

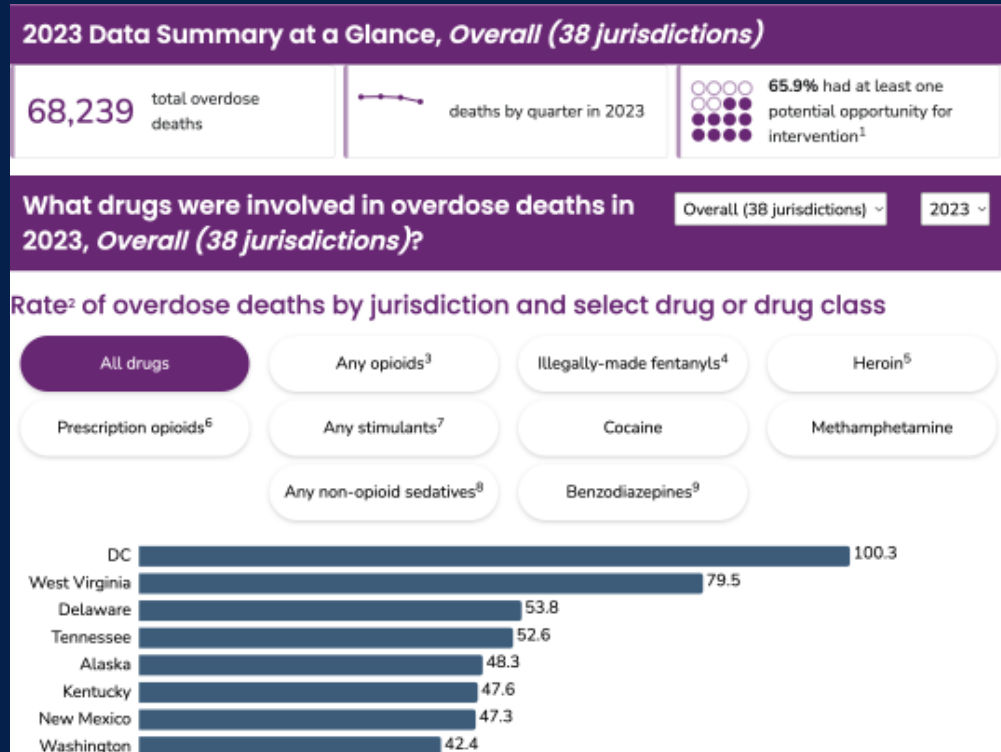
Emerging Illicit Substances: Surveillance Resource Appendix

Surveillance Resources

- **CDC SUDORS Dashboard**: National Drug Overdose Fatality Data Source
- **CSFRE NPS Discovery**: Drug and Forensic Toxicology Testing Results, Trend Reports, Emerging New Substances Data
- **Drug Overdose Toxicology-Surveillance**: Emergency Department Overdose Biosurveillance Project conducted by the American College of Medical Toxicology in collaboration with CSFRE
- **National Forensic Laboratory Information System (NFLIS)**: Forensic Drug Chemistry Laboratory Data, Medical Examiner and Coroner Data, Toxicology Laboratory Data
- **National Drug Early Warning System (NDEWS)**: Collaboration between University of Florida, New York University, and Florida Atlantic University
- **Toronto Drug Checking Service**: Drug Checking Data Source- Key Findings, Updates, Testing Methods
- **New York State Dept. of Health Checking Service**: Drug Checking Data Source- Key Findings, Updates, Alerts
- **Drug Checking Programs in Pennsylvania: Philadelphia Dept. of Health Checking Service and PA Groundhogs Drug Checking Services**: in collaboration with CSFRE
- **Street Check**: Community Drug Checking
- **Erowid/Drugsdata.org**: Anonymous drug sample analysis data

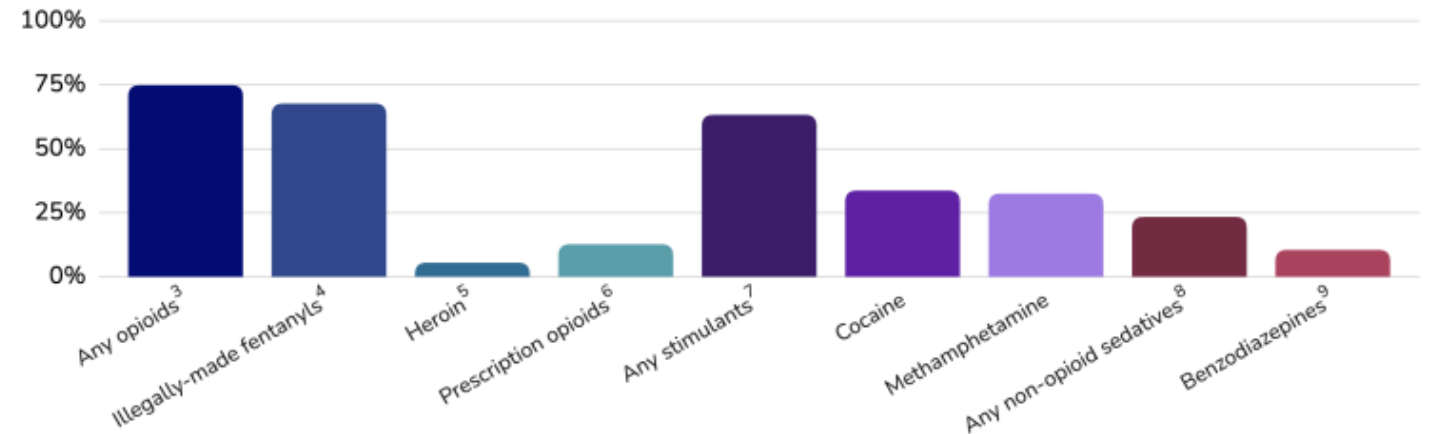
CDC SUDORS Dashboard

National Drug Overdose Fatality Data Source



Percentages² of overdose deaths involving select drugs and drug classes during January–June 2024, Overall (43 jurisdictions)¹ – Preliminary Data

Based on preliminary data, there were 28,963 overdose deaths in 43 jurisdictions. Among those, 74.9% of deaths involved at least one opioid and 63.3% involved at least one stimulant. Illegally-made fentanyl⁴ were the most commonly involved opioids. The most common stimulant involved in overdose deaths was cocaine.



CSFRE NPS Discovery

Drug and Forensic Toxicology Testing Results, Trend Reports, Emerging New Substances Data

NPS Opioids in the United States

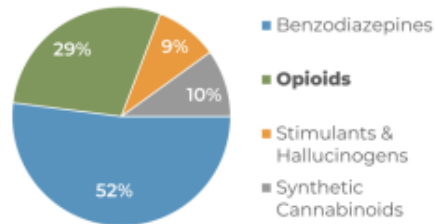
TREND
REPORT

Q4
2024

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

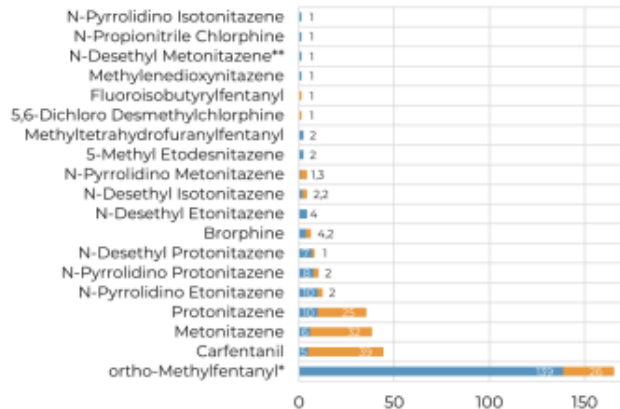
OVERVIEW: Novel psychoactive substances (NPS), including NPS opioids, continue to pose great challenges for forensic scientists, clinicians, and public health and safety personnel. NPS opioids have been implicated in an increasing number of emergency room admissions, death investigations, and mass intoxication events, and often appear in combination with other illicit opioids (e.g. fentanyl, heroin). 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 toxicology specimens and drug 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 1,200 drugs, including a vast majority of NPS and their metabolites. This approach allows for real-time identification of novel opioids and further data analysis of important trends. Specimens and sample types associated with our results stem from recreational drug materials, drug equipment, medicolegal death investigations, clinical intoxications, and/or impaired driving investigations, among other circumstances. This report summarizes the total number of NPS identifications at the CSFRE during this quarter, encompassing findings from sample-mining, data-mining, routine testing, and esoteric testing.



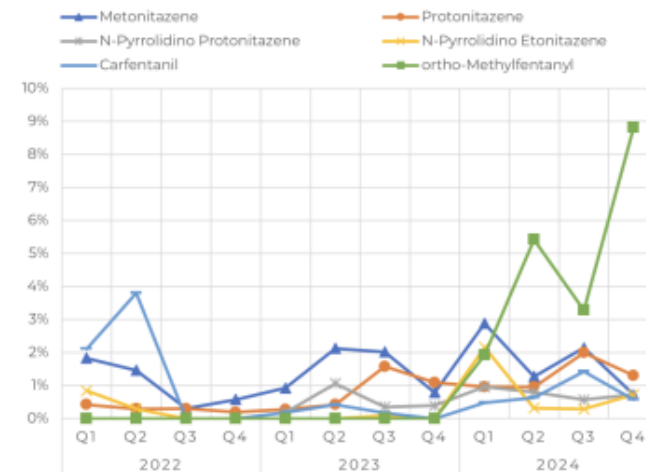
NPS OPIOIDS IDENTIFIED

■ Toxicology Specimen ■ Drug Material



SELECT POSITIVITY: Q1 2022 TO Q4 2024

Positivity plots are derived from a select toxicology data source that has been consistently monitored since 2018.



ACKNOWLEDGMENTS: This report was prepared by Alex J. Kistulski, Sara E. Watson, Joshua S. DeBord, Amanda LA. Hols, and Barry K. Logan. CSFRE's NPS Discovery program acknowledges scientists at the CSFRE, HHS Labs, and many other collaborating agencies for their involvement and contributions. For more information about our programs and reports, please contact NPS Discovery at npsdiscovery@csfre.org or visit our website at <https://www.cfsre.org/nps-discovery/>.

FUNDING: CSFRE's NPS Discovery is supported by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice (Award Number 69402-CC-0443-0140). Implementation of NPS Discovery - An Early Warning System for Novel Drug Intelligence, Surveillance, Monitoring, Response, and Forecasting using Drug Materials and Toxicology Populations in the US. The opinions, findings, conclusions and/or

Since 2018, NPS Discovery has identified **269** NPS in forensic samples (Figure 3). **NPS opioids, stimulants, and cannabinoids** represent the largest subclasses observed. In 2024, **103** total NPS were detected (Figure 4).

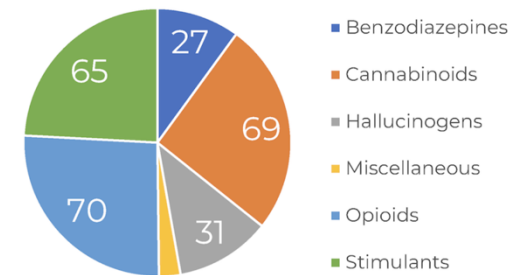


Figure 3: Breakdown by subclass of individual NPS detected 2018-2024

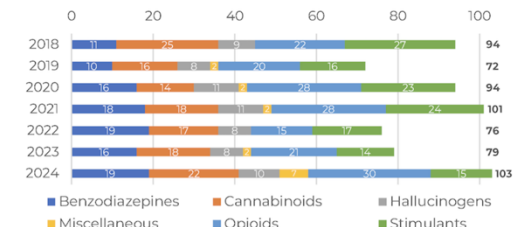


Figure 4: Individual NPS detected each year, cumulative since 2018.

Join the listserv to receive trend reports, public alerts, emerging substance updates and more: <https://action.cfsre.org/a/signup>

Main Site: <https://www.cfsre.org/nps-discovery/>

Drug Overdose Toxico-Surveillance

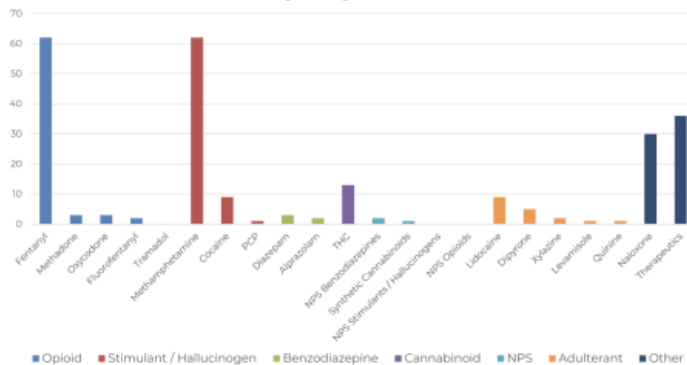
Emergency Department Overdose Biosurveillance Project conducted by the American College of Medical Toxicology in collaboration with CSFRE

DOTS Reporting Program — Quarterly Report

CLINICAL

Q4
2023

WEST REGION SUMMARY (N=74)



Traditional Drugs (ng/mL)

Drug	N	Mean ± Std Dev	Median	Range
Ethanol (mg/dL)	8	80±50	88	10-180
Fentanyl	65	7.1±7.0	5.4	<1-31
Norfentanyl	59	3.8±4.8	2.2	<1-29
Methamphetamine	64	270±260	220	<1->1000
Amphetamine	62	41±53	26	<1-280
Cocaine	10	35±28	37	<1-67
BZE	29	120±190	44	<1->1000
Naloxone	41	26±85	6.2	<1-510

NPS (ng/mL)

Drug	N	Mean ± Std Dev	Median	Range
Bromazolam	2	28±14	28	14-43

CENTRAL REGION SUMMARY (N=130)

Traditional Drugs (ng/mL)				
Drug	N	Mean ± Std Dev	Median	Range
Ethanol (mg/dL)	9	170±140	130	20-390
Fentanyl	101	8.3±12	4.3	<1-100
Norfentanyl	89	9.2±27	2.8	<1-200
Methamphetamine	52	120±170	71	<1->1000
Amphetamine	47	23±30	11	<1-130
Cocaine	30	4.3±3.2	2.9	<1-9.4
BZE	66	260±249	175	<1->1000
Naloxone	44	6.2±4.0	5.0	<1-19
Xylazine	23	19±40	2.5	<1-150

NPS (ng/mL)

Drug	N	Mean ± Std Dev	Median	Range
Bromazolam	6	61±37	55	<5-130
Flubromazepam	2	-	-	<5->500

PARTICIPATING SITES

CATEGORIZED AS WEST, CENTRAL, & EAST REGIONS

WEST

Portland, OR
Oregon Health & Science University
Sacramento, CA
University of California, Davis
San Francisco, CA
University of California, San Francisco
Los Angeles, CA
University of California, Los Angeles, Ronald Reagan
Phoenix, AZ
Banner University Medical Center

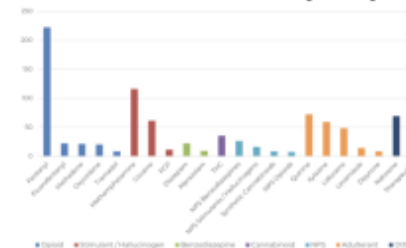
CENTRAL

Denver, CO
University of Colorado
Minneapolis, MN
Hennepin Medical Center
Iowa City, IA
University of Iowa

EAST

Boston, MA
Harvard University
New York, NY
Weill Cornell Medical Center
Philadelphia, PA
University of Pennsylvania
Baltimore, MD
Johns Hopkins Hospital
Washington, DC
Georgetown University
Pittsburgh, PA
University of Pittsburgh
Detroit, MI
Detroit Medical Center
St. Louis, MO
Washington University
Jackson, MS
University of Mississippi


ALL SITE SUMMARY RESULTS (N=294)




Traditional Drugs (ng/mL)					NPS (ng/mL)			
Drug	N	Mean ± Std Dev	Median	Range	Drug	N	Mean ± Std Dev	Median
Ethanol (mg/dL)	24	10±35	79	9.9-390	Bromazolam	21	81±85	50
Fentanyl	227	8.5±11	4.7	<1-100	Flubromazepam	2	-	-
Norfentanyl	207	8.4±21	2.8	<1-200	N,N-Dimethylpentylone	11	24±19	16
Methamphetamine	123	20±240	10	<1->1000	Pentylone	8	15±14	10
Amphetamine	116	35±51	19	<1-280	Eutylone	3	25±22	10
Cocaine	78	11±20	2.4	<1-67	N-Oethyl isotonitazene	4	20±19	11
BZE	160	240±240	160	<1->1000	Mesamitazene	1	-	-
Xylazine	58	14±28	4.9	<1-150	Protonitazene	1	-	-
Naloxone	101	15±39	5.2	<1-510				

<https://www.acmt.net/dots/>

Forensic Drug Chemistry Laboratory Data, Medical Examiner and Coroner Data, Toxicology Laboratory Data



DRUG




snapshot

September 2023

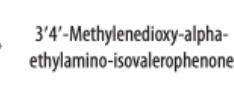
Newly Reported Substances: The following substances were reported to NFLIS-Drug for the first time between July 1, 2023, and September 30, 2023.

West

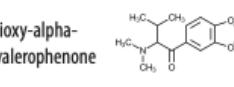


Cannabidibutol

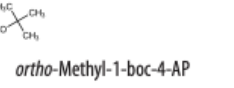
CC(C)C[C@H]1C=CC(=C(C=C1)O)C2=CC=CC=C2C3=CC=CC=C3C4=CC=CC=C4C5=CC=CC=C5C6=CC=CC=C6C7=CC=CC=C7C8=CC=CC=C8C9=CC=CC=C9C10=CC=CC=C10C11=CC=CC=C11C12=CC=CC=C12C13=CC=CC=C13C14=CC=CC=C14C15=CC=CC=C15C16=CC=CC=C16C17=CC=CC=C17C18=CC=CC=C18C19=CC=CC=C19C20=CC=CC=C20C21=CC=CC=C21C22=CC=CC=C22C23=CC=CC=C23C24=CC=CC=C24C25=CC=CC=C25C26=CC=CC=C26C27=CC=CC=C27C28=CC=CC=C28C29=CC=CC=C29C30=CC=CC=C30C31=CC=CC=C31C32=CC=CC=C32C33=CC=CC=C33C34=CC=CC=C34C35=CC=CC=C35C36=CC=CC=C36C37=CC=CC=C37C38=CC=CC=C38C39=CC=CC=C39C40=CC=CC=C40C41=CC=CC=C41C42=CC=CC=C42C43=CC=CC=C43C44=CC=CC=C44C45=CC=CC=C45C46=CC=CC=C46C47=CC=CC=C47C48=CC=CC=C48C49=CC=CC=C49C50=CC=CC=C50C51=CC=CC=C51C52=CC=CC=C52C53=CC=CC=C53C54=CC=CC=C54C55=CC=CC=C55C56=CC=CC=C56C57=CC=CC=C57C58=CC=CC=C58C59=CC=CC=C59C60=CC=CC=C60C61=CC=CC=C61C62=CC=CC=C62C63=CC=CC=C63C64=CC=CC=C64C65=CC=CC=C65C66=CC=CC=C66C67=CC=CC=C67C68=CC=CC=C68C69=CC=CC=C69C70=CC=CC=C70C71=CC=CC=C71C72=CC=CC=C72C73=CC=CC=C73C74=CC=CC=C74C75=CC=CC=C75C76=CC=CC=C76C77=CC=CC=C77C78=CC=CC=C78C79=CC=CC=C79C80=CC=CC=C80C81=CC=CC=C81C82=CC=CC=C82C83=CC=CC=C83C84=CC=CC=C84C85=CC=CC=C85C86=CC=CC=C86C87=CC=CC=C87C88=CC=CC=C88C89=CC=CC=C89C90=CC=CC=C90C91=CC=CC=C91C92=CC=CC=C92C93=CC=CC=C93C94=CC=CC=C94C95=CC=CC=C95C96=CC=CC=C96C97=CC=CC=C97C98=CC=CC=C98C99=CC=CC=C99C100=CC=CC=C100



3',4'-Methylenedioxy-alpha-ethylamino-isovalerophenone



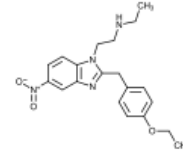
3',4'-Methylenedioxy-alpha-dimethylamino-isovalerophenone



ortho-Methyl-1-boc-4-AP

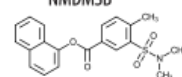
Midwest

N-Desethyl etonitazene

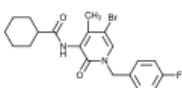


South

NMDMSB

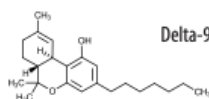


CHO-4'-Me-5'-Br-FUBOXPYRA



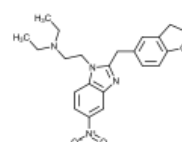
Northeast

Delta-9-THCP



South and Northeast

Ethyleneoxynitazene



Snapshot of Drug Reports Received by NFLIS-Drug

The tables on the right present the top drug reports in each category received by NFLIS-Drug between July 1, 2023, and September 30, 2023.

Top 5 Reported Drugs	187,502
Methamphetamine	77,345
Fentanyl	38,078
Cocaine	37,766
Cannabis/THC	27,473
Heroin	6,840

Selected Benzimidazole Opioids	355
Metonitazene	213
Protonitazene	118
Isotonitazene	9
N-Pyrrolidino etonitazene	9
Ethyleneoxynitazene	6

Fentanyl-Related Compounds	9,150
4-ANPP	4,643
Fluorofentanyl	3,267
Fluorofentanyl (unspecified)	1,975
para-Fluorofentanyl	1,289
meta-Fluorofentanyl	3
Acetyl fentanyl	817
Phenethyl 4-ANPP	337
Ethyl 4-ANPP	86

Psychedelics	3,481
Psilocin	1,849
Psilocin/psilocybin	760
Lysergic acid diethylamide (LSD)	462
Psilocybin	410

Steroids	278
Testosterone	166
Trenbolone	42
Oxandrolone	25
Methandrostenolone	23
Nandrolone	22

NFLIS-Drug

1,181,750 drug reports in 2022

Established in 1997, the National Forensic Laboratory Information System (NFLIS) is a program of the Drug Enforcement Administration (DEA), Diversion Control Division. The DEA's NFLIS-Drug data collection systematically collects drug identification results and associated information from drug cases submitted to and analyzed by participating Federal, State, and local forensic laboratories with drug chemistry sections. The [2022 NFLIS-Drug Annual Report](#) showed that a total of 1,181,750 drug reports were identified by State and local forensic laboratories in the United States.

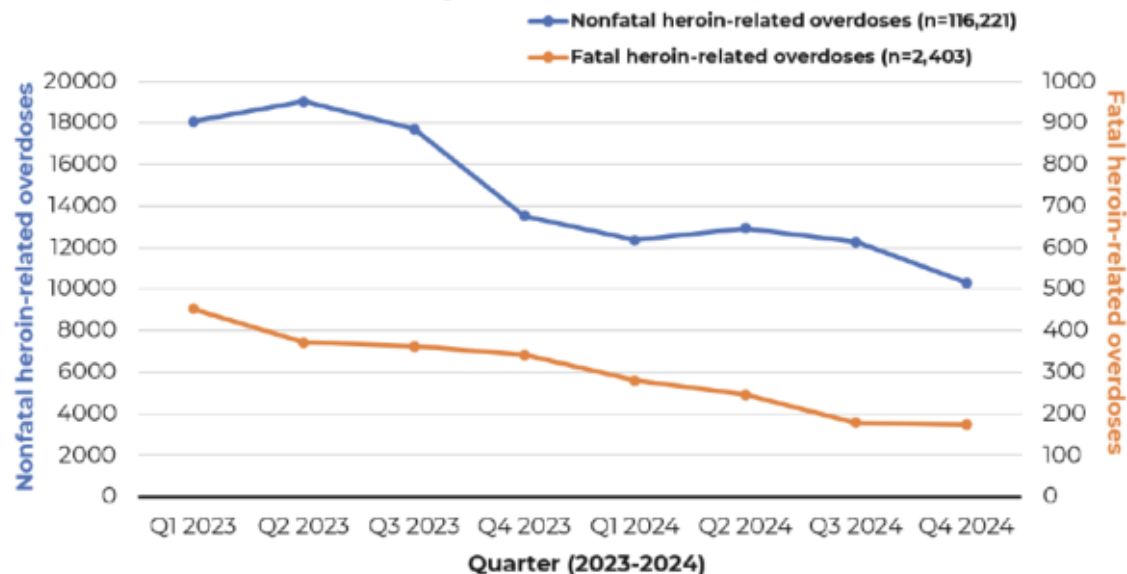
<https://www.nflis.deadiversion.usdoj.gov/>

National Drug Early Warning System (NDEWS)

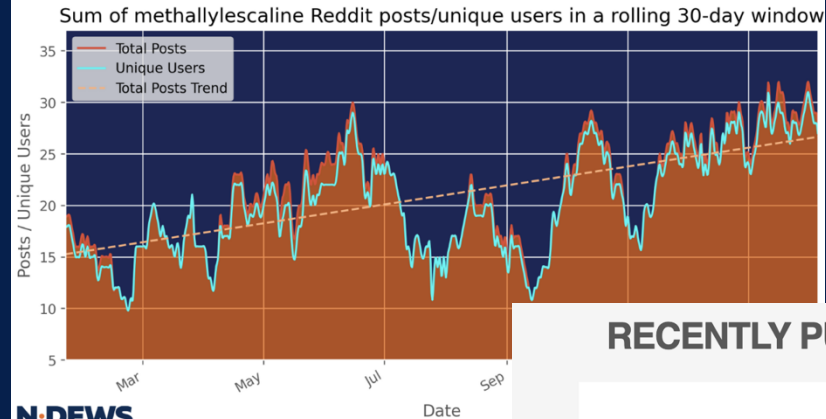
Collaboration between University of Florida, New York University, and Florida Atlantic University

NDEWS Special Report: EMS encounters for nonfatal and fatal heroin-related overdoses in the US January 1, 2023 – December 31, 2024

Nonfatal and fatal heroin-related overdoses among EMS encounters in the US by quarter
January 1, 2023 - December 31, 2024



Alert from the NDEWS Web Monitoring Team: Methallylescaline



What is Methallylescaline? Methallylescaline is mescaline. It is a 5-HT receptor agonist.

RECENTLY PUBLISHED

The prevalence of fentanyl in New York City's unregulated drug supply as measured through drug checking offered at syringe service programs

Summary of drug samples collected via five syringe service programs across New York City from November 2021 through December 2023.

"Sold as" description	Drop-off samples	Participant samples		Total	
	N	N		N	Percent (%)
Opioids	276	632		908	55
Cocaine	113	201		314	19
Methamphetamine	12	50		62	4
Benzodiazepines	19	40		59	4
Speedballs	0	14		14	0.9
Goofballs	0	1		1	0.1
Other	56	128		184	11
No information	85	17		102	6
Total	561	1083		1644	100

Notes: "Sold as" refers to a mixture of opioids and cocaine. "Speedballs" refers to a mixture of opioids and methamphetamine. "Other" includes, but is not limited to, MDMA, ketamine, PCP, psychedelics, and other substances. Drop-off samples refer to drug samples that were left by participants at a program site for drug checking at the next opportunity to encourage service utilization after the medication testing period. Participant samples refer to drug samples that were provided directly to drug-checking technicians.

A new study in *Drug and Alcohol Dependence* by Estrada et al. examines fentanyl prevalence in New York City's unregulated drug market through 1,644 drug samples analyzed at syringe service programs (2021–2023).

You can subscribe to receive weekly briefings from NDEWS:
<https://ndews.org/get-involved/subscribe-to-ndews/>

Main Website: <https://ndews.org/novel-surveillance/>



Toronto Drug Checking Service

Drug Checking Data Source- Key Findings, Updates, Testing Methods

Toronto's Drug Checking Service

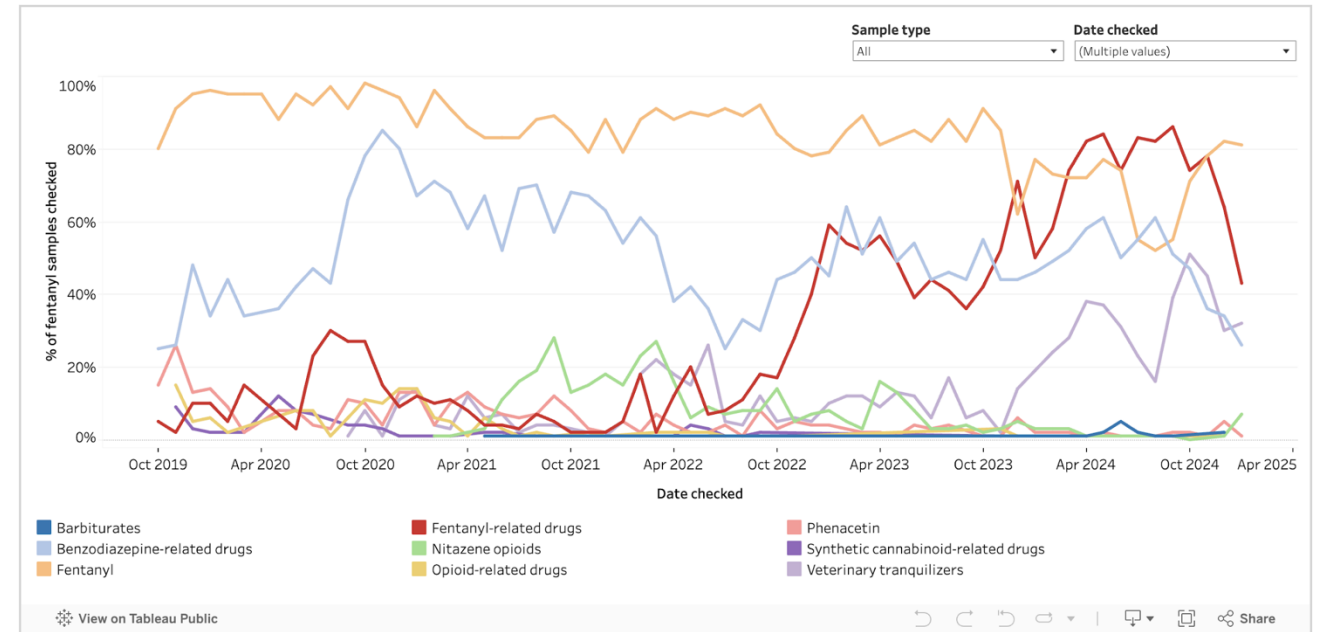
Results from 184 samples checked

February 8 – 21, 2025

Key findings

- 12% of the expected¹ fentanyl samples² were known to be **associated with an overdose** – all of these samples contained at least one high-potency opioid³ (an opioid considered to be as strong as or stronger than fentanyl), many in combination with a benzodiazepine-related drug and/or veterinary tranquilizer
- 38% of the expected¹ fentanyl samples² contained **multiple high-potency opioids**³, including **fentanyl**, **fluorofentanyl**, a **methylfentanyl-related drug**, and/or **protodesnitazene**
- 68% of the expected¹ fentanyl samples² contained a **veterinary tranquilizer** – 55% contained **xylazine** and 17% contained **medetomidine**. **This is by far the highest proportion of expected¹ fentanyl samples² we have found a veterinary tranquilizer in since we first detected them in September 2020.**
- 35% of the expected¹ fentanyl samples² contained a **methylfentanyl-related drug** (at this time, we believe ortho-methylfentanyl is circulating, which is considered to be as strong as fentanyl)
- 35% of the expected¹ fentanyl samples² contained a **benzodiazepine-related drug**, namely, **bromazolam**, **desalkylgidazepam**, **nordiazepam**, as well as a “new” benzodiazepine-related drug, **ethylbromazolam**. **As far as we know, we are the first to publicly share the presence of ethylbromazolam in Canada’s unregulated drug supply.**

This graph shows how often various groups of noteworthy drugs are found in samples expected to be fentanyl. It can be filtered by sample type and the month a sample was checked. This graph includes samples where the expected drug fentanyl was not found.



Sign up to receive reports, alerts, and other information on Toronto's unregulated drug supply and drug checking services more broadly: <https://community.us21.list-manage.com/subscribe?u=661c1ada7b258455a5dfd1289&id=604fa25ed7>

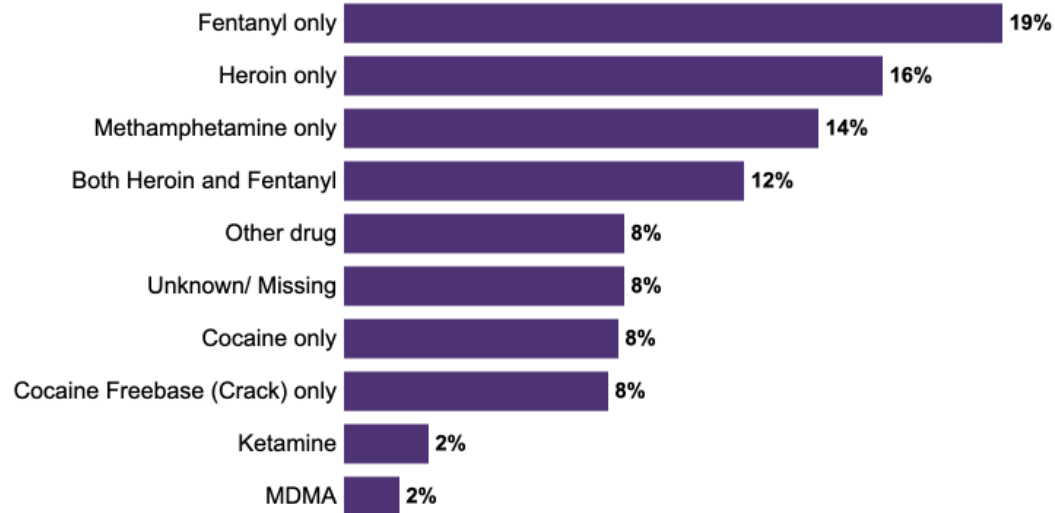
Main website: <https://drugchecking.community/>

New York State Dept. of Health Checking Service

Drug Checking Data Source- Key Findings, Updates, Alerts

Expected Drugs

In the past 6 months, the most common drug that participants expected their sample to be was Fentanyl.



Footnotes:

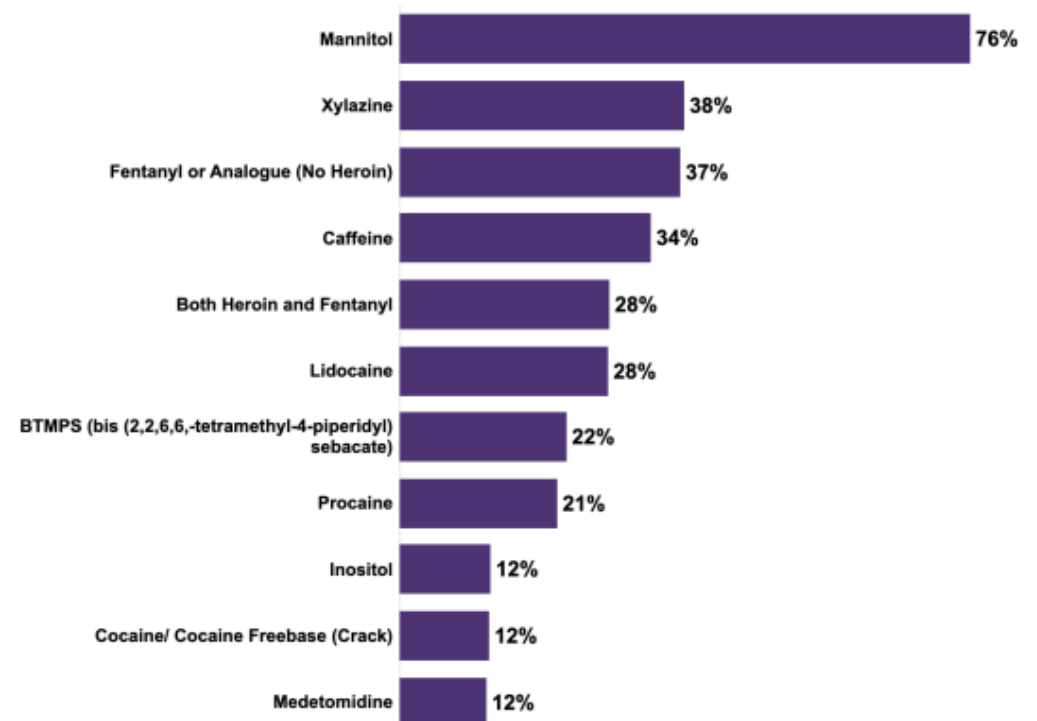
- * The "Other drug" category includes THC/ cannabis, hormones including testosterone and estradiol, prescription medications including Percocet, Adderall, and Xanax, recreational drugs with psychedelic or stimulant effects including DMT and MDA, and benzodiazepines
- * Participants can select more than one expected drug
- * Data from 8/1/24 to 1/31/25.

What was found in samples based on participant's expectations?

What drug did the participant expect?

Any Opioid

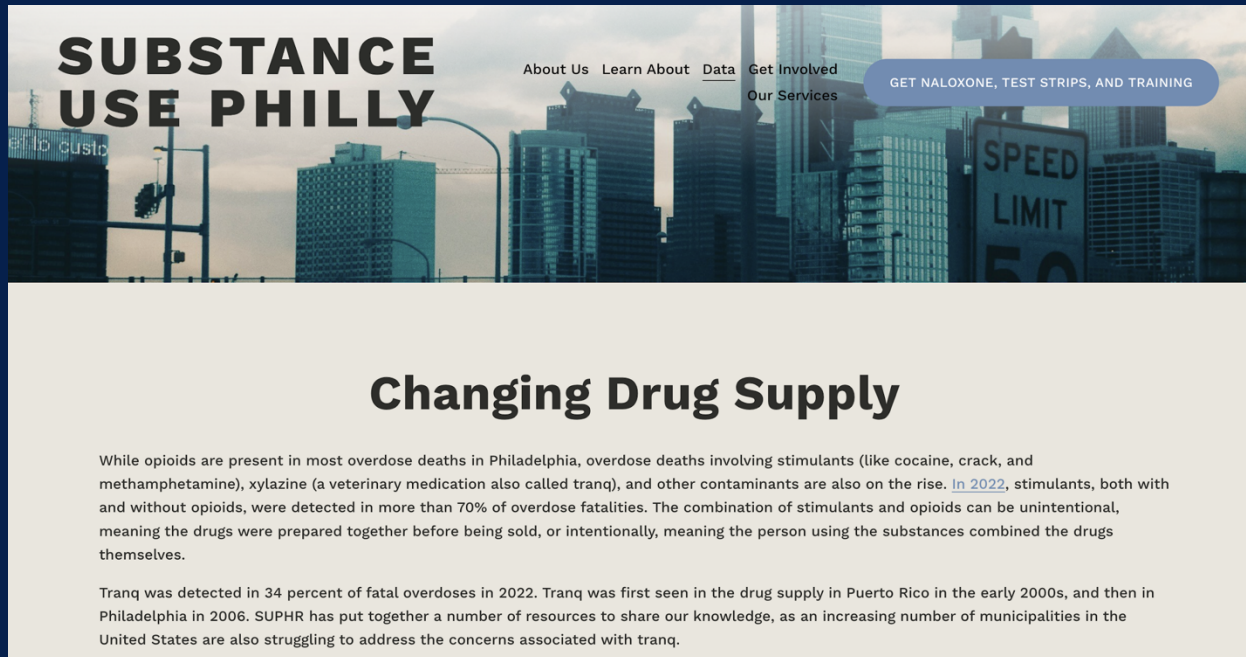
Substances found:



https://www.health.ny.gov/diseases/aids/consumers/prevention/oduh/drug_checking_data.htm

Drug Checking Programs in Pennsylvania: Philadelphia Dept. of Health Checking Service and PA Groundhogs Drug Checking Services

Collaboration with CSFRE



SUBSTANCE USE PHILLY

About Us Learn About Data Get Involved Our Services

GET NALOXONE, TEST STRIPS, AND TRAINING

Changing Drug Supply

While opioids are present in most overdose deaths in Philadelphia, overdose deaths involving stimulants (like cocaine, crack, and methamphetamine), xylazine (a veterinary medication also called tranq), and other contaminants are also on the rise. [In 2022](#), stimulants, both with and without opioids, were detected in more than 70% of overdose fatalities. The combination of stimulants and opioids can be unintentional, meaning the drugs were prepared together before being sold, or intentionally, meaning the person using the substances combined the drugs themselves.

Tranq was detected in 34 percent of fatal overdoses in 2022. Tranq was first seen in the drug supply in Puerto Rico in the early 2000s, and then in Philadelphia in 2006. SUPHR has put together a number of resources to share our knowledge, as an increasing number of municipalities in the United States are also struggling to address the concerns associated with tranq.

<https://www.substanceusephilly.com/drugsupply>



PAG RELEASES ADULTERANT REPORT: NEW CUTTING AGENTS ALTERING THE ILLICIT OPIOID SUPPLY

ABOUT SERVICES TEST KITS



RESOURCES DONATE MORE ▾



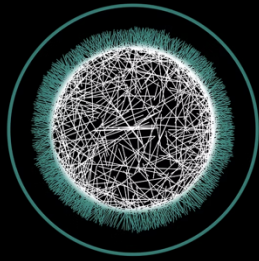
PAGROUNDHOGS.ORG

A SAFER SUPPLY THROUGH SCIENCE

FREE STREET-TO-LAB DRUG CHECKING IN THE
COMMONWEALTH OF PENNSYLVANIA

<https://pagroundhogs.org/home>

Street Check: Community Drug Checking



STREET CHECK COMMUNITY DRUG CHECKING

CLICK HERE TO VIEW DRUG RESULTS

Primary Illicit Substance

All

State of Sample Origin

All

County of Sample Origin

All

Town/City of Sample Origin

All

Packaging/Materials

All

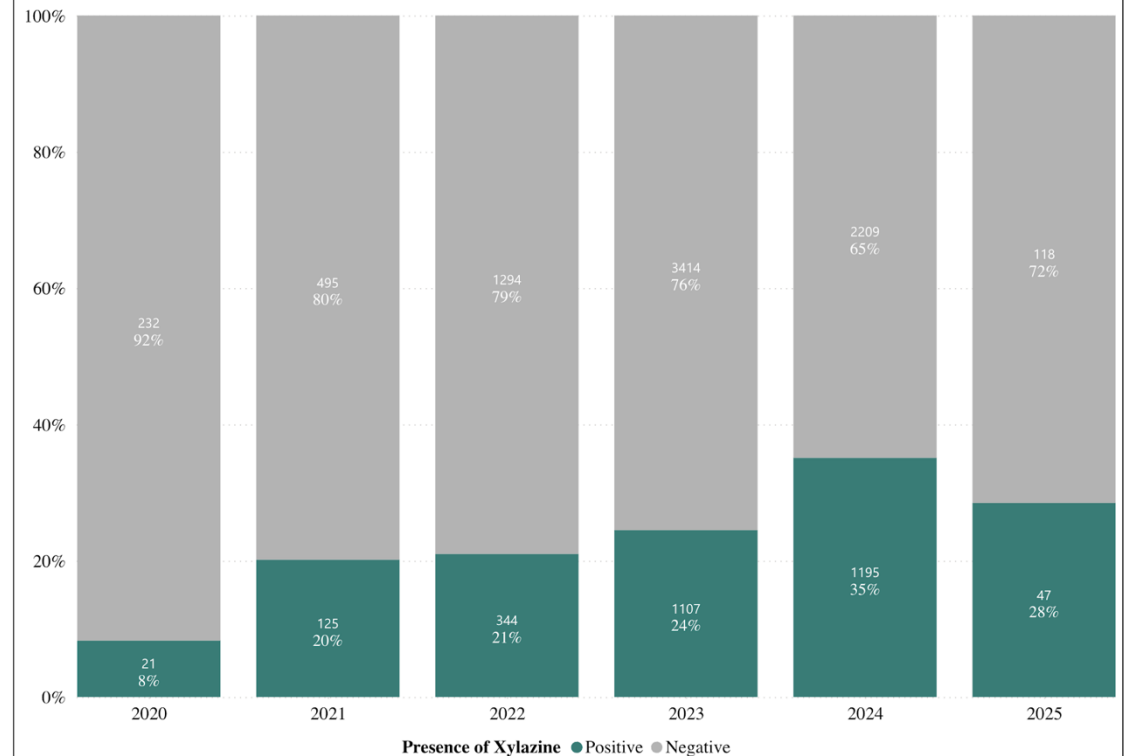
Please note:

This graph is depicting the percentage of lab-tested samples in which xylazine was detected over time.

It is important to note that we are continuously receiving lab results. Please keep this in mind when reviewing the graph.

If you would like to see the total number of samples being represented in each bar, please hover over the bar.

Presence of Xylazine in Lab-Tested Samples - Over Time Updated: 02/18/2025



Erowid/Drugsdata.org

Anonymous drug sample analysis data

DRUGSData.ORG
Erowid's anonymous drug analysis program
Formerly called EcstasyData

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New Submissions Are Not Currently Being Accepted
Samples sent after April 10, 2024 will be put on hold.

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Photo	Sample Name	Active Contents		Date	Location	Data Source
		Substance	Ratio / Amounts			
	Adulterated Cannabis Sold as: Cannabis	<ul style="list-style-type: none">CBDMDMB-4en-PINACATHC		Aug 24, 2024 (Tested: Aug 15, 2024)	Zurich, Switzerland	Safe [Details]
	White Crystals Sold as: 3-MMC / 3-Methylmethcathinone	<ul style="list-style-type: none">2-Methylmethcathinone		Aug 24, 2024 (Tested: Aug 15, 2024)	Zurich, Switzerland	Safe [Details]
	White Powder Sold as: Cocaine	<ul style="list-style-type: none">CocaineProcaine		Aug 24, 2024	Zurich, Switzerland	Safe [Details]
	Alice in Wonderland Blotter Sold as: LSD	<ul style="list-style-type: none">LSD	<ul style="list-style-type: none">234.30 ug	Aug 24, 2024 (Tested: Aug 17, 2024)	Basel, Switzerland	Safe [Details]

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<https://www.drugsdata.org/results.php>