

Bureau of Justice Assistance (BJA)

Comprehensive Opioid, Stimulant, and Substance Abuse Program (COSSAP)

# Keeping Up With the Changing Landscape of Drugs of Abuse: What Do the Data Say?

## Introduction

Access to timely and relevant data is crucial for keeping up with the changing dynamic of drug abuse and drug-related problems across the United States. Over the past 20 years,<sup>1</sup> nearly 450,000 deaths have been caused by the opioid epidemic, and this number is likely an underestimation because of data collection challenges. Although opioid-related deaths fell in 2018 for the first time since 1999, the epidemic continues to pose a significant public health threat to public safety.

While the rise in opioid abuse has been well-publicized for years, recently there has been a sharp increase in public attention to stimulant abuse as well. Research in *JAMA Network Open* analyzed more than 1 million drug tests and found an almost fivefold increase in positive tests for methamphetamine from 2013 through October 31, 2019.<sup>2</sup> Although the number of deaths from stimulants is still substantially lower than that of deaths from opioids, deaths from stimulants are increasing at a rapid rate. Data from the Centers for Disease Control and Prevention (CDC)<sup>3</sup> show that, from 2012 through 2018, cocaine-related deaths tripled and psychostimulant-related deaths per 100,000 increased nearly fivefold (from 0.8 to 3.9).

The mortality rate for drug-related overdoses increased exponentially between 1979 and 2016; however, the trajectories for individual drugs have not all followed the same path. So while the overall trajectory in overdose fatalities suggests that the drug epidemic has gotten worse in the United States, it is doing so in largely drug-specific, cyclical patterns. For example, heroin was a major public

health concern in the 1960s and 1970s, whereas crack cocaine increased in prevalence in the 1980s. In the 1990s and early 2000s, methamphetamine was a concern; over the past 15 years, attention has turned to prescription opioids, heroin, and fentanyl.

As the drug problem changes, it is extremely important that stakeholders understand both the drugs they need to target and the most effective ways to target them. The ever-evolving nature of opioid and stimulant abuse highlights the need for timely data collection, comprehensive identification, and rapid dissemination of findings to develop coordinated responses.

The purpose of this article is to provide examples of local, state, and national efforts aimed at tracking a continuously changing supply of illicit substances, including opioids and stimulants. We highlight efforts that collect near-real-time data, identify types of abused substances, and rapidly disseminate critical data to where they are needed. These initiatives, presented at the 2020 COSSAP National Forum,



include three examples of data integration efforts: a locally driven initiative in Columbus, Ohio; a state-level project in Tennessee; and a national data collection system involving the nation's forensic crime laboratories.

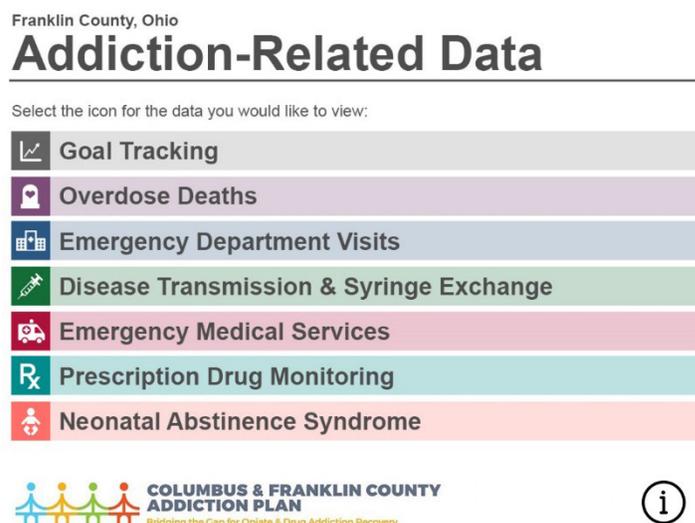
## Data Integration Project in Columbus, Ohio

Led by the Columbus Department of Public Health in collaboration with community partners, this local data integration project is designed to integrate near-real-time and automated suspect overdose data submissions from multiple jurisdictions' records management systems in its Overdose Detection Mapping Application Program (ODMAP). The secondary goal, which is still being developed, is to develop a community data dashboard to efficiently disseminate near-real-time data to relevant stakeholders and invested community members.

The Columbus Department of Public Health<sup>4</sup> collects data from a number of sources, including fire/emergency medical services (EMS) departments and law enforcement agencies. The database includes records for unintentional drug overdose deaths, doses of prescription drugs dispensed, hepatitis C cases, syringe exchange services, suspected overdose cases, naloxone administrations, EMS calls for service to suspected overdoses, and babies with neonatal abstinence syndrome admitted to local hospitals.

This local effort has several important public health and public safety implications. First, the community data dashboard (Figure 1) will utilize reliable and timely data—an important consideration because patterns of drug use can change rapidly. To develop appropriate responses, local public health and law enforcement officials need to access the most recent data possible. Second, many data collection systems, especially those related to public health, require manual uploading, which taxes agency resources and decreases efficiency. An automated process will facilitate multiagency, near-real-time data submission to ODMAP, giving a comprehensive view of the impact of the drug problem through the community data dashboard and reducing burden on reporting agencies.

Figure 1. Example of a Community Data Dashboard



Source: *Comprehensive addiction-related data*. Available from Columbus Public Health, City of Columbus. <https://www.columbus.gov/publichealth/programs/Office-of-Epidemiology/Harm-Reduction/>.

## Office of Informatics and Analytics in Tennessee

Different stakeholders have differing data needs and data agility, but regardless of their experience with data, they crucially need concise and timely information for deeper inquiry and enhanced drug overdose insights. The Tennessee Department of Health Office of Informatics and Analytics (TDH OIA) has worked with partners to build a robust multidisciplinary action group focused on drug overdoses. This group specifically uses data from various sources for analysis and visualizations that can be acted upon by both internal TDH departments and external partners. These data include information pulled from death certificates, hospital discharge billing records, the Controlled Substance Monitoring Database, EMS calls for service, drug shipment data, health care-associated infections, and information on hepatitis C and neonatal abstinence syndrome.

One challenge to understanding the scale and impact of the opioid and stimulant abuse problem in Tennessee is that these data are housed in multiple divisions. A goal of the OIA is to address the overdose problem through drug surveillance, prevention, and treatment. The approach is to develop an integrated data system that unifies the various

data collection sources in an open data-source platform, ensuring fast and easy access to linked data that are collected automatically and updated daily. This data system can automate data visualization and dynamically integrate other data sources regardless of whether the integration is permanent or on an ad hoc basis.

## The National Forensic Laboratory Information System

The National Forensic Laboratory Information System (NFLIS) is a nationwide data collection program initiated by the Drug Enforcement Administration in 1997. NFLIS-Drug collects monthly drug identification results from law enforcement drug seizure cases submitted to and analyzed by federal, state, and local laboratories for both controlled and noncontrolled substances. The 50 state systems and 104 county or municipal laboratories and laboratory systems that participate comprise 282 individual laboratories, accounting for about 98 percent of the national drug caseload. NFLIS is expanding to include two additional continuous data collection programs: (1) public and private toxicology laboratories (NFLIS-Tox), for toxicological findings from antemortem testing, and (2) medical examiner and coroner offices (NFLIS-MEC), for data on deaths in which drugs were identified. Documentation of this type of information is critical to developing more accurate rates of overdose-related deaths. For example, research<sup>5</sup> has shown that the use of polydrug codes to classify deaths when multiple drugs are present leads to undercounting of heroin-related overdose deaths.

The NFLIS data collection system is an important public health and public safety resource. NFLIS-Drug can aid in



## Key Considerations for Other Communities

When considering how to implement similar strategies, public health and public safety agencies and organizations should consider the following questions:

First, how do we collect data in a timely manner (and how do we define “timely”)? What types of data should we be collecting? For example, should data collection include the demographics of the overdose victim, the geocoded location of the incident, or whether naloxone was administered? When in the process should these data be collected?

Second, how are we identifying which drugs are resulting in overdose, especially from the constantly changing supply of illicit drugs such as opioids and stimulants? For example, data collection models such as prescription drug monitoring programs can help to monitor, provide understanding of, and control the legal drug supply. What might a monitoring program for illicit drugs look like, since the illicit drug market is not controlled? Some of the best data currently come from law enforcement data sources. These sources do not always meet the unique needs of those in the public health sector, which can differ from the needs of public safety agencies.

Third, how are data getting into the hands of stakeholders (e.g., researchers, practitioners, and law enforcement personnel) who can use them to save lives?

the monitoring of illicit drug use and drug trafficking in near-real-time, including the diversion of legal pharmaceuticals into the illicit market. It can also help identify changes in indicators of drug patterns geographically and over time using drug estimates and identify emerging drugs of abuse and changes in drug availability. These data can help support international, national, and local drug policy initiatives.

## Summary

This article has described three innovative local, state, and national data collection efforts. These efforts address well-known problems with data access, including timely data

collection, comprehensive drug identification, and rapid dissemination of those data and findings, which are key to developing coordinated responses and interventions and to shaping drug policy. Although every jurisdiction is unique, these efforts can help serve as models for other jurisdictions, whether state or local, looking to implement similar types of data collection systems.

## References

<sup>1</sup>National Institute on Drug Abuse. (2020, March 10). *Overdose death rates*. <https://www.drugabuse.gov/related-topics/trends-statistics/overdose-death-rates>.

<sup>2</sup>Twillman, R. K., Dawson, E., LaRue, L., Guevara, M. G., Whitley, P., & Huskey, A. (2020, January 3). Evaluation of trends of near-real-time urine drug test results for methamphetamine, cocaine, heroin, and fentanyl. *JAMA Network Open*, 3(1), Article e1918514. <https://doi.org/10.1001/jamanetworkopen.2019.18514>.

<sup>3</sup>Hedegaard, H., Miniño, A. M., & Warner, M. (2020, January). *Drug overdose deaths in the United States, 1999–2018* (NCHS Data Brief No. 356). U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics. <https://www.cdc.gov/nchs/products/databriefs/db356.htm>.

<sup>4</sup>Columbus Public Health, City of Columbus. (2020). *Overdose and addiction surveillance*. <https://www.columbus.gov/publichealth/programs/Office-of-Epidemiology/Harm-Reduction/>.

<sup>5</sup>Ray, B., Quinet, K., Dickinson, T., Watson, D. P., & Ballew, A. (2017, Apr). Examining fatal opioid overdoses in Marion County, Indiana. *Journal of Urban Health*, 94, 301–310. <https://doi.org/10.1007/s11524-016-0113-2>.

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