N·DEWS | NATIONAL DRUG EARLY WARNING SYSTEM

National Drug Early Warning System Summary Report for 2021:

Results from Sentinel Site Surveillance

UF UNIVERSITY of FLORIDA
NYU Langone Health
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N·DEWS 2021 Summary Report

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Dear colleagues,

We are pleased to share the 2021 annual reports of the National Drug Early Warning System (NDEWS) Sentinel Sites. We have learned a lot since the beginning of 2021. The COVID-19 pandemic was still impacting communities. At the same time, the overdose crisis continued to evolve.

This report is our first annual report and shows the similarities and differences in local and regional drug use patterns. We asked our Sentinel Sites for information on: heroin, cocaine, methamphetamine, cannabis, fentanyl and other synthetic opioids, prescription opioids and benzodiazepines, and new psychoactive substances, as well as any relevant policy and legislative changes in their areas.

Not all sites were able to provide data on all substances; the types of indicator data also varied by site. Nevertheless, these contributions by our Sentinel Site Directors give us a unique perspective on what has happened at the community level. These data also align well with our scientific publications, which can be accessed here.

These data can only make an impact if they are shared. Please share this report widely. We also publish a free weekly email newsletter with the latest data and findings. Here is the link to subscribe to our NDEWS Weekly Briefing. Please share with your colleagues so we can make an even bigger impact.

We would like to thank our Sentinel Site Directors for their reports and the National Institute on Drug Abuse for their support.

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Atlanta, Georgia

Matthew M. Myers, MPA

Notes from Sentinel Site Director:

Data for the Atlanta Sentinel Site are presented for the geographical area of Fulton County, Georgia. Although some other municipalities exist within Fulton County, the vast majority of high-level data available in Georgia is organized by county, rather than by municipality. Atlanta encompasses approximately 48% of the Fulton County population and 25% of the geographic area.

The Georgia Bureau of Investigation (GBI) Department of Forensic Science (DOFS) Drug Chemistry Section provided drug seizure data for CY 2021, which included data from their statewide service area. The data were filtered by Fulton County; however, significantly more information was found on novel substances when examining all results. For this reason, data from additional areas will be discussed to provide a more robust review of trends.

The GBI DOFS provides identification for a broad scope of licit and illicit substances. Due to workload capacity and the requirement to quantify THC concentration in marijuana cases, the lab only tests felony marijuana cases (i.e., cases with over one ounce or possession with intent to distribute). For this reason, seizure data presented do not include data on misdemeanor marijuana seizures. Results may exclude a small number of drug mixture findings (e.g., fentanyl and methamphetamine) due to irregularities in report coding, although the general trend of such mixtures is discussed where appropriate.

Heroin

Fulton County drug seizures included only 68 heroin cases, partially due to the increasing number of opioid users consuming pure fentanyl instead. The statewide data for heroin included 1,166 cases and numerous findings where heroin was combined with fentanyl, xylazine, ANPP, cocaine, or methamphetamine.

Cocaine

Cocaine was the second-most seized drug in Fulton County, with 348 cases. It retained that position in statewide data, including 3,586 total cases.

Methamphetamine

Methamphetamine was the most-seized drug in Fulton County by a substantial margin, with 602 cases. It was noted that methamphetamine was often found in tablet form (like MDMA), not only in the traditional crystalline form. The near-absence of actual MDMA seizures appears likely related to methamphetamine and synthetic cathinones being sold in preparations that users likely believe are MDMA based upon appearance. On a statewide basis, methamphetamine was the most-seized drug, with more than four-fold higher seizures than cocaine (15,940 seizures versus 3,586 seizures, respectively).

Cannabis

Felony marijuana seizures in Fulton County totaled 325 during the study period. This does not include cases with less than one ounce of cannabis plant (misdemeanors) or cases with derivatives, such as THC oils, tinctures, edibles, or e-liquids. Despite being restricted to felony cases, marijuana seizures ranked third in both Fulton County and the state (3,411 seizures).

Fentanyl and other synthetic opioids

Fentanyl maintained a significant presence in Fulton County drug seizures with 40 cases. The statewide data included 878 fentanyl seizures, making it the fifth most-seized drug. Its prominence as a standalone drug (as opposed to an adulterant) is now well-established. There were no reported confirmations of fentanyl analogs from Fulton County, but statewide data included cases with para-fluorofentanyl (36 cases), carfentanil (7 cases), despropionyl carfentanil (3 cases), valerylfentanyl (1 case), and the fentanyl precursor ANPP (11 cases). Other non-prescription synthetic opioid findings in

statewide data included isotonitazene (3 cases), metonitazene (1 case), and methyl AP-237 (1 case).

Prescription opioids and benzodiazepines

Prescription opioids and prescription benzodiazepines had a significant presence in drug seizures. The most commonly seized prescription benzodiazepine was alprazolam (8 cases in Fulton County, 280 statewide), with the remainder split between diazepam (1 Fulton County, 19 statewide), clonazepam (85 statewide), and lorazepam (3 statewide).

The most commonly seized prescription opioid was oxycodone (66 Fulton County, 925 statewide), followed by hydrocodone (7 Fulton County, 404 statewide). Tramadol, methadone, morphine, codeine, hydromorphone, tapentadol, and oxymorphone composed a total of 11 additional seizure cases in Fulton County and 244 statewide.

Novel benzodiazepines

Findings of novel benzodiazepines in Fulton County were limited, with a total of 16 cases distributed among clonazolam (7 cases), flualprazolam (6 cases), and etizolam (57 cases). Statewide data included a much higher number of cases including clonazolam (190 cases), flualprazolam (112 cases), etizolam (57 cases), flubromazolam (14 cases), bromazolam (5 cases), adinazolam (4 cases), and desalkylflualprazolam (2 cases).

Anecdotal reports from law enforcement officers indicate individuals often obtain these drugs from dark web sources as purported alprazolam, as well as from regular web sources as "research chemicals" allegedly "not for human consumption." Some of these preparations were observed as a liquid solution which could be readily used in vape pens.

Novel hallucinogens

Fulton County did not record any novel hallucinogens for the study period. Statewide findings included two cases of 25C-NBOMe.

Synthetic cathinones

Synthetic cathinones continued to maintain a significant presence, accounting for 92 cases in Fulton County and 999 statewide. Eutylone accounted for 79% of all synthetic cathinone findings and was also found in a small number of mixtures with fentanyl. Others included

3,4-methylenedioxy-N-benzylcathinone (BMDP; 1 case in Fulton County, 50 statewide), 3,4-methylenedioxy-PV8 (2 Fulton County, 49 statewide), alpha-PiHP (2 Fulton County, 44 statewide), 4-fluoro-3-methyl-alpha-PVP (19 statewide), MDPEP (3 Fulton County, 11 statewide), 4-chloro-N,N-DMC (5 Fulton County, 8 statewide), butylhexedrone (7 statewide), alpha-PCYP (5 Fulton County, 6 statewide), N-butyl pentylone (3 statewide), bk-DMBDB (2 statewide), ethyl-heptedrone (1 Fulton County, 2 statewide), N-ethylpentylone (2 statewide), 4-CEC (1 statewide), and mephedrone (1 statewide).

Other novel drugs

The remaining new psychoactive substances, not otherwise categorized, consisted of synthetic cannabinoids. Only five drug seizures for Fulton County were positive for synthetic cannabinoids, including four findings of ADB-BUTINACA and one of 4F-MDMB-BUTICA. Statewide data showed a higher variety of synthetic cannabinoids, including MDMB-4en-PINACA (78 cases), 5F-MDMB-PICA (56 cases), ADB-BUTINACA (37 cases), 4F-MDMB-BUTICA (14 cases), 4F-MDMB-BUTINACA (12 cases), 5F-EDMB-PICA (6 cases), 5F-ADB (3 cases), 5F-EMB-PICA (3 cases), FUB-AMB (2 cases), XLR11 (2 cases), 5F-AB-PINACA (1 case), 5-fluoro-CUMYL-PINACA (1 case), and FUB-144 (1 case).

Chicago, Illinois

Lawrence J. Ouellet, PhD

Notes from Sentinel Site Director:

- Opioid-related overdose deaths in Chicago increased 6% in 2021 (n=1,399) compared to 2020 (n=1,326). Cook County saw a smaller increase in opioid-related overdose deaths, from 1,810 in 2020 to 1,854 in 2021.
- Emergency responses in Chicago related to opioid overdoses declined 14% during the first 10 months of 2021 (n=787) compared to the same period in 2020 (n=916).
- While Black residents constitute 29% of Chicago's population, almost half of opioid-related deaths occurred among Black individuals. The mean age was higher among Black decedents (52 years) than among White and Hispanic decedents (42 and 43 years, respectively).
- Overdose deaths and emergency responses related to opioid use are greatest in areas on Chicago's West Side, such as Austin and West Garfield Park, which have major drug markets that serve not only local residents, but also those from Chicago's suburbs and beyond. Elevated levels of overdose deaths and emergency responses are also found across several areas of the South Side.

Heroin

Among the primary causes of opioid-related deaths in Cook County, the presence of heroin declined 22% between 2020 and 2021, from 695 cases to 543 cases, respectively. Fentanyl was present in 98% of these cases in 2021, up from 11% in 2020, which points to the increasing dominance of fentanyl among illicit opioids. Awareness of fentanyl's ubiquity is high among people who inject opioids.

Cocaine

In 2021, cocaine was listed among the primary causes of death in 835 cases among 12,610 Cook County decedents, an increase of 35% compared to 2020. Of the cases in 2021, only 12% listed cocaine as the only drug present. Fentanyl, alcohol, and benzodiazepines were most often present in combination with cocaine. Rock cocaine continues to be the most common form of cocaine in Chicago and Cook County.

Methamphetamine

In 2021, methamphetamine was cited among the primary causes of death in only 31 cases among 12,610 Cook County decedents. All cases listed at least one other drug, including 27 cases that listed fentanyl. In contrast, about 20% of people 18–30 years old who inject drugs and are participating in one of our studies report occasional recent use of methamphetamine, a figure well above the approximately 2–4% in past studies. These participants primarily inject fentanyl and heroin, and they typically tell us that they use methamphetamine only when the opportunity presents itself rather than seeking it out.

Cannabis

Most seizures submitted to the forensic lab in Chicago are now of larger quantities, which appears to be a consequence of the legalization of cannabis in Illinois for adults at least 21 years or older, as well as of changes in the Cook County State's Attorney's policies regarding low-level arrests for cannabis (personal communication).

Fentanyl and other synthetic opioids

Fentanyl and its analogs were listed among the primary causes of death for 1616 (87%) of 1,854 opioid-related deaths in Cook County in 2021, up from 81% in 2020. Brorphine was present in 11 cases in 2021, down from 17 cases in 2020. However, brorphine without the co-presence of fentanyl was greater in 2021 (82%) than in 2020 (1%), but the small number of cases

makes trend identification difficult.

Prescription opioids and benzodiazepines

Tramadol was reported in 75 cases as one of the primary causes of death in Cook County in 2021. In no case was tramadol the only drug listed, and fentanyl was present in 70 (93%) of these cases.

Hydrocodone or oxycodone as one of the primary causes of death in Cook County appears unchanged between 2020 (n=63) and 2021 (n=66). The co-presence of fentanyl was reported in 66% of these cases in 2021 and 62% of these cases in 2020. Other drugs were present in all 2021 cases. The mean age of decedents in 2021 was 50 years, 69% of decedents were White, and suicide was listed in 7 cases. The Illinois State Forensics Lab in Chicago reports that counterfeit hydrocodone and oxycodone are very common among the purported prescription opioids seized by police (personal communication).

Benzodiazepines were among the primary causes of opioid-related deaths with 201 cases in 2021 and 236 cases in 2020. The large majority of deaths involving benzodiazepines are in conjunction with opioid use, particularly fentanyl. The Illinois State Forensics Lab in Chicago reports that counterfeit benzodiazepines are common among opioids seized by police (personal communication).

Relevant policy and legislative changes

The Chicago Department of Public Health (CDPH) instituted an opioid-related overdose spike alert system. In 2021, there were three high-level spikes (≥2.0 standard deviations above the normal level) in overdose deaths, and three medium-level spikes (1.5 standard deviations above the normal level), all of which occurred during the summer. The system will enable CDPH to alert stakeholders about overdose "spikes" and deploy rapid response interventions.

As part of its efforts to expand naloxone distribution, naloxone is now available in every Chicago public library.

A bill to allow a pilot program to develop guidelines and licensing procedures for safer consumption sites has been introduced in the Illinois House. Among its supporters are the Cook County State's Attorney, the Illinois Attorney General, Cook County Department of Public Health, Illinois Society of Addiction Medicine, AIDS Foundation Chicago, and the Law Enforcement Action Partnership.

As in much of the United States, considerable efforts were enacted in Chicago and across the state after

the onset of COVID-19 to expand low-threshold access to medications for opioid use disorder.

People convicted for possession of under 30 grams of marijuana prior to legalization may have their records reviewed by the state's Prisoner Review Board and then the Governor for a pardon, if those convictions were not associated with a violent crime. If the governor grants the pardon, the Illinois Attorney General then seeks an expungement. Those convicted for possession between 30–500 grams have the option of petitioning for expungement themselves. Local state attorneys can also pursue expungement for convictions on a case-by-case basis. On December 31, 2021, Governor Pritzker pardoned more than 11,000 people convicted of low-level marijuana offenses.

Denver, Colorado

Karen Corsi, MPH/MSPH

Notes from Sentinel Site Director:

- There were 1,780 drug overdose-related deaths in 2021 in Denver, a 20.5% increase from overall counts in 2020. Over the course of 2021, rates decreased in the last quarter of the year from an average of 31.6% in the first three quarters, compared to 23.1% in the last quarter.
- In total, there were 184 heroin-related deaths recorded in Colorado in 2021. This is down from 2020, in which 220 heroin-related deaths were recorded.
- Colorado reported 257 cocaine-related deaths in 2021, representing 4.3% of total recorded deaths, adjusting for age. This is a 17.4% increase from 2020.
- There were 706 total recorded methamphetamine-related deaths in Colorado in 2021. This was a 34.5% increase in methamphetamine-related deaths compared to 2020.
- Through the first nine months of 2021, fentanyl-related deaths increased by 42% from 2020. Colorado recorded 900 synthetic opioid analgesic-related deaths in 2021, with 866 fentanyl-related deaths. Fentanyl-related deaths increased by 60.4% since 2020, while synthetic opioid analgesic-related deaths increased by 54.6%.
- Prescription opioid analgesic-related deaths totaled 218 in Colorado in 2021. This was a decrease from 2020, in which 258 prescription opioid-related deaths were recorded.

Heroin

Heroin overdose deaths appear to be decreasing in Denver. In total, there were 184 overdose deaths related to heroin recorded in Colorado in 2021. This was higher than in 2020, in which 220 heroin-related deaths were recorded. May 2021 had the highest count of heroin-related overdose deaths at 21. There were 110 deaths due to acute heroin toxicity in the first half of 2021 compared to 96 in the first half of 2020 and 124 in the second half of 2020.

Cocaine

Cocaine overdose deaths have increased in Denver over the past year by 17.4%. There were 133 deaths due to acute cocaine toxicity in 2021 compared to 132 in the first half of 2020 and 87 in the second half of 2020. The starker difference was observed between 2019 and 2020 (a 62% increase), though it seems cocaine overdose deaths are continuing to remain high.

Methamphetamine

Methamphetamine overdose deaths continue to rise in Denver through 2021. There were 706 total recorded methamphetamine-related deaths in Colorado in 2021. This was a 34.5% increase in methamphetamine-related deaths compared to 2020. Summer months saw the highest rates of methamphetamine-related deaths, after adjusting for age (12.6–13.6%). There were 367 deaths due to acute methamphetamine toxicity in the first half of 2021 compared to 251 in the first half of 2020 and 274 in the second half of 2020.

Fentanyl and other synthetic opioids

Through the first 9 months of 2021, fentanyl-related deaths increased by 42% from 2020. Colorado recorded 900 synthetic opioid analgesic-related deaths in 2021, with 866 fentanyl-related deaths. Fentanyl-related deaths increased by 60.4% since 2020 (total count in 2020: 540 fentanyl-related deaths), while synthetic opioid analgesic-related deaths increased by 54.6% (total count in 2020: 582 synthetic opioid-related deaths). August 2021 saw the largest number of fentanyl-related deaths (102 deaths) and synthetic opioid analgesic deaths (109 deaths). Accounting for nearly half of all drug-related deaths in Colorado in 2021, fentanyl and other synthetic opioids are the leading drugs associated with morbidity and mortality.

Prescription opioids

Prescription opioid deaths appear to be declining in Denver, after reaching a recent high of 258 in the previous year (2020). There were 118 deaths due to prescription opioid overdoses in the first half of 2021 compared to 128 in the first half of 2020 and 130 in the second half of 2020.

Relevant policy and legislative changes

Many of the policy changes were in response to the impacts of the COVID-19 pandemic and substance use trends that have emerged in this context.

One of the initiatives was to initiate a case against JUUL for targeting youth in marketing campaigns and misrepresenting the electronic vapor product's health risks.

Further, the Colorado Consortium for Prescription Drug Abuse Prevention continues to implement goals and strategies to mitigate the impact of the opioid crisis in Colorado. In July 2021, House Bill 21-1276 was signed into law, which requires private, state-regulated health insurance plans to help cover opioid alternatives.

Additionally, in October 2021, Colorado received approval from the Biden administration to require certain insurance plans to expand coverage for those with substance use disorders, estimated to affect approximately 500,000 Coloradans.

The Senate Bill 21-137, or the Behavioral Health Recovery Act and the Behavioral Health Rescue Act, was also passed, which funds pilot programs aimed ad youth mental health and substance use services, as well as the Recovery Support Services Grant Program, a program that addresses comorbid mental health and substance use services. Colorado also continues to implement its statewide Strategic Plan for Primary Prevention of Substance Abuse (2019–2024).

Detroit, Michigan

Cynthia Arfken, PhD

Notes from Sentinel Site Director:

Information on mortality for this report relies on CDC WONDER and rapid reporting to the System for Overdose Surveillance.

Information from the Wayne County Medical Examiner's Office for the calendar year of 2021 does not include all accidental drug overdose deaths, as most years include some cases that take longer to investigate and close.

The number of naloxone administrations is also available from the System for Overdose Surveillance for Wayne County reported by EMS agencies to MI-EMSIS. Not all EMS agencies report incidents on a real-time bases, and cases may be underreported.

Information on treatment admissions are from Detroit Wayne Integrated Health.

Highlights:

- According to the CDC, US drug overdose deaths increased 27.2% between April 2020 and April 2021. However, the increase was 9.3% in Wayne County and 19.3% in Michigan.
- The number of naloxone administrations was 4,469 during 2021. Of the administrations, 37.9% were for people 55 years or older, 47.5% for Black individuals, and 68.1% for males.
- According to the System for Overdose Surveillance, there were 914 overdose deaths during 2021 in Wayne County. Among those decedents, 67.5% were male, 48.0% were White individuals, and 33.2% were people 55 years or older.
- For 2021, the number of treatment admissions was 12,386. For context, the number of admissions was 16,986 in 2019.

Heroin

Heroin was the second most common primary substance use disorder for treatment admissions (30.2%) in 2021. It was also the second most common in 2019. Data from the Wayne County Medical Examiner's (ME) Office found that 90.3% of deaths had an opioid as a cause of death, 10.3% which involved heroin.

Cocaine

Similar to 2019, cocaine was the third most common primary substance use disorder for treatment admissions in 2021 (15.8%). Of the deaths reported by the Wayne County ME Office for 2021, 42.5% had cocaine listed as a cause of death.

Methamphetamine

Methamphetamine was not common as a primary substance use disorder at admission in 2021. It was reported by 1.3% of people admitted in 2021, but that is a larger percentage than in 2019, when it was reported by 0.5% of people. In 2016, methamphetamine accounted for 0.1% of admissions, suggesting a gradual and slow increase over time. According to data from the Wayne County ME Office, 5.6% of deaths listed methamphetamine as a cause of death in 2021.

Cannabis

Treatment admissions for marijuana as a primary substance use disorder accounted for 3.6% of admissions in 2021, compared to 4.6% of admissions in 2019.

Fentanyl and other synthetic opioids

Fentanyl and other synthetic opioids, prescription opioids, and non-prescription methadone accounted for 5.6% of all treatment admissions in 2021—exactly the same proportion as in 2019. Previous analysis of data from the Wayne County ME Office had shown that fentanyl and its analogs accounted for the majority of drug overdose deaths prior to 2021; in 2021, of the 90.3% of deaths with an opioid as a cause of death, 87.3% involved fentanyl. In addition to fentanyl, acetyl fentanyl and para-fluorofentanyl were reported as causes of death.

Florida

Bruce Goldberger, PhD

Notes from Sentinel Site Director:

Trends are presented for several prominent drugs for the state of Florida, using a combination of emergency medical services (EMS) event records from the biospatial.io platform and records of drug-related deaths as reported by the Florida Medical Examiner's Commission.

It should be noted that the Medical Examiner's Commission data is only up to date through the first and second quarters of 2021. Analyses will keep this limitation in mind.

Heroin

Heroin overdoses involved in emergency medical services (EMS) dispatches recorded on biospatial.io in the state of Florida decreased from 9,673 in 2020 to 9,008 in 2021, a 6.9% decrease. This is the first time the count of heroin overdoses has decreased since between 2017 and 2018, where the number decreased from 4,426 to 4,195—a 5.2% decrease. Notably, in both years before a decline, 2017 and 2020 had relatively large spikes in heroin overdoses at the quarter level (Q2 2017 and Q2 2020) before the rate fell in the following year.

The heroin-related overdose deaths as reported by the Medical Examiner's Commission have continued in a downward trend since peaking in 2015, even accounting for only having Q1 and Q2 data available for 2021. Assuming similar trends for the rest of 2021, the case rate will be 468 for cases with heroin as a cause of death (a 33.9% decrease) and 92 for cases with the presence of heroin in system (a 32.4% decrease), with both rates being compared to the 2020 data. This correlates with the decrease of heroin-related EMS records observed. It is worth noting that when heroin is present in the system of a decedent, it is most often the cause of death, as opposed to other drugs in the system.

Fentanyl and other synthetic opioids

The first half of 2021 saw fentanyl as the cause of about 3,500 deaths and present in over 1,000 other deaths in the state of Florida. Given this information, it is highly likely that fentanyl-related deaths will continue to rise at the exponential rate observed throughout the past decade. Projected into the second half of 2021, we would expect the total values for fentanyl deaths in 2021 to be 6,988 deaths as the primary cause (a 13.6% increase) and 2,184 deaths where fentanyl is present in the decedent's system (a 33.6% increase). Data from the Medical Examiner's Commission on counts of prescribed and illicit fentanyl deaths show that the rate of deaths from prescribed fentanyl has continued to fall, even as fentanyl deaths have continued their general upward trend. This suggests that fentanyl-related deaths in Florida primarily consist of illicitly manufactured fentanyl.

Methamphetamine

In 2021, the trend of deaths involving methamphetamine continued to increase, with methamphetamine constituting the majority of the causes of death in these cases: 962 deaths occurred in which methamphetamine was the cause of death, and 376 deaths occurred

in which methamphetamine was present in the system of the decedent. Looking back over the decade, rates of deaths where methamphetamine was the cause of death as well as where methamphetamine was present in the decedent's system have both risen at an exponential rate. Projecting for the whole of 2021, methamphetamine as the cause of death is expected to increase from 1,386 in 2020 to 1,924 in 2021 (a 38.8% increase), and methamphetamine as present in the decedent's system is expected to increase from 694 in 2020 to 752 in 2021 (an 8.4% increase). The rate of methamphetamine-related deaths appears to be increasing faster than the rate of fentanyl-related deaths, but fentanyl is still responsible for approximately 3.5 times the number of deaths in the state of Florida.

Relevant policy and legislative changes

Several bills that may impact health care professionals are monitored by the Florida Department of Health. This includes HB 6095 (Scheduling of Drug Products Containing Cannabidiol), SB 262 (Dispensing Medical Drugs), and SB 530 (Nonopioid Alternatives).

Los Angeles, California

Mary-Lynn Brecht, PhD

Notes from Sentinel Site Director:

Treatment admissions were provided by the Substance Abuse Prevention and Control, Los Angeles County Department of Public Health. Data are based on all admissions to programs in Los Angeles County receiving any public funding and all admissions to programs providing narcotic replacement therapy (whether or not the program receives public funding). Admissions in which a primary drug was indicated were included. Only major drug categories are distinguishable in these data. The total number of 2021 admissions in the data provided for this report was 33,146.

Medical Examiner toxicology cases were provided by the Los Angeles County Medical Examiner's office. Frequencies reflect cases for which toxicology tests were conducted with a drug detected (i.e., not just drug-related deaths). Each case may have more than one drug detected. The total number of toxicology cases with positive results for 2021 was 4,909.

Poison Control call drug mentions were provided by the California Poison Control Center for the 2021 calendar year. Drug mentions are included in this report for illicit drugs or for any drug mentioned in cases (calls) for which the reason for the call was labeled as "intentional/suspected suicide, misuse, abuse, unknown," "contamination/tampering," or "malicious." The number of such drug mentions totaled 3,099 for Los Angeles County in 2021. Note that more than one drug could have been mentioned in the same case (call).

Heroin

Among Medical Examiner toxicology cases with a drug detected in 2021, 9.8% of cases tested positive for heroin or its metabolites (n=480 of the total 4,909 cases testing positive for drugs), a substantial decrease from 16.5% (n=723) in 2020. Among cases testing positive for heroin, 93% also tested positive for at least one additional type of substance. The most prevalent co-occurring drugs included methamphetamine (57% of heroin cases), fentanyl (49%), other opioids (33%), and cocaine (13%).

In 2021, of the total 33,146 treatment admissions recorded, 15.5% were for heroin, a decrease from 20.3% in 2020—continuing a decline from a peak in 2015.

Heroin was reported in 1.4% (n=43) of the 3,099 relevant Poison Control calls in 2021 with drug mentions. Poison Control data from 2020 were not available for comparison and trend assessment.

Cocaine

Cocaine was identified in 16.6% of Medical Examiner toxicology cases with a drug detected in 2021 (n=815), an increase from 13.3% in 2020 (n=580).

In 2021, 3.5% of treatment admissions were for cocaine, a slight decrease from 3.7% reported in 2020. Cocaine was reported in 2.0% (n=63) of relevant Poison Control calls in 2021.

Methamphetamine

Methamphetamine continues to be a major problem in Los Angeles County, representing a larger proportion of treatment admissions than any other substance and identified in nearly half of Medical Examiner toxicology cases, as well as reported in a higher percentage of toxicology cases than any other drug.

Methamphetamine was identified in 48.9% of Medical Examiner toxicology cases with a drug detected in 2021 (n=2,402), an increase from 46.8% in 2020 (n=2,047). This represents a continued increasing trend over the past decade. Among cases testing positive for methamphetamine, 67% also tested positive for at least one additional type of substance. The most prevalent co-occurring drugs included fentanyl (40% of cases), cocaine (13%), and heroin (11%).

In 2021, 33.4% of total treatment admissions were for methamphetamine, a slight decrease from 33.8% in 2020 (following a peak of 35.2% in 2019).

Methamphetamine was reported in 6.3% (n=195) of relevant Poison Control calls and was the most frequently mentioned illicit substance.

Cannabis

Among Medical Examiner toxicology cases with a drug detected in 2021, 16.0% of cases tested positive for THC (n=785). While this was a slight increase over the number of cases in 2020 (n=713), it represented a slight decrease in the percentage of cases in 2020 (16.3%).

In 2021, 8.1% of total treatment admissions were for marijuana, a very slight decrease from the 8.4% of admissions reported in 2020. Marijuana products were reported in 3.7% (n=114) of relevant Poison Control calls in 2021.

Fentanyl and other synthetic opioids

Fentanyl is a rapidly growing problem in Los Angeles County, as the second most-prevalent drug (after methamphetamine) reported in Medical Examiner toxicology cases. In 2021, 35.4% of toxicology cases tested positive for fentanyl (n=1,736), an increase from 28.1% (n=1,230) in 2020. This represents a continued trend over the past decade, with steep increases since 2017. Among cases testing positive for fentanyl, 85% also tested positive for at least one other substance. The most prevalent co-occurring drugs included methamphetamine (55% of fentanyl cases), cocaine (23% of fentanyl cases), and heroin (14% of fentanyl cases).

Fentanyl was not distinguishable from other opioids in treatment admissions data for 2021. Fentanyl was reported in 3.6% (n=111) of relevant Poison Control calls with drug mentions in 2021.

Prescription opioids

Prescription opioids continue to be a focus of public health concern, but are reported in only a small fraction of treatment admissions and identified in a smaller percentage of Medical Examiner toxicology cases than methamphetamine, fentanyl, heroin, cocaine, and THC.

Among Medical Examiner toxicology cases with a drug detected in 2021, other opioids (i.e., opioids not including heroin and fentanyl) were identified in 9.2% of cases (n=447), a decrease from 11.8% in 2020.

In 2021, 6.0% of treatment admissions were for prescription opioids, an increase from 4.1% in 2020. For treatment admissions data, this category did not distinguish between specific prescription opioids and thus may include fentanyl. Prescription opioids (excluding fentanyl) were reported in 12.5% (n=386) of relevant Poison Control calls in 2021.

Benzodiazepines

Benzodiazepines were identified in 2.8% of Medical Examiner toxicology cases with a drug detected in 2021 (n=135), an increase from 1.6% (n=68) in 2020.

In 2021, 0.8% of treatment admissions were for benzodiazepines, which was similar to levels observed in 2020. Benzodiazepines were reported in 23.1% (n=717) of Poison Control calls.

Other substances

Phencyclidine (PCP) was identified in 4.2% of Medical Examiner toxicology cases with a drug detected in 2021 (n=208), an increase from 3.2% in 2020 (n=141). PCP was also reported in 0.3% (n=10) of relevant Poison Control calls in 2021.

MDMA or its metabolites were identified in 1.0% of Medical Examiner toxicology cases with a drug detected in 2021 (n=50), with little change from 1.1% in 2020 (n=48). Less than 0.1% of treatment admissions were for MDMA in 2021, similar to 2020 levels. MDMA was reported in 0.1% (n=3) of relevant Poison Control calls in 2021.

Synthetic piperazines were identified in 1.0% of Medical Examiner toxicology cases with a drug detected in 2021 (n=47), a slight increase from 0.8% in 2020 (n=36).

Several other substances of potential interest had at least one report among relevant Poison Control calls in 2021, which included ketamine (n=13), LSD (n=13), GHB (n=25), synthetic cannabinoids (n=9), and Rohypnol (n=1).

New York City, New York

Alex Harocopos, PhD, MSc

Notes from Sentinel Site Director:

- During the first three quarters of 2021, there were 1,956 overdose deaths in New York City (NYC). Neighborhoods in the Bronx and Harlem had the highest rates of overdose deaths during this time.
- In 2020, the rate of overdose deaths increased to 30.5 per 100,000 NYC residents, compared with 21.9 in 2019. Black NYC residents had the highest rate of overdose deaths (38.2 per 100,000) and the largest absolute increase in rate from 2019 to 2020 (+14.2 per 100,000). Opioids were involved in 85% of overdose deaths, and for the fourth year in a row, fentanyl was the most common substance involved in overdose deaths, present in 77% of deaths in 2020. Approximately half (48%) of all overdose deaths in 2020 involved more than one central nervous system depressant.
- From 2020 to 2021, there was a decrease in admissions to all Office of Addiction Services and Supports (OASAS) treatment programs, except for residential treatment programs, which remained flat. The number of admissions decreased by 10.1% over this period, from 78,409 admissions in 2020 to 70,491 admissions in 2021.
- In 2021, NYC residents experienced a total of 48,733 non-crisis drug treatment admissions and 21,758 detoxification admissions.
- The largest proportion of NYC residents report alcohol (39%) as their primary substance at admission to a non-crisis drug treatment program. Heroin was the second most-common primary substance (29%), followed by cannabis (13%) and cocaine (10%).

Heroin

Among all treatment admissions, the proportion of individuals who cited heroin as their primary drug at admission remained flat between 2014 and 2021, at 28%.

In 2020, a total of 972 overdose deaths involved heroin, a rate of 14.3 per 100,000 residents. Though the number of heroin-involved overdose deaths increased in 2020 compared to 2019 (789 deaths), the proportion of deaths involving heroin decreased from 2019 to 2020 (53% versus 47%, respectively). Rates of heroin-involved overdose deaths were highest among males (23.3 per 100,000), adults aged 55–64 years (25.8 per 100,000), residents of the Bronx (22.1 per 100,000), and residents of high poverty neighborhoods (23.3 per 100,000).

Cocaine

Among all treatment admissions, the proportion of individuals who cited crack/cocaine as their primary drug at admission decreased from 9% in 2014 to 7% in 2021.

From 2019 to 2020, the rate of cocaine-involved overdose deaths increased from 11.3 to 14.5 per 100,000. In 2020, Black residents had the highest rate of cocaine-involved overdose deaths (22.1 per 100,000), followed by Latino/a (16.2 per 100,000), White (12.6 per 100,000), and Asian/Pacific Islander residents (1.2 per 100,000).

Opioids were involved in 87% of cocaine-involved overdoses in 2020. Cocaine-involved overdose deaths were less likely to involve an opioid among Black residents (81%) compared with Latino/a (91%) and White residents (90%). Fentanyl was the most common opioid involved in cocaine-involved overdose deaths. In 2020, 359 overdose deaths involved cocaine and fentanyl without heroin (an increase from 184 deaths in 2019), while 309 overdose deaths involved cocaine and fentanyl without any other opioid (an increase from 166 deaths in 2019).

Methamphetamine

Among all treatment admissions, the proportion of individuals who cited methamphetamine as their primary drug at admission increased from 0.3% in 2014 to 1.2% in 2021.

In 2020, methamphetamines were involved in 5% (n=112) of overdose deaths in New York City.

Fentanyl and other synthetic opioids

In 2020, fentanyl was the most common opioid involved in overdose deaths (77%). Fentanyl was commonly found in overdose deaths with other substances. Fentanyl was involved in

93% of heroin-involved overdoses, 81% of cocaine-involved overdoses, 80% of alcohol-involved overdoses, 77% of opioid analgesic-involved overdoses, and 66% of amphetamine-involved overdoses.

Prescription opioids

Opioid analgesics, excluding fentanyl and tramadol, were involved in 16% of overdose deaths in 2020, compared with 12% of overdose deaths in 2019.

During 2020, in response to the increased number of heroin and fentanyl seizures containing tramadol, the Office of the Chief Medical Examiner introduced a new, more sensitive test for tramadol. When the more sensitive test was implemented in 2020, tramadol was detected in 274 overdose deaths (13%), compared with 14 overdose deaths (1%) in 2019.

The total number of Schedule II opioid analgesic (OA II) prescriptions filled in NYC decreased by 43% between 2014 and 2021, from 1.9 to 1.1 million prescriptions. Seventy-two percent of the OA II prescriptions filled in 2021 were for oxycodone, and 11% were for hydrocodone.

The number of NYC residents who filled an OA II prescription declined by 46% between 2014 and 2021, from 645,706 to 351,379, respectively. During this period, the number and rate of patients who filled an OA II prescription decreased each year except from 2020 to 2021, where the number and rate increased (331,566 patients, 36.5 per 1,000 residents, and 351,379 patients, 39.1 per 1,000 residents, respectively).

In 2021, female residents filled OA II prescriptions at higher rates than males (42.2 per 1,000 females versus 35.7 per 1,000 males, respectively). However, males filled high-dose prescriptions at higher rates than females (3.5 per 1,000 males versus 3.1 per 1,000 females, respectively). Receiving a high-dose prescription—defined as greater than 90 morphine milligram equivalents per day—greatly increases an individual's risk of overdose. For all boroughs, the rate of high-dose opioid prescriptions decreased from 2014 to 2021. Despite trends in decreasing prescription rates, residents of Staten Island have filled high-dose OA II prescriptions at higher rates than residents of all other boroughs since 2014.

Benzodiazepines

Benzodiazepine prescriptions are of interest, as they were involved in 19% of overdose deaths in NYC in 2020.

The total number of benzodiazepine prescriptions filled in NYC decreased by 11% between 2014 and 2021, from 1.7 to 1.5 million prescriptions. The number of NYC

residents who filled a benzodiazepine prescription declined by 16% between 2014 and 2021, from 440,918 to 370,248.

Between 2014 and 2021, female residents have consistently filled benzodiazepine prescriptions at higher rates than male residents (48.5 per 1,000 females versus 31.9 per 1,000 males, respectively, in 2021).

In 2021, residents of Manhattan filled benzodiazepine prescriptions at a higher rate (59.9 per 1,000 residents) compared with residents of Staten Island (53.2 per 1,000), Brooklyn (38.1 per 1,000), Queens (34.3 per 1,000), and the Bronx (27.4 per 1,000).

Relevant policy and legislative changes

On March 31, 2021, New York State passed the Marijuana Regulation and Taxation Act. Specific provisions include:

- Consumer possession and consumption: Allows personal possession of up to 3 ounces of cannabis and 24 grams of concentrate for individuals ages 21 and older and public smoking and vaping where tobacco smoking is allowed, with some exceptions. After legal sales and home cultivation officially begin, the legislation also allows home possession of up to 5 pounds and home cultivation of up to 6 plants per person, for a total of 12 plants per household.
- Regulatory structure: Creates the State Cannabis Control Board and Office of Cannabis Management to establish and regulate the adult use cannabis industry and state medical cannabis program.
- Tax structure: Creates tax structure for recreational adult cannabis sales and allocates excise tax revenues to cover operating expenses, with the remainder ear-marked to participating localities for school and community investments, substance use education and treatment, law enforcement training and technology for DWI offenses, and public education.
- Criminal legal impact: Automatically expunges criminal records for cannabis offenses which are no longer illegal and reduces criminal offense levels for unlawful possession and sale while retaining cannabis within the penal law.
- Social and economic equity: Licensing program aims to foster participation among communities disproportionately impacted by cannabis program by establishing incubator program and other support.

On October 18, 2021, the New York City Board of Health passed a resolution declaring racism a public health crisis. As part of this resolution, the Board of Health noted the Health Department had

documented persistent racial disparities across a wide range of health conditions. The Board of Health also noted that longstanding structural racism impacts both the health and wellbeing of NYC residents as well as the care they receive.

In response to the unprecedented numbers of overdose deaths, on November 30, 2021, NYC announced the implementation of overdose prevention center (OPC) services at two syringe service programs operated by OnPoint NYC, the first to be recognized in the US. Also known as supervised consumption sites, OPCs are health care facilities that improve individual and community health, increase public safety, and reduce the social consequences of drug use. Operational in more than 10 countries and 60 cities throughout the world, OPCs offer supervised, hygienic spaces in which people can safely use pre-obtained drugs while having the opportunity to access services—onsite or by referral—to routine health, mental health, drug treatment, and other social supports. As of August 7, 2022, the OPC sites were used 30,402 times and averted 406 overdoses to prevent injury and death.

Philadelphia, Pennsylvania

Dana Higgins, MPH, & Jewell Johnson, MPH

Notes from Sentinel Site Directors:

- Of note, data reflected in this report span the time period of July 1, 2020, to June 30, 2021 (2020 H2–2021 H1).
- There were 1,271 overdose deaths that occurred in Philadelphia during this period, a 9% increase since July 1, 2019–June 30, 2020.
- Most overdose decedents were male (75%), non-Hispanic White (42%), and between 40–59 years of age (49%).
- Forty-nine percent (n=622) of overdose decedents who died between 2020 H2 and 2021 H1 had an opioid and a stimulant detected in toxicology tests, followed by 35% (n=448), 14% (n=171), and 2% (n=30) with opioids only, stimulants only, or other drug classes (no opioids/stimulants) detected in toxicology tests, respectively.
- During this time period, there were 6,001 emergency department (ED) visits for overdoses from opioids or unknown substances, an 11% decrease from the preceding 12-month period.
- There were 5,750 ED visits for withdrawal or requests for detoxification during this period, a 6% increase from the preceding 12-month period.
- There were 3,882 ED visits for cocaine use during this period, a 13% decrease from the previous 12-month period.
- There were 4,260 ED visits for hallucinogen use during this period, a 31% increase from the previous 12-month period.

Heroin

In recent years, heroin detections have been decreasing in overdose decedents' toxicology data. Between 2020 H2 and 2021 H1, there were 136 (11%) overdose decedents that had heroin detected in toxicology tests, an 18% decline from July 1, 2019–June 30, 2020. Of those that had heroin detected in toxicology tests in 2020 H2 and 2021 H1, most were male (70%), non-Hispanic Black (42%), and between 40–59 years of age at the time of death (46%). Ninety-two percent (n=125) of heroin-involved decedents were also positive for fentanyl.

During the same period, there were 877 ED visits with mentions of heroin in the chief complaint field or with a discharge diagnosis related to heroin, a 45% decrease from the preceding 12-month period. Of those who had a heroin-involved ED visit, most were males (75%) and between 20–39 years old (46%).

As fentanyl and its analogs have largely replaced heroin in the illicit drug market in Philadelphia, we expect these declining trends to continue.

Cocaine

Over the last decade, there has been an increase in cocaine detections in overdose decedents' toxicology tests. Between July 1, 2020, and June 30, 2021, there were 651 (51%) overdose decedents with cocaine detected in toxicology tests, a 4% increase from the preceding 12-month period. Of those who had cocaine detected in toxicology tests, 75% were male, 51% were non-Hispanic Black, and 57% were between 40–59 years old at the time of death. Of the cocaine-involved decedents, 79% (n=515) also had an opioid detected in toxicology tests. Among the overdose decedents who had cocaine and an opioid detected, 97% (n=498) were positive for fentanyl.

As mentioned in the highlights section of this report, there were 3,882 ED visits for cocaine use, a 13% decrease from the preceding 12-month period. Of those who had a cocaine-involved ED visit, 72% were male and 57% were between 40–59 years old. Twenty-six percent (n=1,001) of those who visited the ED for cocaine also had mentions of opioids.

As most of the cocaine-involved overdose decedents also had an opioid detected (fentanyl), this may suggest that those who use cocaine and encounter fentanyl may be more likely to experience fatal outcomes.

Methamphetamine

In the last five years, Philadelphia has seen a rapid increase of methamphetamine in the illicit drug market. Between July 1, 2020, and June

30, 2021, there were 210 (17%) overdose decedents who had methamphetamine detected in toxicology tests, a 74% increase from the preceding 12-month period. Of those with methamphetamine detections, 81% were male, 72% were non-Hispanic White, and 52% were between 40–59 years old. Seventy-eight percent (n=163) of those with methamphetamine detections were also positive for fentanyl.

Between July 1, 2020, and June 30, 2021, there were 133 ED visits that mentioned methamphetamine in the chief complaint or had a discharge diagnosis related to amphetamines, an 18% increase from 113 visits in the preceding 12-month period. Of those who had a methamphetamine-involved ED visit, 83% were male, and 66% were between 20–39 years old. Only 17% (n=23) of methamphetamine-involved ED visits also mentioned opioids.

Like cocaine-involved decedents, most (n=163, 78%) of the methamphetamine-involved overdose decedents also had fentanyl detected, which may also suggest that those who use methamphetamine and encounter fentanyl may be more likely to experience fatal outcomes.

Fentanyl and other synthetic opioids

Since 2016, fentanyl and its analogs have largely replaced heroin in the illicit drug market in Philadelphia. Due to its rapid expansion in the illicit drug market, the number of fentanyl detections in overdose decedents' toxicology tests have approximated an exponential curve. Between July 1, 2020, and June 30, 2021, there were 1,007 overdose decedents who had fentanyl detected in toxicology tests, an 8% increase from the previous 12-month period. Most of those who had fentanyl detected in toxicology tests were male (75%), non-Hispanic White (45%), and between 40–59 years old (47%). Of note, xylazine has now emerged as a leading adulterant in the fentanyl supply.

While it is known that fentanyl is the leading opioid in the illicit drug market in Philadelphia and nationally, before October 2021, there was not a specific ICD-10-CM code for fentanyl. The ICD-10-CM code T40.4 (poisoning by, adverse effect of, and underdosing of other synthetic narcotics) is used as a proxy with ED syndromic and hospitalization data to monitor fentanyl, but is likely severely underutilized. Between July 1, 2020, and June 30, 2021, there were 115 ED visits that had any mention of synthetic narcotics, a 33% decrease from the previous 12-month period. Of those with mentions of synthetic narcotics, 71% were male and 57% were between 20–39 years old.

Prescription opioids and benzodiazepines

Since 2010, the number of decedents who had a pharmaceutical opioid detected in toxicology tests has remained relatively consistent, while the number of decedents who had a benzodiazepine detected peaked in 2017. Between July 1, 2020, and June 30, 2021, there were 255 and 328 overdose decedents with a pharmaceutical opioid or a benzodiazepine detected in toxicology tests, a 75% and 11% increase from the previous 12-month period, respectively. Of those who had a pharmaceutical opioid detected in toxicology tests, most were male (69%) and non-Hispanic White (43%), and the proportion of those 20–39 years old was the same as those between 40–59 years old (45%). Of those with a benzodiazepine detected in toxicology tests, most were male (62%), non-Hispanic White (52%), and between the ages of 20–39 years (45%). Of note, data from the Philadelphia Medical Examiner's Office do not differentiate between prescription benzodiazepines and novel benzodiazepines.

Between July 1, 2020, and June 30, 2021, there were 174 and 296 ED visits that had any mention of pharmaceutical opioids and benzodiazepines, increasing 5% and decreasing 1% since the previous 12-month period, respectively. Among those who had an ED visit related to pharmaceutical opioids, most were male (62%) and between 20–39 years of age (57%), while those who had an ED visit for benzodiazepines were mostly male (52%) and between 20–39 years (53%).

The number of opioid prescriptions and benzodiazepine prescriptions dispensed in Philadelphia have steady increased since 2016 Q3. Between July 1, 2020, and June 30, 2021, there were 634,003 opioid prescriptions dispensed to Philadelphia residents, compared to 1,117,229 opioid prescriptions dispensed between July 1, 2016 and June 30, 2017. Like opioid prescriptions, benzodiazepine prescriptions decreased from 704,281 prescriptions dispensed between July 1, 2016 and June 30, 2017 to 470,966 prescriptions dispensed between July 1, 2020 and June 30, 2021.

Other novel drugs

Xylazine has emerged in the illicit drug market as the main adulterant of fentanyl in Philadelphia. Between July 1, 2020, and June 30, 2021, there were 400 overdose decedents who had xylazine detected in toxicology tests, a 43% increase from the previous 12-month period. Of those who had xylazine detections, 75% were male, 55% were non-Hispanic White, and 46% were between 40–59 years old. Ninety-nine percent (n=399) of overdose

decedents who were positive for xylazine were also positive for fentanyl.

Relevant policy and legislative changes

On April 13, 2020, Philadelphia City Council passed Bill No. 190864 requiring acute care hospitals in Philadelphia to report aggregate counts of individuals who were seen in the emergency department for substance use-related reasons and the disposition of those individuals. Specific metrics to be reported included the number of patients seen in the ED for an overdose or seeking treatment for withdrawal symptoms, as well as the number of patients who were seen in the ED who were referred to substance use treatment, treated with buprenorphine, or provided naloxone on discharge. Hospitals began reporting data quarterly starting in October 2020.

Phoenix, Arizona

James K. Cunningham, PhD

Notes from Sentinel Site Director:

- Nonfatal opioid overdose events reported in Arizona were fairly stable during 2018 (n=3,211), 2019 (n=3,471), 2020 (n=3,976), and 2021 (n=3,488).
- Consistent with nonfatal opioid overdose events, opioid-related encounters at emergency departments and hospitals (EDs/hospitals) in Arizona were fairly stable as well: 21,206 in the first half of 2018, 21,427 in the first half of 2019, 19.781 in 2020, and 20,261 in the first half of 2021.

Heroin

The percentage of nonfatal opioid overdose events that included heroin in Arizona has decreased in recent years. Heroin was present in 26.0%, 23.9%, 13.0%, and 4.7% of nonfatal opioid overdose events in 2018, 2019, 2020, and 2021, respectively.

Cocaine

Cocaine-related ED/hospital encounters in Arizona decreased from 3,677 in the first half of 2018 to 2,827 in the first half of 2021. Cocaine was involved in 5.6% of nonfatal overdose events reported in Arizona in 2018 and 4.3% in 2021.

Methamphetamine

Methamphetamine and other stimulant-related ED/hospital encounters were higher in the first half of 2021 (n=18,186) than in the first halves of 2018 (n=16,237), 2019 (n=17,638), and 2019 (n=17,687). Methamphetamine was involved in 15.5% of nonfatal overdose events reported in Arizona in 2018, while it was involved in 19.8% of nonfatal overdose events in 2021.

Cannabis

Marijuana/cannabis-related ED/hospital encounters in Arizona have been fairly flat. There were 11,023 marijuana/cannabis-related ED/hospital encounters in the first half of 2018 and 11,234 encounters in the first half of 2021.

Fentanyl and other synthetic opioids

The percentage of nonfatal opioid overdose events that included fentanyl has risen during the past several years. Fentanyl was present in 12.6%, 25.4%, 40.0%, and 47.4% of these events in 2018, 2019, 2020, and 2021, respectively.

Prescription opioids

Oxycodone was present in 28.2%, 33.4%, 28.1%, and 17.4% of nonfatal opioid overdose events in 2018, 2019, 2020, and 2021, respectively.

Hydrocodone was present in 5.7%, 3.8%, 2.5%, and 1.9% of nonfatal opioid overdose events in 2018, 2019, 2020, and 2021, respectively.

Methadone was present in 3.6%, 5.0%, 5.2%, and 3.4% of nonfatal opioid overdose events in 2018, 2019, 2020, and 2021, respectively.

Benzodiazepines and other sedatives

Benzodiazepines were present in 17.7%, 14.3%, 7.0%, and 9.1% of nonfatal opioid overdose events in 2018, 2019, 2020, and 2021, respectively.

Sedative-related ED/hospital encounters were higher in the first half of 2021 (n=2,586) than in the first halves of 2018 (n=2,373), 2019 (n=2,245), and 2019 (n=2,151).

Other drugs

Inhalant-related ED/hospital encounters were higher in the first half of 2021 (n=153) than in the first halves of 2018 (n=82), 2019 (n=75), and 2019 (n=68).

San Diego, California

Elieen V. Pitpitan, PhD

Notes from Sentinel Site Director:

Most of the information described below is from the California Overdose Surveillance Dashboard, which summarizes data along deaths, hospitalizations, and emergency department (ED) visits.

Acute poisoning deaths involve the drug in question. Deaths related to chronic use of drugs are excluded from this indicator. For psychostimulants with abuse potential, acute poisoning deaths exclude cocaine. For prescribed opioid pain relievers, acute poisoning deaths include methadone but exclude synthetic opioids such as fentanyl, which are presented separately.

ED visits include those caused by nonfatal acute poisonings due to the effects of the drug in question, regardless of intent. ED visits related to late effects, adverse effects, and chronic poisonings due to the effects of drugs are excluded from this indicator.

Hospitalizations include those caused by nonfatal acute poisonings due to the effects of the drug in question, regardless of intent. Hospitalizations related to late effects, adverse effects, and chronic poisonings due to the effects of drugs are excluded from this indicator.

Heroin

Heroin overdose deaths saw a slight increase at the beginning of 2021, but appeared to be declining in San Diego by the end of 2021. In the fourth quarter of 2020, the age-adjusted rate for acute poisoning deaths involving heroin was 2.36 (per 100k residents; 95% CI: 1.9, 3.0), which increased to 2.56 (95% CI: 2.1, 3.1) by the first quarter of 2021. This represented an 11.8% one-year increase in heroin-related overdose deaths, although this one-year change was not statistically significant. However, the upward trend discontinued in the second quarter of 2021, where the age-adjusted rate declined to 1.59 (95% CI: 1.2, 2.1). The second quarter of 2021 represented a statistically significant 47% one-year reduction in heroin-related overdose deaths in San Diego.

Emergency department (ED) visits caused by nonfatal acute poisoning of heroin mirrored trends found for overdose deaths, where there was a significant decline in ED visits by the end of 2021. In the fourth quarter of 2020, the total population age-adjusted rate per 100k residents for heroin-related overdose ED visits was 7.55 (95% CI: 6.7, 8.5), which declined to 6.94 (95% CI: 6.1, 7.9) by the first quarter of 2021. The downward trend continued into the second quarter of 2021, where the total heroin-related overdose ED visits age-adjusted rate further dropped to 4.94 (95% CI: 4.2, 5.8), which was a statistically significant 45.1% one-year reduction (i.e., compared to the second quarter of 2020).

Hospitalizations due to nonfatal heroin-related overdose appear to contrast the declining trend of heroin overdose deaths and ED visits in 2021. For example, in the second quarter of 2021, the age-adjusted rate was 2.15 per 100k residents (95% CI: 1.7, 2.7). This represented a 15.6% one-year increase in heroin-related overdose hospitalizations, although this one-year change was not statistically significant, indicating that hospitalization rates involving heroin toxicity in San Diego have remained the same since 2020.

Cocaine

Cocaine overdose deaths in San Diego reached a significant high toward the end of 2020. In the fourth quarter of 2020, the age-adjusted rate was 3.52 per 100k residents (95% CI: 2.9, 4.2), and this represented a statistically significant 139.5% one-year increase (i.e., compared to the fourth quarter of 2019). Over 2021, the rate appeared to be on a declining trend, although when compared to 2020, the one-year changes were not statistically significant. For example, in the first quarter of 2021, the age-adjusted rate for cocaine-related overdose deaths was

3.98 (95% CI: 3.3, 4.7), which decreased to 2.90 (95% CI: 2.4, 3.5) by the second quarter of 2021; however, these changes are not significant when compared to 2020 quarterly rates, indicating that acute poisoning deaths involving cocaine in San Diego remained the same since 2020.

ED visits caused by nonfatal acute poisoning of cocaine showed an increasing trend over 2021, but when compared to 2020, none of the one-year changes were statistically significant. In the fourth quarter of 2020, the total population age-adjusted rate per 100k residents for cocaine-related overdose ED visits was 1.40 (95% CI: 1.0, 1.9). By the first and second quarter of 2021, the age-adjusted rate increased to 1.79 (95% CI: 1.4, 2.3) and 1.81 (95% CI: 1.4, 2.4), respectively.

Hospitalization trends due to nonfatal cocaine-related overdose remained similar and did not show any statistically significant one-year change from 2020 to 2021. In the fourth quarter of 2020, the age-adjusted rate for cocaine-related overdose hospitalization was 1.27 per 100k residents (95% CI: 0.9, 1.7), which did not change much by the second quarter of 2021, when the rate was 1.2 per 100k residents (95% CI: 0.9, 1.6).

Methamphetamine

ED visits and hospitalizations due to nonfatal methamphetamine-related overdose showed similar trends with an increase at the beginning of 2021 that discontinued with a drop by the second quarter of the year. For example, in the fourth quarter of 2020, the total population age-adjusted rate per 100k residents for methamphetamine-related overdose ED visits was 4.35 (95% CI: 3.6, 5.2). By the first quarter of 2021, the age-adjusted rate increased slightly to 4.82 (95% CI: 4.1, 5.7) before dropping to 4.03 (95% CI: 3.4, 4.8) in the second quarter. Hospitalizations due to methamphetamine toxicity mirrored this trend as the total population age-adjusted rate per 100k residents increased from 8.33 (95% CI: 7.4, 9.4) to 9.8 (95% CI: 8.8, 10.9) between the fourth quarter of 2020 and the first quarter of 2021, before dropping to 8.66 (95% CI: 7.7, 9.7) into the second quarter of 2021. However, when compared to 2020 quarterly rates, the one-year changes in 2021 were not statistically significant, indicating ED visits and hospitalizations due to nonfatal methamphetamine-related overdose have remained the same in San Diego since 2020.

Deaths involving psychostimulants with abuse potential such as methamphetamine, MDMA, dextroamphetamine, levoamphetamine, or Ritalin (excluding cocaine) significantly increased in San Diego over 2021, although this substantial rise in deaths

can be partially attributed to opioids (prescription opioid pain relievers or other opioids) in combination with the psychostimulants mentioned above.

In the fourth quarter of 2020, the total population age-adjusted rate per 100k residents for psychostimulants with abuse potential-related overdose deaths was 12.81 (95% CI: 11.6, 14.1), which increased to 17.12 (95% CI: 15.8, 18.6) by the first quarter of 2021 before dropping back to 12.18 (95% CI: 11.0, 13.4) in the second quarter of 2021. The psychostimulant-related overdose deaths in all these three quarters represented a statistically significant one-year increase of 94.1% (2020 Q4) and 43.3% (2021 Q2) respectively, indicating that acute poisoning deaths involving psychostimulants were rising in San Diego between 2020 and 2021.

Overdose deaths due to both psychostimulants and opioids (in combination) also exhibited substantial rise in San Diego over 2021. In the first and second quarter of 2021, the total population age-adjusted rate per 100k residents for acute poisoning deaths involving combinations of opioids and psychostimulants were 11.76 (95% CI: 10.6, 13.0) and 7.81 (95% CI: 6.9, 8.8), and both represented statistically significant one-year changes of 318.5% (2021 Q1) and 42% (2021 Q2), respectively. The substantial one-year increase (318.5%) in the first quarter of 2021 is alarming and adds reason for further concern regarding substance-related overdose deaths in San Diego.

Mirroring the trend of overdose deaths, ED visits and hospitalizations due to nonfatal acute poisoning from combinations of methamphetamine and opioid drugs also saw a significant rise in San Diego over 2021. For example, in the second quarter of 2021, the total population age-adjusted rate per 100k residents for methamphetamine-opioid overdose ED visits and hospitalizations were 1.08 (95% CI: 0.8, 1.5) and 2.45 (95% CI: 1.9, 3.0), respectively. Both of these rates represented statistically significant one-year increases of 980% and 250% (i.e., compared to the second quarter of 2020), indicating substantial increases in methamphetamine-opioid combination-related ED visits and hospitalizations in San Diego over the last year.

Cannabis

At the beginning of 2021, there was a significant decrease in ED visits due to nonfatal acute cannabis-related overdose in San Diego. In the first quarter of 2021, the age-adjusted rate for ED visits due to nonfatal acute poisonings of cannabis was 5.84 per 100k residents (95% CI: 5.0, 6.8). This was a 25.9% one-year reduction (i.e., compared to the first quarter of

2020), which was statistically significant.

Similarly, hospitalizations due to nonfatal cannabis-related overdose in San Diego appeared to be significantly declining at the end of 2020, which continued through the first quarter of 2021, although this downward trend discontinued into the second quarter of 2021, with a significant rise in hospital visits involving acute cannabis toxicity. For example, in the fourth quarter of 2020, the total population age-adjusted rate per 100k residents for hospitalization due to nonfatal acute poisonings of cannabis was 1.49 (95% CI: 1.1, 2.0), which dropped to 1.18 (95% CI: 0.8, 1.6) by the first quarter of 2021. The hospitalization rates in both these quarters represented a statistically significant one-year reduction of 53.7% (i.e., 2020 Q4 compared to 2019 Q4) and 50.6% (i.e., 2021 Q1 compared to 2020 Q1), respectively. However, the substantial decline discontinued in the second quarter of 2021, where the rate per 100k residents was 2.75 (95% CI: 2.2, 3.4), which represented a statistically significant 154.6% one-year increase in cannabis-related hospitalizations across San Diego.

Fentanyl and tramadol

Fentanyl (and fentanyl analogs) has been one of the leading substances associated with morbidity and mortality in San Diego. In the fourth quarter of 2020, the age-adjusted rate per 100k residents for fentanyl-related overdose deaths was 14.16 (95% CI: 12.9, 15.5), which increased to 17.87 (95% CI: 16.5, 19.4) and 15.86 (95% CI: 14.5, 17.3) by the first and second quarters of 2021, respectively. The acute poisoning deaths involving fentanyl (and common analogs) in all these three quarters represented statistically significant one-year increases of 179.8% (2020 Q4), 133.6% (2021 Q1), and 72.8% (2021 Q2), respectively, indicating an alarming rise in fentanyl-related overdose deaths in 2021 across San Diego.

Contrary to previous years, data on fentanyl-related overdose ED visits and hospitalizations were available on the California Overdose Surveillance Dashboard for 2021. In the first quarter of 2021, the age-adjusted rate per 100k residents for ED visits due to nonfatal acute poisoning of fentanyl was 9.65 (95% CI: 8.6, 10.8), which increased to 14.14 (95% CI: 12.9, 15.5) by the second quarter of 2021. Hospitalization rates mirrored ED visit trends, where the age-adjusted rate per 100k residents for hospitalizations due to nonfatal acute poisoning of fentanyl was 4.57 (95% CI: 3.9, 5.4) in the first quarter of 2021, which increased to 6.46 (95% CI: 5.7, 7.4) by the second quarter of 2021.

Data on tramadol-related overdose ED visits and hospitalizations were also

available on the California Overdose Surveillance Dashboard for the year 2021. In the first quarter of 2021, the age-adjusted rate per 100k residents for ED visits due to nonfatal acute poisoning of tramadol was 0.71 (95% CI: 0.4, 1.1), which increased to 1.21 (95% CI: 0.9, 1.7) by the second quarter of 2021. Hospitalization rates mirrored ED visit trends, where the age-adjusted rate per 100k residents for hospitalizations due to nonfatal acute poisoning of tramadol was 0.2 (95% CI: 0.1, 0.4) in the first quarter of 2021, which slightly increased to 0.26 (95% CI: 0.1, 0.5) by the second quarter of 2021.

Acute poisoning deaths involving tramadol and fentanyl were significantly high in San Diego over 2021 (which is consistent with the above-mentioned solo-fentanyl data). In the fourth quarter of 2020, the age-adjusted rate per 100k residents for tramadol and fentanyl-related overdose deaths was 14.42 (95% CI: 13.2, 15.8), which increased to 18.13 (95% CI: 16.7, 19.6) and 16.39 (95% CI: 15.1, 17.8) by the first and second quarters of 2021. The acute poisoning deaths involving tramadol and fentanyl in all these three quarters represented statistically significant one-year increases of 175.7% (2020 Q4), 136.7% (2021 Q1), and 76.6% (2021 Q2), respectively, indicating substantial rise in overdose deaths from synthetic opioids in San Diego.

Prescription opioids

Prescription opioids include hydrocodone, oxycodone, morphine, and methadone. Acute poisoning death rates involving prescription opioids showed no significant change between 2020 and 2021. The total population age-adjusted rate per 100k residents for prescription opioid-related overdose deaths increased from 2.14 (95% CI: 1.7, 2.7) to 3.71 (95% CI: 3.1, 4.4) between the fourth quarter of 2020 and the first quarter of 2021, before dropping to 2.33 (95% CI: 1.9, 2.9) into the second quarter of 2021. However, when compared to 2020 quarterly rates, the one-year changes in 2021 were not statistically significant, indicating that prescription opioid-related overdose death rates in San Diego have remained the same since 2020.

Benzodiazepines

Benzodiazepine overdose deaths saw a potential rise in the first half of 2021, although this did not represent a statistically significant one-year increase in San Diego between 2020 and 2021. In the fourth quarter of 2020, the age-adjusted rate for acute poisoning deaths involving benzodiazepines was 2.83 per 100k residents (95% CI: 2.3, 3.5), which increased to 5.51 per 100k residents (95% CI: 4.7, 6.4) by the first quarter of 2021 before dropping to 2.66 per 100k

residents (95% CI: 2.1, 3.3) into the second quarter of 2021. The rate in 2021 Q1 represented a 31.8% one-year increase in benzodiazepine-related overdose deaths. However, this one-year change was not statistically significant, indicating that death rates related to benzodiazepine overdose in San Diego have remained the same since 2020.

At the beginning of 2021, there was a significant increase in hospitalization trends due to nonfatal benzodiazepine-related overdose in San Diego. In the first quarter of 2021, the age-adjusted rate for hospitalizations due to nonfatal acute poisonings of benzodiazepines was 4.01 per 100k residents (95% CI: 3.4, 4.8). This was a 52.5% one-year increase (i.e., compared to the first quarter of 2020), which was statistically significant. In contrast, ED visits mirrored the trend of benzodiazepine overdose deaths, with no statistically significant change between 2020 and 2021.

San Francisco, California

Phillip O. Coffin, MD, MIA

Notes from Sentinel Site Director:

- There were 700 deaths from opioid, cocaine, or methamphetamine overdoses in 2020 in San Francisco, a 59% increase from 2019. For 2021, the current estimate is 650 deaths.
- Of all 2020 overdose deaths, 74% were attributed to fentanyl, with the largest increases attributed to both fentanyl and a stimulant.
- Based on 2020 data, males, persons aged 50–59 years, and Black/African Americans had the highest rates of overdose mortality related to opioids, methamphetamine, and cocaine/crack.
- Drug overdose mortality tends to be concentrated in the Tenderloin, South of Market, and Mission neighborhoods of San Francisco.
- In 2021, heroin remained the most common primary substance resulting in admission to publicly funded SUD treatment programs or methadone maintenance programs. Methamphetamine exceeded alcohol as the second most common substance for the first time in 2021. Admissions for fentanyl increased substantially and admissions for benzodiazepines also increased.
- The overall number of substance use disorder treatment admissions continued to decline in 2021, from 6,707 in 2020 to 6,404 in 2021.

Heroin

Heroin overdose deaths continue to decline in San Francisco. There were 30 deaths due to acute heroin toxicity, excluding fentanyl, in 2021, 34 in 2020, and 48 in 2019. In contrast to eastern regions of the country, heroin and fentanyl are not commonly sold together in San Francisco and thus deaths involving both heroin and fentanyl are less common.

Substance use disorder (SUD) treatment admissions for heroin as the primary drug continued to decline, from 3,4034 in 2020 to 2,598 in 2021. This continues a trend that has been attributed to changes in Medi-Cal and increasing utilization of buprenorphine through general medical care settings. Although the decline in 2020 was believed to be related to COVID-19 restrictions, the persistence suggests other issues, including challenges in sustaining people who use fentanyl in treatment.

Emergency department visits for heroin rose through 2020, while hospitalizations for heroin declined from 2019–2020. 2021 data for these areas are not yet available.

As fentanyl has captured the market for street opioids in San Francisco, this trend is expected to continue.

Cocaine

Cocaine overdose deaths have increased then decreased in San Francisco, although the increase appears to be related to fentanyl. There were 229 deaths in 2021 due to acute cocaine toxicity, 268 deaths in 2020, and 207 deaths in 2019. However, deaths due to cocaine without opioids have remained low (48 in 2019, 44 in 2020, and 42 in 2021), whereas deaths due to both cocaine and fentanyl rose from 118 in 2019 to 205 in 2020.

SUD treatment admissions for cocaine as the primary drug continued to decline from 349 in 2020 to 330 in 2021. This continues a trend since 2013.

Hospitalizations and emergency department visits for cocaine declined precipitously from 2019 to 2020. 2021 data for these areas is not yet available.

While the intentional use of cocaine and fentanyl is common in San Francisco, there are documented episodes of fentanyl unintentionally consumed due to similar appearance to cocaine, raising concern about more unintentional fentanyl exposure than previously believed.

Methamphetamine

Methamphetamine overdose deaths have steadily increased in San Francisco

since 2009, although the increase since 2018 can be attributed to fentanyl. There were 333 deaths due to acute methamphetamine toxicity in 2021, compared to 385 deaths in 2020 and 258 deaths in 2019. However, deaths due to methamphetamine alone remained relatively stable during that period (279 in 2019 and 283 in 2020), whereas deaths due to both methamphetamine and fentanyl rose from 134 in 2019 to 280 in 2020.

SUD treatment admissions for methamphetamine as the primary drug of concern increased for the first time since 2017, from 1,102 in 2020 to 1,163 in 2021.

Hospitalizations and emergency department visits for methamphetamine declined from 2019 to 2020. 2021 data for these areas is not yet available.

Intentional use of both methamphetamine and fentanyl is common in San Francisco; however, unintentional exposure has been documented.

Cannabis

Local indicators for cannabis in San Francisco have been mixed. Emergency department visits involving cannabis have declined precipitously since 2018, while hospitalizations have slightly increased through 2020. SUD treatment admissions for cannabis as a primary drug increased for the first time in many years, from 177 in 2020 to 199 in 2021.

Fentanyl and other synthetic opioids

Fentanyl (and common analogs, such as acetyl fentanyl) is the leading drug associated with morbidity and mortality in San Francisco. This increase began in 2016, with significant increases beginning in the second half of 2018, then a decrease in 2021. There were 472 deaths due to acute fentanyl toxicity in 2021, 518 deaths in 2020, and 241 deaths in 2019. Fentanyl is sold as a white powder or rocks in San Francisco, often used with cocaine or methamphetamine, and sometimes mistaken for those drugs. Fentanyl was also considered causal in 76% of cocaine and 73% of methamphetamine overdose deaths in 2020. Deaths involving fentanyl tend to occur among younger persons than deaths not involving fentanyl. Furthermore, white and Latinx decedents from fentanyl overdose tend to be younger than Black/African American decedents from fentanyl overdose.

SUD treatment admissions for fentanyl as the primary drug continued to markedly increase, from 310 in 2020 to 569 in 2021.

Emergency department visits for fentanyl increased through 2018, then declined through 2020. Hospitalizations for fentanyl increased through 2019, then declined in 2020. 2021 data for these areas is not yet available.

Since 2015, there have been scattered reports of counterfeit opioid or benzodiazepine pills, cocaine/crack, and methamphetamine containing or entirely consisting of fentanyl (see, e.g., these public health alerts). Fentanyl is present in many forms, including white powders and "rocks" easily mistaken for methamphetamine, powder cocaine, or crack cocaine. Reports from people who use drugs and service providers suggest that fentanyl is commonly smoked to allow for dose titration.

Prescription opioids

Prescription opioid overdose deaths appear to be declining in San Francisco, after a peak in 2009. There were 15 deaths due to prescription opioid overdose, excluding heroin or fentanyl, in the first half of 2020 compared to 19 in the first half and 23 in the second half of 2019.

SUD treatment admissions for prescription-type opioids as the primary drug increased for the first time in many years, from 259 in 2020 to 286 in 2021.

While hospitalizations for prescription opioids were relatively stable through 2018, emergency department visits appeared to be increasing; more recent data are not yet available.

Prescription of opioids has declined consistently in San Francisco. From 2010 to 2020, the number of opioid prescriptions (excluding buprenorphine) dispensed by pharmacies decreased by 51% and the daily morphine milligram equivalent (MME; excluding buprenorphine) in each prescription issued declined by a net 34% (there was a slight increase in MME per prescription from 2019 to 2020).

Benzodiazepines

Benzodiazepine overdose deaths are relatively uncommon in San Francisco, although there was a potential increase in the first half of 2020. There were 25 deaths due to benzodiazepine overdose in the first half of 2020 compared to 13 in the first half and 7 in the second half of 2019. Over three-quarters (76%) of benzodiazepine overdose deaths were also attributed to methadone, and another 8% were also attributed to another opioid. Only 4 benzodiazepine overdose deaths were not also attributed to an opioid.

SUD treatment admissions for benzodiazepines as the primary drug are low, but stable from 61 in 2020 to 59 in

2021.

Relevant policy and legislative changes

The most substantial changes in San Francisco continue to relate to the response to the COVID-19 pandemic. San Francisco continued to provide extensive housing to people who were experiencing homelessness or were marginally housed in order to reduce the reach of the pandemic; many of those housed were people who used drugs. Housing in the context of shelter-in-place restrictions can increase isolation, which could reduce the likelihood of survival in the event of an overdose. Following early reports of overdose events in shelter-in-place hotels, San Francisco initiated aggressive overdose prevention programming in those sites.

Naloxone remained the mainstay of overdose prevention (with the distribution program [Drug Overdose Prevention and Education Project] reporting 1,477 new registrations, 9,077 refills, and 4,307 reversals); however, increasing efforts have been implemented to establish cultural changes and networks of support for overdose prevention in public and supportive housing environments.

In addition, due to federal and state changes authorizing remote (telehealth) initiation and maintenance of buprenorphine treatment, San Francisco was able to broaden access to this essential medication for opioid use disorder.

Unfortunately, as fentanyl came to represent 89% of opioid overdose deaths in 2020, mortality rose substantially. In 2021, preliminary reports suggest a 7–10% reduction in overdose death.

Additional recent changes included:

- In early 2022, the San Francisco Department of Public Health (SFDPH) opened the Tenderloin Linkage Center, a harm reduction-based site for overdose prevention and service linkage. The site serves 300–400 visits per day.
- SFDPH plans to open SOMA-Rise, a drug “sobering” center, in 2022.
- SFDPH is implementing Mental Health SF, a legislative package passed in 2019 that includes enhanced care coordination, street crisis response teams staffed with behavioral health clinicians and peers, expanded buprenorphine access, and drug sobering centers.
- California Proposition 64, legalizing the sale and distribution of cannabis products, took effect in January 2018. Additional information about cannabis

legalization in San Francisco can be found at the CCSF City Performance Unit publication "Cannabis in San Francisco: A Review Following Adult-Use Legalization," and "Cannabis Legalization in San Francisco: A Health Impact Assessment."

- San Francisco initiated a cannabis social marketing campaign in 2019.

Seattle, Washington

Caleb Banta-Green, PhD, MPH, MSW

Notes from Sentinel Site Director:

- There were 719 deaths from drug overdose in 2021, most involving opioids and/or stimulants, and a substantial increase from 512 deaths in the year prior. Overdose mortality was fairly stable between 2013 and 2016; however, it has risen in recent years with rapid, large increases in methamphetamine and fentanyl.
- In 2021, 230 deaths involved an opioid without a stimulant, 319 an opioid and a stimulant, and 140 a stimulant without any opioids.
- Fentanyl was the most commonly identified drug in deaths in 2021 for the first time, with its presence detected in 395 deaths compared to 370 for methamphetamine. Many deaths involve multiple substances.
- King County data on the unique number of publicly funded clients receiving specialty addiction treatment services declined substantially prior to and during COVID-19, from 9,697 in 2017 to 6,047 in 2021. These data do not include prescribed addiction treatment medications outside of a treatment program and only include providers contracted with the county.
- The proportion of clients receiving treatment for heroin in specialty addiction treatment declined substantially from 29% to 20% of clients during this period of time.
- Currently, fentanyl as a primary drug is not trackable with these treatment data and is included under prescription-type opioids. The proportion of clients reporting prescription-type opioids (including illicitly manufactured fentanyl) increased slightly numerically and as a proportion from 4% to 8%.
- Recent data (October 2021–March 2022) from low threshold buprenorphine clinics co-located with four syringe

Seattle, WA

services programs (SSPs) in Washington State outside of King County indicate that 1 in 4 clients report fentanyl as their primary drug (n=427).

- The number of clients reporting methamphetamine as their primary drug was net unchanged over this period of time, though the proportion increased from 11% to 18%.
- Public Health–Seattle & King County (PHSKC) SSPs distributed 5,160,283 new syringes in 2021. This is a decline from 5,444,786 in 2020 and the largest decline seen after many years of increases. This decline may be due in part to the huge increase in illicit fentanyl pills locally, which are primarily smoked.
- The 2021 SSP client survey conducted at PHSKC programs indicate 38% said heroin was their "main drug," 21% said methamphetamine, 24% said methamphetamine and heroin mixed together, and 4% said fentanyl.
- Almost half (47%) of SSP clients said they used fentanyl in the prior 3 months and 15% said they had used fentanyl five or more days in the prior week. Smoking was the most common route of administration reported. Most (72%) reported using fentanyl "on purpose." Service providers report that while some people use fentanyl preferentially, others use it because they are not able to obtain heroin.
- Among SSP clients surveyed who reported fentanyl use on purpose, 52% said the last time they used it was in pill form, while 40% said it was in powder form. This is a much higher proportion reporting fentanyl in powder form than the state average and appears to be more common than was reported anecdotally a year prior.

Heroin

Heroin-involved overdose deaths totaled 154 in 2021, a similar annual number as seen in 2014. In 2018, heroin was the most commonly identified drug in overdose deaths; in 2019, it was surpassed by methamphetamine; and in 2020, it was surpassed by both fentanyl and methamphetamine.

Available substance use disorder (SUD) treatment data for heroin as the primary drug are limited to publicly funded treatment providers contracted with the county, so this does not include all specialty addiction treatment programs and excludes prescribed medications, buprenorphine, and naltrexone. Overall, the number of clients served dropped by 50% between 2017 and 2021, coinciding with the COVID-19 pandemic; clients are counted once in each year, so they may be duplicated across years if they re-enter treatment. Both the absolute number and the relative proportion of clients with heroin as their primary drug declined substantially. The number of clients reporting heroin use dropped from 2,794 to 1,193 during this period and the proportion dropped from 29% to 20% (note though that the data indicate an increase in "unknown" substances among those entering opioid treatment programs during this period of time). A shift in the route of administration for heroin was observed during this period, with almost equal proportions reporting smoking and injecting, 45% and 51%, respectively, compared to 60% injecting in 2017. For comparison, with a different treatment data system and a slightly different measure, in 2009, 74% of those reporting heroin as their primary drug indicated recent injection. There have been substantial increases in the prescribing of buprenorphine and naltrexone in recent years, with more clients staying on buprenorphine and for a longer period of time than for naltrexone. 2021 data are unavailable.

Heroin police evidence testing represented 28% of major drug type cases in 2021, compared to 38% in 2020. The proportion from 2014 to 2020 was quite steady, paralleling temporal trends in heroin-involved overdose deaths. For context, King County police evidence testing cases decreased by approximately 50% in 2021, coinciding with a state Supreme Court decision issued February 25, 2021, that removed state felony penalties for drug possession, which in turn decreased arrests and prosecutions that typically lead to evidence testing (details in "Relevant policy and legislative changes" section below). The only drug category that was unchanged in terms of absolute numbers in 2021 was fentanyl, with the rest declining substantially. Because of this major policy change

impacting the number of cases, and perhaps the types of cases, relative proportions of drug types will be the focus of discussion here.

Cocaine

Cocaine-involved overdose deaths totaled 130 in 2021, the highest number since at least 1997 and an increase from 114 in 2020 and 86 in 2019. In recent years, the number of deaths involving cocaine has been lower than for heroin, methamphetamine, or fentanyl.

The number of clients entering treatment for primary cocaine use declined from 452 to 204 from 2017 to 2021, and the proportion declined from 5% to 3%. The proportion of clients smoking cocaine has been steady at around 78%.

Police evidence testing for cocaine represented just 12% of major drugs in 2021, similar to 2020. Cocaine was the fourth most common drug in 2021, just below methamphetamine, fentanyl, and heroin. This is in contrast to the period from 2002 to 2007 when cocaine was the most common drug, representing approximately 45% of all cases.

Methamphetamine

There were 370 methamphetamine-involved overdoses in 2021 out of a total of 719 drug overdose deaths. This represents the apex of a continual increase since 2010, when there were 10 methamphetamine-involved deaths. Methamphetamine surpassed heroin in 2019 and was itself surpassed by fentanyl in 2021.

Clients entering treatment reporting methamphetamine as their primary drug increased from 10% to 18% of clients from 2017 to 2021. Smoking is increasing as the route of administration for methamphetamine, from 61% of clients to 74% of clients during this period, while injection declined from 28% to 19%.

Methamphetamine was the most common drug detected in police evidence testing in 2021 and has been the most common drug since 2016. In 2021, methamphetamine represented 46% of all major drug evidence cases, higher than fentanyl or heroin.

Cannabis

Cannabis as the primary drug at the time of entry into treatment declined from 11% to 8% from 2017 to 2021. Almost all clients (95%) reported smoking as their route of administration for cannabis.

Cannabinoids were detected in 30 police evidence cases in 2021, similar to recent years and down from the peak of 729 in 2005 (WA State I-502 legalized cannabis).

Healthy Youth Survey data for King

County 10th graders indicate a significant decline in past 30-day use of "marijuana," from 18% in 2010 to 7% in 2021.

Fentanyl and other synthetic opioids

Fentanyl-involved deaths continued their rapid increase in 2021, when there were 395 deaths, the most common drug detected, up from 33 in 2017. Medical Examiner data indicate most fentanyl-involved deaths appear to involve fake pills imprinted with "M30" and smoking as the most common route of administration.

Treatment data do not currently document fentanyl as a specific substance. However, it is currently included in the prescription-type opioid category (even though it is virtually all illicitly manufactured fentanyl and not pharmaceutical nor prescribed). The proportion of clients reporting prescription-type opioids (including illicitly manufactured fentanyl) increased slightly numerically and as a proportion from 4% to 8%. Route of administration data from treatment indicate 49% smoked, 32% oral, and 6% injected in 2021, contrasted with 28% smoked, 6% injected, and 55% oral in 2020; note that these data are suggestive of the widespread smoking of illicitly manufactured fentanyl visible in the community. Recent data (October 2021–March 2022) from low threshold buprenorphine clinics co-located with four syringe services programs in Washington State outside of King County indicate that 1 in 4 clients report fentanyl as their primary drug (n=427).

Almost half (47%) of syringe service program (SSP) clients surveyed at Public Health–Seattle & King County programs said they used fentanyl in the prior 3 months and 15% said they had used fentanyl five or more days in the prior week. Smoking was the most common route of administration reported. Most (72%) reported using fentanyl "on purpose." Service providers report that while some people use fentanyl preferentially, others use it because they are not able to obtain heroin. Among SSP clients surveyed who reported fentanyl use on purpose, 52% said the last time they used it was in pill form, while 40% said it was in powder form. This is a much higher proportion reporting powder form than the state average and appears to be more frequent than was reported anecdotally a year prior.

Prescription opioids

Prescription-type opioid-involved overdose deaths totaled 133 in 2021, very similar to the prior decade and slightly lower than the peak of 152 in 2009. The

only other major substance class with such steady numbers is benzodiazepines.

Treatment admissions data for prescription-type opioids are largely obscured by the combination in data coding with illicitly manufactured fentanyl; see trends above in "Fentanyl and other synthetic opioids" for treatment suggesting the impact of illicitly manufactured fentanyl in this category.

Healthy Youth Survey data for King County 10th graders indicate a significant decline in past 30-day use of a prescription pain killer to "get high," from 6% in 2010 to 1% in 2021.

Benzodiazepines

Benzodiazepine-involved overdose deaths in 2021 totaled 92, very similar to the prior decade. Historically, almost all benzodiazepine-involved deaths involve other psychoactive drugs as well.

Benzodiazepines appear to be inconsistently coded in treatment data over time, so they are not reported here. Historically, benzodiazepines are rarely a primary drug and more often secondary to other substances such as opioids in treatment admissions.

Relevant policy and legislative changes

There were two major inter-related policy changes in 2021. On February 25, 2021, the WA State Supreme Court essentially struck down the State's felony drug possession law in State v. Blake. Community reports from law enforcement and jails indicated an immediate decline in arrests and incarcerations for drug possession cases. The impact of this was quickly evidenced by a 90% decline in police evidence testing sent to the Washington State Patrol (the basis for National Forensic Laboratory Information System [NFLIS] data).

In response to this court ruling, on May 13, 2021, the Governor signed SB 5476, immediately making drug possession for adults a divertible offense for the first two cases, with subsequent charges a misdemeanor. Law enforcement agencies are to refer divertible cases to local recovery navigator programs, which are beginning to be implemented in April 2022. Further, possessing drug paraphernalia such as safer smoking supplies is no longer a criminal offense, though distributing safer use supplies technically remains a civil infraction. A Substance Use Recovery Services Advisory Committee is currently meeting to develop measures to help individuals

with substance use disorder access outreach, treatment, and recovery support services. Services will be low barrier; person-centered; informed by people with lived experience; and culturally and linguistically appropriate. The committee will include a panel of individuals with lived experience, legislative representation, and local and national experts. The law expires in 2023 and unless the legislature acts, drug possession will revert to not being a criminal offense in WA State.

St. Louis, Missouri

Heidi Israel, PhD, FNP, LCSW, CCRG

Notes from Sentinel Site Director:

- Fentanyl by itself and in combination with cocaine and methamphetamine have been the primary drugs fueling deaths and treatment admissions in 2020–2021 in the St. Louis community.
- In 2021, of the 370 reported St. Louis City drug-related deaths, only 30% were fentanyl only; the remaining deaths involved methamphetamine and, to a much lesser degree, cocaine, as well as alcohol, oxycodone, and various tranquilizers/tranquilizing agents. Of the decedents, 53% were African American, 47% Caucasian, and a third were female.
- In St. Louis County, the numbers are somewhat different. Of the 402 decedents from drug-related deaths, 51% were Caucasian, 47% African American, and 22% female. The primary drug causing death was fentanyl, in 72% of cases; 15% were caused by methamphetamine, 9% cocaine, and 1% heroin.
- In 2020, a similar pattern was present, with fentanyl identified by far as the precipitating cause and with methamphetamine as the second drug of mention, both as a single agent and in combination with fentanyl.
- Treatment admissions increased in 2021 compared to 2020, with the primary drug of admission in 2021 as fentanyl. In 2020, fentanyl and heroin were nearly tied, whereas in 2019, heroin was 50% higher in total admissions.
- Of the 10,082 treatment admissions in 2021, 1,756 were for heroin, 2,911 for fentanyl, 508 for other opioids, and 1,002 for methamphetamine.

Heroin

As indicated in the treatment and Medical Examiner (ME) cases noted above, the availability and use of heroin has changed dramatically from 2019 to 2021. As recently as 2015, the story in total treatment admissions was heroin, then alcohol, then marijuana. Medication-assisted treatment (MAT) admissions were directed at those who used opioids orally or heroin, as this transition to fentanyl began in 2017.

In the last 3 years, those who used heroin were approximately 30% female and tended to be 35 years of age and older. There is a persistent 7–9% group of younger individuals who used heroin (18–24 years old) in all three years. In 2019, 50% of those who used heroin and 34% of those who used fentanyl and other opioids were African American; in 2020, 50% of those who used heroin were African American and 59% of those who used fentanyl and other opioids were Caucasian; and in 2021, 50% of a decreasing number of those who used heroin and 40% of those who used fentanyl and other opioids were African American. The change in drug preference and availability has been ahead of prevention, MAT, and policies of prescribing naloxone to all individuals who use drugs who come to the emergency room (ER). The COVID-19 pandemic impacted response ability as well. Overdoses and drug-related deaths in 2020, 2021 are now largely related to fentanyl or effects from its use.

Cocaine

Cocaine has remained present in death, treatment admission, and street indicators. In treatment admissions, African Americans represent 83% of admissions for cocaine, and the drug continues to be used primarily by an older clientele. Cocaine is seen in combination with heroin and methamphetamine in death data.

Methamphetamine

Methamphetamine in Missouri had been a drug used by those in rural areas in the first decade of this century, with increasing use in St. Louis City and St. Louis County as access and purity of cocaine became less dependable. Ten to 15 years ago, methamphetamine was made in-home in pop-up labs, but it has transitioned in the last five years into more mainstream availability. Methamphetamine is primarily a drug used by Caucasian residents, as represented by 86–92% of the treatment population. This drug has also used by a younger clientele (about 10% of 18–25 years, about 35% of 26–34 years) over the past 3 years. Methamphetamine is

represented frequently in combination with fentanyl in overdose deaths.

Cannabis

Marijuana remains illegal in Missouri, although medical marijuana is permissible and medical marijuana cards are easy to obtain for a fee. Marijuana is still illegal according to medical licensing boards and can result in referral to treatment and sanctions on health care licenses. Marijuana remains at about 10% of all treatment admissions across all age categories over the last three years. Of these clients admitted, 25–30% are 17 years and younger, 50% are African American, 50% are Caucasian, and 33% are female.

Fentanyl and other synthetic opioids

Fentanyl has been the source of most overdose deaths in the last two years, as well as of the increased treatment programs and community services directed at identifying those at risk and promoting treatment. Many of the regional ERs have policies on prescribing naloxone to all patients with opioid overdoses and to patients who use methamphetamine on discharge. Paramedics report carfentanil as the source of some overdoses.

Additional observations in the ME reports are that alprazolam, oxazepam, and diazepam have also been identified in fatal fentanyl overdoses. Fluorofentanyl and acetyl fentanyl have also been detected.

Prescription opioids

There has been a downward curve in opioid prescribing in Missouri and policies to curb dispensing of Schedule II drugs.

Other novel drugs

Bromazolam has been seen in a few ME cases in St. Louis City in conjunction with acute fentanyl intoxication.

Acknowledgments

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