

Changing Dynamics in the Opioid Crisis Since the COVID-19 Pandemic

Soaring rates of fatal fentanyl, methamphetamine, and cocaine overdoses have worsened and spread to previously insulated groups, including teenagers and the elderly

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Summary

This brief examines recent trends in the United States' opioid crisis and patterns in drug overdose death rates from 2019 to 2022, representing the onset of the COVID-19 pandemic and a concurrent wave of overdose deaths.

Companion Data

To view state-level data on drug overdose death rates from 2019 to 2022, visit [the accompanying appendix](#).

INTRODUCTION

More than a decade after the U.S. Centers for Disease Control and Prevention (CDC) declared a national opioid “epidemic,” the crisis has become a grim fact of life in the United States.¹ Since the year 2000, more than 1.1 million people have died of drug overdoses, with more than 100,000 fatal overdoses in 2022, the most recent year of complete data.

Many people are aware of the rise of fentanyl in recent years and how that substance in particular fueled a surge in overdose deaths coinciding with the COVID-19 pandemic.² The news media have chronicled macabre milestones, such as when the U.S. first crossed the threshold of 100,000 overdose deaths in a single year, and the emergence of new and growing public health threats, such as increasing rates of fatal overdoses involving cocaine and methamphetamine (see Fatal Drug Overdose Categories section for more details). And millions of Americans have experienced the tragedy of the crisis all too personally, such as the one in three U.S. adults who know someone who has died of an overdose.³

This issue brief examines data on recent years of the opioid crisis — from 2011 (when the CDC first rang alarms over a growing overdose epidemic involving prescription opioids) through 2022. Using vital statistics data on fatal drug overdoses, we document both the changes in the substances most commonly associated with drug overdose deaths and the evolving demographics of people whose lives have been lost.

Fatal Drug Overdose Categories

Each day, hundreds of people in the U.S. die of drug overdoses, called “drug poisoning” deaths in vital statistics terminology. These deaths are caused by a wide range of substances, including prescription and over-the-counter medications, as well as illicit drugs. Our analysis focuses on the four categories of drugs that account for an overwhelming majority of fatal overdoses in recent years:⁴

FENTANYL

Although fentanyl overdose deaths are classified within the broader category of “synthetic opioid involved deaths,” we refer to these data as “fentanyl overdose deaths” because evidence shows that fentanyl accounts for the vast majority of overdose deaths involving synthetic opioids.

PRESCRIPTION OPIOIDS

“Prescription opioids” is a common, short-hand term used to describe natural and synthetic opioids that are ultimately derived or synthesized from products of the opium poppy, including the common prescription painkillers oxycodone and hydrocodone, as well as others.⁵

METHAMPHETAMINE

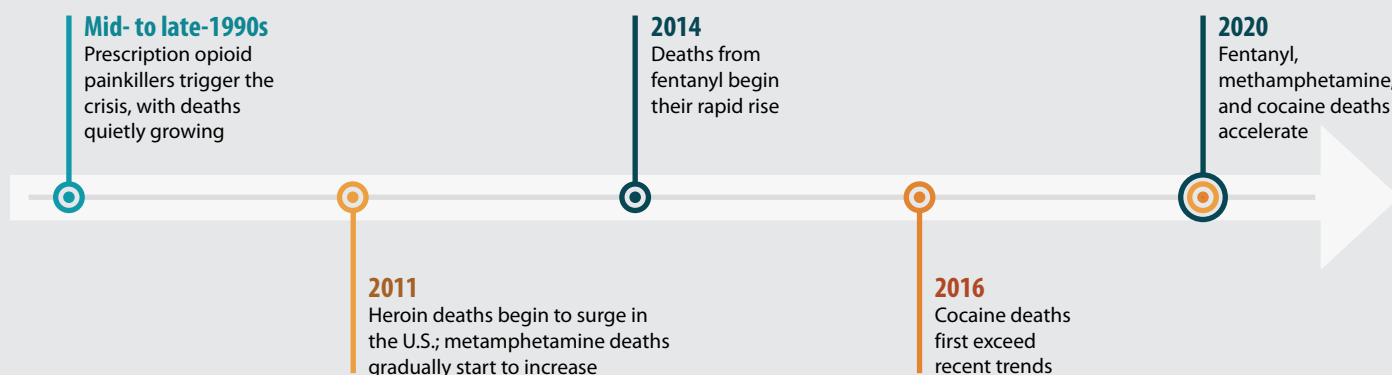
Similar to the situation described with fentanyl, methamphetamine overdose deaths are combined into a broad category of drugs called “psychostimulants with abuse potential,” which includes deaths from drugs as varied as caffeine and MDMA (i.e., ecstasy). Despite other drugs being included in this broader category, we refer to these data as “methamphetamine overdose deaths” because evidence shows that methamphetamine accounts for most of the deaths involving substances in this category.

COCAINE

More straightforward than the other categories, these data refer to deaths that involve cocaine, regardless of its form (e.g., powder vs. “crack” cocaine). Cocaine stands alone in its own category in vital statistics data.

A note on heroin: This report does not present data on heroin overdose deaths. While heroin is chemically a semi-synthetic opioid, similar to oxycodone and hydrocodone, it has no recognized medical uses in the U.S. and is entirely prohibited under federal law. Earlier in the opioid crisis, heroin played an integral role and contributed to many overdose deaths; however, heroin has since been largely supplanted by fentanyl in the illicit U.S. drug trade, and heroin overdose deaths have dropped dramatically. In recent years, heroin overdose deaths have only accounted for a small fraction of those attributable to fentanyl, methamphetamine, and cocaine — the latest drivers of the U.S. drug overdose crisis.

Figure 1. Timeline of the Evolving Opioid Crisis



History of the opioid crisis

The opioid crisis is widely considered to have its roots in the mid- to late-1990s, when a confluence of factors — including the beginning of the “Pain as the 5th Vital Sign” campaign and the U.S. Food and Drug Administration’s approval of Purdue Pharma’s blockbuster opioid painkiller OxyContin — led the U.S. health care system to greatly increase prescribing of opioid painkillers.⁶ For more than a decade, the steadily increasing rate of overdose deaths involving prescription opioids continued with little notice. But that changed around 2011, when the CDC declared deaths from prescription painkillers an “epidemic.”

In the years that followed, the U.S. health care and public health systems took steps to rein-in prescribing of opioid painkillers. The CDC developed guidelines aimed at reducing risky prescribing patterns, and many states implemented legal restrictions in addition to the voluntary, well-meaning attempts made by many health care providers to be more cautious in prescribing opioid painkillers. The leveling-off of prescription opioid overdose deaths after 2011 suggest some degree of success, though it was limited, and rates never declined in any large or durable way.

Data on drug overdose deaths show that around that same time that prescription opioid deaths peaked in 2011, the opioid crisis made a distinct shift. Overdose death rates began to climb first from heroin, an illegal opioid that has been trafficked for decades by criminal enterprises, and then from fentanyl and similar synthetic opioids that criminal enterprises also began to traffic.^{7,8,9} Eventually, death rates from heroin began to recede, while those from fentanyl continued to surge.

In hindsight, basic principles of economics explain each of these developments. When many people who had become addicted during the rise of prescription opioids suddenly found themselves cut off from a substance on which they had become chemically dependent, some of them sought out a substitute.¹⁰ At first, that substitute was often heroin, which is chemically closely related to prescription opioids and thus could satiate cravings and stave off withdrawal. But, as drug traffickers discovered a new and growing market for illicitly trafficked opioids, they also sought new ways to exploit that market. They responded by introducing fentanyl, with devastatingly deadly results.

Fentanyl has proved useful to drug traffickers for multiple reasons. One critical factor is the relative ease of producing large quantities of fentanyl. While fentanyl production requires precursor chemicals, it does not require the huge fields of opium poppies needed to produce heroin. Another factor that has drawn traffickers to fentanyl is its potency, which can be 50 times stronger than heroin, meaning that a relatively tiny quantity of fentanyl could be smuggled more easily and cheaply compared to its equivalent market value in heroin. In short, many people switched to illicitly trafficked opioids when prescription opioids became too difficult to obtain through the health care system, then fentanyl elbowed its way in to become a favorite substance for drug traffickers because it offered them an economic advantage.

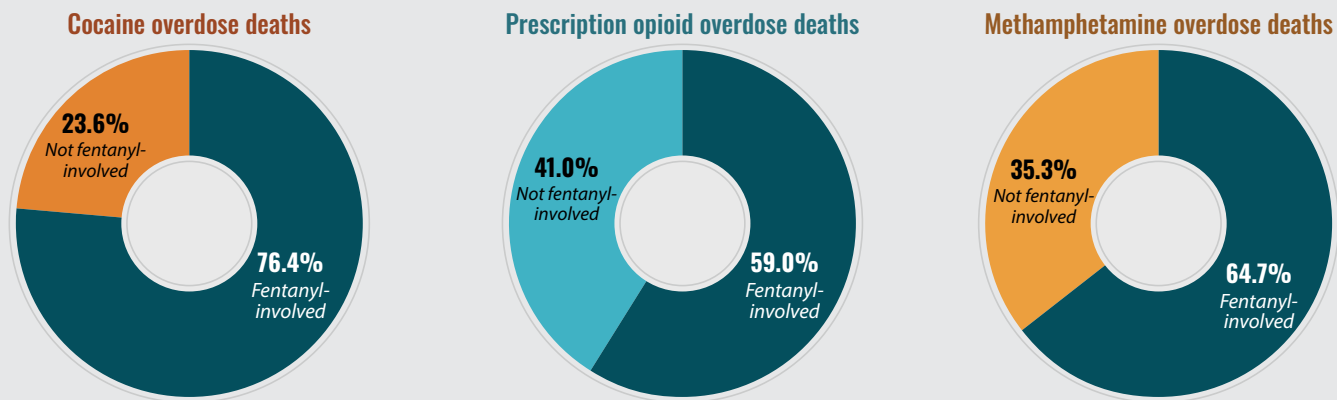
A surprising revival of past cocaine and methamphetamine crises

Mechanisms driving the more-recent increases in death rates from methamphetamine and cocaine are more puzzling than the evolution of the opioid crisis from prescription opioids to heroin and then to fentanyl, but history and data offer clues. Well before the opioid crisis captured the nation’s attention, the U.S. had experienced drug crises related to both cocaine in the 1980s and 1990s, and methamphetamine in the 1990s and 2000s. Those eventually waned in severity, but they may have left the U.S. primed for a resurgence, with changes in drug trafficking dynamics tossing a spark into dry tinder.

Law enforcement data on seizures of smuggled drugs suggest there was increased trafficking of cocaine and methamphetamine in the years marked by growing fentanyl overdose deaths.¹¹ Contemporary cocaine, derived from the coca plant, is relatively unchanged from that of earlier years. But the contemporary supply of synthetically produced methamphetamine is considered to be qualitatively different from that of the 1990s and 2000s. Methamphetamine from the 1990s and 2000s was mostly produced domestically on a smaller scale and using less-sophisticated methods, resulting in a less-pure and less-potent product. Today, methamphetamine is produced by international drug cartels using more-advanced, larger-scale production methods, resulting in methamphetamine that is usually purer and more potent.¹²

Data on the drugs most commonly involved in fatal overdoses indicate a close relationship between these substances. Our analysis of 2022 vital statistics data found that roughly three-quarters of cocaine overdose deaths also involved fentanyl or similar synthetic opioids (76.4%), and almost two-thirds of prescription opioid and methamphetamine overdose deaths also involved fentanyl or similar synthetic opioids (59.0% and 64.7%, respectively) (Figure 2). Not only has fentanyl become the dominant substance driving today’s crisis of drug overdose deaths, but it has also become the center of gravity around which other drugs orbit.

Figure 2. Overlap of fentanyl with cocaine, prescription opioid, and methamphetamine overdose deaths, 2022



Source: SHADAC analysis of National Vital Statistics System (NVSS) data.

Trends since 2011

In this issue brief, we focus on the opioid crisis since the CDC declared an epidemic in 2011, as that year served as a turning point. Up until then, rising drug overdose deaths had been driven by prescription opioids. But after that year, the opioid crisis underwent a tectonic shift to instead revolve around drugs illicitly trafficked through criminal enterprises.

In Figure 3, we present trends in overdose death rates from 2011 to 2022.

Prescription Opioids

Starting with prescription opioids, we see that, compared to the other drug types, overdose death rates involving these substances have changed little. After more than a decade of consistent growth, death rates from prescription opioids basically plateaued, varying a bit from year to year, but landing at 3.5 deaths per 100,000 people in 2022—a statistically significant decline from the rate of 3.7 deaths per 100,000 people in 2011, but a relatively small change compared to other drugs. Prescription opioids remain a public health threat, continuing to kill thousands of people from overdose deaths each year. But, it also is important to revisit the earlier point that most prescription opioid overdose deaths in 2022 also involved fentanyl. Prescription opioids are now both influenced and overshadowed by the fentanyl goliath.

Fentanyl

Overdose deaths from fentanyl began to climb around 2013, just two years after the CDC made its opioid epidemic declaration. At first there was little market in the illicit drug trade for fentanyl, which is a relative newcomer to international drug trafficking networks. Instead of being sold as fentanyl, it was often used as an additive to boost the potency of heroin or even sold inaccurately as heroin. Additionally, it was often, and continues to be, used as an ingredient in counterfeit opioid painkillers — fake OxyContin or similar pills that substitute cheaper, abundant fentanyl for the semi-synthetic opioids found in most prescription opioid painkillers.

But within a few years of its emergence as an adjuvant or substitute for illicit heroin, fentanyl was sufficiently well-known and demanded enough by customers that it no longer had to masquerade as other substances (although it still often does). The overdose data in Figure 3 track fentanyl's deadly, meteoric rise: Accounting for only 0.8 deaths per 100,000 people in 2011, fentanyl deaths grew nearly 27 times in a decade to 22.7 deaths per 100,000 people in 2022, an obvious as well as a statistically significant increase.

Methamphetamine

Methamphetamine has followed a similar path to fentanyl. In 2011, both drugs were relatively uncommon as causes of overdose deaths, each accounting for less than one death per 100,000 people. Overdose death rates from methamphetamine grew relatively slowly for several years after 2011 before skyrocketing around 2018, becoming the second most common cause of drug overdose death in the U.S. by 2020.

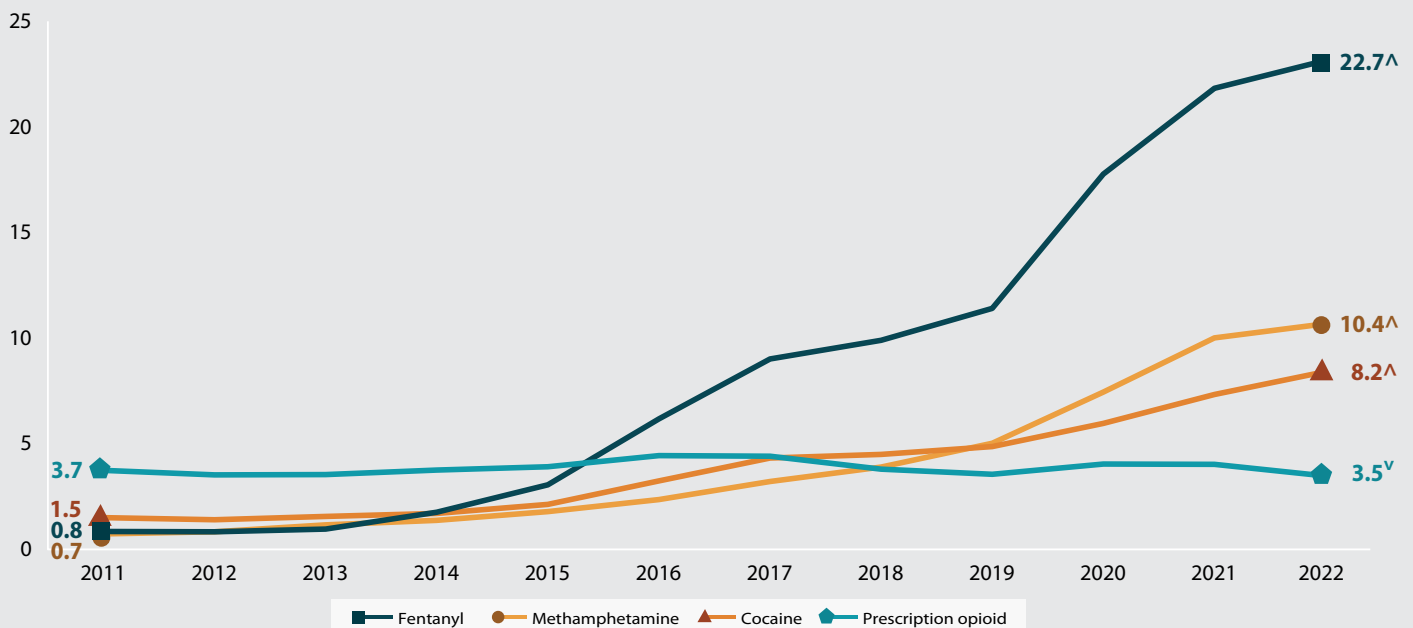
In 2022, overdose deaths from methamphetamine and other psychostimulants reached 10.4 deaths per 100,000 people — a statistically significant increase of more than 14 times its initial rate since 2011. In this case, it is worth mentioning that while most methamphetamine overdose deaths also involve fentanyl, the rate of methamphetamine deaths not involving fentanyl stood at 3.7 deaths per 100,000 people — several times the rate of methamphetamine deaths in 2011. While methamphetamine deaths are closely intertwined with fentanyl, methamphetamine stands as a public health threat in its own right, on par with the death rate from prescription opioids when the CDC first declared an epidemic.

Cocaine

Cocaine overdose death rates tell a somewhat different story. In 2011, cocaine deaths were roughly twice as common as deaths from both fentanyl and methamphetamine, representing a persistent public health threat going back to the 1990s and earlier. It wasn't until 2016, however, that cocaine overdose death rates began to exceed their relatively stable levels. Since then, they have increased more gradually compared to the death rates from methamphetamine or fentanyl, but have clearly grown. By 2022, cocaine overdose deaths reached 8.2 per 100,000 people, a statistically significant increase of more than five times since 2011.

But the relationship between cocaine and fentanyl is different than the relationship between methamphetamine and fentanyl. When excluding cocaine overdose deaths that also involve fentanyl, we find a death rate of cocaine-alone at 1.9 deaths per 100,000 people, little changed since the 2011 rate of 1.5 deaths per 100,000 people. Thus, the rise in cocaine overdose deaths appears to be driven primarily by the rise of fentanyl.

Figure 3. Fentanyl, Prescription Opioid, Methamphetamine, and Cocaine Overdose Death Rates, 2011-2022



Source: SHADAC analysis of National Vital Statistics System (NVSS) data.
[^] Rate significantly higher than 2011 rate at 95% level
^v Rate significantly lower than 2011 rate at 95% level

Opioid deaths since the COVID-19 pandemic

As with many aspects of American society, the overdose crisis worsened demonstrably during the COVID-19 pandemic. Between 2019 and 2022, the U.S. methamphetamine overdose death rate more than doubled from 5.0 to 10.4 deaths per 100,000 people; the fentanyl overdose death rate very nearly doubled, from 11.4 to 22.7 deaths per 100,000 people; the cocaine overdose death rate grew by almost 70%, from 4.9 to 8.2 deaths per 100,000 people. All of these were statistically significant changes.¹³

The prescription opioid overdose death rate was the only category that did not increase between 2019 and 2020. At 3.5 deaths per 100,000 people in 2022, the rate of fatal prescription opioid overdoses was not significantly different from 2019.

During the pandemic period of 2019 to 2022, not only did the total population rates increase for fentanyl, methamphetamine, and cocaine overdose deaths, but they also increased across nearly all demographic groups. And, strikingly, the crisis expanded to some groups that had previously been mostly insulated from growing rates of fatal overdoses, namely adolescents (age 13-17) and elderly adults (age 65 and older). Increasing rates of fatal overdoses for those groups are notable because they had been relatively rare at earlier stages of the opioid crisis.

Overdoses by age

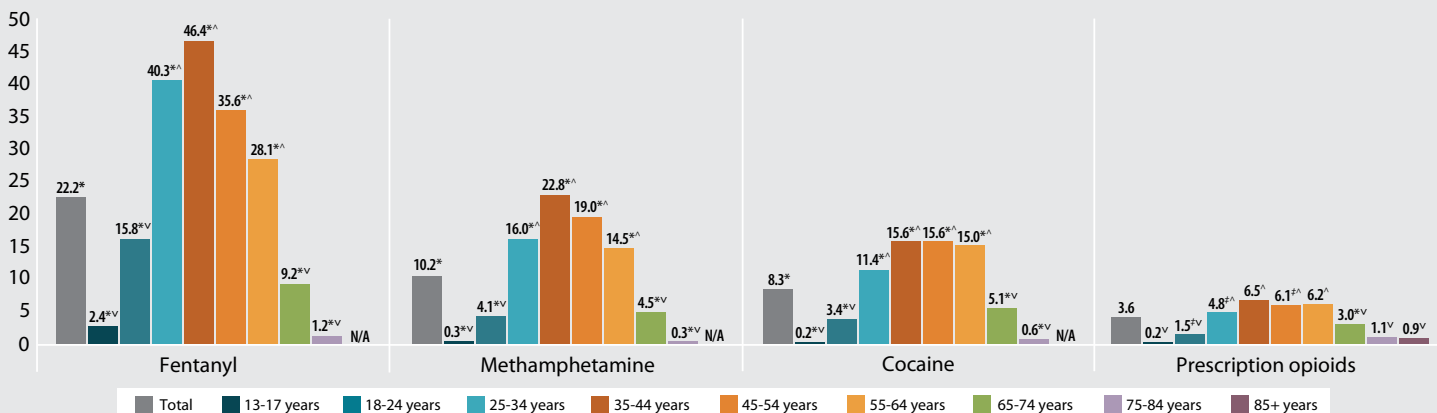
From 2019 to 2022, fentanyl overdose death rates increased significantly across all categories of non-elderly adults, as well as adolescents (age 13-17) and elderly adults age 65-74 and 75-84 (the overdose rate for elderly adults age 85 and older was suppressed due to a small number of deaths). Adolescents experienced the largest growth in fentanyl overdose death rates, increasing 293%, from 0.6 to 2.4 deaths per 100,000 (Figure 4). Elderly adults age 65-74 and 75-84 experienced the next-largest increases in fatal overdose death rates, at 177% and 152%, respectively. Adults age 35-44 had the highest fentanyl overdose death rate in 2022, at 46.4 deaths per 100,000.

Prescription opioid overdose deaths remained statistically unchanged for most age categories, but they increased significantly for elderly adults age 65-74 (up 16%) and declined significantly for young adults (age 18-25) and adults age 25-34 and 45-54. Young adults experienced the largest decline, at 21%. Adults age 35-44 had the highest prescription opioid overdose death rate in 2022, at 6.5 deaths per 100,000 people.

Methamphetamine overdose deaths increased significantly across all ages of non-elderly adults, as well as adolescents (age 13-17) and elderly adults age 65-74 and 75-84 (the overdose rate for elderly adults age 85 and older was suppressed due to a small number of deaths). Elderly adults age 65-74 experienced the largest growth in methamphetamine overdose death rates, at 142% (1.9 to 4.5 deaths per 100,000 people). At 22.8 deaths per 100,000 people, adults age 35-44 also had the highest methamphetamine death rate in 2022.

Cocaine overdose deaths also increased significantly across all ages of non-elderly adults, as well as adolescents (age 13-17) and elderly adults age 65-74 and 75-84 (the overdose rate for elderly adults age 85 and older was suppressed due to a small number of deaths). Elderly adults age 75-84 and 65-74, experienced the largest growth, at 139% and 135%, respectively. Those age 35-44 and 45-54 had the highest cocaine overdose death rate, at 15.6 deaths per 100,000 people in 2022.

Figure 4. Drug Overdose Death Rates by Age, 2022



Source: SHADAC analysis of National Vital Statistics System (NVSS) data.
 * Rate significantly higher than 2019 rate at 95% level.
 ^ Rate significantly lower than 2019 rate at 95% level.
 v Rate significantly higher than total rate at 95% level.
 ^ Rate significantly lower than total rate at 95% level.

Overdoses by race and ethnicity

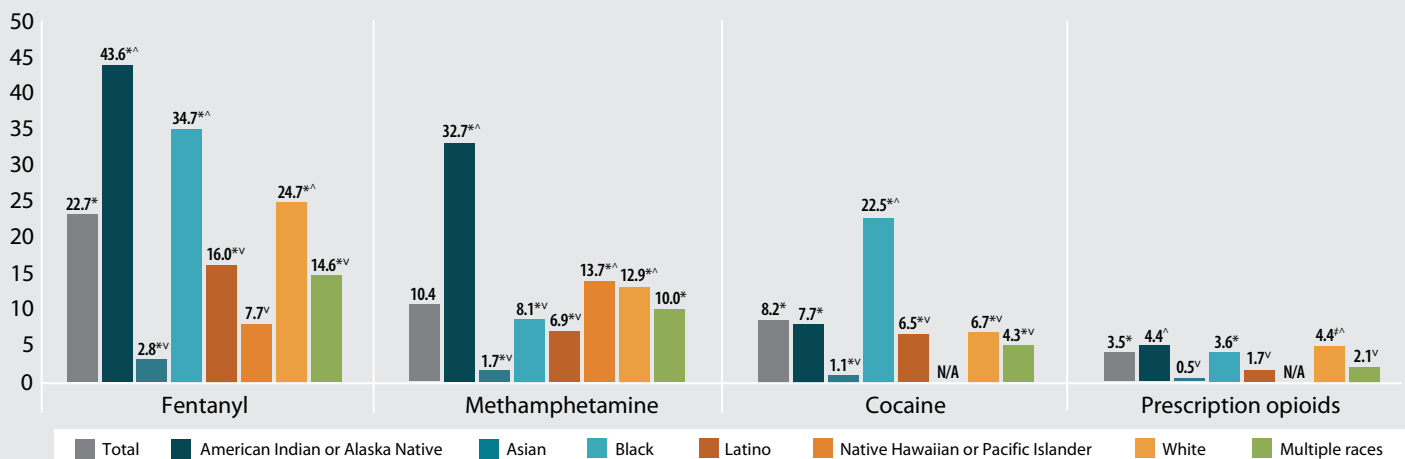
Between 2019 and 2022, fentanyl overdose death rates increased significantly across all racial and ethnic groups we were able to test.¹⁴ American Indian and Alaska Native people experienced the largest growth in fentanyl overdose death rates, at 306% (Figure 5). At 43.6 deaths per 100,000 people, American Indian and Alaska Native people also had the highest fentanyl overdose death rate in 2022.

Prescription opioid overdose deaths only increased significantly between 2019 and 2022 among Black people (up 23%) and only declined among White people (down 6%), whereas they were not significantly changed for others (data on Native Hawaiian or other Pacific Islander people were not available for testing due to suppression by the CDC). At 4.4 deaths per 100,000 people, American Indian and Alaska Native people also had the highest prescription opioid overdose death rate in 2022.

Methamphetamine overdose death rates increased significantly across all racial and ethnic groups from 2019 to 2022. Black people experienced the largest growth in methamphetamine overdose death rates, at 176% (2.9 to 8.1 deaths per 100,000 people). American Indian and Alaska Native people had the highest methamphetamine overdose death rate in 2022, at 32.7 deaths per 100,000 people.

Cocaine overdose deaths also increased significantly across all racial and ethnic groups we were able to test. Black people experienced the largest growth in cocaine overdose death rates, at 107%. At 22.5 deaths per 100,000 people, Black people had the highest cocaine overdose death rate in 2022.

Figure 5. Drug Overdose Death Rates by Race and Ethnicity, 2022



Source: SHADAC analysis of National Vital Statistics System (NVSS) data.
 * Rate significantly higher than 2019 rate at 95% level.
 † Rate significantly lower than 2019 rate at 95% level.
 ^ Rate significantly higher than total rate at 95% level.
 v Rate significantly lower than total rate at 95% level.

Overdoses by urbanization

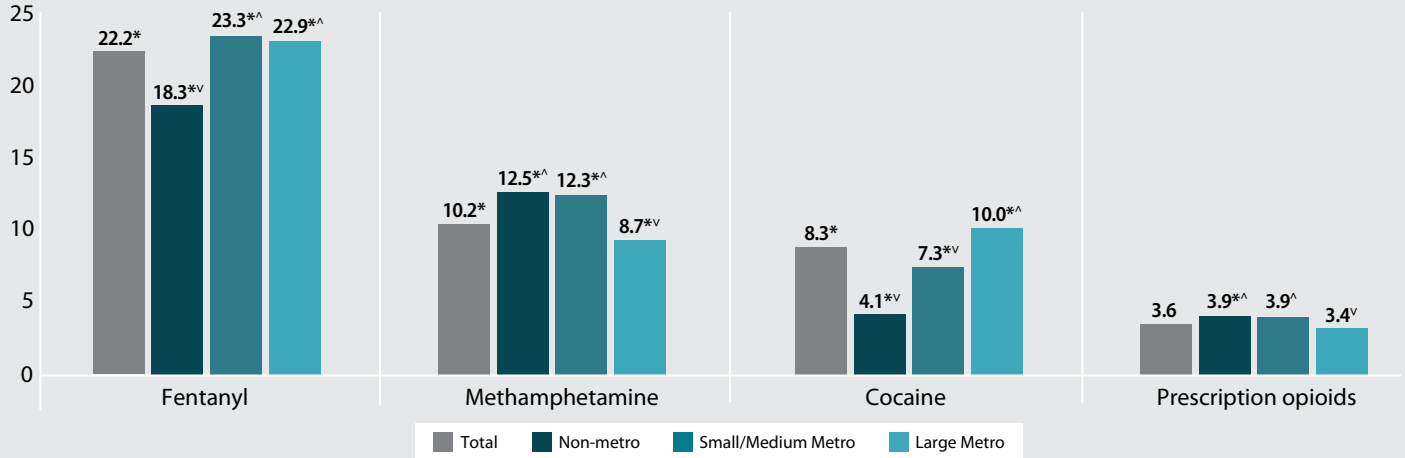
Overdose death rates increased significantly across all levels of urbanization for almost all substances we studied, with the sole exception of prescription opioids. Prescription opioid overdose death rates grew only for non-metro areas, up 10% (3.5 to 3.9 deaths per 100,000 people); non-metro areas and small and medium metro areas had the highest rate of prescription opioid overdose deaths in 2022, at 3.9 deaths per 100,000 people.

Fentanyl overdose death rates grew the most for non-metro areas, at 153% (7.2 to 18.3 deaths per 100,000 people), but small and medium metro areas had the highest fentanyl overdose death rate in 2022, at 23.3 deaths per 100,000 people (Figure 6).

Methamphetamine overdose death rates grew the most for small and medium metro areas, at 118% (5.7 to 12.3 deaths per 100,000 people), but non-metro areas had the highest rate of methamphetamine deaths in 2022, at 12.5 deaths per 100,000 people.

Cocaine overdose death rates increased most for non-metro areas, at 86% (2.2 to 4.1 deaths per 100,000 people), but large metro areas had the highest cocaine overdose death rate in 2022, at 10.0 deaths per 100,000 people.

Figure 6. Drug Overdose Death Rates by Urbanization, 2022



Source: SHADAC analysis of National Vital Statistics System (NVSS) data.
 * Rate significantly higher than 2019 rate at 95% level.
[^] Rate significantly higher than total rate at 95% level.
^v Rate significantly lower than total rate at 95% level.

Overdoses across the states

Fentanyl

During the first three years of the COVID-19 pandemic, from 2019 to 2022, 43 states and the District of Columbia experienced statistically significant increases in their fentanyl overdose death rates (Appendix A). Only four states did not experience significant changes (Maryland, New Hampshire, New Jersey, and South Dakota). No states saw significant declines.¹⁵

Across the states, fentanyl overdose death rates ranged from a low of 4.6 deaths per 100,000 people in South Dakota to a high of 67.0 deaths per 100,000 people in West Virginia — a difference of almost 15 times (Figure 7). Figure 8 illustrates whether states’ fentanyl overdose death rates are significantly higher, significantly lower, or not significantly different from the rate for the U.S. overall.

Figure 7. Highest and Lowest State Fentanyl Overdose Death Rates, 2022

Five highest rates:

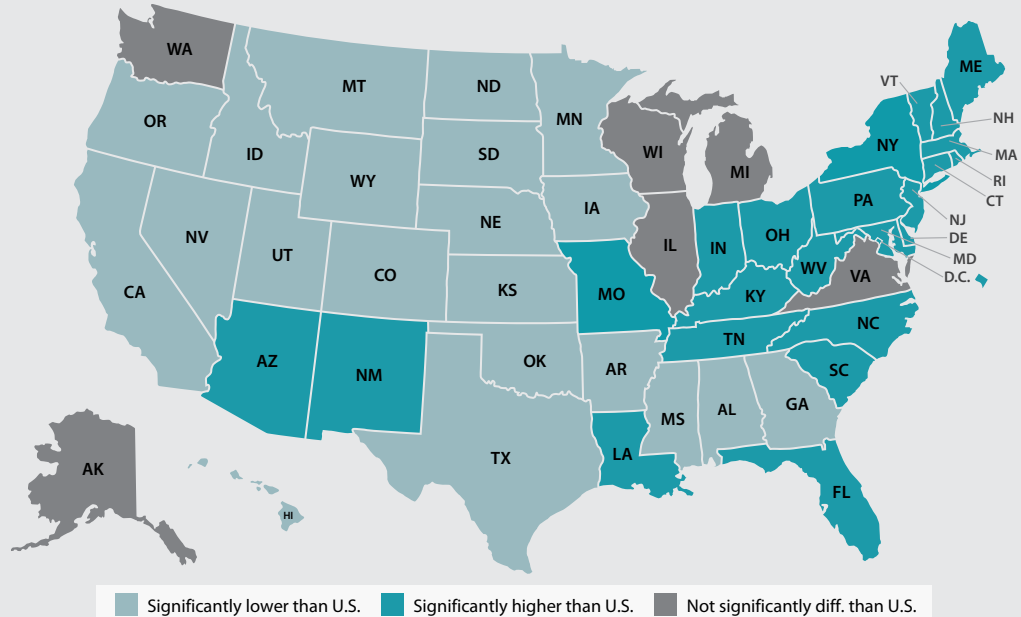
States	Death rate per 100,000 people
West Virginia	67.0
Delaware	47.1
District of Columbia	46.4
Maine	44.7
Tennessee	42.2

Five lowest rates:

States	Death rate per 100,000 people
South Dakota	4.6
Hawaii	5.4
Nebraska	5.5
Utah	6.7
Iowa	6.9

Source: SHADAC analysis of National Vital Statistics System (NVSS) data.

Figure 8. State vs U.S. Fentanyl Overdose Death Rates, 2022



Source: SHADAC analysis of National Vital Statistics System (NVSS) data.

Prescription opioids

From 2019 to 2022, 7 states experienced statistically significant increases in their prescription opioid overdose death rates, while 7 states experienced statistically significant declines. The remaining 36 states and the District of Columbia did not experience significant changes.

Across the states, prescription opioid death rates ranged from a low of 1.6 deaths per 100,000 people in Hawaii to a high of 8.7 deaths per 100,000 people in West Virginia — a difference of more than five times (Figure 9). Figure 10 illustrates whether states’ prescription opioid overdose death rates are significantly higher, significantly lower, or not significantly different from the rate for the U.S. overall.

Figure 9. Highest and Lowest State Prescription Opioid Overdose Death Rates, 2022

Five highest rates:

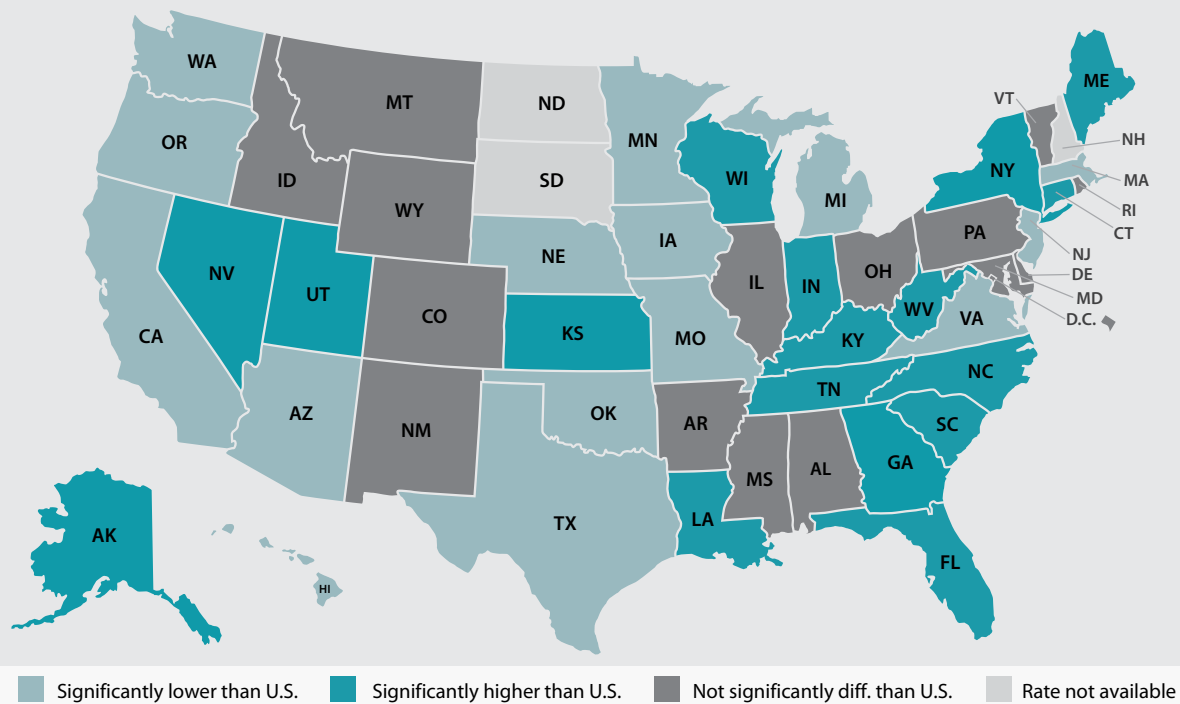
States	Death rate per 100,000 people
West Virginia	8.7
Kentucky	7.3
Tennessee, South Carolina	6.7
Alaska	6.5
Louisiana	6.2

Five lowest rates:

States	Death rate per 100,000 people
Hawaii	1.6
Iowa, Nebraska	1.7
California, Texas	2.2
Minnesota	2.4
Virginia	2.5

Source: SHADAC analysis of National Vital Statistics System (NVSS) data.

Figure 10. State vs U.S. Prescription Opioid Overdose Death Rates, 2022



Source: SHADAC analysis of National Vital Statistics System (NVSS) data.

Methamphetamine

From 2019 to 2022, 44 states experienced statistically significant increases in their methamphetamine overdose death rates. Only five states (Connecticut, Hawaii, Rhode Island, South Dakota, and Utah) did not experience significant changes. No states saw significant declines.

Across the states, methamphetamine death rates ranged from a low of 2.3 deaths per 100,000 people in Connecticut to a high of 44.3 deaths per 100,000 people in West Virginia — a difference of more than 19 times (Figure 11). Figure 12 illustrates whether states' methamphetamine overdose death rates are significantly higher, significantly lower, or not significantly different from the rate for the U.S. overall.

Figure 11: Highest and Lowest State Methamphetamine Overdose Death Rates, 2022

Five highest rates:

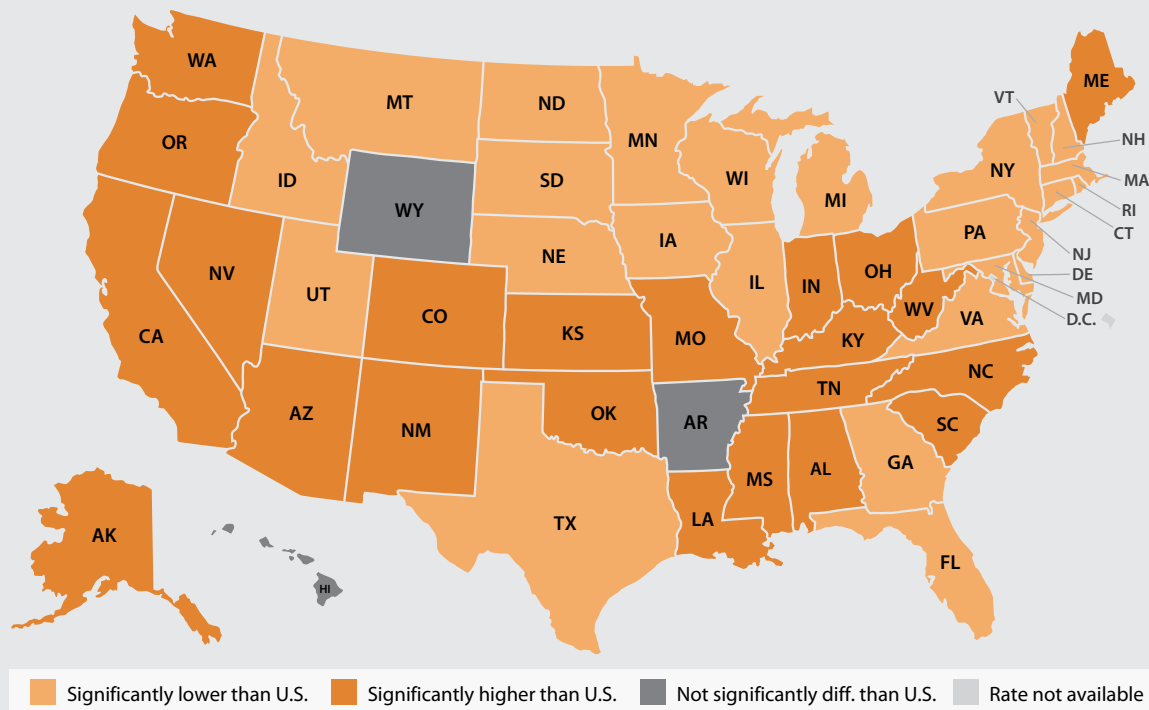
States	Death rate per 100,000 people
West Virginia	44.3
New Mexico	24.7
Kentucky	24.2
Tennessee	23.2
Alaska	19.6

Five lowest rates:

States	Death rate per 100,000 people
Connecticut	2.3
Maryland	2.4
Massachusetts	3.3
New York	3.5
Rhode Island	3.6

Source: SHADAC analysis of National Vital Statistics System (NVSS) data

Figure 12. State vs U.S. Methamphetamine Overdose Death Rates, 2022



Source: SHADAC analysis of National Vital Statistics System (NVSS) data.

Cocaine

From 2019 to 2022, 37 states and the District of Columbia experienced statistically significant increases in their cocaine overdose death rates. Four states (Delaware, New Hampshire, Utah, and West Virginia) saw no significant changes. No states saw significant declines.

Across the states, cocaine overdose death rates ranged from a low of 1.2 deaths per 100,000 people in Utah to a high of 32.0 deaths per 100,000 people in the District of Columbia—a difference of almost 27 times (Figure 13). Figure 14 illustrates whether states' cocaine overdose death rates are significantly higher, significantly lower, or not significantly different from the rate for the U.S. overall.

Figure 13. Highest and Lowest State Cocaine Overdose Death Rates, 2022

Five highest rates:

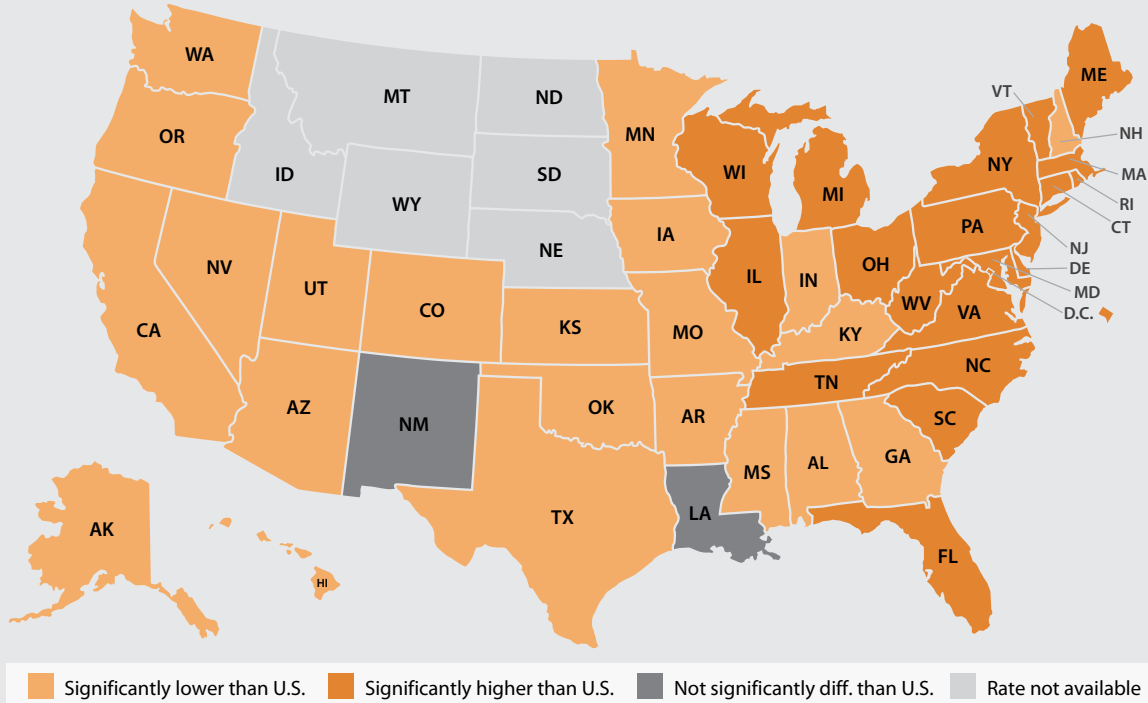
States	Death rate per 100,000 people
District of Columbia	32.0
Delaware	22.0
Rhode Island	18.2
Vermont	17.6
Massachusetts	17.4

Five lowest rates:

States	Death rate per 100,000 people
Utah	1.2
Iowa	1.5
Hawaii	2.1
Oklahoma	2.2
Arkansas	2.5

Source: SHADAC analysis of National Vital Statistics System (NVSS) data.

Figure 14. State vs U.S. Cocaine Overdose Death Rates, 2022



Source: SHADAC analysis of National Vital Statistics System (NVSS) data.

CONCLUSION AND DISCUSSION

Vital statistics data on the opioid crisis in the COVID-19 pandemic era present a tragic story of dramatic growth in drug overdose death rates. The data also hint at distinct ways in which this surge manifested.

The most obvious factor in rising rates of fatal drug overdoses is the U.S. fentanyl crisis' rapid acceleration. Between 2019 and 2022, U.S. fentanyl overdose death rates increased by 99%, from 11.4 to 22.7 deaths per 100,000 people. A large part of the overall increase in drug overdose death also was due to illicitly trafficked fentanyl's increasingly intertwined relationship with cocaine and methamphetamine. During that same time period, the rate of fatal cocaine overdoses that also involved fentanyl increased by 98% and the rate of fatal methamphetamine overdoses that also involved fentanyl increased 276%.

Another critical factor in the growth of fatal overdose rates during the pandemic was a pernicious expansion of the epidemic to segments of the U.S. population that had previously been relatively unaffected. Many states that had fentanyl overdose death rates in the single digits before the pandemic saw their crisis balloon in just a few years. For instance, Alaska's rate of fatal fentanyl overdoses increased 563%, Oklahoma's rate increased 713%, and Oregon's rate increased 777%. There were similar patterns of extreme growth for cocaine and methamphetamine overdose deaths at the state level. For instance, Minnesota's rate of fatal cocaine overdoses increased 249%, and North Carolina's rate of fatal methamphetamine overdoses increased 275%.

We found surprisingly large increases in fatal drug overdoses among particular demographic sub-populations, including some that have long been relatively insulated from broader trends. For instance, fentanyl overdose deaths increased 293% among adolescents (age 13-17), from 0.6 deaths per 100,000 people in 2019 to 2.4 deaths per 100,000 people in 2022. Elderly adults also experienced some of the largest increases in overdose deaths. Among adults age 65-74, the fatal fentanyl overdose rate increased 177%, the fatal cocaine overdose rate increased 135%, and the fatal methamphetamine overdose rate increased 142%.

We also found evidence of dramatic and growing disparities across racial and ethnic groups in rates of fatal overdoses, with the crisis increasingly harming American Indian and Alaska Native people and Black people during the pandemic era. While fentanyl overdose death rates increased across all the racial and ethnic groups we were able to measure, they increased the most among American Indian and Alaska Native people, up more than 300% in just three years.

Similarly, while methamphetamine overdose death rates increased across all racial and ethnic groups, they increased most among Black people, up almost 200%. Across racial and ethnic groups, American Indian and Alaska Native people also suffered the highest rates of fatal overdoses involving both fentanyl and methamphetamine, and Black people suffered the highest rates of fatal overdoses involving cocaine.

While provisional data released by the CDC provide a glimmer of hope that fatal drug overdoses may have plateaued, and perhaps even declined somewhat in 2023, we should temper our expectations and resist any impulse to ease back on interventions in anticipation of success.¹⁶ We have experienced similar interludes before in the opioid crisis: When total drug overdoses dipped in 2018 and it seemed for a moment that the worst might be over, we then watched in horror as overdose death rates rebounded and surged to previously unimaginable levels during the pandemic.¹⁷ And even with a slight decline, provisional data still show more than 100,000 deaths from drug overdoses in 2023 — hardly a number that should give us a sense of satisfaction.

The U.S. has much room to improve its response to the opioid crisis, including but not limited to direct efforts to prevent overdose deaths. The country also has woefully outdated and inadequate data infrastructure to help researchers, public health professionals, and policymakers understand the nuances of the current crisis. Data on national trends and patterns in drug overdose mortality are subject to long time lags, with delays of several months for provisional data and more than a year for final data.

The data also are often so imprecise that they provide us with only a hazy understanding of the situation. For instance, national vital statistics data lump deaths caused by fentanyl with almost every other form of synthetic opioid, potentially hampering our ability to identify whether new types of synthetic opioids could be emerging to edge fentanyl out of its dominance in the illicit opioid trade, just as fentanyl itself once did to heroin.

Policymakers should consider strategic investments in public health data infrastructure to enhance our ability to conduct surveillance and research into the details and nuance of the ongoing overdose crisis and to improve our ability to respond to evolving and emerging public health threats.

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- ¹⁴ For this study, we were unable to test for statistical significance in overdose death rates for fentanyl, cocaine, and prescription opioids among Native Hawaiian and Pacific Islander adults because 2019 data were suppressed by the CDC due to low numbers of occurrences.
- ¹⁵ For each substance, there were some states which we were unable to test for statistically significant changes in overdose death rates because data were suppressed by the CDC due to low numbers of occurrences.
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