage of ≥ 90 MME.

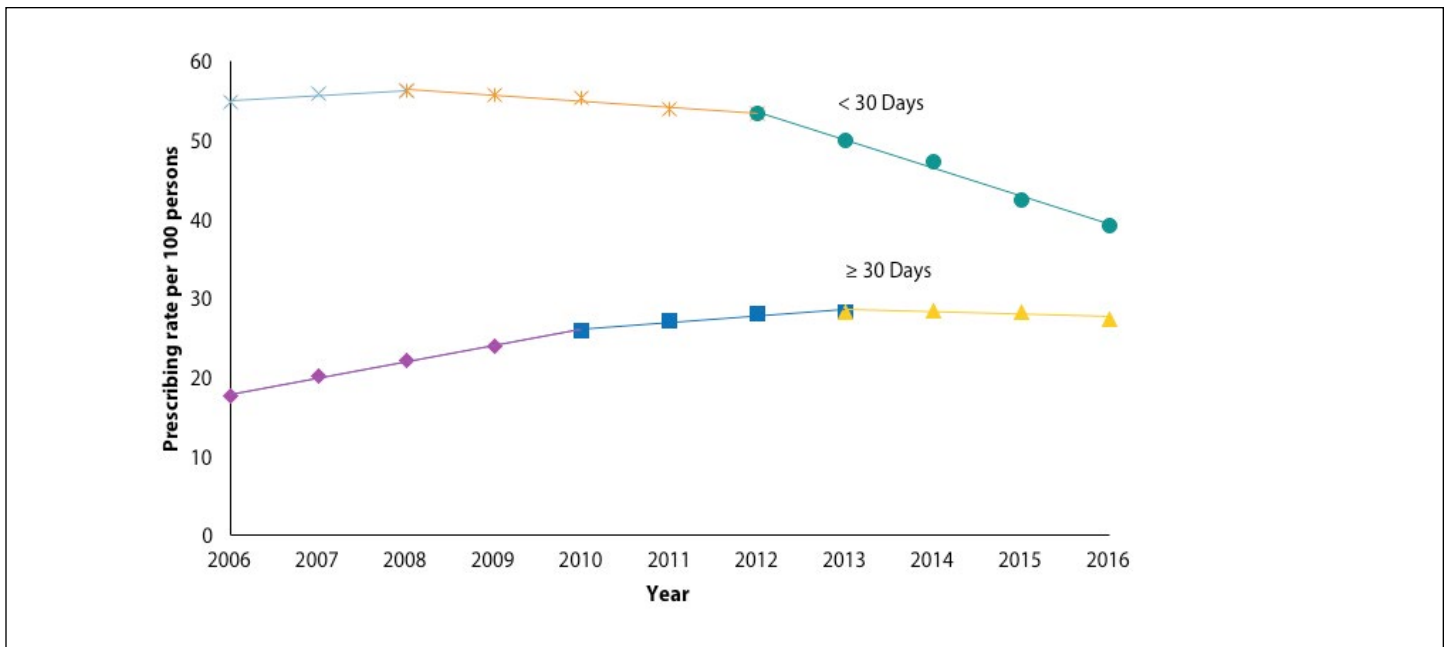
FIGURE 1B

Trends in opioid prescribing — United States, 2006-2016

Annual prescribing rates by days of supply per prescription

From 2006 through 2016, the annual prescribing rate for thirty or more days' supply per 100 persons increased from 17.6 to 27.3 for prescriptions with ≥ 30 days of supply, an overall 55.1% increase. The rate increased annually by 9.9% from 2006 through 2010 ($p < 0.05$) and by 2.9% from 2010 through 2013 ($p < 0.05$), and then annually decreased by 1.3% between 2013 and 2016 ($p < 0.05$).

During 2006-2016, the annual prescribing rate for less than thirty days' supply per 100 persons decreased from 54.7 to 39.2 for prescriptions with < 30 days' supply, an overall 28.3% reduction. The rate leveled off from 2006 through 2008, then decreased annually by 1.2% between 2008 and 2012 ($p < 0.05$), and further decreased annually by 7.3% from 2012 to 2016 ($p < 0.05$).



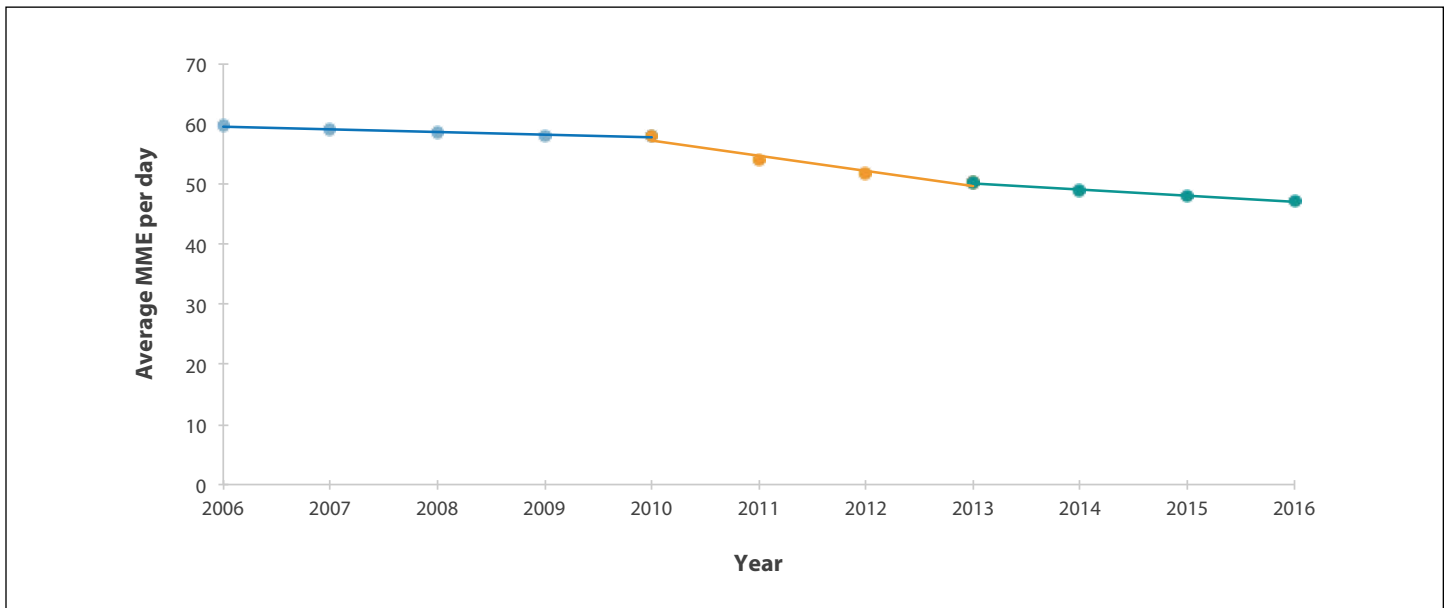
Source: QuintilesIMS® Transactional Data Warehouse.

FIGURE 1C

Trends in opioid prescribing — United States, 2006-2016

Average daily morphine milligram equivalents (MME) per prescription

Between 2006 and 2016, average daily MME per prescription decreased from 59.7 to 47.1 for all opioids, an overall 21.1% reduction. The rate decreased annually by 1.0% from 2006 to 2010 ($p < 0.05$), 4.7% from 2010 to 2013 ($p < 0.05$), and 1.7% from 2013 to 2016 ($p < 0.05$).



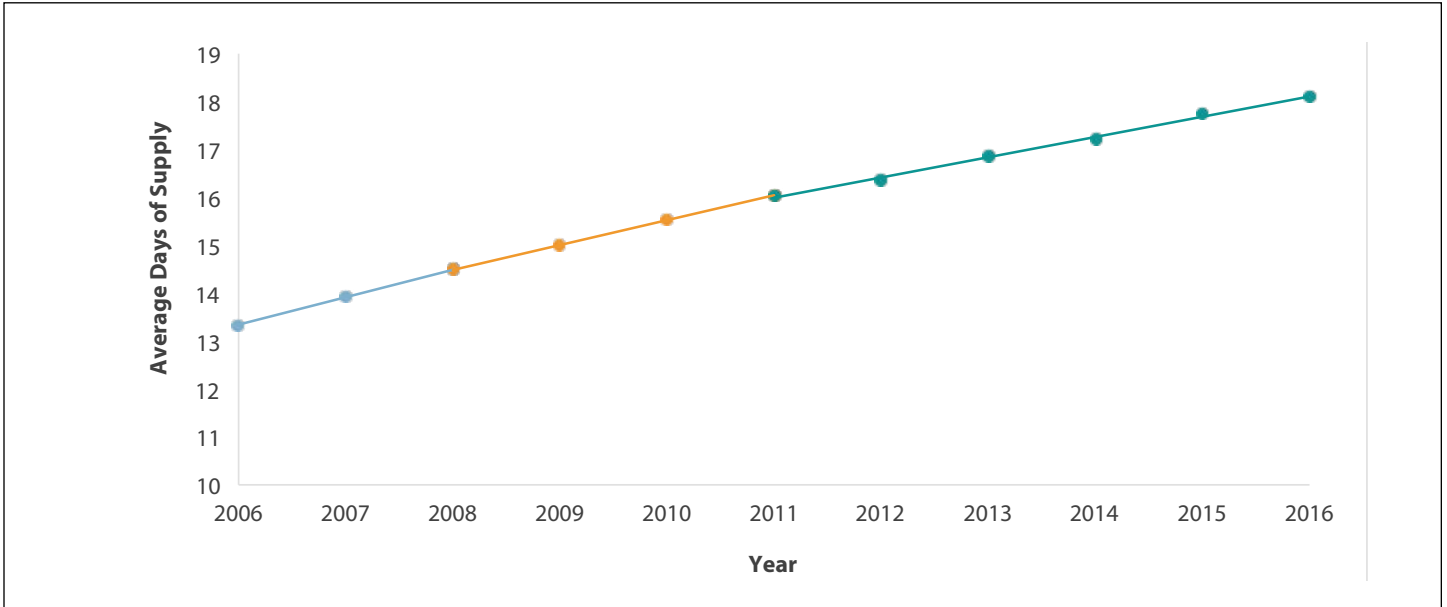
Source: QuintilesIMS® Transactional Data Warehouse.
Abbreviation: MME, morphine milligram equivalents.

FIGURE 1D

Trends in opioid prescribing — United States, 2006-2016

Average days of supply per prescription

Between 2006 and 2016, average days of supply increased from 13.3 to 18.1 days per prescription, an overall 35.7% increase. The rate increased annually by 4.4% from 2006 to 2008 ($p < 0.05$), 3.4% from 2008 to 2011 ($p < 0.05$), and 2.5% from 2011 to 2016 ($p < 0.05$).

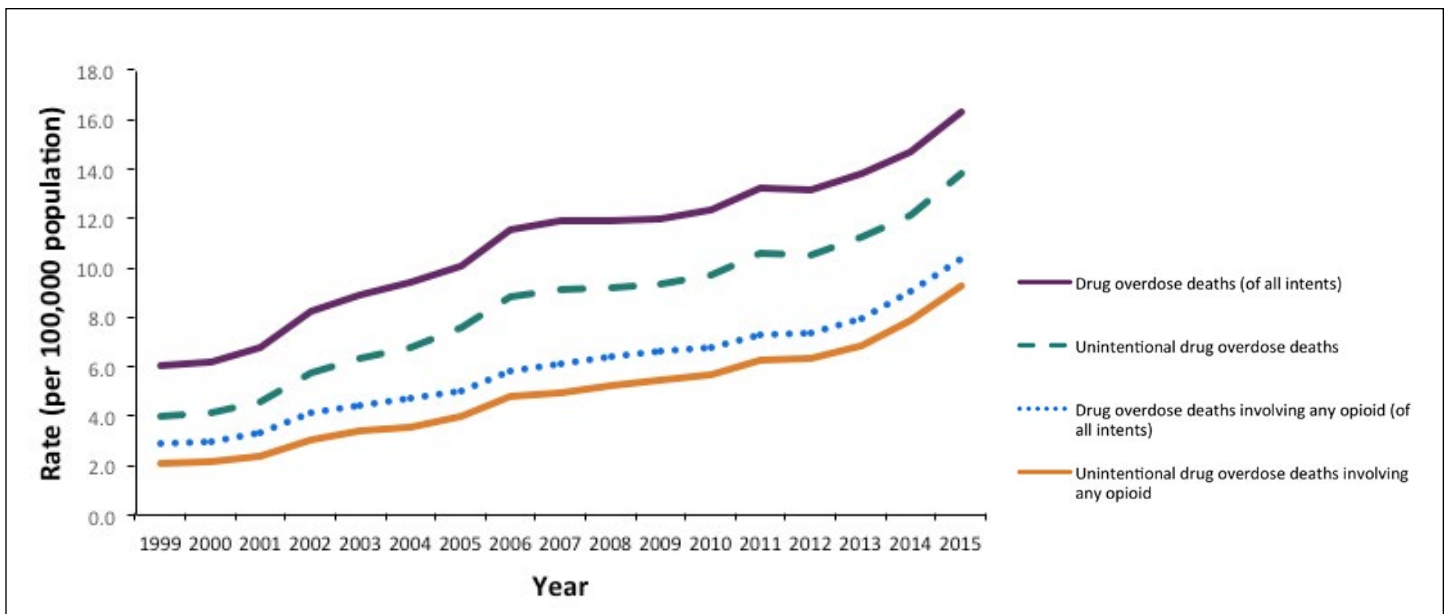


Source: QuintilesIMS® Transactional Data Warehouse.
Abbreviation: MME, morphine milligram equivalents.

FIGURE 2A

Age-adjusted rates^a of drug overdose deaths^b and drug overdose deaths involving any opioid^c, for all intents and for unintentional intent, by year — United States, 1999–2015

The rate of drug overdose deaths increased from 6.1 per 100,000 population in 1999 to 16.3 in 2015; for unintentional drug overdose deaths, the rate increased from 4.0 per 100,000 in 1999 to 13.8 in 2015; for drug overdose deaths involving any opioid, the rate increased from 2.9 per 100,000 in 1999 to 10.4 in 2015 ($p<0.05$); for unintentional drug overdose deaths involving any opioid, the rate increased from 2.1 per 100,000 in 1999 to 9.3 per 100,000 in 2015 ($p<0.05$). For all four categories of drug overdose deaths, increases in rates were largest from 2013 to 2015, with the rate increasing on average by 9% per year for overall drug overdose deaths ($p<0.05$), 11% per year for unintentional drug overdose deaths ($p<0.05$), 15% per year for drug overdose deaths involving any opioid ($p<0.05$), and 16% for unintentional drug overdose deaths involving any opioid ($p<0.05$).



Source: National Vital Statistics System, Mortality File, CDC WONDER.

^a Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year.

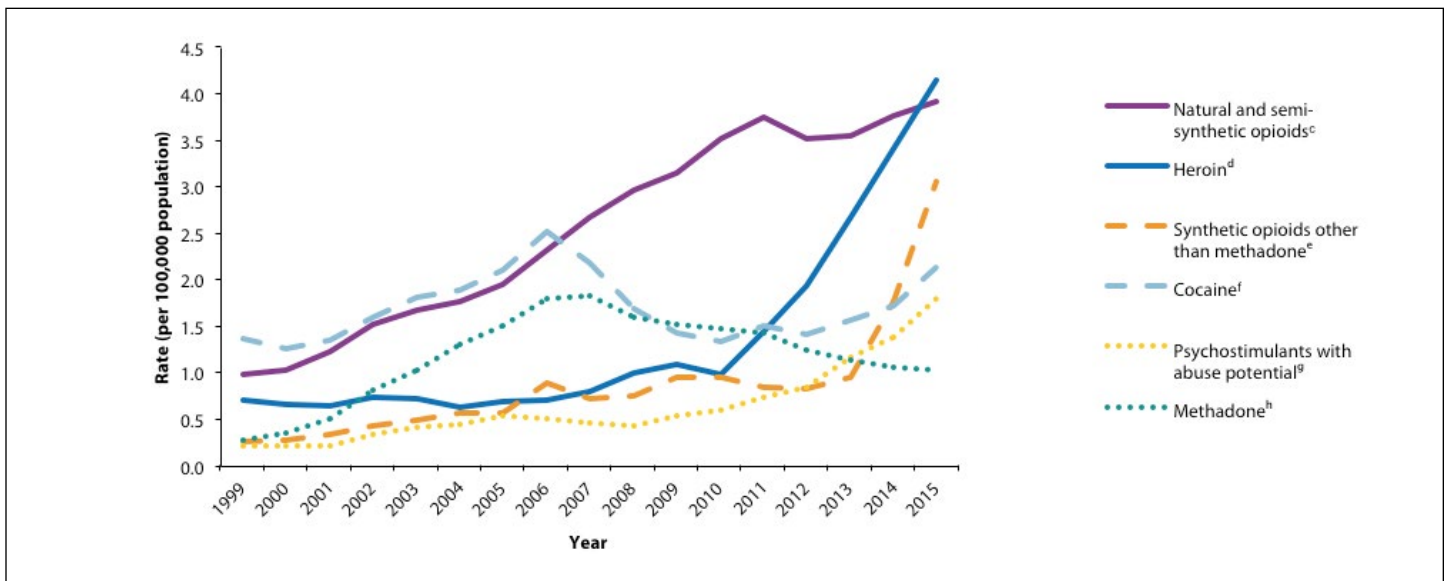
^b Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD-10). All drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined). Unintentional drug overdose deaths are identified using underlying cause-of-death codes X40–X44. Note that overall drug overdose deaths and opioid overdose deaths include deaths of any intent. In 2015, 5.7% of drug overdose deaths had undetermined intent; this is a decrease of 14.7% of drug overdose deaths with undetermined intent in 1999. Some of these deaths may be unintentional drug overdose deaths.

^c Drug overdose deaths, as defined, that involve opium (T40.0), heroin (T40.1), natural and semi-synthetic opioids (T40.2), methadone (T40.3), other synthetic opioids excluding methadone (T40.4), and other and unspecified narcotics (T40.6). Specification on death certificates of drugs involved with deaths varies over time. In 2015, approximately 17% of drug overdose deaths did not include information on the specific type of drug(s) involved. Some of these deaths may have involved opioids.

FIGURE 2B

Age-adjusted rates^a of drug overdose deaths^b, by drug or drug class and year — United States, 1999–2015

The rate of drug overdose deaths involving natural and semi-synthetic opioids increased from 1.0 per 100,000 population in 1999 to 3.9 in 2015 ($p < 0.05$); for those involving heroin, the rate increased from 0.7 per 100,000 in 1999 to 4.1 in 2015 ($p < 0.05$); for those involving synthetic opioids other than methadone, the rate increased from 0.3 per 100,000 in 1999 to 3.1 in 2015 ($p < 0.05$); and for those involving psychostimulants with abuse potential, the rate increased from 0.2 per 100,000 in 1999 to 1.8 in 2015 ($p < 0.05$). Rates of drug overdose deaths involving methadone declined from 1.8 per 100,000 in 2006 to 1.0 in 2015 ($p < 0.05$), an average decrease of 7% per year; and for those involving cocaine, increased from 1.3 per 100,000 in 2010 to 2.1 in 2015 ($p < 0.05$), an average increase of 9% per year. Rates for drug overdose deaths involving natural and semi-synthetic opioids remained stable from 2010 to 2015 ($p > 0.05$); while increases in drug overdose deaths involving synthetic opioids other than methadone were largest from 2013 to 2015 ($p < 0.05$), with the rate increasing on average by 81% per year. Heroin rates increased on average 31% per year from 2010 to 2015 ($p < 0.05$), and death rates of psychostimulants with abuse potential increased on average 23% per year from 2008 to 2015 ($p < 0.05$).



Source: National Vital Statistics System, Mortality File, CDC WONDER.

^a Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. Because deaths might involve more than one drug, some deaths are included in more than one category. Specification on death certificates of drugs involved with deaths varies over time. In 2015, approximately 17% of drug overdose deaths did not include information on the specific type of drug(s) involved. Some of these deaths may have involved opioids or stimulants.

^b Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD-10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined).

^c Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2).

^d Drug overdose deaths, as defined, that involve heroin (T40.1).

^e Drug overdose deaths, as defined, that involve synthetic opioids other than methadone (T40.4).

^f Drug overdose deaths, as defined, that involve cocaine (T40.5).

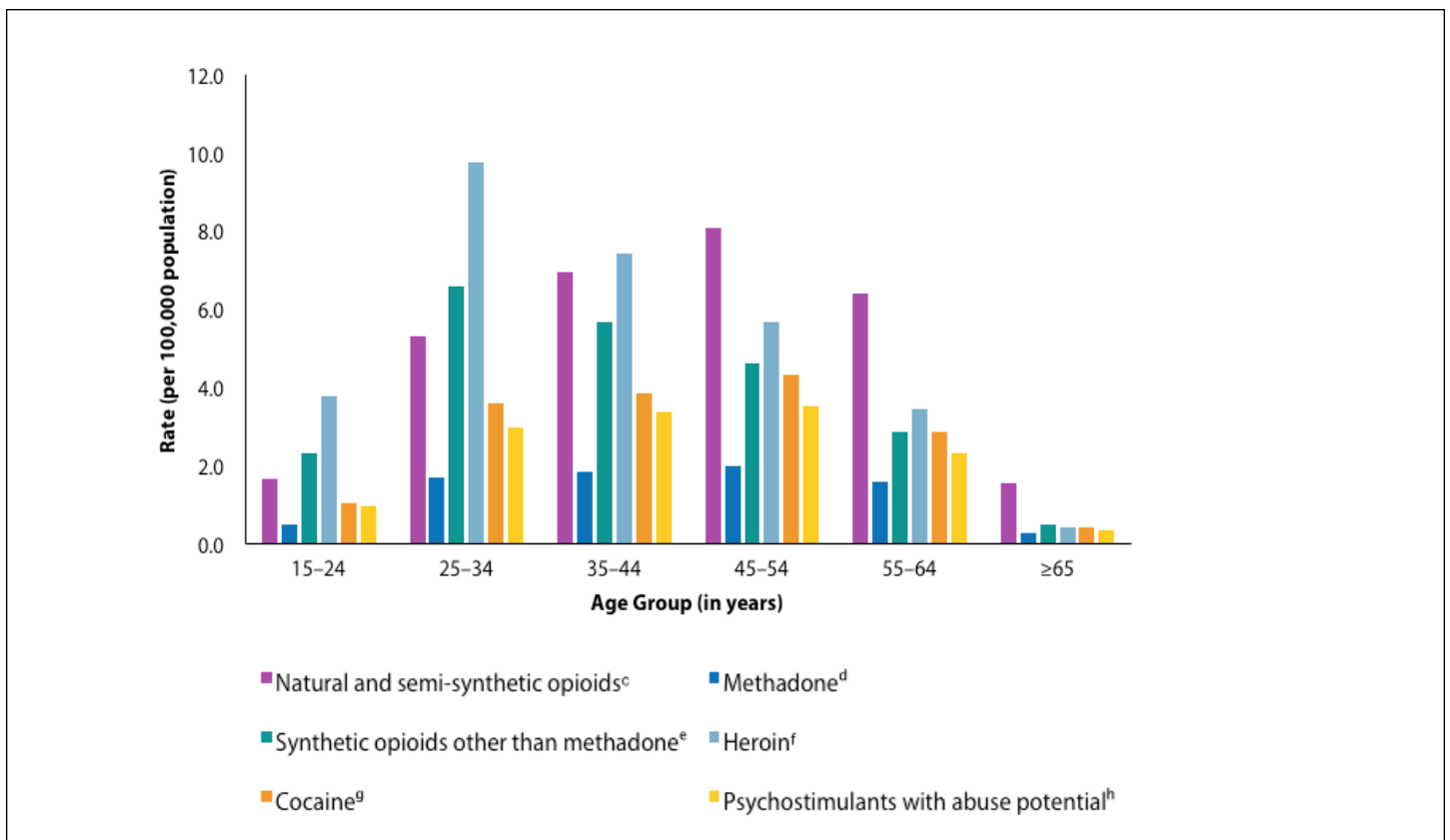
^g Drug overdose deaths, as defined, that involve psychostimulants with abuse potential (T43.6).

^h Drug overdose deaths, as defined, that involve methadone (T40.3).

FIGURE 2C

Age-adjusted rates^a of drug overdose deaths^b, by drug or drug class and age category — United States, 2015

Among persons ages 15 to 24 years, the rate of drug overdose deaths involving heroin was 3.8 per 100,000, and those involving synthetic opioids other than methadone was 2.3. Among persons ages 25 to 34 years, the rate of drug overdose deaths involving heroin was 9.7 per 100,000; those involving synthetic opioids other than methadone was 6.6; and those involving natural and semi-synthetic opioids was 5.3. Among persons ages 35 to 44 years, the rate of drug overdose deaths involving heroin was 7.4 per 100,000; those involving synthetic opioids other than methadone was 5.6; and those involving natural and semi-synthetic opioids was 6.9. Among persons ages 45 to 54 years and 55 to 64 years, the rate of drug overdose deaths involving natural and semi-synthetic opioids was 8.1 and 6.4 per 100,000 respectively; those involving heroin were 5.6 and 3.4, respectively; those involving synthetic opioids other than methadone were 4.6 and 2.9, respectively. Rates of drug overdose deaths involving cocaine were 3.6 per 100,000 among 25 to 34 year olds, 3.8 among 35 to 44 year olds, and 4.3 among 45 to 54 year olds. Rates of deaths involving psychostimulants with abuse potential were 3.0 per 100,000 among 25 to 34 year olds, 3.3 among 35 to 44 year olds, and 3.5 among 45 to 54 year olds.



Source: National Vital Statistics System, Mortality File, CDC WONDER.

^a Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. Because deaths might involve more than one drug, some deaths are included in more than one category. Specification on death certificates of drugs involved with deaths varies over time. In 2015, approximately 17% of drug overdose deaths did not include information on the specific type of drug(s) involved. Some of these deaths may have involved opioids or stimulants.

^b Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD-10). Drug overdose deaths are identified using underlying cause-of-death codes X40-X44 (unintentional), X60-X64 (suicide), X85 (homicide), and Y10-Y14 (undetermined).

^c Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2).

^d Drug overdose deaths, as defined, that involve methadone (T40.3).

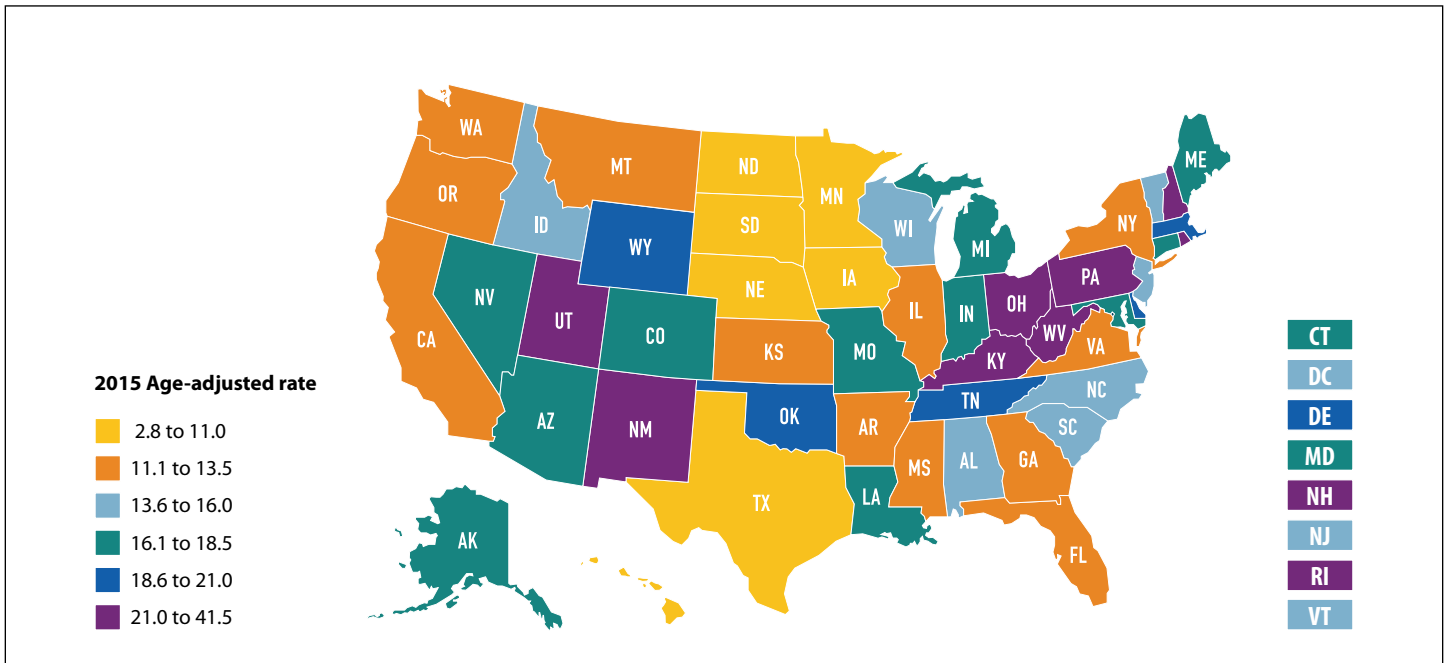
^e Drug overdose deaths, as defined, that involve synthetic opioids other than methadone (T40.4).

^f Drug overdose deaths, as defined, that involve heroin (T40.1).

^g Drug overdose deaths, as defined, that involve cocaine (T40.5).

^h Drug overdose deaths, as defined, that involve psychostimulants with abuse potential (T43.6).

FIGURE 2D

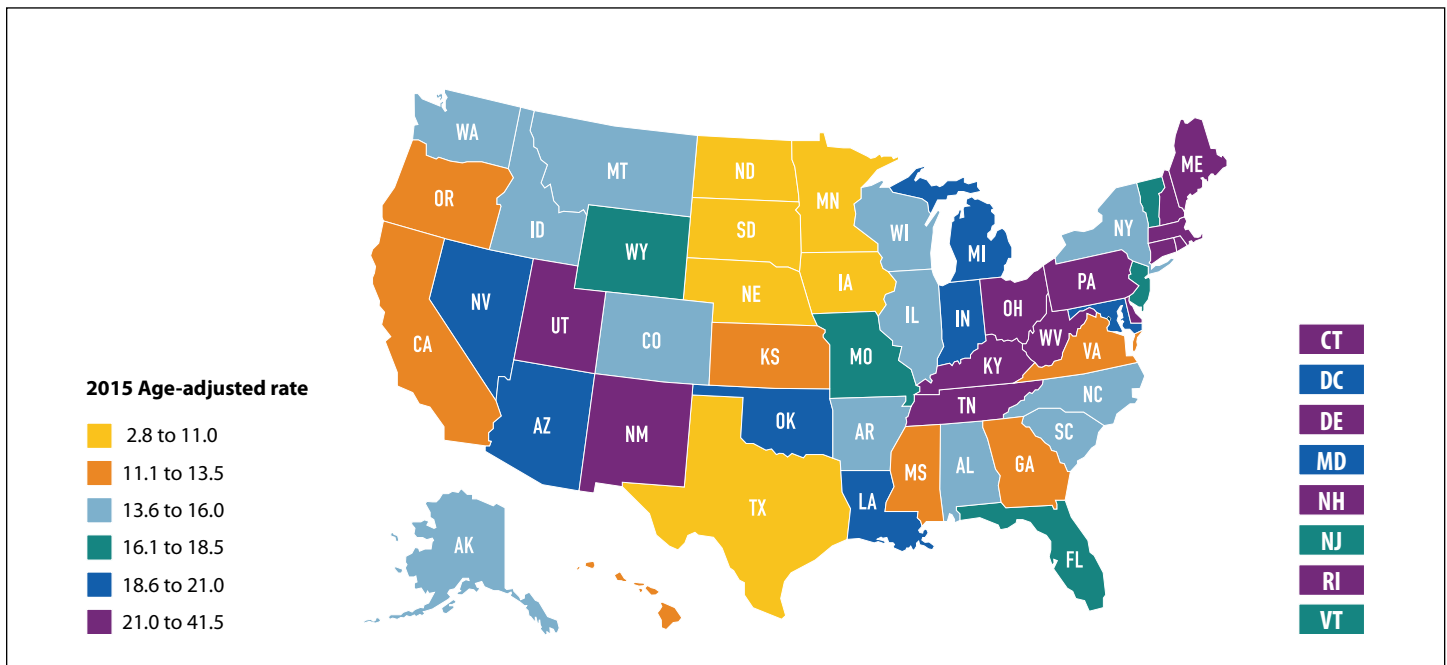
Age-adjusted rates^a of drug overdose deaths,^b by state — United States, 2014

Source: National Vital Statistics System, Mortality File, CDC WONDER.

^a Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. Rates are suppressed when based on <20 deaths.

^b Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD-10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined). On death certificates, the specificity of drugs involved with deaths varies over time. In 2014, approximately 19% of drug overdose deaths did not include information on the specific type of drug(s) involved.

FIGURE 2E

Age-adjusted rates^a of drug overdose deaths,^b by state — United States, 2015

Source: National Vital Statistics System, Mortality File, CDC WONDER.

^a Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. Rates are suppressed when based on <20 deaths.

^b Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD-10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined). On death certificates, the specificity of drugs involved with deaths varies over time. In 2015, approximately 17% of drug overdose deaths did not include information on the specific type of drug(s) involved.

APPENDIX



**Centers for Disease
Control and Prevention**
National Center for Injury
Prevention and Control

SUPPLEMENTAL
TABLE 1

Opioid prescribing, United States, 2006-2016

Opioid Prescribing	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	% Change from 2006 to 2016
Prescribing rate^a												
All opioids	72.4	75.9	78.2	79.5	81.2	80.9	81.3	78.1	75.6	70.6	66.5	-8.1
High-dosage ^b	11.5	11.7	11.8	11.5	11.4	8.8	8.3	7.6	7.1	6.7	6.1	-46.8
Days of supply per Rx												
≥ 30 days	17.6	20.1	22.1	23.9	25.9	27.1	28.0	28.3	28.4	28.2	27.3	55.1
< 30 days	54.7	55.8	56.1	55.6	55.3	53.8	53.2	49.8	47.2	42.5	39.2	-28.4
Dosage (MME)												
Average daily MME per Rx	59.7	59.1	58.7	58.1	58.0	53.9	51.8	50.2	48.9	48.1	47.1	-21.0
Average MME per Rx	828.2	861.9	894.1	922.6	963.8	946.7	911.5	901.7	895.9	907.5	599.3	-27.6
MME per Capita	599.3	653.9	699.4	733.0	782.3	765.9	740.6	704.1	677.0	640.4	599.3	0.0
Average days supply per Rx	13.3	13.9	14.5	15.0	15.5	16.0	16.4	16.9	17.2	17.7	18.1	35.7

Source: QuintilesIMS Transactional Data Warehouse.

Abbreviation: MME, morphine milligram equivalents; Rx, prescription

^a Rate per 100 persons adjusted to the U.S. census population.

^b High-dose prescriptions were defined as opioid prescriptions resulting in a daily dosage of ≥ 90 MME.

SUPPLEMENTAL
TABLE 2AEstimated number^{ab} and rate per 100,000 population of drug poisoning-related hospitalizations by selected substances — United States, 2014

Socio-demographic Characteristic	All drug poisonings ^c			All Opioid poisonings ^d			Heroin poisonings ^e			Methadone poisonings ^f			Poisoning by other opioids ^g			Cocaine poisonings ^h			Methamphetamine poisonings ⁱ		
	Number	Rate ^j	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE
All Visits	259,665	81.4	1.01	53,000	16.6	0.28	11,475	3.6	0.12	4,580	1.4	0.06	37,125	11.6	0.21	13,265	4.2	0.22	8,290	2.6	0.09
Sex																					
Male	114,590	73.0	1.07	25,880	16.5	0.34	8,080	5.1	0.18	2,460	1.6	0.08	15,445	9.8	0.22	8,990	5.7	0.32	5,405	3.4	0.14
Female	145,075	89.6	1.12	27,120	16.7	0.32	3,395	2.1	0.1	2,120	1.3	0.07	21,680	13.4	0.28	4,275	2.6	0.15	2,885	1.8	0.09
Age groups (years)																					
0-14	7,950	13.0	0.75	560	0.9	0.11	^k	^k	^k	105	0.2	0.04	435	0.7	0.09	140	0.2	0.05	355	0.6	0.08
15-19	15,645	74.2	2.17	935	4.4	0.35	350	1.7	0.2	65	0.3	0.09	520	2.5	0.26	140	0.7	0.13	470	2.2	0.24
20-24	19,260	84.0	1.74	3,600	15.7	0.63	2,205	9.6	0.49	180	0.8	0.13	1,230	5.4	0.35	445	1.9	0.2	1,030	4.5	0.34
25-34	42,725	98.1	1.74	8,755	20.1	0.59	4,260	9.8	0.41	750	1.7	0.14	3,790	8.7	0.35	1,850	4.2	0.25	2,700	6.2	0.31
35-44	39,420	97.3	1.75	6,970	17.2	0.54	1,730	4.3	0.26	740	1.8	0.16	4,510	11.1	0.4	2,350	5.8	0.4	1,700	4.2	0.25
45-54	52,360	120.5	2.03	10,860	25.0	0.68	1,695	3.9	0.28	1,095	2.5	0.19	8,110	18.7	0.55	4,685	10.8	0.7	1,260	2.9	0.21
55-64	42,085	105.0	1.81	11,585	28.9	0.72	985	2.5	0.2	1,155	2.9	0.2	9,495	23.7	0.65	2,885	7.2	0.57	570	1.4	0.15
≥65	40,220	87.1	1.38	9,735	21.1	0.58	230	0.5	0.08	490	1.1	0.11	9,035	19.6	0.55	770	1.7	0.15	205	0.4	0.07
U.S. Census region of residence																					
Northeast	47,920	85.3	2.73	10,690	19.0	0.78	3,510	6.2	0.36	990	1.8	0.17	6,240	11.1	0.46	4,410	7.9	0.91	575	1.0	0.11
Midwest	57,800	85.3	2.26	11,250	16.6	0.62	3,345	4.9	0.33	865	1.3	0.12	7,070	10.4	0.4	2,340	3.5	0.32	1,300	1.9	0.16
South	101,450	84.7	1.66	19,610	16.4	0.43	2,900	2.4	0.15	1,575	1.3	0.08	15,170	12.7	0.37	5,325	4.4	0.32	2,925	2.4	0.14
West	52,495	69.8	1.75	11,450	15.2	0.55	1,720	2.3	0.16	1,150	1.5	0.11	8,645	11.5	0.44	1,190	1.6	0.18	3,490	4.6	0.27

^a Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS), 2014, Agency for Healthcare Research and Quality (AHRQ).

^b In-hospital deaths and patients who transferred from another hospital were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

^c includes ICD-9-CM principal diagnosis code of 960-979 (Poisoning by Drugs, Medicinal, and Biological Substances) or first listed cause of injury E850-E858 (Accidental Poisoning by Drugs, Medicinal Substances, and Biologicals).

^d includes ICD-9-CM principal diagnosis code of 965.00, 965.01, 965.02, 965.09 or first listed cause of injury E850.0, E850.1, E850.2.

^e includes ICD-9-CM principal diagnosis code of 965.01 or first listed cause of injury E850.0.

^f includes ICD-9-CM principal diagnosis code of 965.02 or first listed cause of injury E850.1.

^g includes ICD-9-CM principal diagnosis code of 965.09, 965.00 or first listed cause of injury E850.2.

^h includes ICD-9-CM principal diagnosis code of 970.81 or first listed cause of injury E854.3 or E855.2.

ⁱ includes ICD-9-CM principal diagnosis code of 969.72 or first listed cause of injury E854.2.

^j Rates calculated per 100,000 population using the vintage year population of the data.

^k The relative standard error was >30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

SUPPLEMENTAL
TABLE 2AEstimated number^{ab} and rate per 100,000 population of drug poisoning-related hospitalizations by selected substances — United States, 2014

CONTINUED

Socio-demographic Characteristic	All drug poisonings ^c			All Opioid poisonings ^d			Heroin poisonings ^e			Methadone poisonings ^f			Poisoning by other opioids ^g			Cocaine poisonings ^h			Methamphetamine poisonings ⁱ		
	Number	Rate ^j	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE
2013 Urbanization																					
Large Central Metropolitan	78,000	79.6	2.79	15,515	15.8	0.66	3,950	4.0	0.26	1,585	1.6	0.12	10,045	10.3	0.45	7,080	7.2	0.6	2,795	2.9	0.18
Large Fringe Metropolitan	58,605	74.1	2.64	12,740	16.1	0.67	3,510	4.4	0.26	910	1.2	0.1	8,350	10.6	0.46	2,290	2.9	0.24	1,490	1.9	0.15
Medium Metropolitan	57,540	86.6	4.13	12,070	18.2	0.96	2,340	3.5	0.28	1,025	1.5	0.15	8,760	13.2	0.72	2,050	3.1	0.25	1,750	2.6	0.24
Small Metropolitan	25,790	88.3	5.05	4,860	16.6	1.08	730	2.5	0.27	400	1.4	0.16	3,745	12.8	0.87	620	2.1	0.27	925	3.2	0.4
Micropolitan	23,375	85.8	2.94	4,595	16.9	0.81	525	1.9	0.22	390	1.4	0.18	3,690	13.5	0.68	575	2.1	0.23	720	2.6	0.26
Not Metropolitan or Micropolitan	14,085	74.3	3.22	2,760	14.6	0.85	250	1.3	0.19	205	1.1	0.18	2,310	12.2	0.77	255	1.3	0.23	460	2.4	0.27
Unknown	2,270			460			170			65			225			395			150		

^a Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS), 2014, Agency for Healthcare Research and Quality (AHRQ).

^b In-hospital deaths and patients who transferred from another hospital were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

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^j Rates calculated per 100,000 population using the vintage year population of the data.

^k The relative standard error was >30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

SUPPLEMENTAL
TABLE 2BEstimated number^{ab} and rate per 100,000 population of drug poisoning related emergency department visits by selected substances
— United States, 2014

Socio-demographic Characteristic	All drug poisonings ^c			All Opioid poisonings ^d			Heroin poisonings ^e			Methadone poisonings ^f			Poisoning by other opioids ^g			Cocaine poisonings ^h			Methamphetamine poisonings ⁱ			
	Number	Rate ^j	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	
All Visits	418,313	131.2	4.17	92,262	28.9	1.82	53,930	16.9	1.5	2,921	0.9	0.07	35,690	11.2	0.41	6,424	2.0	0.18	11,012	3.5	0.14	
Sex																						
Male	199,999	127.4	4.74	57,655	36.7	2.58	38,035	24.2	2.17	1,554	1.0	0.09	18,242	11.6	0.49	4,462	2.8	0.29	6,752	4.3	0.22	
Female	218,313	134.8	3.86	34,607	21.4	1.14	15,894	9.8	0.86	1,367	0.8	0.07	17,448	10.8	0.38	1,962	1.2	0.09	4,260	2.6	0.11	
Age groups (years)																						
0-14	70,984	116.2	4.12	2,263	3.7	0.23	k	k	k	95	0.2	0.03	2,126	3.5	0.22	472	0.8	0.09	2,244	3.7	0.22	
15-19	46,755	221.8	7.19	4,170	19.8	1.16	1,796	8.5	0.79	64	0.3	0.08	2,321	11.0	0.63	226	1.1	0.17	1,318	6.3	0.45	
20-24	48,443	211.3	8.91	16,294	71.1	4.96	12,276	53.5	4.35	231	1.0	0.16	3,848	16.8	0.89	589	2.6	0.23	1,873	8.2	0.58	
25-34	80,785	185.5	9.12	30,478	70.0	5.72	22,411	51.5	4.99	675	1.6	0.16	7,503	17.2	0.9	1,662	3.8	0.39	3,051	7.0	0.43	
35-44	53,233	131.3	5.42	14,410	35.6	2.68	8,703	21.5	2.15	558	1.4	0.16	5,177	12.8	0.68	1,369	3.4	0.38	1,376	3.4	0.27	
45-54	50,116	115.3	4.44	12,328	28.4	1.91	5,869	13.5	1.45	575	1.3	0.15	5,929	13.6	0.61	1,250	2.9	0.41	734	1.7	0.15	
55-64	34,075	85.0	2.73	8,061	20.1	1.01	2,458	6.1	0.62	488	1.2	0.16	5,132	12.8	0.56	703	1.8	0.23	321	0.8	0.1	
≥65	33,922	73.4	2	4,258	9.2	0.42	375	0.8	0.14	236	0.5	0.07	3,655	7.9	0.37	152	0.3	0.06	95	0.2	0.05	
U.S. Census region of residence																						
Northeast	83,450	148.6	14.49	27,462	48.9	7.96	20,570	36.6	6.8	585	1.0	0.19	6,356	11.3	1.28	1,105	2.0	0.24	1,125	2.0	0.17	
Midwest	100,900	148.9	8.44	24,944	36.8	4.16	16,162	23.9	3.4	433	0.6	0.1	8,437	12.5	0.9	1,127	1.7	0.21	2,377	3.5	0.24	
South	137,841	115.1	6.12	25,100	21.0	1.84	11,802	9.9	1.36	975	0.8	0.11	12,393	10.3	0.61	3,128	2.6	0.41	3,694	3.1	0.2	
West	96,122	127.9	6.5	14,756	19.6	1.33	5,396	7.2	0.7	929	1.2	0.15	8,504	11.3	0.67	1,063	1.4	0.27	3,816	5.1	0.44	

^a Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS), 2014, Agency for Healthcare Research and Quality (AHRQ).

^b In-hospital deaths and patients who transferred from another hospital were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

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^k The relative standard error was >30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

SUPPLEMENTAL
TABLE 2BEstimated number^{ab} and rate per 100,000 population of drug poisoning related emergency department visits by selected substances
— United States, 2014

CONTINUED

Socio-demographic Characteristic	All drug poisonings ^c			All Opioid poisonings ^d			Heroin poisonings ^e			Methadone poisonings ^f			Poisoning by other opioids ^g			Cocaine poisoning ^h			Methamphetamine poisoning ⁱ			
	Number	Rate ^j	SE	Number	Rate ^j	SE	Number	Rate ^j	SE	Number	Rate ^j	SE	Number	Rate ^j	SE	Number	Rate ^j	SE	Number	Rate ^j	SE	
2013 Urbanization																						
Large Central Metropolitan	104,834	107.0	7.32	22,862	23.3	2.36	13,122	13.4	1.72	1,170	1.2	0.16	8,672	8.9	0.73	2,619	2.7	0.41	3,155	3.2	0.31	
Large Fringe Metropolitan	89,713	113.5	9.87	27,093	34.3	4.98	19,012	24.0	4.27	485	0.6	0.08	7,658	9.7	0.85	1,196	1.5	0.19	1,697	2.1	0.2	
Medium Metropolitan	111,082	167.1	11.78	23,438	35.3	3.78	13,468	20.3	2.9	625	0.9	0.11	9,425	14.2	1.08	1,514	2.3	0.25	2,919	4.4	0.33	
Small Metropolitan	40,317	138.0	14.37	7,143	24.5	4.15	3,330	11.4	2.97	222	0.8	0.13	3,600	12.3	1.48	430	1.5	0.3	1,199	4.1	0.48	
Micropolitan	41,919	153.8	6.71	6,776	24.9	2.09	3,084	11.3	1.65	178	0.7	0.13	3,529	13.0	0.76	316	1.2	0.19	1,069	3.9	0.31	
Not Metropolitan or Micropolitan	26,890	141.9	6.24	3,720	19.6	1.36	975	5.1	0.82	207	1.1	0.18	2,537	13.4	0.87	208	1.1	0.18	804	4.2	0.39	
Unknown	3,557			1,230			938			k			269			k			168			

^a Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS), 2014, Agency for Healthcare Research and Quality (AHRQ).

^b In-hospital deaths and patients who transferred from another hospital were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

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^f includes ICD-9-CM principal diagnosis code of 965.02 or first listed cause of injury E850.1.

^g includes ICD-9-CM principal diagnosis code of 965.09, 965.00 or first listed cause of injury E850.2.

^h includes ICD-9-CM principal diagnosis code of 970.81 or first listed cause of injury E854.3 or E855.2.

ⁱ includes ICD-9-CM principal diagnosis code of 969.72 or first listed cause of injury E854.2.

^j Rates calculated per 100,000 population using the vintage year population of the data.

^k The relative standard error was >30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

SUPPLEMENTAL DATA
SUPPORTING MORTALITY
FIGURE 2A

Age-adjusted rates^a of drug overdose deaths^b and drug overdose deaths involving any opioid^c, for all intents and for unintentional intent, by year — United States, 1999–2015

Year	Drug overdose deaths (of all intents)		Unintentional drug overdose deaths		Drug overdose deaths involving any opioid (of all intents)		Unintentional drug overdose deaths involving any opioid	
	Rate	SE	Rate	SE	Rate	SE	Rate	SE
1999	6.1	0.047	4.0	0.038	2.9	0.032	2.1	0.028
2000	6.2	0.047	4.1	0.038	3.0	0.033	2.2	0.028
2001	6.8	0.049	4.6	0.040	3.3	0.034	2.4	0.029
2002	8.2	0.053	5.7	0.045	4.1	0.038	3.1	0.033
2003	8.9	0.055	6.3	0.047	4.5	0.039	3.4	0.034
2004	9.4	0.057	6.8	0.048	4.7	0.040	3.6	0.035
2005	10.1	0.059	7.6	0.051	5.1	0.042	4.0	0.037
2006	11.5	0.062	8.8	0.055	5.9	0.045	4.8	0.04
2007	11.9	0.063	9.1	0.055	6.1	0.045	5.0	0.041
2008	11.9	0.063	9.2	0.055	6.4	0.046	5.3	0.042
2009	11.9	0.063	9.4	0.056	6.6	0.047	5.5	0.043
2010	12.3	0.064	9.7	0.057	6.8	0.047	5.7	0.044
2011	13.2	0.066	10.6	0.059	7.3	0.049	6.3	0.045
2012	13.1	0.065	10.6	0.059	7.4	0.049	6.4	0.046
2013	13.8	0.067	11.3	0.061	7.9	0.051	6.9	0.048
2014	14.7	0.069	12.1	0.063	9.0	0.054	7.9	0.051
2015	16.3	0.072	13.8	0.067	10.4	0.058	9.3	0.055

Source: National Vital Statistics System, Mortality File, CDC WONDER.

^a Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year.

^b Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD-10). All drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined). Unintentional drug overdose deaths are identified using underlying cause-of-death codes X40–X44. Note that 5.7% of drug overdose deaths in 2015 had undetermined intent; this is a decrease of 14.7% of drug overdose deaths with undetermined intent in 1999. Some of these deaths may be unintentional drug overdose deaths.

^c Drug overdose deaths, as defined, that involve opium (T40.0), heroin (T40.1), natural and semi-synthetic opioids (T40.2), methadone (T40.3), other synthetic opioids excluding methadone (T40.4), and other and unspecified narcotics (T40.6).

SUPPLEMENTAL DATA
SUPPORTING MORTALITY
FIGURE 2B

Age-adjusted rates^a of drug overdose deaths^b, by drug or drug class and year,
United States, 1999–2015

Year	Natural and semi-synthetic opioids ^c		Methadone ^d		Synthetic opioids other than methadone ^e		Heroin ^f		Cocaine ^g		Psychostimulants with abuse potential ^h	
	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
1999	1.0	0.019	0.3	0.010	0.3	0.009	0.7	0.016	1.4	0.022	0.2	0.009
2000	1.0	0.019	0.4	0.011	0.3	0.010	0.7	0.015	1.3	0.021	0.2	0.009
2001	1.2	0.021	0.5	0.013	0.3	0.011	0.6	0.015	1.3	0.022	0.2	0.009
2002	1.5	0.023	0.8	0.017	0.4	0.012	0.7	0.016	1.6	0.023	0.3	0.011
2003	1.7	0.024	1.0	0.019	0.5	0.013	0.7	0.016	1.8	0.025	0.4	0.012
2004	1.8	0.025	1.3	0.021	0.6	0.014	0.6	0.015	1.9	0.025	0.4	0.012
2005	1.9	0.026	1.5	0.023	0.6	0.014	0.7	0.015	2.1	0.027	0.5	0.013
2006	2.3	0.028	1.8	0.025	0.9	0.017	0.7	0.016	2.5	0.029	0.5	0.013
2007	2.7	0.030	1.8	0.025	0.7	0.015	0.8	0.016	2.2	0.027	0.4	0.012
2008	3.0	0.031	1.6	0.023	0.8	0.016	1.0	0.018	1.7	0.024	0.4	0.012
2009	3.1	0.032	1.5	0.023	1.0	0.018	1.1	0.019	1.4	0.022	0.5	0.013
2010	3.5	0.034	1.5	0.022	1.0	0.018	1.0	0.018	1.3	0.021	0.6	0.014
2011	3.7	0.035	1.4	0.022	0.8	0.017	1.4	0.022	1.5	0.022	0.7	0.016
2012	3.5	0.034	1.2	0.020	0.8	0.017	1.9	0.025	1.4	0.022	0.8	0.017
2013	3.5	0.034	1.1	0.019	1.0	0.018	2.7	0.030	1.6	0.023	1.2	0.020
2014	3.8	0.035	1.1	0.019	1.8	0.024	3.4	0.034	1.7	0.024	1.4	0.021
2015	3.9	0.035	1.0	0.018	3.1	0.032	4.1	0.037	2.1	0.026	1.8	0.024

Source: National Vital Statistics System, Mortality File, CDC WONDER.

- ^a Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. Because deaths might involve more than one drug, some deaths are included in more than one category.
- ^b Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD–10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined).
- ^c Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2).
- ^d Drug overdose deaths, as defined, that involve methadone (T40.3).
- ^e Drug overdose deaths, as defined, that involve synthetic opioids other than methadone (T40.4).
- ^f Drug overdose deaths, as defined, that involve heroin (T40.1).
- ^g Drug overdose deaths, as defined, that involve cocaine (T40.5).
- ^h Drug overdose deaths, as defined, that involve psychostimulants with abuse potential (T43.6).

SUPPLEMENTAL DATA
SUPPORTING MORTALITY
FIGURE 2C

Age-adjusted rates^a of drug overdose deaths^b, by drug or drug class and age category,
United States, 2015

Age group (yrs)	Natural and semi-synthetic opioids ^c		Methadone ^d		Synthetic opioids other than methadone ^e		Heroin ^f		Cocaine ^g		Psychostimulants with abuse potential ^h	
	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
0–14	0.1	0.011	—*	—*	—*	—*	—*	—*	—*	—*	—*	—*
15–24	1.6	0.061	0.5	0.032	2.3	0.072	3.8	0.093	1.0	0.048	0.9	0.047
25–34	5.3	0.109	1.7	0.061	6.6	0.122	9.7	0.148	3.6	0.090	3.0	0.082
35–44	6.9	0.131	1.8	0.067	5.6	0.118	7.4	0.135	3.8	0.097	3.3	0.091
45–54	8.1	0.137	2.0	0.067	4.6	0.103	5.6	0.114	4.3	0.100	3.5	0.090
55–64	6.4	0.125	1.6	0.062	2.9	0.084	3.4	0.092	2.9	0.084	2.3	0.075
≥65	1.5	0.057	0.3	0.024	0.5	0.032	0.4	0.028	0.4	0.029	0.3	0.027

Source: National Vital Statistics System, Mortality File, CDC WONDER.

^a Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. Because deaths might involve more than one drug, some deaths are included in more than one category.

^b Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD–10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined).

^c Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2).

^d Drug overdose deaths, as defined, that involve methadone (T40.3).

^e Drug overdose deaths, as defined, that involve synthetic opioids other than methadone (T40.4).

^f Drug overdose deaths, as defined, that involve heroin (T40.1).

^g Drug overdose deaths, as defined, that involve cocaine (T40.5).

^h Drug overdose deaths, as defined, that involve psychostimulants with abuse potential (T43.6).

* Rates are suppressed when based on <20 deaths

SUPPLEMENTAL DATA
SUPPORTING MORTALITY
FIGURE 2D

Age-adjusted rates^a of drug overdose deaths^b, by state, 2015

State of residence	Age-adjusted rate	SE	State of residence	Age-adjusted rate	SE
Alabama	15.7	0.589	Montana	13.8	1.22
Alaska	16.0	1.482	Nebraska	6.9	0.633
Arizona	19.0	0.544	Nevada	20.4	0.833
Arkansas	13.8	0.713	New Hampshire	34.3	1.716
California	11.3	0.168	New Jersey	16.3	0.435
Colorado	15.4	0.53	New Mexico	25.3	1.16
Connecticut	22.1	0.803	New York	13.6	0.264
Delaware	22.0	1.595	North Carolina	15.8	0.405
District of Columbia	18.6	1.686	North Dakota	8.6	1.129
Florida	16.2	0.294	Ohio	29.9	0.532
Georgia	12.7	0.356	Oklahoma	19.0	0.721
Hawaii	11.3	0.898	Oregon	12.0	0.55
Idaho	14.2	0.98	Pennsylvania	26.3	0.473
Illinois	14.1	0.335	Rhode Island	28.2	1.648
Indiana	19.5	0.562	South Carolina	15.7	0.582
Iowa	10.3	0.599	South Dakota	8.4	1.064
Kansas	11.8	0.668	Tennessee	22.2	0.592
Kentucky	29.9	0.853	Texas	9.4	0.187
Louisiana	19.0	0.663	Utah	23.4	0.932
Maine	21.2	1.338	Vermont	16.7	1.731
Maryland	20.9	0.593	Virginia	12.4	0.389
Massachusetts	25.7	0.63	Washington	14.7	0.455
Michigan	20.4	0.47	West Virginia	41.5	1.582
Minnesota	10.6	0.452	Wisconsin	15.5	0.535
Mississippi	12.3	0.67	Wyoming	16.4	1.729
Missouri	17.9	0.56			

Source: National Vital Statistics System, Mortality File, CDC WONDER.

^a Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage 2015 population.

^b Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD-10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined).