


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



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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



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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-ask-questions_13642290.htm#query=confused&position=0&from_view=keyword&track=sph

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What are Novel Psychoactive Substances (NPS)?

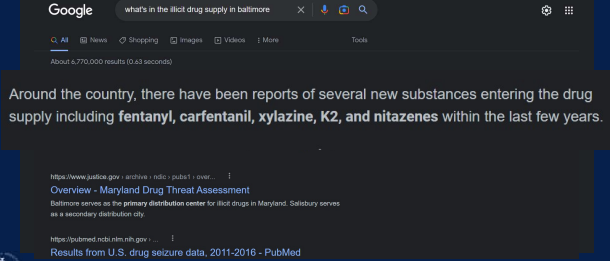
- ◆ Synthetics
 - ◆ Cathinones ("bath salts")
 - ◆ Cannabinoids ("spice" or "K2")
 - ◆ Depressants
 - ◆ Opioids (fentanyl, "nitazenes")
 - ◆ Benzodiazepines (etizolam)
 - ◆ Hallucinogens
 - ◆ Dissociatives (methoxetamine)
 - ◆ Psychedelics (NBOMe series, 2C series)
- ◆ Herbals (kratom)



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

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Google....not so helpful



About 6,770,000 results (0.63 seconds)

Around the country, there have been reports of several new substances entering the drug supply including fentanyl, carfentanil, xylazine, K2, and nitazenes within the last few years.

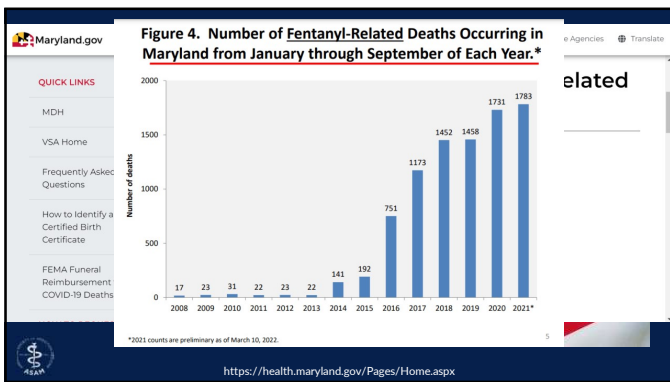
https://www.justice.gov/archives/ndc/pubs1/over...
Overview - Maryland Drug Threat Assessment
Baltimore serves as the primary distribution center for illicit drugs in Maryland. Salisbury serves as a secondary distribution city.

https://pubmed.ncbi.nlm.nih.gov/...
Results from U.S. drug seizure data, 2011-2016 - PubMed

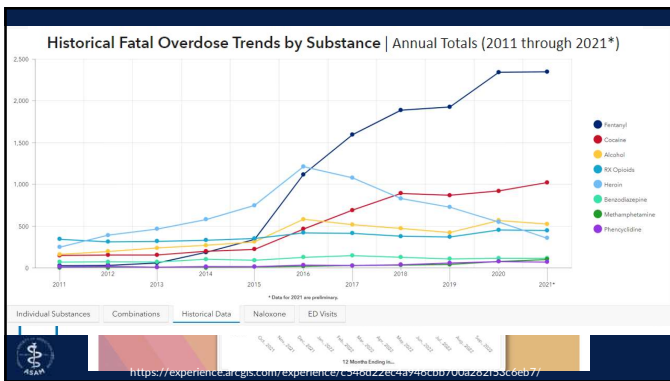
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Before It's Too Late Maryland

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

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Rapid Analysis of Drugs Program

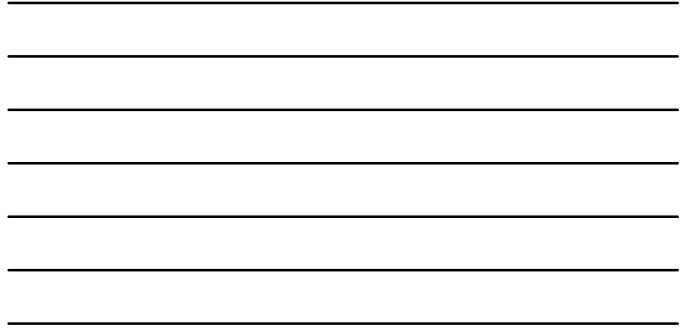
Fed Lab Predicts Local Changes in Illicit Drug Supply

A lab operated by the National Institute of Standards and Technology (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 local drug supply.



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

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Literature Reports by MD Researchers

RESEARCH

Fentanyl-contaminated overdose amc in Baltimore, MD

Abstract
Fentanyl-associated deaths have risen in Maryland, but the prevalence of illicit fentanyl use in Baltimore remains unclear. This study was designed 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 162 patients met inclusion criteria and were approached; 76 consented; 63 (39%) of whom tested positive for recent fentanyl use. Of 80% were male, 26 (34%) had overdosed, 41 (63%) were seeking SUD treatment, and 11 (17%) were in withdrawal. Of 16 had multiple overdoses; of those who underwent both standard hospital urine drug screens and POC fentanyl testing, 56% (22/39) were positive for fentanyl and negative for opioids. 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
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KEYWORDS
Opioids; drug screening and testing; emergency medicine

Additional substance use cases, fentanyl use, and overdose risk are associated with the drug supply in Baltimore City (19-2)

45% for decedents aged 20-29 (18.5%) vs. 18.5% for decedents aged 30-39 (18.5%) vs. 18.5% for decedents aged 40-49 (18.5%) vs. 18.5% for decedents aged 50-59 (18.5%) vs. 18.5% for decedents aged 60-69 (18.5%) vs. 18.5% for decedents aged 70-79 (18.5%) vs. 18.5% for decedents aged 80-89 (18.5%) vs. 18.5% for decedents aged 90-99 (18.5%)

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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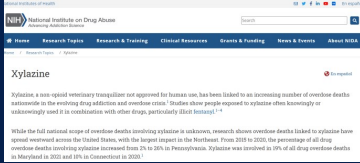
Dr. Kelly Dunn, PhD, MEd, is an Assistant Professor of Public Health and Director, Johns Hopkins Center for Communications Programs

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But no testing for xylazine....

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

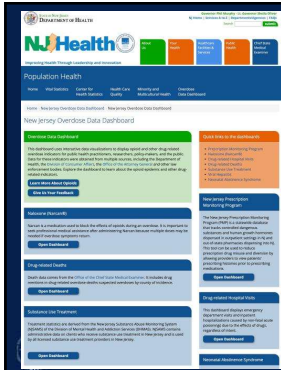


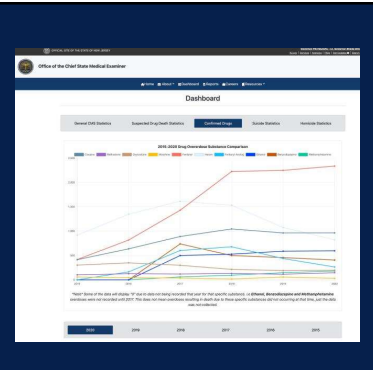
<https://nida.nih.gov/research-topics/xylazine>

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State and Federal Government Sites

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WEEKLY DRUG ENVIRONMENT REPORT

2023-04-13 (Monday) 08:54 AM (UTC-04:00)

ADDENDUM

The Division of Drug Monitoring & Abuse (DDMA) updates Florida's drug environment through the Drug Monitoring Reporting System (DMRS) on a weekly basis. DDMA's goal is to provide the public with timely information on drug trends in Florida.

ADDENDUM

The Florida Department of Health (DOH) is pleased to announce that Florida's drug environment report is now available on the DOH website. The report provides information on drug trends in Florida, including drug types, quantities, and sources. The report is updated weekly and provides information on drug trends in Florida.

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INCLUDES/LAB IDENTIFICATION RESULTS

Heroin/Phencyclidine	Black	Good & Plenty	NPI AC Agency	4/14/22	ATL
Fentanyl/MDA/Quinidine/Phencyclidine/AMPH	Black	Bad Army	Alphacore Corp	4/21/22	ATL
Heroin/Fentanyl	Red	Lukasa Inc	Yusman	4/21/22	ATL
Fentanyl/AMPH/Oxycodone	Black	Red Army	Pharmco Inc	4/26/22	ATL
Fentanyl/Heroin/MDA/AMPH/Phencyclidine/AMPH	Black	Diablo & David's Gas (Sage)	Cannocka PC PD	4/27	CAM
Heroin/Fentanyl/Oxycodone/AMPH/Phencyclidine/AMPH	N/A	Innocent Green Labs	NPI Trafficking South	4/12/22	CAM
Fentanyl/Heroin/Phencyclidine/AMPH/Phencyclidine/AMPH	Blue	Blondie & Jay of Dependence	NPI Trafficking South	4/12/22	CAM
Fentanyl/AMPH/Oxycodone	Green	Dragon 1 (Blue Field)	Dragon & Dragon Phd w/Therap	4/9/22	CAM
Fentanyl/AMPH/Phencyclidine/AMPH/Oxycodone/AMPH/Phencyclidine/AMPH	Black	Paul Center & Muscular Statistics	Cannocka PC PD	4/9/22	CAM
Fentanyl/AMPH/Phencyclidine/AMPH/Oxycodone/AMPH/Phencyclidine/AMPH	Black	Carl's Old Field	Chain RB	4/11/22	CAM
Fentanyl/AMPH/Phencyclidine/AMPH/Oxycodone/AMPH/Phencyclidine/AMPH	N/A	Unsubsd	Cannocka PC PD	4/11/22	CAM
Fentanyl/AMPH/Phencyclidine/AMPH/Oxycodone/AMPH/Phencyclidine/AMPH	Black	Gettuly & Soley Inc	NPI Baltimore	4/27/22	CAM
Fentanyl/AMPH/Phencyclidine/AMPH/Oxycodone/AMPH/Phencyclidine/AMPH	Red	W/Cherish Day (Sage)	Cannocka PC PD	4/12/22	CAM
Fentanyl/AMPH/Phencyclidine/AMPH/Oxycodone/AMPH/Phencyclidine/AMPH	Red	Payton & Trip Day (Sage)	Cannocka PC PD	4/14/22	CAM
Fentanyl/AMPH/Phencyclidine/AMPH/Oxycodone/AMPH/Phencyclidine/AMPH	Black	Tada Day	NI Travel PD	4/19/22	CAM
Fentanyl/AMPH/Phencyclidine/AMPH/Oxycodone/AMPH/Phencyclidine/AMPH	Black	Red/Green/Sage/1/Power Play	Cannocka PC PD	4/20/22	CAM
Fentanyl/AMPH/Phencyclidine/AMPH/Oxycodone/AMPH/Phencyclidine/AMPH	Black	Gettuly & Soley Inc (Sage)	Cannocka PC PD	4/20/22	CAM
Fentanyl/AMPH/Phencyclidine/AMPH/Oxycodone/AMPH/Phencyclidine/AMPH	Black	Power Play & Motion Green	Cannocka PC PD	4/21/22	CAM
Fentanyl/AMPH/Phencyclidine/AMPH/Oxycodone/AMPH/Phencyclidine/AMPH	Black	Dragon	Cannocka PC PD	4/27/22	CAM
Fentanyl/AMPH/Phencyclidine/AMPH/Oxycodone/AMPH/Phencyclidine/AMPH	Black	Red & Day Blue (Sage/Blue)	Cannocka PC PD	4/27/22	CAM
Fentanyl/AMPH/Phencyclidine/AMPH/Oxycodone/AMPH/Phencyclidine/AMPH	Black	Red/Blue (Sage/Blue)	Cannocka PC PD	4/27/22	CAM
Fentanyl/AMPH/Phencyclidine/AMPH/Oxycodone/AMPH/Phencyclidine/AMPH	Black	Power Play & Motion Green	Cannocka PC PD	4/27/22	CAM
Fentanyl/AMPH/Phencyclidine/AMPH/Oxycodone/AMPH/Phencyclidine/AMPH	Black	Blondie & Jay (Blue Field)	NPI/Combe Memo	4/21/22	CHB
Fentanyl/AMPH/Phencyclidine/AMPH/Oxycodone/AMPH/Phencyclidine/AMPH	Red	Red Army (Blue Field)	Unsubd	4/21/22	CHB
Heroin/Phencyclidine/AMPH/Oxycodone/AMPH/Phencyclidine/AMPH	Red	Veritas	Veritas	4/22/22	CHB
Fentanyl/AMPH/Phencyclidine/AMPH/Oxycodone/AMPH/Phencyclidine/AMPH	Black	Apple Blue Field	NPI/Combe South	4/15/22	CHB

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FROST Florida Drug Outcomes Surveillance and Tracking System

Dashboard showing drug trends and outcomes in Florida.

Florida drug-related outcomes surveillance and tracking system

Drug Deaths with Fentanyl Analogue Present (Florida)

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State Unintentional Drug Overdose Reporting System (SUDORS)

The Drug Overdose Epidemic Continues to Worsen in the United States

SUDORS Provides Comprehensive Information on Drug Overdose Deaths

2021 Data Summary as of Quarter: Overall (22 jurisdictions)

50,943 deaths in 2021

What drugs were involved in overdose deaths in 2021: Overall (22 jurisdictions)

Top drugs involved in overdose deaths:

- Heroin
- Oxycodone
- Fentanyl
- Morphine
- Xanax
- Alprazolam
- Buprenorphine
- Hydrocodone
- Codeine
- Valium
- Tramadol
- Propofol
- Carfentanil
- Propoxyphene
- Marijuana
- Prescription Opioids
- Barbiturates
- Alcohol
- Other
- Other
- Other

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

- Provides timely data on vital signs and emergency department trends.
- Identifies overdose information or trends across jurisdictions.
- Informs drug overdose response and prevention activities.

The drug overdose epidemic continues to worsen in the United States

The number of deaths attributable to drug overdoses in the United States has increased significantly since 2000, with a sharp increase in 2021. Data collected through DOSE are used for rapid identification of suspected overdoses. Timely reporting and analysis of such data from DOSE is used to identify trends and respond to changes in drug overdose patterns.

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

In 2016, CDC's Vital Signs System was expanded to include DOSE. DOSE is a national system for collecting, analyzing, and reporting data on drug overdoses. It is a part of the Vital Signs System and is used to monitor and report on drug overdoses.

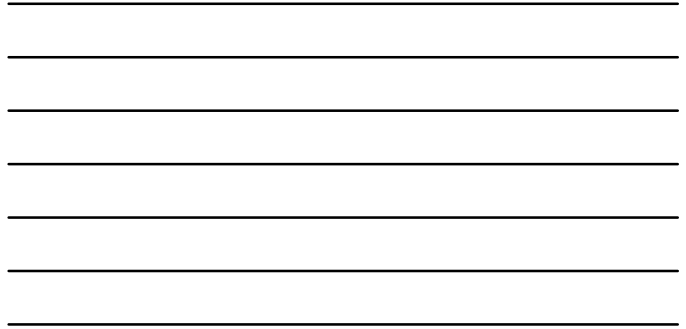
DOSE's Functions: Surveillance in DOSE

1. **Identify and track** trends in drug overdose mortality, morbidity, and emergency department trends.
2. **Identify and track** trends in drug overdose mortality, morbidity, and emergency department trends.
3. **Identify and track** trends in drug overdose mortality, morbidity, and emergency department trends.

DOSE's Functions: Reporting in DOSE

DOSE's functions include reporting on drug overdoses to the public and to policymakers. This includes reporting on the number of drug overdoses, the types of drugs involved, and the locations where overdoses occurred.

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DEA Drug Enforcement Administration

Fentanyl

What are they?

Fentanyl is a synthetic opioid that is 50-100 times stronger than heroin. It is often used for pain management but is also abused. It is highly addictive and can be fatal. Many people who abuse fentanyl do not know they are taking it. It is often mixed with other drugs, such as heroin, and is sold in small amounts.

Street Names

Common street names for fentanyl include: "China White," "Dance Floor," "Matrix," "Meadow Green," "Red Bull," "The Man," "Peanut Butter," and "Purple Pills."

How are they abused?

Fentanyl is often abused by snorting, swallowing, or injecting. It is also often mixed with other drugs, such as heroin, and is sold in small amounts.

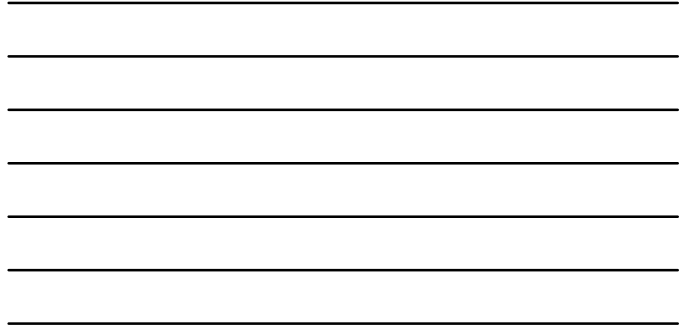
What is their effect on the body?

Fentanyl is a powerful opioid that can cause respiratory depression, coma, and death. It is also highly addictive and can lead to long-term health problems.

Drug Seizure Statistics FY2022

As of 10/20/2022, the total number of drug seizures is 1,234,567. The total weight of drug seizures is 123,456,789 grams.

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DrugsData.org

Name	Amount	Date	Location	Date Rec'd
Fentanyl	1.23	10/20/2022	Princeton, NJ	10/20/2022
Oxycodone	4.56	10/20/2022	Princeton, NJ	10/20/2022
Hydrocodone	7.89	10/20/2022	Princeton, NJ	10/20/2022
Fentanyl	1.23	10/20/2022	Princeton, NJ	10/20/2022
Oxycodone	4.56	10/20/2022	Princeton, NJ	10/20/2022
Hydrocodone	7.89	10/20/2022	Princeton, NJ	10/20/2022
Fentanyl	1.23	10/20/2022	Princeton, NJ	10/20/2022
Oxycodone	4.56	10/20/2022	Princeton, NJ	10/20/2022
Hydrocodone	7.89	10/20/2022	Princeton, NJ	10/20/2022

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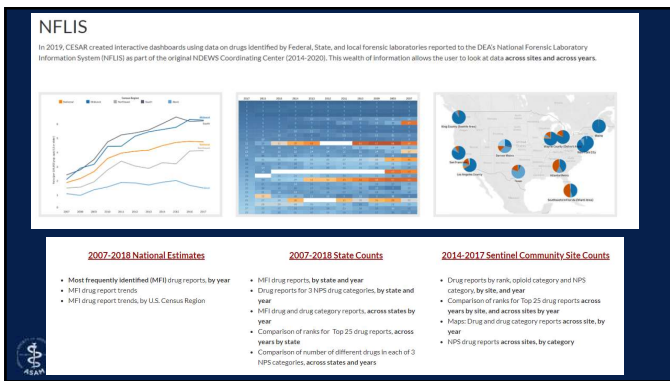




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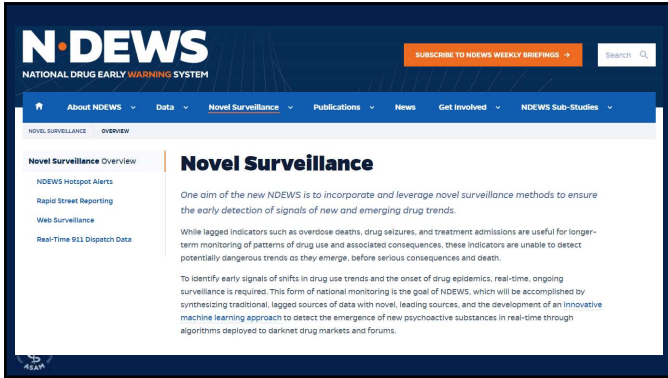


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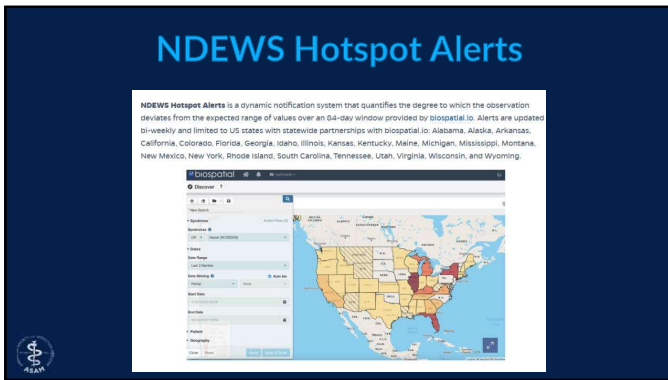
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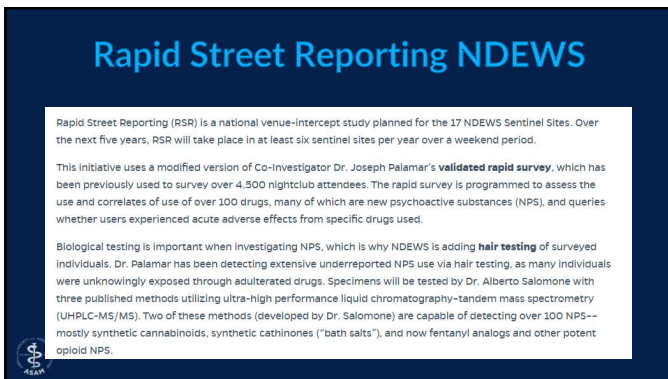
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Web Surveillance NDEWS

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.




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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.




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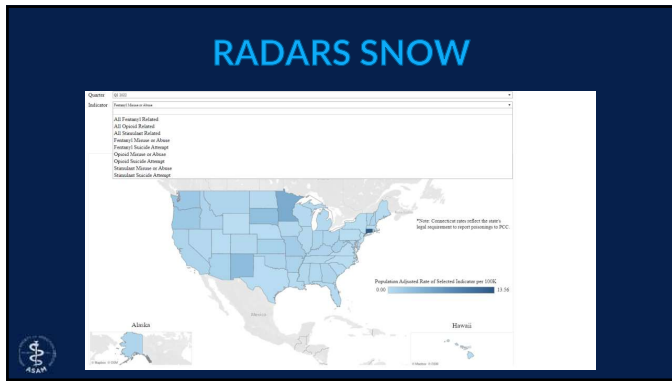
Welcome to the State and National Overdose Web (SNOW) Interactive Dashboard



https://public.tableau.com/viz/StateandNationalOverdoseWebdashboard/Homepage?language=en&display_count=ny&origin=viz_share_link&csHowVizHome=no&embed=yes&toolbar=no



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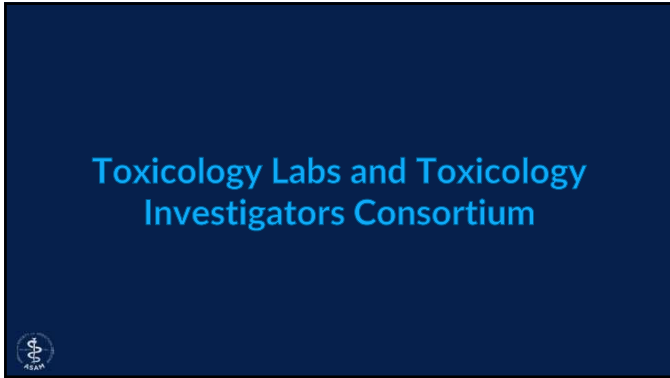
FROST

FROST NDEWS

The Florida Drug-Related Outcomes Surveillance and Tracking System (FROST), directed by NDEWS Co-investigator Dr. Bruce Gollubarger, 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.

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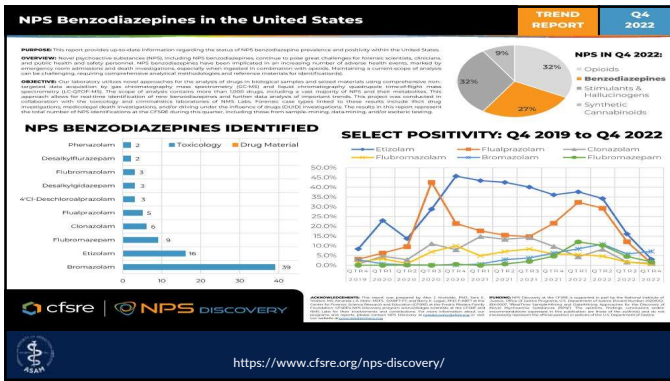
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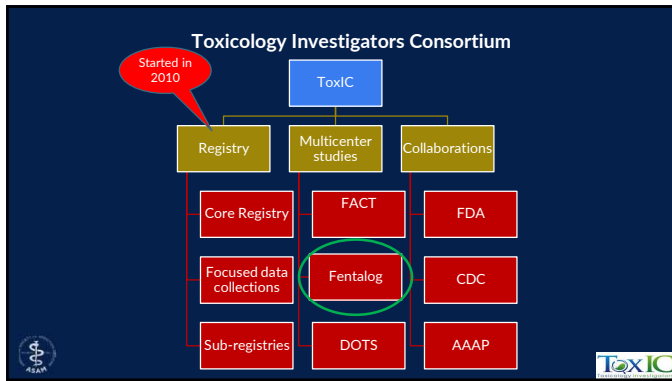
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Toxic Toxicology Investigators Consortium

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Home Data Sites Projects Publications News

- What is Toxic?
- Fentalog Project
- North American Trade Site Registry
- FACT Project
- Toxic MOSE Project

- 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/>

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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/>

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Coming soon!


New CDC Drug Overdose Dashboard



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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.



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