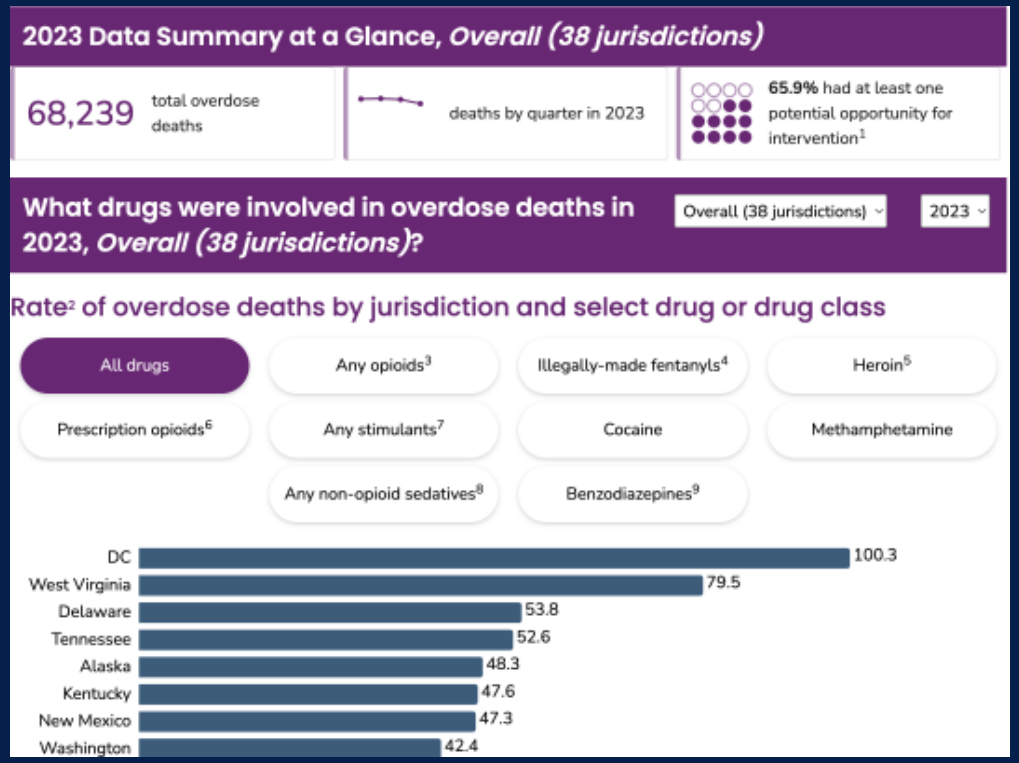
Emerging Illicit Substances: Surveillance Resource Appendix

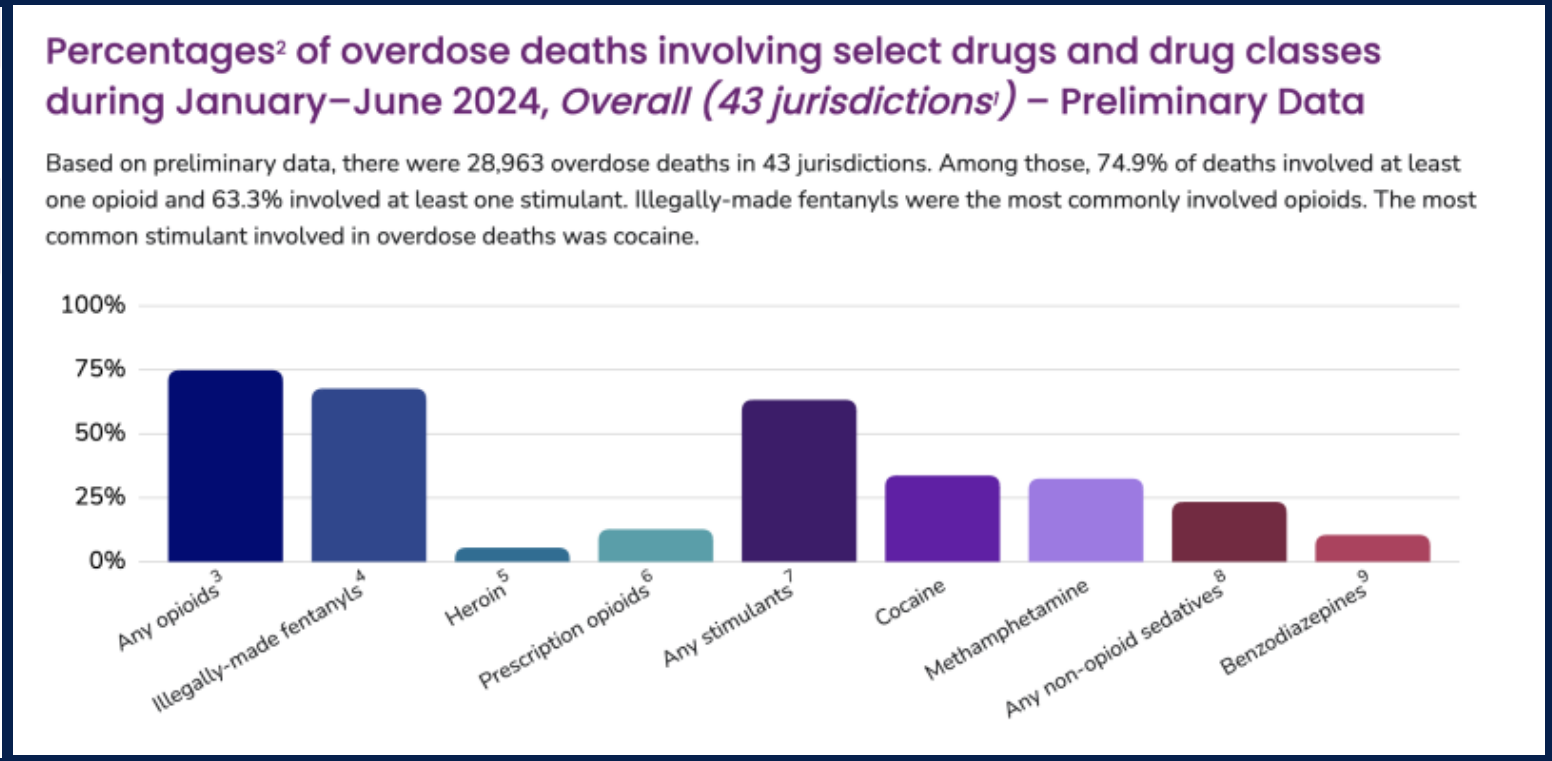
Surveillance Resources

- **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 Toxico-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

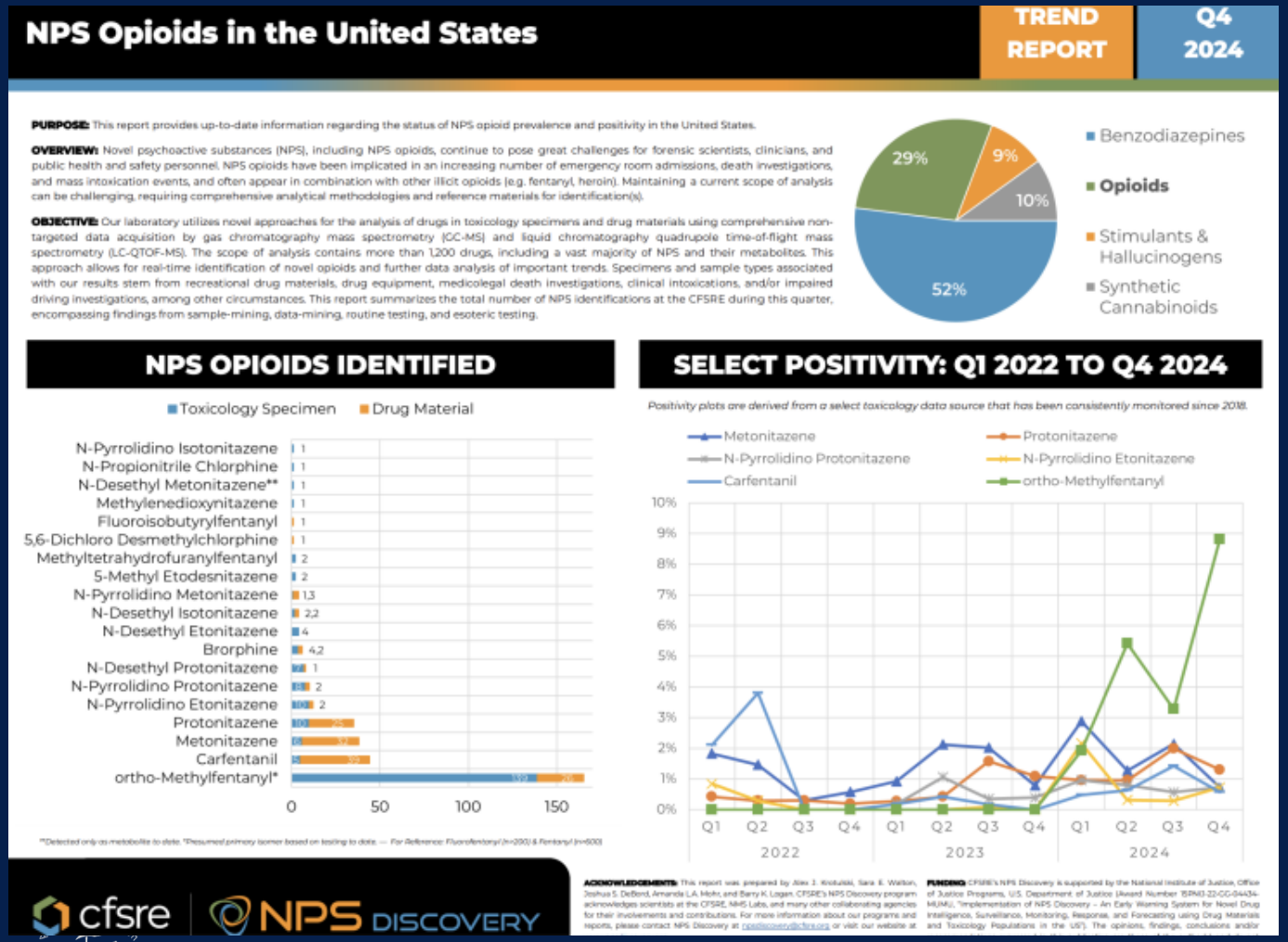




https://www.cdc.gov/overdose-prevention/data-research/facts-stats/sudors-dashboard-fatal-overdose-data.html

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 CFSRE during this quarter, encompassing findings from sample-mining, data-mining, routine testing, and esoteric testing.

NPS OPIOIDS IDENTIFIED

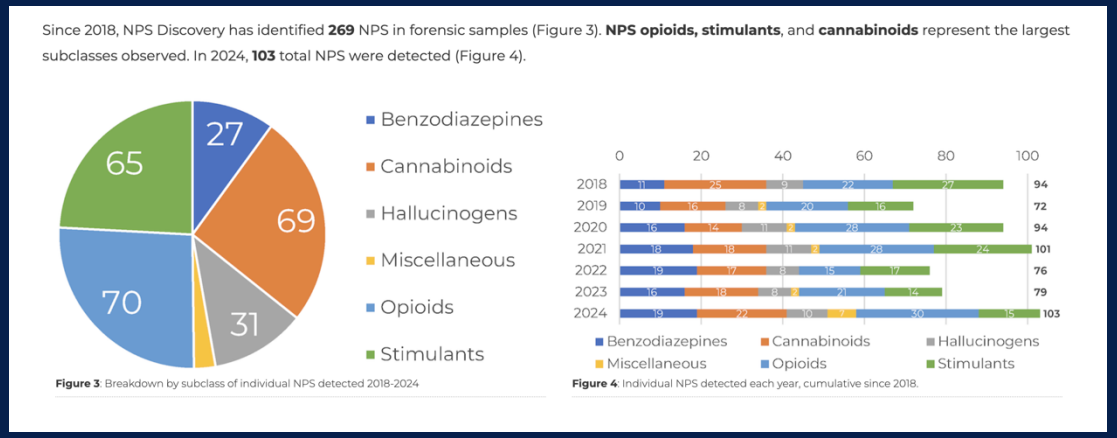
SELECT POSITIVITY: Q1 2022 TO Q4 2024

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

cfsre | NPS DISCOVERY

ACKNOWLEDGEMENTS: This report was prepared by Alex J. Krotulski, Sara E. Walton, Joshua S. DeBord, Amanda L.A. Mohr, and Barry K. Logan. CFSRE's NPS Discovery program acknowledges scientists at the CFSRE, NMS Labs, and many other collaborating agencies 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

FUNDING: CFSRE's NPS Discovery is supported by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice (Award Number 15PNIJ-22-GG-04434-MUMU). "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

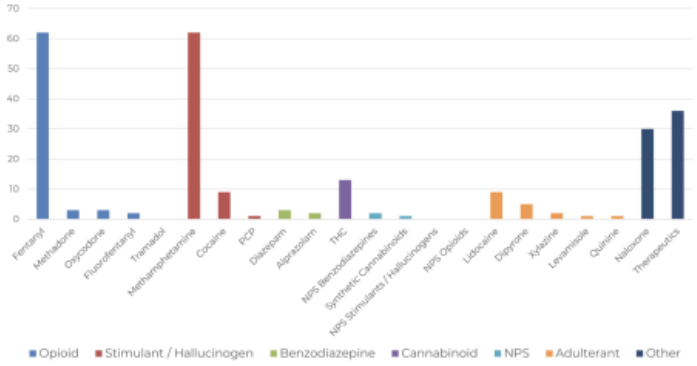
Main Site: https://www.cfsre.org/nps-discovery/

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)

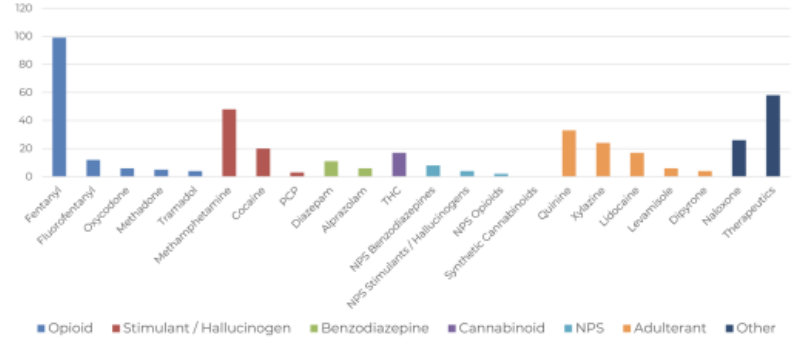
Traditional Drugs (ng/mL)

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)

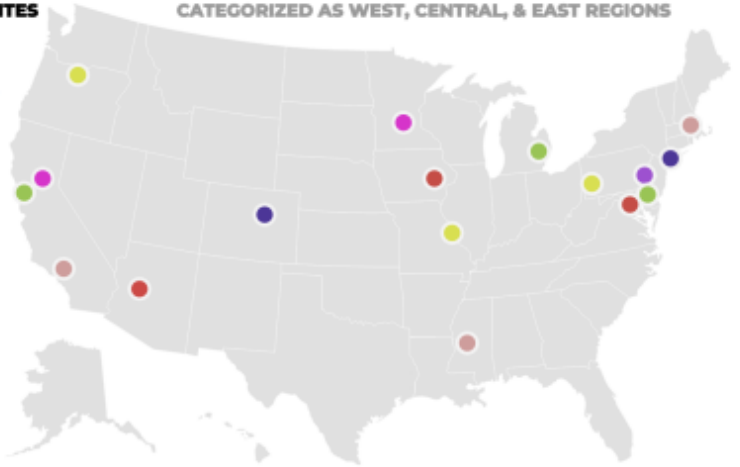
Drug	N	Mean ± Std Dev	Median	Range
Bromazolam	6	61±37	55	<5-130

Drug	N	Range
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

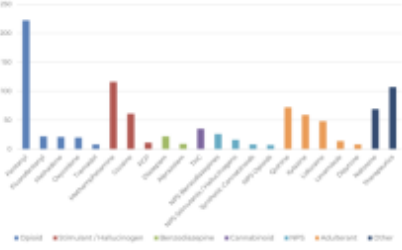
EAST

- Boston, MA — Harvard University
- New York, NY — Weill Cornell Medical Center
- Philadelphia, PA — University of Pennsylvania
- Baltimore, MD — John's Hopkins Hospital
- Washington, DC — Georgetown University
- Pittsburgh, PA — University of Pittsburgh

CENTRAL

- 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)

Drug	N	Mean ± Std Dev	Median	Range
Ethanol (mg/dL)	24	110±105	79	9.9-390
Fentanyl	227	8.5±11	4.7	<1-100
Norfentanyl	207	8.4±21	2.8	<1-200
Methamphetamine	123	210±240	120	<1->1000
Amphetamine	116	35±51	19	<1-280
Cocaine	78	11±20	2.4	<1-67
BZE	160	240±240	160	<1->1000
Xylazine	58	14±28	4.9	<1-150
Naloxone	101	15±59	5.2	<1-510

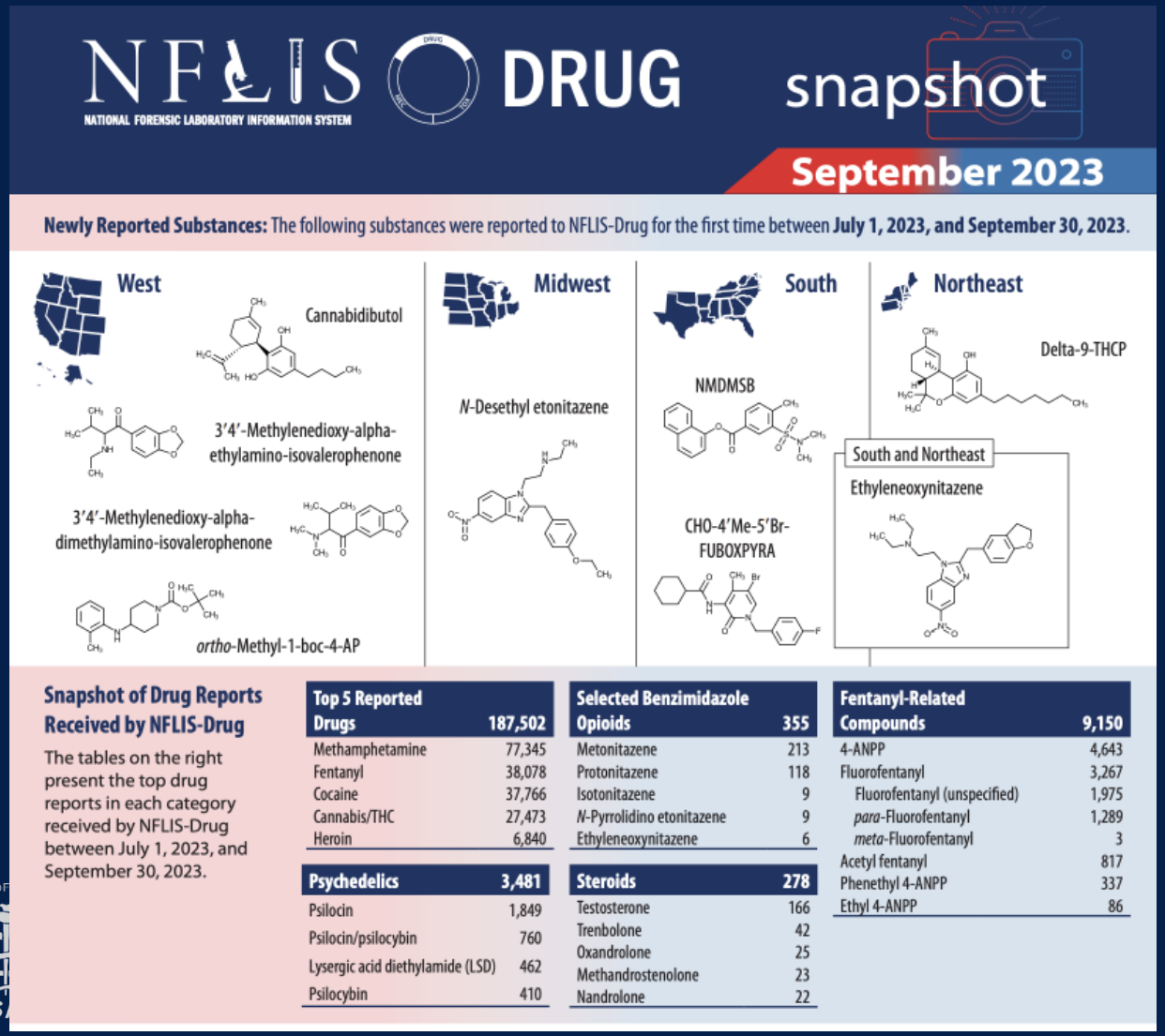
NPS (ng/mL)

Drug	N	Mean ± Std Dev	Median	Range
Bromazolam	21	81±85	50	<5-310
Flubromazepam	2	-	-	<5->500
N,N-Dimethylpentylone	11	24±19	16	<10-63
Pentylone	8	15±14	10	<10-54
Eutylone	3	25±22	10	<10-57
N-Desethyl Isotonitazene	4	2.0±1.9	1.1	0.5-5.3
Metonitazene	1	-	-	1.0
Protonitazene	1	-	-	<0.5

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

National Forensic Laboratory Information System (NFLIS)

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



NFLIS-Drug

1,181,750 drug reports in 2022

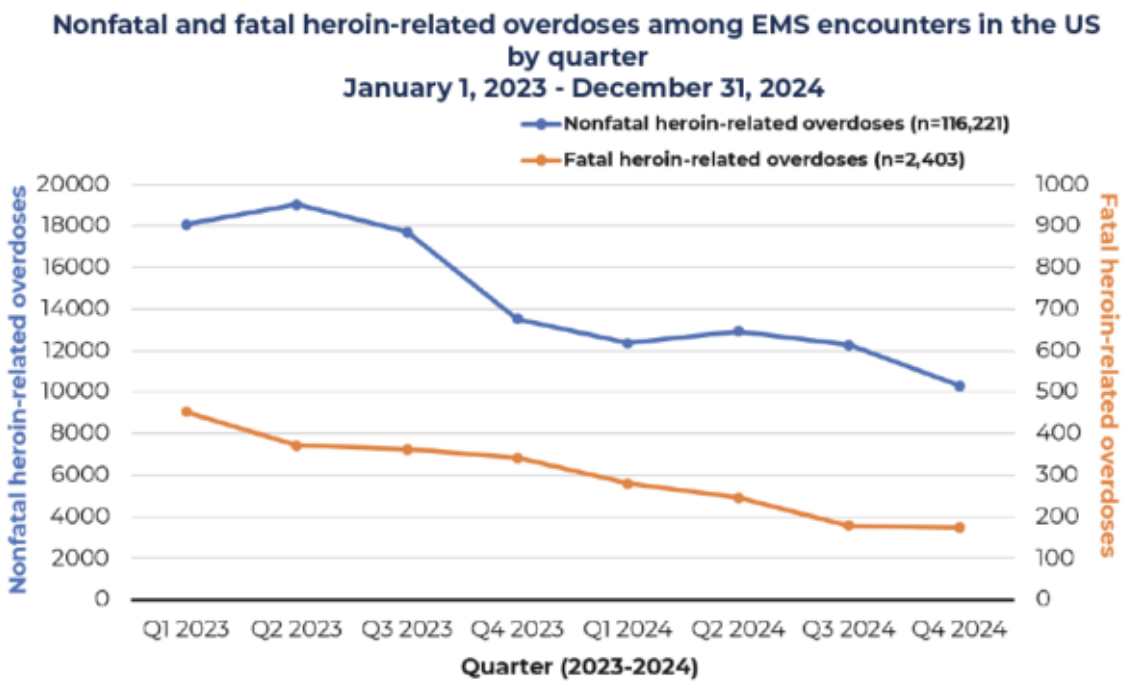
Established in 1997, the National Forensic Laboratory Information System (NFLIS) is a program of the Drug Enforcement Administration (DEA), Diversion Control Division. The DEA's NFLIS-Drug data collection systematically collects drug identification results and associated information from drug cases submitted 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/

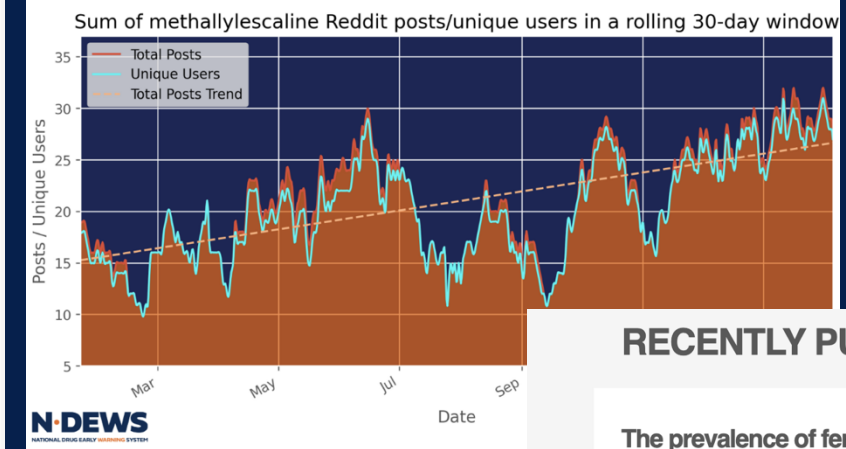
National Drug Early Warning System (NDEWS)

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



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: 'Speedballs' refer to a mixture of opioids and cocaine. 'Goofballs' refer 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 technician training 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 receuive 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

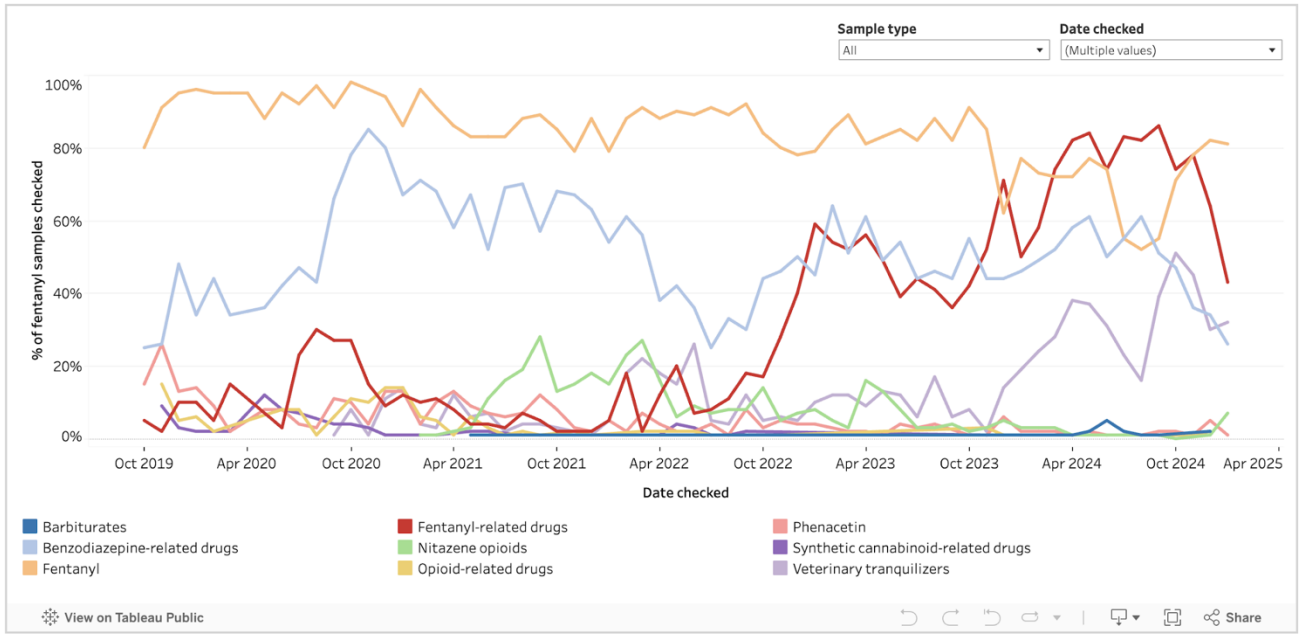
Results from 184 samples checked

February 8 – 21, 2025

Key findings

- 12% of the expected[1] fentanyl samples[2] were known to be **associated with an overdose** – all of these samples contained at least one high-potency opioid[3] (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 expected[1] fentanyl samples[2] **contained multiple high-potency opioids**[3], including fentanyl, fluorofentanyl, a methylfentanyl-related drug, and/or protodesnitazene
- 68% of the expected[1] fentanyl samples[2] **contained a veterinary tranquilizer** – 55% contained xylazine and 17% contained medetomidine. **This is by far the highest proportion of expected[1] fentanyl samples[2] we have found a veterinary tranquilizer in since we first detected them in September 2020**.
- 35% of the expected[1] fentanyl samples[2] **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 expected[1] fentanyl samples[2] **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.

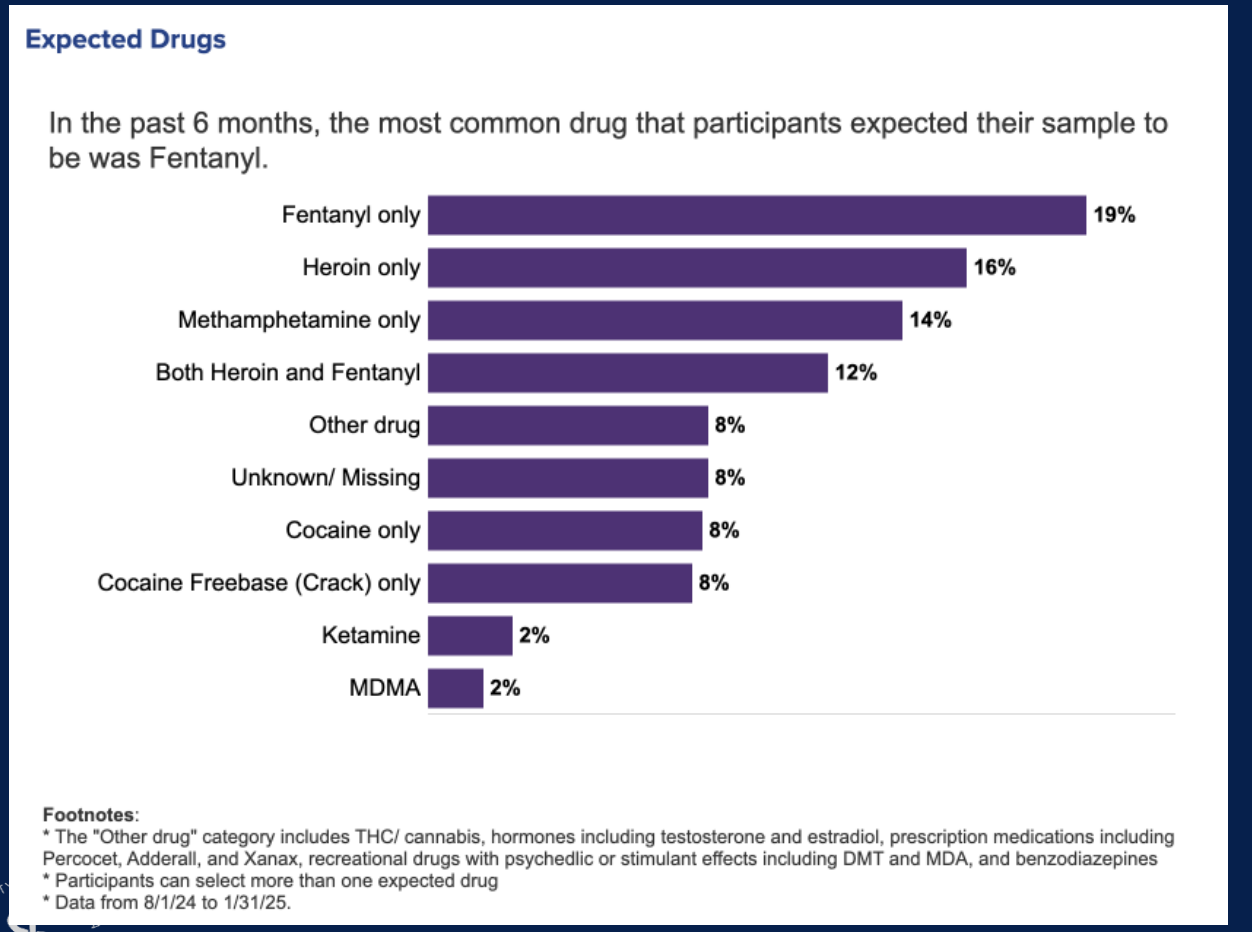


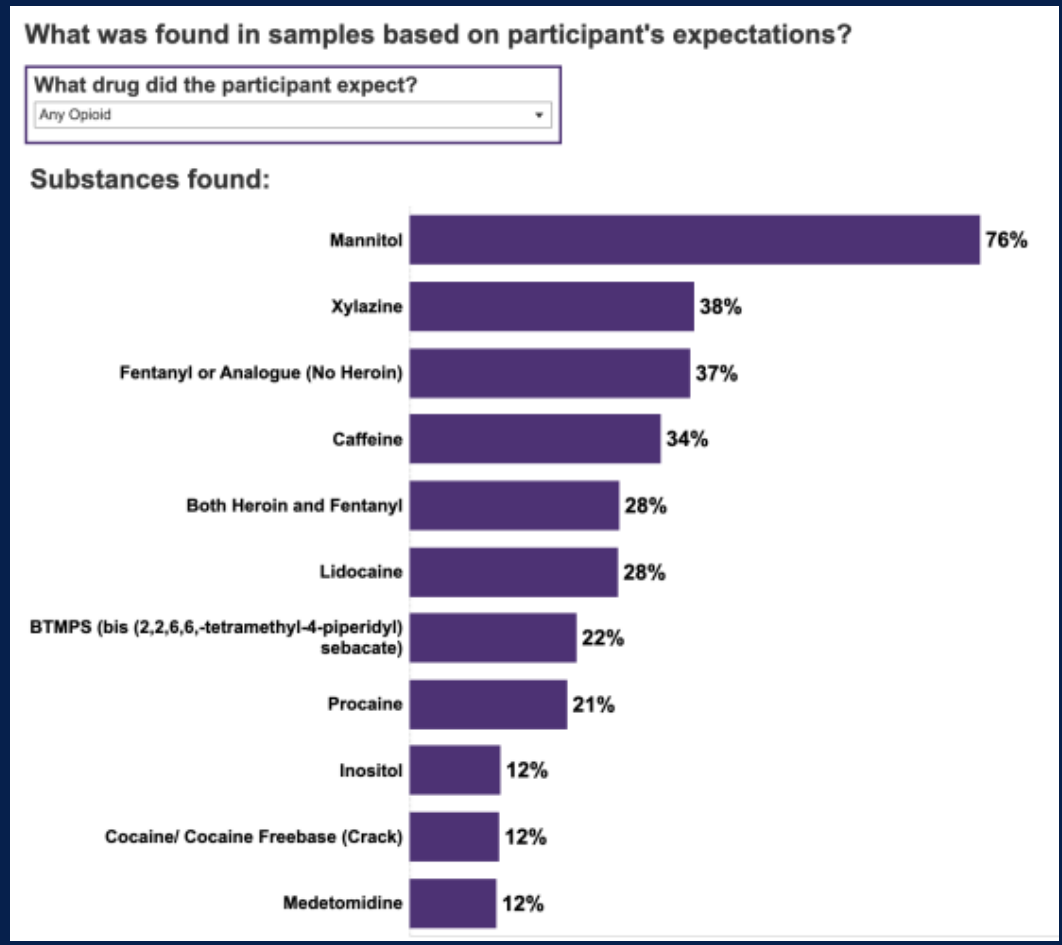
Sign up to receive reports, alerts, and other information on Toronto's unregulated drug supply and drug checking services more broadly: https://community.us21.list-manage.com/subscribe?u=661c1ada7b258455a5dfd1289&id=604fa25ed7

Main website: https://drugchecking.community/

New York State Dept. of Health Checking Service

Drug Checking Data Source- Key Findings, Updates, Alerts

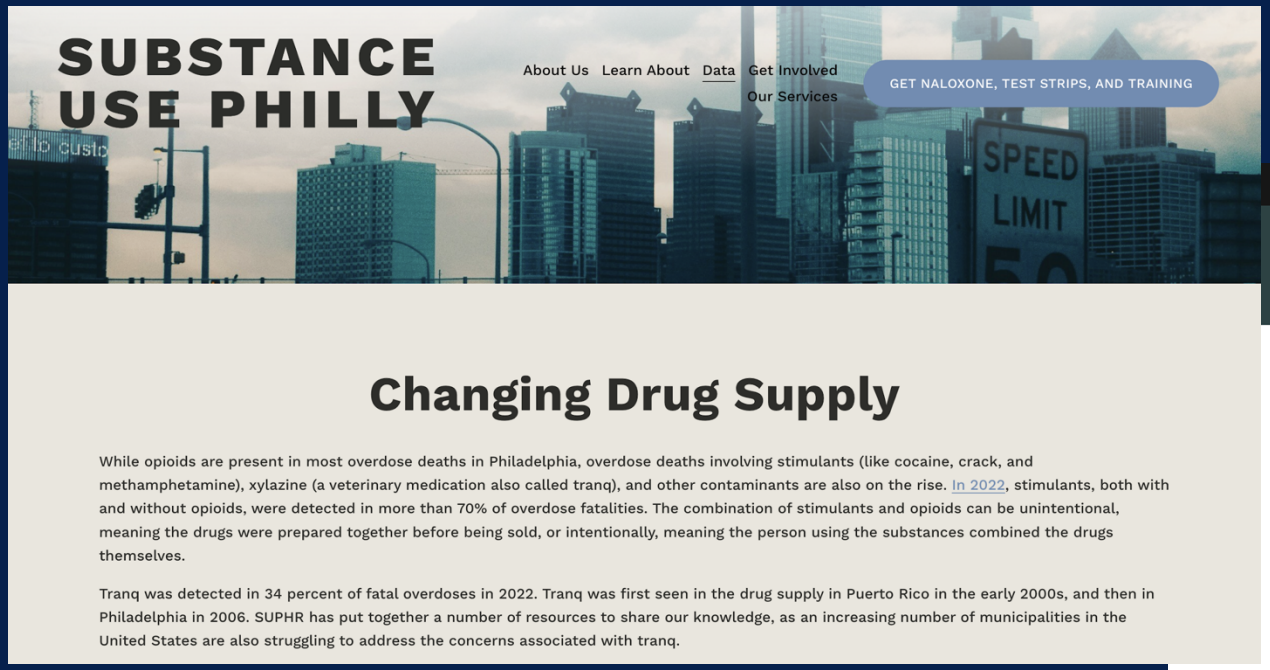




https://www.health.ny.gov/diseases/aids/consumers/prevention/oduh/drug_checking_data.htm

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

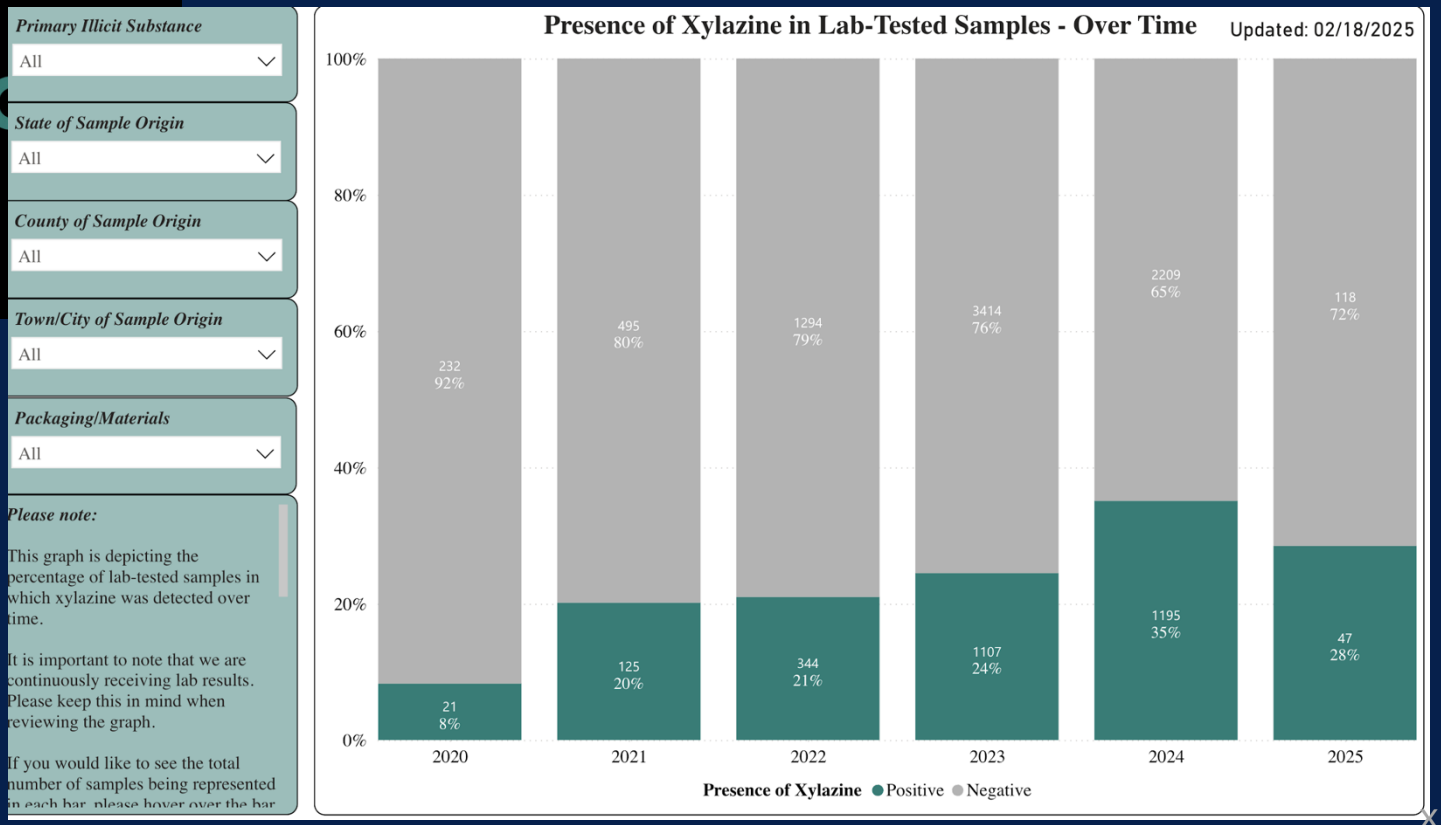
Collaboration with CSFRE



https://www.substanceusephilly.com/drugsupply

https://pagroundhogs.org/home

Street Check: Community Drug Checking



https://www.info.streetcheck.org/data

Erowid/Drugsdata.org

Anonymous drug sample analysis data

DrugsData.org
Erowid's anonymous drug analysis program
Formerly called EcstasyData

SEARCH LAB RESULTS BY All GO Advanced Search

Send in a sample for testing › Support DrugsData ›

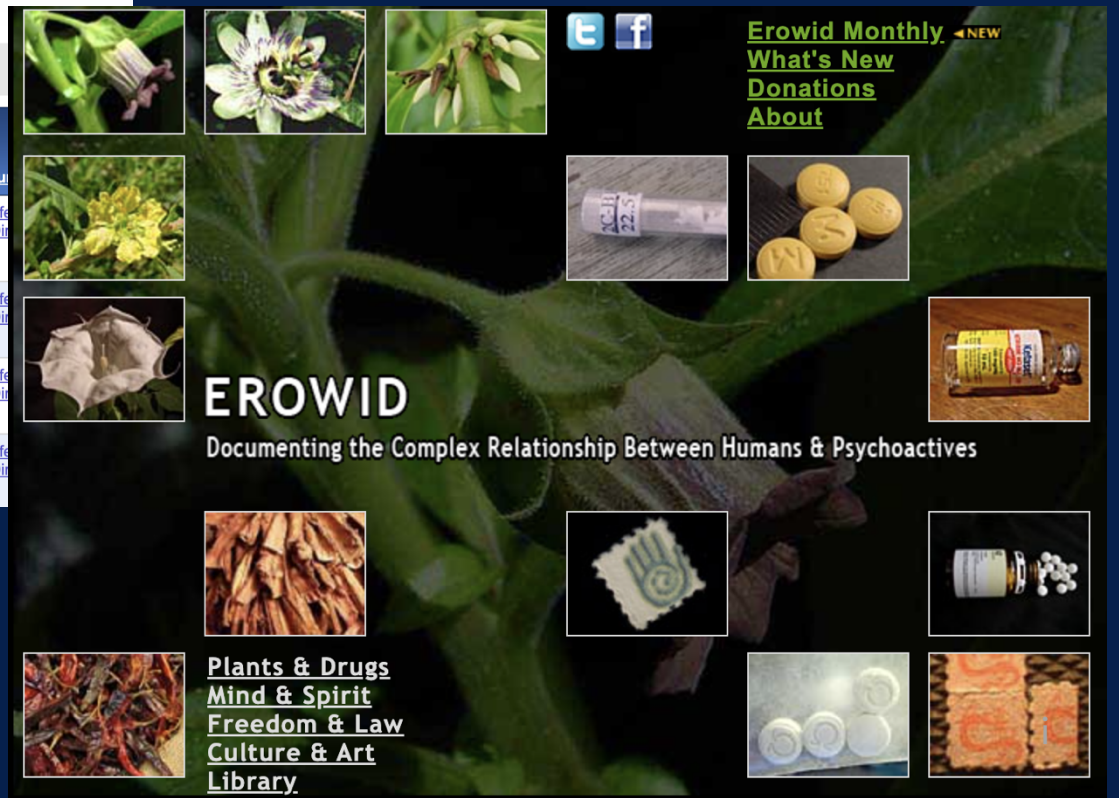
Test Results | Test Result Statistics | About Tests & Data | About Us | Contact Us | FAQ

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

Advanced Search: show ▶

20195 ENTRIES TOTAL | ENTRIES PER PAGE: 100 | PAGE: 1 / 202 > | SHOWING ALL TESTING RESULTS | Quick Filter..

Photo	Sample Name	Active Contents: Substance	Active Contents: Ratio / Amounts	Date	Location	Data Sou
	Adulterated Cannabis Sold as: Cannabis	• CBD • MDMB-4en-PINACA • THC		Aug 24, 2024 (Tested: Aug 15, 2024)	Zurich, Switzerland	Safe [Di
	White Crystals Sold as: 3-MMC / 3-Methylmethcathinone	• 2-Methylmethcathinone		Aug 24, 2024 (Tested: Aug 15, 2024)	Zurich, Switzerland	Safe [Di
	White Powder Sold as: Cocaine	• Cocaine • Procaine		Aug 24, 2024	Zurich, Switzerland	Safe [Di
	Alice in Wonderland Blotter Sold as: LSD	• LSD	• 234.30 ug	Aug 24, 2024 (Tested: Aug 17, 2024)	Basel, Switzerland	Safe [Di



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