Trends, Analysis & Threats

Overdose Response Strategy Webinar Series

Funded by the Office of National Drug Control Policy and the Centers for Disease Control and Prevention

This webinar series is supported in-part by the Centers for Disease Control and Prevention (CDC) of the U.S. Department of Health and Human Services (HHS) as part of a financial assistance award totaling $11,000,000 with 100 percent funded by CDC/HHS. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement by, CDC/HHS, the U.S. Government, or the CDC Foundation.

Agenda

Opening Remarks

Christopher Jakim, HIDTA National Coordinator, Overdose Response Strategy

National Overdose Data Highlight

Steve Barnes, Technical Advisor, Overdose Response Strategy

Speaker Briefings

Alex J Krotulski, PhD,

Center for Forensic Science Research and Education, Fredric Rieders Family Foundation, Horsham, PA

Q&A and Closing Remarks

Overdose Response Strategy

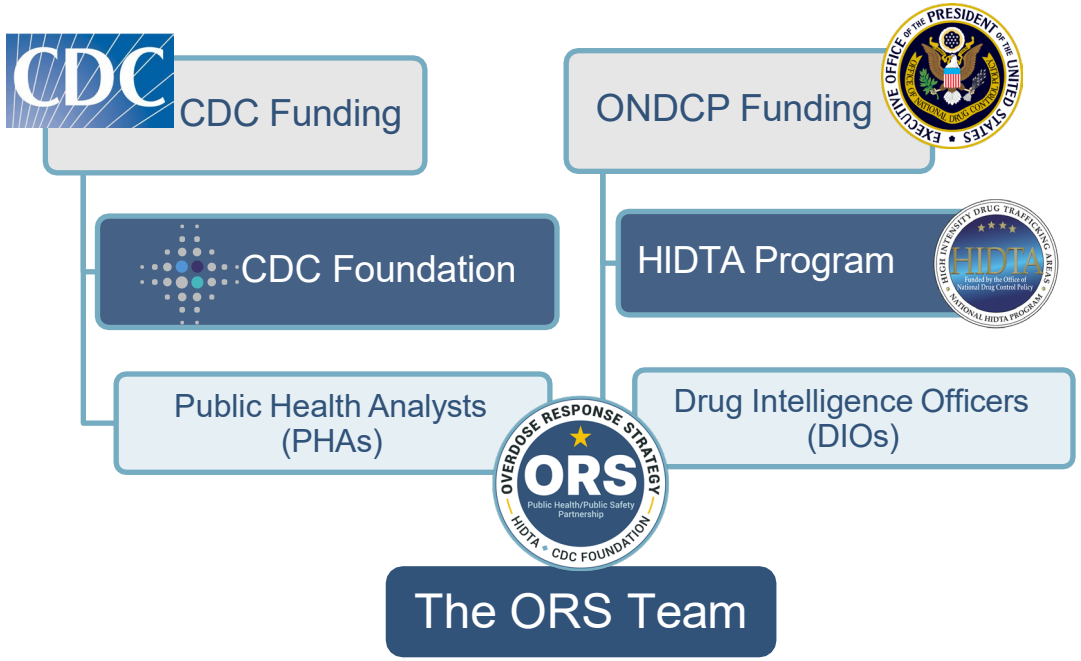
The ORS is a nationally coordinated, cross-sector collaboration between public health and public safety.

The mission of the ORS is to **help communities reduce fatal and non-fatal drug overdoses** by connecting public health and public safety agencies, sharing information and supporting evidence-based interventions.

Connect

1. Go to www.orsprogram.org

2. Visit **"ORS Interactive Teams Map"** for team contact info



The ORS is implemented by 61 teams of DIOs and PHAs covering all 50 states, D.C., Puerto Rico, and the U.S. Virgin Islands.

Accessing ORS TAT Materials

After today's webinar, remember to access all follow-up and recorded materials for our ORS TAT Webinars on the 'Resources' tab of the ORS website.

https://orsprogram.org/tat-webinars/

***We will still be sending follow-up emails to our mailing list and will include the materials link to our website within that communication.**

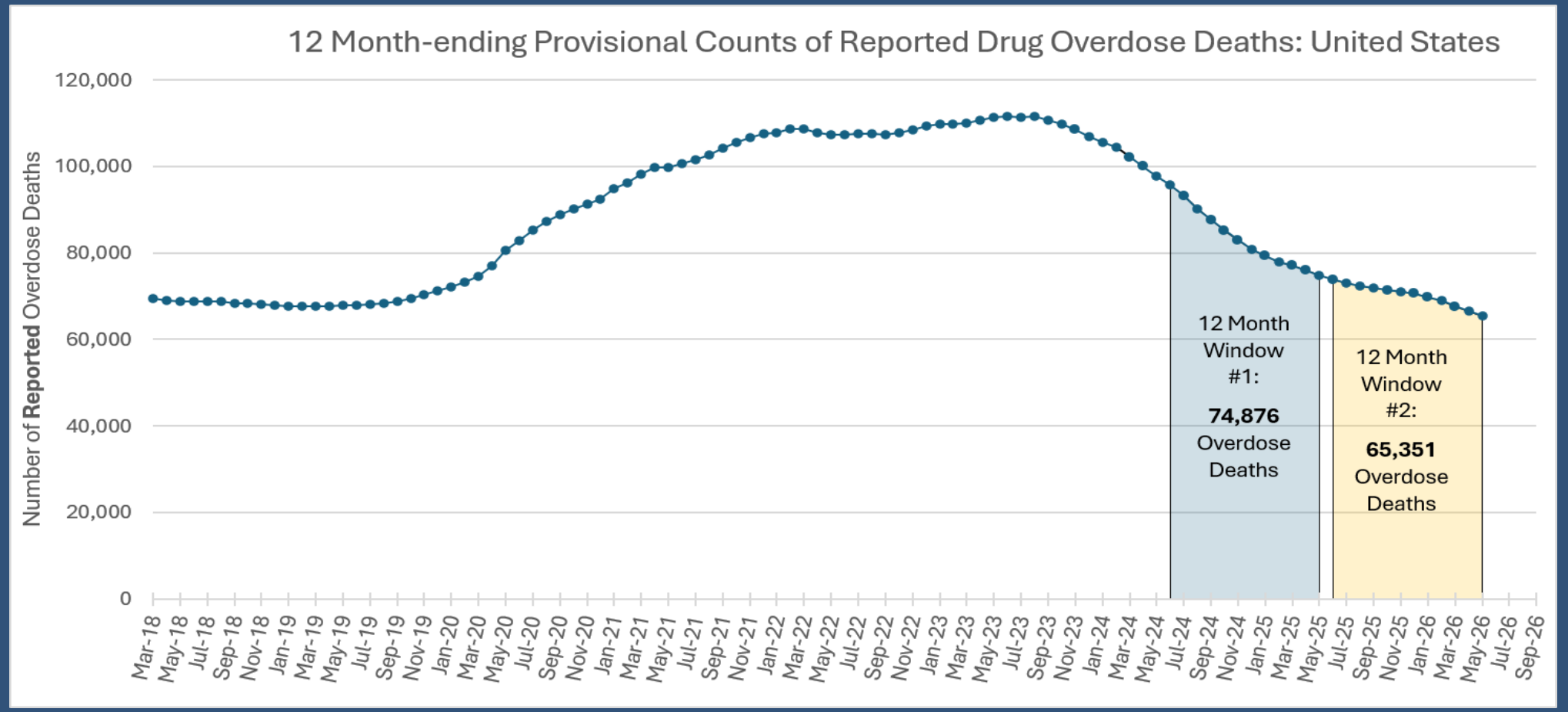
Trends, Analysis & Threats Webinar: Acknowledgement of Data Sensitivity and Use

The information presented and discussed at ORS Trends, Analysis & Threats (TAT) meetings is shared voluntarily by data owners, often in advance of public release and is often preliminary and incomplete. The Overdose Response Strategy (ORS) does not own or manage any of the data presented.

National Overdose Data Snapshot

Steve Barnes, *Technical Advisor, Overdose Response Strategy*

National Picture - Overdose Mortality



Percent Change for United States

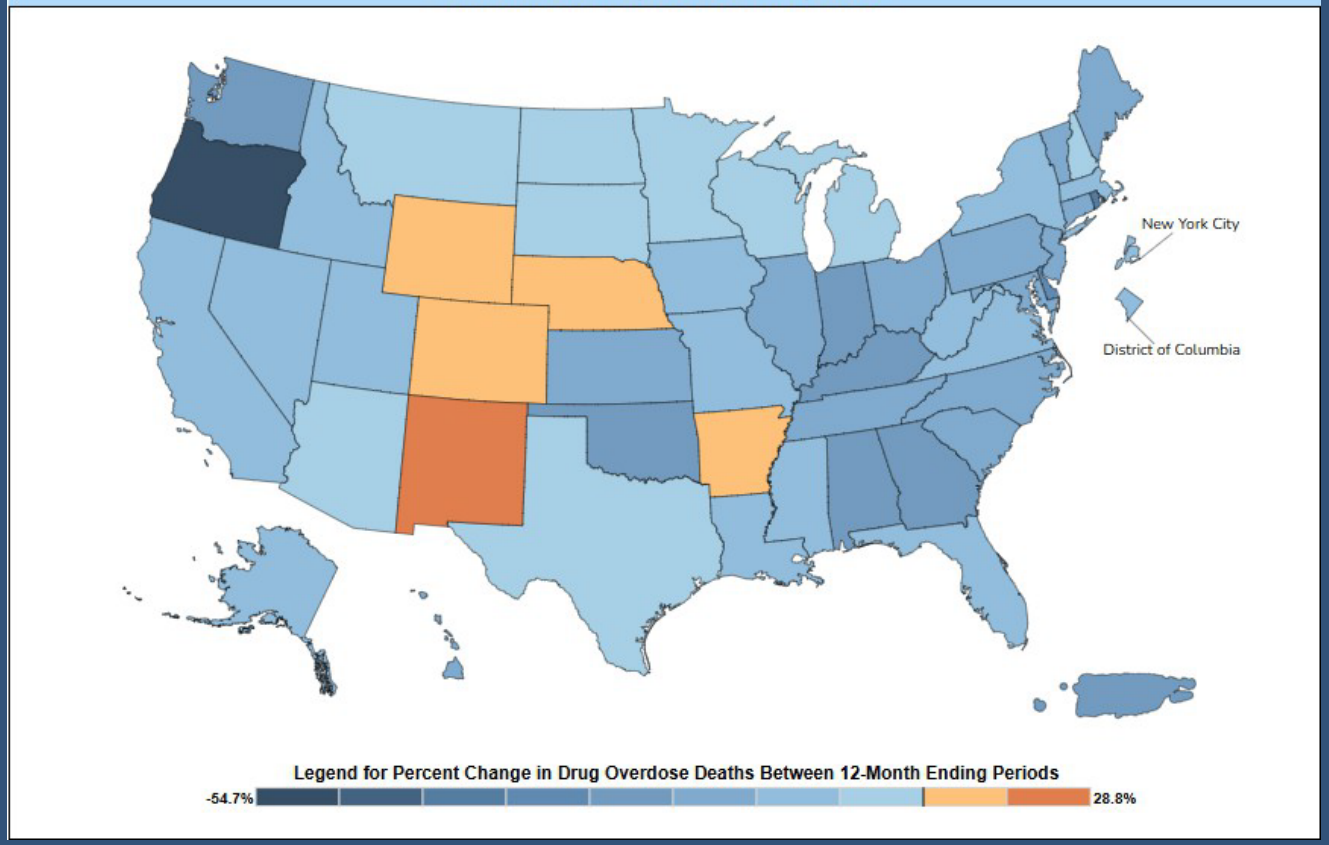
-12.7

Based on data available for analysis on: **October 4th, 2026**

National Center for Health Statistics, Provisional Drug Overdose Death Counts

National Picture - Overdose Mortality

Figure 1b. Percent Change in Reported 12 Month-ending Count of Drug Overdose Deaths, by Jurisdiction: May 2025 to May 2026



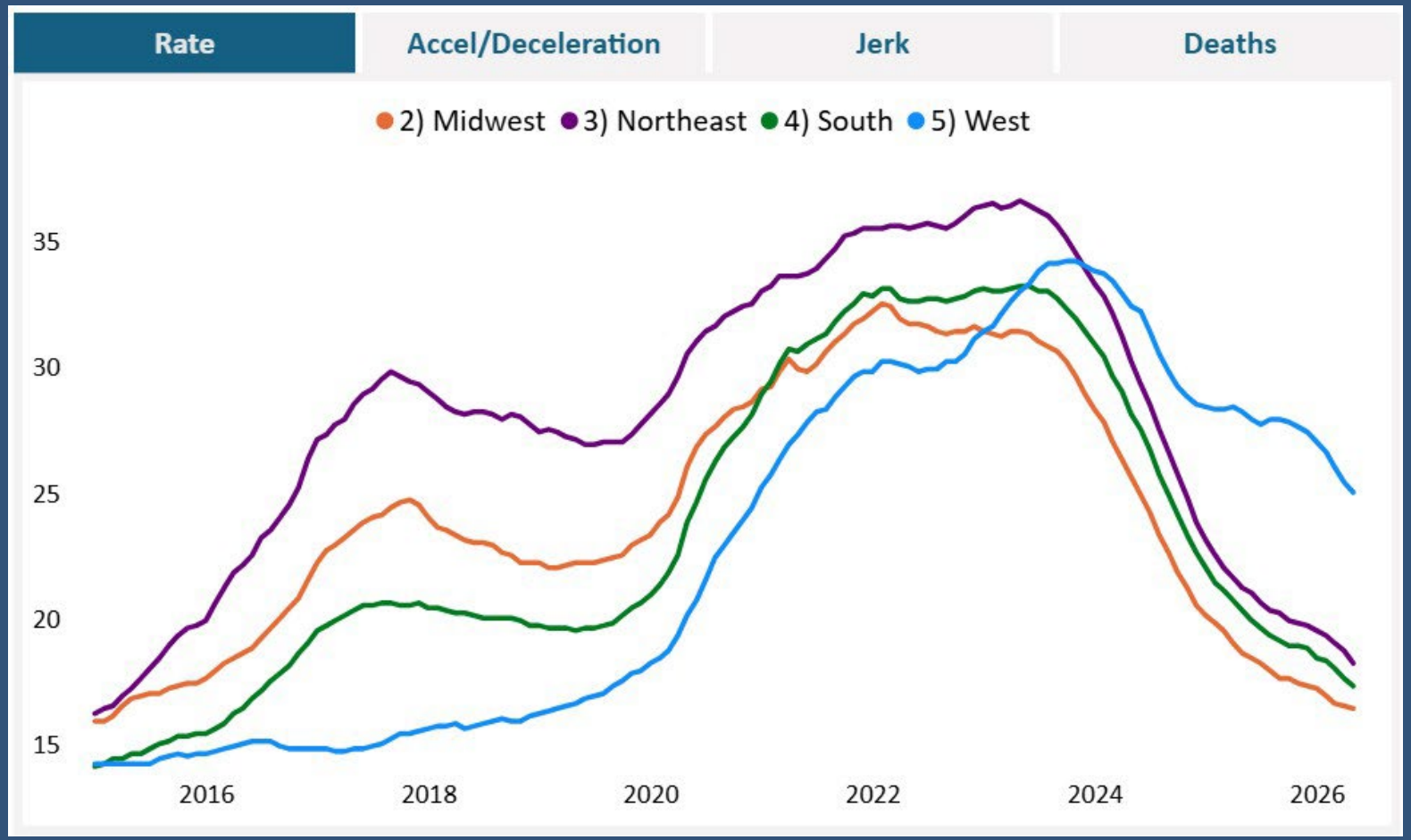
Percent Change for United States

-12.7

Based on data available for analysis on: **October 4th, 2026**

National Center for Health Statistics, Provisional Drug Overdose Death Counts

Northwestern University “OD Pulse” Dashboard



National summaries provide useful context but obscure important regional variation

Public dashboards, like OD Pulse, are useful tools for understanding trends by region and state

Source (visualization): Northwestern University “The OD Pulse” Dashboard, (accessed 3 November 2026)

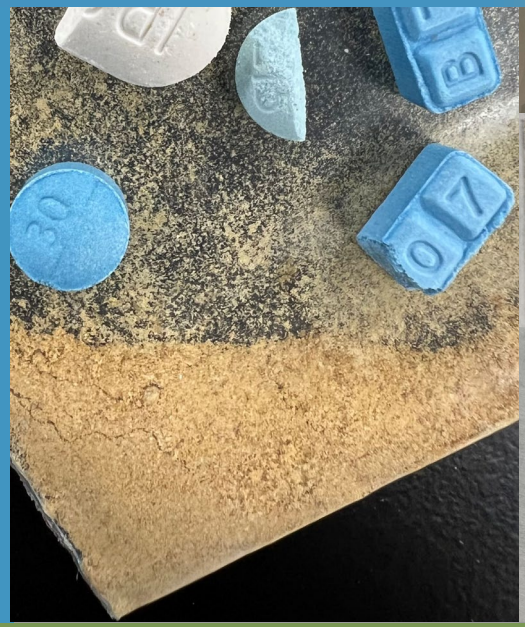
Data: Provisional drug overdose death counts. National Center for Health Statistics. Based on data available for analysis on: **October 4th, 2026**

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The Current Drug Landscape

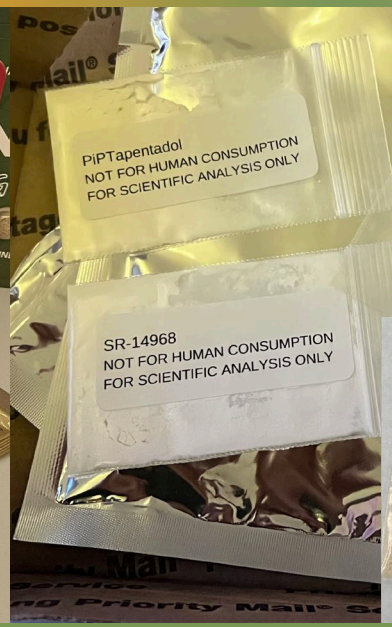
Overdose Response Strategy (ORS) Trends, Analysis, & Threats Webinar --- Wednesday, November 4, 2026 – 2:00 PM ET

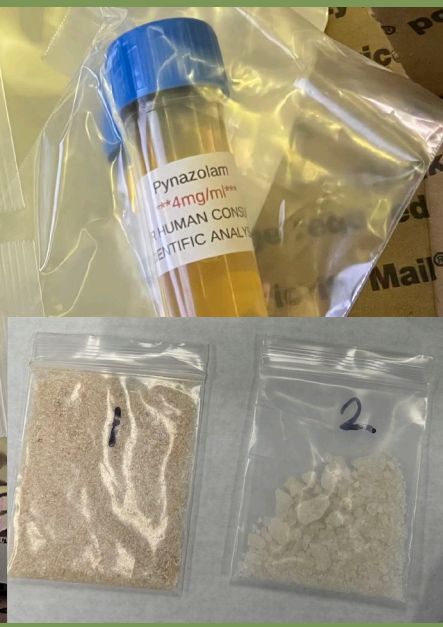
Alex J Krotulski, PhD
Center for Forensic Science Research and Education, Fredric Rieders Family Foundation, Horsham, PA











FUNDING

- **CFSRE's NPS Discovery program is funded by the National Institute of Justice (NIJ), Office of Justice Programs (OJP), U.S. Department of Justice (DOJ).**
  - Award Number: 15PNIJ-24-GK-00981-COAP
  - The opinions, findings, conclusions and/or recommendations expressed in this presentation are those of the author(s) and do not necessarily represent the official position or policies of the U.S. Department of Justice.



- The CFSRE & its NPS Discovery program also receives funding, either directly or indirectly, from a variety of agencies and entities, including Centers for Disease Control and Prevention (CDC), the National Institutes of Health (NIH), and others.

CFSRE'S NPS DISCOVERY
U.S. DRUG EARLY WARNING SYSTEM

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CFSRE'S NPS DISCOVERY PROGRAM

- Launched in 2018, **NPS Discovery** is an **open-access drug early warning system** operating in the United States and housed at the Center for Forensic Science Research & Education (CFSRE)
  - Primary focus on **analytically confirmed** detections of NPS and other substances (when possible)

- Maintain extensive **collaborations and partnerships** with vast variety of public health and safety organizations (federal, state, and local) within North America and around the world

DRUG MATERIAL	RECREATIONAL	CLINICAL	FORENSIC
Customs & Border	Drug Use Survey	Non-Fatal Overdose	Impaired Driving
Street Drug Supply	Recreational Drug Use	Hospital Settings	Drug Facilitated Crime
Interdiction & Forensic	Drug Forums	Treatment Centers	Fatal Overdose



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OPEN-ACCESS DRUG EARLY WARNING SYSTEM



Surveillance & Monitoring

- Fatal Overdoses
- Non-Fatal Overdoses
- Recreational Drug Use
- Impaired Driving
- Local Drug Seizures
- Customs Interdiction



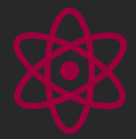
Outbreak Testing

- Emergent Harms & Overdose
- Rapid Turnaround
- Drug Materials
- Biological Specimens
- Public Health Interpretation



Drug Checking

- Public Health
- Harm Reduction
- Point-of-Use
- Market Analysis
- All Types of Drug Materials
- Use Information
- Survey Responses



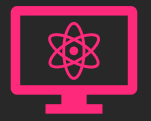
Test Purchases

- **Smoke Shops, Gas Stations, & Corner Stores**
- Recreational Supplies
- Gray Market Websites
- The Dark Web



Dissemination

- New Drug Monographs
- Trend Reports
- Public Alerts
- Year In Review
- Drug Checking Reports
- Clinical Reports
- Scope Recs.
- NPS Naming Guides



Resources

- Open-Access Web Repository
- *Forensically Relevant Drugs Database*
- Drug Checking Database
- Analytical Spectral Library
- Expert Review & Interpretation

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CFSRE ANALYTICAL WORKFLOW







Receipt

- Login
- Tracking
- Storage

Identification *(LC-QTOF-MS)*

- **Basic & Acidic Prep. Procedures**
- **Report: Positive**

Differentiation

- NPS Isomers
- E.g., Fluorofentanyl, SCRAs, 2F-2oxo-PCE, etc.

Quantitation *(LC-QQQ-MS)*

- Various Assays
- Varied Approaches
- **Report: Concentration (ng/mL)**

Interpretation

- Case Review
- Autopsy Findings
- Clinical Findings

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SCREENING, CONFIRMATION, & QUANTITATION

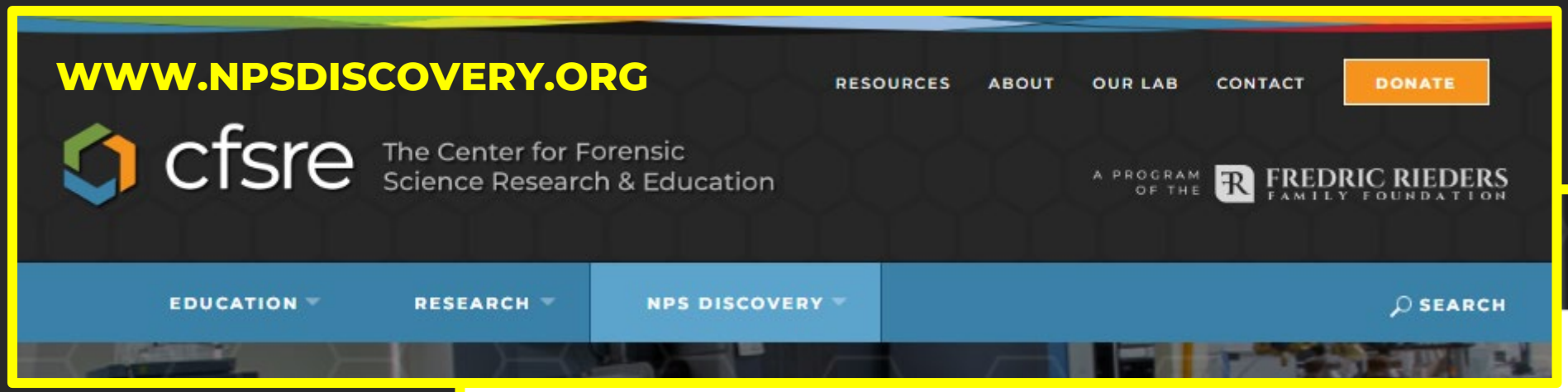
- **Screening**
  - Non-targeted LC-QTOF-MS acquisition
  - Various data processing approaches
- **Confirmation Methods**
  - Qualitative (LC-QTOF-MS)
  - Quantitative (LC-QQQ-MS)
  - Isomer differentiations (LC-QQQ-MS)
  - Sample types (e.g., drug materials vs. toxicology samples)
- **Quantitative Workflows**
  - Semi-quantitative assessments (LC-QTOF-MS)
  - Method of standard addition (LC-QQQ-MS)
  - Traditional, external calibration approaches (LC-QQQ-MS)







WWW.NPSDISCOVERY.ORG





NPS DISCOVERY

The CFSRE's NPS Discovery program is an open-access drug early warning system (EWS) operating in the United States. Our evidence-based approach leads the development of high impact reports for real-time action among public health and safety stakeholders.

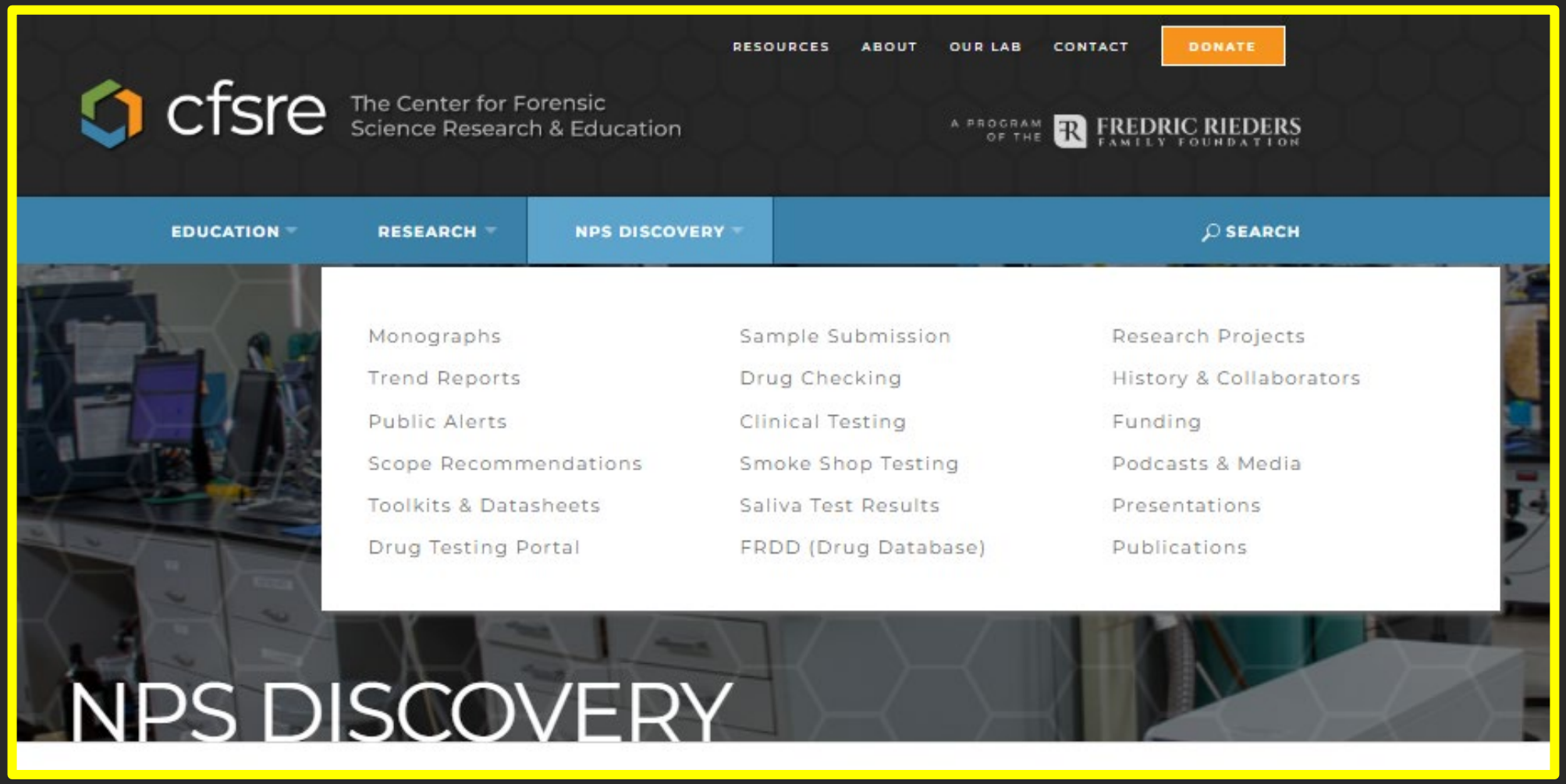
We are working in collaboration with forensic science, public health, emergency medicine, and criminal justice agencies to rapidly identify emerging drugs, also known as Novel Psychoactive Substances (NPS), associated with intoxications and adverse events. Our data and results are consolidated into reports and resources to allow for the rapid dissemination of information to colleagues and affected communities.

CFSRE's NPS Discovery is supported by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice (Award Number 15PNIJ-24-GK-00981-COAP, "Novel Psychoactive Substance Discovery, Education, and Reporting Institute"). The opinions, findings, conclusions and/or recommendations expressed in our publications and presentations are those of the author(s) and do not necessarily represent the official position or policies of the U.S. Department of Justice.

JOIN THE CONVERSATION VIA OUR NEW DISCUSSION GROUP >>> SIGN-UP TO INTERACT WITH COLLEAGUES!

STAY CONNECTED VIA OUR NEWSLETTER >>> SIGN-UP TO RECEIVE NEW NPS REPORTS IN REAL-TIME!

DOWNLOAD OUR LATEST REPORTS



WWW.NPSDISCOVERY.ORG

RESOURCES ABOUT OUR LAB CONTACT DONATE

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A PROGRAM OF THE FREDRIC RIEDERS FAMILY FOUNDATION

EDUCATION RESEARCH NPS DISCOVERY SEARCH

Smoke Shop Testing

CFSRE's NPS Discovery is keeping tabs on the latest trends and changes among recreational drug products sold in smoke shops, head shops, gas stations, and the like. Due to legal gray areas in state and federal laws, smoke shops across the country have begun selling a wide variety of products containing hemp-derived substances or semi-synthetic cannabinoids (e.g. delta-8 THC, HHC, THCP), plant alkaloids (e.g., mitragynine, 7-hydroxy mitragynine, kava), and a multitude of "supplements" (e.g., tianeptine, phenibut). Our goal is to analytically confirm the substances present in products purchased from smoke shops, and to increase public awareness regarding the involvement of these substances in adverse events and/or fatalities. For more information about our Smoke Shop Testing, reach out to us via email: npsdiscovery@cfsre.org.

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May 8, 2026

Dihydro-7-Hydroxy Mitragynine (MGM-15) - May 2026



PURPOSE: The objective of this report is to detail our findings from forensic testing of newly marketed kratom-like products containing Dihydro-7-Hydroxy Mitragynine ("MGM-15") for notification to public health, public safety, clinicians, medical examiners, coroners, forensic laboratories, and other related communities regarding this emerging drug of concern.

DOWNLOAD THE ALERT

May 7, 2026

Mushroom-Related Products - May 2026



PURPOSE: The objective of this report is to detail our findings from forensic testing of mushroom-based (psychedelic) marketed commercial products for notification to public health, public safety, clinicians, medical examiners, coroners, forensic laboratories, and other related communities regarding this emerging topic.

DOWNLOAD THE ALERT

May 6, 2026

Mitragynine & 7-Hydroxy Mitragynine - May 2026



PURPOSE: The objective of this report is to detail our findings from forensic testing of Mitragynine (MG) and 7-Hydroxy Mitragynine (7OH) marketed products for notification to public health, public safety, clinicians, medical examiners, coroners, forensic laboratories, and other related communities regarding this emerging topic.

DOWNLOAD THE ALERT

May 5, 2026

Semi-Synthetic Cannabinoids - May 2026



PURPOSE: The objective of this report is to detail our findings from forensic testing of semi-synthetic cannabinoid marketed commercial products for notification to public health, public safety, clinicians, medical examiners, coroners, forensic laboratories, and other related communities regarding this emerging topic of concern.

DOWNLOAD THE ALERT

SUBMIT SAMPLES FOR TESTING

EDUCATION | RESEARCH | NPS DISCOVERY

Sample Submission

Through grant funding, CFSRE's NPS Discovery is able to offer non-routine, no-cost comprehensive forensic chemistry and toxicology t
emerging drugs and novel psychoactive substances (NPS), including qualitative and quantitative analyses. Our laboratory accepts biol
specimens (e.g., blood, urine, serum, plasma,) and drug materials (e.g., pills, powder, plant materials), among other sample types upon
more information and/or to inquire about testing opportunities, please contact our program director Dr. Alex Krotulski (alex.krotulski@

SAMPLE SUBMISSION FORMS

The links below allow you to download our sample submission forms. These PDFs contain fillable fields to provide information to our sc
about the case circumstances, request for type(s) of testing, and primary contact information for results and reporting. In addition, the
contains information about shipping, sample requirements, and laboratory contact information.

TOXICOLOGY (BIOLOGICAL SPECIMENS) - SAMPLE SUBMISSION FORM

CHEMISTRY (DRUG MATERIALS) - SAMPLE SUBMISSION FORM


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FORENSIC TESTING FOR EMERGING DRUGS & NOVEL PSYCHOACTIVE SUBSTANCES (NPS)

The **Center for Forensic Science Research and Education (CFSRE)** operates an open-access drug early warning system called **NPS Discovery**. Through this initiative, with funding and support from the **Fredric Rieders Family Foundation**, the **National Institute of Justice**, and the **Colombo Plan**, the CFSRE is able to offer **non-routine, no-cost** comprehensive forensic chemistry and toxicology testing for emerging drugs and novel psychoactive substances (NPS), including qualitative and quantitative reporting.

BENEFITS OF FORENSIC TESTING AT THE CFSRE:

- Perform routine testing for all NPS subclasses, including opioids, benzodiazepines, stimulants, hallucinogens, and cannabinoids.
- Assist medical examiners and coroners with determining cause of death when prior toxicology testing is negative or inconclusive.
- Analysis by state-of-the-art instrumentation and methodologies.
- Regularly updated, comprehensive in-house library database containing more than 1,200 drugs.
- Sample handling and analysis performed under chain of custody.
- Forensic quality data and individual reports generated per case.
- World-leading forensic toxicologists, chemists, and scientists.
- Laboratory follows forensic and industry best practices.

TESTING CATALOG

NPS Opioids
Fentanyl Analogues, Nitazene Analogues, U-Series, AP-Series, Other Novel Opioids

NPS Benzodiazepines
Etizolam, Flualprazolam, Flubromazepam, Clonazolam, Bromazolam, Flubromazolam

NPS Stimulants
Empathogens, Cathinones, Amphetamines, Phenethylamines, Pyrrolidines

NPS Hallucinogens
Psychedelics, Dissociatives, PCP Analogues, Ketamine Analogues, LSD Analogues

Synthetic Cannabinoids
Classical, Indoles, Indazoles, Miscellaneous, Newly Emergent, & Many More!

2019	2020	2021	2022	2023	2024
Isotonitazene	MDMB-4en-PINACA	Metonitazene & Nitazene Analogues	*N,N*-Dimethylpentylone	Bromazolam	*N*-Pyrrolidino Protonitazene & *ortho*-Methylfentanyl
First outbreak investigation in the U.S. involving 20+ deaths, primarily from Indiana and Illinois.	Investigation of 50+ cases involving deaths and hospitalizations from states in the South, Midwest, and Northeast.	Continued monitoring and investigations of 40+ deaths involving new nitazene analogues emerging in various regions across the U.S.	First outbreak investigations involving a new stimulant drug linked to 50+ cases, including deaths, primarily originating from Florida and Northeastern states.	Nation-wide outbreak involving hundreds of intoxications and deaths, linked to counterfeit tablets and opioid drug combinations.	Investigations of 30+ deaths involving new nitazene analogues emerging in various regions across the U.S. and Europe, and investigation of a new fentanyl analogues in Canada.

CONTACT INFORMATION*

Dr. Alex J. Krotulski, PhD
Director - Toxicology & Chemistry
alex.krotulski@cfsre.org | 215-366-1771

SHIPPING DETAILS

CFSRE
206 Welsh Road
Horsham, Pennsylvania 19044

*Correspondence required for approval prior to sample submission.

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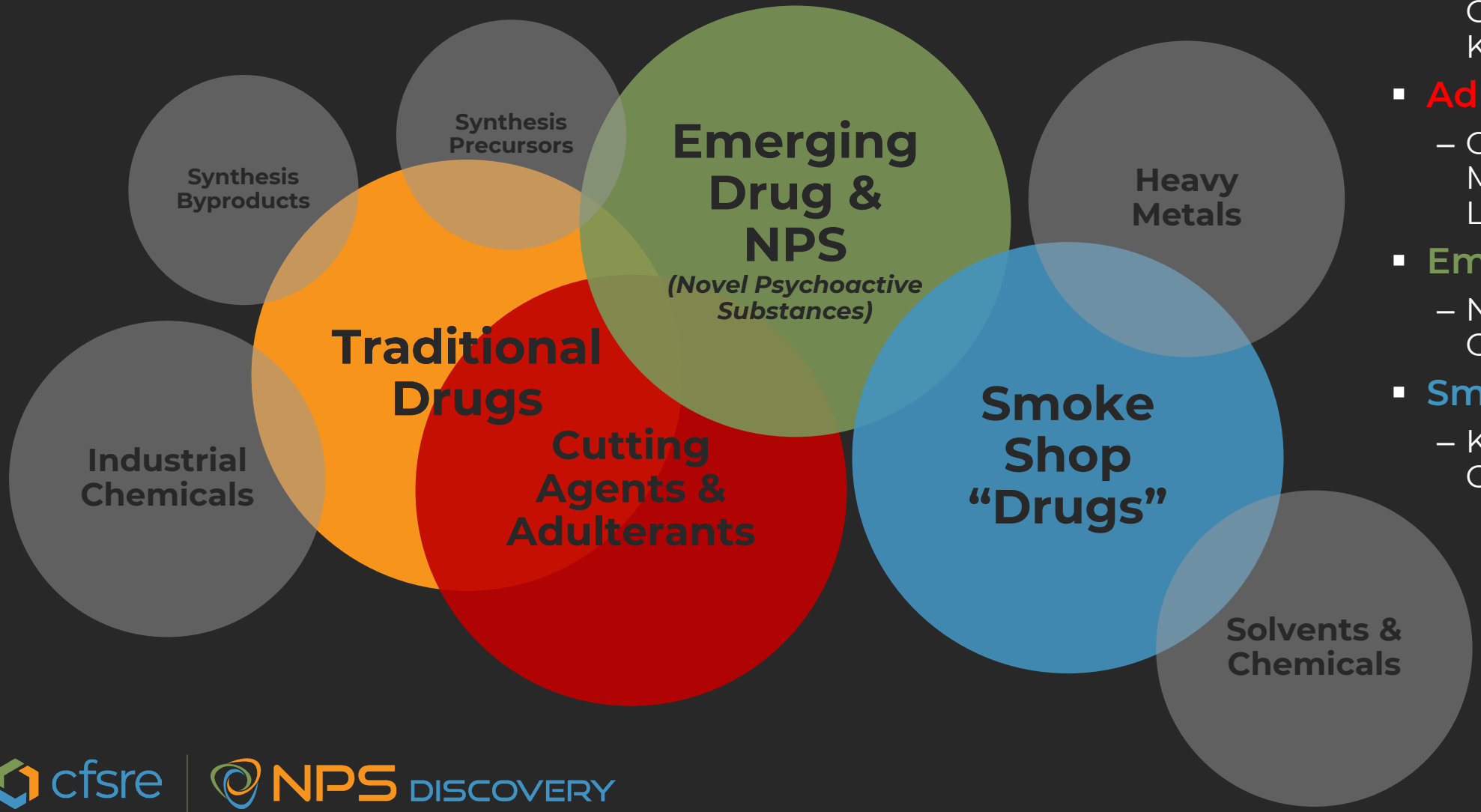
www.npsdiscovery.org

Q3 2026 SCOPE RECOMMENDATIONS

BENZODIAZEPINES		OPIOIDS		STIMULANTS & HALLUCINOGENS		SYNTHETIC CANNABINOIDS		SEMI-SYNTHETIC CANNABINOIDS		MISCELLANEOUS	
TIER ONE (STRONGLY RECOMMEND)											
Bromazolam	1-10	*N*-Propionitrile Chlorphine*	<1	2/3/4-Methylmethcathinone	>10	5F-MDMB-PINACA (5F-ADB)	<1	THCP	1-10	Medetomidine	1-10
Phenazolam	1-10	•5-Chloro Desmethylchlorphine	<1	alpha-PiHpP / alpha-PHpP	>10	MDMB-4en-PINACA	<1	Δ^8-THC	1-10	Mitragynine	>10
Ethylbromazolam	1-10	*N*-Pyrrolidino Protonitazene	<1	*N*-Isopropyl Butylone	>10	MDMB-BINACA (-BUTINACA)	<1	Δ^8-THC-COOH	1-10	7OH-Mitragynine	1-10
Desalkylgidazepam†	1-10	Metonitazene	<1	2F-2oxo-PCE / Fluorexetamine	>10	4F-MDMB-BINACA (-BUTINACA)	<1	9(R)-HHC / 9(S)-HHC	1-10	Mitragynine Pseudoindoxyl	1-10
8-Aminoclonazolam‡	1-10	Carfentanil	<1	*N-sec*-Butyl Butylone	>10	•MDMB-INACA	<1	9(R)-HHC-COOH / 9(S)-HHC-COOH	1-10	Dihydro-7OH-Mitragynine*	1-10
TIER TWO (RECOMMEND)											
Clonazolam‡	<1	•Etodezitramide	<1	2/3/4-Chloromethcathinone	>10	•ADB-4en-PINACA	<1	Δ^{10}-THC	1-10	4-AcO-DMT / Psilocin	1-10
Ethylflualprazolam	1-10	5,6-Dichloro Desmethylchlorphine*	1-10	*N,N*-Dimethylpentylone	>10	ADB-BINACA (-BUTINACA)	<1	Δ^{10}-THC-COOH	1-10	•4-AcO-MET / 4-HO-MET	1-10
Etizolam†	1-10	•*o/m/p*-Fluorofentanyl	1-10	alpha-PiHP / alpha-PHP	>10	ADB-CHMINACA	<1	THC-O-Acetate	1-10	•4-AcO-DET / 4-HO-DET	1-10
Flualprazolam	1-10	*o/m/p*-Methylfentanyl	1-10	MDPHP / MDPiHP	>10	4CN-CUMYL-BINACA (-BUTINACA)	<1	HHC-O-Acetate	1-10	•4-PrO-MET	1-10
TIER THREE (CONSIDER)											
Flubromazepam	1-10	Spirochlorphine	<1	2C-B	<1	MDMB-PINACA	<1	HHCP	1-10	•Xylazine	1-10
Desalkylflurazepam†	1-10	5,6-Dichloro Brorphine	<1	•2C-C	<1	AMB-4en-PINACA	<1	HHCH	1-10	Tianeptine	>10
4'Cl-Deschloroalprazolam	1-10	•*N*-Propionitrile Brorphine	<1	Eutylone	>10	5F-MDMB-PICA	<1	THCM	1-10	BTMPS	>10
•Methylclonazepam	1-10	•*N*-Pyrrolidino Metonitazene	<1	Alpha-PVP	>10	ADB-INACA	<1	THCB	1-10	•Kavain & Kavalactones	>10

Note: This may not be an all-inclusive list. Laboratories should consider additional NPS for inclusion (or exclusion) based on local, national, and/or international trends.

TODAY'S U.S. DRUG SUPPLY

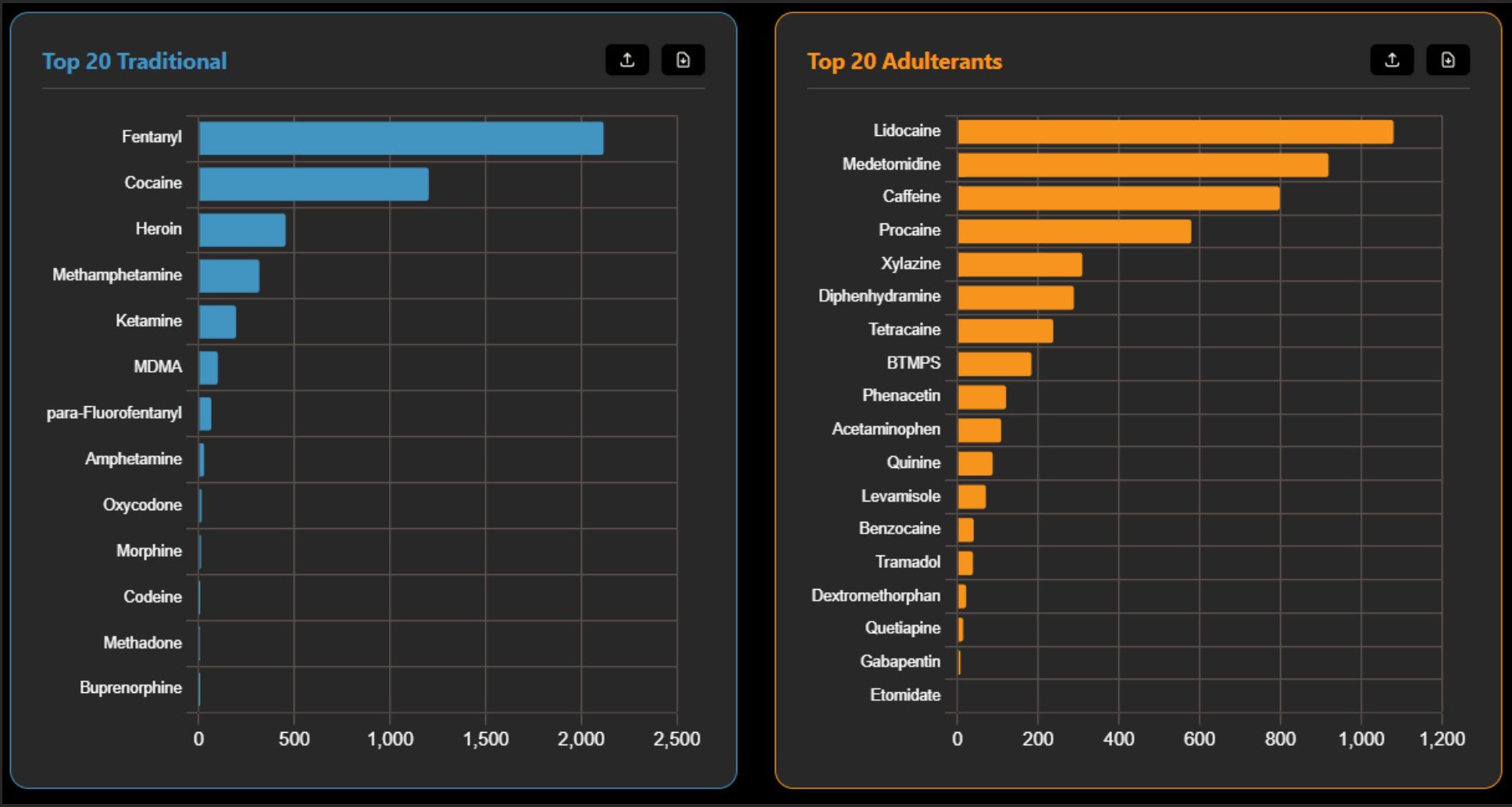


- **Traditional Drugs**
  - Heroin, Fentanyl, Methamphetamine, Cocaine, MDMA, Ketamine, etc.
- **Adulterants**
  - OTCs, Xylazine, Medetomidine, Lidocaine, etc.
- **Emerging Drugs**
  - Nitazenes, Orphines, Cathinones, K2
- **Smoke Shop**
  - Kratom, Mushrooms, Cannabinoids, etc.

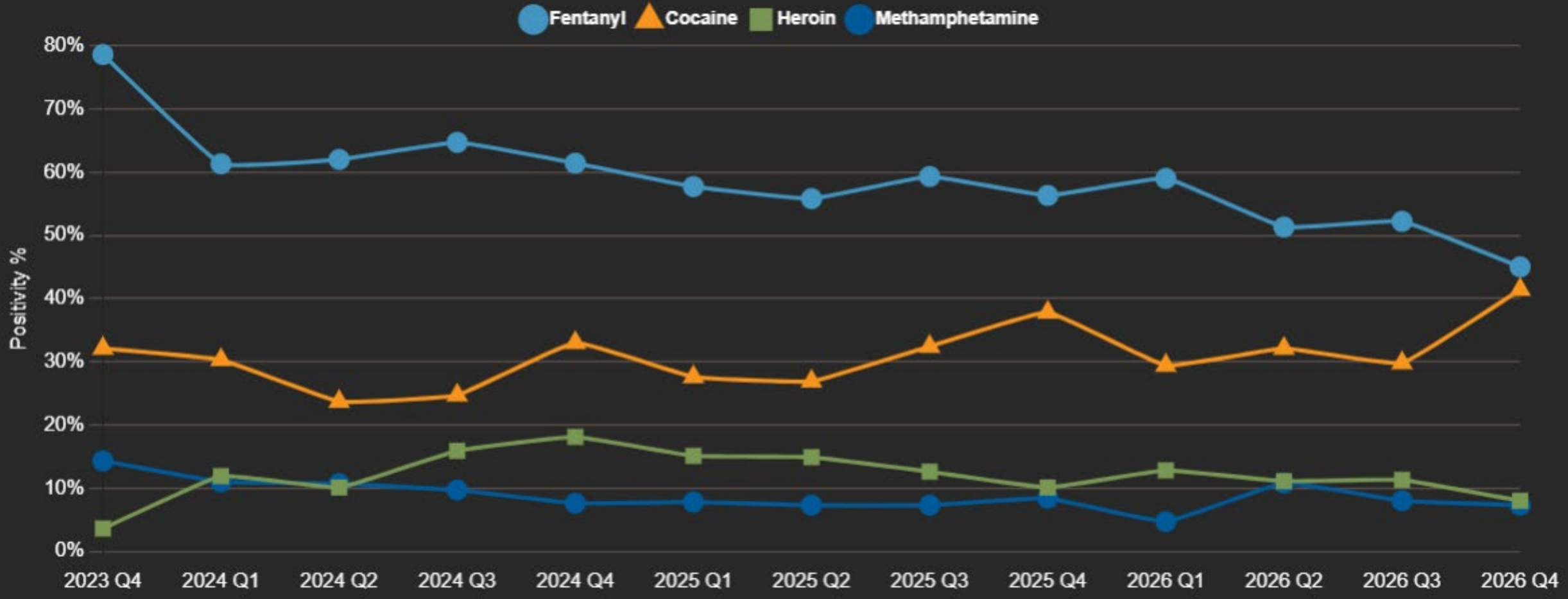
RECREATIONAL DRUG SUPPLY – NOVEMBER 2026 INSIGHTS

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TOP SUBSTANCES BY CLASS IN 2026



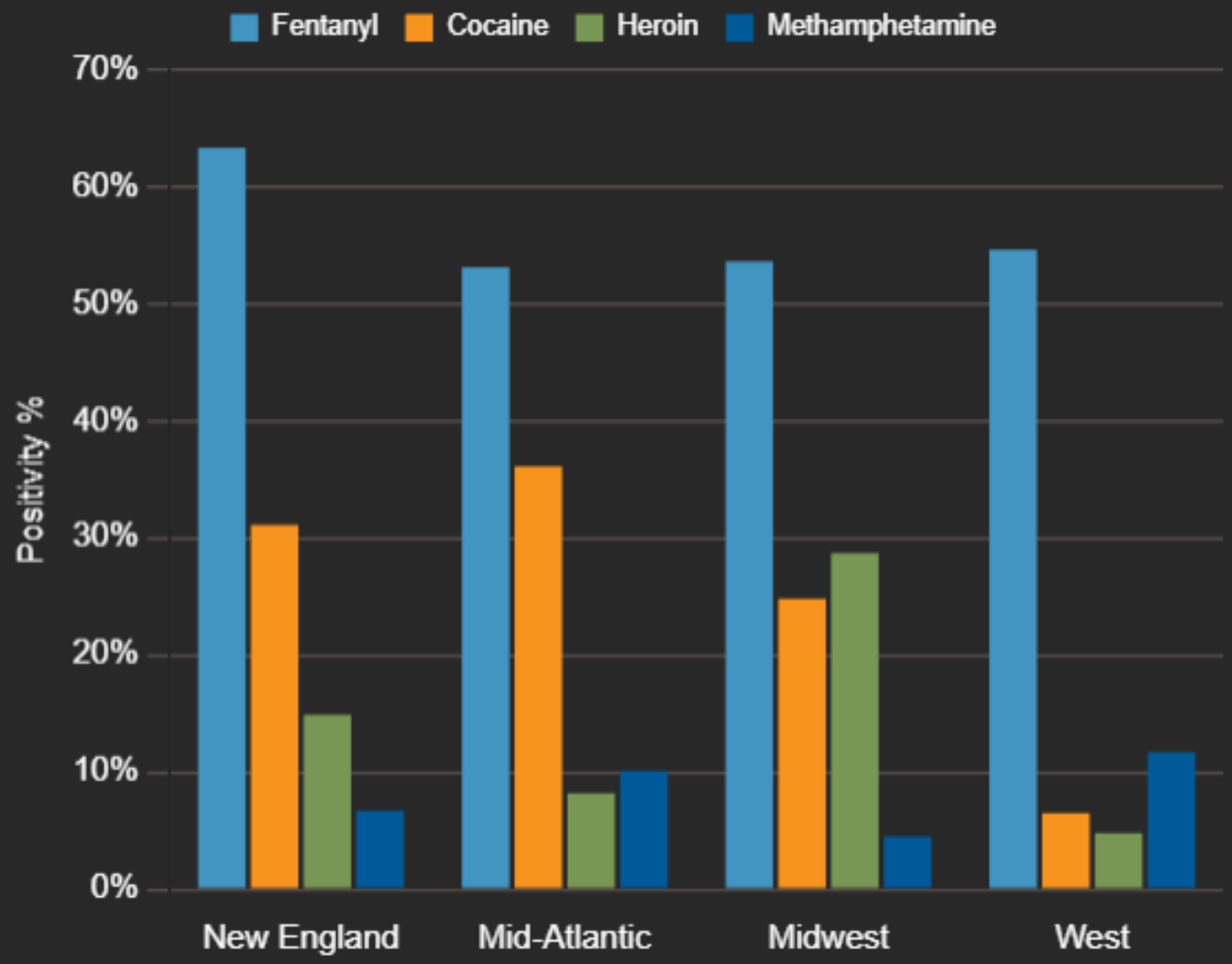
TRADITIONAL DRUGS – TRENDS



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****Q4 2026 – In-Progress*

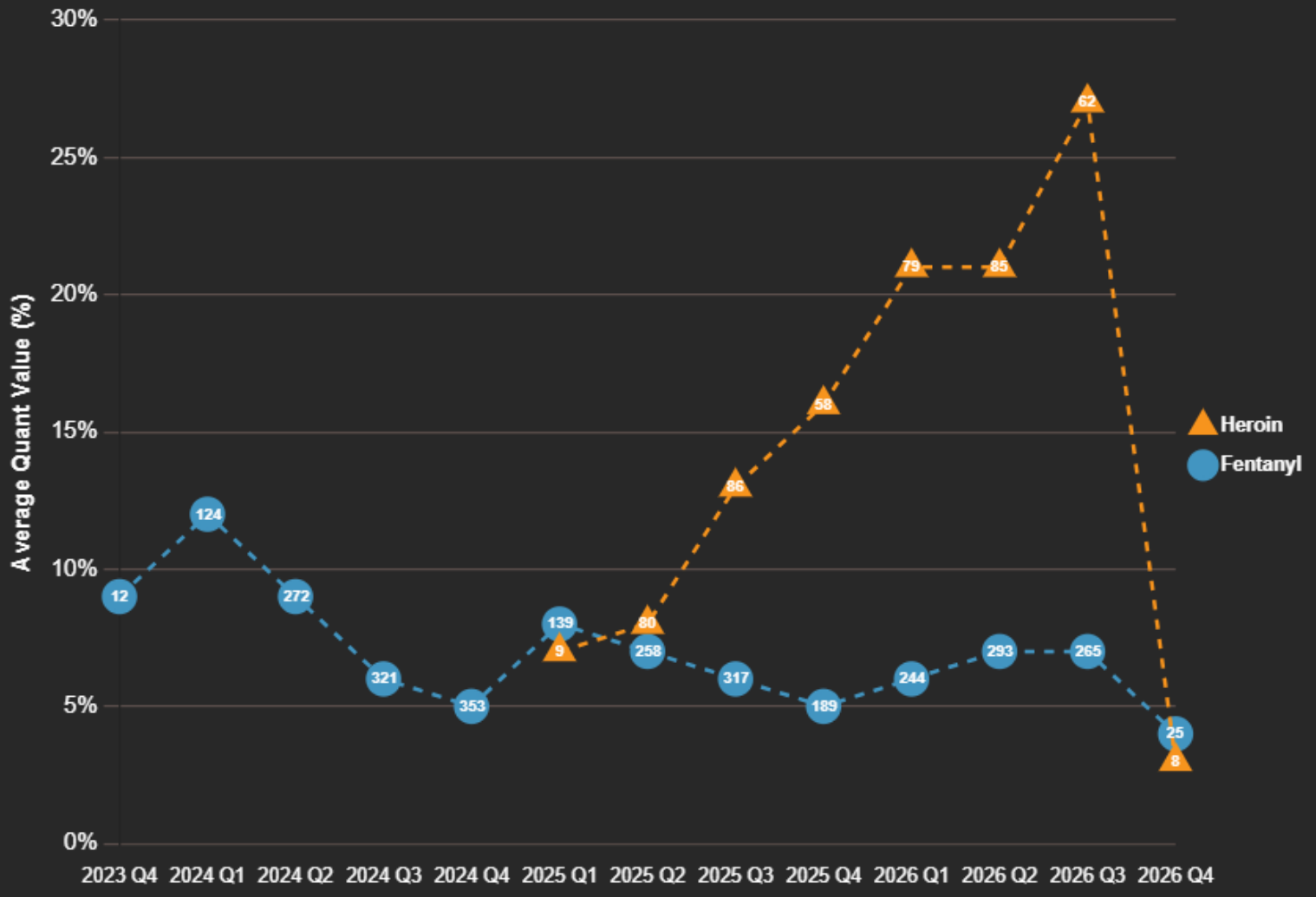
TRADITIONAL DRUGS – GEOGRAPHICS



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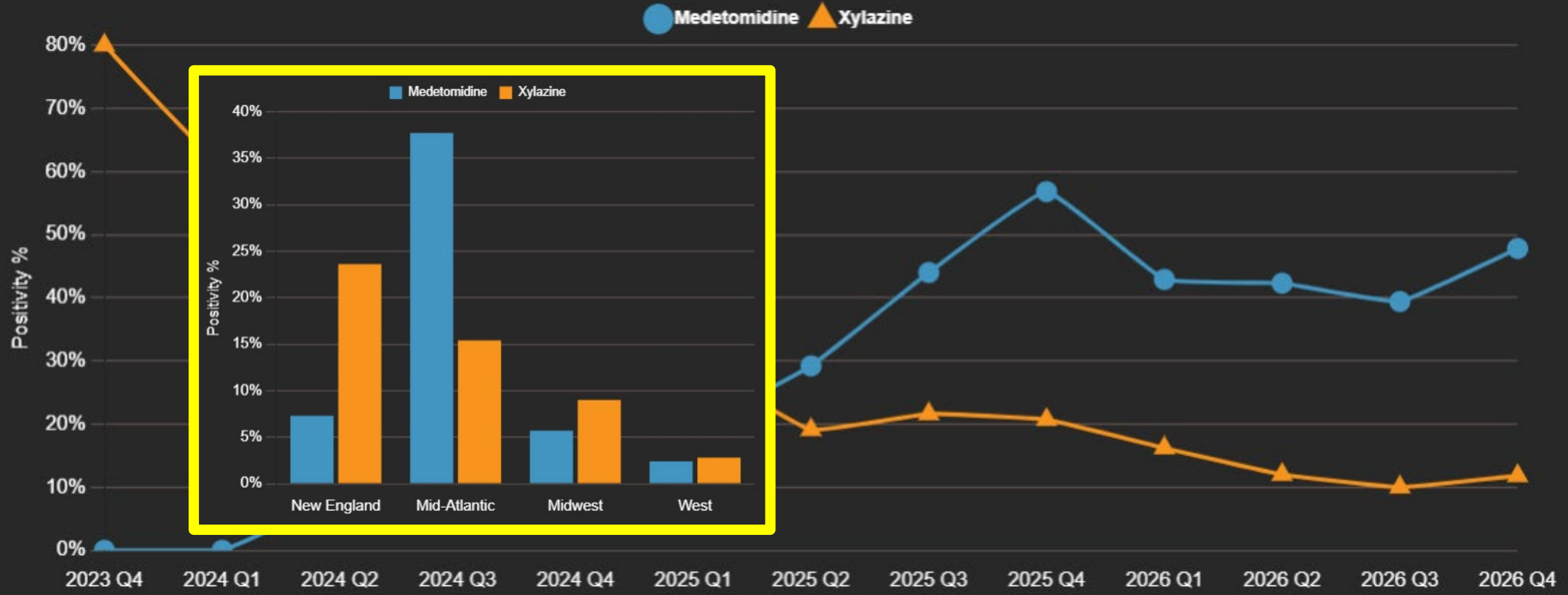
TRADITIONAL DRUGS – QUANTITATION

- **Fentanyl**
  - Relatively stable average amount
  - Highly variable sample-to-sample
  - Geographical differences:
    - **Overall: 6%**
    - NE: 4%
    - MA: 5%
    - MW: 1%
    - W: 17%
- **Methamphetamine**
  - Low number of samples
- **Cocaine**
  - ~60-75% (crack vs. cocaine)

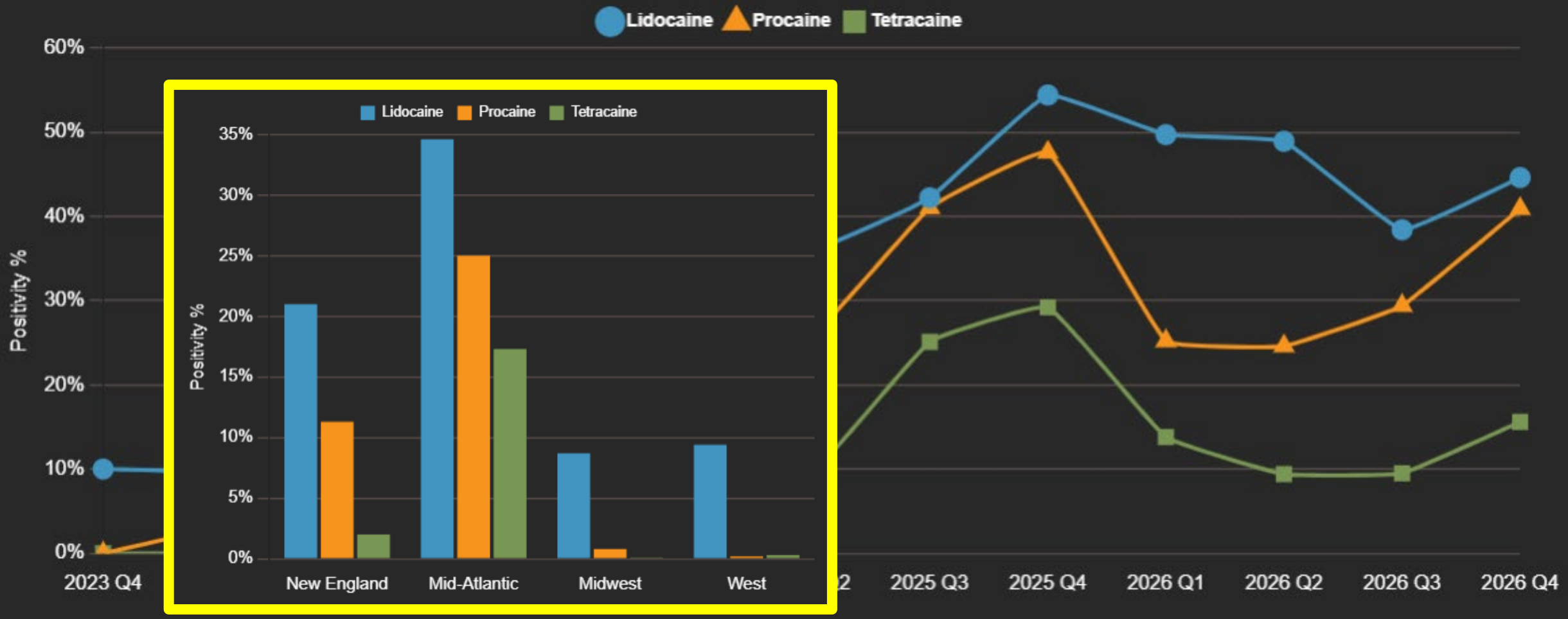


***Q4 2026 – In-Progress

ADULTERANTS – ALPHA-2 AGONISTS

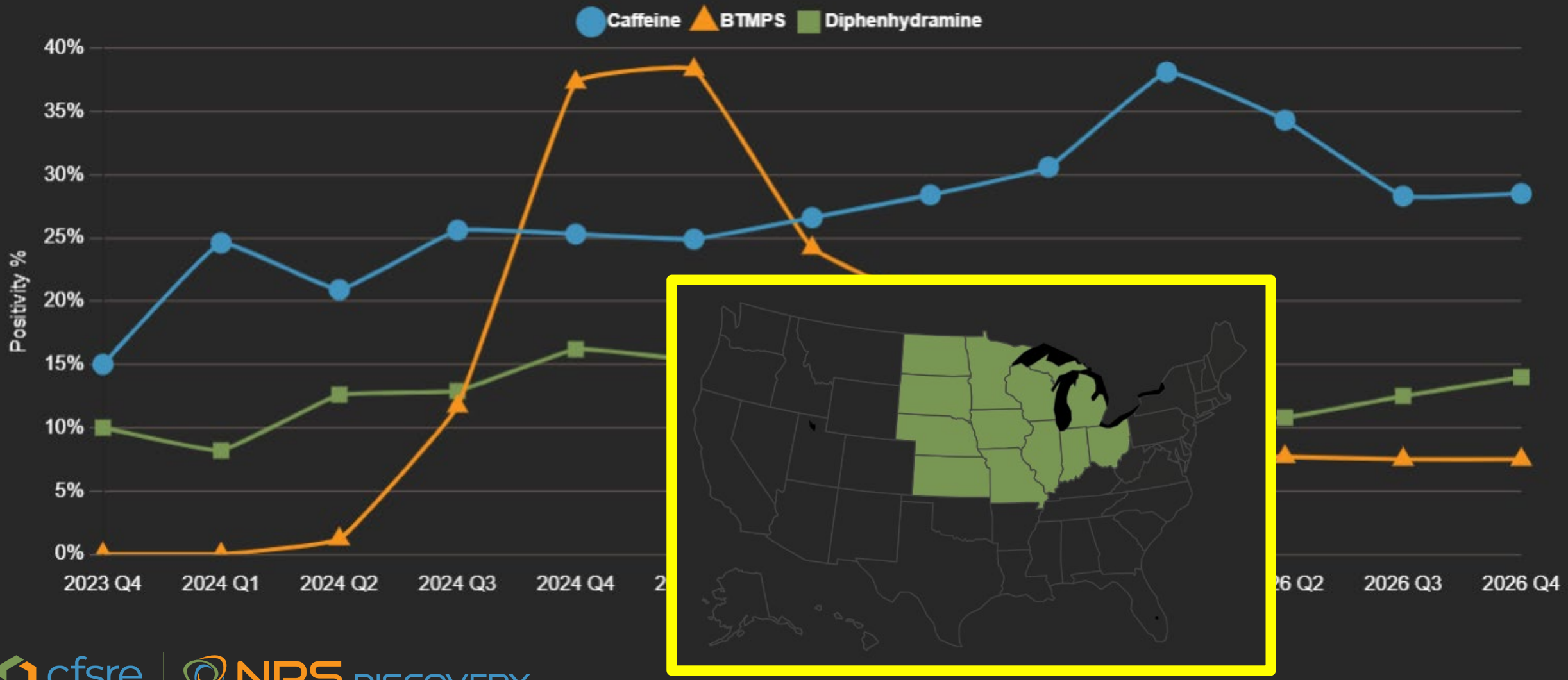


ADULTERANTS – LOCAL ANESTHETICS

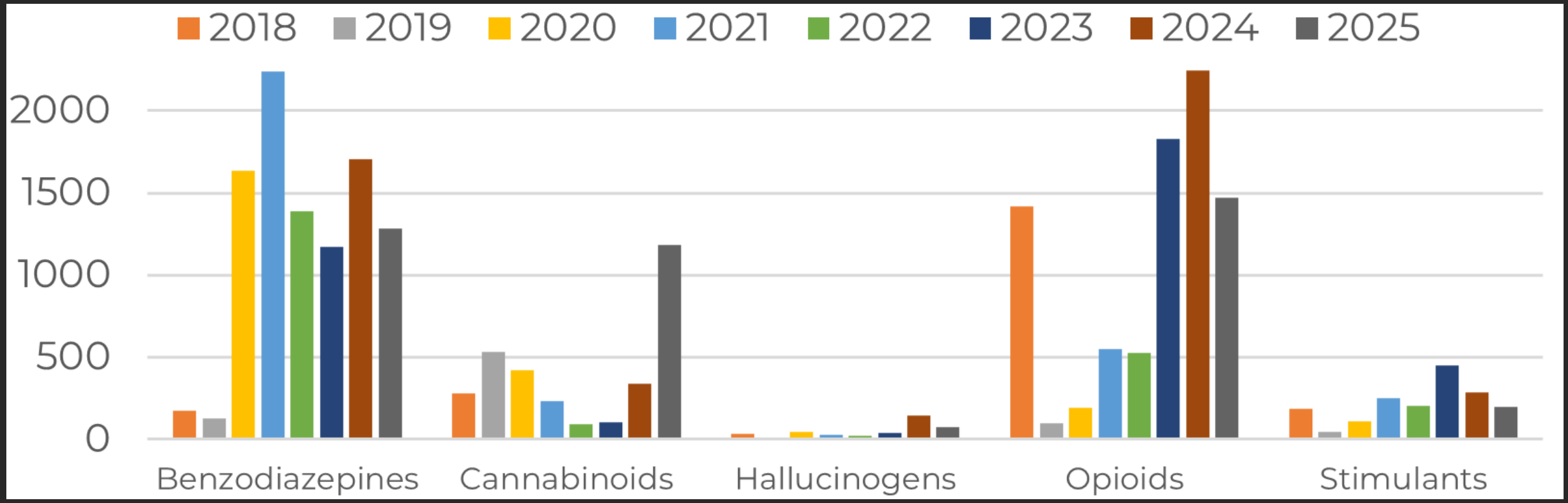


***Q4 2026 – In-Progress

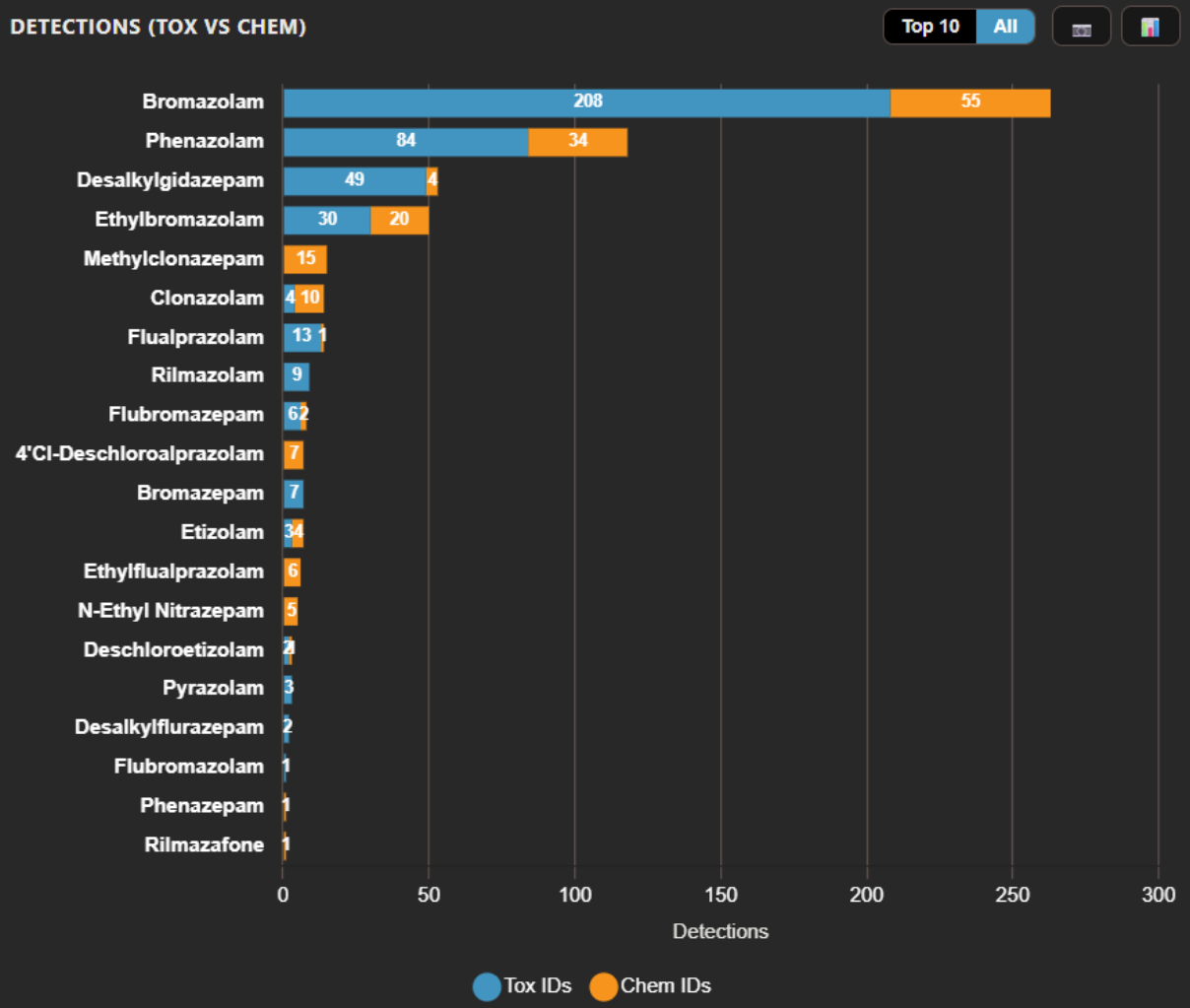
ADULTERANTS – OTHER

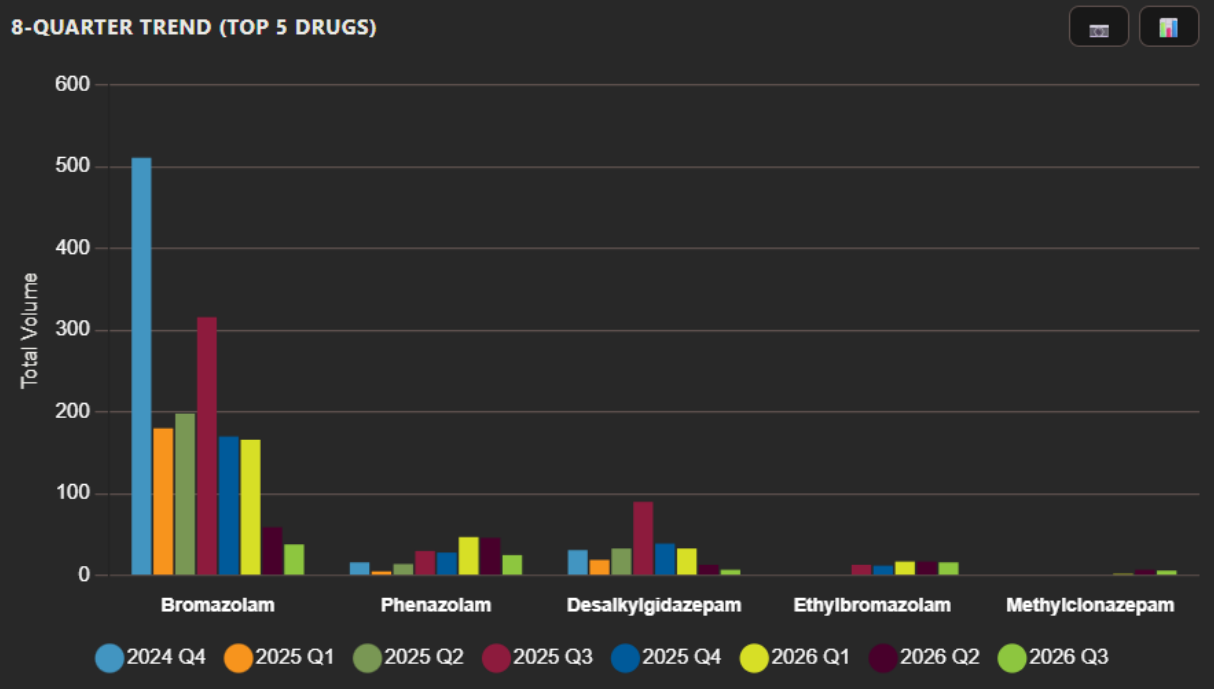


EMERGING DRUG LANDSCAPE PRIOR TO 2026



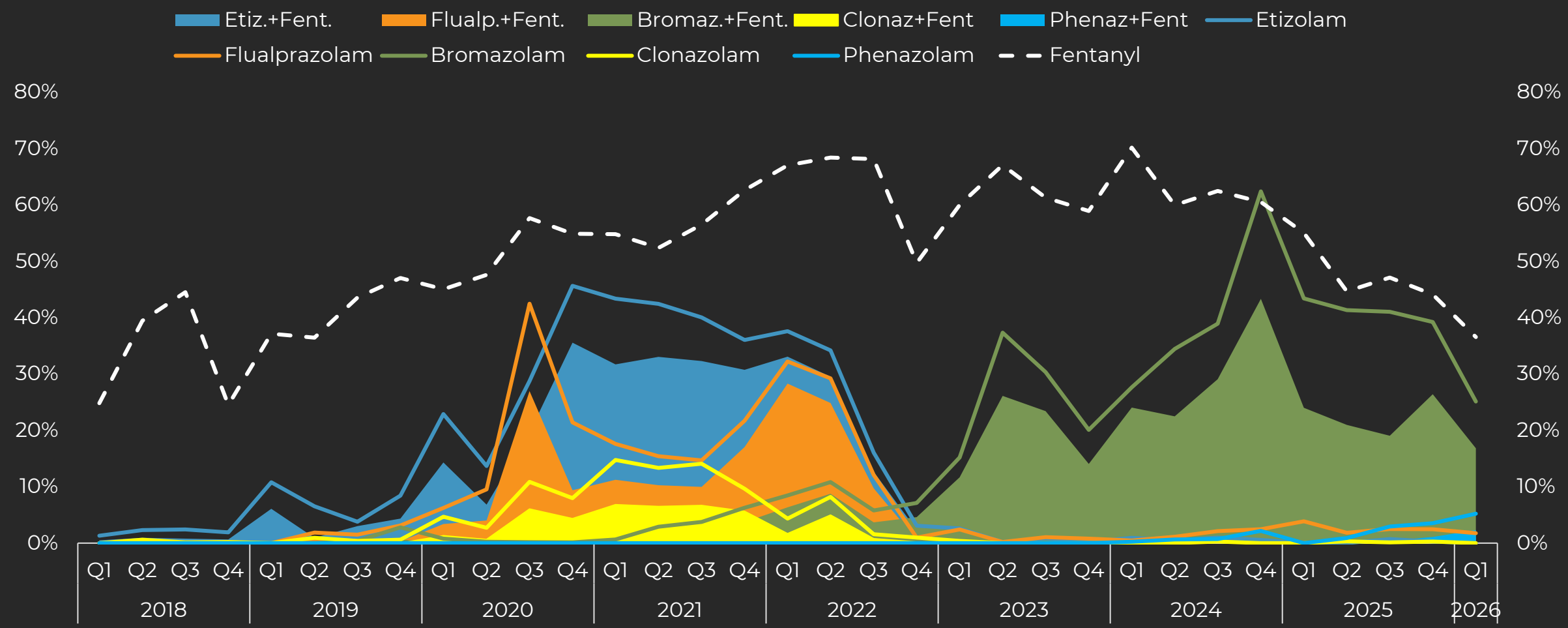
NPS BENZODIAZEPINES – 2026 TOTALS



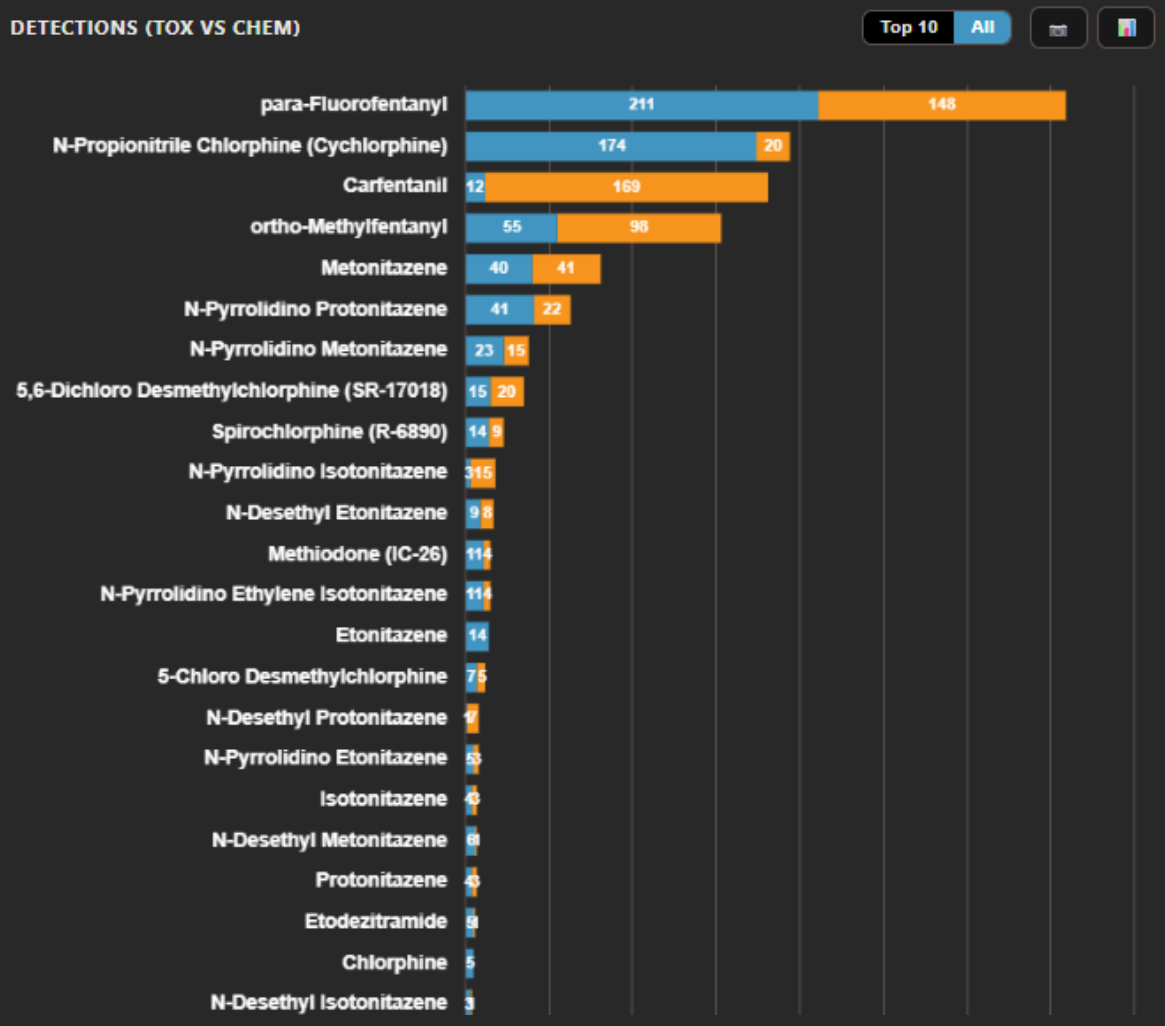


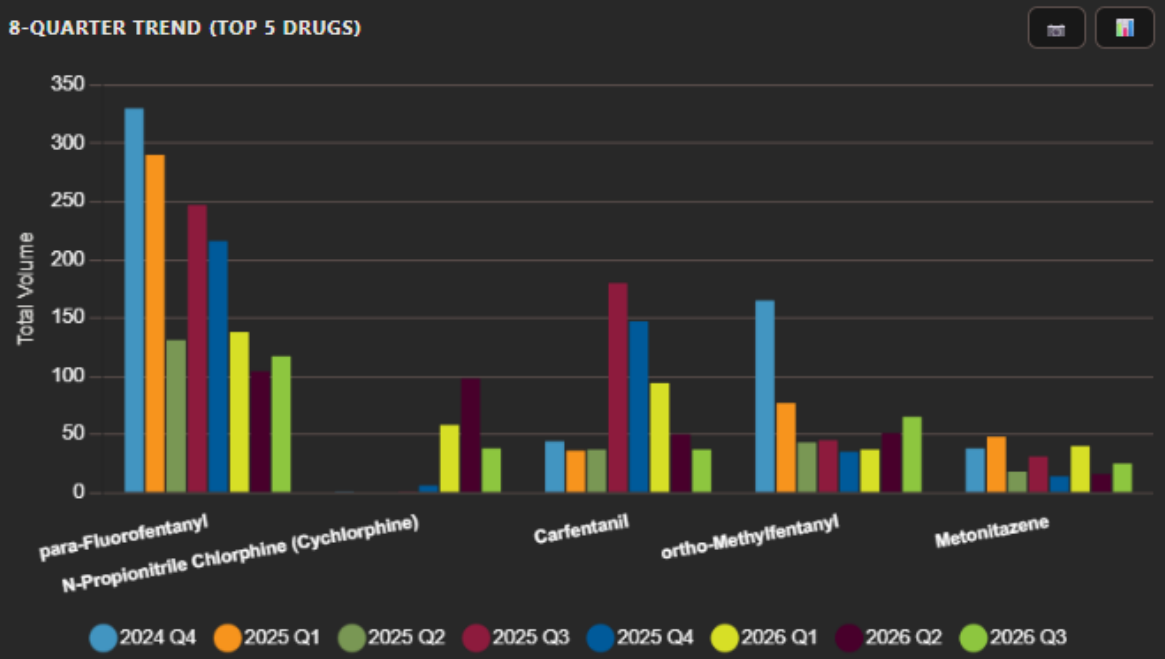
cfsre | NPS DISCOVERY

NPS BENZODIAZEPINES & FENTANYL



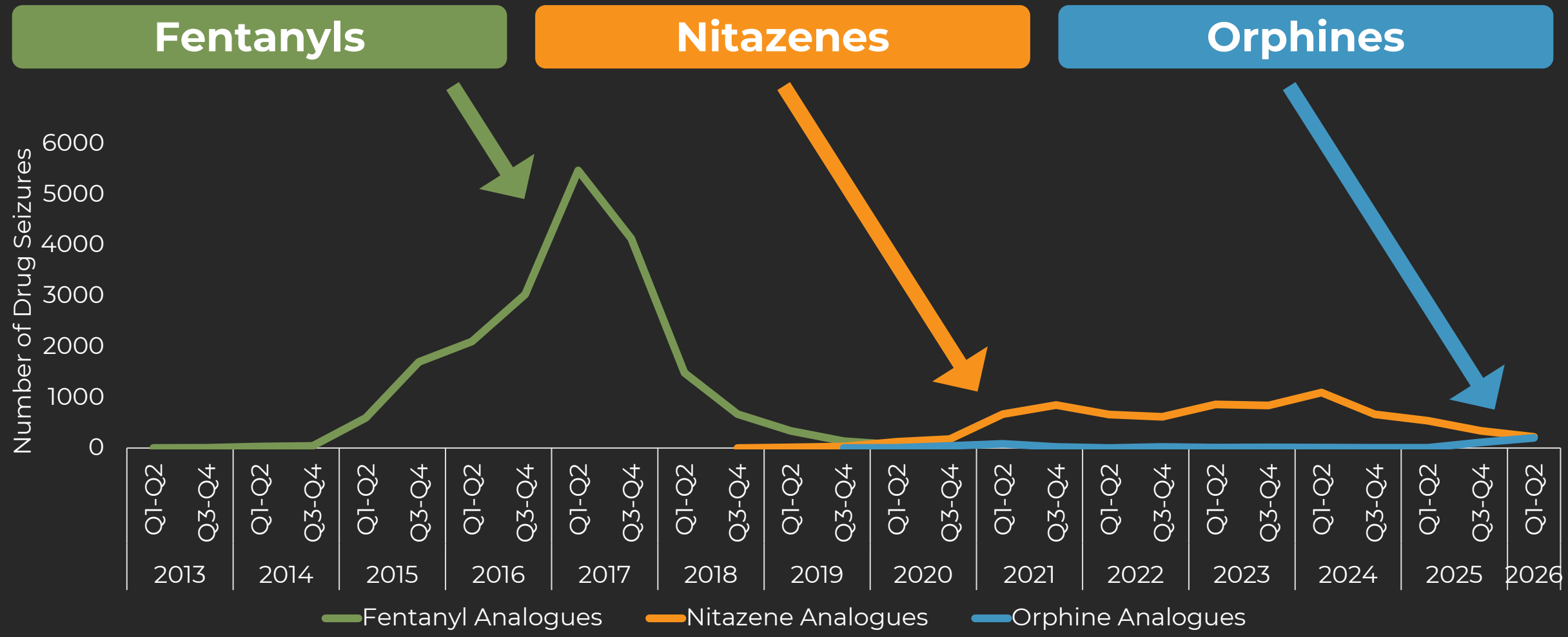
NPS OPIOIDS





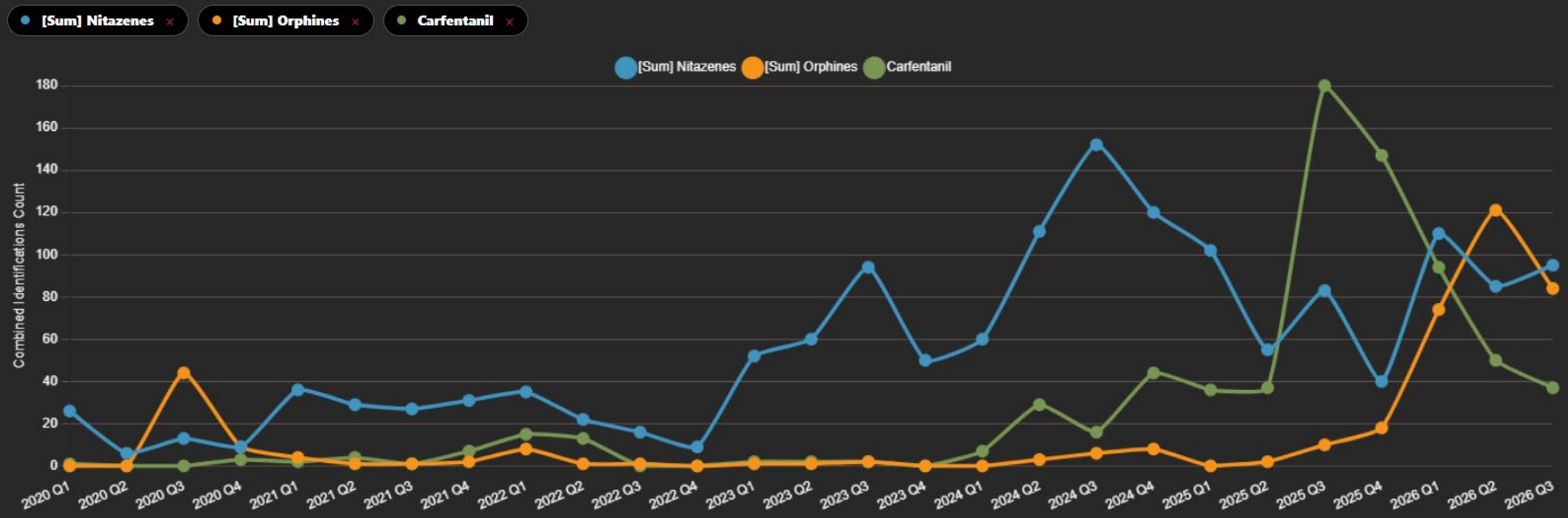
cfsre | NPS DISCOVERY

DISTINCT WAVES OF NOVEL SYNTHETIC OPIOIDS



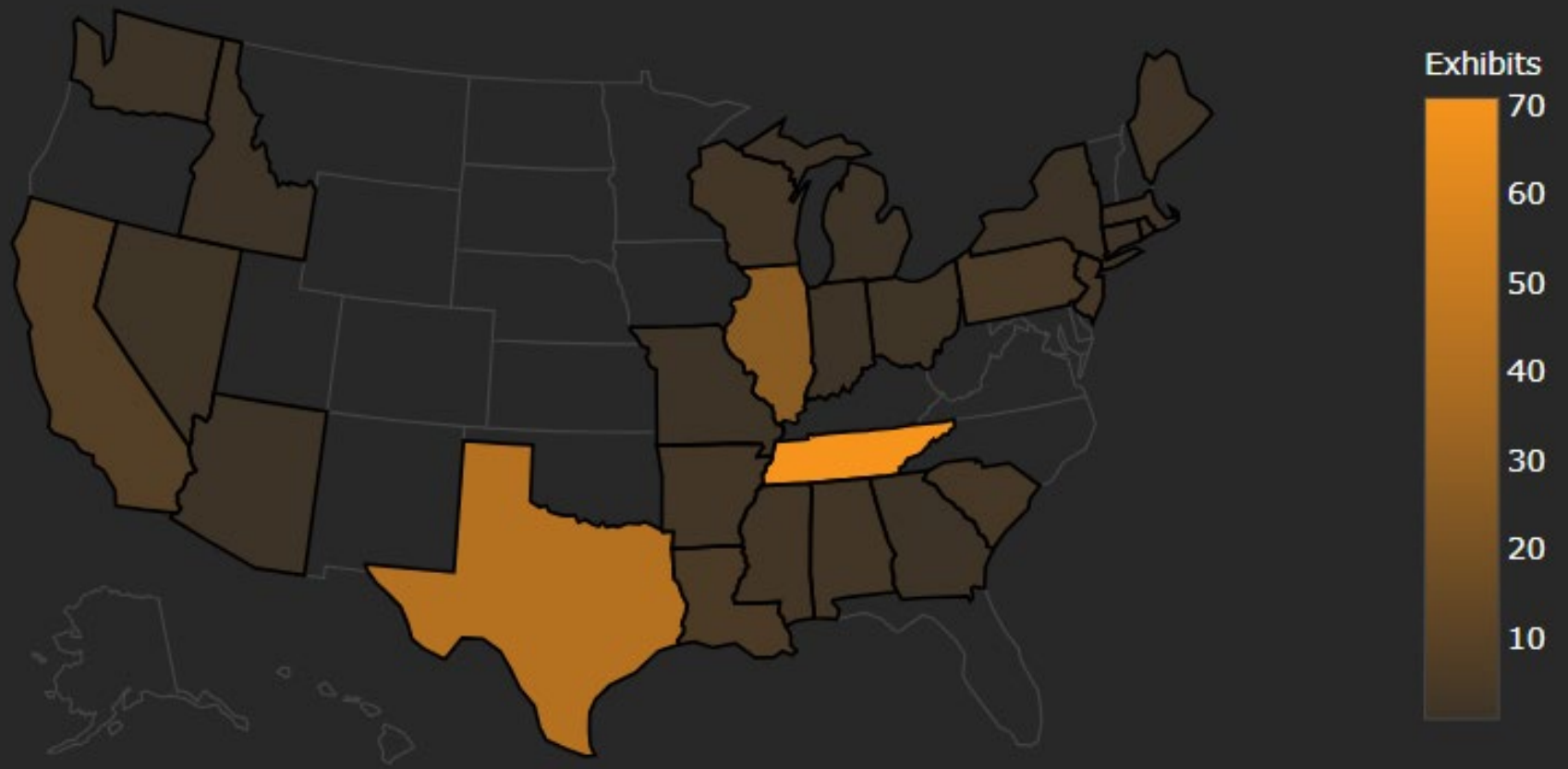
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RECENT TRENDS FOR NEW OPIOIDS



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ORPHINES GEOGRAPHICAL DISTRIBUTION (N=231)



Top States	# Cases
TN	71
TX	43
IL	27
CA	9
PA	5
LA	6
SC	4
AL	3
MS	3
AR	3

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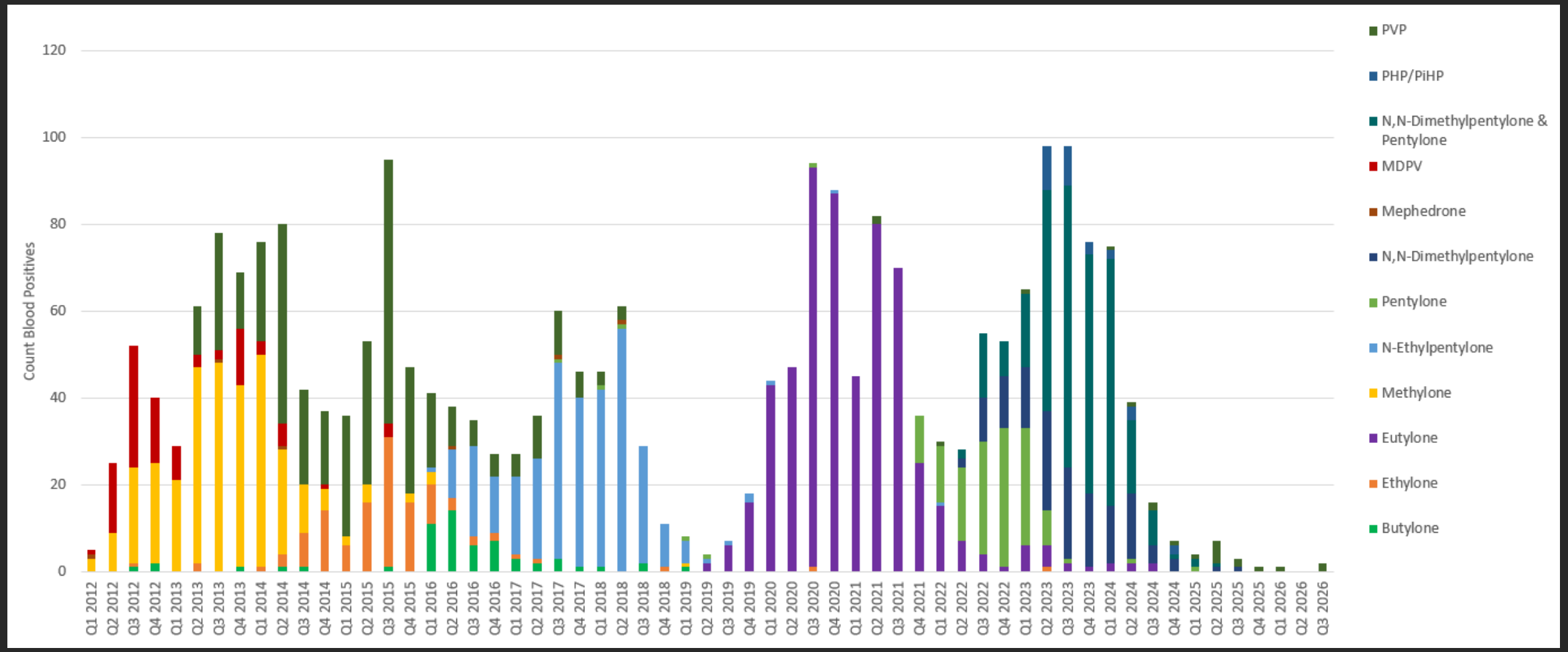
*Note: Death Investigation Case --- *Excludes Brorphine*

ORPHINE CO-POSITIVITY (TOXICOLOGY CASES)

[ROW POSITIVITY]	FENTANYL	COCAINE	METHAMPHETAMINE	NALOXONE	KETAMINE	BROMAZOLAM	ETHYLBROMAZOLAM	PHENAZOLAM	OXYCODONE	MITRAGYNINE
N-PROPIONITRILE CHLORPHINE	77.3%	19.7%	69.7%	34.8%	1.5%	6.1%	3.0%	10.6%	3.0%	7.6%
CHLORPHINE	72.7%	18.2%	72.7%	36.4%	0.0%	9.1%	0.0%	0.0%	18.2%	18.2%
SPIROCHLORPHINE	100.0%	0.0%	66.7%	66.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
5,6-DICHLORO BRORPHINE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
5-CHLORO DESMETHYLCHLORPHINE	100.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
5,6-DICHLORO DESMETHYLCHLORPHINE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

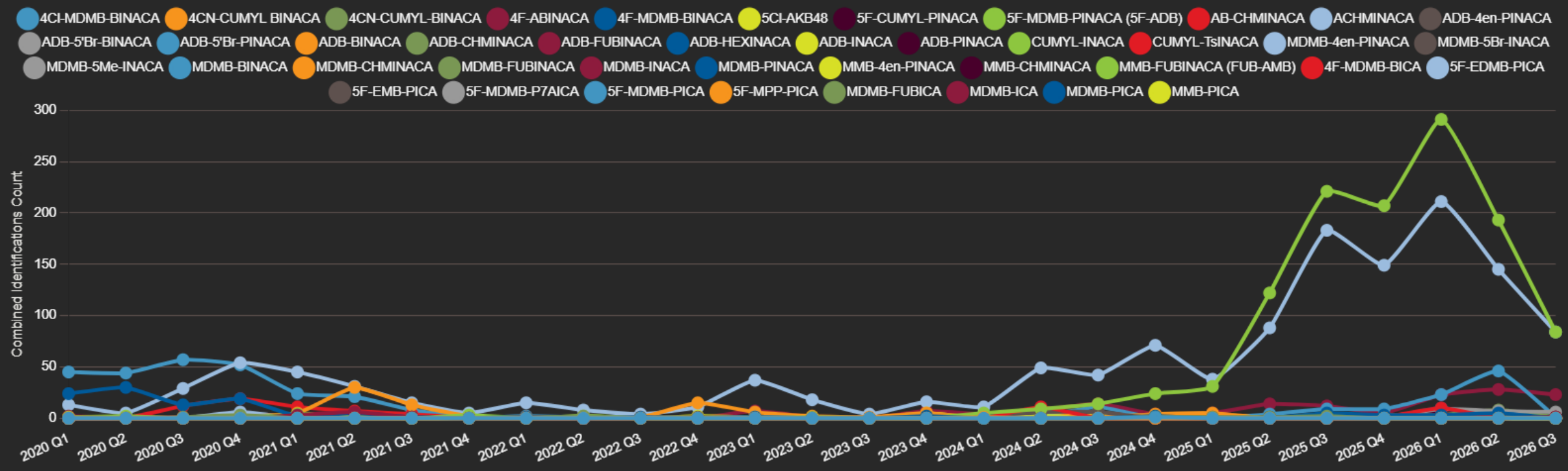
- **Interesting Note:** N-Propionitrile Chlorphine overall positivity with Fentanyl is 36%, but in Texas alone it is 2.4% (n=1) and in Tennessee it is 77.3% (n=51)

NPS STIMULANTS



Source: Papsun (NMS Labs) et al. – SOFT ToxTalk Q4 2026

NOTABLE SYNTHETIC CANNABINOIDS



- 5F-ADB and MDMB-4en-PINACA are #1 and #2

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TIANEPTINE ELIXIRS

- **Expected:**
  - Tianeptine
- **Detected:**
  - Tianeptine
  - MDMB-4en-PINACA
  - ADB-4en-PINACA



CAT'S CLAW

- **Expected:**
  - *Uncaria tomentosa* (mitraphylline, isopteropodine)
- **Detected:**
  - Lidocaine



CANNABINOID VAPE

- **Expected:**
  - Delta-9 THC
- **Detected:**
  - Delta-9 THC
  - Dimethylpentlyone



CANNABINOID VAPE

- **Expected:**
  - Delta-9 THC
- **Detected:**
  - Delta-8 THC
  - MDMB-4en-PINACA



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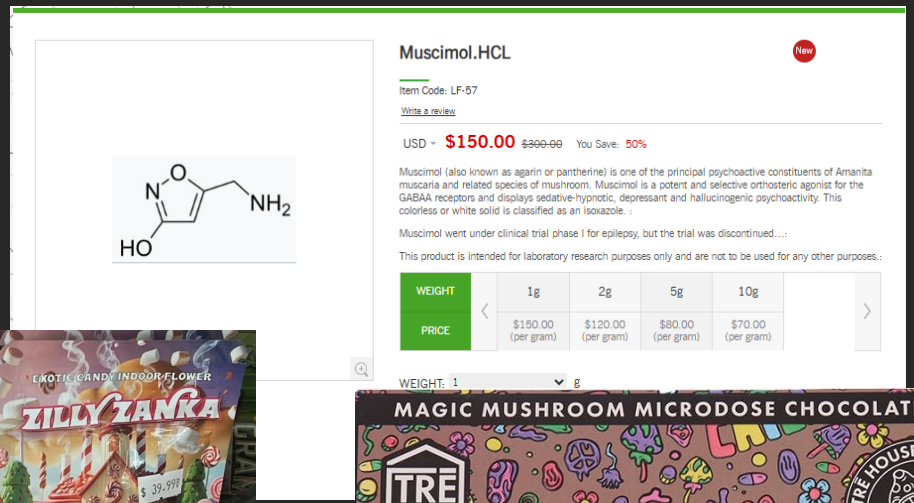
SMOKE SHOPS & THEIR DRUG LANDSCAPE

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SMOKE SHOP DRUGS

- **Plant-Based Substances**
  - Kratom alkaloids
  - Semi-synthetic cannabinoids
  - Kava alkaloids
- **Edibles & Synthetics**
  - Psilocin & 4-AcO-DMT
  - Muscimol
  - Blue Lotus
- **Other Synthetic Drugs**
  - Dihydro-7OH Mitragynine
  - Tianeptine
  - Phenibut
  - Nootropics







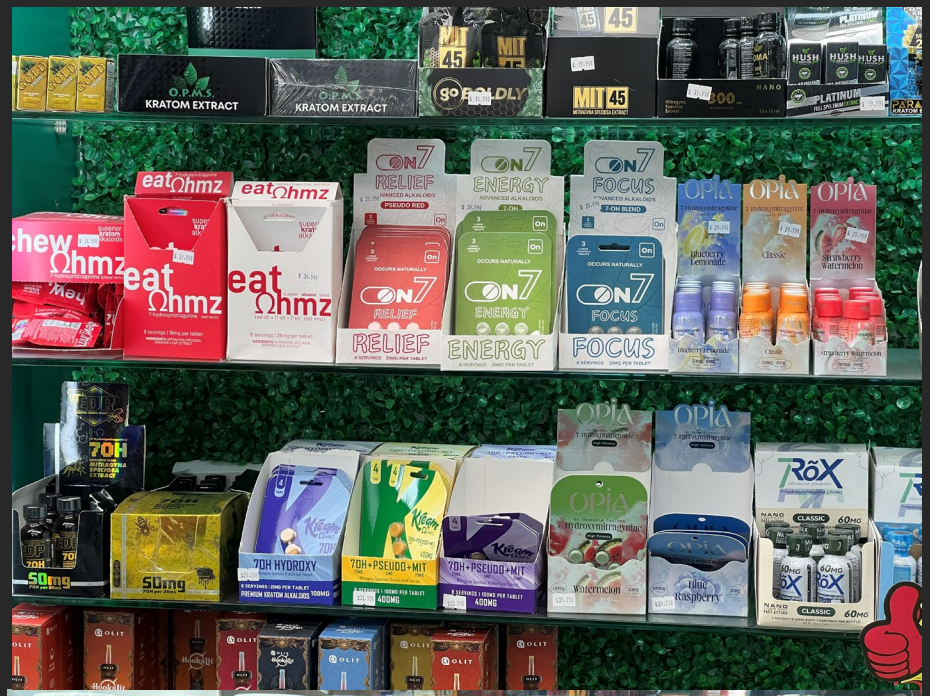


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KRATOM
smoker Destiny
IS EXPANDING
FIND YOUR NEAREST STORE
WHEREVER YOU GO!
CBD
Road Trip
MUSHROOM GUMMIES
green roads
sivan


O.P.M.S
KRATOM EXTRACT
MIT 45
eat Ohmz
ON7
RELIEF
ENERGY
FOCUS
OPIA
RoX
70H HYDROXY
70H+PSEUDO+MIT


750 MIT
CLASSIC RESERVE


MELLOW FELLOW
CREATIVITY
RECOVER
MOTIVATION
INTROVERT
DESIRE
DREAM
EUPHORIA
ZILLY ZANKA
Fruity Pebblez
Cotton Candy
Caramel Marshmallow
SOUR PATCH

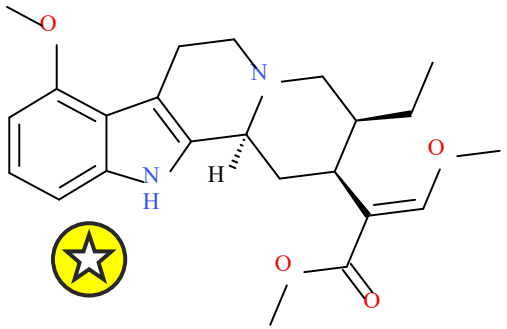

TODAY.
TOMORROW.
Glass & Papers
Vapes & Botanicals

KRATOM & KRATOM ALKALOIDS

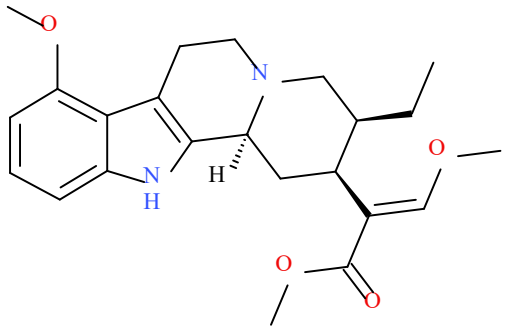
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MITRAGYNINE & RELATED ALKALOIDS

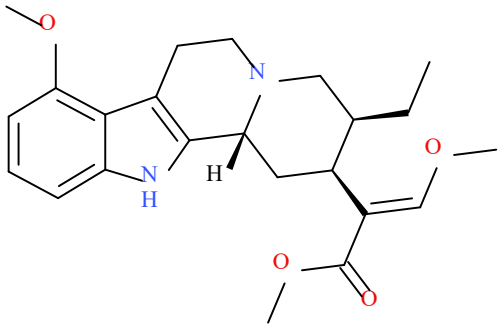
Mitragynine (MG)



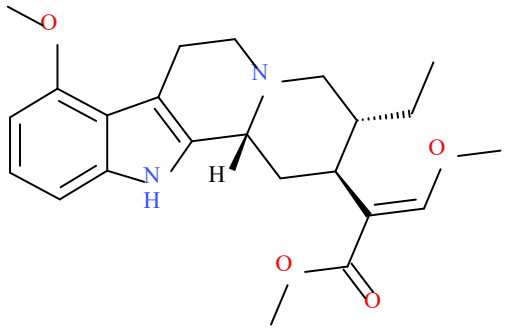
Speciogynine



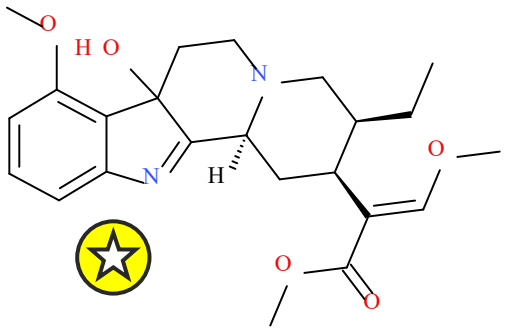
Speciociliatine



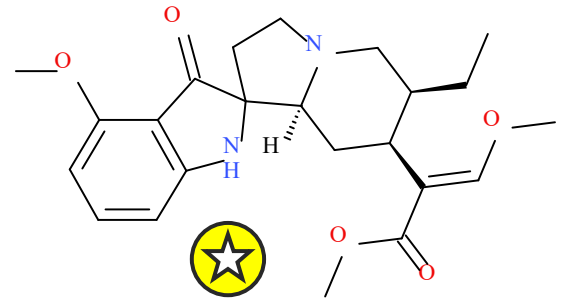
Mitraciliatine



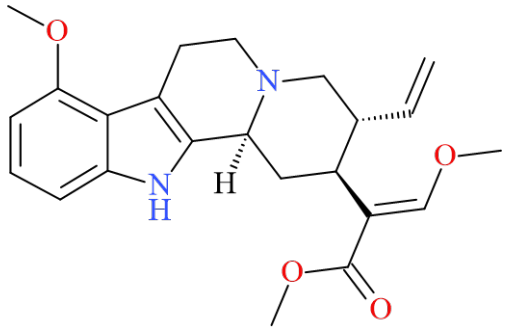
7-Hydroxy Mitragynine (7OH-MG)



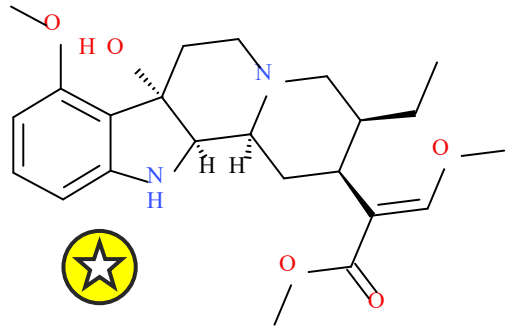
Mitragynine Pseudoindoxyl (MP)



Paynantheine



Dihydro-7-Hydroxy Mitragynine (DH7OH-MG) (or MGM-15)



PRIOR LEGAL STATUS OF KRATOM & 7OH

FEDERALLY

NATIONAL ARCHIVES

FEDERAL REGISTER

The Daily Journal of the United States Government

Proposed Rule

Withdrawal of Notice of Intent to Temporarily Place Mitragynine and 7-Hydroxymitragynine Into Schedule I

A Proposed Rule by the Drug Enforcement Administration on 10/13/2016

PUBLISHED DOCUMENT: 2016-24659 (81 FR 70652)

PDF

Document Details

Document Dates

Table of Contents

DOCUMENT HEADINGS

Department of Justice
Drug Enforcement Administration
21 CFR Part 1308
[Docket No. DEA-442W]

AGENCY:

Drug Enforcement Administration, Department of Justice.

FDA NEWS RELEASE

FDA Takes Steps to Restrict 7-OH Opioid Products Threatening American Consumers

Agency alerts health care professionals and consumers of 7-hydroxymitragynine risks

For Immediate Release: July 29, 2025

The U.S. Food and Drug Administration today is taking a bold step to protect Americans from dangerous, illegal opioids by recommending a scheduling action to control certain 7-hydroxymitragynine (also known as 7-OH) products under the Controlled Substances Act (CSA).

The FDA is specifically targeting 7-OH, a concentrated byproduct of the kratom plant; it is not focused on natural kratom leaf products. 7-OH is increasingly recognized as having potential for abuse because of its ability to bind to opioid receptors. The FDA is releasing a new report to educate the public about the health concerns of 7-OH and its distinction from the kratom plant leaf.

"Today, we're taking action on 7-OH as a critical step in the fight against opioid addiction," **said HHS Secretary Robert F. Kennedy, Jr.** "We will protect the health of our nation's youth as we advance our mission to Make America Healthy Again."

STATE/LOCAL – FLORIDA

OFFICE OF ATTORNEY GENERAL
JAMES UTHMEIER
SAFE ★ STRONG ★ FREE

Contact Us
TOLL FREE: 1-866-9-NO-SCAM

FILE COMPLAINT

Select Language

Home › News Releases › Attorney General James Uthmeier Files Emergency Rule Immediately Rem
Dangerous 7

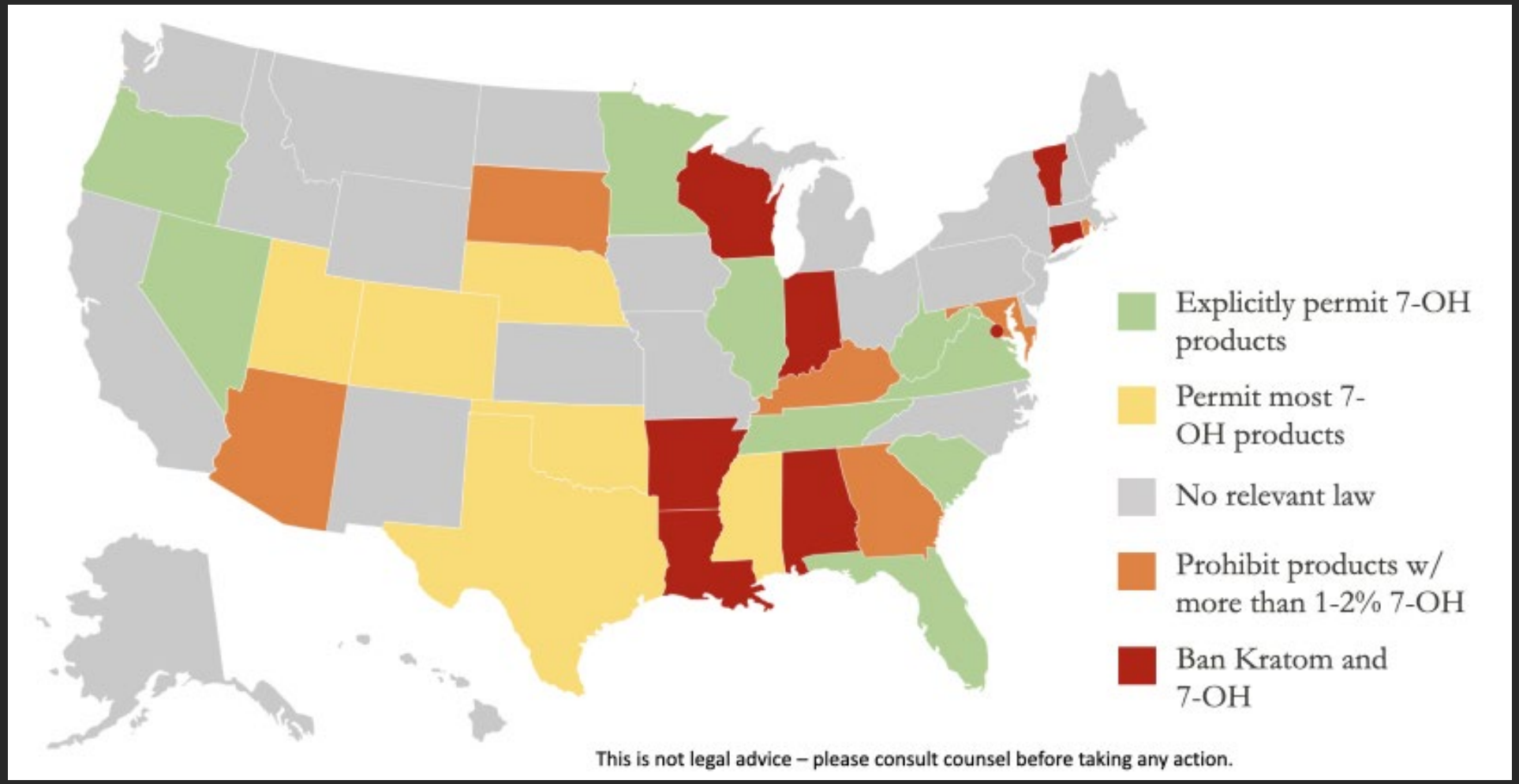
ATTORNEY GENERAL JAMES UTHMEIER FILES EMERGENCY RULE; IMMEDIATELY REMOVING DANGEROUS 7-OH FROM STORE SHELVES

Release Date Aug 13, 2025
Contact Communications
Phone (850) 245-0150



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LEGAL STATUS OF 7OH



Source: https://hartsupporter.com/legality-by-state/

PROBLEMS WITH 7OH LEGISLATIVE LANGUAGE

The Synthetic Kratom & 7-Hydroxymitragynine (7-OH) Control Act

DECEMBER 15, 2025 09:45 AM TO ALL HOUSE MEMBERS



(ix) Any material, compound, mixture or preparation that contains 7-hydroxymitragynine in a concentration equal to or exceeding 2% of the total alkaloid content or 1 milligram per recommended serving size, or any synthetic, semi-synthetic or chemically manipulated form of mitragynine, 7-hydroxymitragynine, mitragynine pseudoindoxyl or any other synthetic, semi-synthetic or chemically manipulated alkaloid, metabolite, derivative or analogue of the Mitragyna speciosa plant.

* * *

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LEGAL STATUS OF KRATOM ALKALOIDS (OCT. 2026)

7OH & PSEUDO

Schedules of Controlled Substances: Temporary Placement of 7-Hydroxymitragynine and Mitragynine Pseudoindoxyl Above a Specified Threshold in Schedule I

A Proposed Rule by the Drug Enforcement Administration on 10/14/2026

The substances [7-hydroxymitragynine] and [mitragynine pseudoindoxyl] be controlled in schedule I [pursuant to 21 U.S.C. 811(h)] when either substance alone, or their combined amount if both present, is:

(A) Above a specified threshold concentration, that is, greater than 1 mg per gram (for solid powders, encapsulated material, or other solid forms) or greater than 1 mg per milliliter (for liquid preparations), OR

(B) The mass of mitragynine present divided by the mass of [7-hydroxymitragynine], or [mitragynine pseudoindoxyl], or the combined amount of [7-hydroxymitragynine] and [mitragynine pseudoindoxyl] if both present, is less than 100.[5]

MGM-15 & MGM-16

Schedules of Controlled Substances: Temporary Placement of MGM-15 and MGM-16 in Schedule I

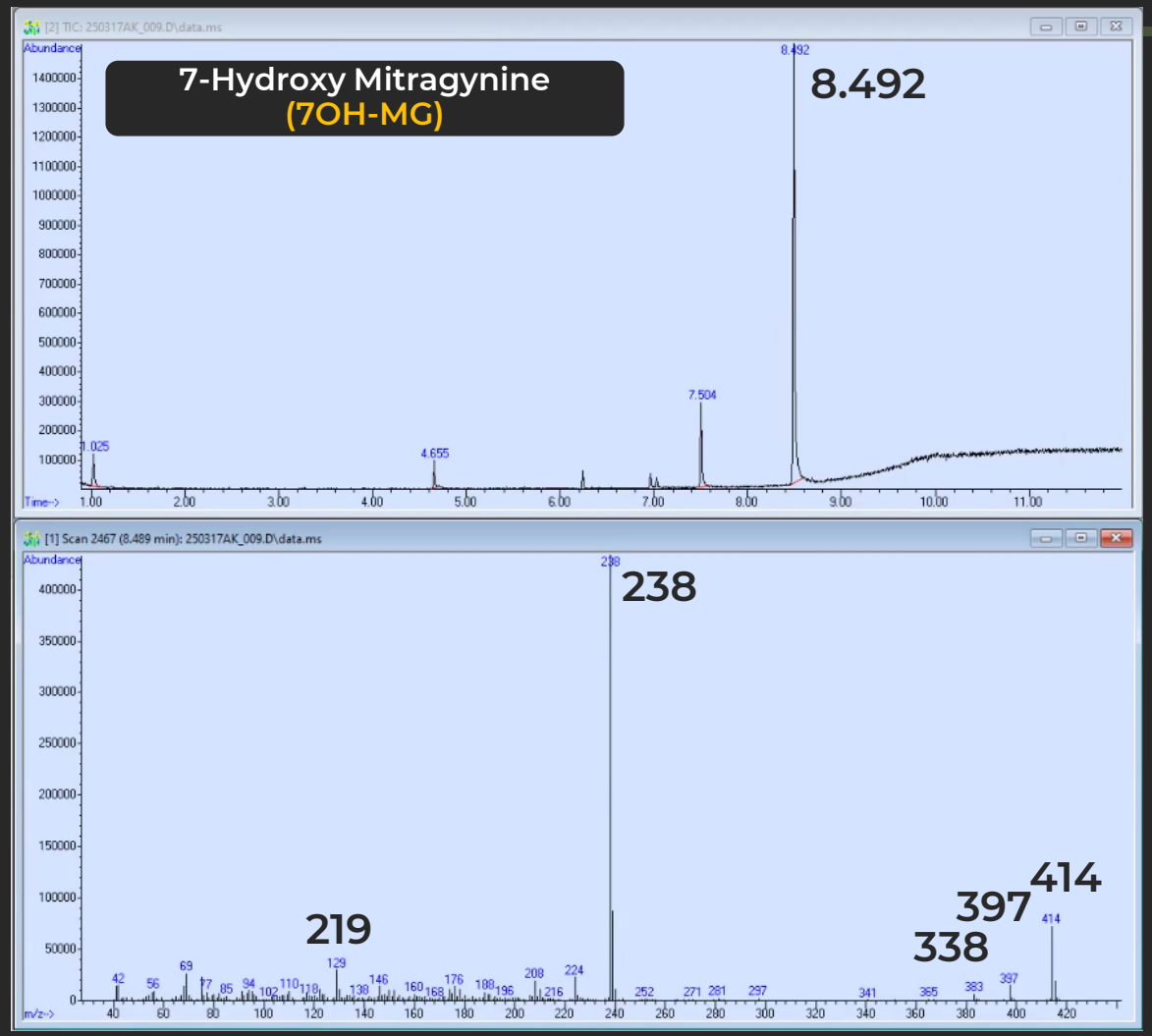
A Proposed Rule by the Drug Enforcement Administration on 10/14/2026

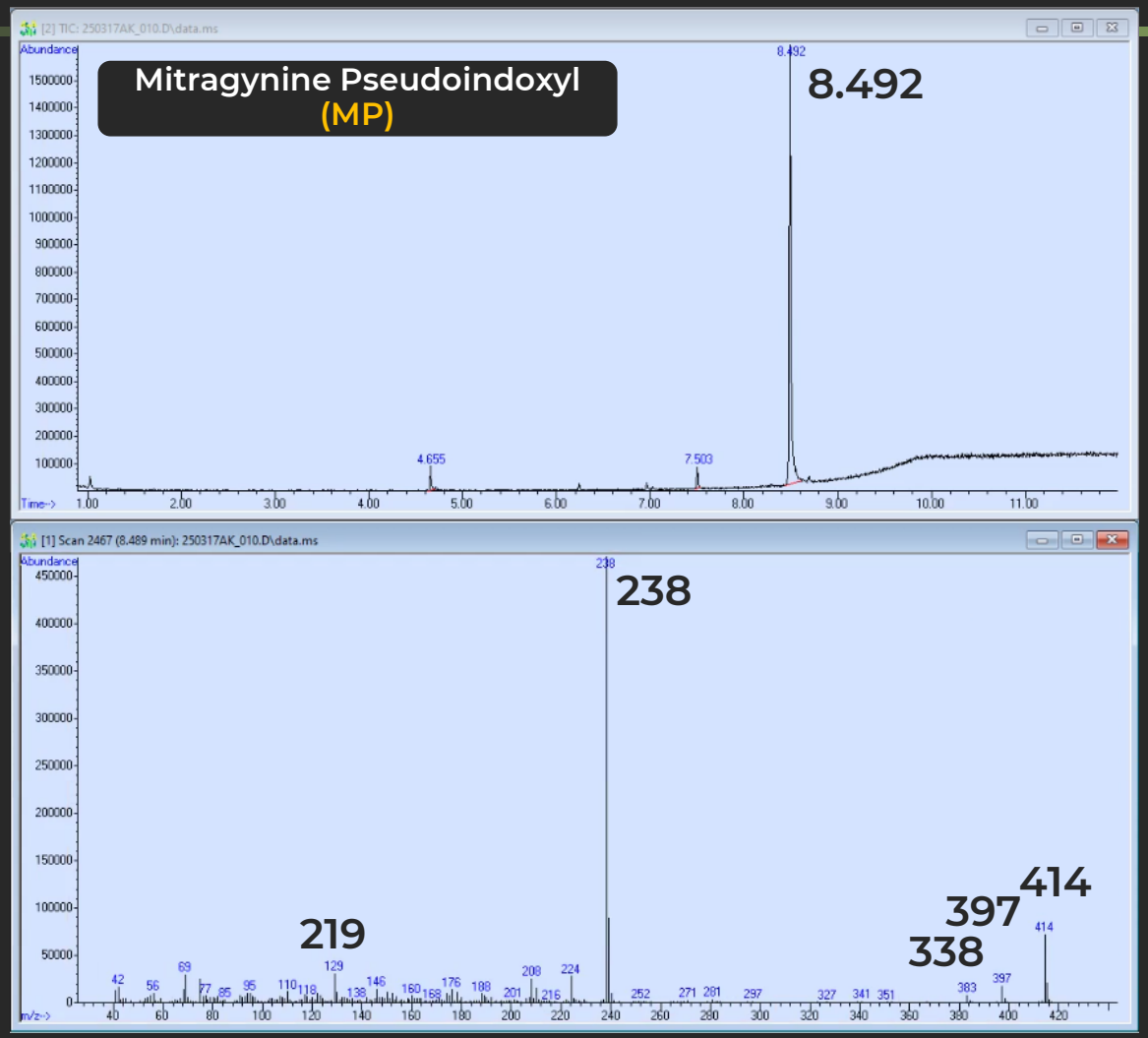
f Justice.

suing this notice of intent to publish a temporary order
bstances (MGM-15 and MGM-16), including their

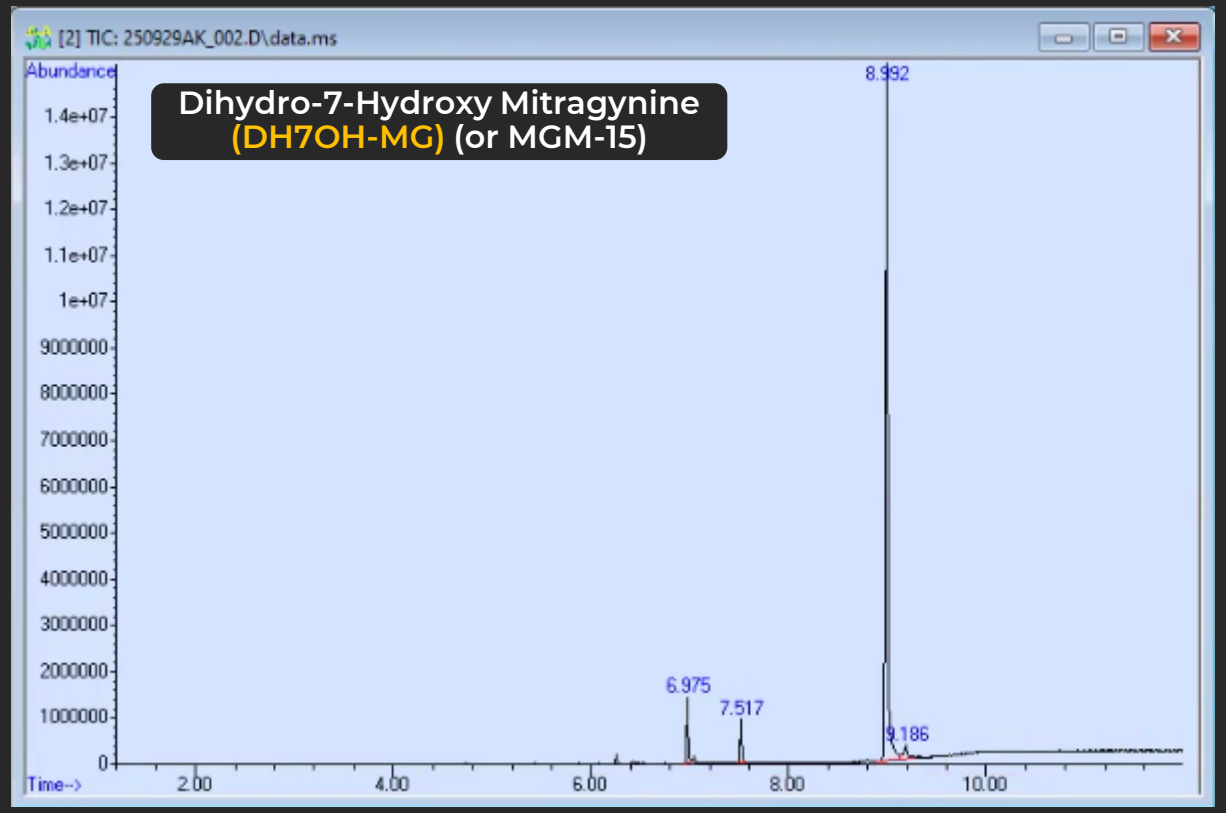
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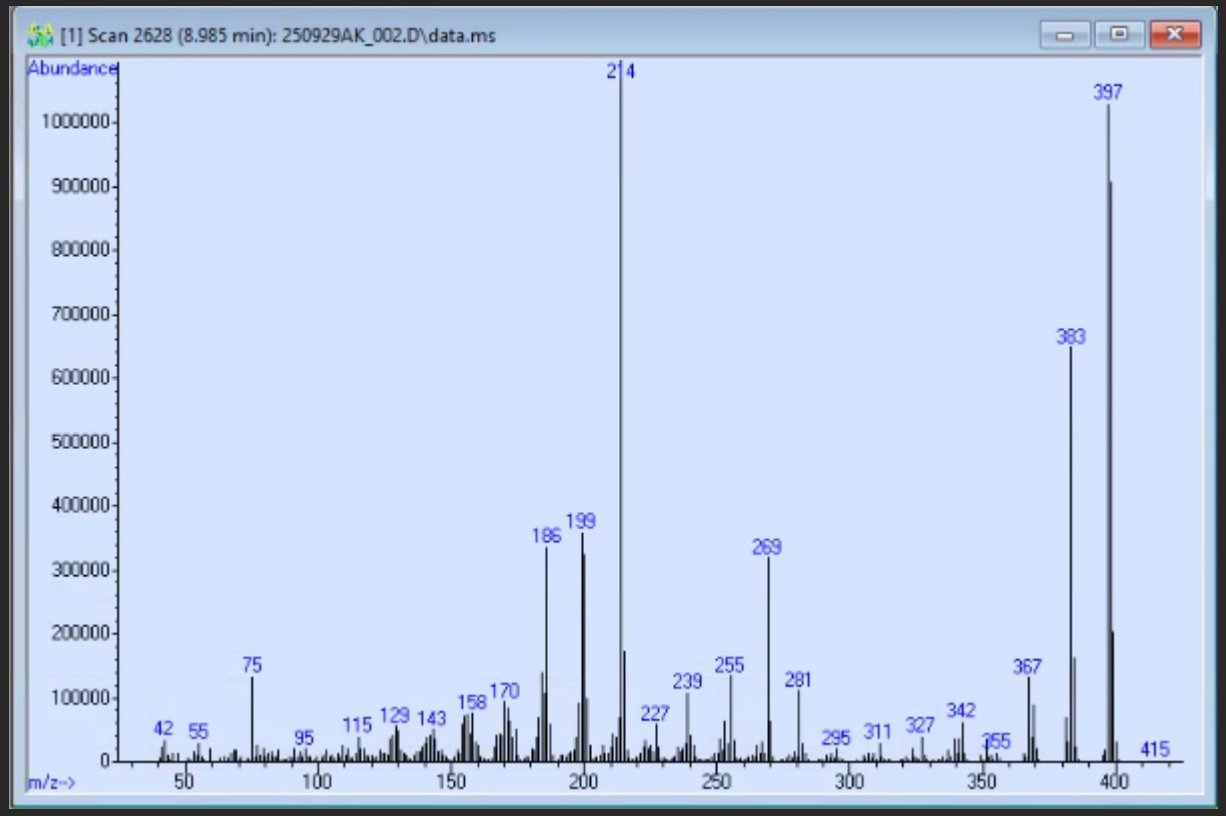
GC-MS


7-Hydroxy Mitragynine
(7OH-MG)
8.492
7.504
4.655
1.025
238
219
414
397
338


Mitragynine Pseudoindoxyl
(MP)
8.492
4.655
7.503
238
219
414
397
338

GC-MS



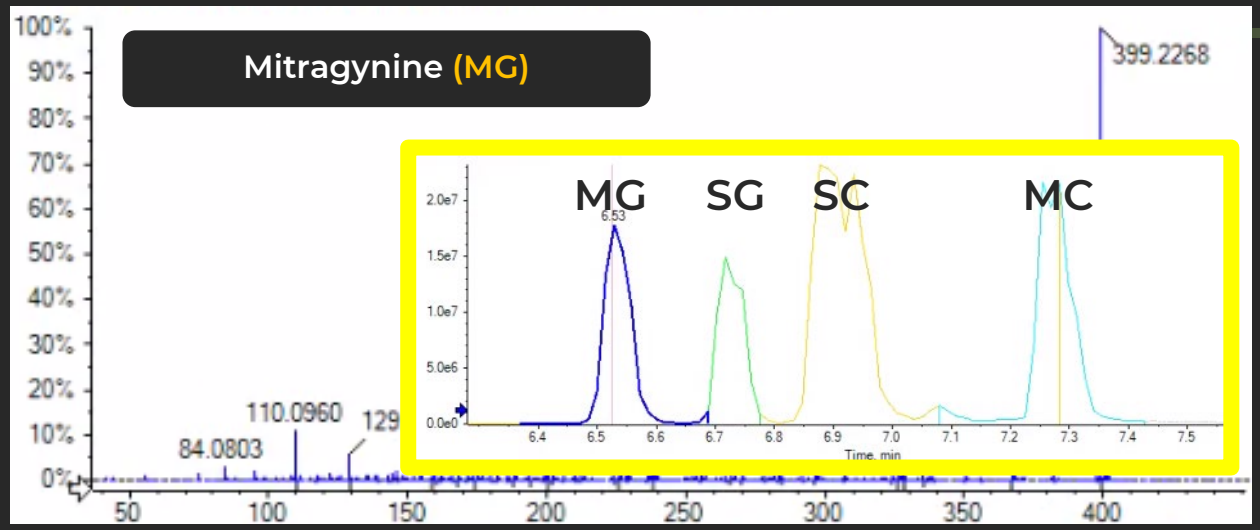


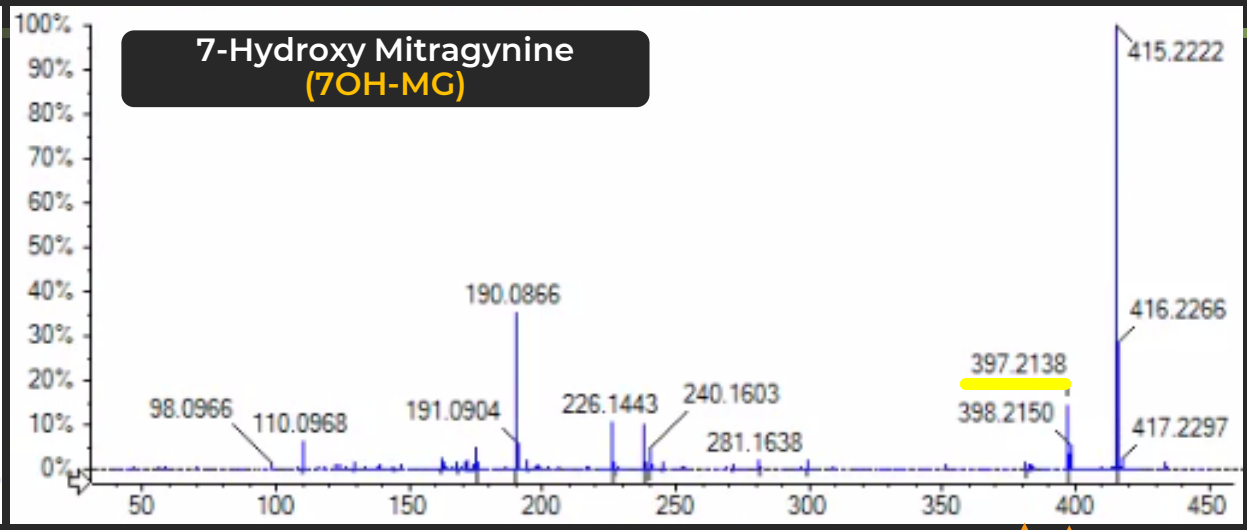
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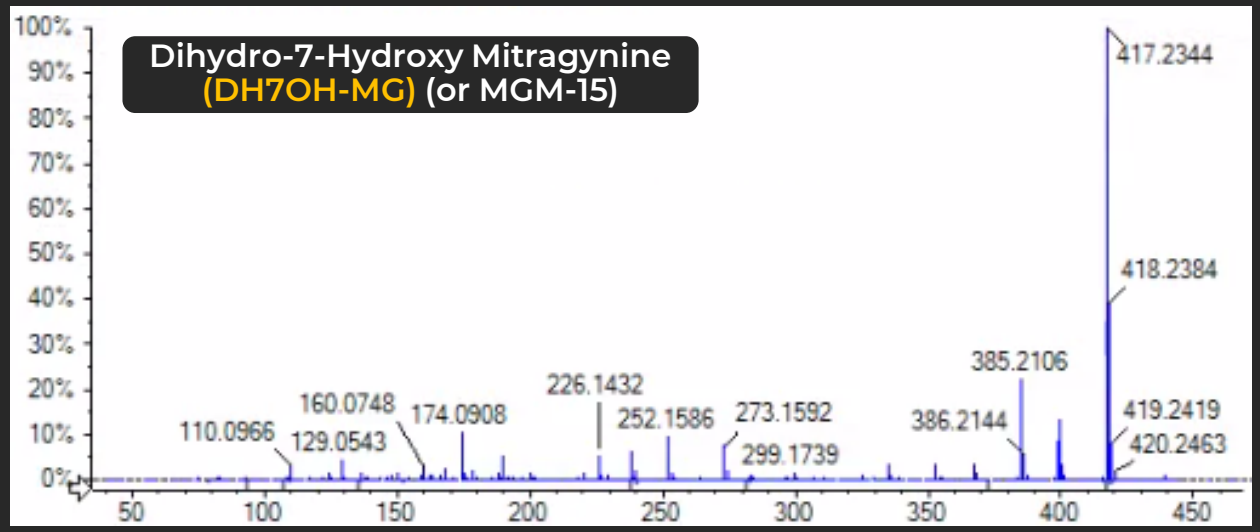
Rank	Name	Ref No.	MW	Qual
1	MITRAGYNINE	387	398	99

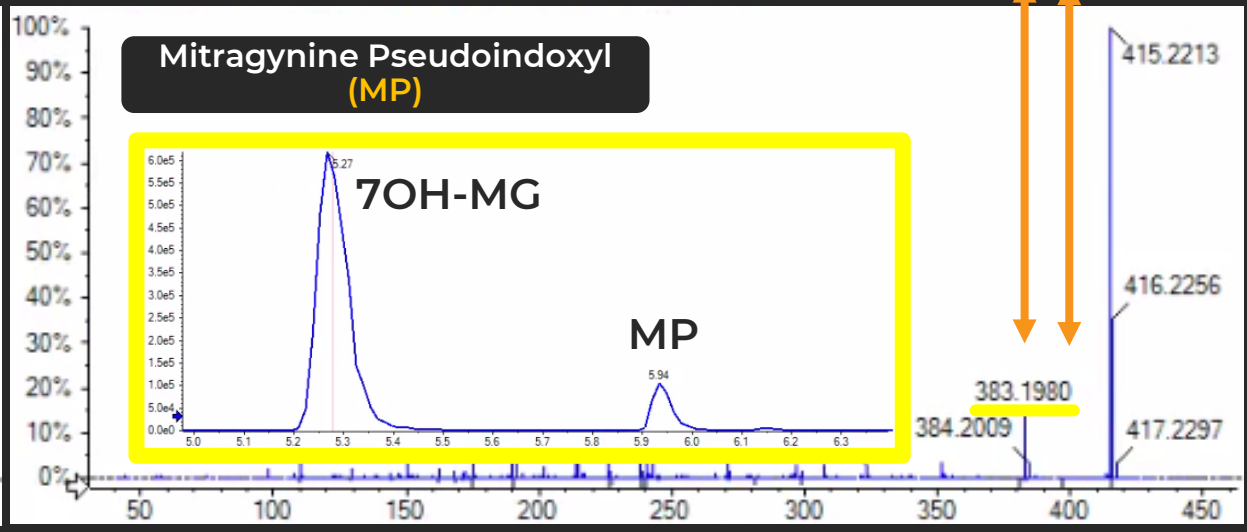
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MASS SPEC DATA & CHROMATOGRAPHY

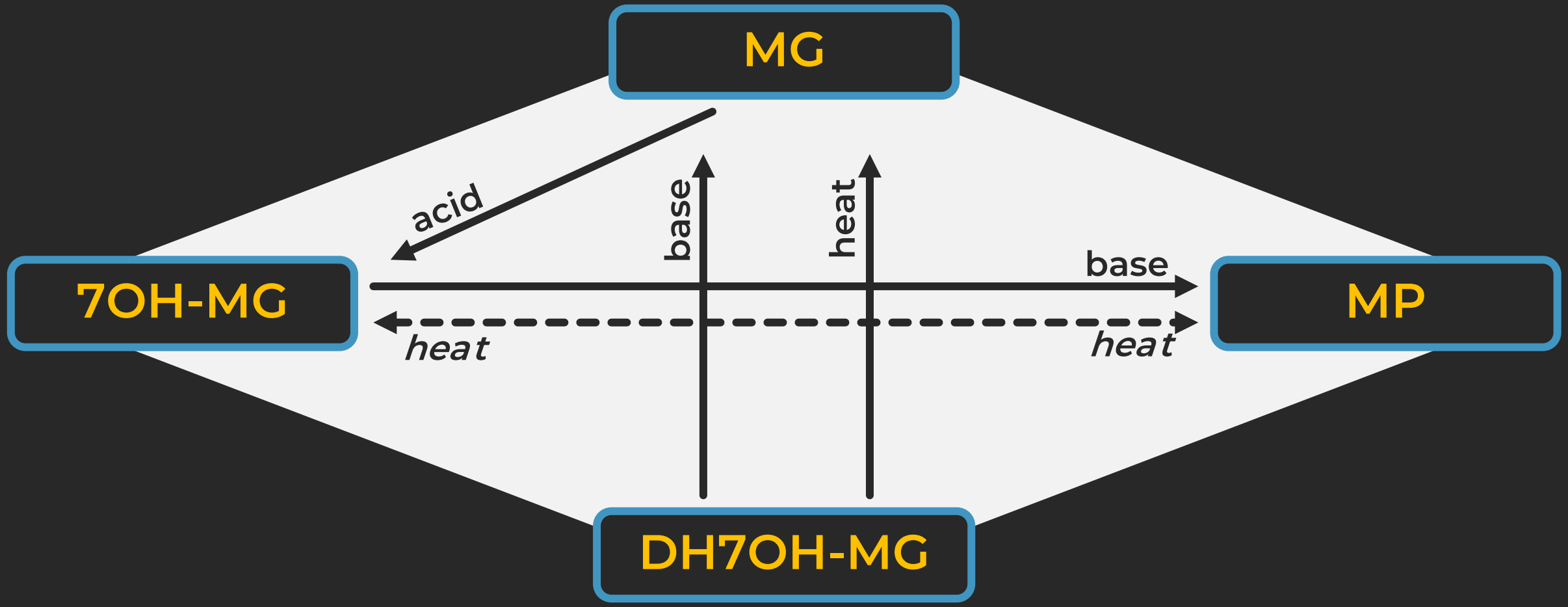






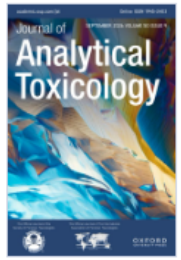


ANALYTICAL CHALLENGES FOR LABS



PUBLICATION

Journal of
Analytical Toxicology



Volume 50, Issue 9
September 2026
(In Progress)

Article Contents

Abstract
Introduction
Materials and methods
Results and discussion

JOURNAL ARTICLE

Quantification of kratom alkaloids mitragynine, 7-hydroxy mitragynine, mitragynine pseudoindoxyl, and dihydro-7-hydroxy mitragynine in forensic casework and medicolegal death investigations

Lauren K Eccarius, Sara E Walton, Donna M Papsun, Barry K Logan, Alex J Krotulski

Journal of Analytical Toxicology, Volume 50, Issue 9, September 2026, bkag090,
https://doi.org/10.1093/jat/bkag090
Published: 15 October 2026 **Article history** ▾

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Abstract

Mitragynine (MG) is the primary psychoactive component of the kratom plant (*Mitragyna speciosa*). 7-Hydroxy mitragynine (7OH-MG) is found naturally in the

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EMERGENCE OF KRATOM & ALKALOIDS IN U.S.

1990s

2000s

-Kratom enters markets



2010s

-Rise of smoke shops



2023

-"Kratom" diversity



2024

-7OH-MG increasing popularity



2025

-"Pseudo shift" to MP

-DH-7OH-MG (MGM-15) emergence



2026

-New derivates

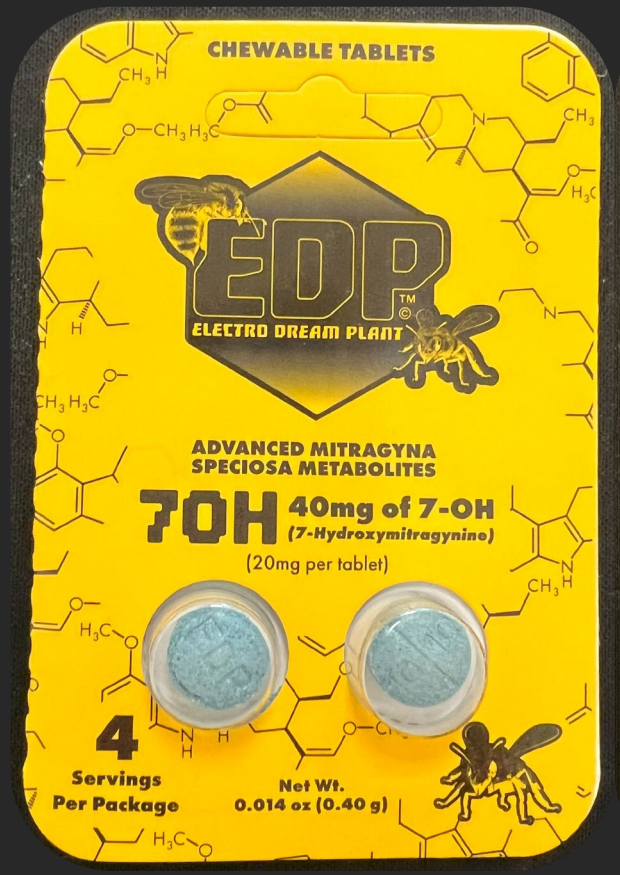
-Federal bans



SMOKE SHOPS & COMMERCIAL PRODUCTS



FIRST GENERATION “7OH” PRODUCTS



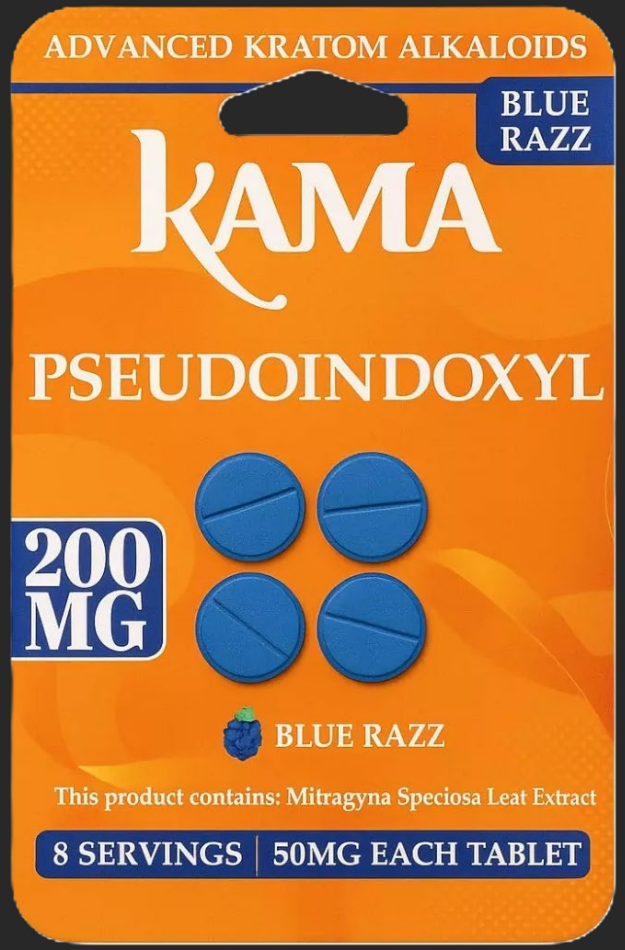


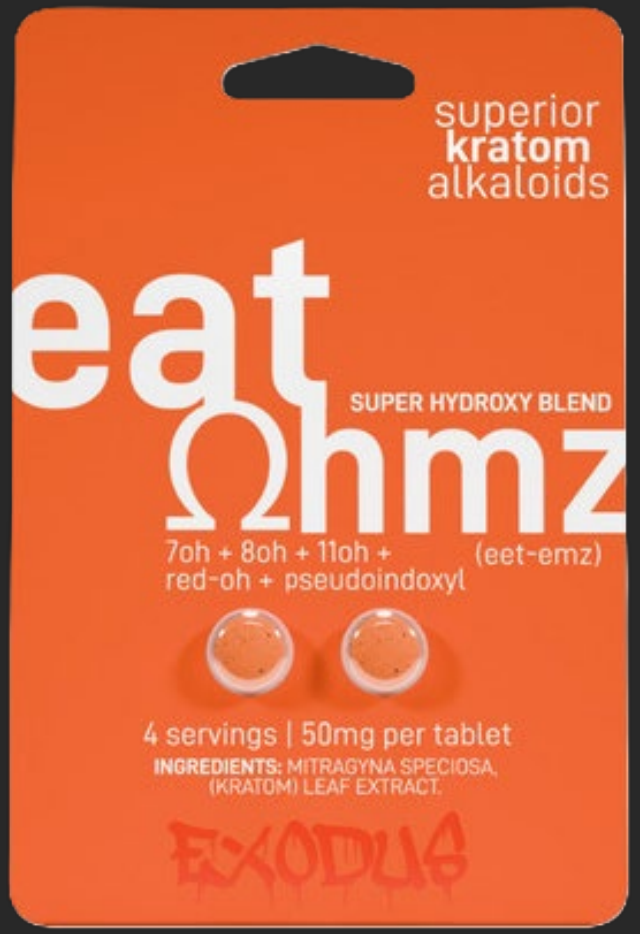




SECOND GENERATION “7OH+” PRODUCTS









THIRD GENERATION “MGM-15” / “DHM” PRODUCTS



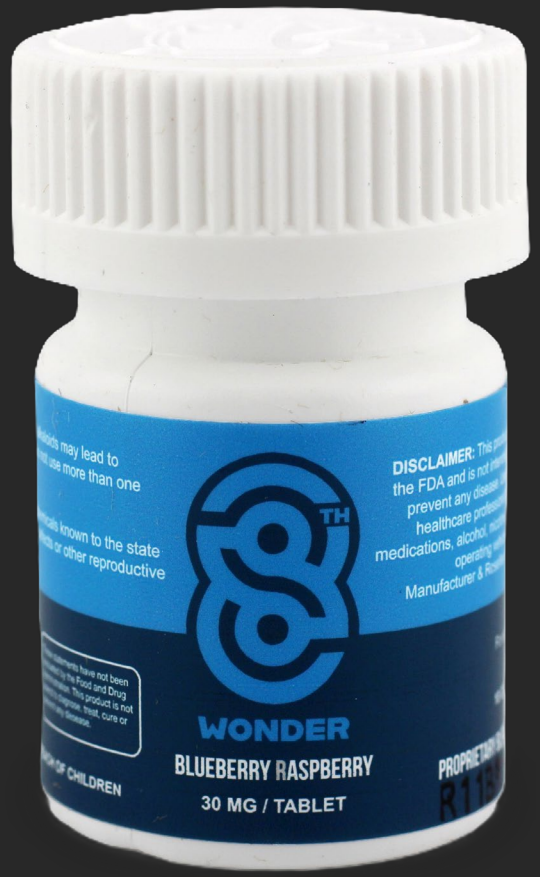




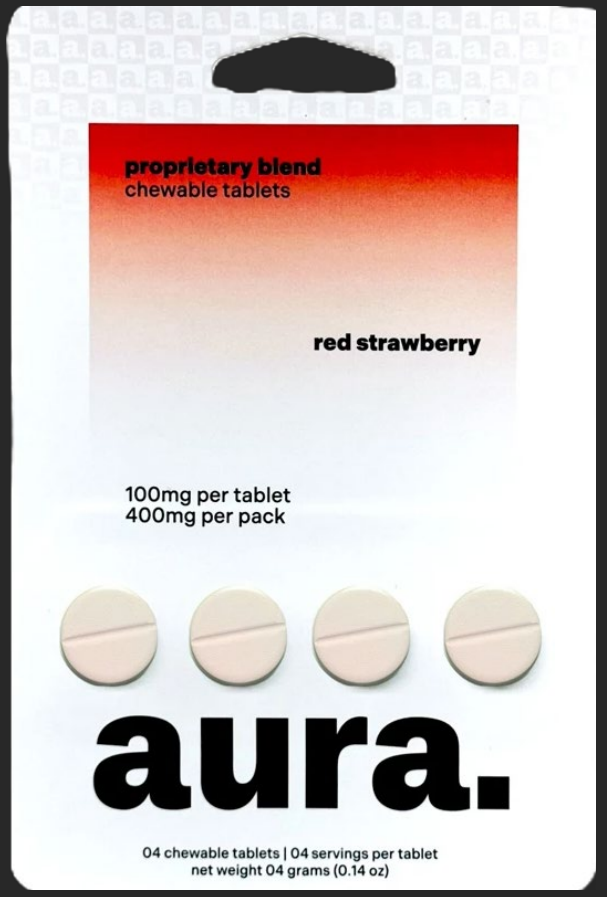


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FOURTH GENERATION "PROPRIETARY BLENDS"



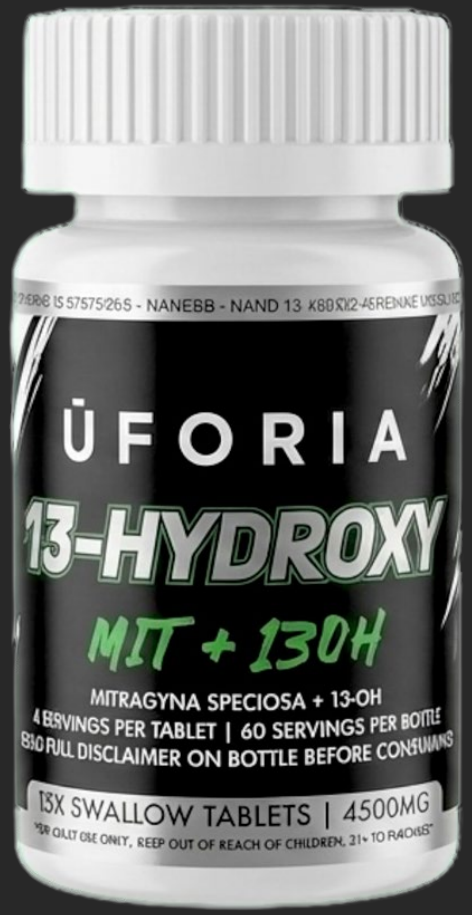






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FIFTH GENERATION???







QUANTITATIVE TESTING OF PRODUCTS

Product (Tablets)	Servings / Dose	Advertised (mg/tablet)			Actual (mg/tablet)		
Analytes ▸	---	MG	7OH	MP	MG	7OH	MP
OPiA Wild Berry	8 / half tablet	-		20	0.15	13.7	1.4
Kream ΩHMZ	8 / half tablet	70	25	5	28.9	21.2	1.1
eat Ωhmz (Red)	8 / half tablet	-	18	-	-	19.6	0.3
eat Ωhmz (White)	8 / half tablet	-		25	-	21.6	0.3
edp 7Oh	6 / half tablet	-	20	-	0.7	19.2	1.4



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DIHYDRO-7-HYDROXY MITRAGYNINE

PRODUCT	ADVERTISED	DETECTED
Unlabeled	“MGM-15 RitPure”	Dihydro-7-Hydroxy Mitragynine
Unlabeled	“MG-M15”	Dihydro-7-Hydroxy Mitragynine
8 Wonder	Proprietary Blend (“DHM”)	Dihydro-7-Hydroxy Mitragynine & Mitragynine
7 Stax Mitragynine	80 mg, Nano Tech Mitragynine	Dihydro-7-Hydroxy Mitragynine & Mitragynine

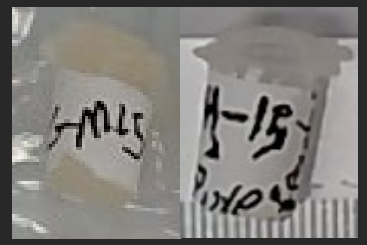




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DH-7OH-MG DRUG PRODUCTS





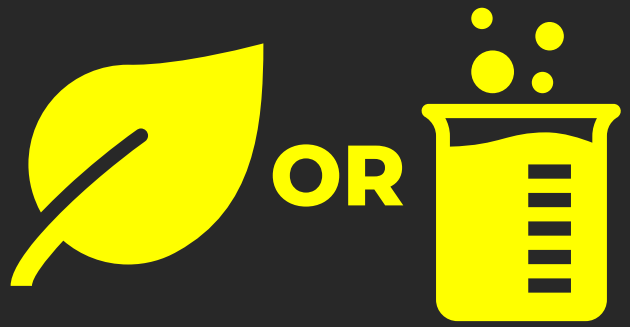








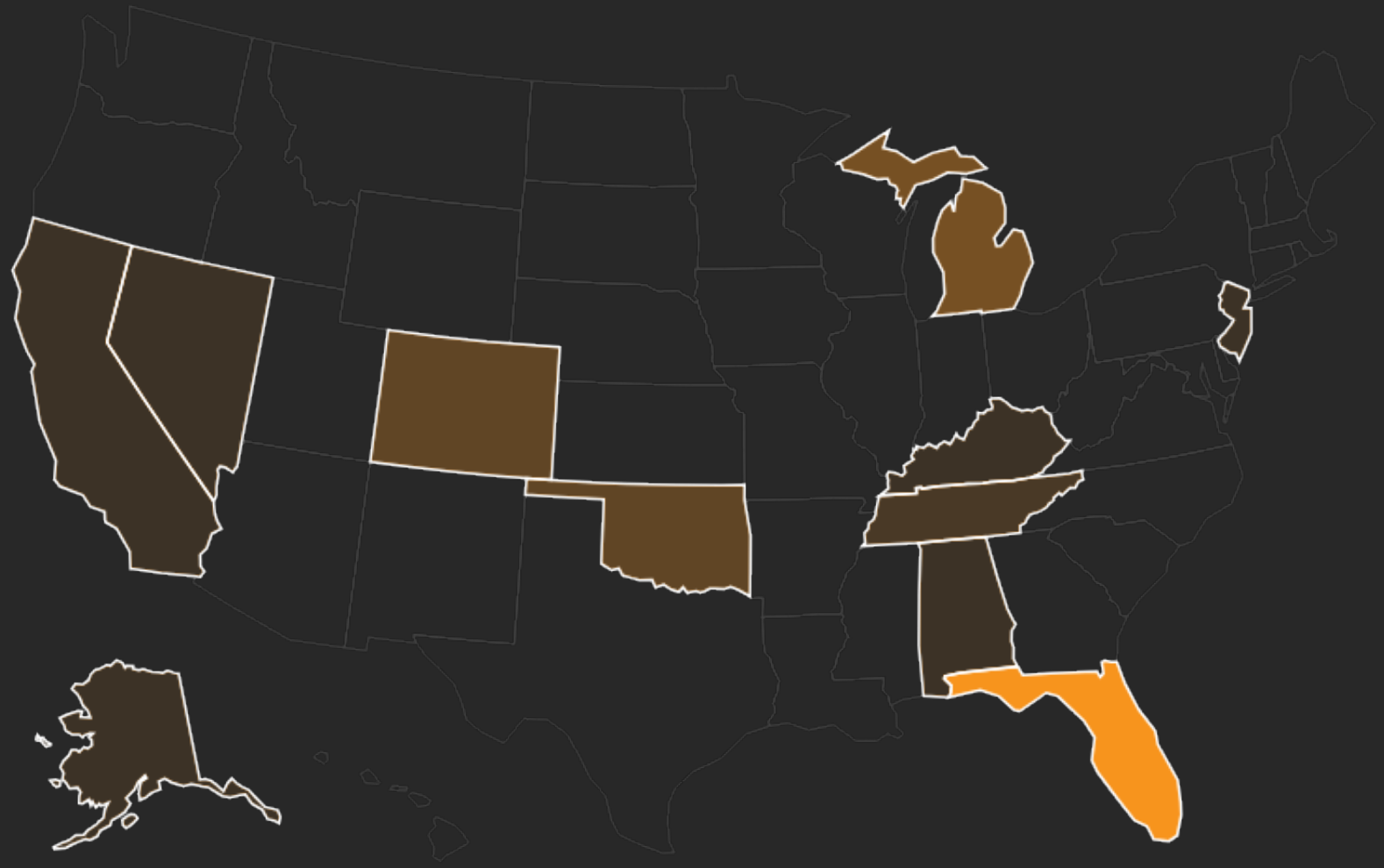






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MGM-15 STATE DISTRIBUTION (DEATHS)



WHAT'S ON THE "KRATOM" HORIZON?















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MUSHROOM / PSYCHEDELICS

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MUSHROOM / PSYCHEDELIC PRODUCTS

- Psilocin (Psilocybin)
- 4-AcO-DMT
- 4-AcO-MET
- 4-HO-MET
- 4-PrO-DMT
- 4-AcO-DET
- 4-PrO-MET

MUSHROOM-RELATED PRODUCTS

TEST PURCHASE | **MAY 2026**

PURPOSE: The objective of this report is to detail our findings from forensic testing of mushroom-based (psychedelic) marketed commercial products for notification to public health, public safety, clinicians, medical examiners, coroners, forensic laboratories, and other related communities regarding this emerging topic.

BACKGROUND: Mushroom-related and psychedelic substances, like other products increasingly sold in smoke shops, represent an evolving and complex subclass of novel psychoactive substances (NPS). This subclass of drugs is generally defined by their structural similarity to psilocybin (4-PO-DMT) and psilocin (4-HO-DMT)—the constituents of "magic mushrooms". The introduction and proliferation of these drugs in products sold openly in retail markets is perplexing, as both are Schedule I substances federally in the United States. A rapid rise in the sale and popularity of mushroom-based products has occurred over the last few years. While some products contain illicit magic mushroom psychedelics, others are prepared with purely synthetic psychedelics, most notably 4-AcO-DMT. Additionally, various strains of mushrooms are now appearing in products, including *Amanita muscaria* with its primary constituents muscimol and ibotenic acid. Mushroom-based products can appear as gummies, chocolates, liquids, vapes, and tablets, among others items.

SUMMARY: Due to increased sale and availability of mushroom-based products marketed as "proprietary mushroom blends", our laboratory continually collects samples for comprehensive forensic drug analysis. Results show that this market is complex, unpredictable, and continually evolving. Testing has revealed the presence of psychedelics in unsuspecting products (e.g., "mad honey") and absence in products purported to contain mushroom-related substances. Additionally, we have observed cross-market combinations as psychedelics are detected alongside semi-synthetic cannabinoids, kava alkaloids, and other substances. Finally, the emergence of new synthetic psychedelics continues to challenge analytical workflows in this arena.



PRODUCT	TYPE	ADVERTISED	DETECTED
Mmelt (Dark Chocolate)	Chocolate	Premium Mushroom Blend	4-HO-MET
PolkaDot (Caramel Peanut Twist)	Chocolate	500 Mg - Proprietary Functional Organic Polka Blend (Organic Lion's Mane, Organic Reishi, Organic Turkey Tail, Organic Cordyceps)	4-AcO-MET & Isomer
TRE House (Grape)	Syrup	Proprietary Blend of Legal Nootropic, Adaptogenic, and Other Mushroom Extracts	4-AcO-DET, 4-HO-DET
Mmelt (tiki punch)	Liquid Megadose	Mushroom Blend	4-HO-MET
Mind Bender	Honey	Proprietary Blend of Nootropics, Mad Honey	4-AcO-DMT

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ACKNOWLEDGEMENTS: This report was prepared by Alex J. Krotulski, Max T. Denn, Roxane Elder, and Barry K. Logan at the Center for Forensic Science Research and Education (CFSRE) at the Fredric Rieders Family Foundation. The authors acknowledge staff at the CFSRE, NMS Labs, and collaborating agencies for involvements and contributions. For more information, please contact CFSRE's NPS Discovery at npsdiscovery@cfsre.org or visit www.npsdiscovery.org.

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THAT'S ALL (?!)

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NPS DISCOVERY

The CFSRE's NPS Discovery program is an open-access drug early warning system (EWS) operating in the United States. Our evidence-based approach leads the development of high impact reports for real-time action among public health and safety stakeholders.

We are working in collaboration with forensic science, public health, emergency medicine, and criminal justice agencies to rapidly identify emerging drugs, also known as Novel Psychoactive Substances (NPS), associated with intoxications and adverse events. Our data and results are consolidated into reports and resources to allow for the rapid dissemination of information to colleagues and affected communities.

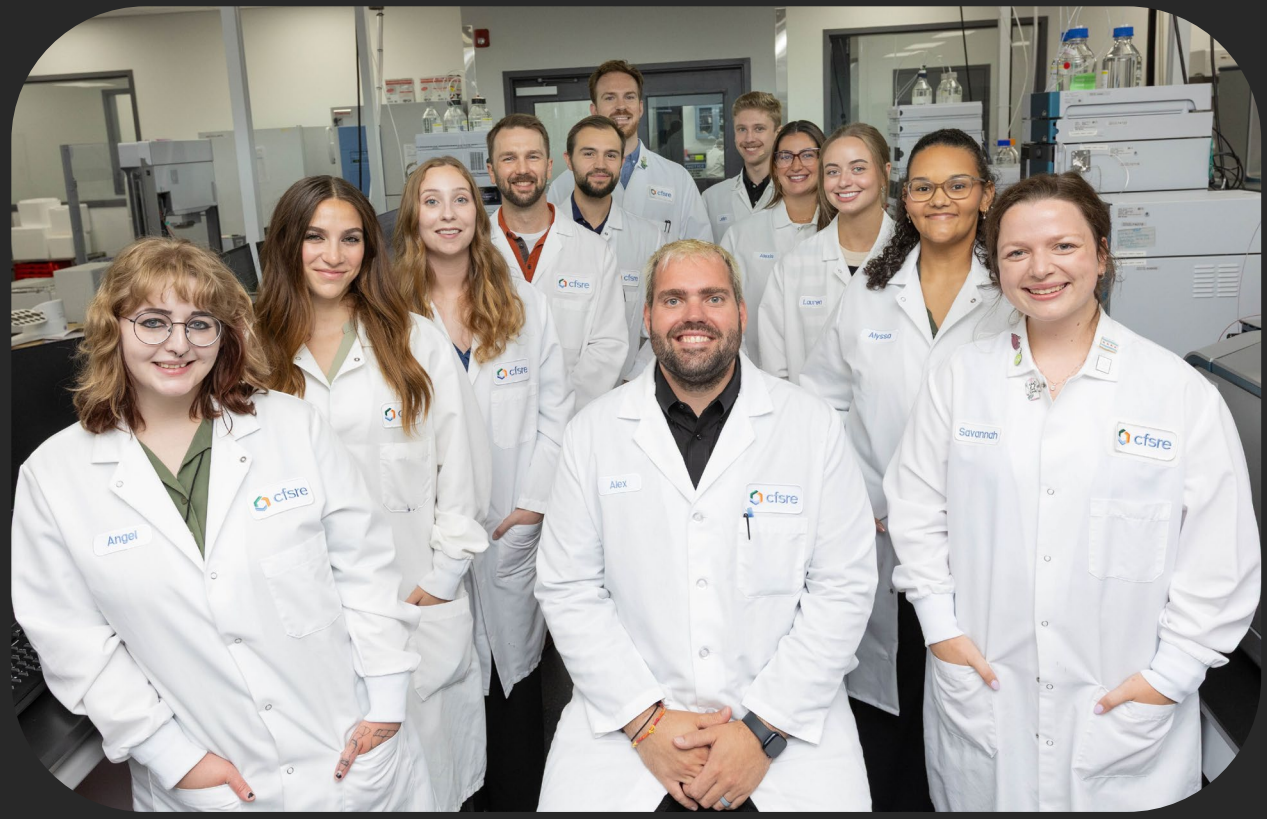
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  - National Institute of Justice (NIJ)



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THANK YOU! QUESTIONS?

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UPCOMING CALLS

Wednesday, January 6 from 2PM-3PM
Wednesday, March 3 from 2PM-3PM

Feedback Requested

THANK YOU!