The Secret Life of the Illicit Drug Supply in the United States

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Disclosure Information

- Presenter 1: Stephanie T. Weiss, M.D., Ph.D.
  - No Disclosures
- Presenter 2: Lewis S. Nelson, M.D., M.B.A.
  - No Disclosures
- Presenter 3: JoAn Laes, M.D.
  - No Disclosures
- Presenter 4: Jeffrey Brent, M.D., Ph.D.
  - No Disclosures

Learning Objectives

1. List several types of monitoring systems for illicit drugs and give examples of each.

2. Access the data from several of these monitoring systems online

3. Describe several novel psychoactive drugs such as “fentalogs” currently found in the illicit drug supply

The Scenario

- We are clinicians in Baltimore, MD
- We want to know: what is in our local drug supply?
  - Designer benzos?
  - “Fentalogs”?
  - Xylazine?

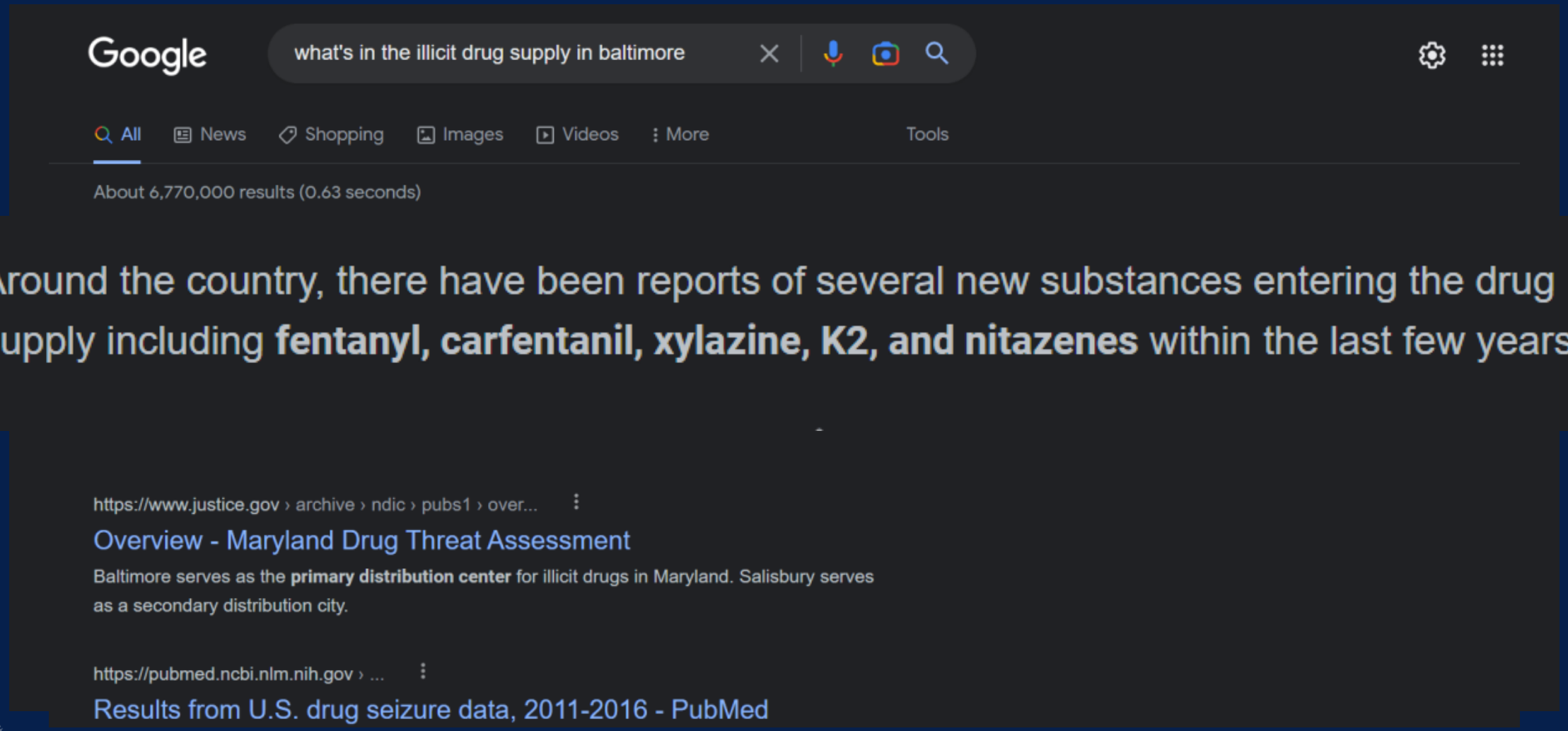
https://www.freepik.com/free-vector/different-people-asking-questions_13642290.htm#query=confused&position=0&from_view=keyword&track=sph

What are Novel Psychoactive Substances (NPS)?

- Synthetics
  - Cathinones (“bath salts”)
  - Cannabinoids (“spice” or “K2”)
  - Depressants
    - Opioids (fentanyls, “nitazenes”)
    - Benzodiazepines (etizolam)
  - Hallucinogens
    - Dissociatives (methoxetamine)
    - Psychedelics (NBOMe series, 2C series)
- Herbals (kratom)

Schifano *et al.,* (2015), World Psychiatry, 14(1): 15-26.

Google….not so helpful



Baltimore City Health Department

https://cxl.com/wp-content/uploads/2016/04/wtf2.jpg

https://health.baltimorecity.gov/stats-and-data

Maryland.gov

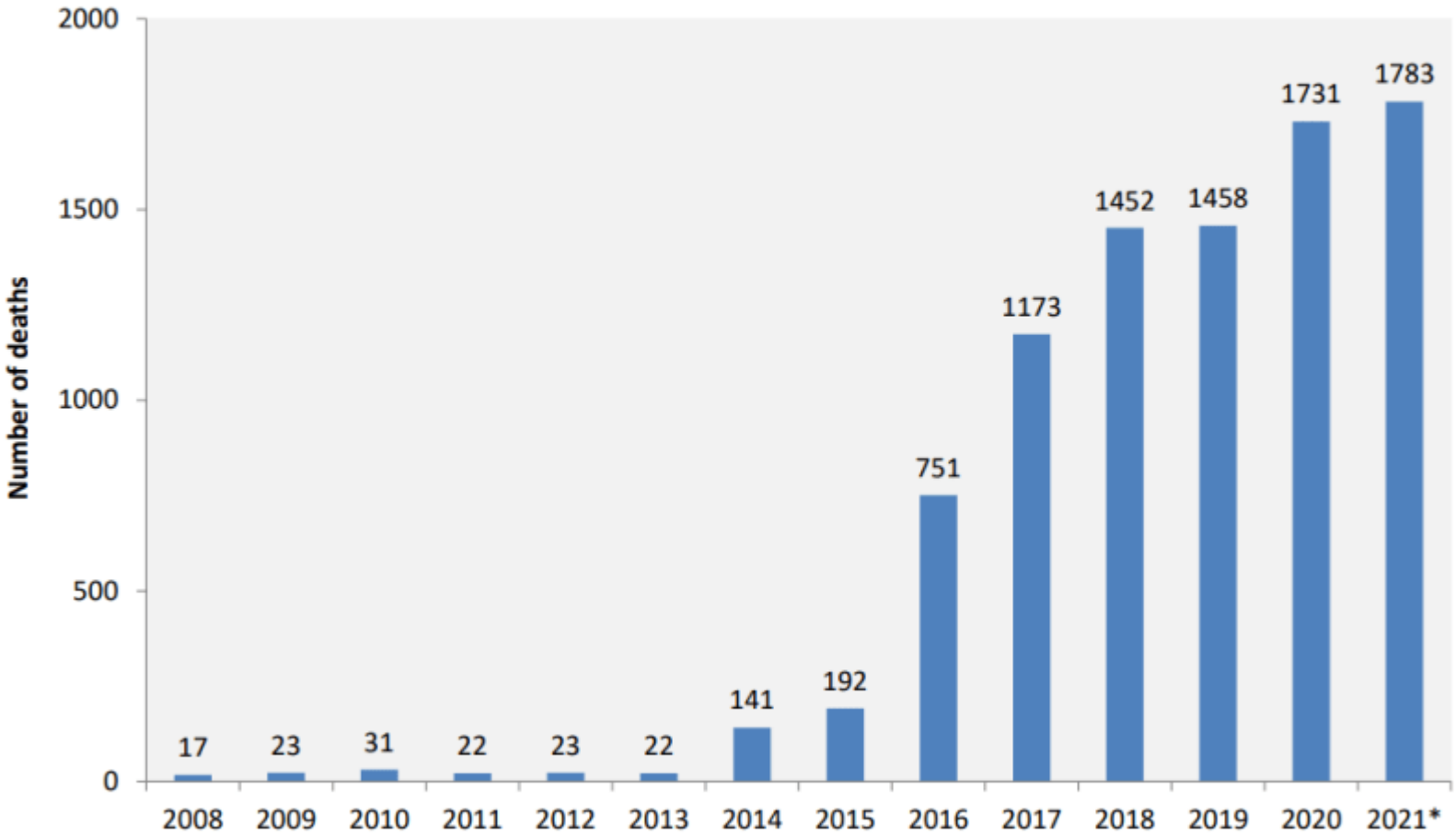
e Agencies Translate

QUICK LINKS

- MDH
- VSA Home
- Frequently Asked Questions
- How to Identify a Certified Birth Certificate
- FEMA Funeral Reimbursement COVID-19 Deaths

elated

Figure 4. Number of Fentanyl-Related Deaths Occurring in Maryland from January through September of Each Year.*

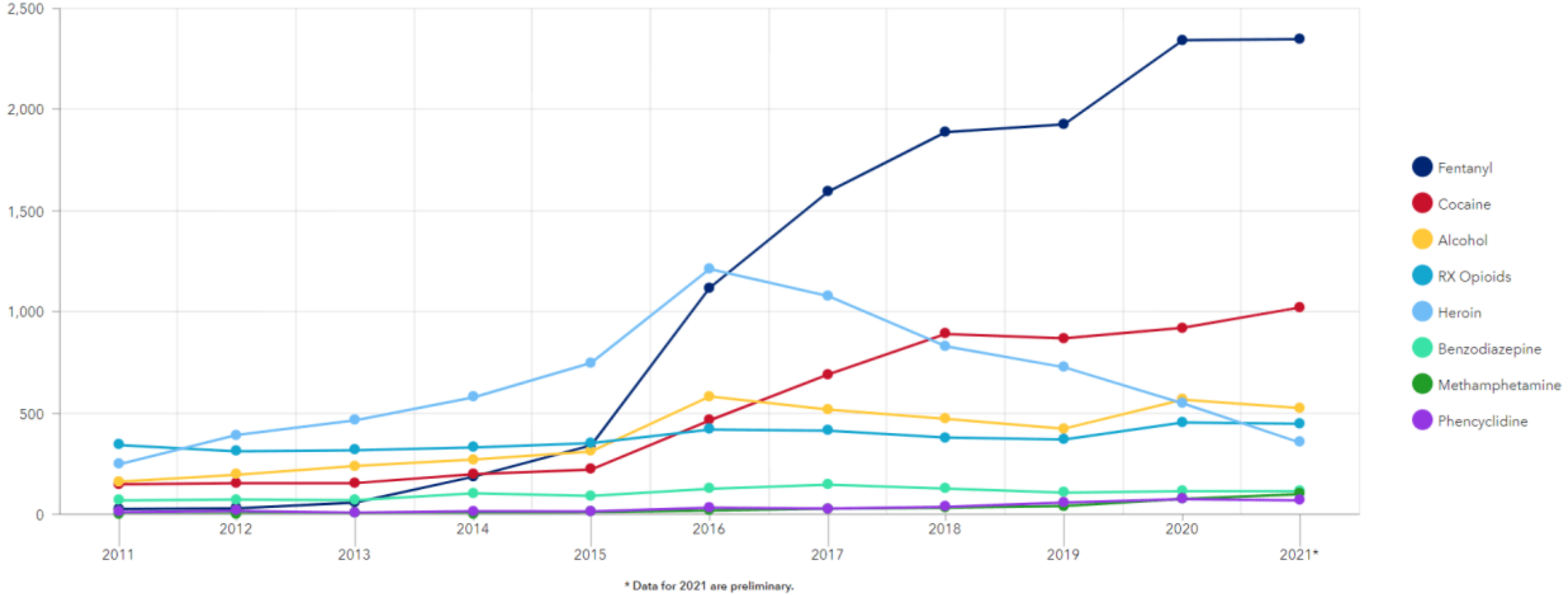


*2021 counts are preliminary as of March 10, 2022.

5

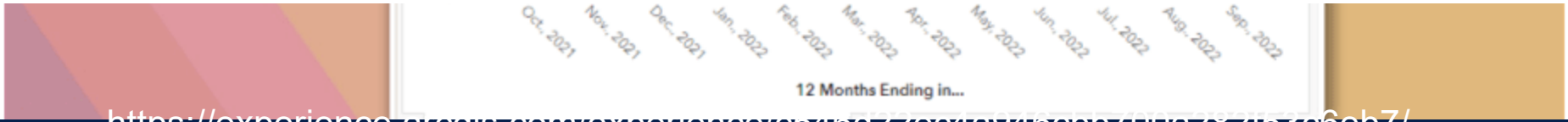
https://health.maryland.gov/Pages/Home.aspx

Historical Fatal Overdose Trends by Substance | Annual Totals (2011 through 2021*)



* Data for 2021 are preliminary.

Individual Substances | Combinations | Historical Data | Naloxone | ED Visits



https://experience.arcgis.com/experience/c546d22ec4a946cbb700a282f53c6eb7/

Before It's Too Late Maryland

Since implementation, approximately 400 samples have been collected and tested through RAD. Various drugs and drug combinations have been identified including the presence of fluorofentanyl, a synthetic opioid more potent than fentanyl, and a growing prevalence of xylazine in samples collected from program participants. CHRS has also identified various rare synthetic cathinones (or bath salts) in combination with fentanyl. SSPs have utilized RAD as a service for participants and a useful tool of engagement, increasing opportunities for education on risk reduction, overdose prevention strategies, emerging drug contents, and injection-related wound prevention and care. At present, further sample collection is needed to understand the extent to which results are representative of the current and changing drug supply; the current number of available samples is not yet sufficient to characterize Maryland's illicit drug supply as a whole.

CHRS intends to expand the RAD Project to additional SSP sites in the coming months and years. Continuation and expansion of RAD will allow for more comprehensive monitoring of the drug supply and further analysis of trends over time, detection of unpredictable changes in the illicit drug market that may increase overdose risk, and more robust analysis of the drug supply throughout different Maryland jurisdictions.

https://beforeitstoolate.maryland.gov/wp-content/uploads/sites/34/2022/07/2021-DORM-Annual-Report-Final.pdf

Rapid Analysis of Drugs Program

Fed Lab Predicts Local Changes in Illicit Drug Supply

D'Paul Nibber - June 2, 2022 -
County News / Emergency Management / Health and Human Services / NACo and Federal Issues / Public Safety and Corrections

A lab operated by the National Institute of Standards and Technolog (NIST), an agency under the United States Department of Commerce, has collected and processed swabs from individuals with substance use disorders (SUDs) from across Maryland to help detect changes in the illicit drug supply.

The Baltimore Sun reports the lab has identified xylazine, an animal tranquilizer, as an added element to the ongoing opioid epidemic. According to the National Institute on Drug Abuse, the drug, sometimes referred to as "tranq," is frequently cut with fentanyl and "was involved in 19% of all drug overdose deaths in Maryland in 2021." Xylazine often results in tissue damage including skin ulcers and abscesses.

CATEGORIES

Select Category

CONTRIBUTORS

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RSS - Posts

https://conduitstreet.mdcounties.org/2022/06/02/fed-lab-predicts-local-changes-in-illicit-drug-supply/

Literature Reports by MD Researchers

CLINICAL TOXICOLOGY
2020, VOL. 58, NO. 1, 59–61
https://doi.org/10.1080/15563650.2019.1605078

Taylor & Francis
Taylor & Francis Group

SHORT COMMUNICATION

Evidence of fentanyl use is common and frequently missed in a cross-sectional study of emergency department patients in Baltimore, Maryland

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ABSTRACT

Objective: Fentanyl-associated deaths have risen in Maryland, but the prevalence of illicit fentanyl use is unknown. Our objective was to measure whether fentanyl is present among emergency department (ED) patients seeking care for a drug overdose.

Design: The prevalence of fentanyl use was determined using a cross-sectional study of a convenience sample of adult ED patients with complaints of apparent opioid overdose, withdrawal from opioids, and/or requesting treatment for their substance use disorder (SUD) between February and April, 2018. Subjects were consented, interviewed, and underwent urine point-of-care (POC) fentanyl testing.

Results: A total of 102 patients met inclusion criteria and were approached, 76 consented, 63 (83%) of whom tested positive for recent fentanyl use. 60 (80%) were male, 26 (34%) had overdosed, 41 (54%) were seeking SUD treatment, and 13 (17%) were in withdrawal (4 had multiple complaints). Of those who underwent both standard hospital urine drug screen and POC fentanyl testing, 56% (22/39) were positive for fentanyl and negative for opiates. Only 5% (4/76) reported knowledge of using fentanyl.

Conclusions: Fentanyl use was common and frequently missed among these ED patients. Hospitals who treat patients taking illicit fentanyl should consider adding fentanyl to their urine drugs of abuse panel.

ARTICLE HISTORY
Received 30 January 2019
Revised 26 March 2019
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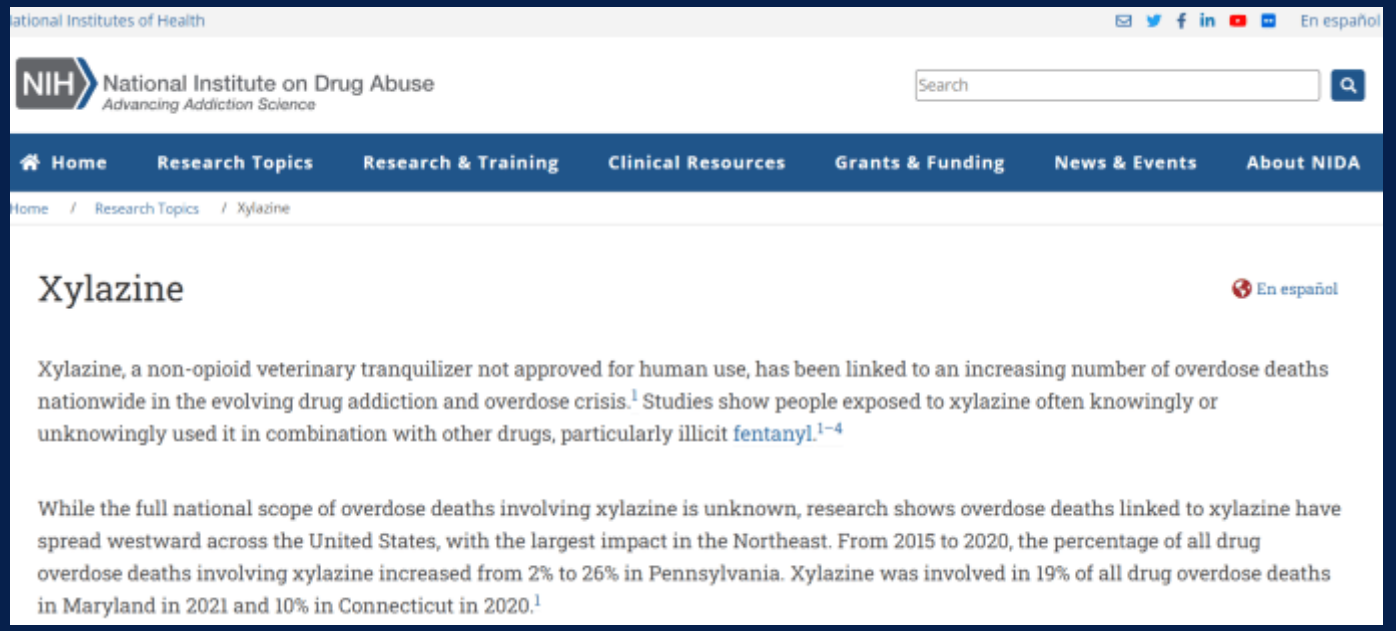
Published online 17 April 2019

KEYWORDS
Opioids; drug screening and testing; emergency medicine

But no testing for xylazine….

- Not by the city or state Health Departments
- Not by NIDA
- Other potential places to turn?



https://nida.nih.gov/research-topics/xylazine

State and Federal Government Sites

State of New Jersey
Department of Health

Governor Phil Murphy · Lt. Governor Sheila Oliver
NJ Home | Services A to Z | Departments/Agencies | FAQs
Search submit

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Improving Health Through Leadership and Innovation

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Population Health

Home | Vital Statistics | Center for Health Statistics | Health Care Quality | Minority and Multicultural Health | Overdose Data Dashboard

Home › New Jersey Overdose Data Dashboard › New Jersey Overdose Data Dashboard

New Jersey Overdose Data Dashboard

Overdose Data Dashboard

This dashboard uses interactive data visualizations to display opioid and other drug-related overdose indicators for public health practitioners, researchers, policy-makers, and the public. Data for these indicators were obtained from multiple sources, including the Department of Health, the Division of Consumer Affairs, the Office of the Attorney General and other law enforcement bodies. Explore the dashboard to learn about the opioid epidemic and other drug-related indicators.

Learn More About Opioids

Give Us Your Feedback

Naloxone (Narcan®)

Narcan is a medication used to block the effects of opioids during an overdose. It is important to seek professional medical assistance after administering Narcan because multiple doses may be needed if overdose symptoms return.

Open Dashboard

Drug-related Deaths

Death data comes from the Office of the Chief State Medical Examiner. It includes drug mentions in drug-related overdose deaths suspected overdoses by county of incidence.

Open Dashboard

Substance Use Treatment

Treatment statistics are derived from the New Jersey Substance Abuse Monitoring System (NJSAMS) of the Division of Mental Health and Addiction Services (DHMAS). NJSAMS contains administrative data on clients who receive substance use treatment in New Jersey and is used by all licensed substance use treatment providers in New Jersey.

Open Dashboard

Quick links to the dashboards

- Prescription Monitoring Program
- Naloxone (Narcan®)
- Drug-related Hospital Visits
- Drug-related Deaths
- Substance Use Treatment
- Viral Hepatitis
- Neonatal Abstinence Syndrome

New Jersey Prescription Monitoring Program

The New Jersey Prescription Monitoring Program (PMP) is a statewide database that tracks controlled dangerous substances and human growth hormones dispensed in outpatient settings in NJ and out-of-state pharmacies dispensing into NJ. This tool can be used to reduce prescription drug misuse and diversion by allowing providers to view patients' prescribing histories prior to prescribing medications.

Open Dashboard

Drug-related Hospital Visits

This dashboard displays emergency department visits and inpatient hospitalizations caused by non-fatal acute poisonings due to the effects of drugs, regardless of intent.

Open Dashboard

Neonatal Abstinence Syndrome

OFFICIAL SITE OF THE STATE OF NEW JERSEY

Office of the Chief State Medical Examiner

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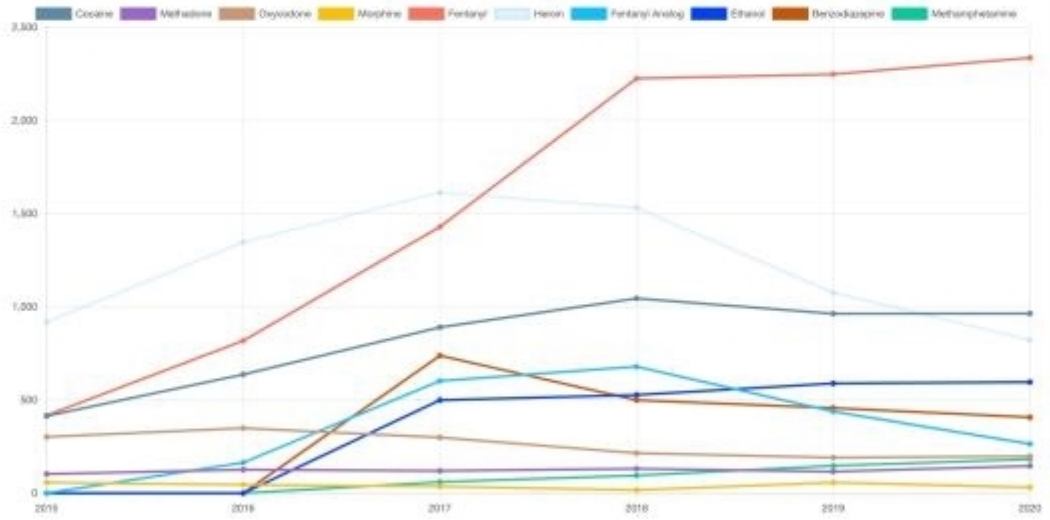
Dashboard

General CMS Statistics | Suspected Drug Death Statistics | **Confirmed Drugs** | Suicide Statistics | Homicide Statistics

2015-2020 Drug Overerdose Substance Comparison



Note* Some of the data will display "0" due to data not being recorded that year for that specific substance. i.e **Ethanol, Benzodiazepine and Methamphetamine overdoses were not recorded until 2017. This does not mean overdoses resulting in death due to these specific substances did not occurring at that time, just the data was not collected.*

2020 | 2019 | 2018 | 2017 | 2016 | 2015

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WEEKLY DRUG ENVIRONMENT REPORT

6 May 2022 *~ ROIC202205-11150D*
Regional Operations & Intelligence Center (ROIC), Office of Drug Monitoring & Analysis (ODMA)
NJROIC SIN: NJORM-0100 (Geographic)/ DHS SIN: HSEC 10 (Illicit Operations)

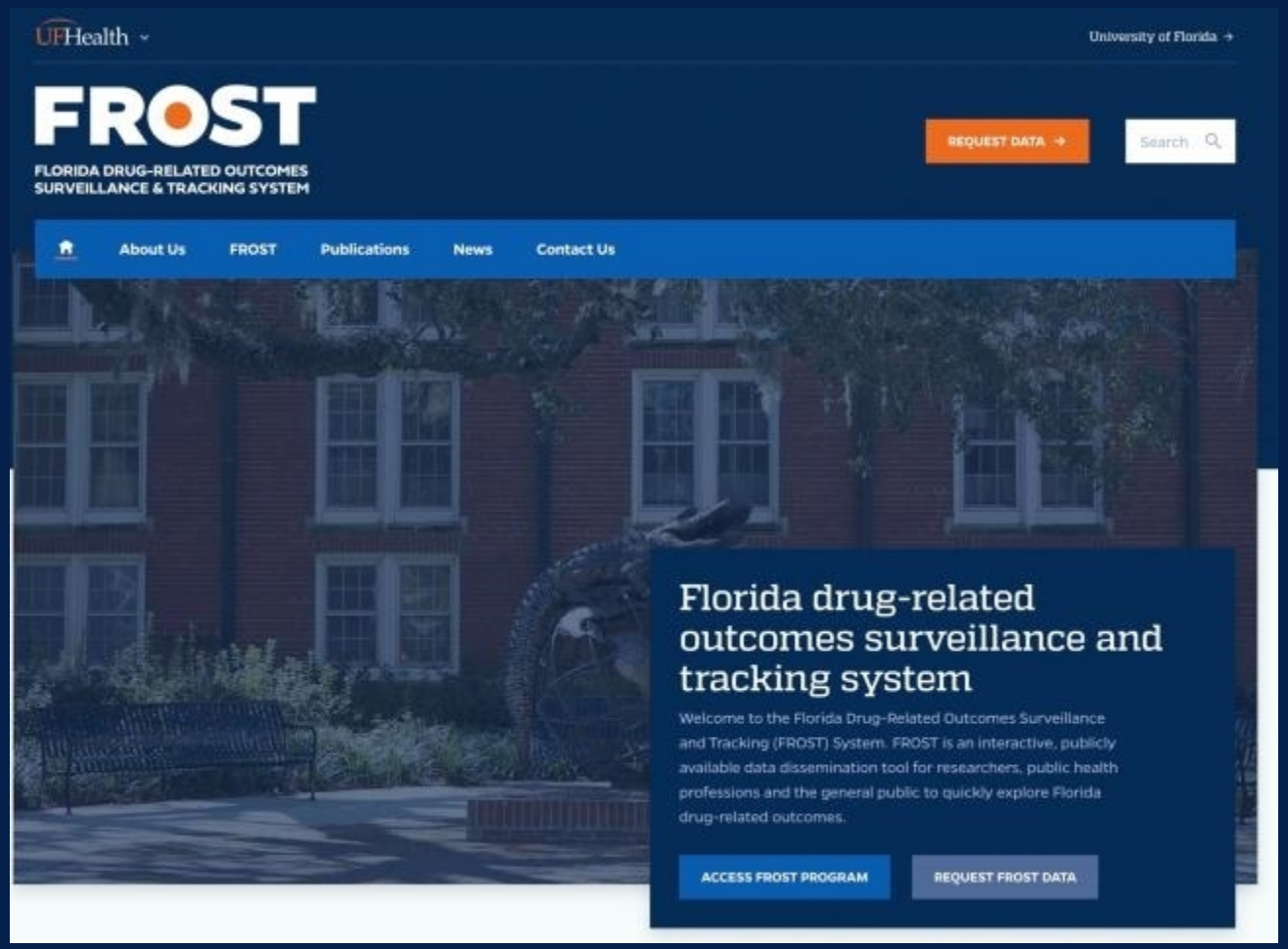
The Office of Drug Monitoring & Analysis (ODMA) monitors New Jersey's drug environment through the Drug Monitoring Initiative (DMI). This information summarizes drug evidence analyzed and reported during the past week by forensic crime labs throughout the state.

HEROIN AND ADULTERANTS

The following information pertains to the forensic identification of suspected heroin seized throughout the state. Stamp names by themselves do not constitute reliable connections between incidents such as overdoses and arrests. However, stamp names in combination with other variables such as stamp colors and adulterants, provide potential investigative leads. In addition, stamps having these similarities, and located within regional proximity and time, provide stronger indicators of potential connectivity.

NOTE: Stamps with adulterants are listed first. Stamps found at scenes of overdoses are denoted with * (fatal) or ** (non-fatal). FIBF is para-Fluoroisobutyryl fentanyl. 6-MAM is 6-Monoacetylmorphine. Unmarked stamps containing adulterants such as cocaine, methamphetamine, and ketamine are included for additional situational awareness. Due to the volume of submissions, this report does not include all stamps. If additional information is required, please contact the DMI for specific stamp searches. Stamps appearing in multiple locations around the state may be highlighted in yellow. Unusual drug combinations or stamps including cocaine may also be highlighted.

Heroin/Fentanyl	Red	Good & Plenty	NJSP AC Expwy	4/19/22	ATL
Fentanyl/4-ANPP/Xylazine/Phenethyl 4-ANPP	Black	Bad Bunny	Atlantic City	4/21/22	ATL
Heroin/Fentanyl	Red	Jackson 5ive	Ventnor	4/23/22	ATL
Fentanyl/4-ANPP/Xylazine	Black	Bad Bunny	Pleasantville	4/26/22	ATL
Fentanyl/Fluorofentanyl/4-ANPP/Phenethyl 4-ANPP	Black	Diablo & Devil w/Gun (Image) (Blue Folds)	Camden Co PO	4/4/22	CAM
Acetyl Fent/Norfentanyl/Fent/4-ANPP/Phenthyl 4-ANPP	N/A	Unmarked Green Folds	NJSP Trafficking South	4/5/22	CAM
Fluorofentanyl/Fent/Cocaine/Diphenhydramine/Xylazine	Blue	Illuminati & Eye of Providence (Image) (Yellow Fold)	NJSP Trafficking South	4/5/22	CAM
Fentanyl/4-ANPP/Xylazine	Green	Dragon & Dragon Head w/Horns (Image)	Camden Co PD	4/8/22	CAM
Fluorofent/Fent/Despropionyl fluorofentanyl/ Fluoro Phenethyl 4-ANPP/Phenethyl 4-ANPP	Multi	Skull Crusher & Muscular Skeleton (Image)	Camden Co PD	4/10/22	CAM
Fluorofentanyl/Fentanyl/Xylazine	Black	Cold Pack (Blue Fold)	Cherry Hill	4/11/22	CAM
Fluorofent/Fent/Fluoro Phenethyl 4-ANPP/Phenethyl 4-ANPP/ Cocaine/Xylazine	N/A	Unmarked	Camden Co PD	4/12/22	CAM
Fentanyl/4-ANPP/Phenethyl 4-ANPP	Multi	Get Lucky & Smiley Face w/Cannabis Eyes (Image)	NJSP Bellmawr	4/12/22	CAM
Fluorofentanyl/Fent/4-ANPP/Fluoro Phenethyl 4-ANPP/ Phenethyl 4-ANPP	Red	Tom & Jerry	Camden Co PD	4/13/22	CAM
Fentanyl/4-ANPP	Red	Playboy & Play Boy Bunny (Image)	Camden Co PD	4/16/22	CAM
Fentanyl/4-ANPP	Multi	Takin Over	NJ Transit PD	4/19/22	CAM
Fentanyl/4-ANPP/Xylazine	Black	Skull (Green Image) & Power Play	Camden Co PD	4/23/22	CAM
Fentanyl/4-ANPP/Phenethyl 4-ANPP	Multi	Get Lucky & Smiley Face (Image)	Camden Co PD	4/23/22	CAM
Fentanyl/4-ANPP/Xylazine	Multi	Power Play & Monster (Green Image)	Camden Co PD	4/23/22	CAM
Fentanyl/4-ANPP	Multi	Get Lucky & Smiley Face (Image)	Camden Co PD	4/27/22	CAM
Fentanyl	Black	KTM & Dirt Bike (Image) (Blue Folds)	Camden Co PD	4/27/22	CAM
Fentanyl/4-ANPP/Phenethyl 4-ANPP	Black	KTM & Dirt Bike (Image) (Blue Folds)	Camden Co PD	4/27/22	CAM
Fluorofentanyl/Fentanyl/Xylazine	Black	Illuminati (Yellow Fold)	Camden Co PD	4/28/22	CAM
Fentanyl/4-ANPP/Xylazine	Black	Apple (Blue Folds)	NJSP Camden Metro South	4/21/22	CUM
Fentanyl/Xylazine/Phenethyl 4-ANPP	Red	Red Snow (Blue Fold)	Vineland	4/21/22	CUM
Heroin/Fentanyl	Red	Versace	Vineland	4/22/22	CUM
Fentanyl/Xylazine	Black	Apple (Blue Folds)	NJSP Crime South	4/25/22	CUM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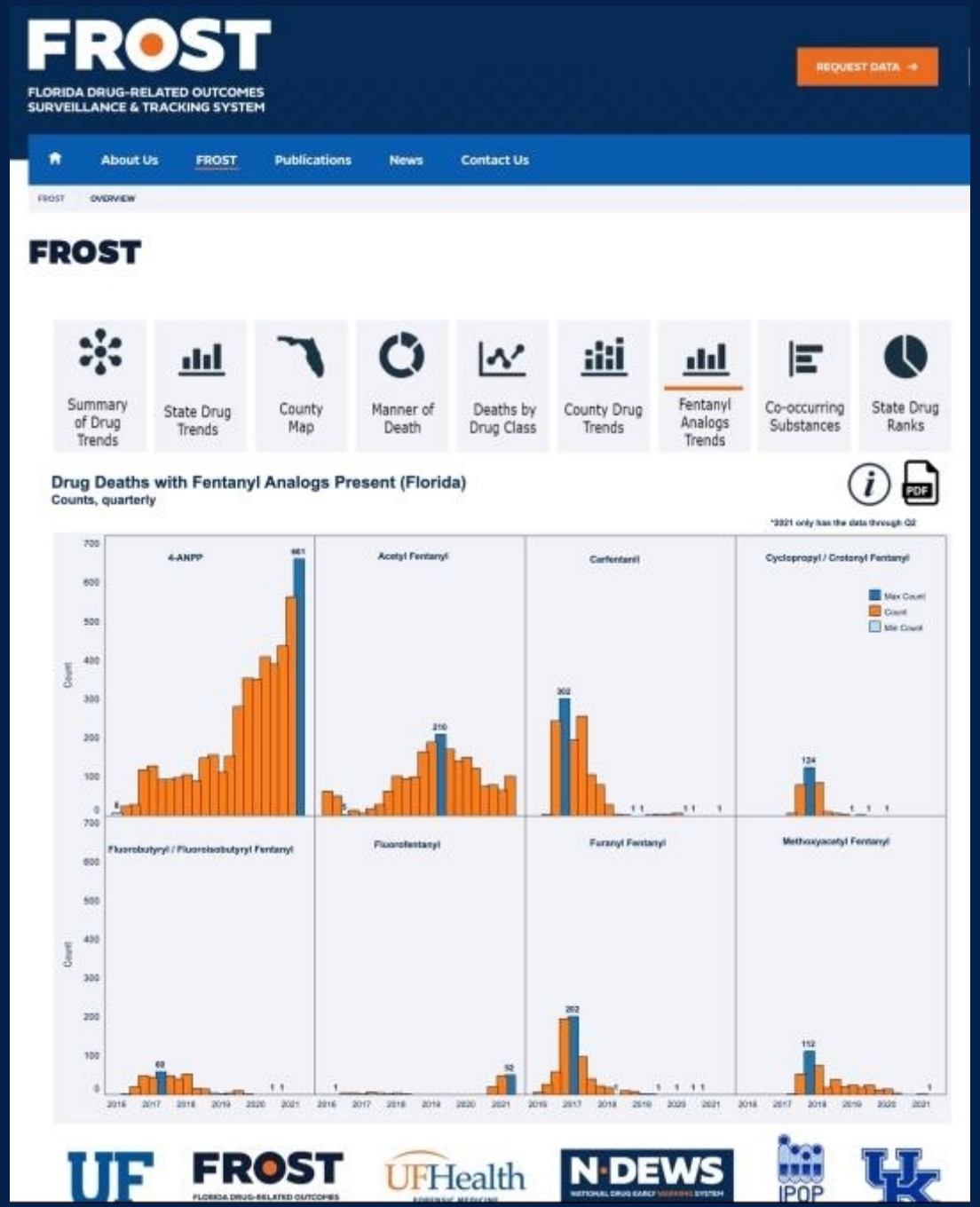
Welcome to the Florida Drug-Related Outcomes Surveillance and Tracking (FROST) System. FROST is an interactive, publicly available data dissemination tool for researchers, public health professions and the general public to quickly explore Florida drug-related outcomes.
ACCESS FROST PROGRAM
REQUEST FROST DATA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SURVEILLANCE & TRACKING SYSTEM
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Summary of Drug Trends
State Drug Trends
County Map
Manner of Death
Deaths by Drug Class
County Drug Trends
Fentanyl Analogs Trends
Co-occurring Substances
State Drug Ranks
Drug Deaths with Fentanyl Analogs Present (Florida)
Counts, quarterly
4-ANPP
Acetyl Fentanyl
Carfentanil
Cyclopropyl / Crotonyl Fentanyl
Fluorobutyryl / Fluoroisobutyryl Fentanyl
Fluorofentanyl
Furanyl Fentanyl
Methoxyacetyl Fentanyl
Count

SUDORS — State Unintentional Drug Overdose Reporting System

State Unintentional Drug Overdose Reporting System (SUDORS)

The Drug Overdose Epidemic Continues to Worsen in the United States

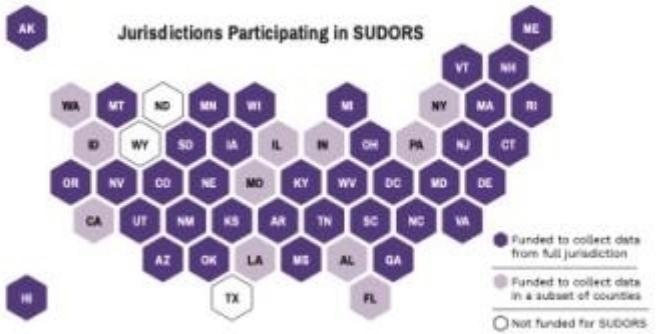
Drug overdose deaths continue to impact our nation and remain a leading cause of injury-related death in the United States. The majority of overdose deaths involve opioids. Deaths involving synthetic opioids (largely illicitly made fentanyl) and stimulants (such as cocaine and methamphetamine) have increased in recent years. In addition, overdose deaths have accelerated during the COVID-19 pandemic. As the worsening and expanding drug overdose epidemic in the United States involves potent synthetic opioids, often in combination with other drugs, timely and comprehensive surveillance and evidence-based prevention and response strategies remain essential.

SUDORS Provides Comprehensive Information on Drug Overdose Deaths

In 2016, the **State Unintentional Drug Overdose Reporting System (SUDORS)** began as part of CDC's Enhanced State Opioid Overdose Surveillance (ESOOS) program, to provide comprehensive data on **opioid overdose deaths**. In 2019, SUDORS expanded to collect data on **all drug overdose deaths in 47 states and the District of Columbia** as part of CDC's Overdose Data to Action (OD2A) program. Each of these 48 funded jurisdictions collects and abstracts data for unintentional and undetermined intent drug overdose deaths from **death certificates and medical examiner/coroner reports (including scene findings, autopsy reports, and full postmortem toxicology findings)** for entry into a web-based CDC platform that is shared with the National Violent Death Reporting System (NVDRS).

The overall goals of SUDORS are to:

1. **Better understand the circumstances** that surround overdose deaths.
2. Improve overdose data **timeliness and accuracy**.
3. Identify specific substances causing or contributing to overdose deaths as well as emerging and polysubstance overdose trends to help **inform overdose prevention and response efforts**.



SUDORS Incorporates Multiple Data Sources

Jurisdictions abstract data from death certificates, medical examiner/coroner reports, and postmortem toxicology results into SUDORS. Combined, these sources yield more than 600 data elements. Examples of data elements captured from each source are:

Death Certificates

- Demographics
- County and state where overdose occurred
- Cause and manner of death
- Other significant conditions contributing to death
- How overdose occurred
- Place of death (e.g., hospital, home)
- Date of death

Medical Examiner/Coroner Reports

- History of prior overdoses
- Treatment for substance use disorder
- Prescription drug misuse or illicit drug use history
- Routes of drug administration (e.g., injection, smoking)
- Presence of bystanders
- Naloxone administration

Postmortem Toxicology

- All drugs detected
- Drugs contributing to death
- Date specimens were collected

View data for: Overall (32 jurisdictions) 2021

2021 Data Summary at a Glance, *Overall (32 jurisdictions)*

50,943 total overdose deaths

deaths by quarter in 2021

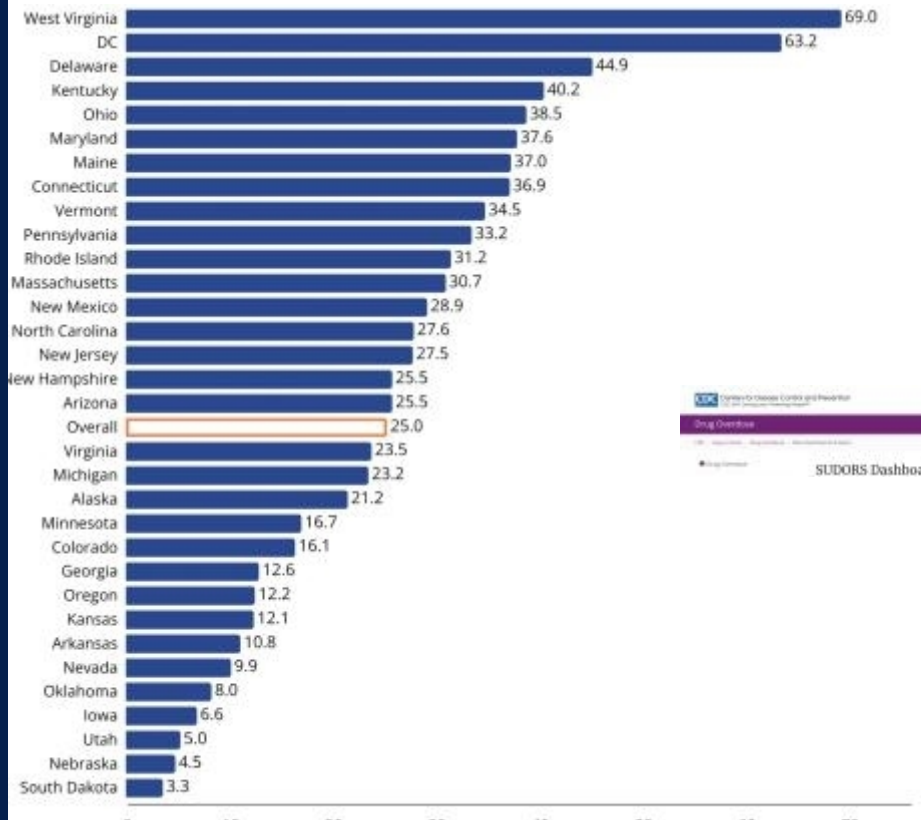
66.8% had at least one potential opportunity for intervention[a]

What drugs were involved in overdose deaths in 2021, *Overall (32 jurisdictions)*?

Overall (32 jurisdictions) 2021

Rate of overdose deaths by state and drug or drug class

All Drugs | Any Opioids[b] | Illicitly Manufactured Fentanyls[c] | Heroin[d] | Prescription Opioids | Any Stimulants[e] | Cocaine | Methamphetamine




SUDORS Dashboard: Fatal Overdose Data

Data from the Drug Overdose Surveillance and Epidemiology (DOSE) System are Used for Action

Provides timely data on nonfatal overdoses treated in emergency departments

Identifies overdose anomalies or outbreaks and changes in trends

Informs drug overdose response and prevention activities

The drug overdose epidemic continues to worsen in the United States

The overdose epidemic affects people in every age group, sex category, race and ethnicity, and geographic area. Monitoring trends in emergency department (ED) visits and hospitalizations for overdose can provide timely data to inform drug overdose response and prevention activities.

CDC's Drug Overdose Surveillance and Epidemiology (DOSE) System

In 2016, CDC's DOSE System began as part of the Enhanced State Opioid Overdose Surveillance (ESOOS) program. As of 2019, DOSE captures data from 47 states and the District of Columbia as part of the Overdose Data to Action (OD2A) program.

DOSE was developed to analyze data at the local, state, and national levels using

1. Electronic health record (EHR) data collected monthly, with a one-month lag, from **syndromic surveillance systems** to rapidly identify anomalies and provide situational awareness of changes in nonfatal drug overdose-related ED visits. Among 42 participating states and the District of Columbia (Figure), the average percent of ED visits currently captured in syndromic surveillance data exceeds 90%. The syndromic surveillance data are updated on the DOSE dashboard each month.
2. **Discharge data** collected quarterly, with a 3.5-month lag, for a more complete and accurate understanding of overdose burden in EDs and among hospitalizations. Among 25 participating states (Figure), the average percent of ED visits/hospital admissions currently captured in discharge data exceeds 95%.

DOSE combines data captured by health departments on ED visits and hospitalizations using standardized definitions for suspected nonfatal overdoses involving all drugs, all opioids, heroin, and all stimulants. These data include demographic characteristics of those who experienced an overdose, such as sex, age, county of patient residence, and intentionality.

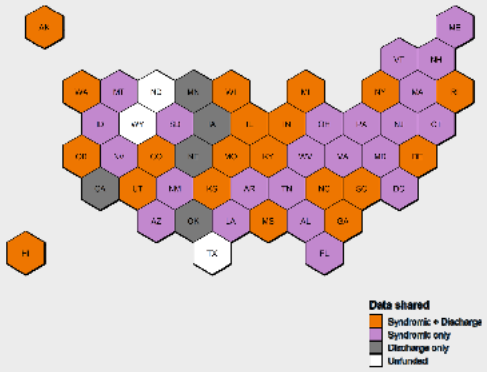
Data collected through DOSE are used for rapid identification of nonfatal overdoses

Timelier reporting and analysis of EHR data from EDs is used to identify, track, and respond to changes in drug overdose trends more quickly.

Rapid availability of data helps to promote response readiness for overdose increases at the state or national level and improves coordination among:

- Health departments
- Healthcare providers
- Law enforcement
- Communities
- Public health
- Government agencies

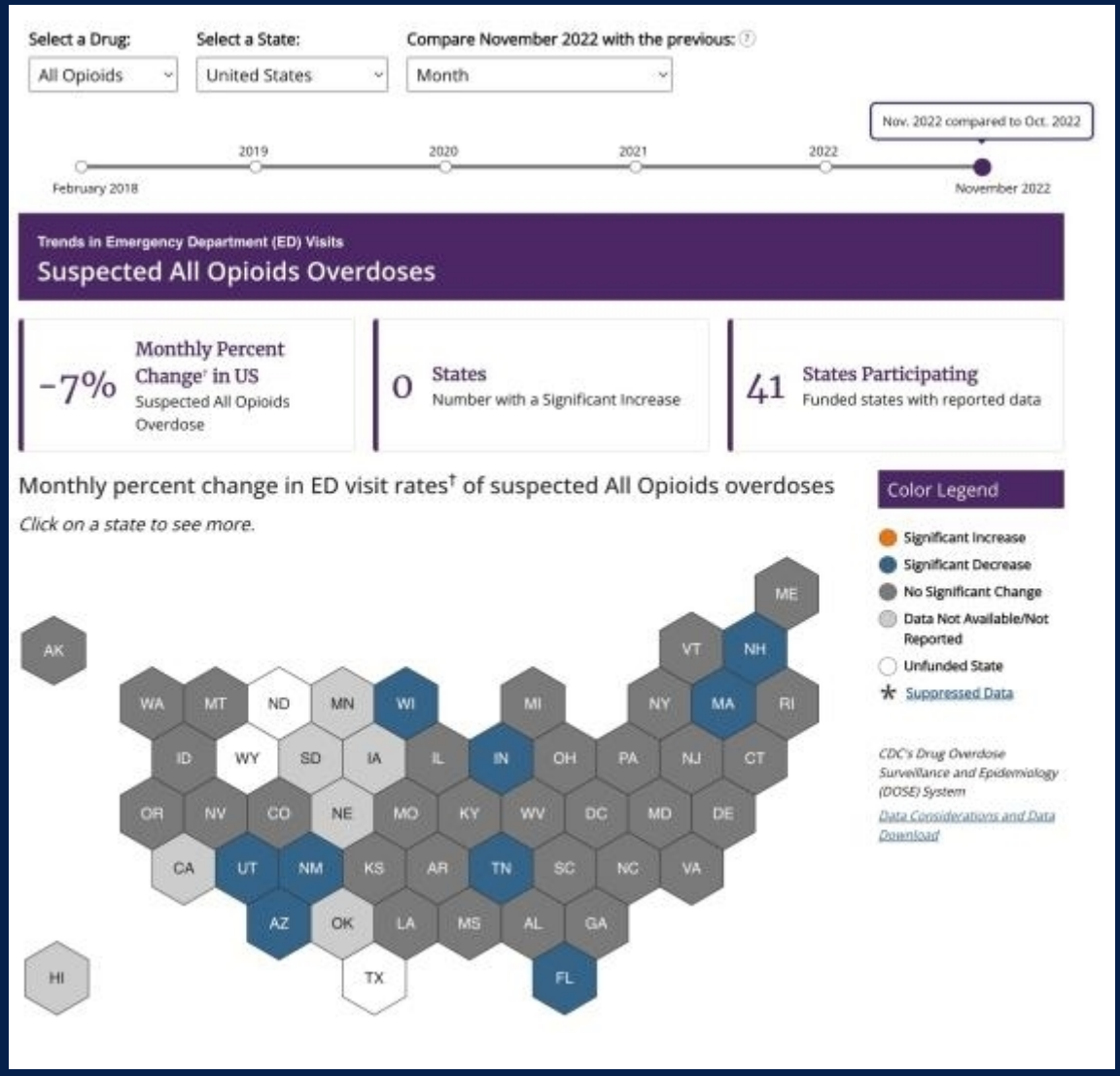
Figure. Jurisdictions Participating in DOSE



CDC Centers for Disease Control and Prevention

Drug Overdose

DOSE Dashboard: Nonfatal Overdose Data



DEA United States Drug Enforcement Administration

SEARCH FULL MENU

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Fentanyl

NARCOTICS (OPIOIDS)

What are they?

Fentanyl is a synthetic opioid that is 50-100 times stronger than morphine. Pharmaceutical fentanyl was developed for pain management treatment of cancer patients, applied in a patch on the skin. Because of its powerful opioid properties, Fentanyl is also diverted for abuse. Fentanyl is added to heroin to increase its potency, or be disguised as highly potent heroin. Many users believe that they are purchasing heroin and actually don't know that they are purchasing fentanyl – which often results in overdose deaths. Clandestinely-produced fentanyl is primarily manufactured in Mexico.

Street Names

Apace, China Girl, China Town, China White, Dance Fever, Goodfellas, Great Bear, He-Man, Poison and Tango & Cash,

How are they abused?

Intense, short-term high, temporary feelings of euphoria, slowed respiration and reduced blood pressure, nausea, fainting, seizures, death.

What is their effect on the body?

Similar to other opioid analgesics, fentanyl produces effects such as: relaxation, euphoria, pain relief, sedation, confusion, drowsiness, dizziness, nausea and vomiting, urinary retention, pupillary constriction, and respiratory depression.

U.S. Customs and Border Protection

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...mmaries » Drug Seizure Statistics

Drug Seizure Statistics FY2023

As of 15 December 2021 the Drug Seizures dashboard now includes seizures of all drug types.

To access the data used to build this dashboard, please visit the **CBP Data Portal**.

Note: *Internet Explorer has problems displaying the following charts. Please use another browser (Chrome, Safari, Firefox, Edge) to view. When usin*
charts are best displayed in landscape mode.

U.S. Customs and Border Protection (CBP) Drug Seizures
US Border Patrol (USBP) and Office of Field Operations (OFO)
Weight (lbs) and Count of Drug Seizure Events by Fiscal Year (FY)

View Seizures by: Drug Seizure Weight (lbs) / Drug Seizure Events
Component: (All)
Fiscal Year: (All)
Drug Type: Fentanyl
Region Filter: (All)
Land Filter: (All)
Area of Responsibility: (All)
Reset Filters

FY 2020 2021 2022 2023 (FYTD)

FY Drug Seizure Weight (lbs) by Month

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Total
2023 (FYTD)	1.9K	2.9K	6.2K	1.4K									12.5K
2022	1.1K	1.1K	569	862	680	1.1K	1.3K	1.1K	700	2.2K	2.3K	1.9K	14.7K
2021	1.2K	804	1.2K	945	797	692	886	950	1.1K	857	1.1K	737	11.2K
2020	310	249	110	146	257	294	271	248	715	774	782	766	4.8K

FY Comparison by Drug Type and Drug Seizure Weight (lbs)

DrugsData.org

Erowid's anonymous drug analysis program
Formerly called EcstasyData

SEARCH LAB RESULTS BY: All | fentanyl | GO | Advanced Search

Send in a sample for testing | Support DrugsData

Test Results | Test Result Statistics | About Tests & Data | About Us | Contact Us | FAQ

Advanced Search: show

2135 ENTRIES TOTAL | ENTRIES PER PAGE: 100 | PAGE: 1 / 22 » | SEARCH ALL FOR FENTANYL | Quick Filter...

Photo	Sample Name	Active Contents: Substance	Active Contents: Ratio / Amounts	Date	Location	Data Source
	White Powder Draft Kings Code: AC2022B0396 Sold as: Heroin	• Fentanyl • Xylazine • Heroin • 4-ANPP • 6-Acetylmorphine • Caffeine • Procaine • 6-Acetylcodeine • Phenethyl 4-ANPP	• 26 • 24 • 12 • 8 • 2 • 2 • 2 • 1 • 1	Feb 21, 2023	Pittsfield, MA	DrugsData
	White Powder AAA Code: AC2022B0402 Sold as: Heroin	• Fentanyl • 4-ANPP • Xylazine • Phenethyl 4-ANPP	• 40 • 10 • 10 • 1	Feb 21, 2023	Pittsfield, MA	DrugsData
	White Powder Tiffany & Co Code: AC2022B0422 Sold as: Heroin	• Xylazine • Fentanyl • 4-ANPP • Ethyl-4-ANPP • Phenethyl 4-ANPP • Cocaine	• 100 • 50 • 5 • 2.50 • 2.50 • 1	Feb 21, 2023	Pittsfield, MA	DrugsData
	Purple Powder Code: A2022B0410 Sold as: Heroin	• Fentanyl • Caffeine • 4-ANPP • Heroin • Xylazine • 6-Acetylmorphine • 4-Fluorofentanyl	• 150 • 100 • 40 • 20 • 10 • 5 • 1	Feb 21, 2023	Pittsfield, MA	DrugsData
	Fentanyl Code: 21371 Sold as: Fentanyl	• Fentanyl • Phenethyl 4-ANPP	• 17 • 1	Feb 13, 2023	Oakland, CA	DrugsData
	Black/Gray Powder Code: AC2023C007 Sold as: Not Specified	• Diphenhydramine • Fentanyl • Heroin • 6-Acetylmorphine • Caffeine • Quinine • 4-ANPP • 4-Fluorofentanyl • 6-Acetylcodeine • Cocaine • Phenethyl 4-ANPP • Lidocaine	• 16 • 10 • 8 • 4 • 4 • 4 • 2 • 2 • 2 • 2 • 2 • 1	Feb 13, 2023	Madison, WI	DrugsData
	Dope Code: AC2023C003 Sold as: Dope	• Fentanyl • 4-ANPP • Acetylfentanyl • Phenethyl 4-ANPP	• 43.33 • 10 • 3.33 • 1	Feb 13, 2023	Rockford, IL	DrugsData
	Dope Code: AC2023C002 Sold as: Dope	• Fentanyl • Diphenhydramine • Xylazine • 4-ANPP	• 10 • 8 • 7 • 2	Feb 13, 2023	Chicago, IL	DrugsData

CESAR and NDEWS

CENTER FOR
SUBSTANCE USE AND
HEALTH RESEARCH

About ▾ EDDS ▾ CDEWS ▾ Other Projects ▾ Publications Search

About NDEWS | Years 1-6

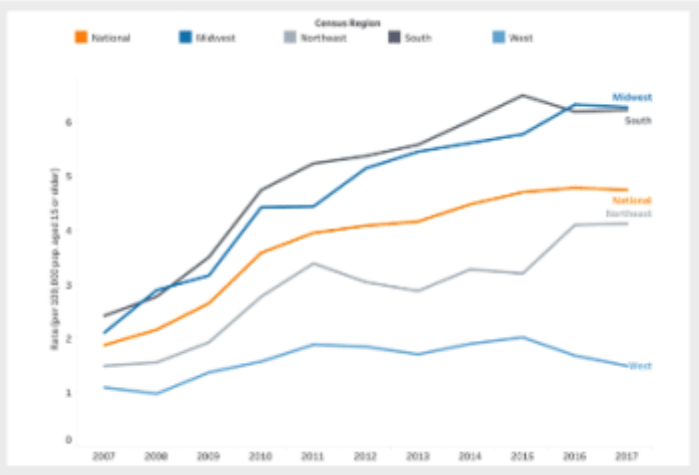
National Institute on Drug Abuse (NIDA) funded the Center for Substance Use And Health Research (CESAR) at the University of Maryland, College Park, to develop this nationwide public health surveillance system from 2014 to 2020. As of August 2020, the NDEWS Coordinating Center is housed at the University of Florida.

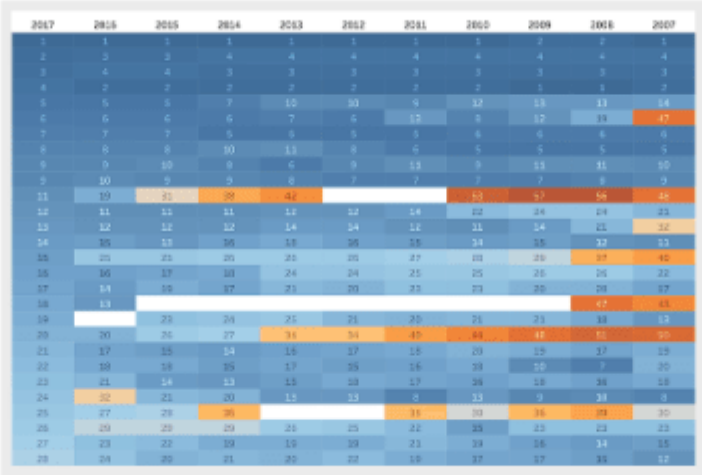
The National Drug Early Warning System (NDEWS) monitors emerging drug use trends to enable health experts, researchers, and concerned citizens across the country to respond quickly to potential outbreaks of illicit drugs such as heroin and to identify increased use of designer synthetic compounds.

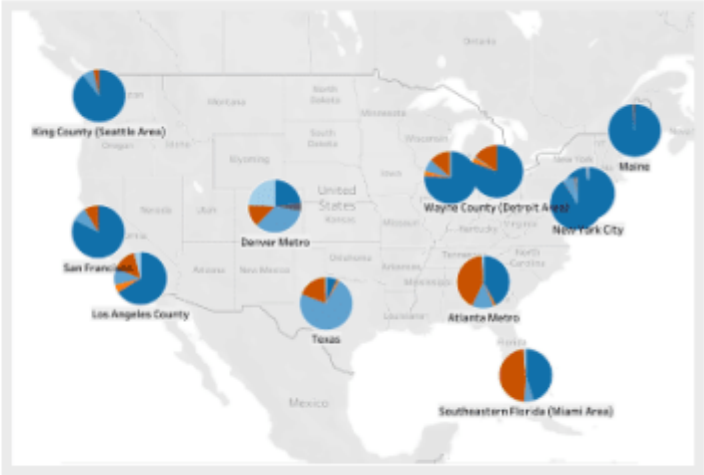
National Drug Early Warning System: The First Six Years
Highlights from NDEWS Sentinel Community Site 2020 Reports
Two Updates: Availability and Use of Methamphetamine in the U.S.
DOTS Bulletins - De-Identified Urine Testing
Final Webinar presented by Eric D. Wish, Ph.D.: Remembrance of Things Passed: Using Urinalysis Results to Monitor Emerging Drug Use, DUF to EDDS
NFLIS Data Visualization Archive (2007-2018)
NDEWS 2020

NFLIS

In 2019, CESAR created interactive dashboards using data on drugs identified by Federal, State, and local forensic laboratories reported to the DEA's National Forensic Laboratory Information System (NFLIS) as part of the original NDEWS Coordinating Center (2014-2020). This wealth of information allows the user to look at data **across sites and across years.**







2007-2018 National Estimates

- **Most frequently identified (MFI)** drug reports, **by year**
- MFI drug report trends
- MFI drug report trends, by U.S. Census Region

2007-2018 State Counts

- MFI drug reports, **by state and year**
- Drug reports for 3 NPS drug categories, **by state and year**
- MFI drug and drug category reports, **across states by year**
- Comparison of ranks for Top 25 drug reports, **across years by state**
- Comparison of number of different drugs in each of 3 NPS categories, **across states and years**

2014-2017 Sentinel Community Site Counts

- Drug reports by rank, opioid category and NPS category, **by site, and year**
- Comparison of ranks for Top 25 drug reports **across years by site, and across sites by year**
- Maps: Drug and drug category reports **across site, by year**
- NPS drug reports **across sites, by category**

CESAR

EDDS

About EDDS

Hospital electronic health records (EHR) contain important information about patients' laboratory test results, diagnoses, and treatment. Urine specimens collected from patients as part of routine care may also be used to better understand the drugs ..

Read more

EDDS Research Reports

Maryland Emergency Department Drug Surveillance (EDDS) publications detailing urine drug testing trends in ED populations: EDDS pilot study, brief bulletins for the Baltimore area and Prince George's County, and MMWR Notes from the Field showing Fent..

Read more

EDDS Hospitals - Data

The de-identified urine drug test results from electronic health records (EHRs) obtained from patients at participating hospitals are updated each quarter and posted on this site. Expanded re-testing of a limited sample of urines is conducted one tim..

Read more

CESAR


CDEWS
Office of National Drug Control Policy
Allen County, IN | HOPE probationers
Chesterfield, VA | Probationers Pilot Project
Coburg, OR | Co-Use of Methamphetamines and Opioids
Denver, CO Drug Court - Hawaii | Probationers
Hillsborough County, FL | Mental Health Clients
Jefferson/Lincoln/Pulaski/Rockcastle Counties, KY | Probationers
Maryland | Re-Testing Biological Samples
North Fort Myers, FL | Fentanyl Positives Likely Indicate Polydrug Use
Ohio | Belmont and Ross Correctional Institutions
Prince George's County, MD Drug Court - Tampa, FL | Juveniles
Washington, DC | Lockup, Pretrial Surveillance, Probationers, Parolees
About CDEWS
CESAR staff worked with the Office of National Drug Control Policy (ONDCP) to develop the Community Drug Early Warning System (CDEWS), a rapid and low-cost system for identifying emerging drugs at the local community level.
Community Drug Early Warning System
CDEWS Publications
Findings from the CDEWS project have been released in numerous full reports and several shorter CDEWS News publications.
CDEWS Reports
CDEWS News


N·DEWS
NATIONAL DRUG EARLY WARNING SYSTEM
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The NIDA-funded NDEWS Coordinating Center at UF
The National Drug Early Warning System (NDEWS), funded to the University of Florida by the National Institute on Drug Abuse (NIDA), provides the field with timely, salient, and valuable information on emerging substance use trends.
MORE ABOUT NDEWS
SUBSCRIBE TO NDEWS WEEKLY BRIEFINGS

Novel Surveillance

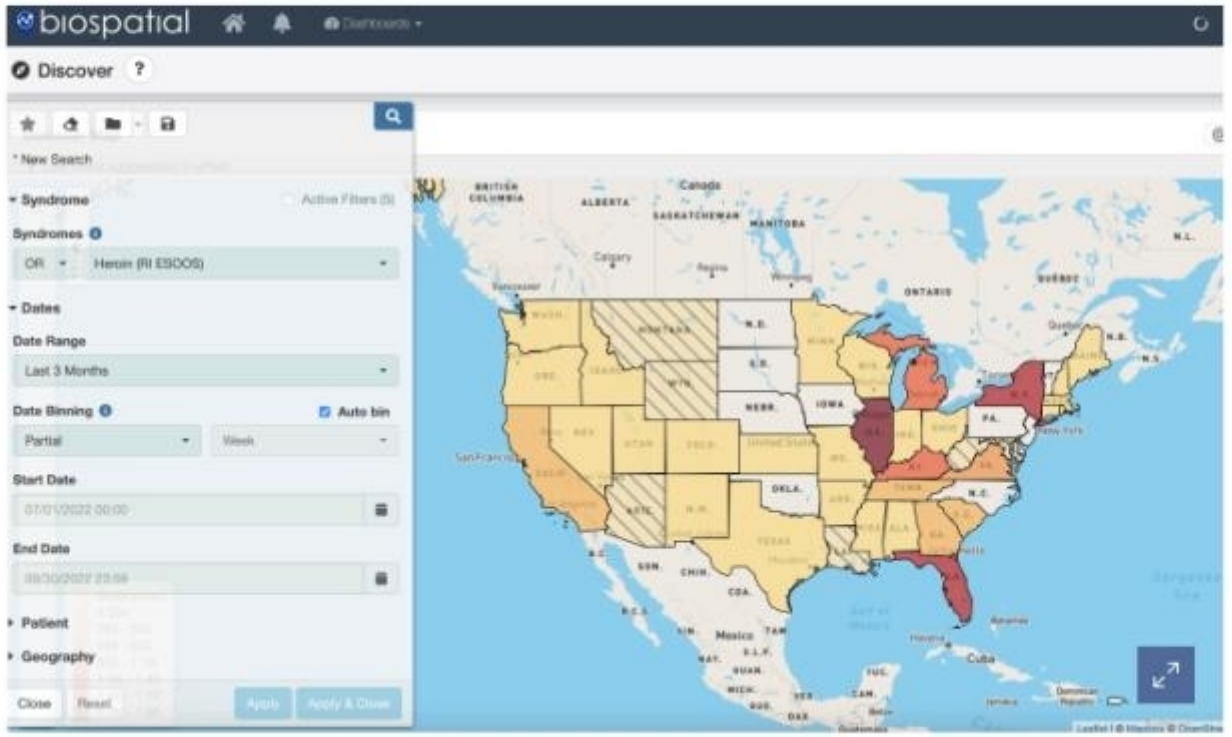
One aim of the new NDEWS is to incorporate and leverage novel surveillance methods to ensure the early detection of signals of new and emerging drug trends.

While lagged indicators such as overdose deaths, drug seizures, and treatment admissions are useful for longer-term monitoring of patterns of drug use and associated consequences, these indicators are unable to detect potentially dangerous trends *as they emerge*, before serious consequences and death.

To identify early signals of shifts in drug use trends and the onset of drug epidemics, real-time, ongoing surveillance is required. This form of national monitoring is the goal of NDEWS, which will be accomplished by synthesizing traditional, lagged sources of data with novel, leading sources, and the development of an innovative machine learning approach to detect the emergence of new psychoactive substances in real-time through algorithms deployed to darknet drug markets and forums.

NDEWS Hotspot Alerts

NDEWS Hotspot Alerts is a dynamic notification system that quantifies the degree to which the observation deviates from the expected range of values over an 84-day window provided by biospatial.io. Alerts are updated bi-weekly and limited to US states with statewide partnerships with biospatial.io: Alabama, Alaska, Arkansas, California, Colorado, Florida, Georgia, Idaho, Illinois, Kansas, Kentucky, Maine, Michigan, Mississippi, Montana, New Mexico, New York, Rhode Island, South Carolina, Tennessee, Utah, Virginia, Wisconsin, and Wyoming.



Rapid Street Reporting NDEWS

Rapid Street Reporting (RSR) is a national venue-intercept study planned for the 17 NDEWS Sentinel Sites. Over the next five years, RSR will take place in at least six sentinel sites per year over a weekend period.

This initiative uses a modified version of Co-Investigator Dr. Joseph Palamar's **validated rapid survey**, which has been previously used to survey over 4,500 nightclub attendees. The rapid survey is programmed to assess the use and correlates of use of over 100 drugs, many of which are new psychoactive substances (NPS), and queries whether users experienced acute adverse effects from specific drugs used.

Biological testing is important when investigating NPS, which is why NDEWS is adding **hair testing** of surveyed individuals. Dr. Palamar has been detecting extensive underreported NPS use via hair testing, as many individuals were unknowingly exposed through adulterated drugs. Specimens will be tested by Dr. Alberto Salomone with three published methods utilizing ultra-high performance liquid chromatography–tandem mass spectrometry (UHPLC-MS/MS). Two of these methods (developed by Dr. Salomone) are capable of detecting over 100 NPS-- mostly synthetic cannabinoids, synthetic cathinones ("bath salts"), and now fentanyl analogs and other potent opioid NPS.

Web Surveillance NDEWS

Social media platforms provide a unique indicator of activity in the rapidly changing market for new psychoactive substances (NPS). On the popular Reddit website, drug-related discussion occurs in user-generated subreddits dedicated to a drug, a class of drugs, or more general topics related to drug use or experimentation. The contents of drug subreddit discussions can be useful for estimating temporal trends in NPS use, including early and real-time identification of emerging drugs.

In collaboration with the Machine Perception and Cognitive Robotics (MPCR) Lab, under the direction of Dr. Elan Barenholtz and PhD candidate Paul Morris, the NDEWS Coordinating Center has developed a web monitoring platform for early detection of NPS in drug subreddits. Trends in drug discussion are quantified through anonymized, aggregate keyword counts derived from algorithmic monitoring of ~80 drug-oriented subreddits. Keyword metrics count mentions over time of keywords that refer to a drug. Machine learning models are employed for automated detection and aggregation of drug keywords.

In combination, these methods detect drug-related activity that is anomalous and potentially indicative of an emerging trend in the development or use of novel substances. **Validation on historical trends** reveals that detection of an NPS in drug subreddit discussion is predictive of its subsequent emergence in toxicology data and other real-world signals. Early detection of NPS trends by web monitoring serves as a source for further investigation and collaboration with NDEWS partners.

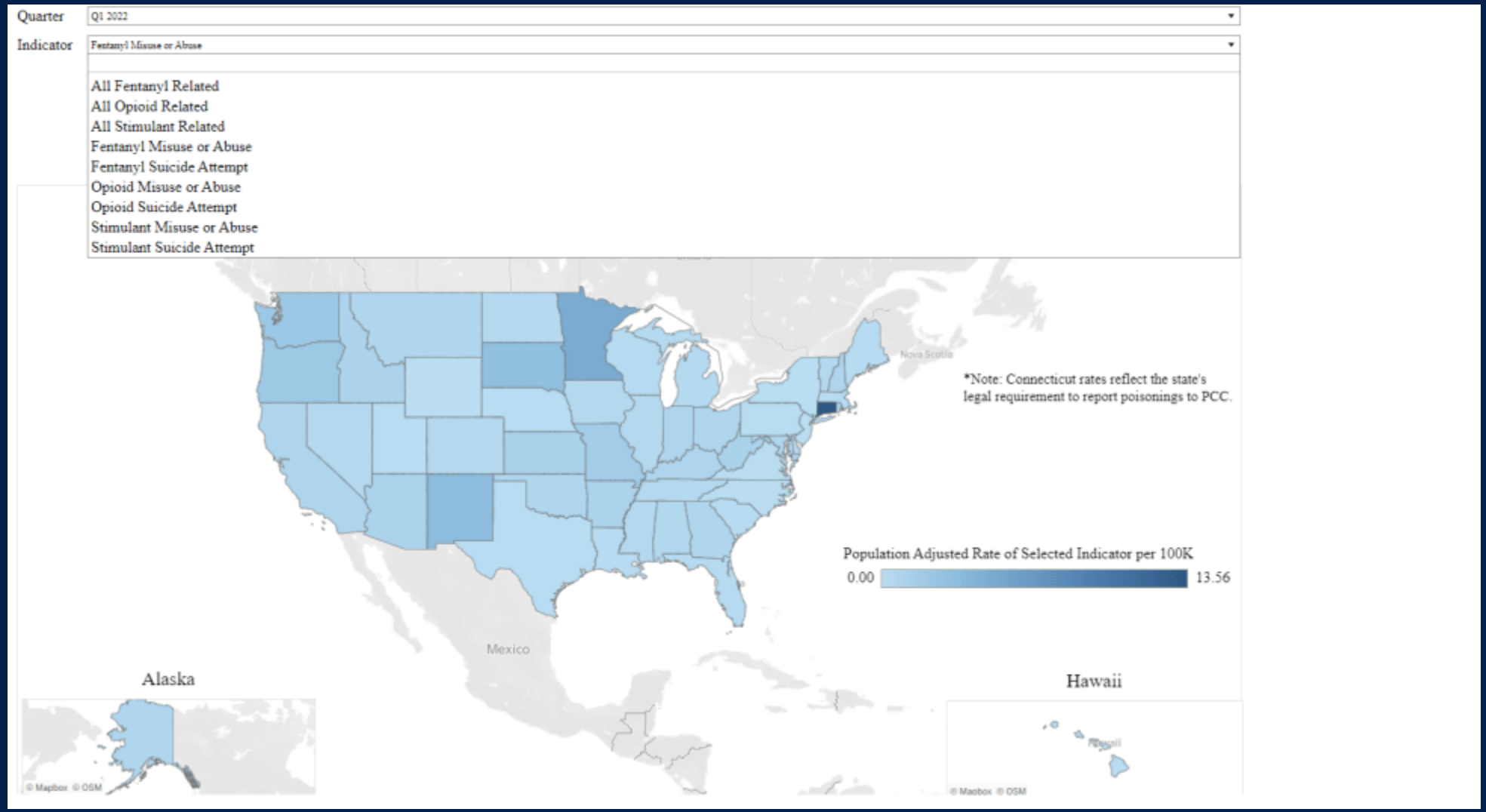
Real Time 911 Data NDEWS

In line with the NDEWS Coordinating Center's focus on leading rather than lagged indicators of drug use trends, NDEWS has partnered with *biospatial, io* to access electronic patient care reports (ePCRs) from thousands of emergency medical services (EMS) providers in over 40 US states. Seventy-five percent of 911 dispatch data is reported within 24 hours of the event.

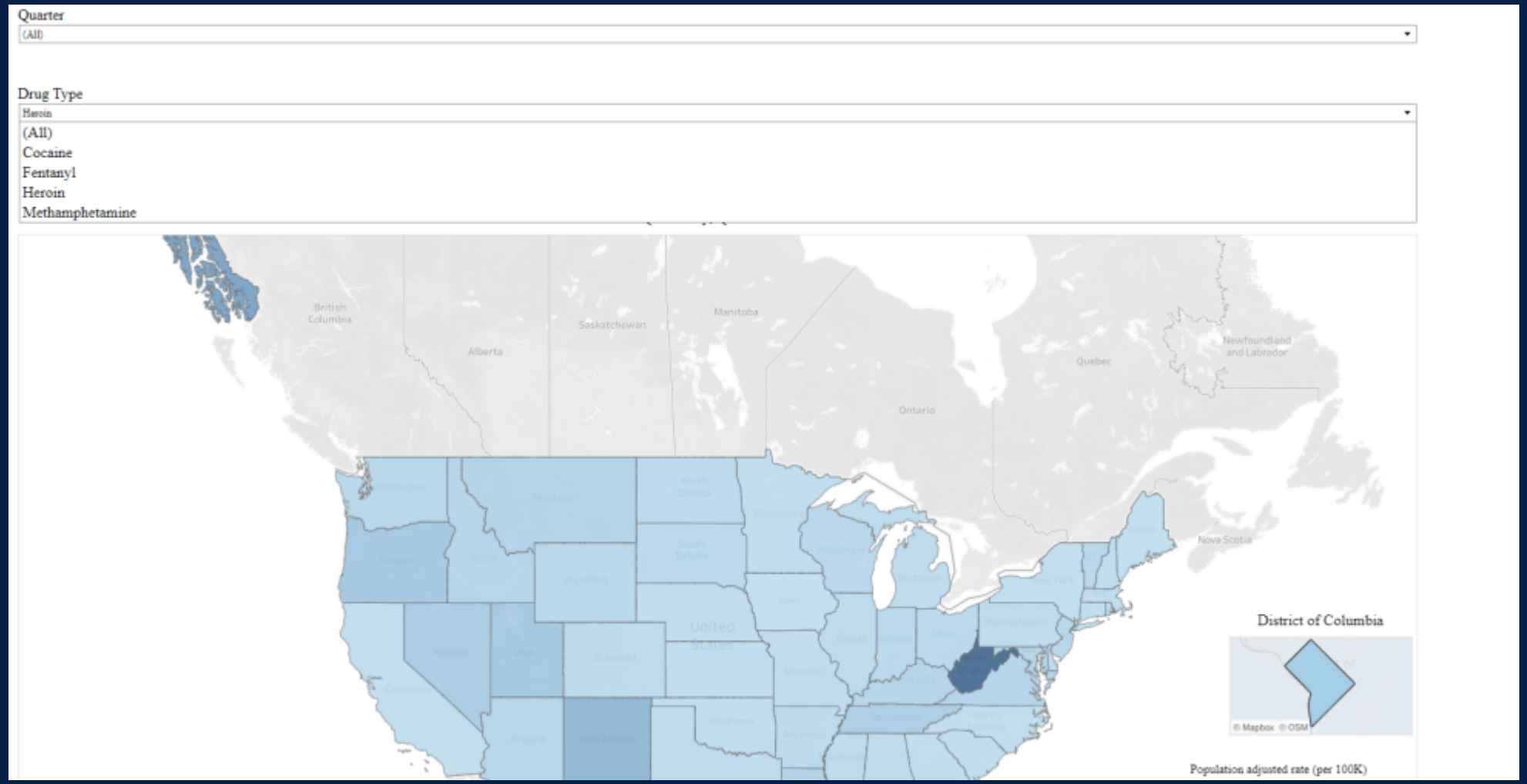
NDEWS is currently monitoring several categories of events, including: opioid and specifically heroin overdoses; non-opioid overdoses; alcohol-related events; methamphetamine-related events; suicide attempts and suicide ideation; and mental health-related events.

- https://public.tableau.com/views/StateandNationalOverdoseWebdashboard/Homepage?:language=en&:display_count=y&:origin=viz_share_link:&:showVizHome=no:embed=yes&:toolbar=no

RADARS SNOW


Quarter
Q1 2022
Indicator
Fentanyl Misuse or Abuse
All Fentanyl Related
All Opioid Related
All Stimulant Related
Fentanyl Misuse or Abuse
Fentanyl Suicide Attempt
Opioid Misuse or Abuse
Opioid Suicide Attempt
Stimulant Misuse or Abuse
Stimulant Suicide Attempt
*Note: Connecticut rates reflect the state's legal requirement to report poisonings to PCC.
Population Adjusted Rate of Selected Indicator per 100K
0.00
13.56
Mexico
Alaska
Hawaii
© Mapbox © OSM

HIDTA Drug Seizures SNOW



FROST NDEWS

FROST

The Florida Drug-Related Outcomes Surveillance and Tracking System (FROST), directed by NDEWS Co-Investigator Dr. Bruce Goldberger, is an interactive, publicly available data dissemination tool for researchers, public health professionals, and the general public to quickly explore drug-related outcomes in the state of Florida.

The FROST Tableau dashboards have information on topics ranging from Prescription Drug Monitoring Program (PDMP) data, national drug-related data and statistics, drug arrest data, and extensive information on drugs identified in deceased persons sourced from the CDC WONDER database. NDEWS indicator dashboards will be modeled after FROST. Visit the FROST website to explore data concerning drug trends in Florida.

NDEWS Sub-Studies

In July 2021, the NDEWS Coordinating Center was awarded two administrative supplements from the National Institute on Drug Abuse to expand our efforts to monitor new and emerging drug trends through two new initiatives: wastewater-based epidemiology and national Poison Control data.

Led by Dr. Tara Sabo-Atwood, the wastewater-based epidemiology initiative will coordinate the collection and analysis of wastewater samples from four NDEWS sentinel sites for known drugs/metabolites and new psychoactive substances using high-end mass spectrometry approaches. This proof-of-concept proposal will integrate wastewater-based epidemiology, an innovative and cost-effective approach, into the existing NDEWS framework. Additional information can be found on the project's NIH RePORTER page.

In collaboration with the RADARS System® (Researched Abuse, Diversion, and Addiction-Related Surveillance), NDEWS will also obtain Poison Control data from 48 states to examine monthly trends in exposures related to the use of heroin, fentanyl and its analogs, cocaine, methamphetamine, and various new psychoactive substances. Current trends in drug-related exposures and deaths will be rapidly disseminated each month through the NDEWS Weekly Briefing and other outlets. More information is available on NIH RePORTER.

N·DEWS
NATIONAL DRUG EARLY WARNING SYSTEM

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NDEWS awarded two administrative supplements

August 9, 2021

In July 2021, the NDEWS Coordinating Center was awarded two administrative supplements from the National Institute on Drug Abuse to expand our efforts to monitor new and emerging drug trends through two new initiatives: wastewater-based epidemiology and national Poison Control data. Led by Dr. Tara Sabo-Atwood, the wastewater-based epidemiology initiative...

Trends in seizures of powders and pills containing illicit fentanyl in the United States, 2018 through 2021

May 10, 2022

A study published in Drug and Alcohol Dependence by NDEWS researchers, led by Co-Investigator Dr. Joseph Palamar, examined quarterly national seizure data from High Intensity Drug Trafficking Areas to determine the number of drug seizures in the US containing fentanyl from January 2018 through December 2021. Read the full study here.For...

NDEWS Hotspot Alerts

NDEWS Publications

Dissemination of findings is crucial to the NDEWS mission, as a warning from an Early Warning System is not effective unless recipients know they have been warned. Our plan for dissemination is five-fold:

- **Indicator Dashboards:** Modeled after the Florida Drug-Related Outcomes Surveillance and Tracking System (FROST), directed by Co-Investigator Dr. Bruce Goldberger, NDEWS will build interactive dashboards on our website to display indicator data that our sentinel sites collect on an ongoing basis. This means that at any point in time, interested parties can access the most up-to-date NDEWS data without waiting for static tables in annual reports. Dashboards will include query options for sentinel site locations, indicators, substances, and time periods, and data will be updated on a monthly basis.

- **Peer-Reviewed Publications:** NDEWS will submit manuscripts to peer-reviewed journals on findings alongside sentinel site directors and collaborators to ensure the highest standards of science. All publications will also be listed on our website.

- **NDEWS Weekly Briefings:** Each week, NDEWS will send out a Weekly Briefing newsletter with curated information on recent and relevant news, articles, and data related to drug trends in the United States and globally. Subscribe here to receive the Weekly Briefing in your email. While this communication method is primarily unidirectional (e.g., there is no ability to "reply all"), we also welcome questions from the scientific community and public at large, which we will include in the following week's Briefing as relevant.

- **Reports:** All sentinel sites will submit annual site reports on drug use and trends in their communities. The NDEWS Coordinating Center will also publish an annual report with cross-site comparisons. Additionally, all NDEWS HotSpot investigations--which will occur in response to an outbreak of significant proportion that needs an immediate evaluation of the depth, cause, and impact of the drug-related event--will result in HotSpot reports.

- **Webinars:** NDEWS will host bi-monthly national town hall meetings, titled Our Community, Our Health (OCOH), modeled after those conducted by Dr. Cottler's community engagement program HealthStreet. These national town halls promote bi-directional communication between researchers and the communities they serve, addressing relevant health topics and disseminating research findings. The events will be streamed nationwide and will be interactive, using social media for Q&A in real-time.

Toxicology Labs and Toxicology Investigators Consortium

Examples of medical toxicology testing laboratories

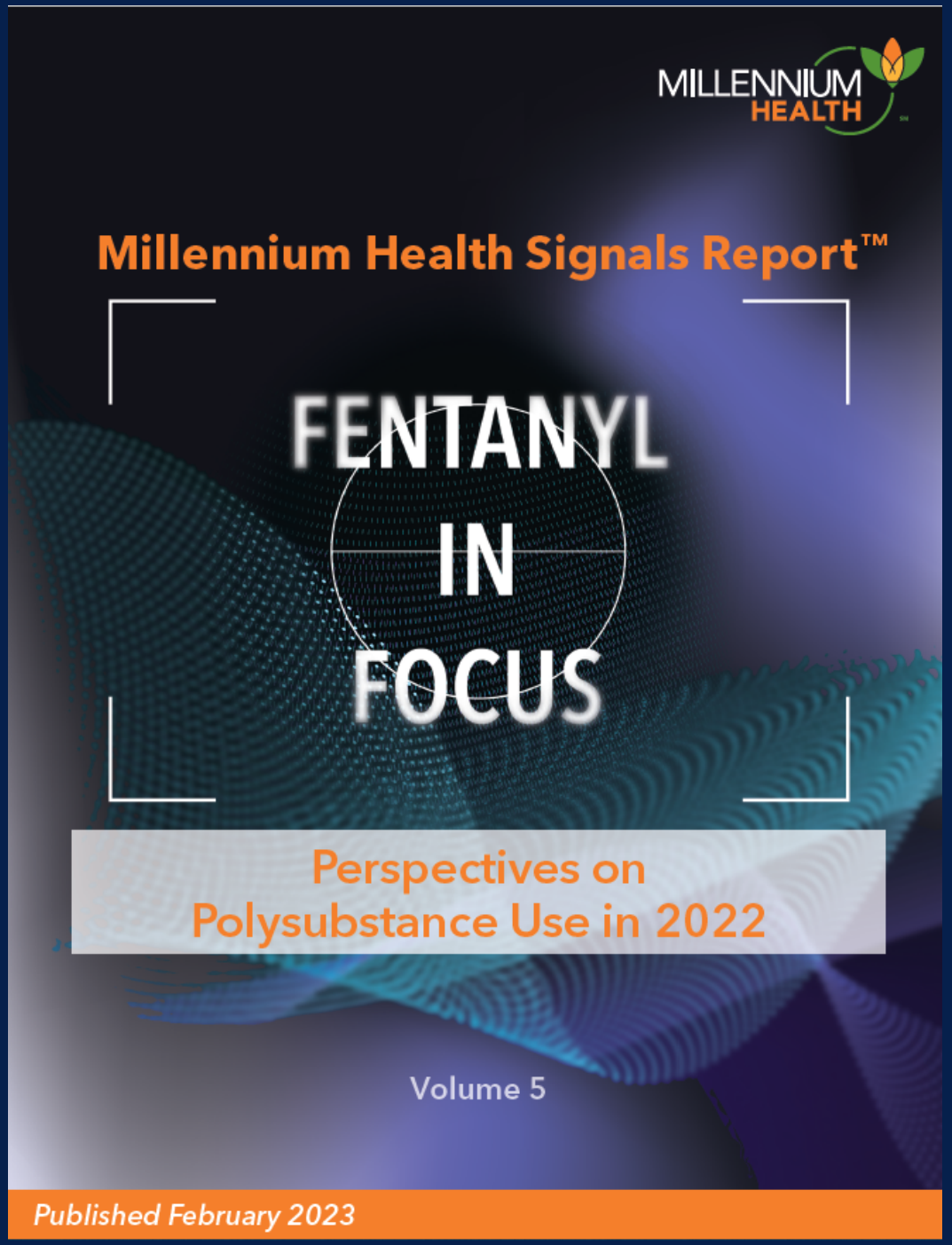
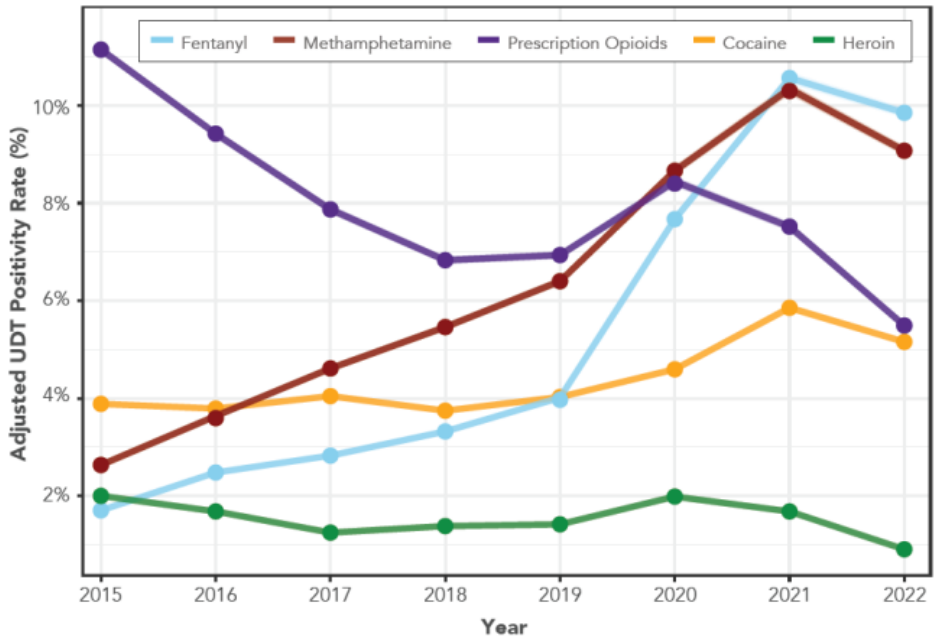
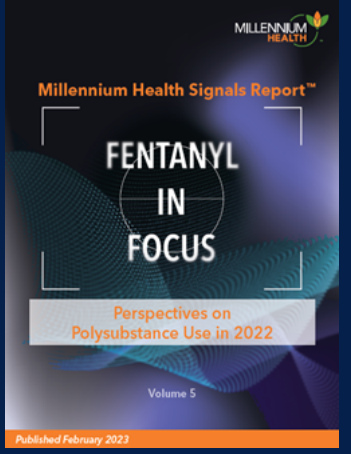


Figure 1.2. National Drug Use Trends in SUD Treatment Settings from 2015-2022



Adjusted UDT Positivity Rates and 95% confidence interval (CI) values for fentanyl, methamphetamine, prescription opioids (hydrocodone, oxycodone, morphine, codeine, and tramadol; without a reported prescription), cocaine, and heroin in patient specimens collected in SUD treatment settings from 2015 through 2022. Positivity rates were adjusted by U.S. Census Division using GEE logistic regression (see Methods).

https://www.millenniumhealth.com/signalsreport/



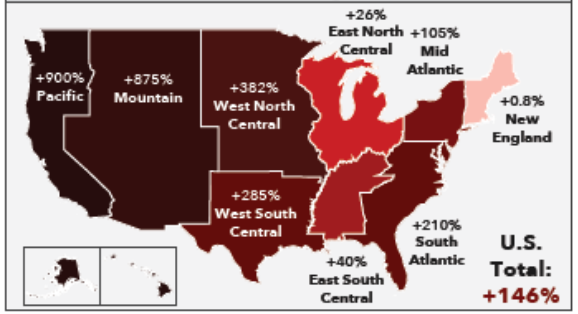
Section 1: A Snapshot of Recent Trends in Urine Drug Test Positivity and Fentanyl Co-Positivity in Substance Use Disorder Treatment Settings *(continued)*

Figure 1.3. Geographical Analysis of Drug Use Trends in SUD Treatment Settings

Fentanyl

U.S. Census Division	UDT Positivity 2019	UDT Positivity 2022
Pacific	1.0%	9.8%
Mountain	1.5%	14.5%
West North Central	2.2%	10.6%
West South Central	1.6%	6.2%
East North Central	7.2%	9.1%
East South Central	7.7%	10.8%
Mid Atlantic	1.4%	3.0%
South Atlantic	5.4%	16.6%
New England	8.7%	8.8% (NS)
US Total	4.0%	9.9%

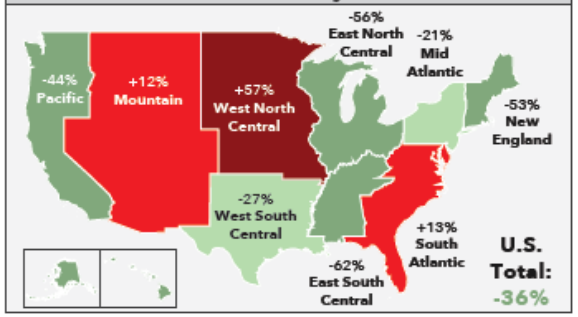
Percent Change



Heroin

U.S. Census Division	UDT Positivity 2019	UDT Positivity 2022
Pacific	3.7%	2.1%
Mountain	0.7%	0.8% (NS)
West North Central	0.8%	1.2%
West South Central	1.0%	0.7% (NS)
East North Central	1.2%	0.5%
East South Central	1.7%	0.6%
Mid Atlantic	0.4%	0.3% (NS)
South Atlantic	1.6%	1.8% (NS)
New England	0.7%	0.3% (NS)
US Total	1.4%	0.9%

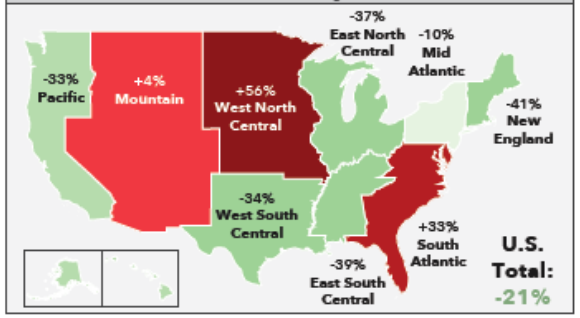
Percent Change



Prescription Opioids

U.S. Census Division	UDT Positivity 2019	UDT Positivity 2022
Pacific	11.6%	7.8%
Mountain	3.6%	3.7% (NS)
West North Central	4.1%	6.4%
West South Central	6.3%	4.2%
East North Central	6.6%	4.2%
East South Central	9.0%	5.5%
Mid Atlantic	5.4%	4.8% (NS)
South Atlantic	7.2%	9.6%
New England	5.6%	3.3%
US Total	6.9%	5.5%

Percent Change



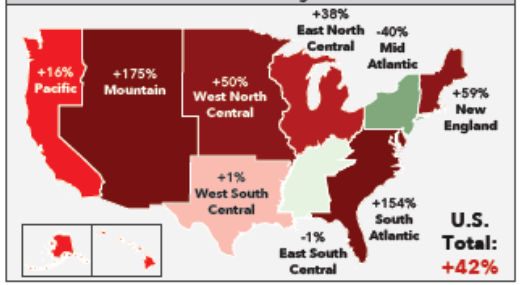
UDT Positivity Rates in 2019 and 2022 (tables, left) and Percent Change from 2019 to 2022 (heat maps, right) for fentanyl, heroin, prescription opioids (see above), methamphetamine, and cocaine (see right) were estimated for each U.S. Census Division. Percent change was calculated as: % Change = (2022 positivity rate - 2019 positivity rate)/2019 positivity rate × 100. Data from 2022 were compared with 2019 data to permit comparisons to the period before COVID-19. (NS) = Not statistically significant. Percent change values greater than 1 were rounded to the nearest whole number.

Figure 1.3. Geographical Analysis of Drug Use Trends in SUD Treatment Settings (continued)

Methamphetamine

U.S. Census Division	UDT Positivity 2019	UDT Positivity 2022
Pacific	10.4%	12.1%
Mountain	4.7%	13.0%
West North Central	10.7%	16.0%
West South Central	10.7%	10.9% (NS)
East North Central	5.5%	7.5%
East South Central	12.2%	12.0% (NS)
Mid Atlantic	2.7%	1.6%
South Atlantic	4.0%	10.1%
New England	3.7%	5.9%
US Total	6.4%	9.1%

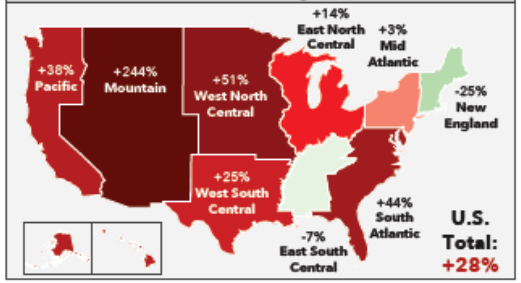
Percent Change



Cocaine

U.S. Census Division	UDT Positivity 2019	UDT Positivity 2022
Pacific	1.5%	2.1%
Mountain	0.7%	2.4%
West North Central	2.8%	4.2%
West South Central	4.1%	5.2%
East North Central	7.7%	8.8%
East South Central	4.8%	4.5% (NS)
Mid Atlantic	4.4%	4.5% (NS)
South Atlantic	9.1%	13.1%
New England	11.2%	8.4%
US Total	4.0%	5.2%

Percent Change



https://www.millenniumhealth.com/signalsreport/

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The Center for Forensic
Science Research & Education

NPS DISCOVERY

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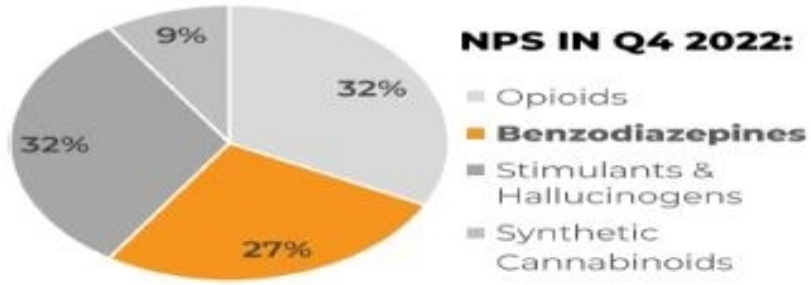
NPS Benzodiazepines in the United States

TREND REPORT | Q4 2022

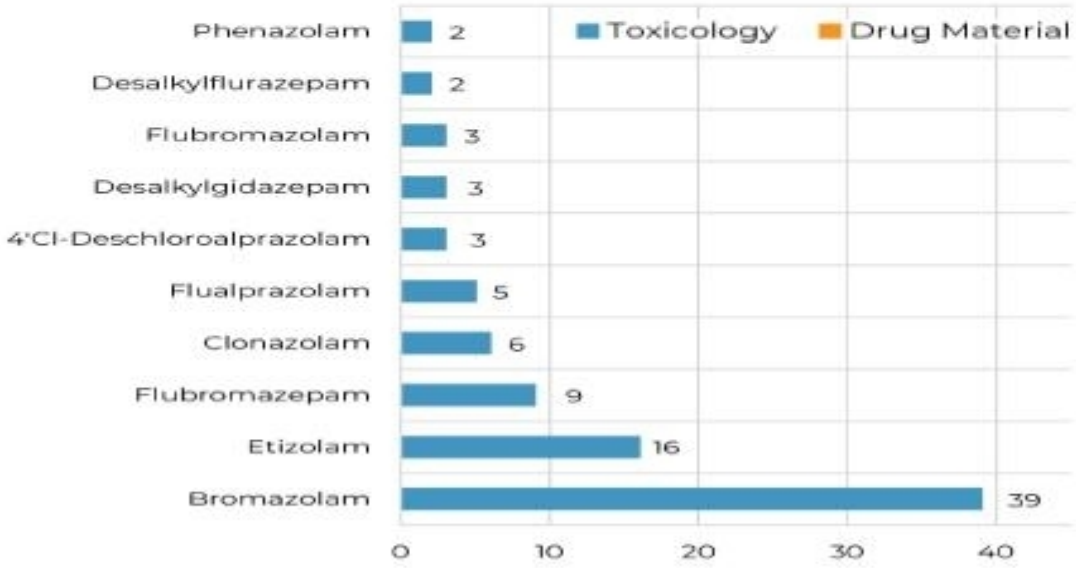
PURPOSE: This report provides up-to-date information regarding the status of NPS benzodiazepine prevalence and positivity within the United States.

OVERVIEW: Novel psychoactive substances (NPS), including NPS benzodiazepines, continue to pose great challenges for forensic scientists, clinicians, and public health and safety personnel. NPS benzodiazepines have been implicated in an increasing number of adverse health events, marked by emergency room admissions and death investigations, especially when ingested in combination with opioids. Maintaining a current scope of analysis can be challenging, requiring comprehensive analytical methodologies and reference materials for identification(s).

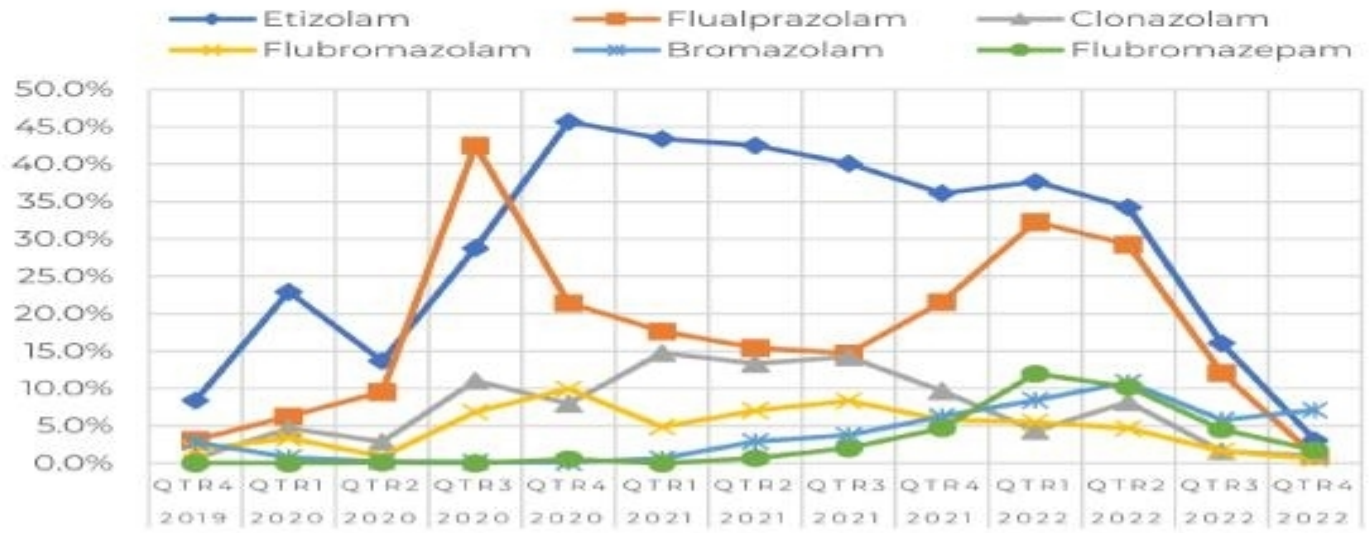
OBJECTIVE: Our laboratory utilizes novel approaches for the analysis of drugs in biological samples and seized materials using comprehensive non-targeted data acquisition by gas chromatography mass spectrometry (GC-MS) and liquid chromatography quadrupole time-of-flight mass spectrometry (LC-QTOF-MS). The scope of analysis contains more than 1,000 drugs, including a vast majority of NPS and their metabolites. This approach allows for real-time identification of new benzodiazepines and further data analysis of important trends. This project was conducted in collaboration with the toxicology and criminalistics laboratories of NMS Labs. Forensic case types linked to these results include illicit drug investigations, medicolegal death investigations, and/or driving under the influence of drugs (DUID) investigations. The results in this report represent the total number of NPS identifications at the CFSRE during this quarter, including those from sample-mining, data-mining, and/or esoteric testing.



NPS BENZODIAZEPINES IDENTIFIED



SELECT POSITIVITY: Q4 2019 to Q4 2022



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ACKNOWLEDGEMENTS: This report was prepared by Alex J. Krotulski, PhD; Sara E. Walton, MS; Amanda LA Mohr, MSFS, DABFT-FT; and Barry K. Logan, PhD, F-ABFT at the Center for Forensic Science Research and Education (CFSRE) at the Fredric Rieders Family Foundation. CFSRE's NPS Discovery program acknowledges scientists at the CFSRE and NMS Labs for their involvements and contributions. For more information about our programs and reports, please contact NPS Discovery at npsdiscovery@cfsre.org or visit our website at www.npsdiscovery.org.

FUNDING: NPS Discovery at the CFSRE is supported in part by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice (Award Number 2020-DQ-BX-0007, "RealTime Sample-Mining and Data-Mining Approaches for the Discovery of Novel Psychoactive Substances (NPS)". The opinions, findings, conclusions and/or recommendations expressed in this publication are those of the author(s) and do not necessarily represent the official position or policies of the U.S. Department of Justice.

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PUBLIC ALERT | **JAN 2023**

NEW POTENT SYNTHETIC OPIOID—*N*-DESETHYL ISOTONITAZENE—PROLIFERATING AMONG RECREATIONAL DRUG SUPPLY IN USA

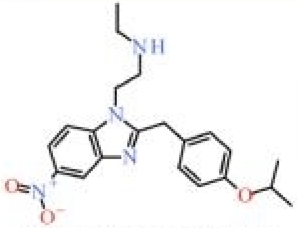
PURPOSE: The objective of this announcement is to notify public health and safety, law enforcement, first responders, clinicians, medical examiners and coroners, forensic and clinical laboratory personnel, and all other related communities about new information surrounding the emergent synthetic opioid ***N*-desethyl isotonitazene**.

BACKGROUND: Synthetic opioids (e.g., fentanyl, fentanyl analogues) are chemically manufactured drugs, often having unknown potency and adverse effects or health risks. Synthetic opioids are frequently mixed with more traditional opioids (e.g., heroin) and other drugs in unregulated drug markets creating additional risk and danger for people who use recreational drugs. Synthetic opioids may be distributed in powder or tablet form. In the United States (USA), an alarming increase in the number of deaths linked to synthetic opioid use has been reported. Primary adverse effects associated with synthetic opioid use are sedation and respiratory depression, leading to death.

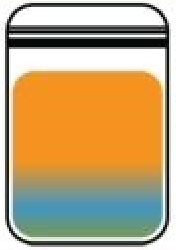
SUMMARY: *N*-Desethyl isotonitazene is a new synthetic opioid bearing structural resemblance to **isotonitazene** and recently emergent nitazene analogues. *N*-Desethyl isotonitazene is dissimilar in chemical structure to fentanyl, the synthetic opioid most commonly encountered, but this subclass of new opioids has been proliferating in the wake of the scheduling of fentanyl analogues. *N*-Desethyl isotonitazene is a known metabolite of isotonitazene; however, it has now emerged as a primary drug in its own right. Most nitazene analogues encountered retain opioid receptor activity and potency similar to or greater than fentanyl. *In vitro* **pharmacological data** show that *N*-desethyl isotonitazene is an active opioid agonist and is approximately 20x more potent than fentanyl. In December 2022, *N*-desethyl isotonitazene was first reported by **NPS Discovery** (Florida); however, first identifications were observed as early as September 2022. To date, seven drug material samples ("dope" powders) collected from the Philadelphia drug supply have tested positive for *N*-desethyl isotonitazene. In December 2022, the **Philadelphia Department of Public Health** issued an alert regarding the discovery of this new nitazene analogue in the city's drug supply. The toxicity of *N*-desethyl isotonitazene has not been examined or reported but recent association with overdoses among people who use drugs leads professionals to believe this synthetic opioid has the potential to cause harm and is of high public health concern.

TIMELINE — *N*-DESETHYL ISOTONITAZENE ...

- **2022 – September:** Identified in urine samples from a drug treatment program (PA).
- **October:** Identified in oral fluid samples collected from people who use drugs (PA).
- **November:** Identified in a counterfeit "A215" (oxycodone) round blue tablet (FL).
- **December:** Identified in "dope" samples alongside fentanyl, xylazine, and bromazolam (PA).
- **2023 – January:** Continues to be identified in "dope" samples among Philadelphia drug supply (PA).



N-DESETHYL ISOTONITAZENE



"DOPE" SAMPLES CONTAINING *N*-DESETHYL ISOTONITAZENE

LOCATION: Philadelphia, PA, USA

NUMBER OF SAMPLES: 7+

CONTENTS (PURITY RANGE):

- Xylazine (49% to 76%)
- Fentanyl (1.1% to 5.1%)
- *N*-Desethyl Isotonitazene (0.05% to 0.4%)
- Bromazolam (trace to 2.5%)
- Flubromazepam (trace)
- *para*-Fluorofentanyl (trace)

RECOMMENDATIONS FOR CLINICIANS

- Become familiar with the signs and symptoms associated with synthetic opioid use (e.g., sedation, respiratory depression).
- Naloxone should be administered to reverse critical respiratory depression and repeated naloxone administration may be necessary. Be aware that clinical conditions may change rapidly and unpredictably after naloxone administration due to other drugs onboard or precipitation of withdrawal, which may be more severe with faster onset.
- Be mindful that drugs have limited quality control, containing undeclared substances that impact clinical effects or findings.
- Counsel about the harms and dangers of synthetic opioid products and other drugs.

RECOMMENDATIONS FOR PUBLIC HEALTH

- Implement surveillance for rapid identification of drug overdose outbreaks. Engage local poison centers and clinicians to assist with treatment of affected patients.
- Track and monitor geographical drug distribution and trends. Track demographics and known risk factors.
- Raise awareness about the risks, harms, and dangers associated with opioid use.
- Make naloxone available to people who use drugs. Notify personnel that naloxone remains effective at reversing opioid overdoses caused by nitazene analogues.
- Be aware that fentanyl test strips are not effective at detecting nitazene analogues.

RECOMMENDATIONS FOR LABORATORIES

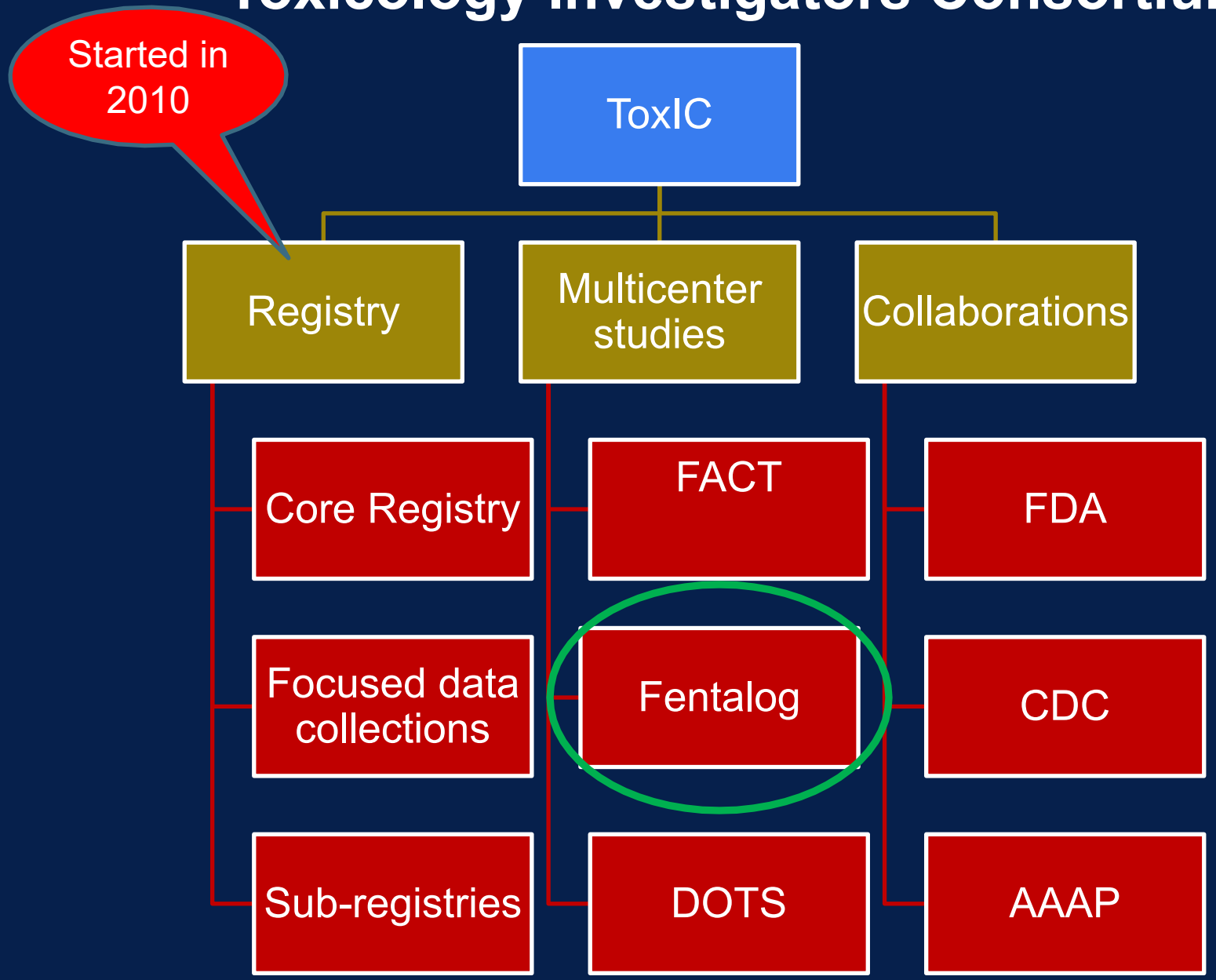
- Utilize analytical data available publicly for the identification of ***N*-desethyl isotonitazene** if a reference standard is not immediately available.
- Utilize previously developed non-targeted testing protocols or develop sensitive and up-to-date testing procedures for synthetic opioids and novel drugs.
- Prioritize analytical testing of drug materials obtained from drug overdose scenes during death investigations.
- Share data on synthetic opioid drug seizures with local health departments, medical examiners, coroners, and related communities.

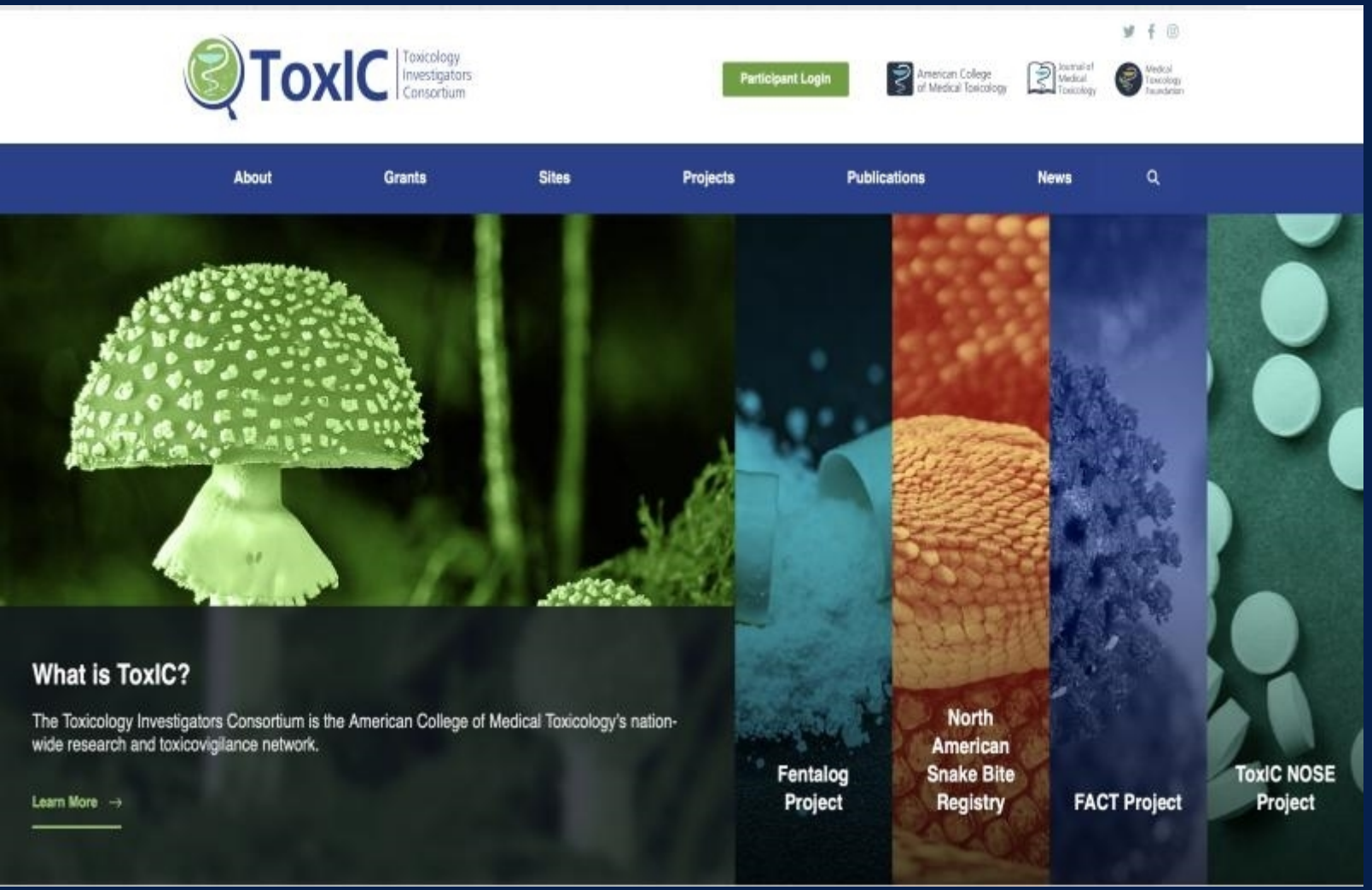
RECOMMENDATIONS FOR MEDICAL EXAMINERS & CORONERS

- Test for new synthetic opioids and their biomarkers (if known) in suspected opioid overdose cases.
- Be aware that ELISA screening for synthetic opioids is not specific or specialized for the newest generations of drugs — Mass spectrometry-based screening is necessary.
- Be aware that concentrations of synthetic opioids in biological specimens can vary and GC-MS sensitivity may not be adequate.
- Consult with forensic toxicologists about novel opioid activity, potency, and association with overdose and/or death.

https://www.acmt.net/toxic/

Toxicology Investigators Consortium





- Core Registry - Over 95,000 cases
- Infrastructure allows for the collection of high-level data on toxicological exposures including prospective multi-center studies

https://www.acmt.net/toxic/

Predicting Medical Consequences of Novel Fentanyl Analog Overdose (Fentalog study)

- Alex Manini PI
- Patients presenting to site emergency departments with apparent opioid overdoses
- Detailed clinical data from emergency department chart reviews
- State-of-the-art blood analytics (CFSRE)
- Prospective cohort of ED patients with opioid overdose over 5 years
- 12 participating sites across the US
- Funding Period: 2020-2025
- Enrollment target of 1500 patients

https://www.acmt.net/fentanyl-analog/

PUBLIC ALERT

December 2021

Adverse Effects Linked to Next Generation Opioids Reported in Patients Presenting to Emergency Departments After Suspected Opioid Overdose

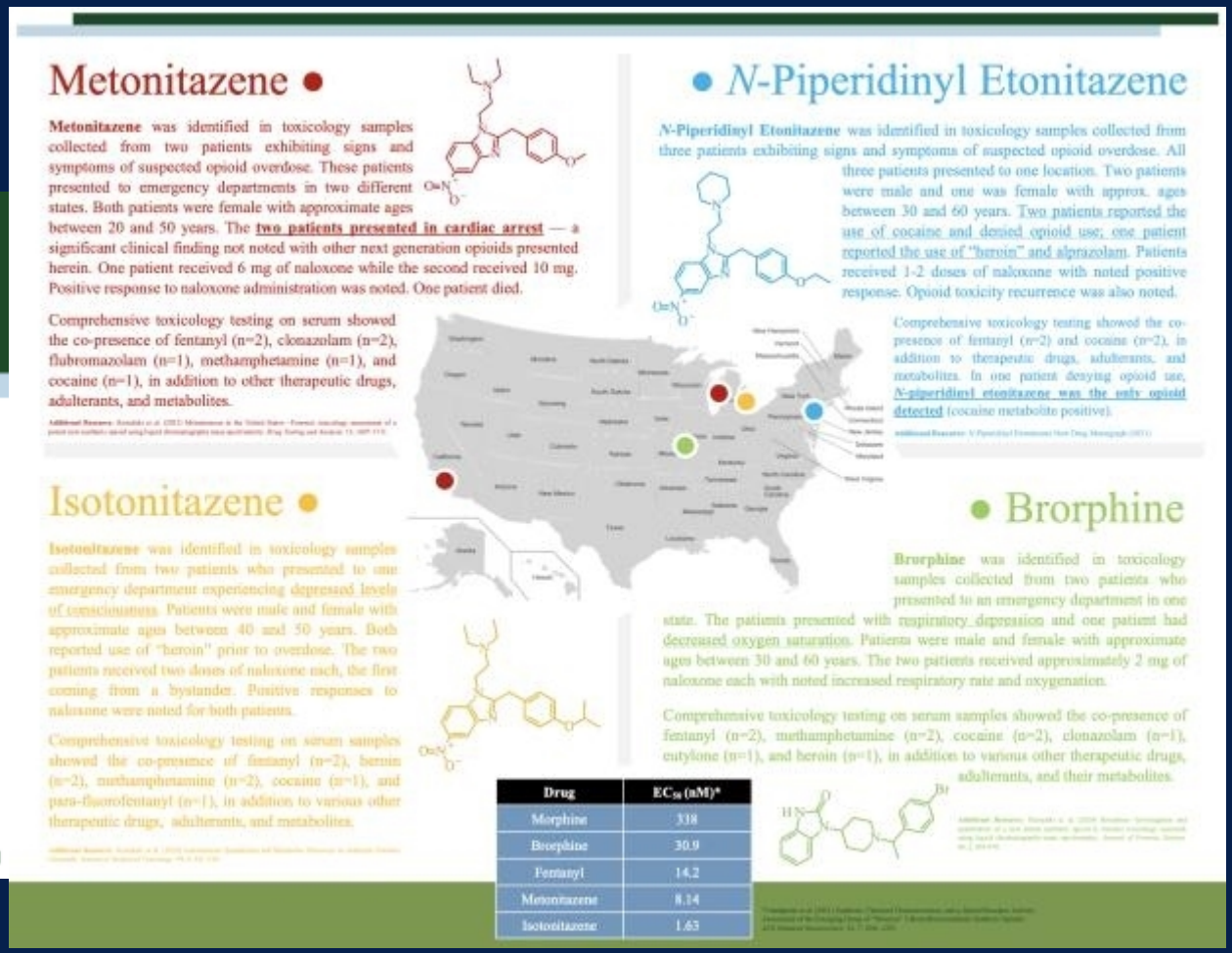
Purpose: The objective of this announcement is to notify public health and safety, clinicians, law enforcement, first responders, medical examiners and coroners, forensic and clinical laboratory personnel, and all other related communities about new information surrounding new generation synthetic opioids in clinical settings after suspected opioid overdoses and presentation to emergency departments, including: **metonitazene**, ***N*-piperidinyl etonitazene**, **isotonitazene**, and **brorphine**.

Overview: Drug use can lead to adverse events and overdose scenarios where individuals present to emergency departments for clinical evaluation and/or treatment. The culprit can be traditional drugs (e.g., heroin, fentanyl, cocaine, methamphetamine) or novel psychoactive substances (NPS); however, proper drug testing methodologies must be employed for accurate identification and characterization. Street-level drug preparations can contain undeclared or unwanted substances, such as toxic adulterants or NPS, which can potentiate effects or lead to adverse reactions. Understanding emerging drugs can help direct new or revised approaches to clinical treatment and harm reduction efforts.

Objective: A partnership between the American College of Medical Toxicology (ACMT) and the Center for Forensic Science Research and Education (CFSRE) was established to comprehensively assess the role and prevalence of synthetic opioids and other drugs among suspected overdose events in the United States. Patients with a suspected opioid overdose presented to an emergency department at a participating site within ACMT's Toxicology Investigators Consortium (ToxIC). Residual, discarded biological samples were obtained for testing against an expansive library of drugs and other substances. Our findings provide a near real-time assessment of the drug market and allude to resulting implications on clinical institutions. Analysis was performed via liquid chromatography quadrupole time-of-flight mass spectrometry (LC-QTOF-MS). The scope of testing targeted more than 950 drugs. Drug classes included opioids, stimulants, cannabinoids, and benzodiazepines, among others.

Acknowledgements: This report was prepared by Alex Manini, MD; Alex J. Krotulski, PhD; Sara E. Walton, MS; Paul Wax, MD; Jeffery Brent, MD, PhD; Kim Aldy, DO; Diane Calello, MD; Alexandra Amaducci, DO; Evan Schwarz, MD; Bryan Judge, MD; Michael Levine, MD; and Barry K. Logan, PhD, F-ABFT. The authors acknowledge ACMT personnel, ToxIC investigators, and CFSRE staff for their contributions. Funding was received from the National Institute on Drug Abuse (NIDA) from the National Institutes of Health (NIH), Award Number: R01DA048009. The opinions, findings, conclusions and/or recommendations expressed in this publication are those of the authors and do not necessarily reflect those of NIDA, NIH, or other agencies. For more information about NPS Discovery, contact npsdiscovery@cfsre.org or visit www.npsdiscovery.org. For more information about ACMT and ToxIC, visit www.acmt.net and www.toxicregistry.org.

ToxIC Toxicology Investigators Consortium | ACMT American College of Medical Toxicology | cfsre | NPS DISCOVERY



Accessible at www.toxicregistry.org or www.cfsre.org

ASAM American Society of Addiction Medicine

ToxIC Toxicology Investigators Consortium

ToxIC Fentalog Study Group — Quarterly NPS Report

CLINICAL | **Q3 2022**

PURPOSE: This report provides new information regarding comprehensive drug testing of clinical toxicology specimens collected after suspected opioid overdoses in cities across the United States (U.S.).

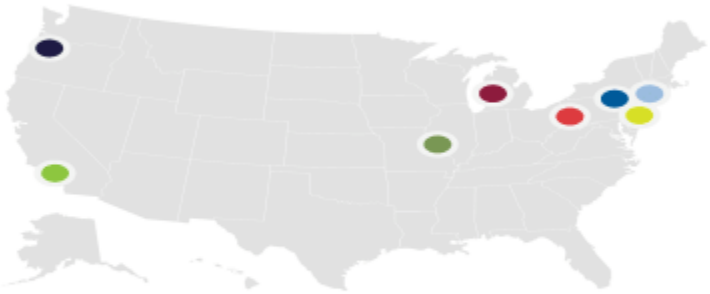
OVERVIEW: Drug use can lead to adverse events and overdose scenarios where individuals present to emergency departments (EDs) for clinical evaluation and/or treatment. The culprit can be traditional drugs (e.g., heroin, fentanyl, cocaine, methamphetamine) or novel psychoactive substances (NPS); however, proper drug testing methodologies must be used for accurate identification and characterization. Street-level drug preparations can contain undeclared or unwanted substances (e.g., toxic adulterants or NPS) which can potentiate effects or lead to adverse reactions. Understanding emerging drug trends and drug testing results can help direct new or revised approaches to clinical treatment and harm reduction.

OBJECTIVE: A partnership between the American College of Medical Toxicology (ACMT) and the Center for Forensic Science Research and Education (CFSRE) was established to comprehensively assess the role and prevalence of synthetic opioids and other drugs among suspected overdose events in the U.S.

SAMPLE SOURCE: Patients presented to EDs within ACMT's Toxicology Investigators Consortium (ToxIC) experiencing a suspected opioid overdose. Residual, discarded biological samples were obtained for testing against an expansive library of drugs and other substances. Our findings provide a near real-time assessment of the drug market and allude to resulting implications on clinical institutions.

TOXICOLOGY TESTING: Analysis was performed via liquid chromatography quadrupole time-of-flight mass spectrometry (LC-QTOF-MS). The scope of testing targeted more than 1,000 drugs, including a vast majority of NPS and metabolites. Drug classes included opioids, benzodiazepines, cannabinoids, stimulants, and hallucinogens, among other drugs.

ACKNOWLEDGEMENTS: This report was prepared by Alex Manini, MD; Alex J. Krotulski, PhD; Sara E. Walton, MS; Paul Wax, MD; Jeffery Brent, MD, PhD; Kim Aldy, DO; Alexandra Amaducci, DO; Diane Calello, MD; Adrienne Hughes, MD; Anthony Pizon, MD; Michael Levine, MD; Evan Schwarz, MD; Bryan Judge, MD; and Barry K. Logan, PhD, F-ABFT. The authors acknowledge ACMT personnel, ToxIC investigators, and CFSRE staff for their contributions. Funding was received from the National Institute on Drug Abuse (NIDA) from the National Institutes of Health (NIH), Award Number: R01DA048009. The opinions, findings, conclusions and/or recommendations expressed in this publication are those of the authors and do not necessarily reflect those of NIDA, NIH, or other agencies. For more information about NPS Discovery, contact npsdiscovery@cfsre.org or visit www.cfsrenpsdiscovery.org.



PITTSBURGH, PA

- 75% positive for at least one opioid
- Fentanyl (75%) commonly detected, followed by heroin (25%) and tramadol (25%)
- Opioid and stimulant use commonly observed (75%)
- NPS: *p*-Fluorofentanyl (25%), Clonazolam

BETHLEHEM, PA

- 97% positive for at least one opioid
- Fentanyl (88%) commonly detected
- Opioid and stimulant use observed (53%); benzodiazepine and opioid use less common (25%)
- *p*-Fluorofentanyl detected w/o fentanyl
- NPS: *p*-Fluorofentanyl (25%), *o*-Fluorofentanyl (6%), Valerylfentanyl, ADB-PINACA

NEW YORK, NY

- 88% positive for at least one opioid
- Fentanyl (65%) commonly detected, followed by methadone (26%), heroin (15%), and oxycodone (15%)
- Opioid and benzodiazepine use observed (32%); opioid and stimulant use (21%)
- PCP detected alongside fentanyl
- NPS: *p*-Fluorofentanyl (21%), Bromazolam, Flubromazepam, MDMB-4en-PINACA

NEWARK, NJ

- 89% positive for at least one opioid
- Fentanyl (78%) commonly detected, followed by methadone and tramadol (11%)
- Opioid and stimulant use observed (44%); opioid and benzodiazepine use (17%)
- PCP detected alongside fentanyl
- NPS: *p*-Fluorofentanyl (11%), Clonazolam

ST. LOUIS, MO

- 95% positive for at least one opioid
- Fentanyl (93%) very commonly detected
- Opioid and stimulant use common (63%); opioid and benzodiazepine use was less common (15%)
- MDMA detected alongside fentanyl (5%)
- NPS: *p*-Fluorofentanyl (10%), Bromazolam, Flubromazepam

PORTLAND, OR

- 74% positive for at least one opioid
- Fentanyl (68%) commonly detected, followed by heroin (16%)
- THC and metabolites detected (32%)
- Opioid and stimulant use observed (53%); opioid and benzodiazepine use less common (21%)
- NPS: *p*-Fluorofentanyl (11%), Bromazolam

LOS ANGELES, CA

- 90% positive for at least one opioid
- Fentanyl (75%) commonly detected, followed by heroin (5%) & methadone (5%)
- Opioid and stimulant use observed (45%); opioid and cannabinoid use (15%); opioid and benzodiazepine use (10%)
- Xylazine not detected in opioid samples
- *p*-Fluorofentanyl detected w/o fentanyl
- NPS: *p*-Fluorofentanyl (15%), *o*-Fluorofentanyl (5%)

GRAND RAPIDS, MI

- 89% positive for at least one opioid
- Fentanyl (74%) commonly detected, followed by tramadol (8%) and heroin (8%)
- Opioid and stimulant use observed (55%); opioid and benzodiazepine use (21%)
- *p*-Fluorofentanyl detected w/o fentanyl
- NPS: *p*-Fluorofentanyl (11%), Clonazolam, Flualprazolam, BZO-POXIZID, ADB-5Br-INACA, MDMB-5Br-INACA, 4CN-CUMYL-BINACA, ADB-HEXINACA, 3,5-ADB-4en-PFUPPYCA

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ACMT | American College of Medical Toxicology

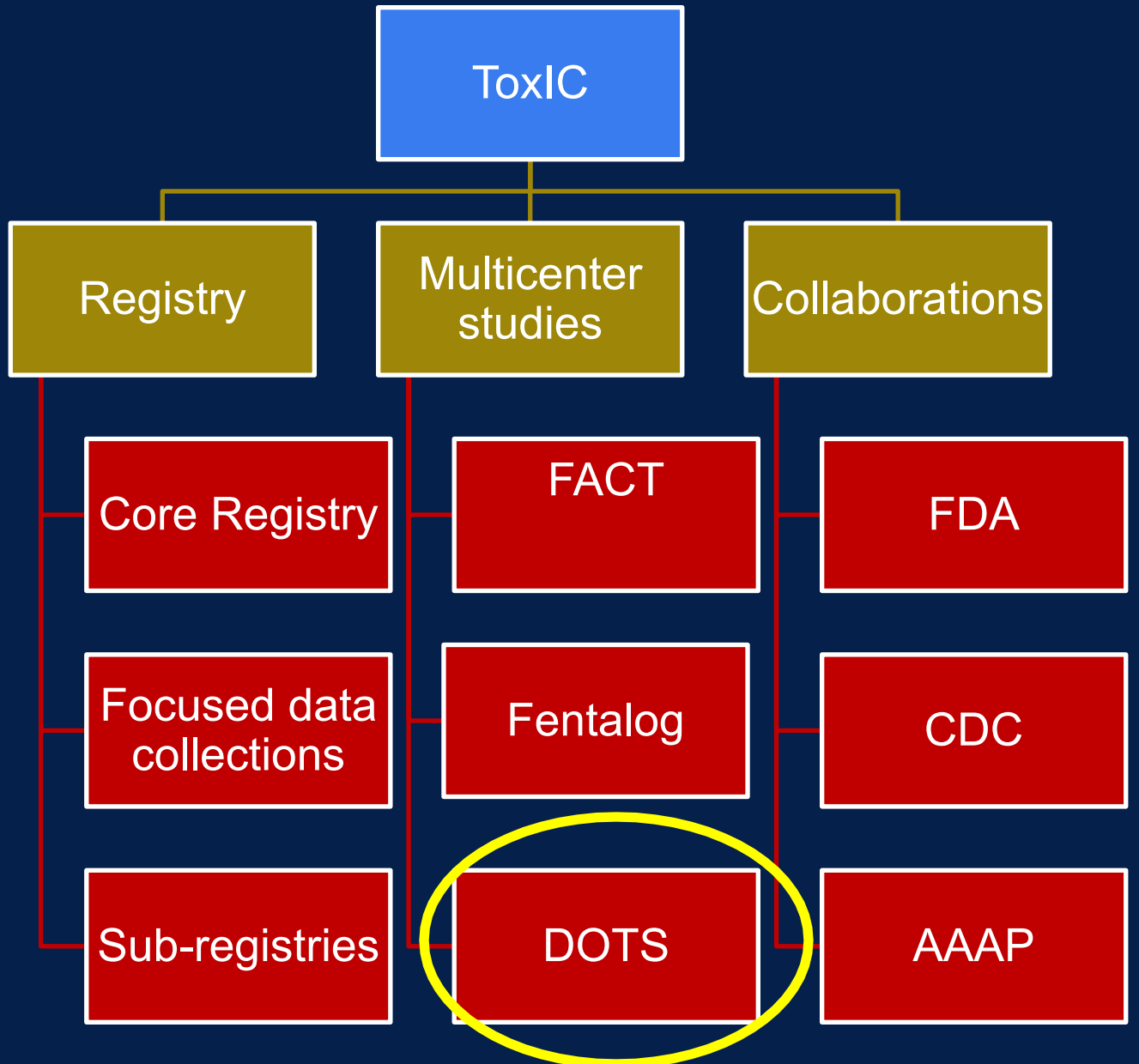
ToxIC | Toxicology Investigators Consortium

https://www.cfsre.org/images/content/reports/clinical_reports/2022_Q3_Clinical_ToxIC_Fentalog_Study_Group_Quarterly_NPS_Report.pdf

ASAM

ToxIC Toxicology Investigators Consortium

Toxicology Investigators Consortium



Coming soon!

New CDC Drug Overdose Dashboard

Final Takeaways/Summary

- Information about illicit drug supply components is limited and may be difficult to access.
- It is usually necessary to access several sites to find the desired information.
- Real-time resources such as ToxIC and CESAR can be helpful for these purposes.