CRIMINAL JUSTICE INTERVENTIONS DURING THE OVERDOSE CRISIS

NOTEWORTH TRENDS AND POLICY CHANGES

Roland Neil and Beau Kilmer

Executive summary

As policymakers and criminal justice agencies review how they have addressed problems related to illegal drugs over the past decade, it is useful to examine relevant data and policy changes from this period. This paper first analyzes trends in multiple criminal justice indicators related to drugs, focusing primarily on the period from 2010 onward. It then highlights a handful of noteworthy policy changes that have been implemented, accelerated, or in some cases reversed during the ongoing overdose crisis. Finally, it presents some key findings from the analysis and offers some recommendations to policymakers and criminal justice practitioners.

KEY FINDINGS

Trends in criminal justice indicators

- From 2010 to 2019, drug offenses accounted for 12%-16% of all reported arrests nationwide, making them the largest category of arrests during that period.

- Data from the Uniform Crime Reporting system show a decline in drug possession arrests from 2010 to 2019, primarily driven by a reduction in cannabis-related arrests. When excluding cannabis, drug possession arrests increased, largely due to the "Other – dangerous nonnarcotic drugs" category, which includes methamphetamine.

- More recent trends are harder to track due to changes in how the Federal Bureau of Investigation collects and reports arrest data. However, our analysis of data from 17 states with reliable National Incident-Based Reporting System coverage suggests that drug arrests—even excluding cannabis—generally declined from 2017 to 2022.

- While caution is advised when interpreting drug seizure data for insights into law enforcement or drug seller behavior, the data show a sharp increase in fentanyl seizures and a noticeable decrease in heroin seizures. Methamphetamine seizures surged for much of the period but appear to have reversed in recent years.

- As with most offense types, more individuals convicted of drug offenses are supervised in the community (e.g., via probation or parole) than incarcerated.

- The number of individuals on probation or parole for drug offenses dropped by approximately 22% and 15%, respectively, between 2011 and 2021. However, due to incomplete data on offense types, these figures are rough estimates.

- The federal and state prison populations for individuals serving sentences for drug offenses have also declined substantially over the past decade. Notably, the most significant drop in state prison populations was among Black individuals, whose numbers decreased by more than 50% between 2010 and 2019.

- There are limited data on drug prices over the past decade, though one study found that the purity-adjusted price of fentanyl powder in the lower-wholesale market dropped significantly from 2016 to 2021, despite the sharp increase in seizures.

Changes in drug policies and practices

- A growing number of jurisdictions have implemented police-led diversion or deflection programs aimed at facilitating treatment and reducing arrests and criminal justice consequences. However, the evidence base for these emerging programs remains thin.

- At the same time, there has also been an increase in the application of drug-induced homicide laws and Good Samaritan laws. While both Oregon and Washington have relaxed their drug possession laws in recent years—Oregon through a ballot initiative and Washington via a court decision—both states' legislatures later passed laws recriminalizing possession.

- Carrying naloxone to respond to overdoses is now a common practice among U.S. police. Though less common, some law enforcement agencies have also made efforts to follow up with individuals who have overdosed.

RECOMMENDATIONS

- **Improve data infrastructure:** Although data collection on drug-specific arrests has improved significantly, major gaps remain in many criminal justice indicators related to drugs, particularly regarding jail admissions, the role of drugs in probation and parole revocations, and drug prices (especially purity-adjusted prices). Data infrastructure and access should be improved to enable comprehensive analysis and informed policy-making.

- **Refrain from using drug-induced homicide laws:** Jurisdictions should avoid enacting or applying drug-induced homicide laws, as there is no empirical evidence supporting their effectiveness and they run counter to what we know about how deterrence works. These laws may also deter individuals from calling authorities during an overdose.

- **Pilot and evaluate police-led diversion and deflection programs:** Police-led diversion and deflection programs should be piloted and rigorously evaluated. We must also recognize that the success of these programs will likely vary depending on the outcomes measured (e.g., overdose deaths versus rearrests) and the availability and quality of services in the community.

- **Consider context and evidence when evaluating alternatives to criminal penalties for drug possession:** The liberalization of drug possession laws in Oregon and Washington coincided with a surge in fentanyl use. In Oregon, the substance use disorder treatment infrastructure was already weak and there were serious implementation issues related to the rollout of Measure 110. While drug possession arrests have clearly declined, many other outcomes remain uncertain and lack consensus. Jurisdictions exploring alternatives to criminalizing possession should consider the experiences of Oregon and Washington, the emerging research on these policies, and evidence from other countries on decriminalization.

- **Reconsider how criminal justice resources are allocated:** In areas heavily affected by fentanyl, law enforcement agencies currently focused on supply-reduction efforts—in the hope that such efforts will increase fentanyl prices and thus curb consumption in the long run—may want to consider reallocating some of these resources to other strategies. Depending on the jurisdiction, these can include addressing open-air drug markets that create disorder and trauma in neighbor-hoods, partnering with service organizations to pilot diversion and deflection programs, training and equipping officers to respond to overdoses, and combating the violence, corruption, and money laundering tied to illegal drug markets.

While the evidence base for some alternative approaches to traditional drug law enforcement remains limited, this sometimes reflects their novelty rather than their potential. Meanwhile, current efforts are not often grounded in evidence-based best practices. Given the severity of the overdose crisis and the wide-spread and increasingly entrenched presence of fentanyl in much of the country, policymakers and criminal justice practitioners must think outside the box. Experimenting with promising new approaches, even when evidence is scarce or unavailable, is urgently needed to improve upon the status quo. As these models are imple-mented, it is crucial to rigorously evaluate them to determine what works and establish best practices for law enforcement's response to fentanyl and the overdose crisis.

I. Introduction

U.S. drug overdose deaths have risen exponentially since at least the late 1970s, but what has happened over the past decade has been nothing short of shocking.[1] Since 2014, nearly 800,000 people have died from drug overdoses in the United States, with roughly half of these deaths involving "synthetic opioids other than methadone," which largely captures illegally manufactured fentanyl.[2] Provisional data for 2023 predict 108,323 overdose deaths, with 75,297 (about 70%) involving synthetic opioids other than methadone.[3] While most of these deaths involve multiple substances, the outsized role of illegally manufactured opioids in the crisis is undeniable.

The impact of synthetic opioids and other drugs extends far beyond the fatalities. A recent study found that more than 40% of American adults—approximately 125 million people—personally know someone who has died from an overdose, with 40 million reporting that these deaths disrupted their lives.[4] There are also the harms that substance use disorders can impose on people who use drugs and their families and loved ones, employers, and communities.

In their volume on the U.S. opioid ecosystem, Bradley D. Stein and colleagues describe how opioid use affects multiple governmental and nongovernmental systems and how these systems interact with one another.[5] They highlight the significant roles played by the medical, specialty treatment, and criminal justice systems, noting that criminal laws and these agencies' actions sometimes create barriers for individuals within these systems.[6] For example, drug-related criminal convictions can limit access to professional licenses and social services such as housing. These laws can also stifle the evaluation of alternative approaches in U.S. settings, such as drug-checking services and supervised consumption sites.[7] However, the authors also note the vital role criminal justice actors can play in saving lives, supporting victims of drug-related crimes, tackling organized crime and corruption, and reducing the harms associated with street-level drug dealing.

As policymakers and criminal justice agencies take stock of how they have addressed problems related to illegal drugs over the past decade, it is useful to examine the relevant data and policy changes from the period. This paper begins by assessing trends in multiple criminal justice indicators related to drugs, with a particular focus on opioids. It then highlights some significant policy changes that have been implemented, accelerated, or in some cases reversed, during the past decade. Finally, it presents the key findings from the analysis and offers some recommendations to policymakers and criminal justice practitioners.

II. Trends in criminal justice indicators related to drugs

This section outlines trends in five categories of criminal justice indicators related to drugs since the early 2010s: arrests, seizures, community supervision, incarceration, and prices.

DRUG ARRESTS

Law enforcement dedicates substantial time to addressing illegal drug activity. Between 2010 and 2019, U.S. law enforcement agencies made between 10 and 13 million arrests annually, with drug violations—such as possession and sales—consistently representing the largest category, accounting for 12% to 16% of all arrests.[8] Cannabis-related arrests, which made up 52% of all drug arrests in 2010, dropped to 35% in 2019, partly reflecting the growing trend toward legalization in many states.

However, drug-specific offenses are only one component of what law enforcement agencies address when it comes to drugs. Many other crimes are committed by individuals who use or sell drugs, though this should not be interpreted as "everyone who uses or sells drugs commits other crimes." There is robust evidence linking heavy opioid, cocaine, and methamphetamine use to other crimes, mostly property crimes, typically committed to obtain money for drugs.[9] Regarding opioids specifically, Beau Kilmer estimates that around 2019, there were approximately "200,000 to 300,000 arrests for opioid-specific offenses each year (i.e., arrests for production, sales, and distribution and for simple possession) and multiple times that for arrests for crimes related to opioid use."[10]

Tracking and assessing more recent national trends in drug arrests can be challenging. In 2021, the Federal Bureau of Investigation (FBI) transitioned to using the National Incident-Based Reporting System (NIBRS) as the source data for its Uniform Crime Reports (UCR), leading to a significant drop in participation—from 15,628 law enforcement agencies in 2020 to 13,115 in 2021.

Figure 1 presents trends in drug arrests for possession and sales/manufacturing by drug category, drawing from FBI UCR data from 2010 to 2022. It uses the drug categories provided in the UCR: "marijuana," "opium or cocaine or their derivatives," "other – dangerous nonnarcotic drugs," and "synthetic (or manufactured) narcotics." Due to the 2021 data collection change, comparisons should not be made before and after the change.
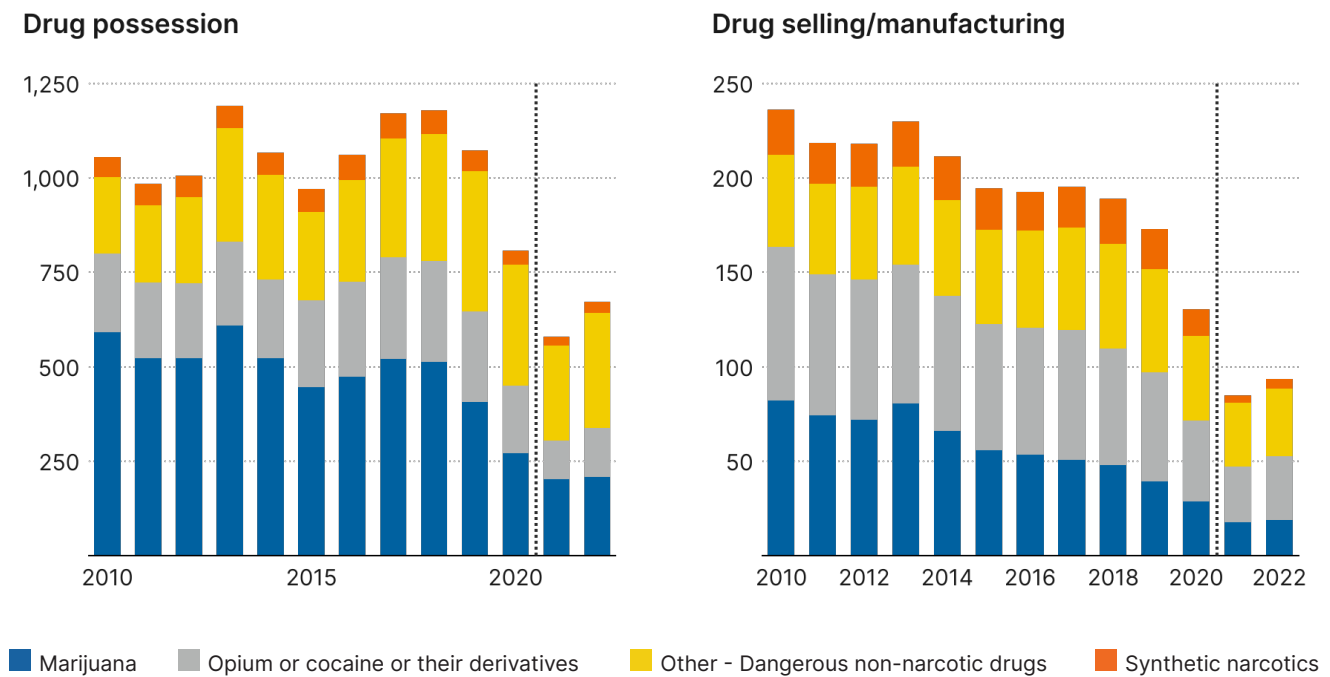
Several observations can be drawn from Figure 1:

- Cannabis arrests in 2019 were 33.6% lower than in 2010, likely due to the move toward legalization and shifting societal norms around the drug.

- There is a lot of ambiguity with these four general categories. "Other – dangerous nonnarcotic drugs" is often interpreted as referring mainly to methamphetamine, but in some jurisdictions, it might be classified as "synthetic narcotics."[11] Additionally, it is unclear whether fentanyl is always classified as synthetic or whether it is sometimes grouped with opium-based drugs since it is an opioid. What happens if both heroin and fentanyl are seized together?

- Arrests for possession of "other – dangerous nonnarcotic drugs" increased from 2010 to 2019 (2020 being an anomaly due to COVID-19). The total for this category surpassed "opium or cocaine" and "synthetic or manufactured narcotics" combined in recent years. Moreover, the increase in this category is largely responsible for the rise in non-cannabis drug possession arrests over the same period.

- If the "opium or cocaine" and "synthetic or manufactured narcotics" categories cover most opioids, it is noteworthy that there was no corresponding surge in arrests despite the sharp rise in fentanyl overdose deaths.

FIGURE 1

Trends in UCR-recorded drug arrests, 2010–2022

(thousands)

Drug possession

Drug selling/manufacturing

■ Marijuana   ■ Opium or cocaine or their derivatives   ■ Other - Dangerous non-narcotic drugs   ■ Synthetic narcotics

Note: Due to the significant break in series beginning in 2021, pre- and post-2021 totals should not be directly compared.

Given the limitations in comparing UCR data over time, we also analyze drug trends using raw NIBRS data. Since NIBRS is still being phased in across the country, our analysis focuses on the 17 states where at least 90% of the population was covered by NIBRS from 2017 to 2022.[12] Although these trends are not necessarily nationally representative—for instance, Oregon and Washington had periods during which drug possession laws were relaxed in these years (see sec. 3.3)—the advantage of using NIBRS is that it avoids the UCR data source transition issue, counts all arrests involving drug offenses, and allows for more specific drug categories to be analyzed.[13]

Drawing on these NIBRS data, Figure 2 shows drug arrest trends from 2017 to 2022 for possession and sales/manufacturing, broken down by major drug categories. Similar to Figure 1, there has been a notable decline in drug possession arrests in recent years—about 40% since 2017—primarily driven by reductions in cannabis possession arrests.
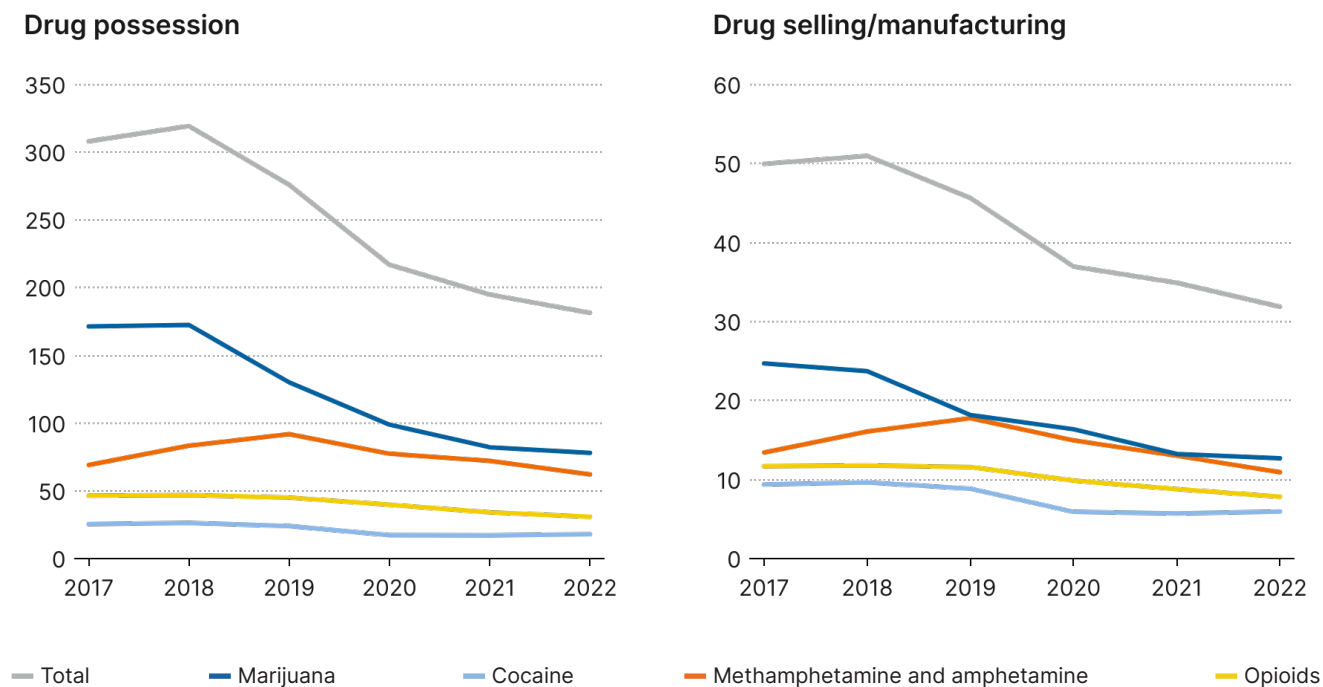
Possession arrests fell across all drug categories, although the decline for methamphetamine/amphetamine began only in 2019. Drug selling/manufacturing arrests also dropped by 36% over this period, following similar patterns across all categories as possession arrests. Opioid-related arrests for both possession and selling/manufacturing gradually declined from 2017 to 2022.

Although UCR data may overstate the recent decline in drug arrests, the NIBRS data corroborate a real and significant reduction.[14] Additionally, while not shown in Figure 2, the percentage of arrests involving both a drug offense and some other type of offense increased slightly during this period—from around 18% before 2020 to about 22% afterward. This trend holds for the 17 states analyzed and beyond. Thus, while most drug arrests continue to involve only drug offenses, it has become slightly more common for multiple offense types to be involved in these incidents.

FIGURE 2

Trends in NIBRS-recorded drug arrests for 17 states, 2017-2022

(thousands)

Drug possession

Drug selling/manufacturing

Legend: — Total — Marijuana — Cocaine — Methamphetamine and amphetamine — Opioids
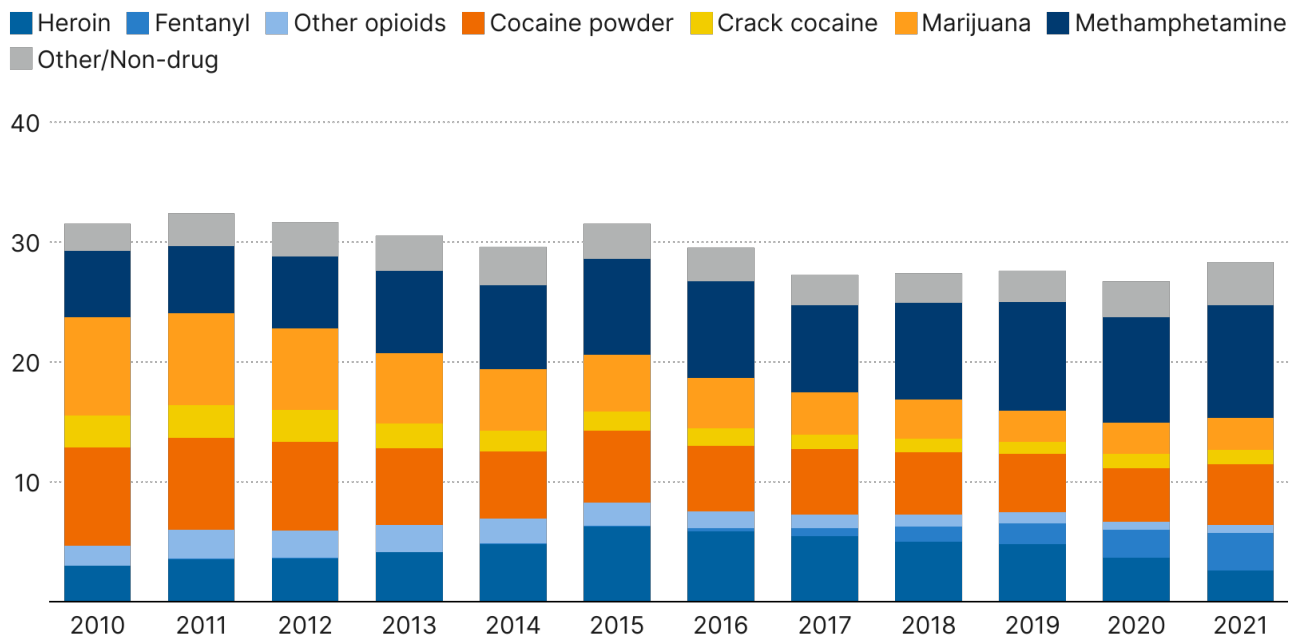
At the federal level, fentanyl-related arrests have increased over the past decade. Figure 3 shows the number of arrests made by the Drug Enforcement Administration (DEA) from 2010 to 2021, using data drawn from a Bureau of Justice Statistics (BJS) report.[15] During this period, the total number of DEA arrests declined slightly—from 31,517 in 2010 to 28,224 in 2021. However, arrests specifically for fentanyl skyrocketed, increasing from just 19 in 2010 to 3,318 in 2021. By then, fentanyl accounted for approximately 11% of all DEA arrests.[16]

In contrast, the overall number of opioid arrests remained relatively stable, though the composition of those arrests changed dramatically. This pattern might hold for local law enforcement agencies. However, the coarse categories used in Figure 2 could be obscuring diverging trends for arrests involving different types of opioids.

FIGURE 3

Trends in DEA drug arrests, 2010-2021

(thousands)

■ Heroin ■ Fentanyl ■ Other opioids ■ Cocaine powder ■ Crack cocaine ■ Marijuana ■ Methamphetamine
■ Other/Non-drug

DRUG SEIZURES

Interpreting trends in drug seizures or using them to make inferences about policymaking requires great caution. As Peter Reuter astutely notes, seizure figures are a function of at least three phenomena: (1) the volume of drugs being trafficked or sold; (2) the care taken by those holding or transporting the drugs; and (3) the intensity of law enforcement efforts to confiscate them.[17] Thus, an increase in seizures could signify that more drugs are being trafficked, but it could also suggest that law enforcement agencies are focusing more resources on locating and confiscating these substances. Of course, it could also mean both are the case.

Like drugs themselves, data on drug seizures come from multiple sources. The High Intensity Drug Trafficking Areas (HIDTA) program, which operates in more than 600 counties across all 50 states and covers more than two-thirds of the U.S. population, oversees 33 regional HIDTAs.[18]

In addition to its enforcement role, the program gathers data from participating local, state, and federal agencies on drug seizures. A recent study by Joseph J. Palamar and colleagues used these data to track fentanyl seizures from 2017 to 2023, revealing dramatic increases, especially in fentanyl pills (see Figure 4).[19] By 2023, approximately 115 million fentanyl pills had been seized. Assuming an average of 2 milligrams of fentanyl per pill, this amounts to roughly 0.23 metric tons of pure fentanyl.[20]

Estimating the purity of fentanyl in powder form is more complex as these HIDTA seizures include products sold at different levels of the market and purity varies across and within those levels—an issue less applicable to pills. However, assuming an average purity of 15% (which may be a high estimate for the retail level),[21] the 10,000 kilograms of fentanyl powder seized in 2023 would equate to 1.5 metric tons of pure fentanyl. Combined with the pills, this brings the total estimated amount of pure fentanyl seized

by HIDTA-affiliated agencies to 1.73 metric tons. This figure is, however, an approximation and may exclude seizures by other agencies (discussed below).[22] Still, to put this into perspective, the total amount of pure fentanyl consumed in the United States around 2021 was believed to be in the single-digit metric tons.[23]

Fentanyl seizures by agencies affiliated with the HIDTA program, 2017–2023
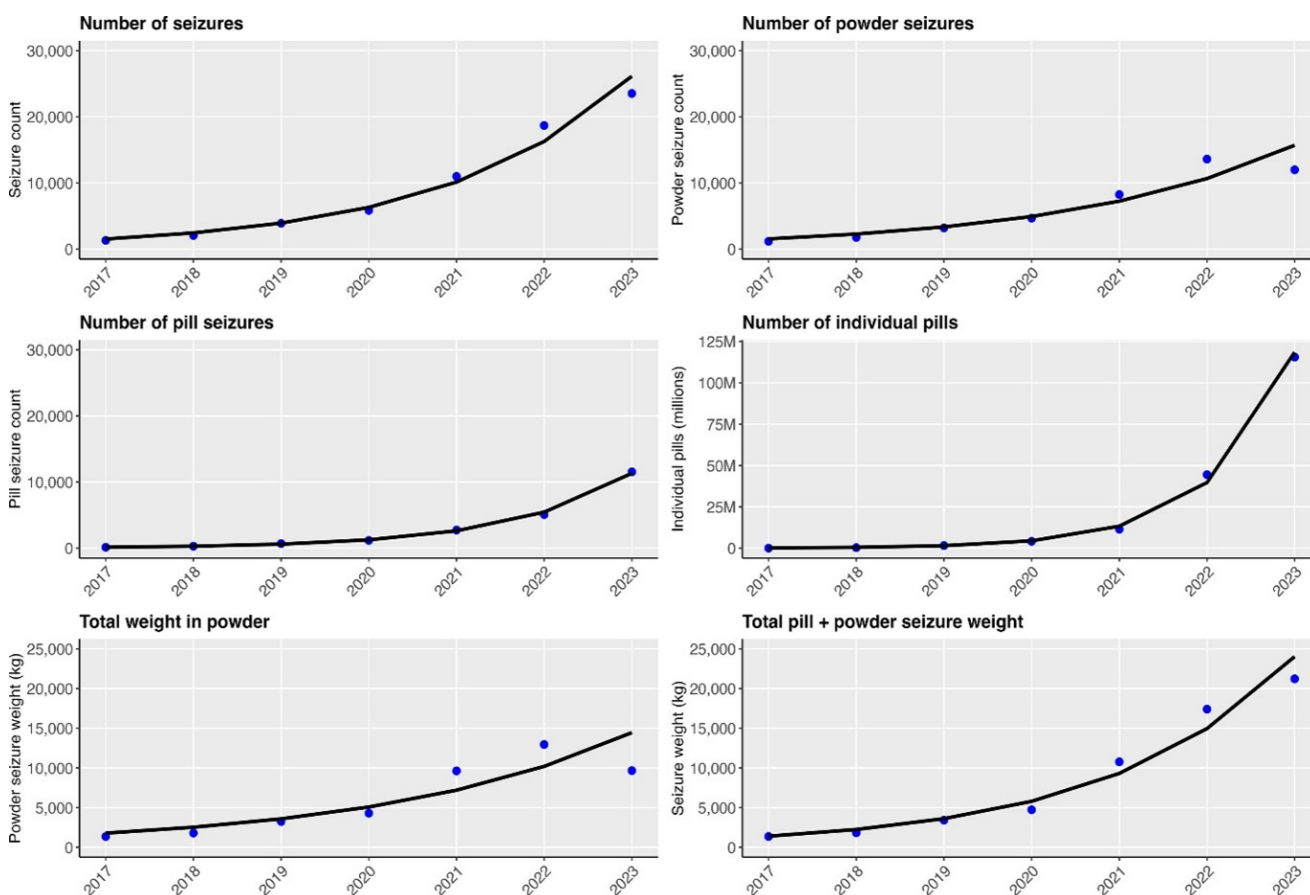

Source: Reproduced from Palamar et al.[24]

Given its responsibility for monitoring the flow of goods and people at ports of entry into the United States, and along the borders, Customs and Border Patrol (CBP) plays a particularly important role in drug seizures. Figure 5 presents the raw weight—unadjusted for the potency of formulation—of selected drug types seized by the CBP between fiscal years 2012 and 2023.

The data are separated by seizures made by the Office of Field Operations (which primarily oversees ports of entry) and Border Patrol (responsible for areas in between ports of entry). This figure updates an earlier analysis by the Congressional Research Service for fiscal years 2012-2018.[25]
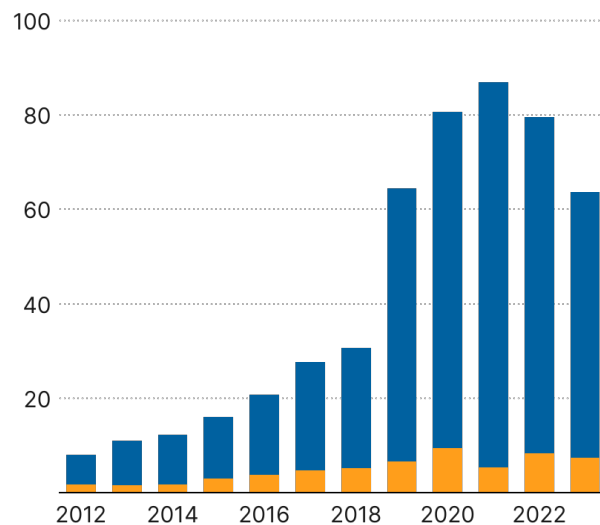
FIGURE 5

CBP drug seizures in weight for selected drug types, 2012–2023 (fiscal year)
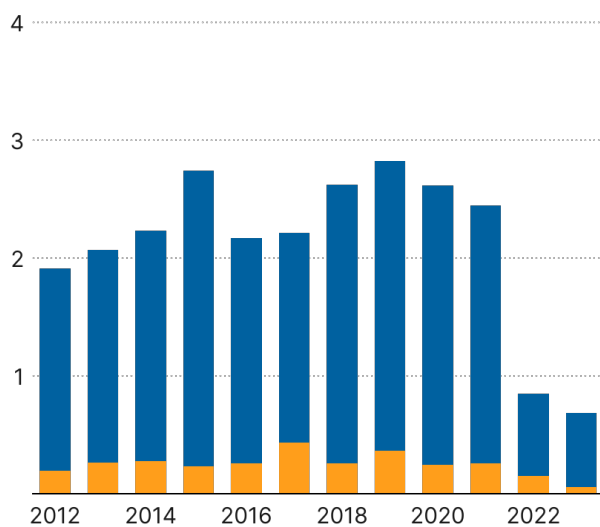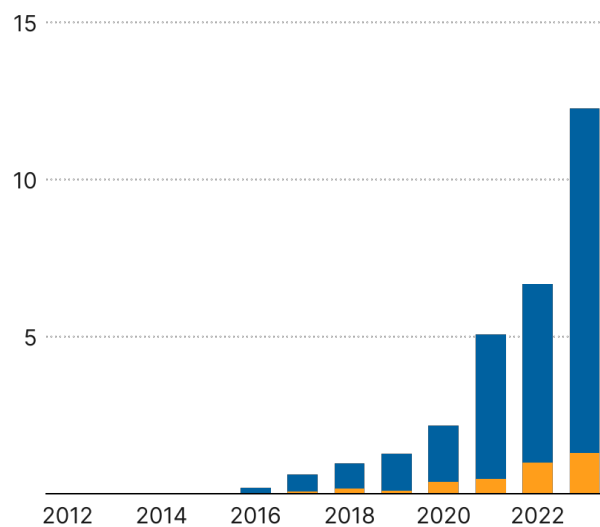
(metric tons)

Cocaine
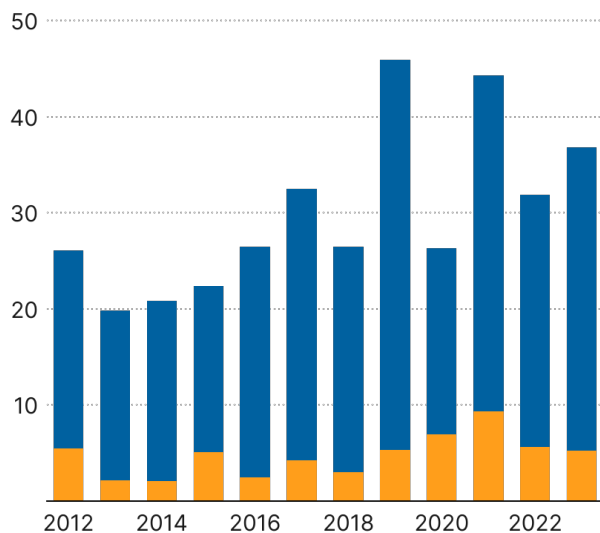
Methamphetamine

Heroin

Fentanyl

■ Office of Field Operations   ■ U.S. Border Patrol

Note: Each quadrant in the figure has a different Y-axis. Crystal methamphetamine seizures are likely reflected only from 2019 onward in the methamphetamine data.

As shown in Figure 5, for the four drug types examined, the overwhelming majority of seizures occur at ports of entry (including land, air, and sea), rather than along the borders between those entry points. Cocaine seizures display a slight upward trend with significant fluctuations in weight, peaking at just over 45 metric tons in 2019. Methamphetamine seizures reached their highest level in 2021 at around 87 metric tons but have since fallen by about 25%. The large spike in methamphetamine seizures in 2019 appears to coincide with the CBP beginning to count crystal methamphetamine and methamphetamine together.[26]

Heroin seizures remained fairly steady between 2012 and 2021, ranging from about 2 to 2.5 metric tons annually, but dropped sharply to under 1 ton in 2022 and declined further in 2023. By contrast, fentanyl seizures by the CBP have surged dramatically in recent years, increasing nearly tenfold from approximately 1.25 metric tons in 2019 to 12.3 metric tons in 2023. It is worth noting that the pre-2016 CBP data we have access to do not include the weight of fentanyl seizures, which judging by the trend shown in Figure 5 likely reflects that little fentanyl was seized by CBP prior to that year.

As far as we are aware, the weights displayed in Figure 5 represent raw, unadjusted totals that simply combine the weights of seized packages and pills. As such, they are not adjusted for purity levels. This is important because purity levels vary—pills typically have lower purity than powders, and the percentage of fentanyl seizures involving pills has been rising. As displayed in Figure 4, Palamar and colleagues reported that the proportion of fentanyl seizures in pill form increased from 10.3% in 2017 to 49% in 2023, based on HIDTA data.[27] However, since pills can be pressed in the United States, CBP's figures

may not directly align with those of HIDTA. Consequently, the sharp rise in the weight of CBP fentanyl seizures may partially be attributed to the increased prevalence of lower-purity product being confiscated.

Another major source of data on drug seizures is the DEA's National Forensic Laboratory Information System (NFLIS), which collects information on suspected drugs submitted to forensic laboratories by state and local law enforcement agencies. In 2017, for example, 98% of forensic labs participated in this system. Most of the drug samples analyzed and recorded in NFLIS data come from seizures, suggesting there is likely overlap with data from HIDTA and CBP.[28]

While the NFLIS does not provide information on the weight, value, or volume of drugs seized, it does track the frequency with which substances submitted to forensic labs test positive for various drugs. Figure 6 illustrates the number of reports for six common drugs from 2014 to 2022. It is important to note that if a seizure includes both fentanyl and heroin, for example, it will appear in the data for both drugs.[29]

For most drug types shown, the substance detection count declined during this period. This includes opioids like oxycodone and heroin. Methamphetamine, on the other hand, increased in NFLIS reports through 2019, though it has since been in decline, remaining the most identified drug in 2022 (accounting for 31.4% of drug reports). Fentanyl's growth is especially striking: it was detected in 5,554 tests in 2014, compared to 171,172 in 2022, making it one of the most frequently identified drugs by that year (representing 15.1% of reports).

FIGURE 6

Number of law enforcement tests detecting drugs, 2014–2022

(thousands)
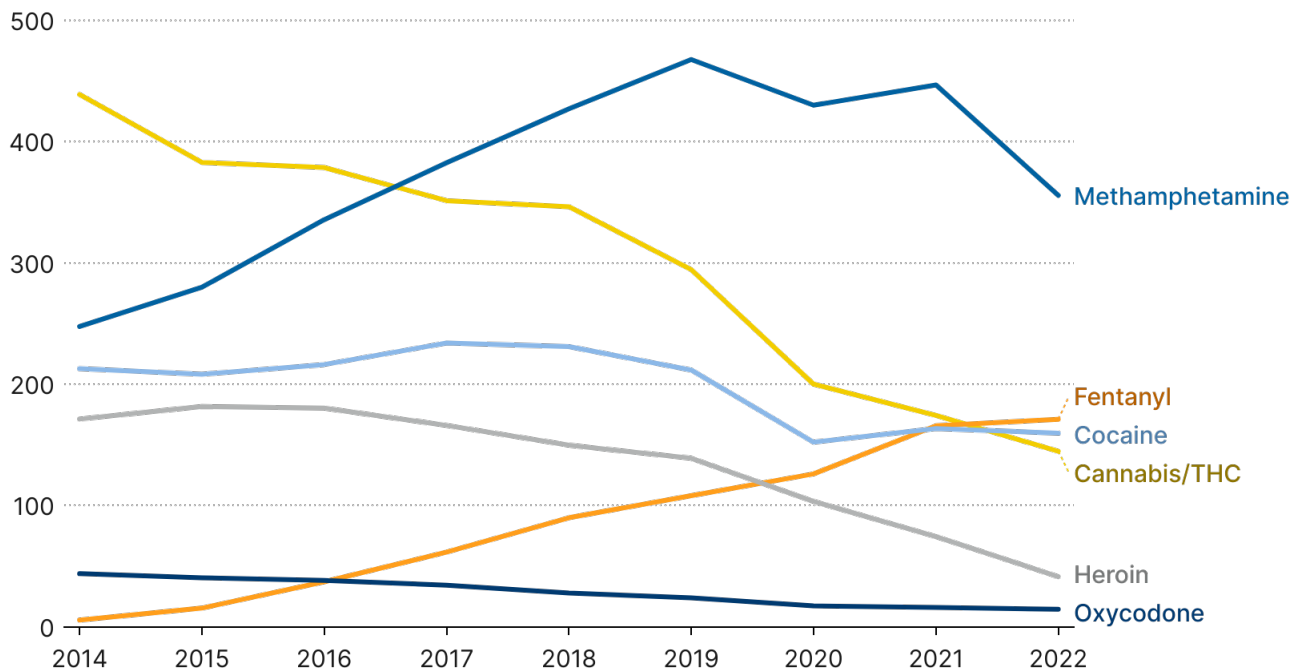
DRUGS AND COMMUNITY SUPERVISION

Individuals serving probation sentences represent the largest share of the community supervision population. The BJS Annual Probation Survey collects national data on probation. However, since we lack access to data beyond 2018, we rely here on BJS estimates from 2011 to 2021.[30]

At the end of 2011, around 15% of the 3,973,800 adults on probation had a drug offense as their most serious offense type, amounting to 596,070 individuals. However, there are significant missing data on offense types. For those with recorded offense data, 25% were for drug-related offenses. Assuming the distribution of offenses for cases with missing data mirrors those with recorded data, we estimate that 993,450 individuals were on probation for drug offenses at the end of 2011.

Analogously, for 2021, 16% of 2,963,000 probationers, or 474,080 individuals, had a drug offense as their most serious offense. Applying the same method to account for missing data, we estimate that 26% of individuals on probation, or 770,380 individuals, were there for drug offenses. This represents a roughly 22% decrease from the 993,450 individuals on probation in 2011, which aligns with the overall reduction in the probation population during this period. In fact, the probation population declined incrementally for the 14th consecutive year in 2021, although there was a sharper drop in 2020 when the population decreased by about 8%. In 2022, the probation population saw a slight increase of 0.3%.[31]

For parole, as with probation, we do not have access to the relevant data past 2018—in this case, the BJS Annual Parole Survey—so we use BJS estimates for 2011 to 2021.[32] In 2011, 29% of the 855,500 individuals on parole had a drug offense as their most serious offense, amounting to

to 248,095 people. After accounting for missing offense data in the same way as probation, we estimate that 33% of parolees, or 282,315 individuals, were on parole for drug offenses.

For 2021, 22% of the 803,200 individuals on parole, or 176,704 people, had a drug offense as their most serious offense type. After adjusting for missing data, we estimate that 30% of parolees were on parole for drug offenses, or 240,960 individuals, by the end of 2021. This marks a near 15% decrease from the 282,315 individuals on parole for drug offenses we estimated for 2011. The total parole population fell by about 6% during this period, with that decline fully occurring between 2020 and 2021. The parole population continued to drop by a further 6.2% in 2022, although comparisons with previous years are complicated by changes in California's data reporting.[33]

Another major intersection between drugs and community supervision involves technical violations and revocations due to missed or positive drug tests. Using 2017 data, the Council of State Governments found that one-quarter of all prison admissions were due to technical violations, with 14% being parole violations and 11% being probation violations.[34] Drug testing is a very common condition of parole and probation, suggesting that positive or missed drug tests may play an important role in these revocations. However, it remains unclear exactly how large that role is, in part because a positive or missed test may not necessarily lead to a revocation on its own.[35]

In Denver, Colorado, data from 2015-2018 show that 63% of probationer revocations for technical violations involved a missed drug test, and 46% involved a positive drug test, indicating that these are among the most common technical violations leading to revocation.[36] Over the past few decades, many states have taken steps to

reduce the number of people entering prison due to community supervision violations.[37] However, with the data available, it is difficult to determine the extent to which changes in the use of drug tests during community supervision have affected prison admissions or the amount of time spent in prison due to technical violations.

DRUG-RELATED INCARCERATION

When it comes to drug-related incarceration, most of the activity is with local jails and state prisons, though federal prisons and detention centers also play a significant if smaller role. This section explores the levels and trends in these types of incarceration, though limited data prevent a detailed analysis of changes in the use of jails for drug offenses at the national level.

To track trends in the number of federal prisoners serving sentences for drug offenses, we rely on data reported in the BJS's annual "Prisoners" series, which itself draws from the BJS Federal Justice Statistics Program. As shown in Figure 7, the number of federal prisoners serving drug-related sentences peaked in 2011, at just under 100,000 inmates. While the increase in drug-related incarcerations began long before 2010, the figure illustrates the subsequent decline, with inmate numbers dropping by one-third between 2011 and 2022.

As the figure shows, the rate of decline slowed significantly between 2020 and 2022, with federal prison populations remaining relatively stable year-to-year. Federal prisoners make up a relatively small portion of all incarcerated individuals in the United States. However, federal prisoners serving drug sentences constitute a substantial percentage of people incarcerated for drug offenses. Nevertheless, state prison populations remain larger, even for drug-related sentences.

FIGURE 7

The number of federal prison inmates serving sentences for drug offenses, 2010-2022 (fiscal year)

(thousands)
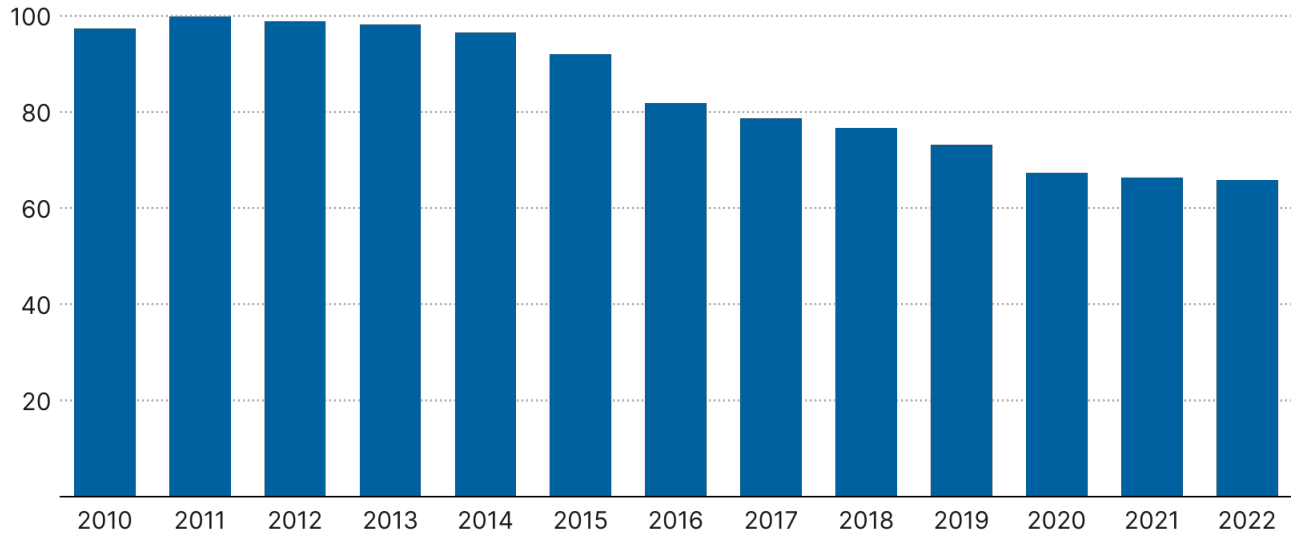
To analyze trends in state prisons for drug offenses, we turn to data from the BJS National Corrections Reporting Program (NCRP) for 2010-2020. The NCRP collects individual-level administrative data on prison admissions, year-end populations, and more.[38] We aggregate these data to the national level.[39] Figure 8 shows the number of individuals in state prisons at the end of each year whose most serious offense, as coded in the NCRP, was a drug-related offense.
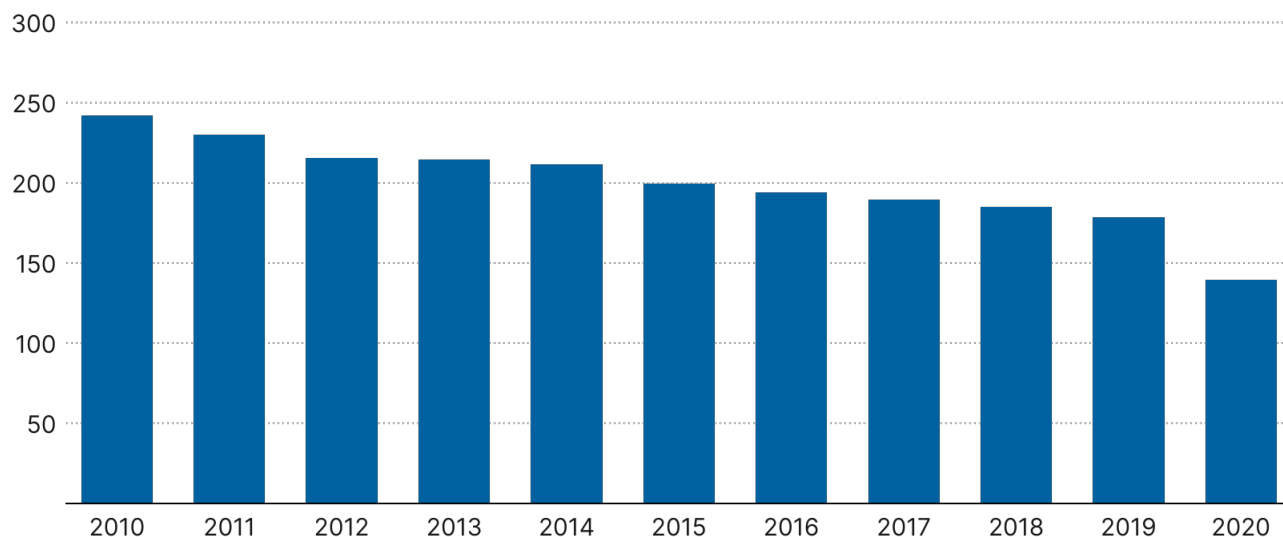
State prison populations for those serving sentences for drug offenses fell incrementally during the 2010s, decreasing from roughly 242,000 inmates in 2010 to 178,000 in 2019,

marking a 26% decline. In 2020, state prison populations experienced a sharp drop, attributable to the effects of the COVID-19 pandemic,[40] with the 2020 drug-related state prison population being 42% smaller than in 2010. We do not have access to NCRP data beyond 2020, though separate BJS estimates indicate a slight decrease in state prison populations for drug offenses following 2020.[41] That same BJS report also shows that overall state prison populations increased by about 2% in 2022; an analogous figure for just drug offenses in 2022 is not reported.

FIGURE 8

The number of state prison inmates serving sentences for drug offenses, 2010-2020 (fiscal year)

(thousands)

Not depicted in Figure 8, the same BJS report offers state-level data on state prison populations over the same period. While the number of inmates serving drug sentences in state prisons fell between 2010 and 2019 (the year before the pandemic) for two-thirds of U.S. states, some saw exceptionally large declines. California led this trend. In 2010, California had the second-largest drug inmate population (over 24,000), just behind Texas (with over 28,000 inmates). By 2019, California's drug inmate population had dropped by 82% to 4,448 inmates. This sharp decline coincides with the implementation of Assembly Bill 109 in 2011, which shifted responsibility for many offenses from the state to counties, resulting in a greater use of county jails over state prisons. Other states that saw particularly large drops in state prison populations for drug offenses between 2010 and 2019 include Colorado (54%), Connecticut (63%), and Louisiana (53%). At the opposite extreme, Idaho's state prison populations for drug offenses increased by 118% during this period. It was mainly smaller states that experienced increases in the number of inmates serving sentences for drugs.

Figure 9 presents data on the racial and ethnic composition of sentenced prisoners under state jurisdiction for drug offenses in 2010 and 2019. While there was a slight decline in the number of non-Hispanic white inmates during this period, the decrease was far more pronounced for non-Hispanic Black and Hispanic inmates. The figure is reproduced from Kilmer, who notes:

> The declines for non-Hispanic Black and Hispanic individuals were very large (54 percent and 35 percent, respectively), especially compared with the decline seen for non-Hispanic White people (8 percent). In 2010, there were approximately 36,000 more non-Hispanic Black people in state prisons for drug offenses than non-Hispanic White people, but this soon changed. By 2019, there were approximately 16,000 fewer non-Hispanic Black people in state prisons for drug offenses compared with non-Hispanic White people. There are multiple hypotheses for changes in racial disparities with respect to drug offenses, such as decreasing punitiveness, reductions in racial bias, and legal or policy changes (e.g., see Light, 2022).

But these reductions in racial disparities are also consistent with the fact that the opioid problem was more entrenched among the non-Hispanic White population for most of the past 25 years. Now that the racial dynamics have changed, at least with respect to opioid overdose deaths largely involving illegally manufactured synthetic opioids, it remains to be seen what this will mean for disparities in arrests and incarceration."[42]

We hope future research will provide a more comprehensive assessment of how drug use patterns, especially heavy use, have changed over the past four decades across different racial and ethnic groups. It will also be important to examine the racial composition of those involved in drug selling, which is much more likely to result in incarceration, to better understand shifts in racial disparities concerning drug-related incarceration.

FIGURE 9

The number of sentenced prisoners under state jurisdiction for drug offenses, by race/ethnicity, 2010 and 2019
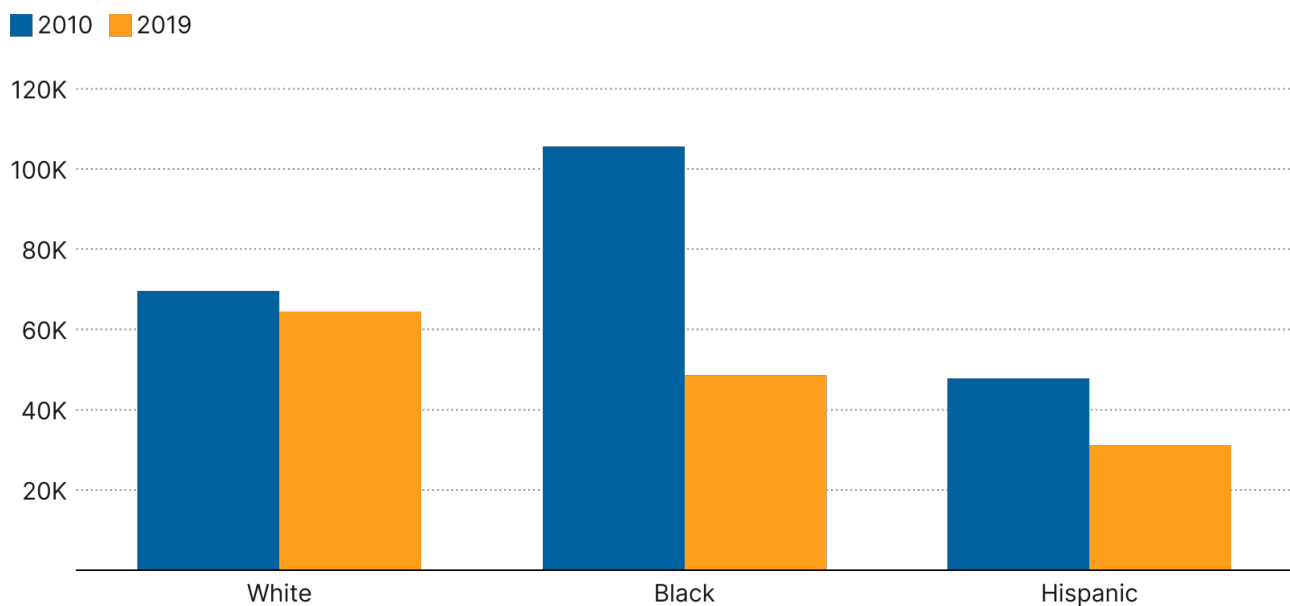
Source: Reproduced from Kilmer, based on data from Carson (2021) and Carson & Sabol (2012)[43]

Changes in prison population counts reflect the net difference between admissions and releases. This means that changes in any given year are partly shaped by how prisons were used to address drug offenses in prior years. In other words, population declines may result from *both* a reduction in admissions and the release of individuals who were sentenced in earlier periods.

Figure 10 illustrates state prison admissions and releases for drug offenses from 2010 to 2020, again based on NCRP data. Interestingly, the decline in admissions for drug offenses from 2010 to 2019 matches the decline seen over the same period for the numbers of state prison inmates serving sentences for drug offenses (Figure 8), both at 26%. However, a comparison

of the two figures shows that the decline in admissions was less consistent than the decline in populations. The most notable difference is the drop-off in state prison admissions for drug offenses during 2020 (Figure 10), which was even more pronounced than the decrease in the corresponding inmate populations that year (Figure 8). As for releases, these also fell substantially over the decade, indicating that the drop in state prison populations for drug offenses was not driven by a surge in releases. However, it remains possible that larger numbers of individuals admitted in earlier years contributed to releases exceeding admissions in every year examined in Figure 10.

The number of state prison admissions and releases for drug offenses, 2010-2020

(thousands)
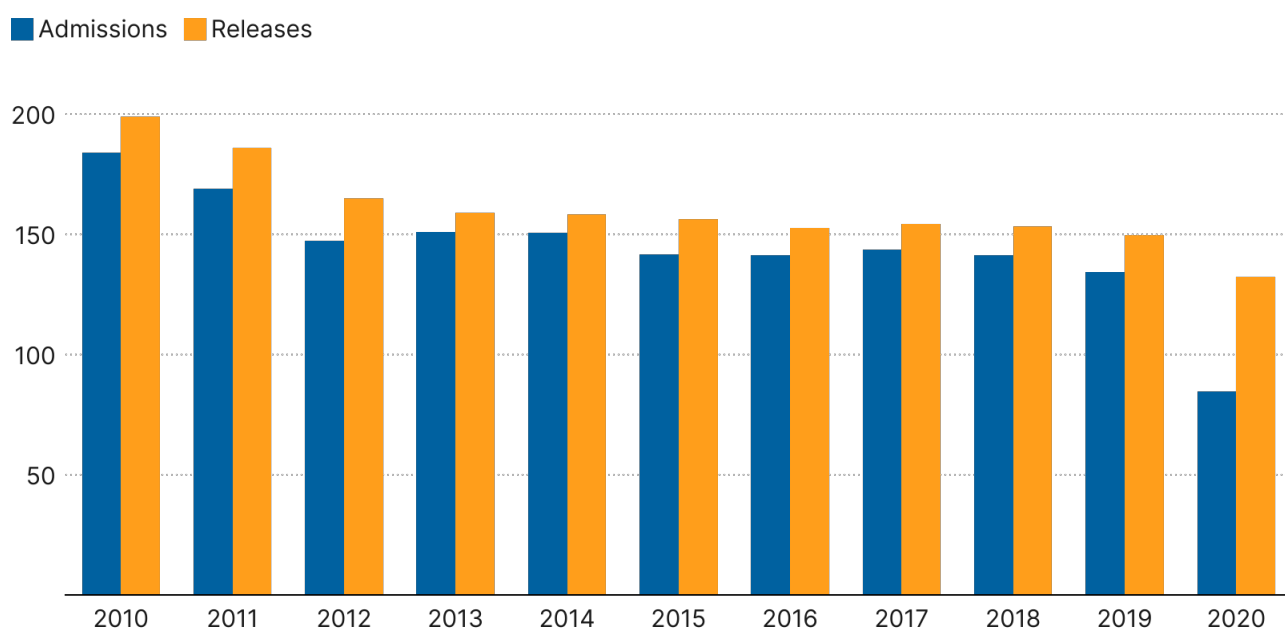
While we cannot produce analogous jail inmate counts or admissions for drug-specific offenses, a few key points about jails bear mentioning. First, a recent report from the Prison Policy Initiative suggests that the vast majority of jail inmates held for drug-related offenses were there for pretrial detention and had not yet been convicted.[44]

Second, BJS figures indicate that from 2012 to 2022, the average number of jail inmates (for all offenses) in the United States decreased by an average of 1.2% per year, dropping from 737,400 to 652,500.[45] However, the 2022 figure represents a 5.5% increase from 2021, which had the lowest average jail inmate count for this period. Importantly, jails experience rapid inmate turnover, meaning that daily counts significantly underrepresent the total number of jail admissions throughout the year, which may include individuals cycling through multiple times. Between July 2021 and June 2022, there were 7.3 million jail admissions in the United States.

While overall jail populations have been relatively stable over the past decade (aside from 2020), albeit with a downward trend, there is insufficient data to determine the extent to which this trend holds specifically for those incarcerated in jail for alleged or convicted drug-related offenses.

We conclude by noting that, even if we had detailed data, we would likely still underestimate the number of people jailed due to drug-related offenses. In many jurisdictions, bench warrants—issued for reasons like failure to appear in court or failure to pay fines—can result in jail time (and potentially even prison time). This creates a pathway from drug charges to jail that might not be reflected in the data as drug-related jail admissions. Moreover, as mentioned earlier, positive or missed drug tests during community supervision can lead to incarceration on technical violations, even if the original offense was not drug related.

DRUG PRICES

If criminal justice efforts are effective in reducing drug supply, this should be reflected in the price of drugs. By price, we mean here the purity-adjusted price. For instance, a dime bag may always cost $10, but the amount of pure drug inside that bag can differ depending on supplier decisions.

At a minimum, calculating purity-adjusted prices requires information about the quantity of drug purchased (often referred to as the raw weight), the price paid, and the drug's purity. More informative estimates can be derived with additional details about the transaction. These data are frequently sourced from administrative law enforcement datasets on drug seizures and undercover purchases. Thirty years ago, Jonathan P. Caulkins developed an algorithm for calculating purity-adjusted prices using the DEA's System To Retrieve Information from Drug Evidence (STRIDE) database, which has since

been renamed STARLIMS.[46] This method was adopted by the Office of National Drug Control Policy (ONDCP) to track trends in purity-adjusted prices across various drugs and market levels, though this official series was discontinued in 2012.[47]

More recently, Greg Midgette and colleagues used this method to update purity-adjusted price data through 2016, as shown in Figure 11.[48] The data reveal that cocaine prices remained relatively stable from 2010 to 2016 (the earlier increase from 2006 to 2009 has been discussed by Kilmer).[49] However, there was a significant drop in methamphetamine prices. Heroin prices also generally declined during this period (except for increases in 2008 and 2009), but the decrease was not as dramatic as that seen for methamphetamine.

FIGURE 11

National estimates of price per pure gram of various drugs, 2006-2016

(2016 dollars)
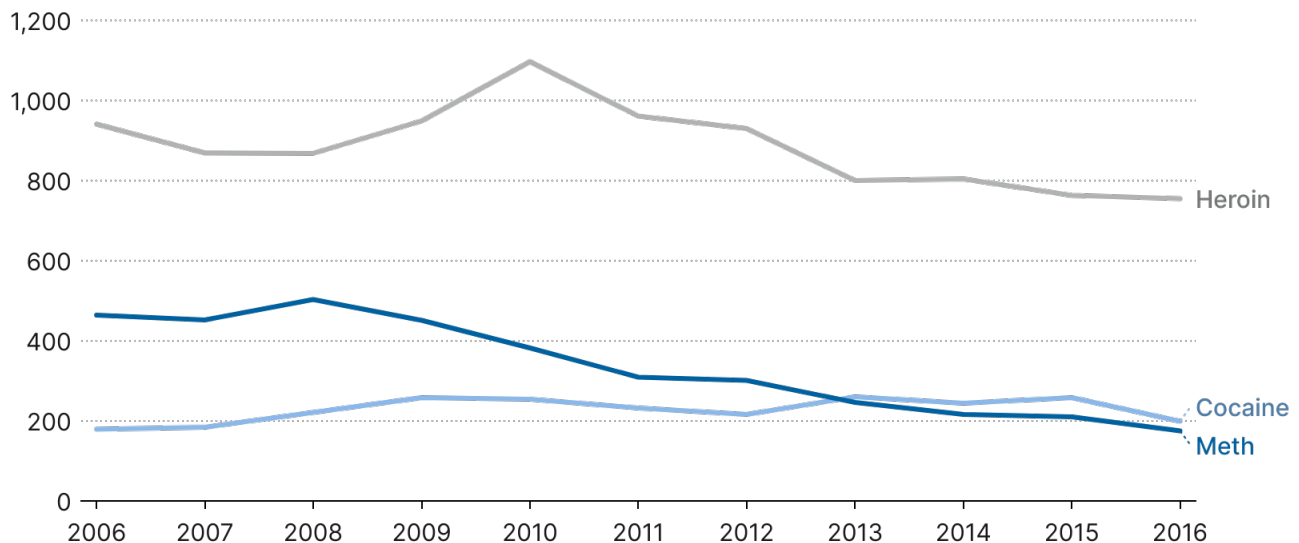
Source: Reproduced from Midgette et al.[50]

These analyses did not examine fentanyl or its growing role as an additive in some of these substances. Bryce Pardo and colleagues note the following:[51]

> However, it is not entirely clear what has happened to heroin prices since 2012. None of the standard methods of tracking drug prices is designed to handle a situation in which a primary drug (in this case, heroin) routinely appears in a mixture with another drug that has similar effects, let alone when that is happening in one part of the country but not in another and the goal is to report national prices. Furthermore, there appears to be a discrepancy in two estimates of heroin price trends in the years after fentanyl's arrival. In 2018, the DEA published a chart indicating that heroin prices largely declined from 2012 to 2014 and then significantly increased from 2014 to 2016 (DEA, 2018a). It is unclear how these figures were calculated or whether they are adjusted for inflation (although inflation was quite low in those years). In contrast, estimates produced for ONDCP by RAND (Midgette et al., 2019 [see Figure 11 above]) suggest that the price per pure gram of heroin at the retail level decreased throughout this period (2012 = $924; 2013 = $795; 2014 = $800; 2015 = $758; 2016 = $750; all values in 2016 dollars). The methodology for the latter approach is described by Arkes et al. (2004). Of course, in addition to the challenges peculiar to tracing heroin prices after fentanyl's arrival, there are perennial challenges in estimating drug market prices; however, the differences in trends are not insubstantial and deserve additional analysis."

There is very little evidence regarding trends in the purity-adjusted prices of fentanyl. One study using the STARLIMS data suggests a roughly 50% reduction in the purity-adjusted price of fentanyl powder (when no other drugs were reported in the seizure) at lower wholesale levels between 2016 and 2021 (Figure 12).[52]

The study's regression analyses indicate a 17% annual decline in prices at the greater than 10g to less than 100g level. For the greater than 1g to less than 10g level, the models also suggested a decline, though statistical significance was only found in one of the models. Due to insufficient data, the authors were unable to apply the more robust methodology previously used by Caulkins, Jeremy Arkes and colleagues, and ONDCP.[53]

Price per pure gram of fentanyl powder by year and weight category
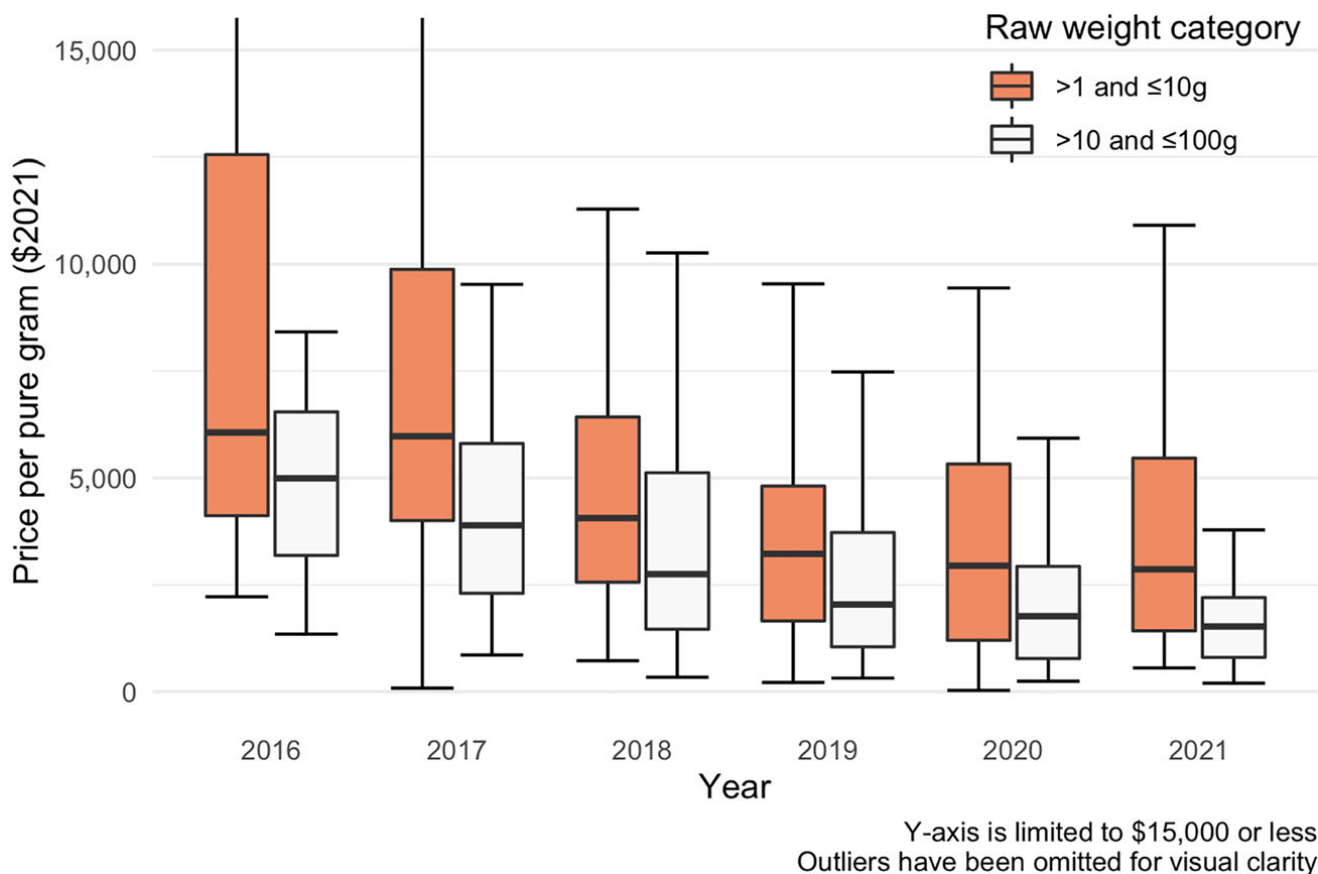
Source: Reproduced from Kilmer et al.[54]

This raises two important issues, one methodological and one practical. Caulkins' original method for calculating purity-adjusted prices was based on the assumption that only one intoxicating substance was present in a seized sample.[55] However, given the increasing prevalence of synthetic opioids, xylazine, and other mind-altering substances mixed with drugs, future efforts to calculate purity-adjusted prices will need to update this methodology.

The practical question is whether it is feasible to use criminal justice interventions to sustain an increase in fentanyl prices in the United States. Caulkins and Reuter note:[56]

> "[W]hile there are calls for ratcheting up maximum sentences for supplying fentanyl and doubling down on border control, it's hard to imagine those measures drying up supply in the long-term. That is not to say that localized short-run shortages cannot have effects, but even these are hard to create given the ubiquity of fentanyl in much of the US."

Caulkins and Reuter caution that this observation should not be interpreted as law enforcement having no role to play or that all drug control efforts should be abandoned. Rather, they argue:

> "[F]reeing law enforcement agencies from unrealistic expectations that they can shut off supply allows them to focus on reducing the violence, corruption, money laundering and other harms associated with illegal markets at the local, national and international levels."

III. Changes in drug policies and practices

This section highlights some noteworthy changes in criminal justice policies and practices related to drugs over the past decade. While not exhaustive, it focuses on developments that are particularly relevant to current discussions: drug-induced homicide laws, Good Samaritan laws, drug possession decriminalization, police-led deflection or diversion programs, and law enforcement overdose response efforts. Though not discussed here, increased access to medication treatment for opioid use disorder, the use of Medicaid waivers for covering treatment in prisons and jails, and supporting post-release treatment transitions are also important changes (see Pollack et al. in this volume).

DRUG-INDUCED HOMICIDE LAWS

Sentencing for drug supply offenses—even at the retail level—can be severe, with some states allowing for sentence enhancements that increase penalties under specific circumstances. For example, California's new law in 2024 automatically adds three years to the sentence for anyone convicted of selling or distributing more than one kilogram of fentanyl.[57] Other states have imposed additional sanctions if the drugs supplied result in overdose death. As characterized by the Legislative Analysis and Public Policy Association (LAPPA),[58] "drug-induced homicide/drug delivery resulting in death laws … refer to types of laws that establish a specific criminal charge, often manslaughter or murder, for individuals who furnish or deliver controlled substances to another individual who dies as a result."

While drug-induced homicide (DIH) laws were on the books in some states before fentanyl took off, they have expanded and been applied more frequently in recent years.[59] Notably, this trend is not limited to conservative regions. States like Illinois; New Jersey; Washington, DC; and Washington State have DIH laws on the books, and similar legislation has been proposed in California, Oregon, and other "blue" states.[60] Even in San Francisco, the mayor, along with the state's Democrat governor, announced plans to investigate overdose deaths as homicides.[61]

However, DIH laws make little sense from a theoretical perspective. As Kilmer notes:[62]

> Levying additional sanctions on these individuals if someone overdoses and dies from a product they supplied is unlikely to create a deterrent effect. (Increasing the severity of sanctions is not a very effective way of producing deterrence, especially for individuals with substance use disorders; see, e.g., Chalfin and McCrary, 2017; Kleiman, 2009; National Research Council, 2014). Furthermore, doing so could create disincentives for those individuals who shared or sold

the drug to call for help if they witness an overdose; if the person dies, they could face additional time behind bars. One could argue that the additional sanctions could give prosecutors more leverage in extracting information from individuals to go after others in the supply chain, but this contention presupposes that the maximum penalties for supplying by itself are too low to coerce compliance."

Moreover, there is no reliable empirical evidence that DIH laws make a positive difference. One 2022 study concluded that DIH laws led to reductions in opioid overdoses.[63] However, the study was deeply flawed and was subsequently retracted. The study's most significant issue was that the incorrect coding of the key independent variable—the effective dates of DIH laws in the states analyzed—rendered the findings invalid. A critique of the study also pointed out other methodological weaknesses.[64] As such, we are unaware of any credible evidence supporting the efficacy of DIH laws.

GOOD SAMARITAN LAWS

In the context of drug use, Good Samaritan laws aim to encourage people to seek medical help for overdoses by offering legal protection to those who report them, thereby reducing fear of negative criminal justice consequences.[65] The first such law was enacted in New Mexico in 2007,[66] and these laws have since spread to nearly all U.S. states, with Wyoming being the only state without one as of May 2024.[67] Good Samaritan laws differ in their scope, such as whether legal protections apply to the person overdosing, bystanders, or both, and whether they apply only to drug possession or extend to other offenses, such as probation violations. LAPPA provides a thorough description of these laws across different states.[68]

Studies on Good Samaritan laws have yielded mixed results. One study found that these laws reduced opioid overdose deaths by 15%.[69] Two subsequent studies also suggested a link between having a Good Samaritan law and lower overdose death rates, but the estimates were not statistically significant due to large standard errors.[70] Another study found that Good Samaritan laws with more expansive provisions, when accompanied by naloxone access laws, were associated with lower overdose death rates.[71] Soroush Moallef and Kanna Hayashi offer a review of studies as of 2021, including research on public knowledge of these laws and the willingness of people who use drugs to call emergency services.[72] Jennifer J. Carroll and colleagues find that many police officers were unable to correctly identify the legal protections offered by their state's Good Samaritan law, which could indicate a weakness in the implementation of such laws (see also Nicholas J. Richardson's survey findings).[73]

While there are only a few quantitative studies on the effects of Good Samaritan laws on overdose deaths, some of which have null findings, there is no evidence to suggest Good Samaritan laws cause harm and some to indicate they are beneficial. Going forward, a better understanding of which provisions are most effective and how to ensure proper implementation so that they are used as intended by people who use drugs and law enforcement alike will be beneficial, now that they are so pervasive.

DRUG POSSESSION DECRIMINALIZATION

On February 1, 2021, Oregon decriminalized possession of controlled substances (PCS) for personal use through Measure 110 (M-110), which had passed with 58% of the popular vote in the 2020 election. Under M-110, PCS became a "Class E" violation, entailing either paying a fine of up to $100 or undergoing a health screening. The measure also created a fund for agencies that would provide substance use disorder treatment and related services. The public's support for M-110 likely reflected the severity of problems associated with drug use in Oregon, coupled with a desire to improve the relevant health services and skepticism that criminal justice-based approaches to drug use were effective or fair—particularly in the wake of the protests in 2020 that followed the killing of George Floyd by police in Minneapolis.

However, Oregon faced significant challenges in the years after M-110's enactment. Overdose deaths in the state surged, from about 600 in 2019 to nearly 1,800 in 2023.[74] Media reports increasingly associated M-110 with open-air drug markets and disorder, especially in downtown Portland.[75] Violent and property crimes in Oregon also rose between 2021 and 2022, with a combined increase of over 10% compared to 2020.[76] Meanwhile, the Behavioral Health Resource Networks, the organizations tasked with implementing M-110's treatment-based provisions, were not active when the law came into effect and it took over a year for them to receive grant funding and begin operations.[77]

Most Class E tickets did not result in payments or court appearances, with recipients facing no further penalties.[78] Relatedly, the statewide hotline for health screenings saw minimal use, with only 8% of individuals cited for PCS (about 500 people between February 2021 and September 2023) calling in, of whom 50 received drug treatment.[79] Public support for M-110 eroded, and by April 2023, one poll found that 63% of Oregonians supported reinstating criminal penalties for PCS, and a similar percentage felt that M-110 had worsened addiction, overdose rates, homelessness, and crime in the state.[80] A narrative emerged, including among political leaders, that M-110 had failed in terms of implementation, by effectively decriminalizing drugs without sufficient policy alternatives in place.[81]

Importantly, problems facing Oregon after M-110 went into effect are not necessarily the result of that law. For example, consequences could be confounded by the COVID-19 pandemic. Research may help isolate the effects of M-110. Though not unanimous, some studies indicate that the rise in overdose deaths likely resulted from an increase in fentanyl in Oregon's drug supply, which coincided with M-110's implementation.[82] Though less research has been conducted on the effects of M-110 on crime, disorder, and law enforcement, some quantitative studies confirm that the measure reduced PCS arrests, even though rates were already declining before it was introduced.[83] The decline in PCS arrest rates following M-110's implementation was greater for Black (a 77% reduction) than white (66% reduction) individuals.[84]

However, effects on other criminal justice outcomes, such as other arrests, police stops, searches, and 911 calls, appear limited, with trends remaining relatively flat before and after M-110 was implemented.[85] Two qualitative studies asked law enforcement officers about their perceptions of the law and how it changed their practices.[86] They found that officers felt they had limited means to hold drug users accountable, were hesitant to issue Class E violations, felt unable to use drug violations as a tool (e.g., in establishing probable cause or in cultivating informants), and saw a reduction in proactive policing.

Faced with escalating drug-related issues and declining public support, Oregon passed House Bill 4002 (HB 4002) on April 1, 2024, recriminalizing PCS. The bill reclassified PCS as a misdemeanor, which can result in up to six months in jail. However, under HB 4002, counties may adopt deflection programs directing individuals toward treatment instead of the criminal justice system. Those attending court can also request probation and treatment, potentially leading to dropped charges upon completion, with other provisions in place also aimed at encouraging treatment participation rather than simply sending violators to jail.[87] While HB 4002 undid a centerpiece of M-110—decriminalization of PCS—in principle, at least, it maintains some focus on alternatives to the criminal justice system to respond to drug use. Its impacts remain to be seen, as the recriminalization only began on September 1, 2024. Nor is it clear how many counties will ultimately implement deflection programs (see sec. 3.4) and what those will look like. Understanding the efficacy of those programs that are implemented will be particularly useful.

Washington state's drug possession laws have also recently undergone a series of changes. In February 2021, the Washington Supreme Court

ruled in State v. Blake that the state's strict liability drug possession statute was unconstitutional, finding that the law violated due process clause protections by criminalizing unintentional possession.[88] The legislature responded with temporary legislation in July 2021, making (intentional) possession a misdemeanor, set to expire in two years. Permanent legislation in July 2023 redefined possession as, at most, a gross misdemeanor.[89] Some of the previously cited studies on Oregon simultaneously examined this change in Washington, reaching similar conclusions, especially in that it lowered drug possession arrests.[90]

POLICE-LED DEFLECTION AND DIVERSION PROGRAMS

Police-led deflection programs aim to connect people with substance use disorders to community-based treatment and support services, thereby "deflecting" them away from the criminal justice system before they are either arrested, booked, or cited.[91] Such programs vary in their specifics, such as in how individuals are identified for deflection, the sort of outreach that officers do, and whether the threat of criminal justice sanctions exists for nonparticipation.[92] Terminology can be ambiguous, as "diversion" is sometimes used instead of "deflection," especially in the case of police-led or pre-arrest diversion programs. Although "deflection" and "pre-arrest diversion" are sometimes used interchangeably, some reserve the latter term for programs where individuals could otherwise have faced criminal charges instead of program participation.[93]

Regardless of these differences among deflection programs, they differ from more traditional and well-established diversion efforts, such as prosecutor- or judge-led programs, which typically occur later in the legal process.[94] A well-known example is drug courts, which allow individuals to enter drug treatment programs in lieu of criminal justice sanctions such as incarceration. The first U.S. drug court was established in Miami in 1989, and there are now more than 4,000 across the country.[95]

Police-led deflection is a more recent phenomenon, with early models developed between 2011 and 2015, followed by a rapid expansion of deflection programs among U.S. law enforcement agencies.[96] Although precise numbers are uncertain, the Bureau of Justice Assistance (BJA) noted over 600 deflection initiatives as of 2020,[97] while another estimate placed the number closer to 850.[98] These may be undercounts, given that numbers have likely continued to grow in the years since.

The Law Enforcement Assisted Diversion (LEAD) program is one of the best-known models of police-led diversion. Established in Seattle in 2011, LEAD has since spread, including to major cities such as San Francisco and Atlanta.[99] As of May 2024, there are 73 sites in the United States listed as being served by the LEAD Support Bureau, which offers training, assistance, and guidance to jurisdictions implementing (or considering) a LEAD program.[100] In the model originally implemented in Seattle, individuals who had been arrested on suspicion of certain offenses (including drug offenses) but who were yet to be booked could be offered diversion from the criminal justice system by police officers. Those interested in the program were given a one-time opportunity to connect with a case manager who would help them meet their goals and basic needs, for example, access to medical care, mental health support, substance use treatment, food, and housing. The case managers adopted a harm reduction approach, meaning participants were not required to abstain from drug use or enter treatment to remain in the program. Coordination between program leaders, case managers, and prosecutors aimed to foster behavioral change, even when participants committed new offenses.[101]

Despite these efforts, there are questions about the available evidence of the effectiveness of these programs. As Kilmer notes:[102]

> " A study of Seattle's program in its early years focused on 318 people suspected of low-level drug and prostitution activity in downtown

Seattle between 2011 and 2014; 203 were receiving LEAD, and 115 were going through the criminal legal system "as usual" (Collins, Lonczak, and Clifasefi, 2017). The researchers found that participation in LEAD led to '58% lower odds of [future] arrest and 39% lower odds of being charged with a felony over the longer term' (p. 49). A follow-up analysis suggested that LEAD reduced incarceration and legal costs for participants (Collins, Lonczak, and Clifasefi, 2019); however, questions remain about how much of this effect can be causally attributed to the program.[103] It would be interesting to learn more about whether the program affected victimization in the community (which doesn't always get reported to the police).

"In a more recent study, Malm, Perrone, and Magaña (2020) examined LEAD programs in Los Angeles and San Francisco. The authors were unable to conduct an outcome analysis for Los Angeles because of missing data, but the cost analysis for San Francisco showed that LEAD 'reduced average yearly criminal justice system utilization and associated costs over system-as-usual comparisons' (p. 122); however, this finding is rooted in a propensity score analysis which leaves open many questions about how much of the effect can be attributed to LEAD. The results from Seattle and San Francisco are encouraging, but more work needs to be done to isolate the causal effect of LEAD. Jurisdictions adopting these programs should consider robust evaluation strategies before the programs are implemented."

A broader systematic review examined 27 studies on police deflection programs, including 17 from the United States,[104] and generally found positive impacts on participant health and crime prevention, along with cost reductions. However, these studies did not provide enough evidence to evaluate drug use outcomes or accessibility.[105] Moreover, none employed randomized controlled trials, some used relatively weak observational methods, and many lacked a comparison group.

Another review focused on studies evaluating diversion programs aimed to tackle drug use and misuse,[106] although only two of the 31 studies reviewed specifically addressed pre-booking diversion programs. This highlights that, while the initial evidence on these programs is promising, more research employing rigorous methodologies and focusing specifically on pre-booking diversion initiatives is needed.[107]

Most studies focus on programs that impose criminal sanctions for nonparticipation, leaving programs with voluntary self-referral pathways understudied. A 2023 report addressed this gap by examining two sites that had implemented self-referral deflection programs and using a quasi-experimental synthetic control method.[108] The study compared two counties which had implemented programs (one in Illinois and one in Massachusetts) with other counties in those states that had not (13 in Massachusetts and 101 in Illinois). For the Massachusetts site, findings were mostly inconclusive, possibly due to limited statistical power. For the Illinois site, the program was associated with a decrease in fatal opioid overdoses and property crimes, though other outcomes, such as drug arrests, showed no statistically significant differences between conditions.

LAW ENFORCEMENT OVERDOSE RESPONSE EFFORTS

In recent years, many U.S. law enforcement agencies have incorporated overdose response efforts into their practices to address the opioid crisis, especially by equipping officers with naloxone and training them to administer it during overdoses. Naloxone is an opioid antagonist that can reverse the effects of an opioid-induced overdose. Additionally, some agencies have implemented follow-up programs,[109] such as quick response teams (QRTs), to connect overdose survivors to resources such as substance use treatment. QRTs can also be considered a form of police-led deflection (see the previous section) since they typically involve police and can mean criminal sanctions are avoided.

Moreover, drug-offending deflection and overdose follow-up efforts may coincide, in what has been called the "naloxone plus" model of police-led deflection.[110] However, in some cases, overdose response efforts may also be in tension with conventional law enforcement. This was seen, for example, in Massachusetts, where a survey found that over 50% of post-overdose response programs conducted warrant checks before engaging in outreach, though arrests following these checks are uncommon.[111]

Naloxone deployment is now widespread: a 2021 survey of a nationally representative sample of 2,009 law enforcement agencies found that 81.7% of them equip officers with it, and around 30% conduct routine post-overdose follow-ups.[112] These follow-ups were conducted with a wide variety of partner services, with emergency medical services and hospitals being the most common. Among those agencies engaging in follow-up, 21.4% used the QRT model, with around three-quarters partnering with local substance use disorder treatment organizations. The survey indicated that overdose response has become a regular feature of policing during the opioid crisis, though there is considerable variety in how this is done. Another survey of police across eastern U.S. states in 2017 revealed that about 73% of officers had responded to an overdose in the previous six months, with approximately 37% having administered naloxone.[113] It is unclear exactly how these numbers have changed with the subsequent proliferation of fentanyl, but these almost certainly remain pervasive experiences for contemporary patrol officers in the United States.[114]

Equipping officers with naloxone can prevent overdoses from becoming fatal. A 2016 study based on 126 incident reports found that officers could administer naloxone safely and effectively.[115] A later study, using data from Arizona from February 2020 to May 2021, analyzed footage from body-worn cameras of incidents where naloxone had been administered.[116] Its findings reinforced the 2016 study's conclusions, with about 95% of individuals surviving

overdoses, as did another report-based study of naloxone use by police in New York state between 2015 and 2020.[117] Similarly, an Ohio study covering the period from 2011 to 2014 reported a decrease in overdose deaths after officers began carrying naloxone in late 2013.[118] Although these study designs aren't the most rigorous, naloxone use by law enforcement clearly saves lives given the high survival rates (77.6% in the Ohio study) associated with its administration.

Research on the efficacy of post-overdose follow-up programs remains less conclusive, owing both to the dearth of rigorous evaluation and the sheer variety of programs that exist. A 2019 review of such programs concluded that little can be concluded about their effectiveness,[119] and while there has been some informative work since,[120] most studies do not focus on quantitative outcomes nor use strong causal designs. However, a 2023 study on Massachusetts from 2013 to 2019, which used interrupted time series analysis, found reduced opioid fatality rates in municipalities with outreach programs.[121]

Challenges remain for police engaging in overdose responses, even in agencies that successfully procure naloxone and distribute it to their officers. A 2020 study reported persistent negative attitudes toward the use of naloxone and the efficacy of drug treatment among officers, particularly those who had frequently responded to overdoses and administered naloxone.[122] Another study published the same year appears to reinforce this finding, pointing to what it calls "compassion fatigue" among surveyed officers: those who frequently responded to overdoses were less likely to endorse overdose response efforts.[123]

Safety concerns have also been raised by officers, such as fears of needlestick injuries or accidental exposure to fentanyl—one study found that 93.5% of surveyed New York officers believed that briefly touching fentanyl could be fatal.[124] Despite the attention incidental exposure to fentanyl has received, it should be noted here that *briefly touching fentanyl is not a real risk*.[125] Training programs like SHIELD have emerged to help officers respond to overdoses more effectively and safely, while providing information to dispel myths.[126] These initiatives appear to have been effective, with one study finding that SHIELD's three-hour training session dramatically reduced the fraction of officers who thought first responders who touch or inhale fentanyl were at great risk of overdose.[127] A 2016 evaluation of law enforcement naloxone training programs found that they improved officers' skills and confidence in opioid overdose response and naloxone use but did not alter overall attitudes.[128]

Finally, another way that naloxone intersects with the criminal justice system is the distribution of naloxone kits upon release from incarceration, sometimes coupled with overdose prevention education. Individuals reentering society after incarceration are at particularly high risk of overdose, making these programs increasingly common and valued.[129] For example, California's state prisons began offering naloxone kits and training to all individuals upon release in 2020. By July 2022, about 95% accepted the kits, and a similar percentage expressed willingness to use them to aid others.[130] A 2019 study found that in San Francisco County Jail, about one-third of naloxone recipients on release reported later using their kits to reverse overdoses, indicating these programs worked as intended.[131] If such programs have any effects, they are likely to be quite cost-effective given the large benefits relative to the relatively low cost of naloxone distribution.

IV. Concluding thoughts

The past decade has witnessed an alarming rise in opioid overdose deaths and fentanyl seizures by law enforcement, yet this trend did not correspond with higher rates of opioid-related arrests and incarcerations. Instead, arrests for opioid-related offenses (disaggregating data for fentanyl alone is rarely possible) remained steady or even declined, and there was a marked reduction in the number of individuals convicted of drug offenses from 2010 to 2019. One of the biggest successes of this period was the significant decrease in the incarceration of people of color for drug offenses—54% for non-Hispanic Black individuals, 35% for Hispanic individuals, and 8% for non-Hispanic white individuals. Yet much remains to be done to address persistent racial disparities in drug-related arrests and sentencing outcomes.

Various factors likely contributed to the observed trends in arrests and incarcerations, warranting further study. One plausible factor is that fentanyl markets, unlike the crack markets of the 1980s and 1990s, tend to be less associated with violence, thus reducing direct police involvement.[132] The extreme potency of fentanyl and the health risks it poses to users make it unique in terms of public health rather than its association with violence. Another possible factor is the expansion of medications—for opioid use disorder in prisons, jail, and community supervision settings (see Pollack et al. in this volume), which likely lowered illegal opioid use and, consequently, the probability of being arrested on a drug charge. Additionally, the rise of police-led diversion and deflection programs reflects an increasing emphasis on alternative models of responding to drug use. Despite the various reforms, however, drug-related arrests remain a substantial element of law enforcement activity.

Shifts in policing practices include the widespread equipping of officers with naloxone for overdose responses and broader overdose prevention initiatives. These changes highlight the evolving intersection of public health and law enforcement responsibilities within policing. This evolution raises questions: Are public health efforts and law enforcement activities inherently at odds with each other, or can they be effectively integrated? More broadly, do these policy changes signal a paradigmatic shift toward a harm reduction model in police responses to drug markets, or are they merely new tools being adopted on a piecemeal basis?[133]

V. Recommendations

If this paper has accomplished its aim, it has prompted more questions than it has answered. Nevertheless, after reviewing the data and available evidence on some of these interventions, this paper offers the following recommendations to policymakers and criminal justice practitioners:

■ **Improve data infrastructure:** Existing data gaps around drug-related criminal indicators—such as jail admissions, probation/parole revocations due to drug involvement, and drug prices—are consequences of policy choices. Despite advances in tracking drug-specific arrests, access remains limited to vital administrative data, including DEA drug seizures and prices, impeding comprehensive analysis and informed policy decisions.[134]

■ **Refrain from using drug-induced homicide laws:** No empirical data support the efficacy of DIH laws, and they contradict what we know about how deterrence works. There is also concern that these laws may discourage individuals from seeking help from the authorities during an overdose, although this hypothesis needs further study.[135] While the passage of these laws gives the appearance of decisive action, there is in fact little reason to believe they achieve positive outcomes.

■ **Pilot and evaluate police-led diversion and deflection programs:** Police-led diversion and deflection programs should be piloted and rigorously evaluated. We must also recognize that the effectiveness of diversion and deflection programs will vary depending on the accessibility and quality of community services available and the metrics used to gauge success, such as reductions in overdose rates, rearrests, or treatment admissions.

■ **Consider context and evidence when evaluating alternatives to criminal penalties for drug possession:** Recent drug law changes in Oregon and Washington coincided with a surge in fentanyl—and especially in Oregon, there was a limited substance use disorder treatment infrastructure and serious implementation issues. Although the evidence shows that these policies reduced drug possession arrests, there is not yet a consensus on many other outcomes. Jurisdictions considering alternatives to criminalizing possession should account for contextual differences, the growing body of research on these reforms, and lessons from other countries on decriminalization.

■ **Reconsider how criminal justice resources are allocated:** In areas heavily affected by fentanyl, law enforcement agencies currently focused on supply-reduction efforts—in the hope that such efforts will increase fentanyl prices and thus curb consumption in the long run—may want to consider reallocating some of these resources to other strategies. Depending on the jurisdiction, these can include addressing open-air drug markets that create disorder and trauma in neighborhoods, partnering with service organizations to pilot diversion and deflection programs, training and equipping officers to respond to overdoses, and combating the violence, corruption, and money laundering tied to illegal drug markets.

The evidence base for some alternative approaches to traditional drug enforcement is still developing, though this sometimes reflects their novelty rather than their potential. At the same time, it is often not the case that the status quo is driven by evidence-based best practices. Given the pressing overdose crisis and entrenchment of fentanyl in much of the country, policymakers and criminal justice practitioners need to think outside the box.[136] Experimenting with promising new approaches is urgently needed, even where the existing evidence base is thin or even nonexistent. As innovative models are implemented, rigorous evaluations will be invaluable for identifying what works and guiding best practices in law enforcement's response to fentanyl and the overdose crisis.

Endnotes

1   Hawre Jalal et al., "Changing Dynamics of the Drug Overdose Epidemic in the United States from 1979 through 2016," *Science* 361, no. 6408 (September 21, 2018), https://doi.org/10.1126/science.aau1184.

2   For overdose figures, see "U.S. Overdose Deaths Decrease in 2023, First Time Since 2018," Centers for Disease Control and Prevention [CDC], May 14, 2024, https://www.cdc.gov/nchs/pressroom/nchs_press_releases/2024/20240515.htm; "Drug Overdose Deaths: Facts and Figures," National Institute on Drug Abuse," August 21, 2024, https://nida.nih.gov/research-topics/trends-statistics/overdose-death-rates.

3   F.B. Ahmad et al., "Provisional drug overdose death counts," National Center for Health Statistics, 2024, https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm.

4   Alison Athey, Beau Kilmer, and Julie Cerel, "An Overlooked Emergency: More Than One in Eight US Adults Have Had Their Lives Disrupted by Drug Overdose Deaths," *American Journal of Public Health* 114, no. 3 (March 2024): 276-79, https://doi.org/10.2105/AJPH.2023.307550.

5   Bradley D. Stein et al. (eds.), *America's Opioid Ecosystem: How Leveraging System Interactions Can Help Curb Addiction, Overdose, and Other Harms* (Santa Monica: RAND Corporation, 2023), https://www.rand.org/pubs/research_reports/RRA604-1.html.

6   While we use the term "criminal justice system" in various parts of this essay, it is critical to note that this can encompass many different agencies that may not necessarily have the same goals or incentives.

7   While the phrase "war on drugs" is commonly used to describe these activities, this framing is not very helpful. It makes it harder to have productive discussions about the pros and cons of different criminal justice policy levers.

8   "Crime in the U.S.," Federal Bureau of Investigation, https://ucr.fbi.gov/crime-in-the-u.s.

9   Rosalie Liccardo Pacula et al., "Improving the Measurement of Drug-Related Crime" (Washington, DC: Office of National Drug Control Policy [ONDCP], 2013).

10 Beau Kilmer, "Criminal Legal System," in *America's Opioid Ecosystem*, eds. Bradley D. Stein et al. (2023), 219-272.

11 Aggravating this issue, the FBI's naming of these categories can be inconsistent. For instance, the 2004 FBI handbook, which contains instructions for reporting agencies, used the category "Synthetic narcotics—manufactured narcotics which can cause true drug addiction" whereas the "Crime in the United States 2004" FBI report refers to that category as "synthetic or manufactured drugs."

12 These states are Arkansas, Colorado, Delaware, Idaho, Iowa, Kentucky, Michigan, Montana, New Hampshire, North Dakota, Oregon, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, and Washington.

13 The UCR applies the hierarchy rule, meaning that only the most serious offense in an incident is counted, while NIBRS data can capture multiple offenses within a single incident.

14 Excluding Oregon and Washington from the analysis shows similar trends to those in Figure 2. While these states had sharper declines in arrests, especially for opioid, methamphetamine, and amphetamine possession, they are not solely responsible for the decreases observed in the figure.

15 Mark Motivans, "Heroin, Fentanyl, and Other Opioid Offenses in Federal Courts, 2021," (Washington, DC: Bureau of Justice Statistics, February 2024), https://bjs.ojp.gov/library/publications/heroin-fentanyl-and-other-opioid-offenses-federal-courts-2021.

16 The Drug Enforcement Administration does not differentiate between types of drug arrest (e.g., possession versus trafficking) in these data. These figures reflect the total across all types of drug arrests.

17 Peter Reuter, "Seizure of Drugs," *Encyclopedia of Drugs and Alcohol* 3 (1995): 1022-1023.

18 "HIDTA Works 2022," High Intensity Drug Trafficking Areas, 2023, https://www.hidtaprogram.org/summary.php.

19 Joseph J. Palamar et al., "National and Regional Trends in Fentanyl Seizures in the United States, 2017–2023," *International Journal of Drug Policy* (May 13, 2024), https://doi.org/10.1016/j.drugpo.2024.104417.

20 The DEA's analysis of fentanyl in counterfeit pills reveals variations in this amount. Pills have ranged "from .02 to 5.1 milligrams ... of fentanyl per tablet. 42% of pills tested for fentanyl contained at least 2 mg of fentanyl," see "Facts About Fentanyl," DEA, https://www.dea.gov/resources/facts-about-fentanyl). See also "Fentanyl Profiling Program Report," DEA Special Testing and Research Laboratory, 2022, https://www.dea.gov/sites/default/files/2022-05/FPP%20Report%20January%202022.pdf.

21 "Fentanyl Profiling Program Report," DEA.

22 It is unclear how many drug seizures by the Customs and Border Patrol are also captured in the HIDTA dataset.

23 Beau Kilmer et al., "How Much Illegally Manufactured Fentanyl Could the U.S. Be Consuming?," *The American Journal of Drug and Alcohol Abuse* 48, no. 4 (July 4, 2022): 397-402, https://doi.org/10.1080/00952990.2022.2092491.

24 Palamar et al., "National and Regional Trends in Fentanyl Seizures."

25 Kristin Finklea, "Illicit Drug Flows and Seizures in the United States: What Do We [Not] Know?" (Washington, DC: Congressional Research Service, 2019).

26 "CBP Enforcement Statistics Fiscal Year 2020," U.S. Customs and Border Protection, https://www.cbp.gov/newsroom/stats/cbp-enforcement-statistics-fy2020.

27 Palamar et al., "National and Regional Trends in Fentanyl Seizures."

28 Bryce Pardo et al., "The Future of Fentanyl and Other Synthetic Opioids" (Santa Monica: RAND, 2019), https://www.rand.org/pubs/research_reports/RR3117.html.

29 A test of a seized substance or package can reveal multiple drug types. Thus, the reports of different drug types shown in Figure 5 are not mutually exclusive.

30 Danielle Kaeble, "Probation and Parole in the United States, 2021" (Washington, DC: Bureau of Justice Statistics, February 2023), https://bjs.ojp.gov/library/publications/probation-and-parole-united-states-2021.

31 Danielle Kaeble, "Probation and Parole in the United States, 2022" (Washington, DC: Bureau of Justice Statistics, 2024), https://bjs.ojp.gov/library/publications/probation-and-parole-united-states-2022.

32   Kaeble, "Probation and Parole in the United States, 2021."

33   Ibid.

34   "Confined and Costly: How Supervision Violations Are Filling Prisons and Burdening Budgets," Council of State Governments Justice Center, June 2019, https://csgjusticecenter.org/publications/confined-costly/.

35   Arnold Ventures, "Drug Testing and Supervision," https://assets.arnoldventures.org/uploads/AV-Drug-Testing-Fact-Sheet_v2.pdf.

36   "Reducing Revocation Challenge: Final Report" (University of Wyoming & Denver Adult Probation Department), https://www.uwyo.edu/cj/opportunities/news-and-events/uw-revised-final-report.pdf.

37   "To Safely Cut Incarceration, States Rethink Responses to Supervision Violations," The Pew Charitable Trusts, July 16, 2019, https://pew.org/2XGRrky.

38   NCRP data, based on individual-level data, was preferred over BJS's National Prisoner Statistics (NPS) data due to its broader analytic scope. Overall incarceration levels are similar between the two sources.

39   A few states did not report to the NCRP for certain years. For 28 of 550 state-year data points, missing values were imputed using quadratic polynomials based on each state's available data.

40   E. Ann Carson, "Prisoners in 2020: Statistical Tables," (Washington, DC: Bureau of Justice Statistics, 2021), https://bjs.ojp.gov/content/pub/pdf/p20st.pdf.

41   E. Ann Carson, "Prisoners in 2022: Statistical Tables," (Washington, DC: Bureau of Justice Statistics, 2023), https://bjs.ojp.gov/library/publications/prisoners-2022-statistical-tables.

42   Kilmer, "Criminal Legal System."

43   Ibid. Data reproduced from E. Ann Carson, "Prisoners in 2020—Statistical Tables"; E. Ann Carson and William J. Sabol, "Prisoners in 2011," (Washington, DC: Bureau of Justice Statistics, December 2012), https://bjs.ojp.gov/content/pub/pdf/p11.pdf.

44   Wendy Sawyer and Peter Wagner, "Mass Incarceration: The Whole Pie 2024," Prison Policy Initiative, March 14, 2024, https://www.prisonpolicy.org/reports/pie2024.html.

45   Zhen Zeng, "Jail Inmates in 2022: Statistical Tables," (Washington, DC: Bureau of Justice Statistics, 2023), https://bjs.ojp.gov/library/publications/jail-inmates-2022-statistical-tables.

46   Jonathan P. Caulkins, "Developing Price Series for Cocaine" (Santa Monica: RAND, January 1, 1994), https://www.rand.org/pubs/monograph_reports/MR317.html.

47   "National Drug Control Strategy Data Supplement 2016," (Washington, DC: ONDCP, January 2017), https://obamawhitehouse.archives.gov/sites/default/files/ondcp/policy-and-research/2016_ndcs_data_supplement_20170110.pdf.

48   Gregory Midgette et al., "What America's Users Spend on Illegal Drugs, 2006–2016" (Santa Monica: RAND, August 19, 2019), https://www.rand.org/pubs/research_reports/RR3140.html.

49   Beau Kilmer, "Uncle Sam's Cocaine Nosedive: A Brief Exploration of a Dozen Hypotheses," in *After the Drug Wars: Report of the LSE Expert Group on the Economics of Drug Policy* (London: London School of Economics, 2016), 67-78, https://www.lse.ac.uk/ideas/Assets/Documents/reports/LSE-IDEAS-After-Drug-Wars.pdf.

50   Midgette et al., "What America's Users Spend on Illegal Drugs."

51   Pardo et al., "Future of Fentanyl and Other Synthetic Opioids."

52   Beau Kilmer et al., "Rapid Changes in Illegally Manufactured Fentanyl Products and Prices in the United States," *Addiction* 117, no. 10 (2022): 2745-2749, https://doi.org/10.1111/add.15942.

53   Jonathan P. Caulkins, "Developing Price Series for Cocaine"; Jeremy Arkes et al., "Technical Report for the Price and Purity of Illicit Drugs Through 2003" (Washington, DC: ONDCP, 2004); "National Drug Control Strategy Data Supplement 2016," ONDCP.

54   Kilmer et al., "Rapid Changes in Illegally Manufactured Fentanyl Products and Prices in the United States."

55   Caulkins, "Developing Price Series for Cocaine."

56   Jonathan Caulkins and Peter Reuter, "Stopping Fentanyl at the Border Won't Work: We Must Reimagine Drug Law Enforcement," *Scientific American*, April 17, 2023, https://www.scientificamerican.com/article/stopping-fentanyl-at-the-border-wont-work-we-must-reimagine-drug-law-enforcement/.

57   Nigel Duara, "California New Laws for 2024: Longer Prison Sentences for Fentanyl Trafficking," CalMatters, December 29, 2023, http://calmatters.org/justice/2023/12/fentanyl-new-california-laws-2024/.

58   "Good Samaritan Fatal Overdose Prevention and Drug-Induced Homicide: Summary of State Laws," Legislative Analysis and Public Policy Association [LAPPA], 2022, https://legislativeanalysis.org/good-samaritan-fatal-overdose-prevention-and-drug-induced-homicide-summary-of-state-lawsgood-samaritan-fatal-overdose-prevention-and-drug-induced-homicide-summary-of-state-laws/.

59   Jeremiah Goulka et al., "Drug-Induced Homicide Defense Toolkit (2021 Edition)," Ohio State Public Law Working Paper No. 467, last revised August 13, 2021, https://doi.org/10.2139/ssrn.3265510.

60   "Good Samaritan Fatal Overdose Prevention," LAPPA.

61   Sydney Johnson, "SF Wants to Charge Drug Dealers With Homicide: But Could it Lead to More Overdose Deaths?" KQED, October 27, 2023, https://www.kqed.org/news/11965813/sf-wants-to-charge-drug-dealers-with-homicide-but-could-it-lead-to-more-overdose-deaths; As this chapter was going to press, California voters passed Proposition 36 which included multiple changes to state drug laws and other offenses. With respect to DIH, the California Legislative Analyst's Office notes: "Proposition 36 requires courts to warn people that they could be charged with murder if they sell or provide illegal drugs that kill someone. This warning would be given to people convicted of selling or providing certain drugs (such as fentanyl, heroin, cocaine, and meth-amphetamine). This could make it more likely for them to be convicted of murder if they later sell or provide illegal drugs to someone who dies." See "Proposition 36: Allows Felony Charges and Increases Sentences for Certain Drug and Theft Crimes. Initiative Statute," Legislative Analyst's Office, November 5, 2024, https://lao.ca.gov/BallotAnalysis/Proposition?number=36&year=2024.

62   Kilmer, "Criminal Legal System."

63   Youngeun Lee, Sung W. Choi, and Jonathan Lee, "Retracted: Longitudinal Study on Deterrent Effect of Drug-Induced Homicide Law on Opioid-Related Mortality Across 92 Counties and the District of Columbia in the U.S.," *Journal of Drug Issues* 52, no. 2 (April 1, 2022): 131-143, https://doi.org/10.1177/00220426211037614.

64   Jennifer J. Carroll et al., "A Discussion of Critical Errors in a Longitudinal Study on the Deterrent Effect of Drug-Induced Homicide Laws on Opioid-Related Mortality across 92 Counties and the District of Columbia in the United States," *World Medical & Health Policy* 15, no. 4 (2023): 587-612, https://doi.org/10.1002/wmh3.570.

65   Chandler McClellan et al., "Opioid-Overdose Laws Association with Opioid Use and Overdose Mortality," *Addictive Behaviors, Prevention and Treatment of Opioid Overdose and Opioid-Use Disorders* 86 (November 1, 2018): 90-95, https://doi.org/10.1016/j.addbeh.2018.03.014.

66   Ralph Blumenthal, "New Mexico Bars Drug Charge When Overdose is Reported," *The New York Times*, April 5, 2007, https://www.nytimes.com/2007/04/05/us/05drugs.html; "Good Samaritan Fatal Overdose Prevention," LAPPA.

67   Jason Alatidd, "New Kansas Law Means You Can Call 911 for a Drug Overdose and Not Be Charged with a Crime," *The Topeka Capital-Journal*, May 14, 2024, https://www.cjonline.com/story/news/politics/government/2024/05/14/kansas-good-samaritan-law-intended-to-save-lives-from-drug-overdoses/73628773007/; Madelyn Beck, "Wyoming Now Only State without Protections for Those Who Help Overdosing Friends," WyoFile, May 20, 2024, http://wyofile.com/wyoming-now-only-state-without-protections-for-those-who-help-overdosing-friends/; "Good Samaritan Fatal Overdose Prevention," LAPPA.

68   "Good Samaritan Fatal Overdose Prevention," Legislative Analysis and Public Policy Association.

69   McClellan et al., "Opioid-Overdose Laws."

70   Danielle N. Atkins, Christine Piette Durrance, and Yuna Kim, "Good Samaritan Harm Reduction Policy and Drug Overdose Deaths," *Health Services Research* 54, no. 2 (2019): 407-416, https://doi.org/10.1111/1475-6773.13119; Daniel I. Rees et al., "With a Little Help from My Friends: The Effects of Good Samaritan and Naloxone Access Laws on Opioid-Related Deaths," *The Journal of Law and Economics* 62, no. 1 (February 2019): 1-27, https://doi.org/10.1086/700703.

71   Leah Hamilton et al., "Good Samaritan Laws and Overdose Mortality in the United States in the Fentanyl Era," *International Journal of Drug Policy* 97 (November 1, 2021), https://doi.org/10.1016/j.drugpo.2021.103294.

72   Soroush Moallef and Kanna Hayashi, "The Effectiveness of Drug-Related Good Samaritan Laws: A Review of the Literature," *International Journal of Drug Policy* 90 (April 1, 2021), https://doi.org/10.1016/j.drugpo.2020.102773.

73   Jennifer J. Carroll et al., "Knowledge, Preparedness, and Compassion Fatigue among Law Enforcement Officers Who Respond to Opioid Overdose," *Drug and Alcohol Dependence* 217 (December 1, 2020), https://doi.org/10.1016/j.drugalcdep.2020.108257; Nicholas J. Richardson et al., "National Survey Findings on Law Enforcement Agency Drug Response Practices, Overdose Victim Outcomes, and Good Samaritan Laws," *Drug and Alcohol Dependence* 248 (July 1, 2023), https://doi.org/10.1016/j.drugalcdep.2023.109916.

74   F.B. Ahmad et al., "Provisional Drug Overdose Death Counts."

75   Jordan Gale and Jan Hoffman, "Scenes From a City That Only Hands Out Tickets for Using Fentanyl," *The New York Times*, July 31, 2023, https://www.nytimes.com/2023/07/31/health/portland-oregon-drugs.html; Jim Hinch, "Oregon Tried a Bold Experiment in Drug Policy: Early Results Aren't Encouraging," *The Atlantic*, July 19, 2023, https://www.theatlantic.com/politics/archive/2023/07/oregon-drug-decriminalization-results-overdoses/674733/.

76   "2022 Release of FBI Uniform Crime Reports for Oregon," (Salem: Oregon Criminal Justice Commission, November 2, 2023), https://www.oregon.gov/cjc/CJC%20Document%20Library/2022%20FBI%20UCR%20Oregon%20Report.pdf.

77   "Funding and Delivery of Measure 110 Substance Use Disorder Services Shows Progress, but Significant Risks Remain," Oregon Audits Division, December 2023, https://sos.oregon.gov/audits/Pages/audit-2023-39-Measure-110.aspx; Oregon Health Authority, "Measure 110: A Public Health-Based Approach to Addiction and Overdose," https://app.powerbigov.us/view?r=eyJrIjoiODU1NDNlNzUtMDB-kNy00NTM1LWE4NzgtNGEyNzQxY-WY0NTU2IiwidCI6IjY1OGU2M2U4LThk-MzktNDk5Yy04ZjQ4LTEzYWRjOTQ1M-mY0YyJ9.

78   Jim Hinch, "Oregon Tried a Bold Experiment in Drug Policy."

79   Ezra Kaplan, "Measure 110 Addiction Hotline Goes Cold," KPTV, November 21, 2023, https://www.kptv.com/2023/11/21/measure-110-addiction-hotline-goes-cold/.

80   "Measure 110 Oregon Voter Survey," DHM Research, 2023, https://www.dhmresearch.com/wp-content/uploads/2023/05/DHM-Panel-Oregon_Measure110_May-2023.pdf.

81   Mike Baker, "Oregon is Recriminalizing Drugs: Here's What Portland Learned," *The New York Times*, April 1, 2024, https://www.nytimes.com/2024/04/01/us/oregon-drug-law-portland-mayor.html.

82   Spruha Joshi et al., "One-Year Association of Drug Possession Law Change With Fatal Drug Overdose in Oregon and Washington," *JAMA Psychiatry* 80, no. 12 (December 1, 2023): 1277-1283, https://doi.org/10.1001/jamapsychiatry.2023.3416; Noah Spencer, "Does Drug Decriminalization Increase Unintentional Drug Overdose Deaths?: Early Evidence from Oregon Measure 110," *Journal of Health Economics* 91 (September 1, 2023), https://doi.org/10.1016/j.jhealeco.2023.102798; Michael Zoorob et al., "Drug Decriminalization, the Introduction of Fentanyl to Drug Markets, and Fatal Overdose in Oregon," medRxiv, April 22, 2024, https://doi.org/10.1101/2024.04.08.24305508.

83   Spruha Joshi et al., "One-Year Association"; Kellen Russoniello et al., "Decriminalization of Drug Possession in Oregon: Analysis and Early Lessons," *Drug Science, Policy and Law* 9 (January 1, 2023), https://doi.org/10.1177/20503245231167407; Kelsey S. Henderson, Christopher M. Campbell, and Brian Renauer, "Impacts of Successive Drug Legislation Shifts: Qualitative Observations from Oregon Law Enforcement [Interim Report: Year One]," *Criminology and Criminal Justice Faculty Publications and Presentations* 114, January 1, 2023, https://pdxscholar.library.pdx.edu/ccj_fac/114.

84   Corey S. Davis et al., "Changes in Arrests Following Decriminalization of Low-Level Drug Possession in Oregon and Washington," *International Journal of Drug Policy* 119 (September 1, 2023), https://doi.org/10.1016/j.drugpo.2023.104155.

85 Corey S. Davis et al., "Changes in Arrests"; Kelsey S. Henderson, Christopher M. Campbell, and Brian Renauer, "Impacts of Successive Drug Legislation Shifts"; "Building the Evidence: Understanding the Impact of Drug Decriminalization in Oregon," RTI International, October 11, 2022, https://www.rti.org/impact/building-evidence-understanding-impacts-drug-decriminalization-oregon.

86 Hope M. Smiley-McDonald et al., "'All Carrots and No Stick': Perceived Impacts, Changes in Practices, and Attitudes among Law Enforcement Following Drug Decriminalization in Oregon State, USA," *International Journal of Drug Policy* 118 (August 1, 2023), https://doi.org/10.1016/j.drugpo.2023.104100; Kelsey S. Henderson, Christopher M. Campbell, and Brian Renauer, "Impacts of Successive Drug Legislation Shifts."

87 Mike Baker, "Oregon is Recriminalizing Drugs, Dealing Setback to Reform Movement," *The New York Times*, March 2, 2024, https://www.nytimes.com/2024/03/01/us/oregon-drug-decriminalization-rollback-measure-110.html.

88 State v. Blake, 481 P. 3d 521 (Supreme Court of Washington 2021).

89 Taylor Romine, Paradise Afshar, and Nouran Salahieh, "Washington Governor Signs New Law Keeping Drug Possession Illegal," CNN, May 17, 2023, https://www.cnn.com/2023/05/17/us/washington-drug-possession-law/index.html; Flannary Collins, "New Law on Drug Possession, Use Takes Effect July 1, 2023," Municipal Research and Services Center, May 24, 2023, https://mrsc.org/stay-informed/mrsc-insight/may-2023/new-law-on-drug-possession-use.

90 Corey S. Davis et al., "Changes in Arrests."

91 Beau Kilmer, "Criminal Legal System."

92 Ibid.; "Law Enforcement and First Responder Deflection," (Washington, DC: Bureau of Justice Assistance [BJA], 2023), https://bja.ojp.gov/library/publications/law-enforcement-and-first-responder-deflection-pathways-deflection-case; Jac Charlier and Jessica Reichert, "Introduction: Deflection—Police-Led Responses to Behavioral Health Challenges," in "Emerging Best Practices in Law Enforcement Deflection and Community Supervision Programs," Journal for Advancing Justice Volume III (2020): 1-14, https://allrise.org/wp-content/uploads/2022/07/Journal-for-Advancing-Justice-Volume-III_final.pdf.

93 "Law Enforcement and First Responder Deflection," BJA.

94 Leah Wang and Katie Rose Quandt, "Building Exits off the Highway to Mass Incarceration: Diversion Programs Explained," Prison Policy Initiative, July 20, 2021, https://www.prisonpolicy.org/reports/diversion.html.

95 "Treatment Courts," Office of Justice Programs, 2024, https://www.ojp.gov/feature/treatment-courts/overview.

96 Jac Charlier and Jessica Reichert, "Police-Led Responses to Behavioral Health Challenges."

97 Melissa M. Labriola et al., "A Multi-Site Evaluation of Law Enforcement Deflection in the United States" (San Monica: RAND, January 10, 2023), https://www.rand.org/pubs/research_reports/RRA2491-1.html.

98 Jac Charlier and Jessica Reichert, "Police-Led Responses to Behavioral Health Challenges."

99 Etienne Blais et al., "Diverting People Who Use Drugs from the Criminal Justice System: A Systematic Review of Police-Based Diversion Measures," *International Journal of Drug Policy* 105 (July 1, 2022), https://doi.org/10.1016/j.drugpo.2022.103697.

100 "LEAD Sites," Lead Support Bureau, https://leadbureau.org/lead-sites/.

101 Susan E. Collins, Heather S. Lonczak, and Seema L. Clifasefi, "Seattle's Law Enforcement Assisted Diversion (LEAD): Program Effects on Criminal Justice and Legal System Utilization and Costs," *Journal of Experimental Criminology* 15, no. 2 (June 1, 2019): 201-211, https://doi.org/10.1007/s11292-019-09352-7; Etienne Blais et al., "Diverting People Who Use Drugs from the Criminal Justice System."

102 Beau Kilmer, "Criminal Legal System."

103 Here, the footnote in Kilmer, "Criminal Legal System" reads: "Collins, Lonczak, and Clifasefi, 2017, report that 'police officer shifts were randomized to be either LEAD or control shifts, and eligible individuals were allocated to those conditions if they were arrested during the respective shifts' (p. 50). However, this randomization was not used to estimate the causal effect of the program. Other individuals made it to the LEAD condition via 'social contacts' with police officers, which could introduce bias into the analysis. The authors also report changes to the sample during the evaluation: 'Finally, after the evaluation began, operational partners recognized that there was a limited number of potential participants in the originally planned catchment area. Over time, most of these individuals were approached for LEAD involvement, which left a dwindling number of individuals available for inclusion in the control group. Thus, to accommodate the need for an adequate and comparable control group, control areas (in addition to control shifts) were added to the evaluation. (p. 50)' For an outcome study focused on only those individuals participating in LEAD (i.e., no control group), see Clifasefi, Lonczak, and Collins, 2017."

104 Etienne Blais et al., "Diverting People Who Use Drugs from the Criminal Justice System."

105 The tendency of such studies to find lowered cost and reduced recidivism is echoed by a similar literature review, which finds that there is less evidence for the impacts of police-led diversion on behavioral health outcomes. See Caroline Harmon-Darrow et al., "Police Diversion at Arrest: A Systematic Review of the Literature," *Criminal Justice and Behavior* 50, no. 3 (2022): 307-329, https://doi.org/10.1177/00938548221131965.

106 Robin Lindquist-Grantz et al., "Diversion Programs for Individuals Who Use Substances: A Review of the Literature," *Journal of Drug Issues* 51, no. 3 (July 1, 2021): 483-503, https://doi.org/10.1177/00220426211000330.

107 Beau Kilmer, "Criminal Legal System"; Jac Charlier and Jessica Reichert, "Police-Led Responses to Behavioral Health Challenges."

108 Melissa M. Labriola et al., "A Multi-Site Evaluation of Law Enforcement Deflection in the United States."

109 Scott W. Formica et al., "Post Opioid Overdose Outreach by Public Health and Public Safety Agencies: Exploration of Emerging Programs in Massachusetts," *International Journal of Drug Policy* 54 (April 1, 2018): 43-50, https://doi.org/10.1016/j.drugpo.2018.01.001; Sarah M. Bagley et al., "A Scoping Review of Post Opioid-Overdose Interventions," *Preventive Medicine* 128 (November 1, 2019), https://doi.org/10.1016/j.ypmed.2019.105813.

110 "Law Enforcement and First Responder Deflection," BJA.

111 Marco E. Tori et al., "Warrant Checking Practices by Post-Overdose Outreach Programs in Massachusetts: A Mixed-Methods Study," *International Journal of Drug Policy* 100 (February 1, 2022): 103483, https://doi.org/10.1016/j.drugpo.2021.103483.

112 Bradley Ray et al., "A National Survey of Law Enforcement Post-Overdose Response Efforts," *American Journal of Drug and Alcohol Abuse* 49, no. 2 (March 4, 2023): 199-205, https://doi.org/10.1080/00952990.2023.2169615. The somewhat low response rate (~50%) means these numbers might not be perfectly representative but the magnitudes they convey are likely to be accurate.

113 Jennifer J. Carroll et al., "Knowledge, Preparedness, and Compassion Fatigue."

114 At-risk individuals may avoid carrying naloxone for fear of potential police interactions, an issue that may be more pronounced for those under community supervision.

115 Rian Fisher et al., "Police Officers Can Safely and Effectively Administer Intranasal Naloxone," *Prehospital Emergency Care* 20, no. 6 (November 1, 2016): 675-680, https://doi.org/10.1080/10903127.2016.1182605.

116 Michael D. White et al., "Leveraging Body-Worn Camera Footage to Better Understand Opioid Overdoses and the Impact of Police-Administered Naloxone," *American Journal of Public Health* 112, no. 9 (September 2022): 1326-1332, https://doi.org/10.2105/AJPH.2022.306918.

117 Elham Pourtaher et al., "Naloxone Administration by Law Enforcement Officers in New York State (2015–2020)," *Harm Reduction Journal* 19, no. 1 (September 19, 2022): 102, https://doi.org/10.1186/s12954-022-00682-w.

118 Jessica Rando et al., "Intranasal Naloxone Administration by Police First Responders is Associated with Decreased Opioid Overdose Deaths," *American Journal of Emergency Medicine* 33, no. 9 (September 1, 2015): 1201-1204, https://doi.org/10.1016/j.ajem.2015.05.022.

119 Sarah M. Bagley et al., "Scoping Review of Post Opioid-Overdose Interventions."

120 Simeon D. Kimmel et al., "Characteristics of Post-Overdose Outreach Programs and Municipal-Level Opioid Overdose in Massachusetts," *International Journal of Drug Policy* 120 (October 1, 2023), https://doi.org/10.1016/j.drugpo.2023.104164; Jennifer J. Carroll et al., "The Police Paradox: A Qualitative Study of Post-Overdose Outreach Program Implementation through Public Health-Public Safety Partnerships in Massachusetts," *International Journal of Drug Policy* 120 (October 1, 2023), https://doi.org/10.1016/j.drugpo.2023.104160; Michael D. White et al., "Moving Beyond Narcan: A Police, Social Service, and Researcher Collaborative Response to the Opioid Crisis," *American Journal of Criminal Justice* 46, no. 4 (August 1, 2021): 626-643, https://doi.org/10.1007/s12103-021-09625-w.

121 Ziming Xuan et al., "Association of Implementation of Postoverdose Outreach Programs With Subsequent Opioid Overdose Deaths Among Massachusetts Municipalities," *JAMA Psychiatry* 80, no. 5 (May 1, 2023): 468-477, https://doi.org/10.1001/jamapsychiatry.2023.0109.

122 Jennifer Murphy and Brenda Russell, "Police Officers' Views of Naloxone and Drug Treatment: Does Greater Overdose Response Lead to More Negativity?," *Journal of Drug Issues* 50, no. 4 (October 1, 2020): 455-471, https://doi.org/10.1177/0022042620921363.

123 Jennifer J. Carroll et al., "Knowledge, Preparedness, and Compassion Fatigue."

124 Eric Persaud and Charles R. Jennings, "Pilot Study on Risk Perceptions and Knowledge of Fentanyl Exposure Among New York State First Responders," *Disaster Medicine and Public Health Preparedness* 14, no. 4 (August 2020): 437-441, https://doi.org/10.1017/dmp.2019.95.

125 Brandon del Pozo et al., "Can Touch This: Training to Correct Police Officer Beliefs about Overdose from Incidental Contact with Fentanyl," *Health & Justice* 9, no. 1 (November 24, 2021): 34, https://doi.org/10.1186/s40352-021-00163-5.

126 "The SHIELD Training Initiative," SHIELD Training, https://www.shieldtraining.org.

127 Brandon Del Pozo et al., "Can Touch This."

128 Karla D. Wagner et al., "Training Law Enforcement to Respond to Opioid Overdose with Naloxone: Impact on Knowledge, Attitudes, and Interactions with Community Members," *Drug and Alcohol Dependence* 165 (August 1, 2016): 22-28, https://doi.org/10.1016/j.drugalcdep.2016.05.008.

129 Ingrid A. Binswanger et al., "Release from Prison: A High Risk of Death for Former Inmates," *New England Journal of Medicine* 356, no. 2 (January 11, 2007): 157-165, https://doi.org/10.1056/NEJMsa064115.

130 Denise M. Allen and John Dunlap, "California Prisons' Naloxone Distribution: Implementation of The California Department of Corrections and Rehabilitation and California Correctional Health Care Service's Naloxone Distribution Program," (Sacramento: The California Department of Corrections ad Rehabilitation and California Correctional Health Care Services, January 2023), https://cchcs.ca.gov/wp-content/uploads/sites/60/California-Prisons-Naloxone-Distribution-Jan-2023.pdf.

131 Lynn D. Wenger et al., "Overdose Education and Naloxone Distribution in the San Francisco County Jail," J*ournal of Correctional Health Care* 25, no. 4 (October 2019): 394-404, https://doi.org/10.1177/1078345819882771.

132 The racial dimensions in the handling of opioids versus crack cocaine have been widely discussed. For an overview, see Bradley D. Stein et al. (eds.), *America's Opioid Ecosystem* (2023), 8.

133 Jonathan Caulkins and Peter Reuter, "Towards a Harm-reduction Approach to Enforcement," *Safer Communities* 8, no. 1 (January 1, 2009): 9-23, https://doi.org/10.1108/17578043200900003.

134 Federal criminal justice research is significantly underfunded. Pollack and Dosani note that National Institute of Justice and Bureau of Justice Statistics funding is less than 4% of the combined budget of the National Institute on Drug Abuse and the National Institute of Mental Health, suggesting an urgent need for funding parity to support essential research. They argue that criminal justice research requires dedicated funding, as the issues these agencies address often diverge from those within the National Institutes of Health's scope. See Harold Pollack and Eshan Dosani, "The Public Health Community Must Stand Up for Greater Resources Devoted to Criminal Justice Research," *Milbank Quarterly* (July 30, 2024), https://www.milbank.org/quarterly/opinions/the-public-health-community-must-stand-up-for-greater-resources-devoted-to-criminal-justice-research/. Further recommendations for improving drug policy data are available in this volume by Greg Midgette and Peter Reuter.

135 Qualitative research and survey/interview data could be valuable for addressing this question as well as exploring whether individuals involved in drug use or sales are aware of DIH laws and policies in their jurisdiction.

136 Pardo et al., "Future of Fentanyl and Other Synthetic Opioids."

About the authors

Roland Neil is a social scientist at RAND. His research interests include policing, changes to crime patterns and the criminal justice system over time, racial and ethnic inequality, and risk prediction. His recent work has been published in journals such as *Criminology*, the *Annual Review of Criminology*, and the *Proceedings of the National Academy of Sciences*.

Beau Kilmer, Ph.D., is co-director of the RAND Drug Policy Research Center, a senior policy researcher at RAND, and a professor of policy analysis at the Pardee RAND Graduate School. His research lies at the intersection of public health and public safety, with special emphasis on substance use, illegal markets, crime control, and public policy.

Acknowledgments

Disclaimer