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

Trends, Analysis & Threats

Overdose Response Strategy Webinar Series

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Agenda

Opening Remarks

Christopher Jakim, HIDTA Deputy National Coordinator, Overdose Response Strategy

National Overdose Data Highlight

Steve Barnes, Technical Advisor, Overdose Response Strategy

Speaker Briefings

- DEA Special Testing and Research Laboratory
  - Agnes Winokur, PhD, Laboratory Director
- The Center for Forensic Science Research and Education (CFSRE)/NMS Labs
  - Joshua DeBord, PhD, Senior Scientist
- Millennium Health
  - Eric Dawson, PharmD, Vice President, Clinical Affairs

Q&A and Closing Remarks

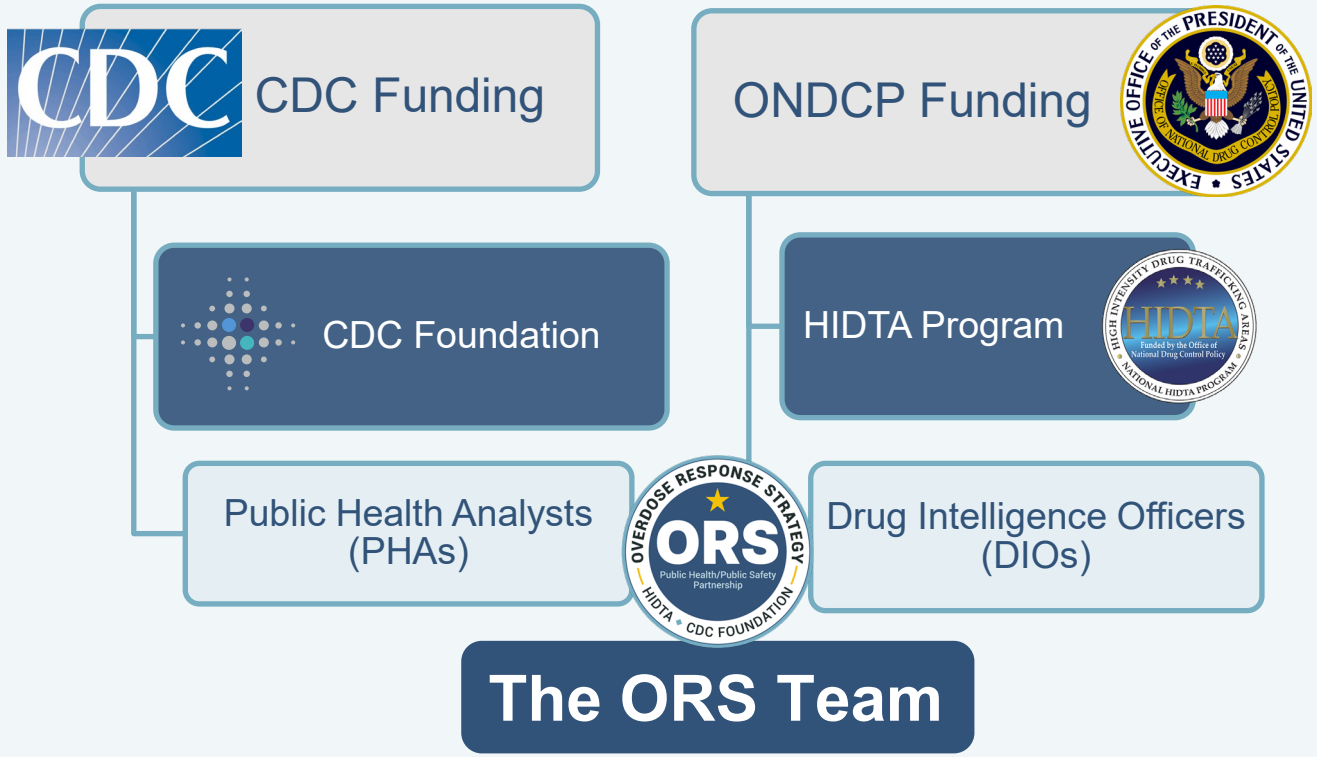
Scan for Q&A

Overdose Response Strategy

About the ORS

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.



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.

Overdose Response Strategy

Program Goals

1. **Share data systems** to inform rapid and effective community overdose prevention efforts
2. Support immediate, **evidence-based response** efforts that can directly reduce overdose deaths
3. Design and use promising strategies at the **intersection of public health and public safety**
4. Support the implementation of **evidence-informed prevention strategies** that can reduce substance use and overdose

Connect

1. Go to www.orsprogram.org

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

3. View contact information by geography

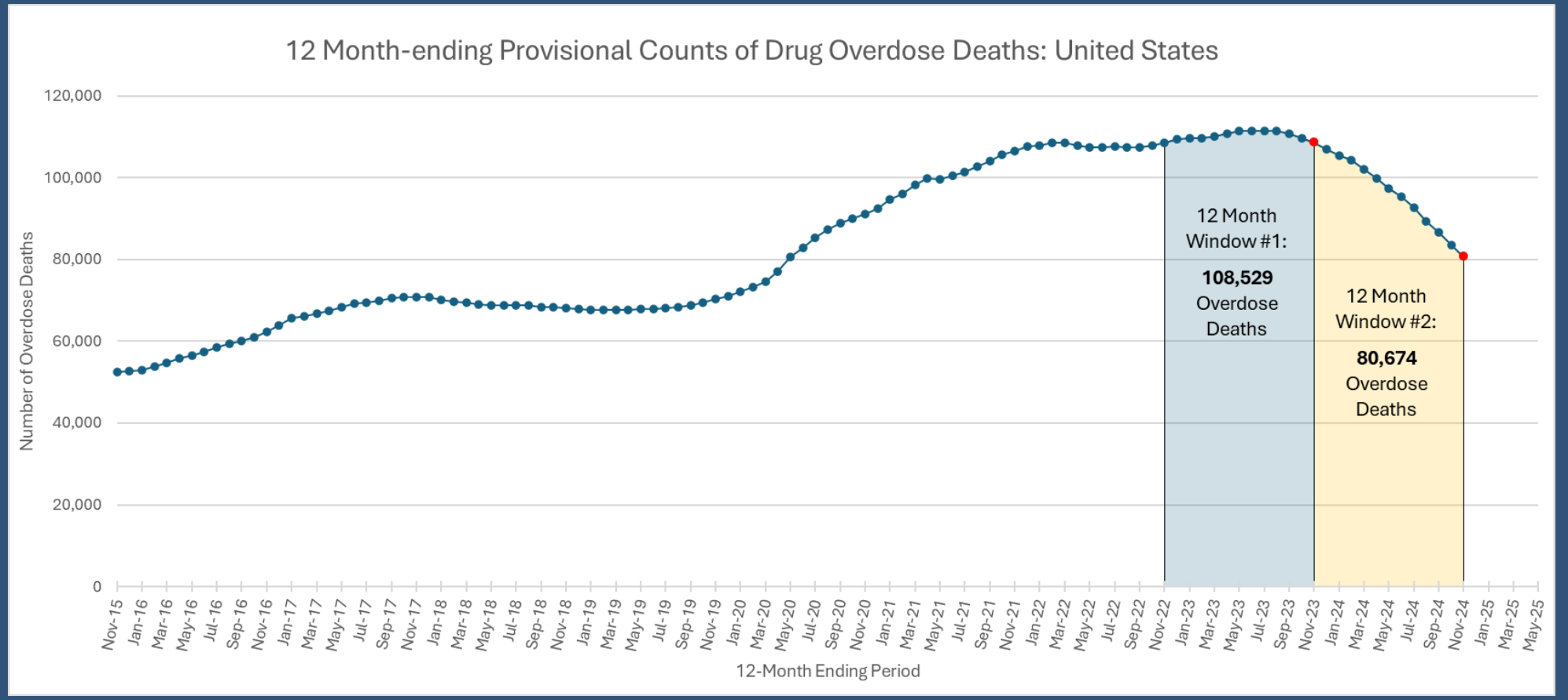
Trends, Analysis & Threats Webinar: Acknowledgement of Data Sensitivity and Use

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 Trends in Overdose Deaths



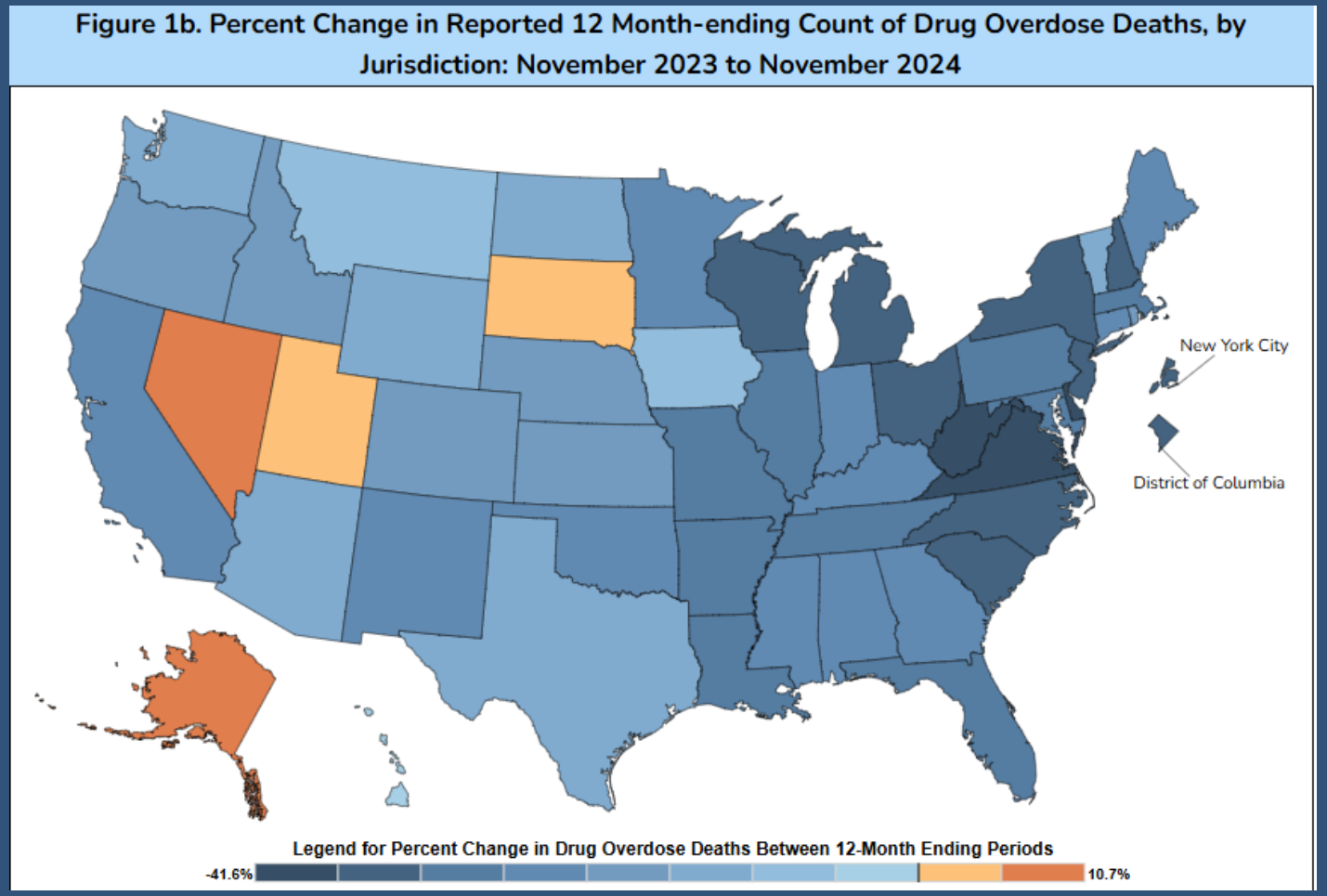
Percent Change for United States

-25.7

Based on data available for analysis on: April 6, 2025

National Center for Health Statistics, Provisional Drug Overdose Death Counts

National Trends in Overdose Deaths



Percent Change for United States

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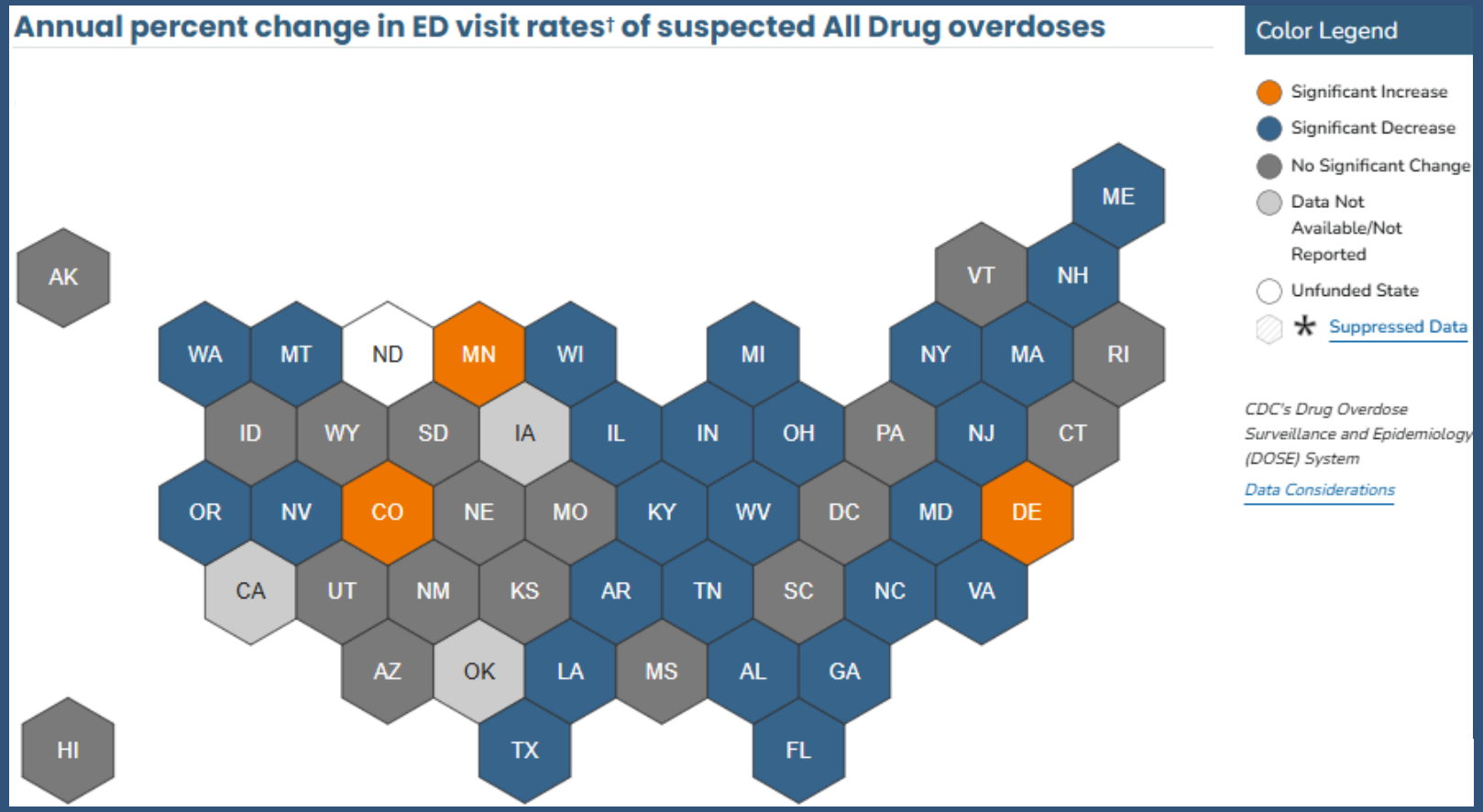
Based on data available for analysis on: April 6, 2025

National Center for Health Statistics, Provisional Drug Overdose Death Counts

Trends in Emergency Department Visits

February 2025 Compared to **February 2024**



-12% Annual Percent Change† in US
Suspected All Drug Overdose

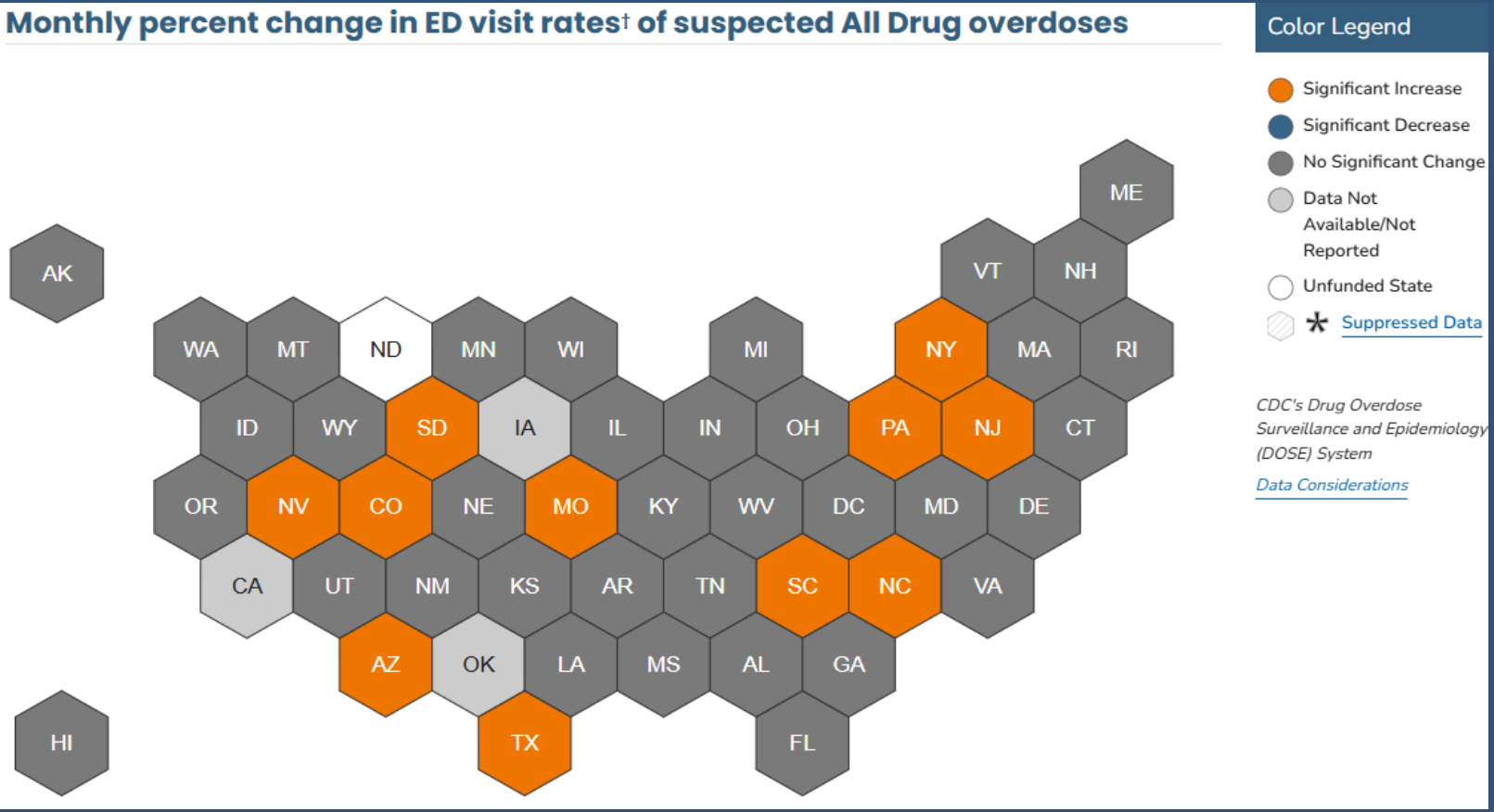
3 States
Number with a Significant Increase

Based on data available for analysis on: April 24, 2025

CDC's Drug Overdose Surveillance and Epidemiology system, syndromic surveillance

Trends in Emergency Department Visits

February 2025 Compared to **January 2025**



+4% Monthly Percent Change† in US
Suspected All Drug Overdose

11 States
Number with a Significant Increase

Based on data available for analysis on:
April 24, 2025

CDC's Drug Overdose Surveillance and Epidemiology system, syndromic surveillance

Trends in Emergency Medical Services (911 Calls)

April 2025 Compared to **April 2024**

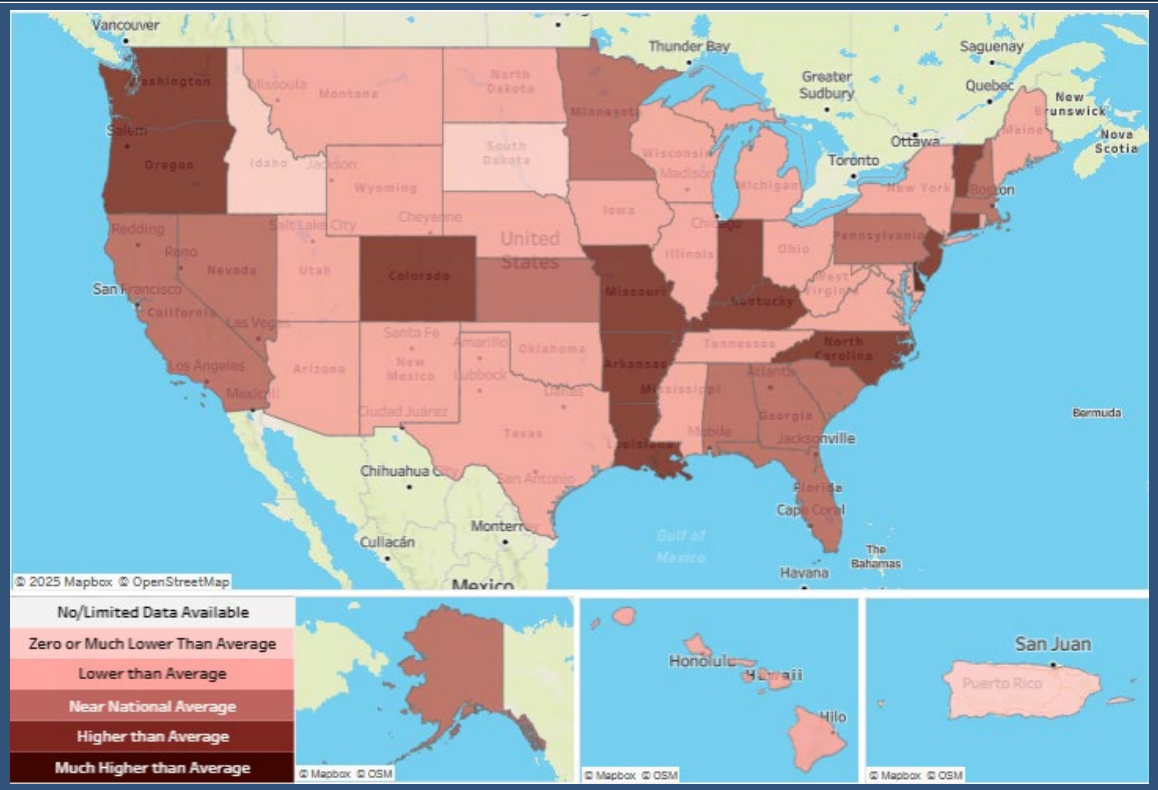
Drug Overdose Surveillance Dashboard

Provisional Mortality Data Updated On: August 13, 2024

EMS Data Updated On: May 3, 2025 for the period

April 21, 2024 – April 20, 2025

Nonfatal Any/All Overdoses Involved in Motor Vehicle Crashes 5,639



Number/Rate Nonfatal Overdoses

646,704 or 199.4 (-13.8%)

Based on data available for analysis on: May 3, 2025

National EMS information system (NEMSIS)

Submit your Questions

Scan for Q&A

Partner Briefings

DEA Emerging Trends

Agnes Winokur, PhD
Laboratory Director, Special Testing and Research Lab

May 7, 2025

DEA Forensic Sciences At-a-Glance

WHO:

- *Chemists: Approx. 360 Positions*
- *Friction Ridge: Approx. 25 Positions*
- *Digital Examiners: Approx. 60 Positions*
- *Support Personnel: Over 100+ Positions (Evidence, Admin, etc.)*
- *Total: Approx. 550 Positions*

MISSION:

Deliver quality forensic information to counter the global drug threat.

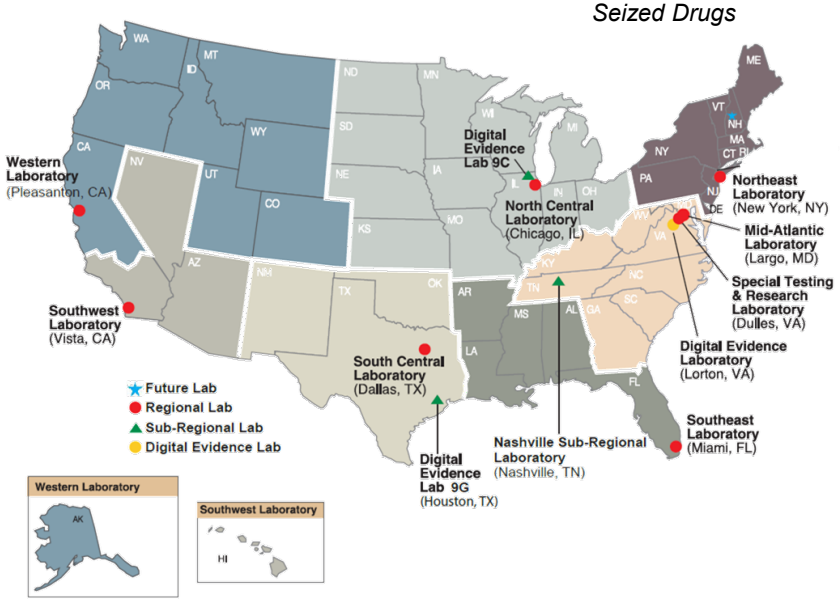
VISION:

Serving with **Integrity,** Empowering with **Information,** Evolving through **Innovation,** and Committing to **Improvement**

WHAT:

Seized Drugs | *Friction Ridge* | *Digital Evidence*

LOCATIONS:



PRIORITIES:

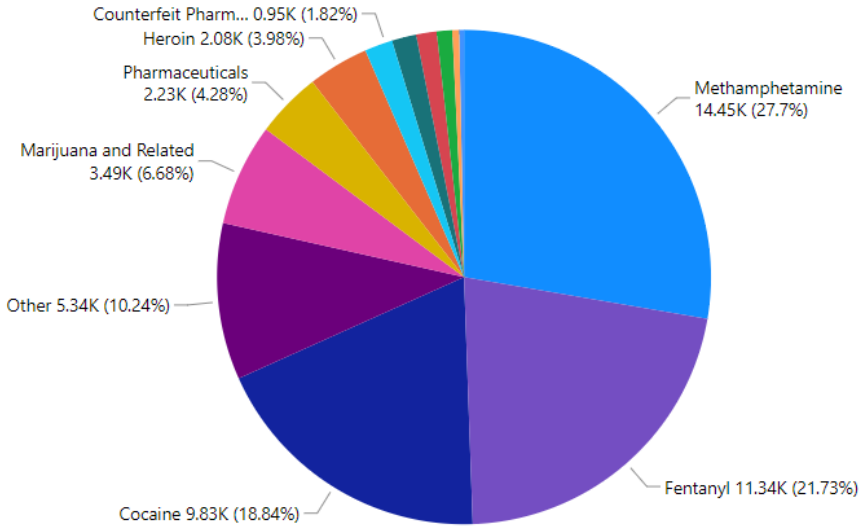
Defeat Sinaloa/CJNG

Reduce Drug Poisonings

BY THE NUMBERS:

Discipline	Receive	Analyze	Backlog
Seized Drugs	65-70K Annual	50-55K Annual	6K
Friction Ridge	2K Annual	1.5-2K Annual	3.3K
Digital	800+ Annual	1000+ Annual	450

RECEPTIONS BY DRUG TYPE (2024):



Source: DEA Forensics Division

Special Testing & Research Laboratory (STRL)

STRL Areas of Responsibility

Intelligence

- Cocaine Signature Program
- Heroin Signature Program
- Methamphetamine Profiling Program
- Fentanyl Profiling Program

Research

- New Synthetic Routes
- Synthesis
- Route Specific By-Products
- Publications
- Reviews

Operational Support

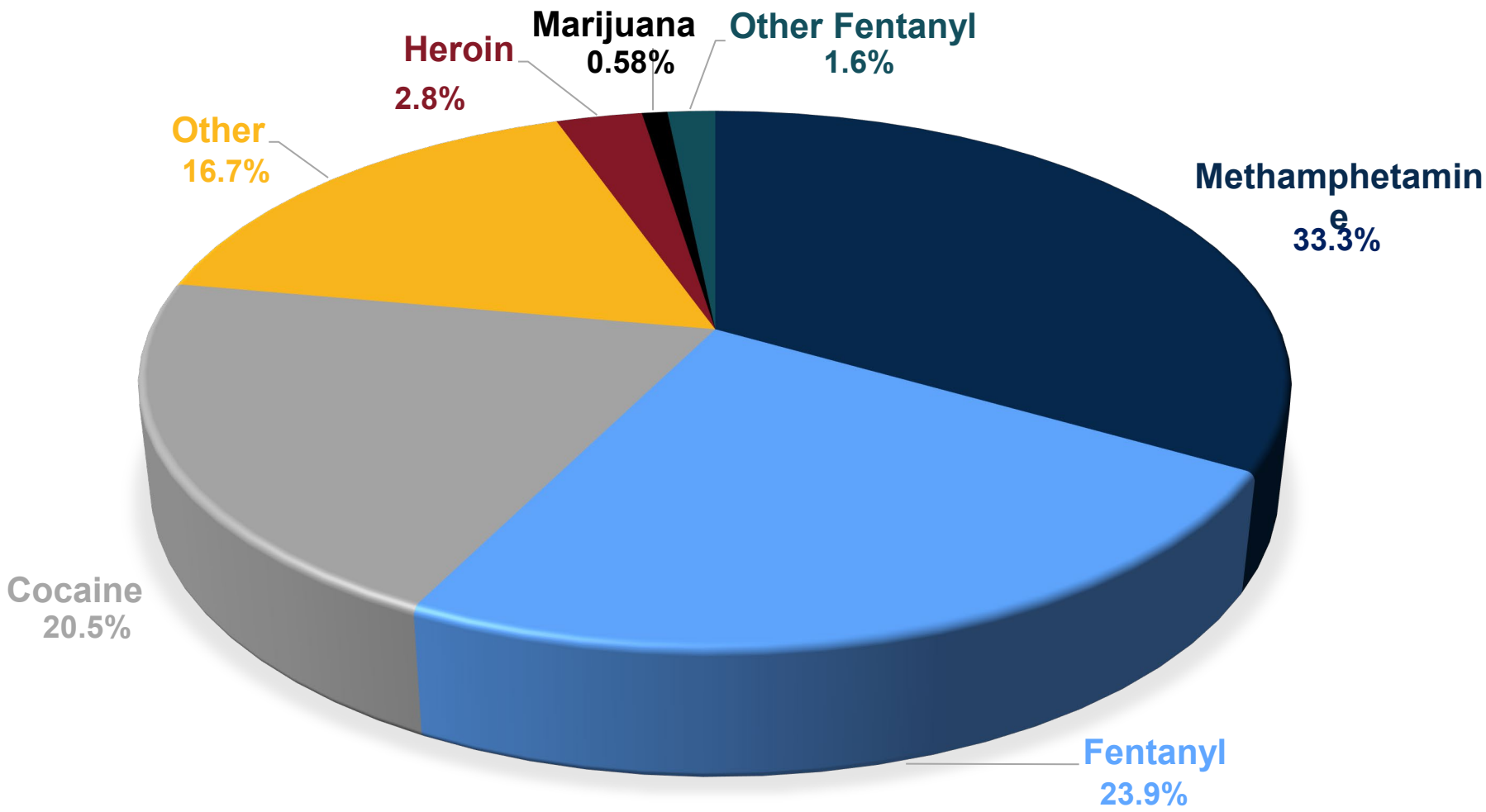
- Methods Development & Validation
- Reference Materials
- Canine Training Materials
- Training
- International

- Technology Evaluation and Transfer
- New Drug / Unknowns – Characterization & Structural Elucidation

Source: DEA Forensics Division – SFL1

DEA Laboratory Analysis

Number of Exhibits by Primary Drug Reported (CY 2024 to date)



Source: AIDD Field Lab Analyses, 11-13-2024
Graphic depicting the number of exhibits analyzed by the DEA laboratory system by drug

New Substances

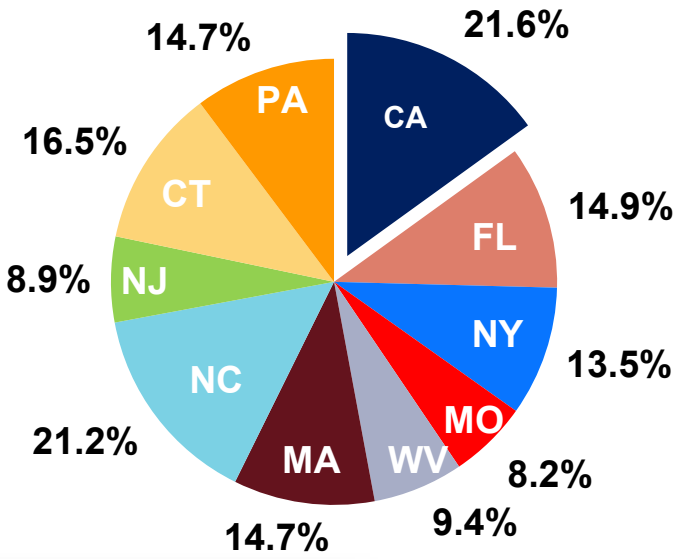
- Fentanyl
- Carfentanil
- Precursors
- BTMPS
- Medetomidine
- Nitazenes (Benzimidazoles)

Unknown Submitted to Special Testing ca. 2020

Source: DEA Forensics Division – SFL1

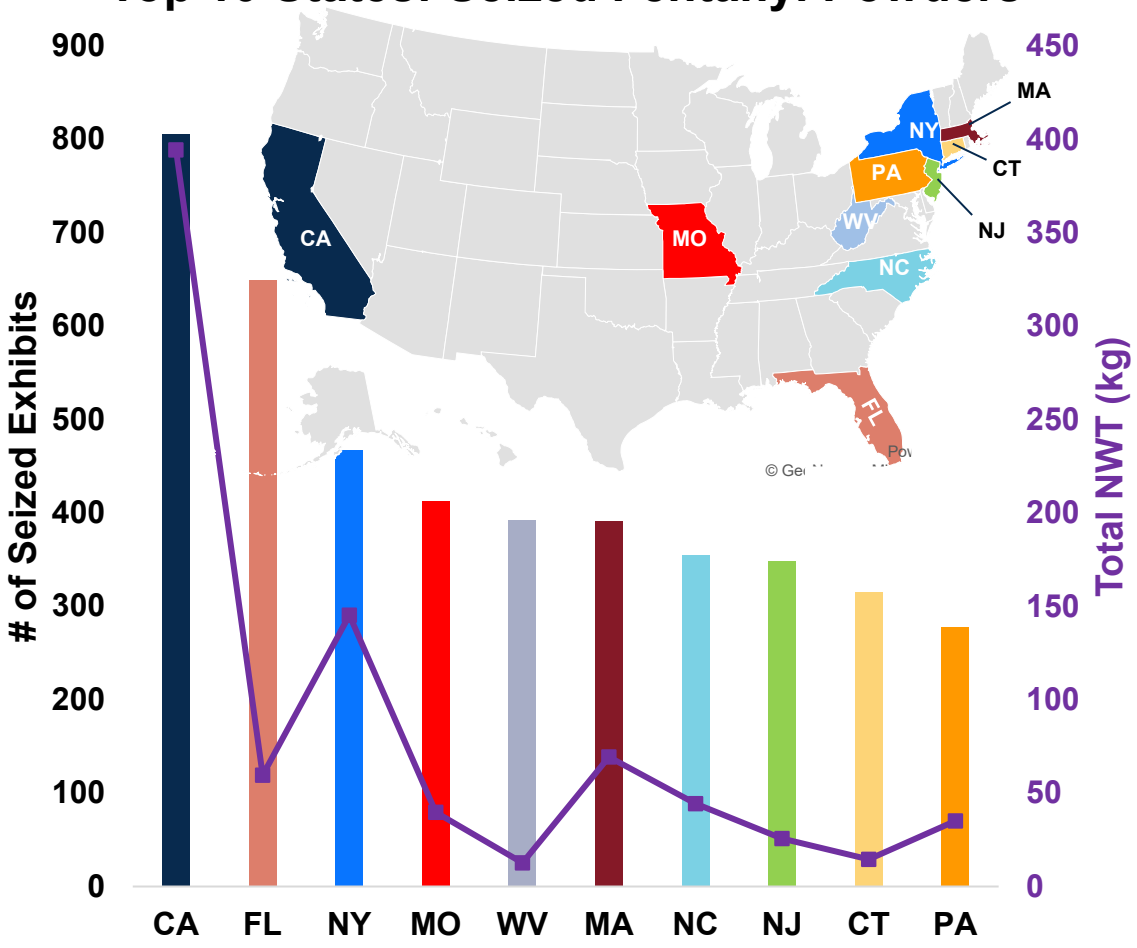
Fentanyl Powders: CY2024

Fentanyl Purity Powders



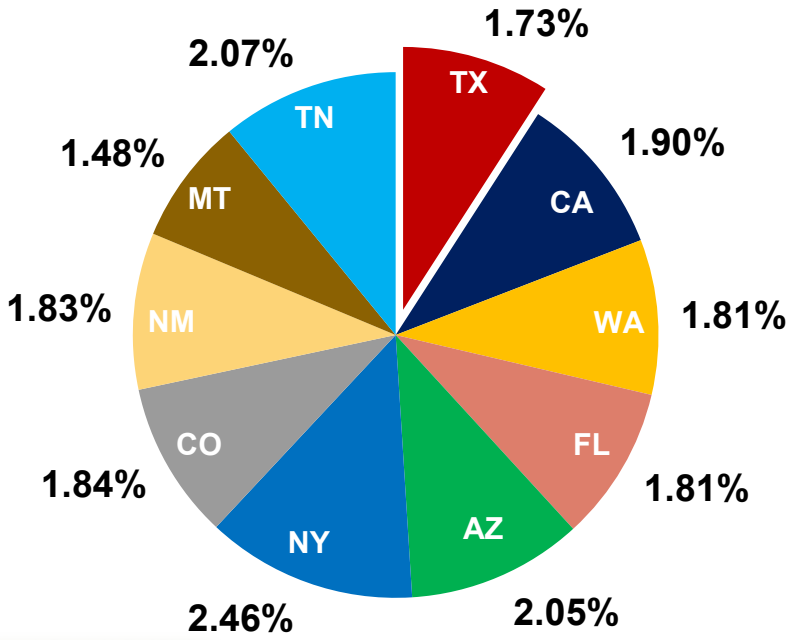
Fentanyl Purity: Powder	
# Exhibits	7,844
Average Purity	11.3%

Top 10 States: Seized Fentanyl Powders



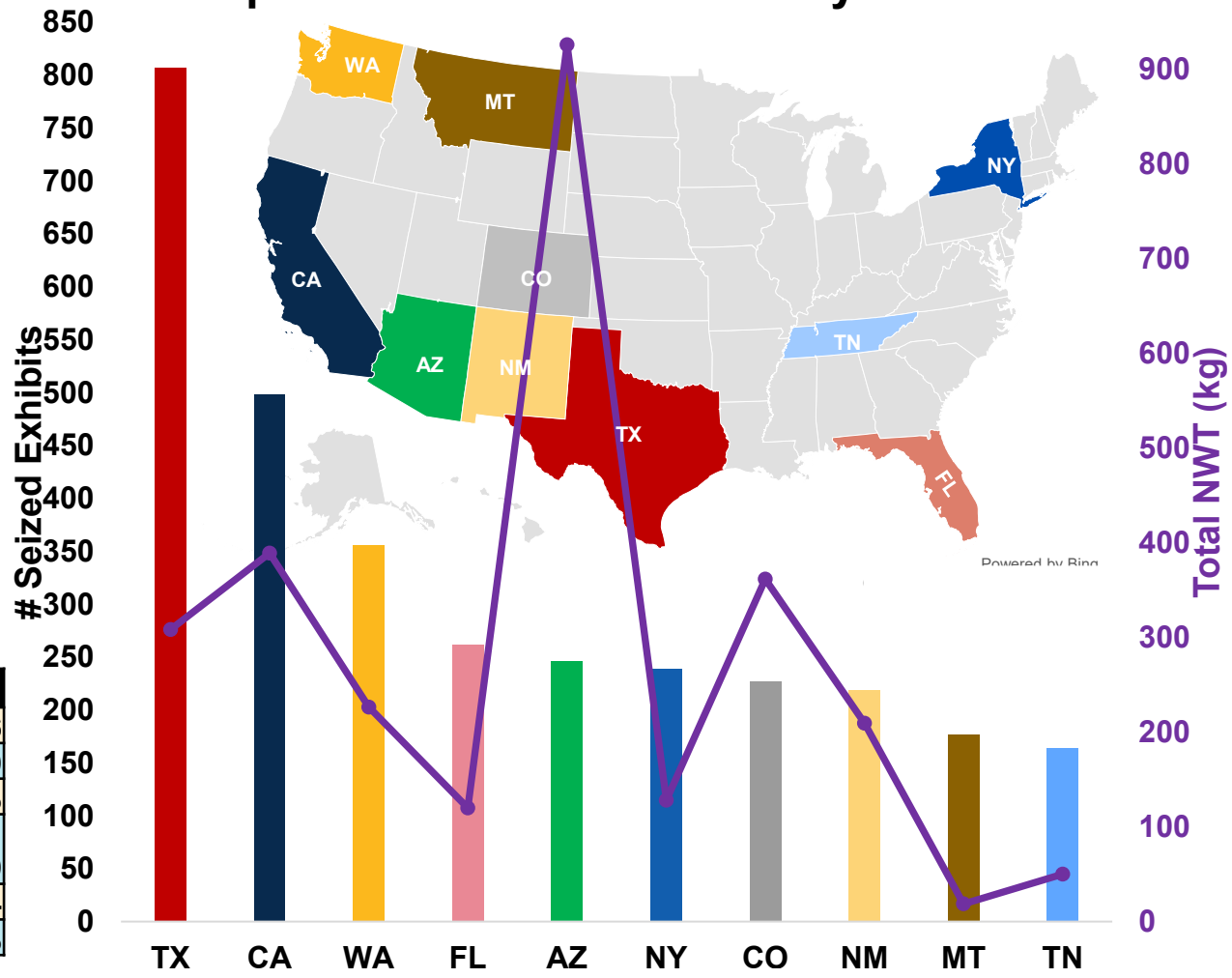
Fentanyl Tablets: CY2024

Top 10 States: Seized Fentanyl Tablets

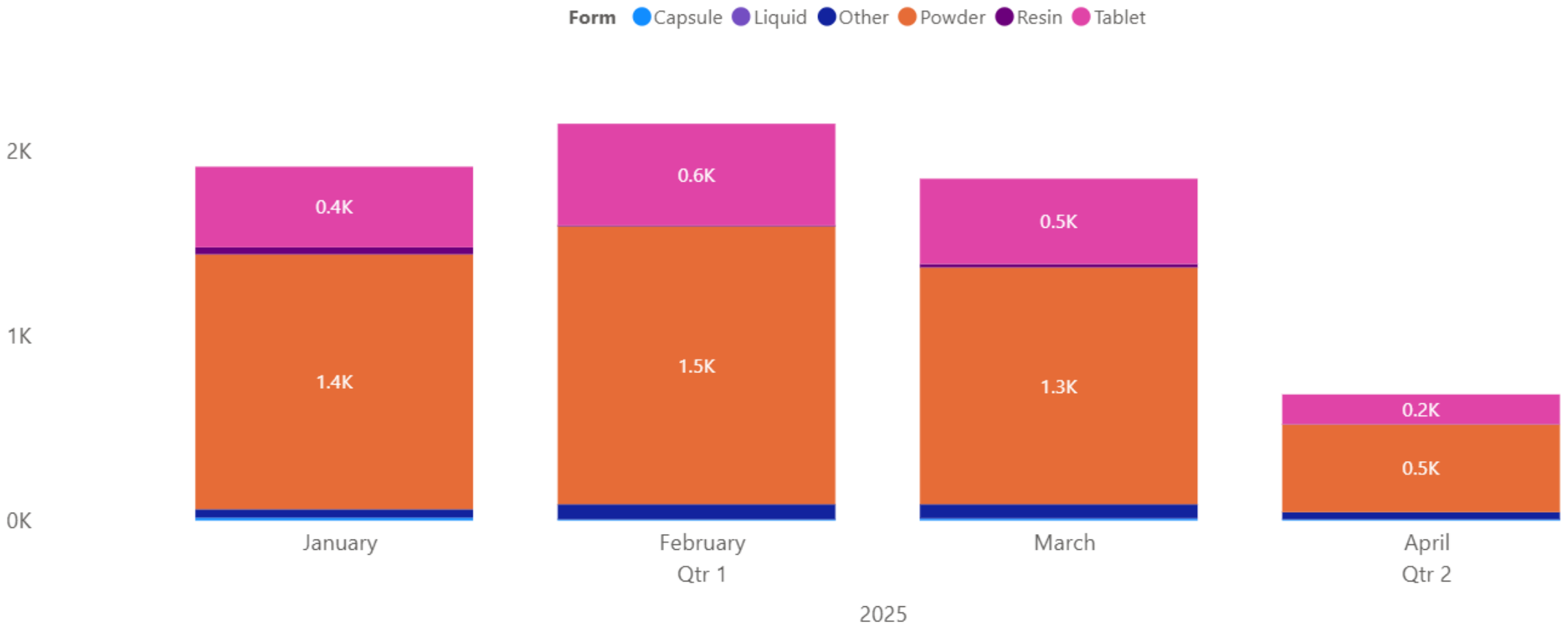


Fentanyl Purity: Tablets	
# Exhibits	5176
# Tablets	30,795,269
Average Purity	1.72%
Average Potency (mg/tablet)	1.89
Max Potency (mg/tablet)	15.84
% Tablets > 2 mg/tablet	46.9%

Top 10 States: Seized Fentanyl Tablets



Fentanyl 2347 exhibits - 2025



Substances with Fentanyl - 2025

Year	Carfentanil
2025	32
January	10
February	3
March	13
April	6
Total	32

Year	Ketamine
2025	37
January	11
February	7
March	16
April	3
Total	37

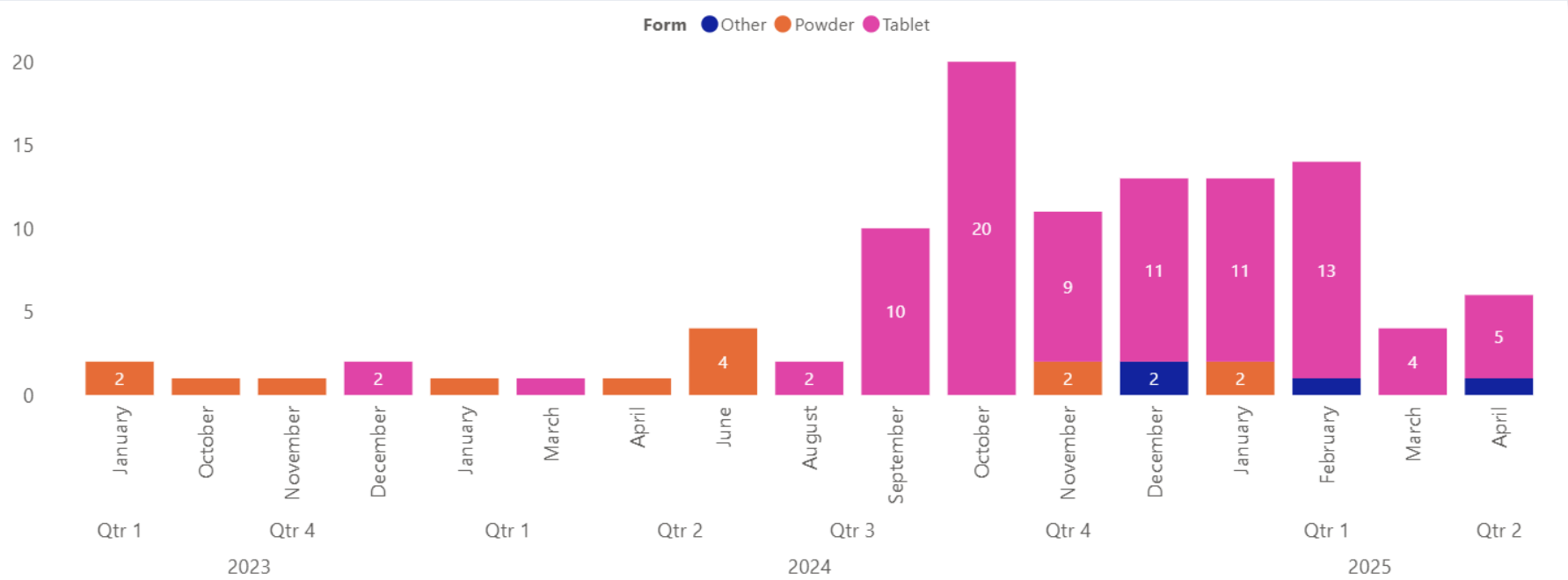
Year	Lidocaine
2025	1173
January	316
February	385
March	331
April	141
Total	1173

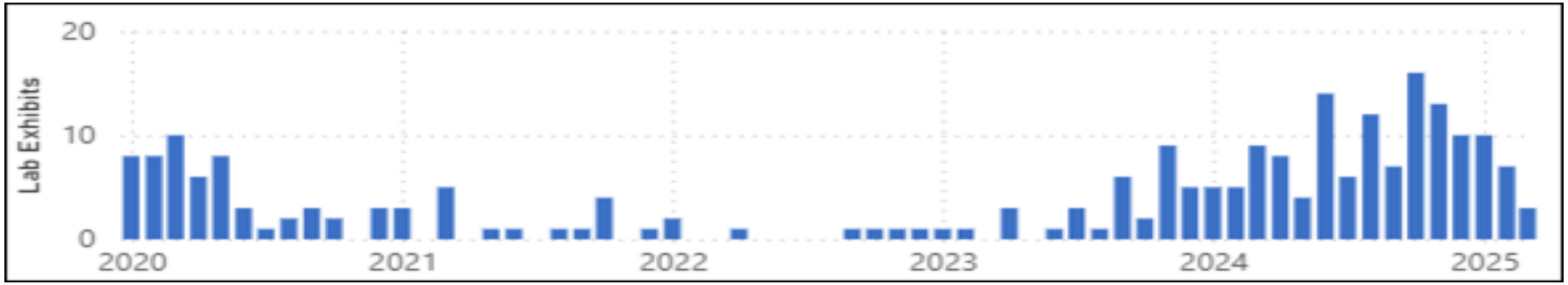
Year	Xylazine
2025	735
January	201
February	257
March	218
April	59
Total	735

Year	Medetomidine
2025	217
January	60
February	68
March	65
April	24
Total	217

Year	BTMPS
2025	1016
January	303
February	332
March	276
April	105
Total	1016

Carfentanil Trends





Fentanyl Synthesis

DEA is tracking seven synthetic routes used to make fentanyl:

- ❑Janssen (used in Toluca Lab- 2006)
- ❑Siegfried/Valdez (used in Mexico and Canada)
- ❑Gupta One-Pot (doesn't work very well per DEA lab experiments)
- ❑Gupta-0 (G-0 Original Gupta Profile-2018)
- ❑Gupta-1(G-1 Borohydride Reagent Indicator-2021)
- ❑Gupta-2 (G-2 t-BOC Protecting Group Indicator-2022)
- ❑t-BOC-Norfentanyl (Academic t-BOC Approach)

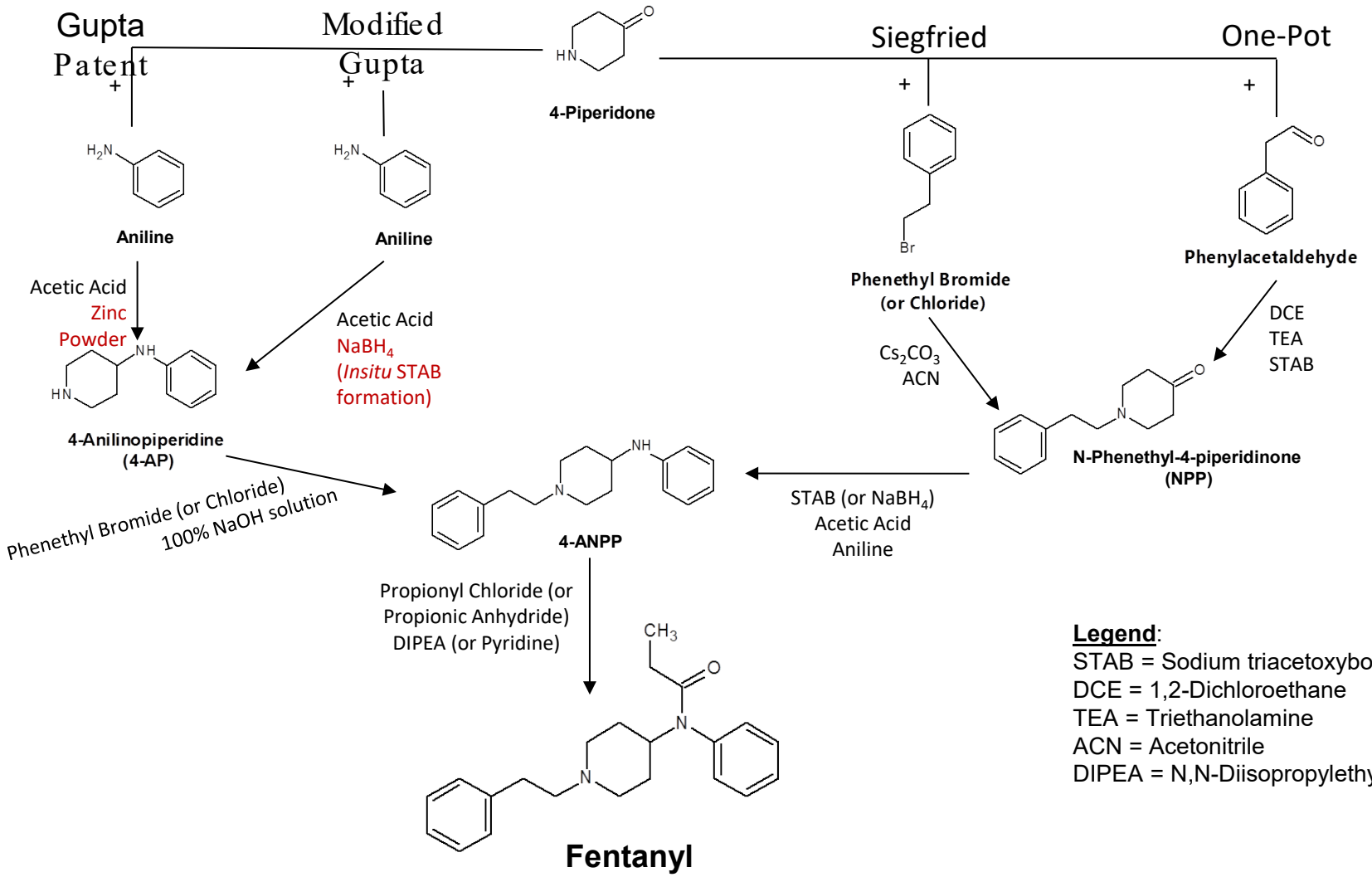
Recent Samples from Canada

Substances Identified	Synthetic Route	Description
Fentanyl (3.9%), dimethyl sulfone (42.6%), mannitol (51.4%), caffeine (0.7%)	Mixed	Blue rock-like powder
Fentanyl (26.6%), inositol (1.7%), caffeine (29.4%), dextrose (5.9%), mannitol (8.4%)	Gupta	Black rock-like powder
Fentanyl (2.1%), acetaminophen (14.8%), methamphetamine (0.3%), dimethyl sulfone (46.3%), heroin, lactose (10.5%), caffeine (4.0%), diazepam	t-BOC	Yellow compressed powder
Fentanyl (18.4%), caffeine (13.8%), cocaine, flubromazepam	Gupta	Off-white chunky powder
Fentanyl (18.4%), caffeine (14.8%), carfentanil	Gupta	Blue-green chunky powder
Fentanyl (7.2%), caffeine (15.1%), carfentanil, flubromazepam	Gupta	White chunky powder
Fentanyl (18.7%), caffeine (13.6%), flubromazepam	Gupta	Purple rock-like powder with grape odor

Fentanyl Precursor Chemicals, Solvents, Reagents, Acids, and Bases

Fentanyl			
Substance	**Synonyms**	**Use**	**CAS Number**
4-Piperidone	piperidin-4-one, 4-piperidinone, 4-oxopiperidine, 4-piperidinon, UNII-15WP1EA7UH, 15WP1EA7UH, 4piperidinone	Precursor	41661-47-6 40064-34-4
4-Anilinopiperidine	4-AP, 4AP, Piperidine, 4-anilino- (8CI); N-Phenyl-4-piperidinamine; 4-(Phenylamino)piperidine; 4-Anilinopiperidine; N-(Piperidin-4- yl)aniline; N-Phenylpiperidin-4-amine; NSC 80678	Precursor	23056-29-3
NPP	1-phenethyl-4-piperidone, 1-(2-phenylethyl)-4-piperidinone, 1-(beta-phenethyl)-4-piperidone, 1-phenethyl-4-piperidone, N-(2-phenylethyl)-4-piperidone, N-phenethylpiperidin-4-one, NSC 74494	Precursor	39742-60-4
4-ANPP	4-Anilino-N-Phenethylpiperidine, ANPP, N-phenyl-1-(2-phenylethyl)-4-piperidineamine, despropionylfentanyl, N-[1-(2-phenylethyl)-4-piperidinyl]aniline, 4-anilino-1-phenethylpiperidine	Precursor	21409-26-7
Aniline	Aniline (8CI); Aminobenzene; Aminophen; Anyvim; Benzene, amino-; Blue Oil; C.I. 76000; NCI 176889; Phenylamine	Precursor	62-53-3
Norfentanyl	N-phenyl-N-4-piperidinyl-propanamide, NSC 89293	Precursor	1609-66-1
N-Benzyl-4-piperidone	1-Benzyl-4-piperidone, NSC 77933, 1-benzylpiperidin-4-one, 1-(phenylmethyl)-4-piperidinone, 1-benzyl-4-oxopiperidine	Precursor	3612-20-2
4-Anilino-1-benzylpiperidine	4-ANBP, NSC 76613	Precursor	1155-56-2
Benzyl fentanyl	N-(1-Benzylpiperidin-4-yl)-N-phenylpropanamide, NSC 73402, R 4129	Precursor	1474-02-8
Sodium triacetoxyborohydride	STAB	Reagent	56553-60-7
Hydrochloric Acid	Muriatic acid, chlorohydric acid, chlorane, UN 1050, NSC 77365, HSDB 545, marine acid	Acid	7647-01-0
Methylene Chloride	Dichloromethane, methylene dichloride, methylene bichloride, HSDB 66, NSC 406122	Solvent	75-09-2
Alcoholic-HCl	Isopropanolic-HCl	Acid	
Methanol	Methyl alcohol, carbinol, methyl hydrate, HSDB 93, NSC 85232, UN 1230	Solvent	67-56-1
Ammonium Hydroxide	Ammonia, HSDB 5125, UN 2672, UN 3318, UN 2073	Base	1336-21-6
Diisopropylethylamine	DIPEA, ethyldiisopropylamine, Hunig's base, N-ethyl-N-isopropylpropan-2-amine	Solvent	7087-68-5
Palladium on Carbon	Pd/C	Reagent	7440-05-3
1-BOC-4-piperidone	tert-butyl-4-oxopiperidone-1-carboxylate, tert-butyl 4-oxopiperidine-1-carboxylate, N-(tert-butoxycarbonyl)-4-piperidone	Precursor	79099-07-3
1-BOC-4-anilinopiperidine	1-BOC-4-AP, 1,1-dimethylethyl-4-(phenylamino)-1-piperidine carboxylate, tert-butyl 4-(phenylamino)piperidine-1-carboxylate, 4-(phenylamino)-1-piperidinecarboxylic acid, 1,1-dimethylethyl ester	Precursor	125541-22-2
1-CBz-4-piperidone	benzyl-4-oxo-1-piperidine carboxylate, N-Benzyloxycarbonyl-4-piperidone, N-(benzyloxycarbonyl)-4-piperidone, 1-Carbobenzoxy-4-piperidone	Precursor	19099-93-5
Phenethyl Bromide	2-Bromoethylbenzene, 2-Bromoethyl)benzene; 1-Bromo-2-phenylethane; 1-Phenyl-2-bromoethane; 2-Bromo-1-phenylethane; 2-Phenethyl bromide; 2-Phenyl-1-bromoethane; 2-Phenylbromoethane; 2-Phenylethyl bromide; NSC 33926; Phenethyl bromide; Phenylethyl bromide; β-Bromoethylbenzene; β-Phenethyl bromide; β-Phenylethyl bromide	Precursor	103-63-9

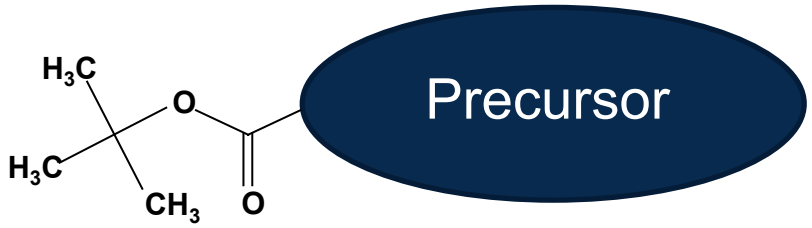
Synthesis Routes Starting With 4-Piperidone



Legend:
STAB = Sodium triacetoxyborohydride
DCE = 1,2-Dichloroethane
TEA = Triethanolamine
ACN = Acetonitrile
DIPEA = N,N-Diisopropylethylamine (Hunig's base)

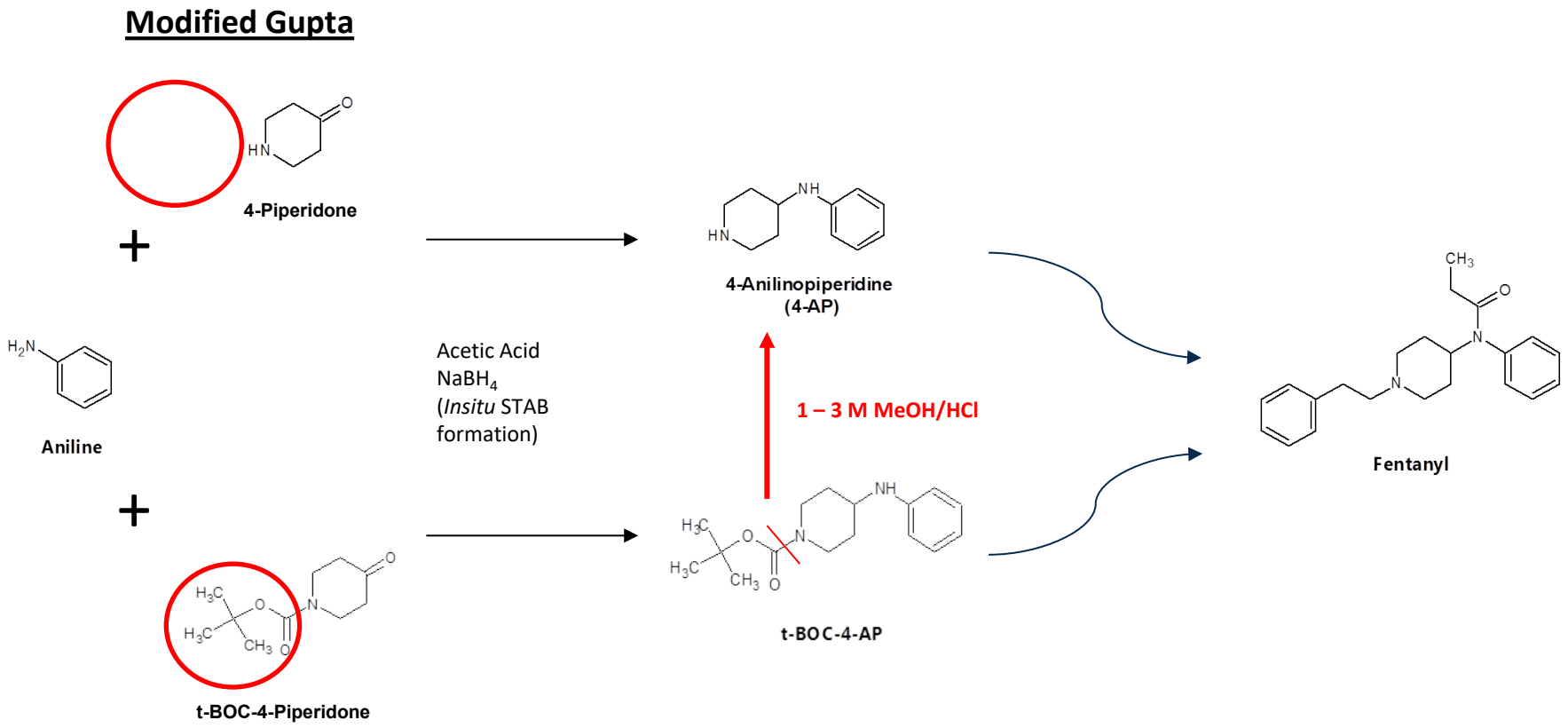
Note: “The BOC”?

- **What is the BOC?**
  - Technically-referred to as a ‘protecting group’
  - A separate molecule that has been temporarily ‘attached’ to a precursor (in this instance).
  - Why?
    - Creates a distinct substance to subvert controls
    - Easy to remove, chemically, so yields are minimally-impacted
- **Expect to see these more commonly or other ‘Protecting Groups’ such as: (brief listing)**
  - Benzyl (Bn)
  - Benzoyl (Bz)
  - Tosyl (Ts)

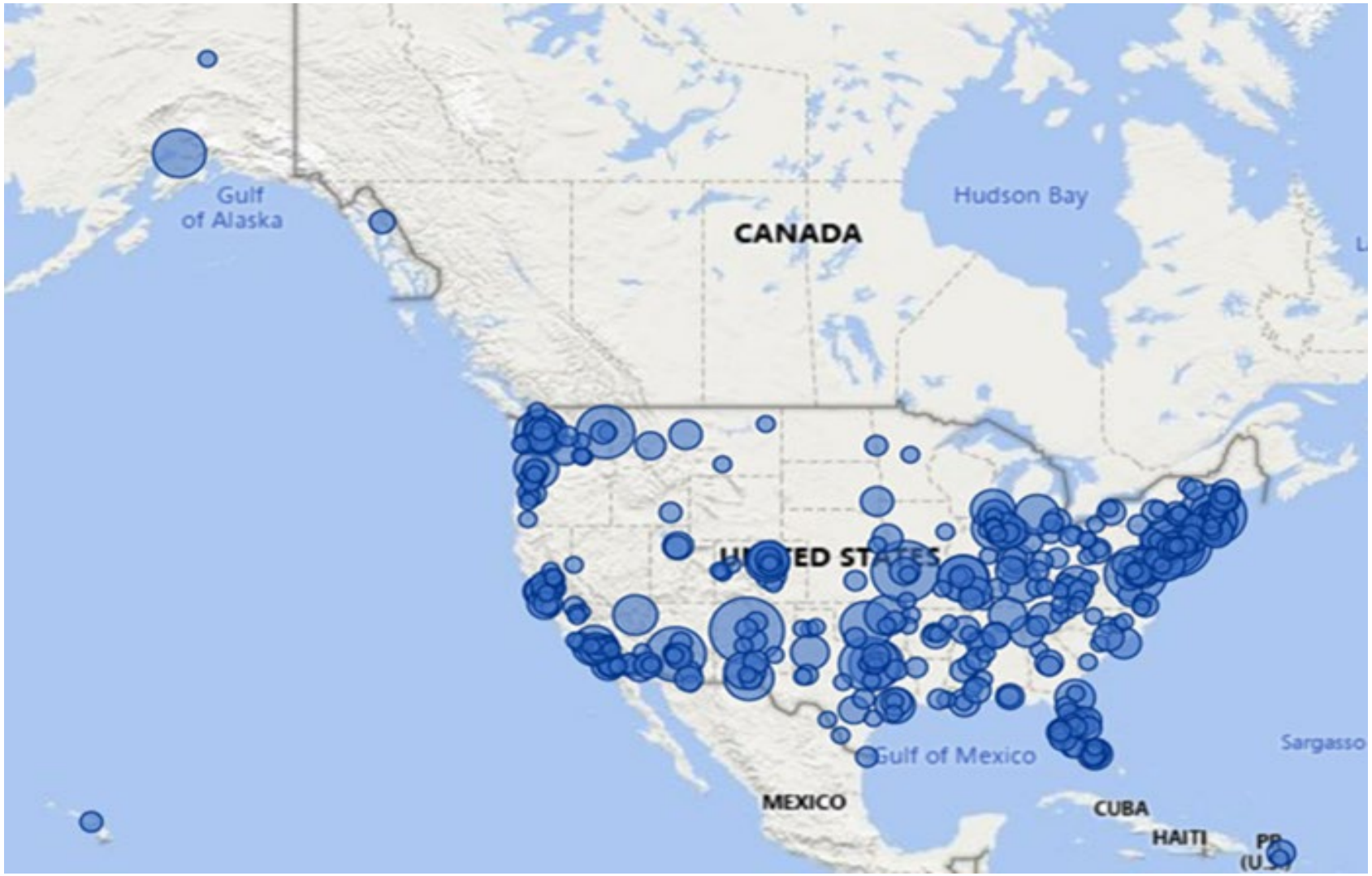


t-BOC (tert-butyloxycarbonyl)

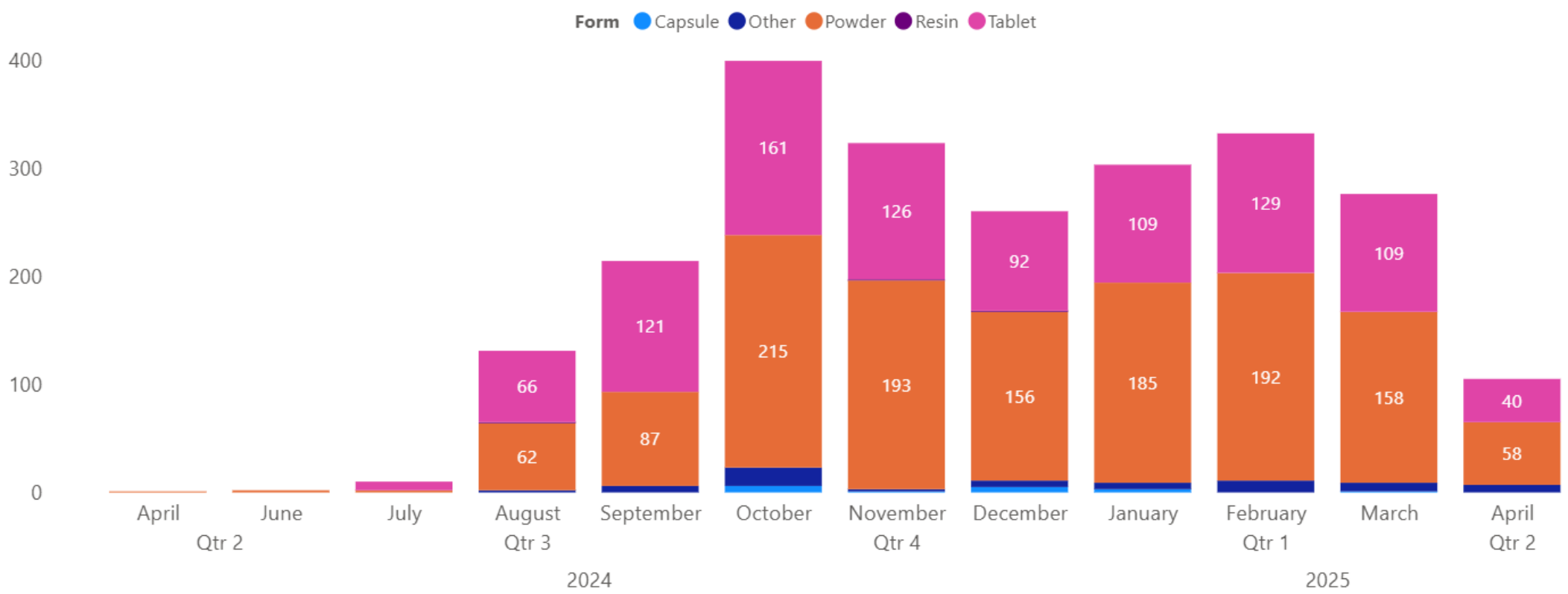
4-Piperidone & t-BOC-4-Piperidone



BTMPS in the US



Fentanyl and BTMPS



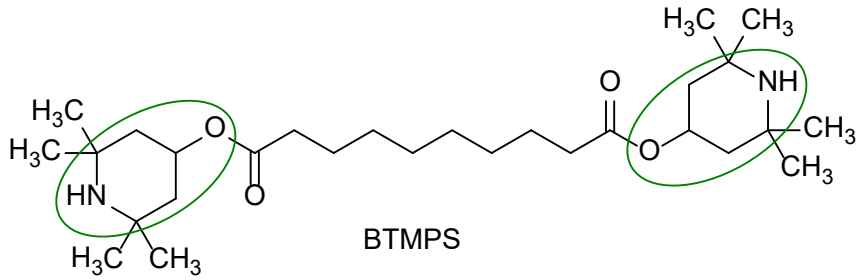
BTMPS: A Failed “Pre-Precursor?”

BTMPS:

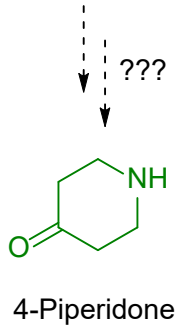
- Bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate
- Additive to plastics, protects against UV degradation (a.k.a. Tinuvin 770)
- Seen in fentanyl samples beginning in 2024, along with related compounds
- No known biological activity in humans, psychoactive or otherwise

Why are we seeing it?

- To increase the high?
- Is it being used as a cutting agent?
- Is it being used as a reagent in synthesis?
- Is it being used as a precursor?



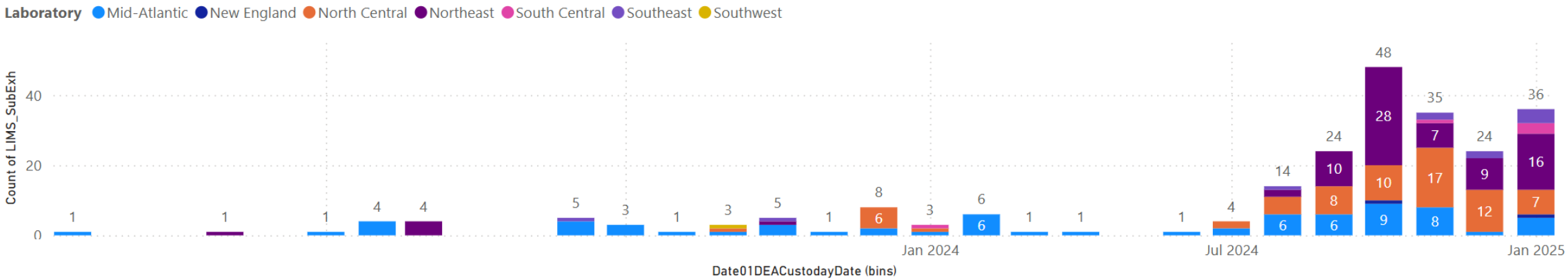
BTMPS

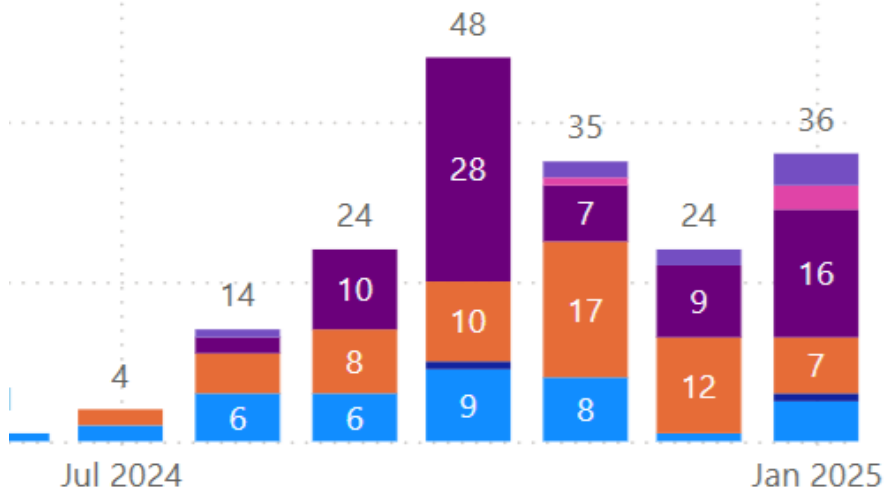


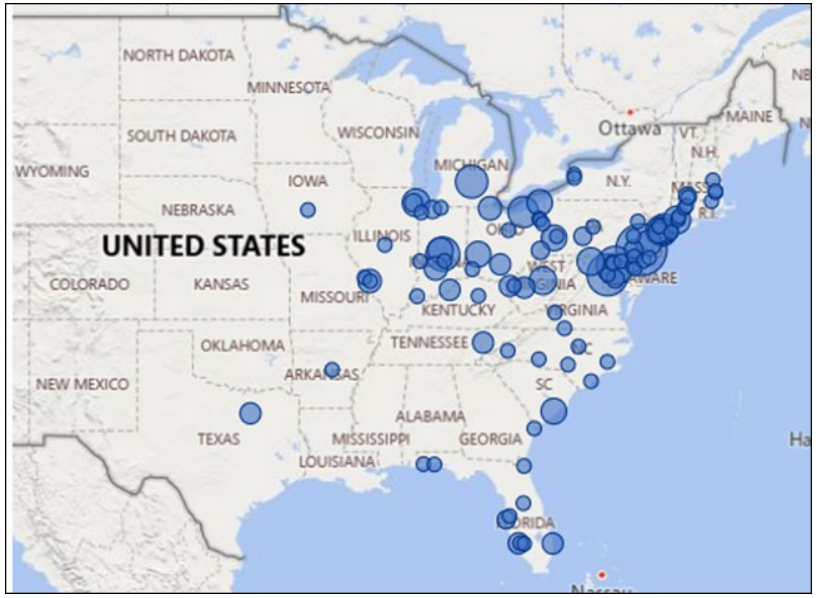
4-Piperidone

Inability to get 4-piperidone precursor (or a protected version) has driven cartels to try alternate methods of production… in the case of BTMPS, unsuccessfully.

Medetomidine DEA Data







Mid-Atlantic New England North Central Northeast South Central Southeast Southwest

NFLIS Data - Medetomidine

	(No column name)	SUBMISSION_DATE_YYYY
1	12	2021
2	263	2022
3	241	2023
4	1418	2024
5	16	2025

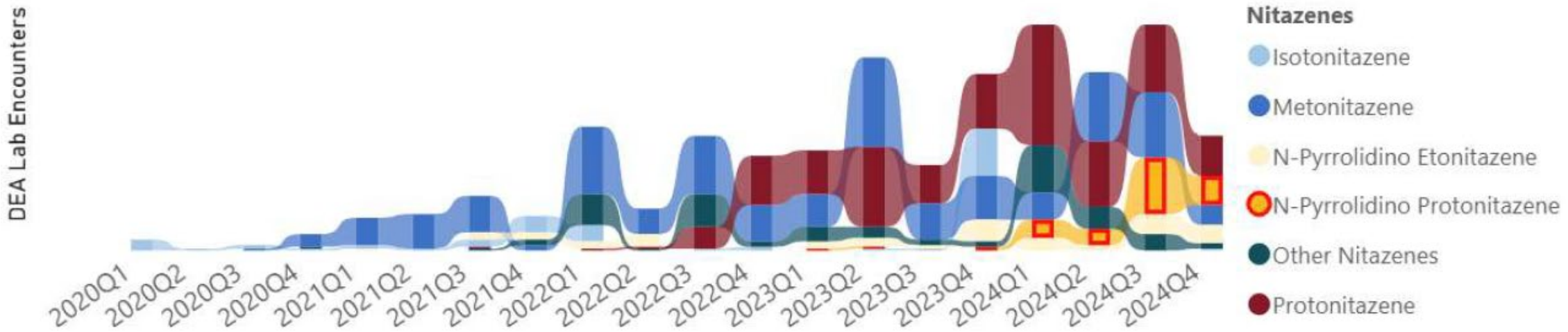
NFLIS Reported Medetomidine since 2017

	(No column name)	SUBMISSION_DATE_YYYY
1	442	2017
2	666	2018
3	1685	2019
4	3472	2020
5	9304	2021
6	12044	2022
7	22975	2023
8	20741	2024
9	71	2025

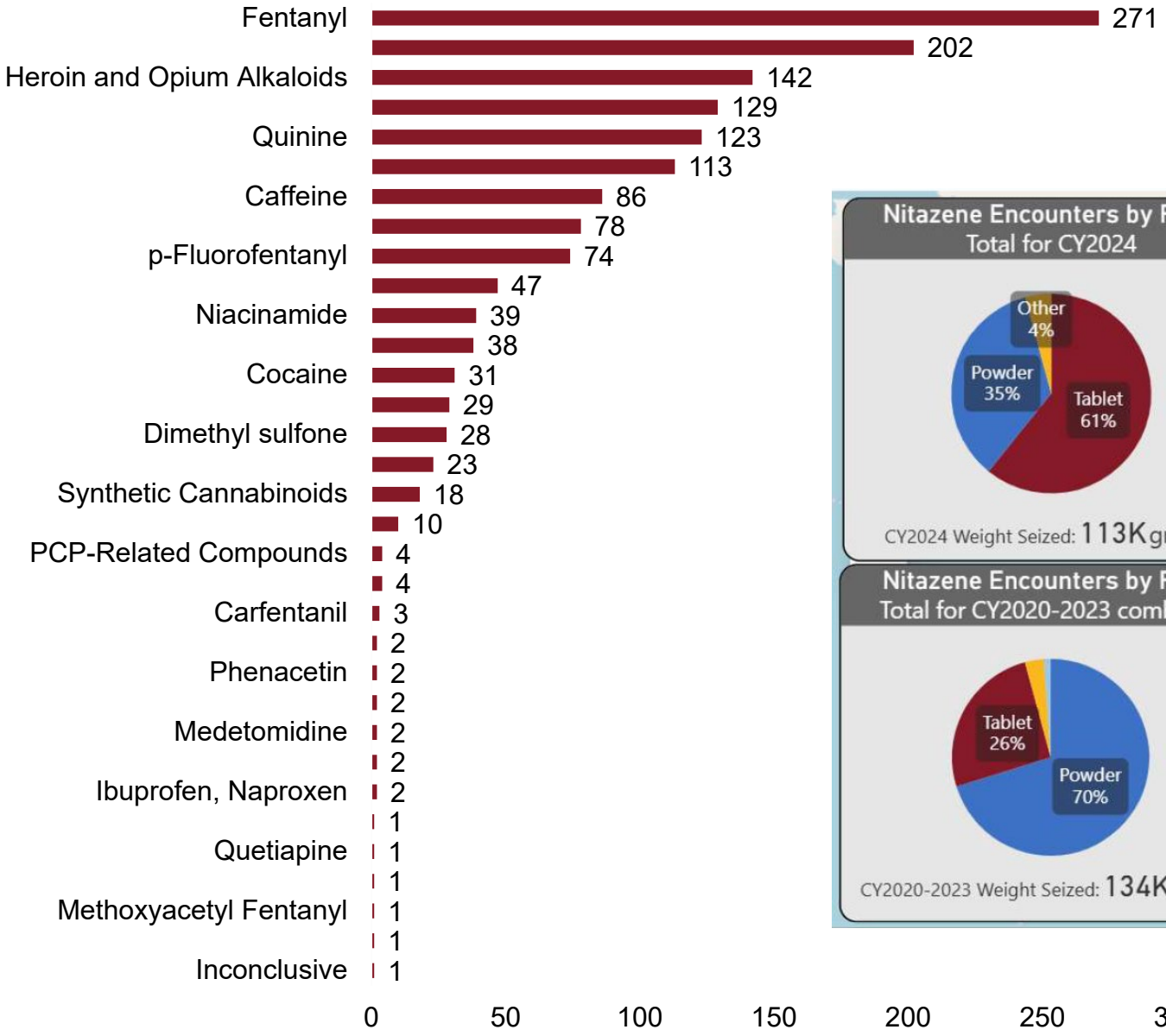
NFLIS Reported Xylazine since 2017

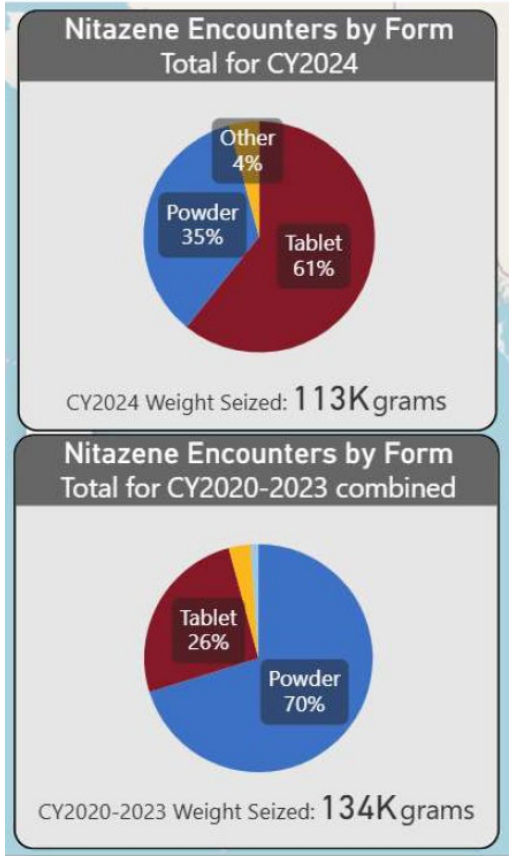
Early Stage?

Nitazenes


DEA Lab Encounters
2020Q1
2020Q2
2020Q3
2020Q4
2021Q1
2021Q2
2021Q3
2021Q4
2022Q1
2022Q2
2022Q3
2022Q4
2023Q1
2023Q2
2023Q3
2023Q4
2024Q1
2024Q2
2024Q3
2024Q4
Nitazenes
Isotonitazene
Metonitazene
N-Pyrrolidino Etonitazene
N-Pyrrolidino Protonitazene
Other Nitazenes
Protonitazene

Substances Co-Identified with Nitazenes





LIMS extract retrieved 11-13-2024
Bar chart depicting substances co-reported by the DEA laboratory system with nitazenes

Nitazene Identifications by the DEA Laboratory System

Nitazene	Powder	Tablet	Plant Material	Other	*Total*
Metonitazene	273	70	0	12	355
Protonitazene	150	132	0	12	294
Isotonitazene	33	29	0	4	66
N-Pyrrolidino Etonitazene	26	30	6	4	66
N-Pyrrolidino Protonitazene	12	44	0	0	56
N-Desethyl Isotonitazene	6	18	0	0	24
Etodesnitazene	7	16	0	0	23
Flunitazene	11	6	0	1	18
N-Desethyl Etonitazene	12	2	0	1	15
N-Piperidinyl Etonitazene	8	0	0	0	8
Ethyleneoxynitazene	7	0	0	0	7
Butonitazene	4	0	0	0	4
Metodesnitazene	3	0	0	0	3
N-Pyrrolidino Metonitazene	3	0	0	0	3
Methylenedioxynitazene	1	0	0	0	1

Data retrieved from AIDD 11-22-2024

Conclusions

- New drugs and precursors continue to spread as synthetic drugs evolve and chemicals get regulated
- Synthesis can assist in identifying new substances
- Polydrug mixtures continue to change

Thank you for your attention!

Agnes D Winokur
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DEA Special Testing and Research Laboratory

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Agnes.D.Winokur@dea.gov

571-776-2079

DEA logo

Submit your Questions

Scan for Q&A

Real-Time Trends in Fentanyl Formulation – Q2/2025

What's in the drug supply?

Joshua DeBord, PhD

DISCLOSURES

- I am a paid employee of CFSRE
- I have no conflicts of interest in the material of this presentation
- CFSRE's NPS Discovery program is funded in part 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.

NIJ | National Institute of Justice

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WHAT'S IN THE DRUG SUPPLY?

- **Which drug? – Compositional Variation**
- **What market? – Geographic Variation**
- **When? – Temporal Variation**

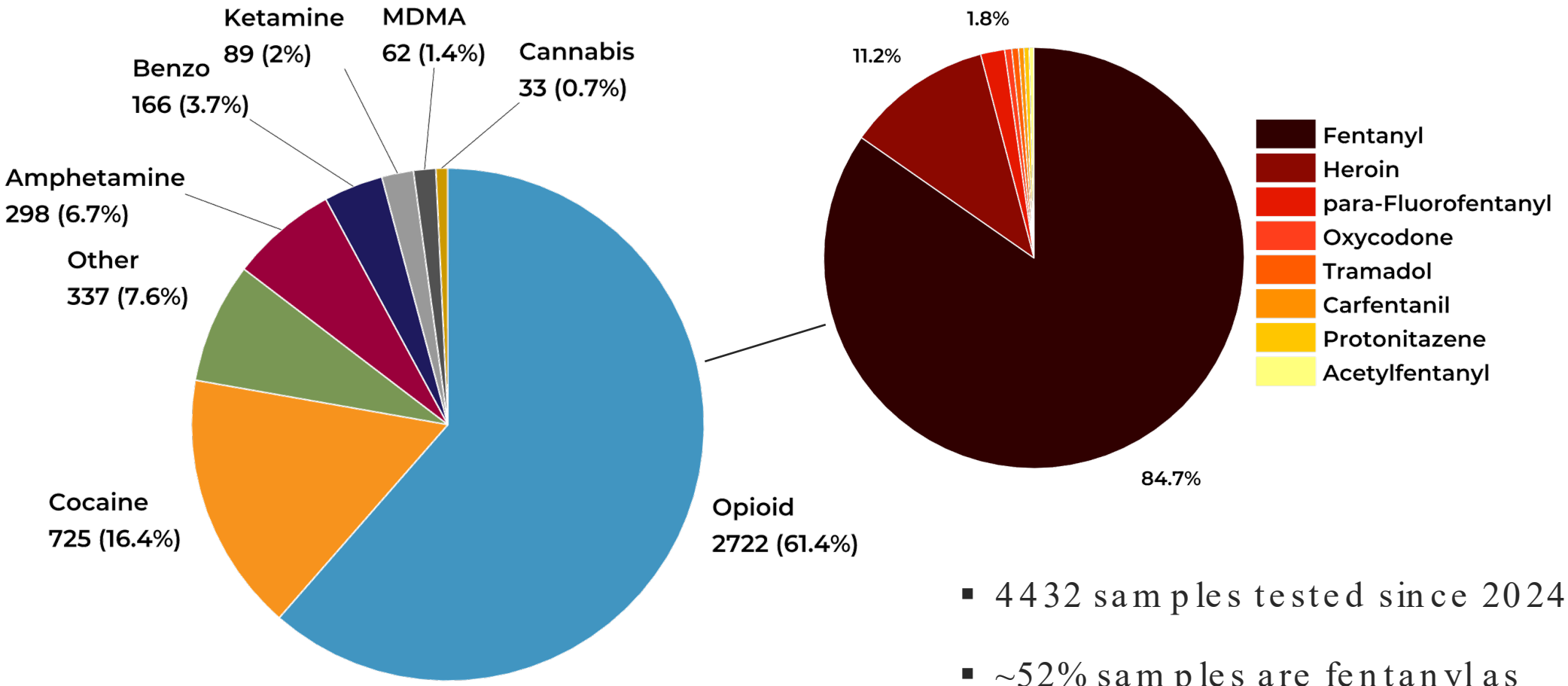
Ethical research statements:

These data reflect only the substances tested through the program

These data represent only samples tested by CFSRE. Trends are indicative, not definitive, due to non-random sampling

X% of tested samples contained Y [substance]; this does not mean X% of samples contain it

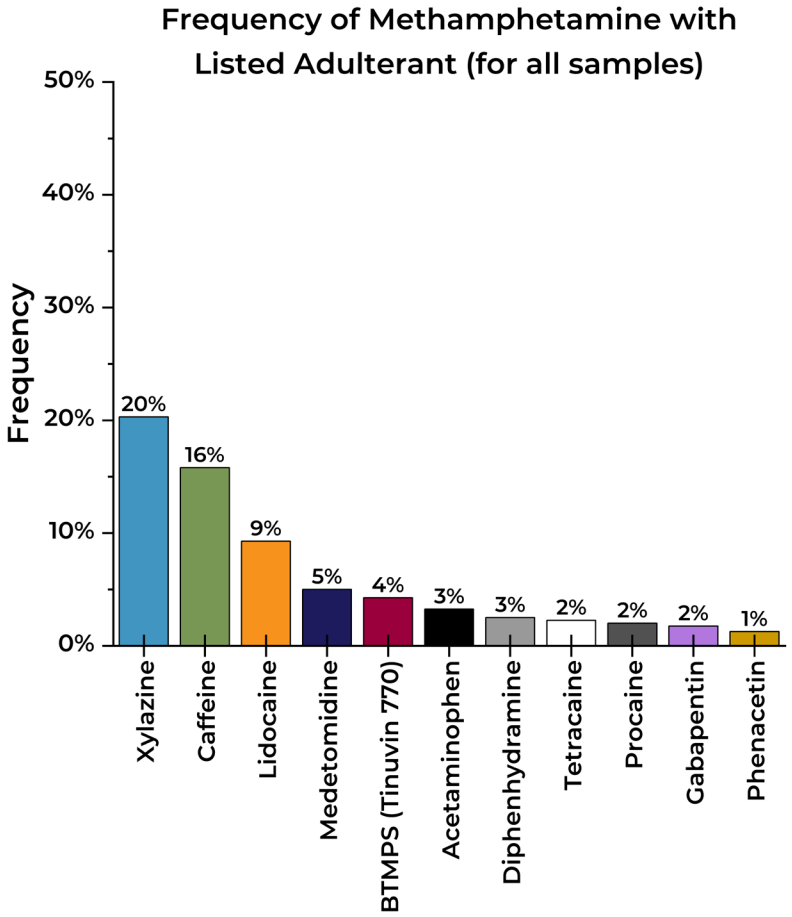
NPS DISCOVERY TESTING SINCE 2024

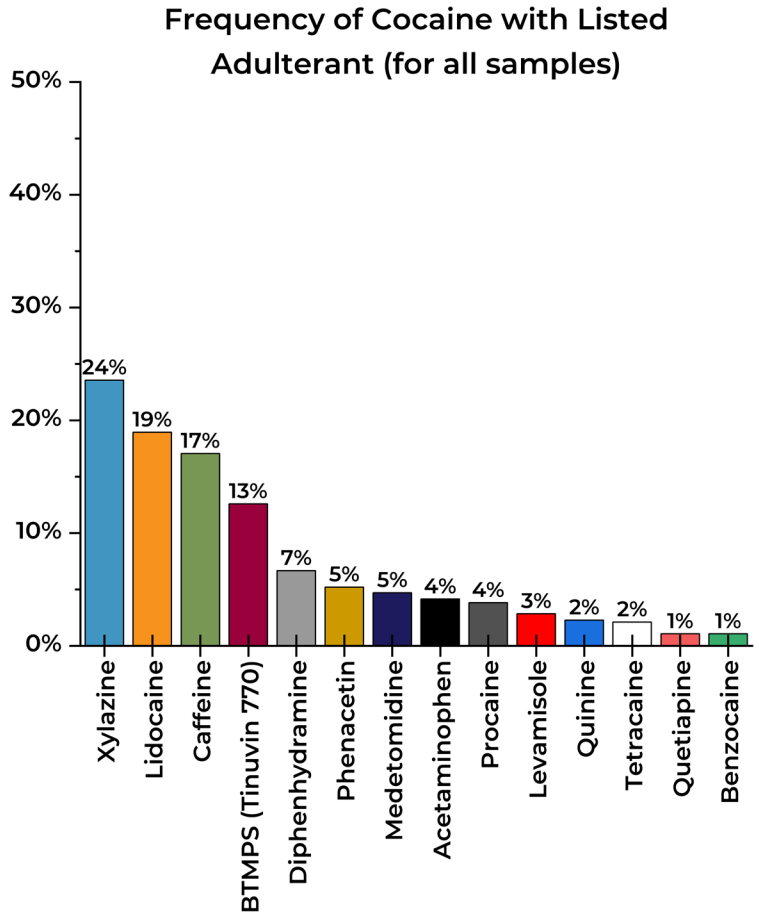


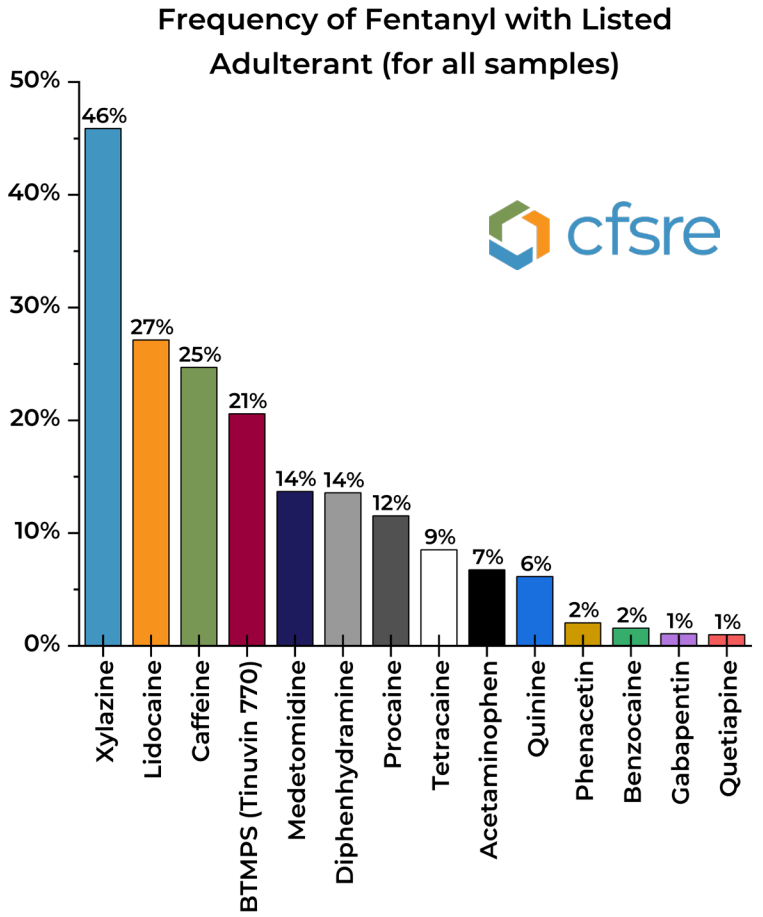
- 4432 samples tested since 2024
- ~52% samples are fentanyl as main drug substance

(CFSRE data; unpublished)

WHAT DRUG?







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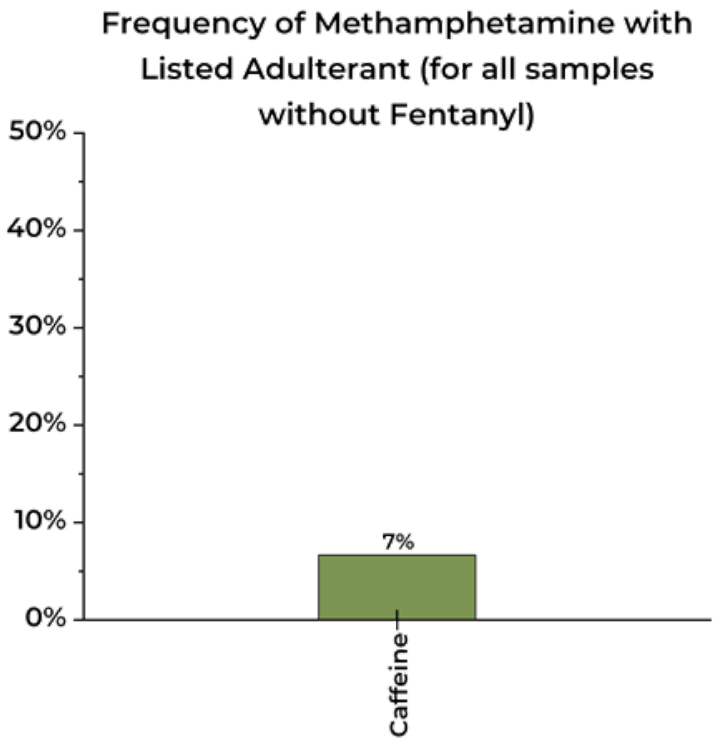
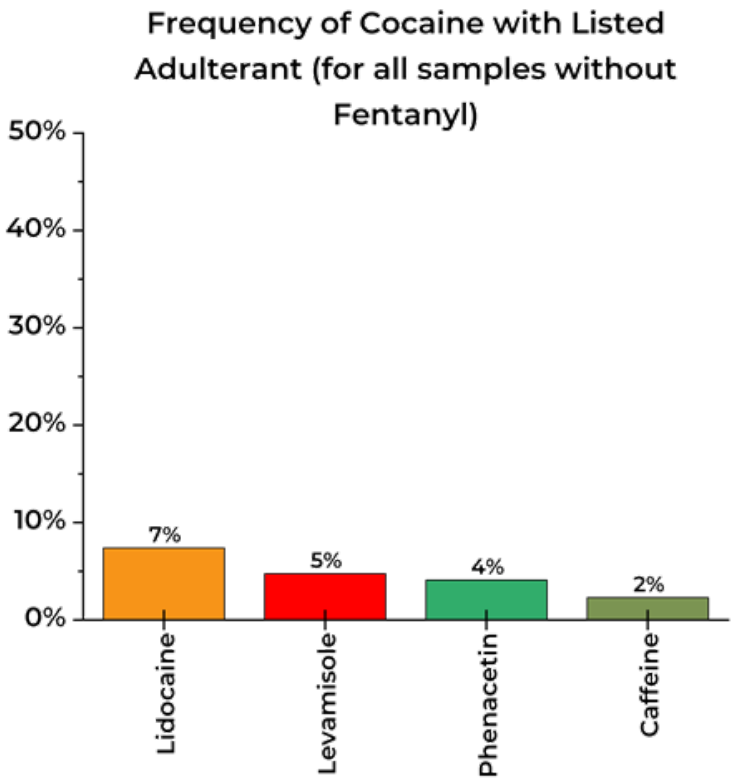
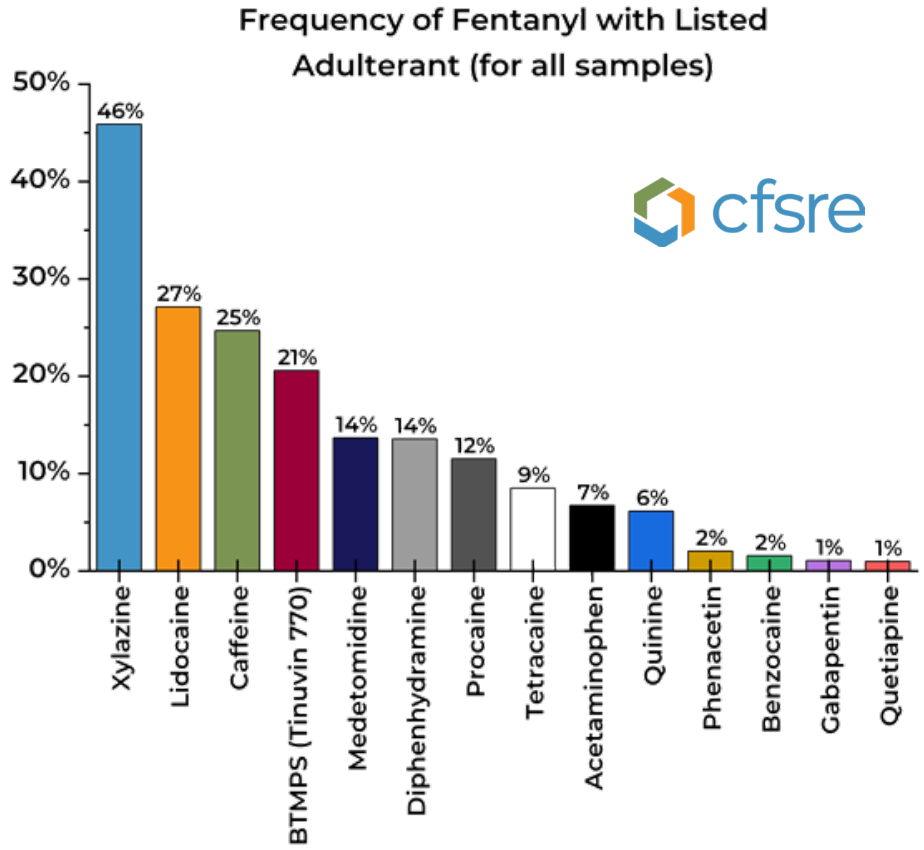
(CFSRE data; unpublished)

WHAT DRUG?

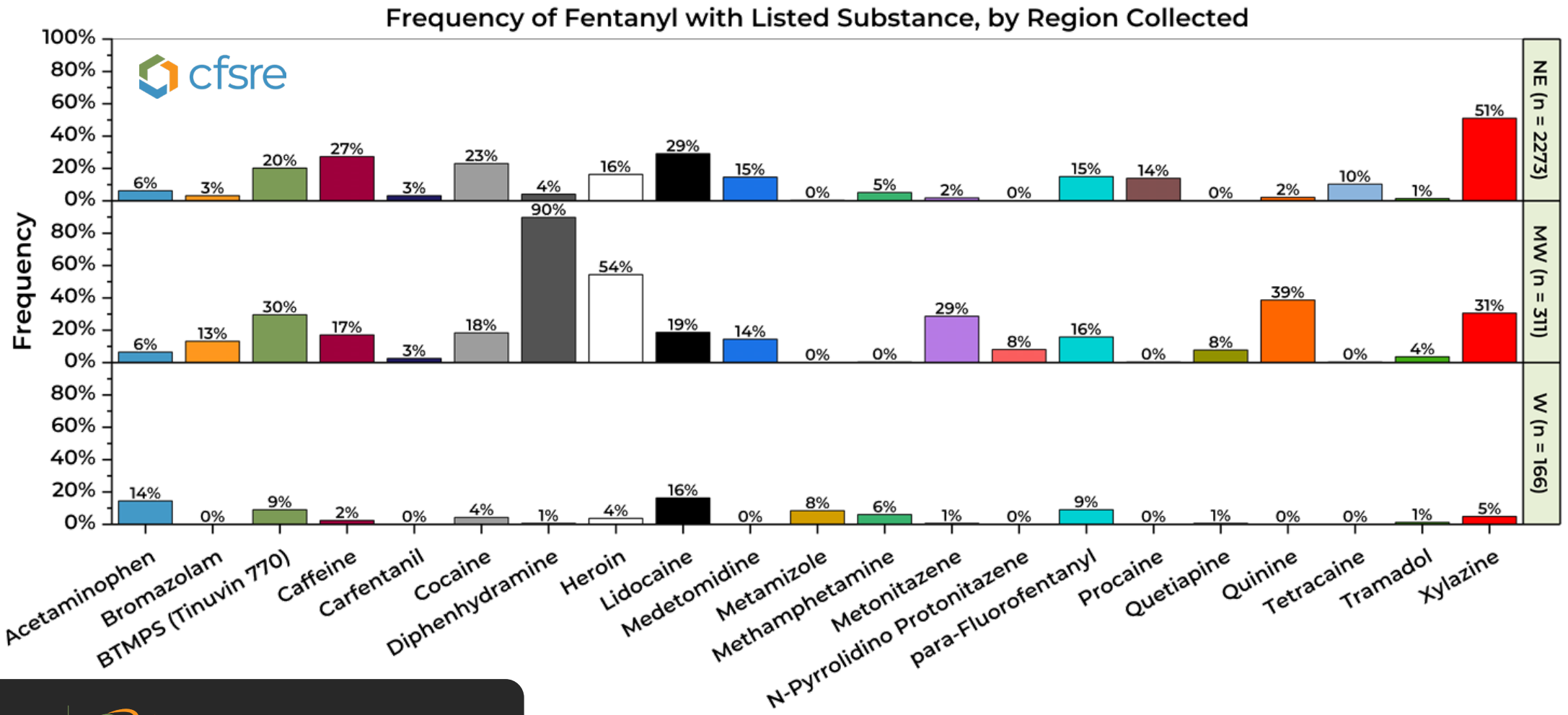






(CFSRE data; unpublished)

W HAT MARKET?



(CFSRE data; unpublished)

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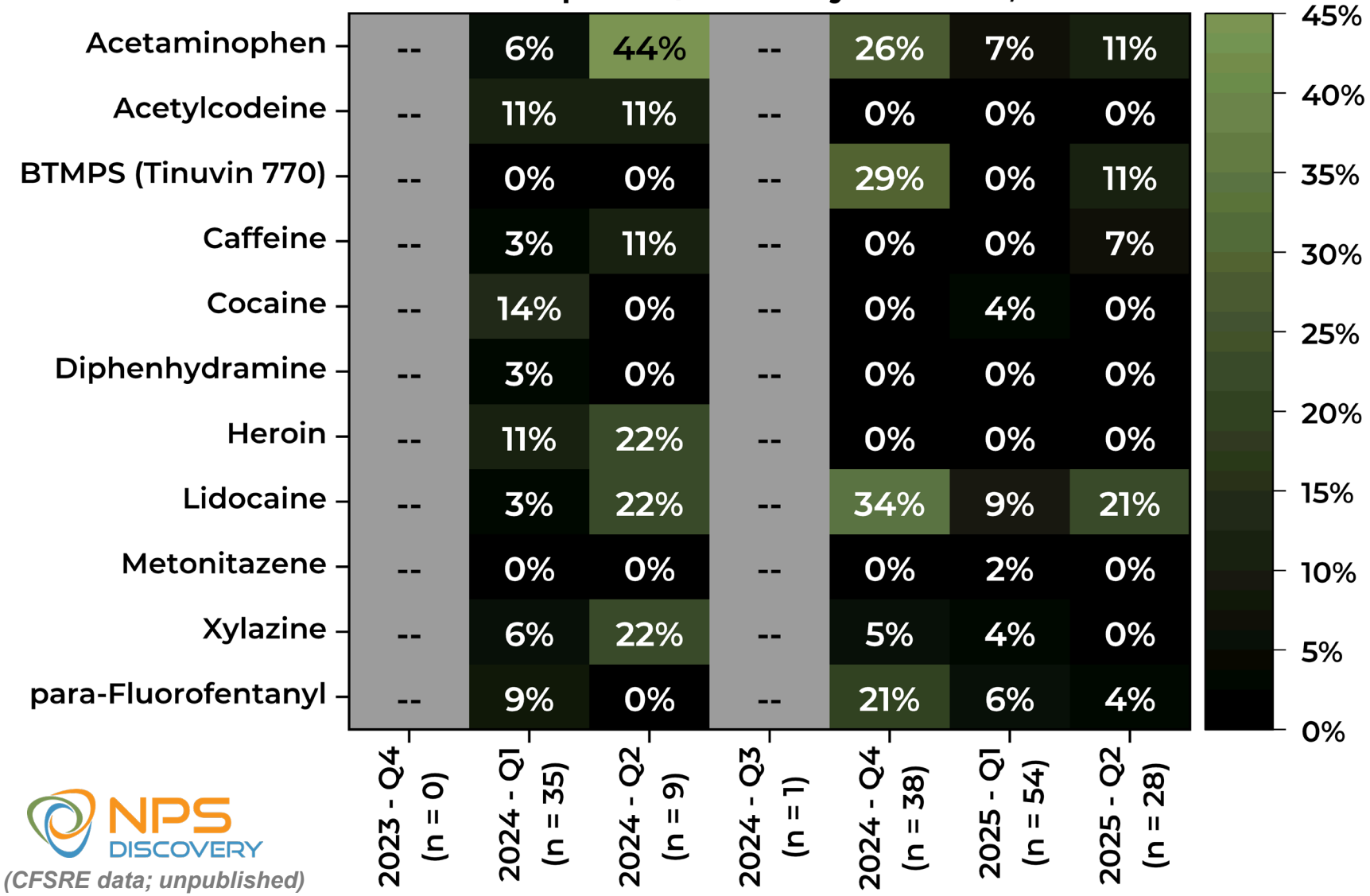
Frequency (%) of Listed Substances in Samples w/ Fentanyl from W, USA



NPS DISCOVERY

(CFSRE data; unpublished)

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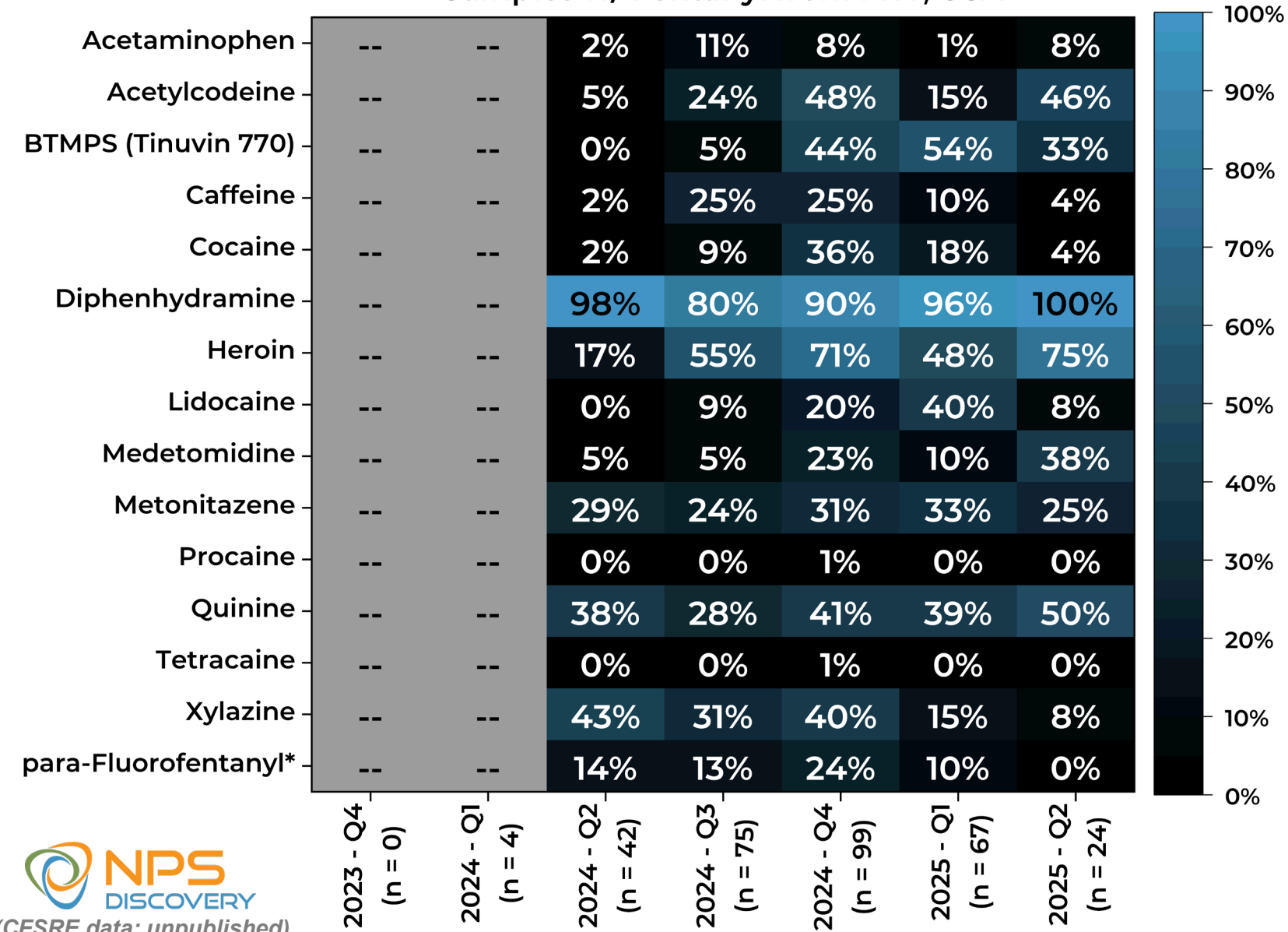
Frequency (%) of Listed Substances in Samples w/ Fentanyl from MW, USA



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NPS DISCOVERY

(CFSRE data; unpublished)

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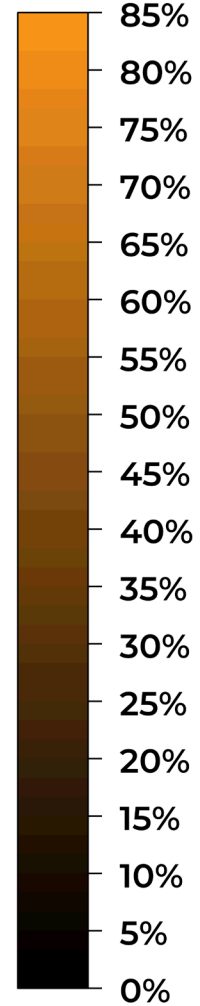
Frequency (%) of Listed Substances in Samples w/ Fentanyl from NE, USA

	2023 - Q4 (n = 22)	2024 - Q1 (n = 224)	2024 - Q2 (n = 454)	2024 - Q3 (n = 552)	2024 - Q4 (n = 476)	2025 - Q1 (n = 414)	2025 - Q2 (n = 129
Acetaminophen	0%	4%	4%	6%	7%	6%	20%
Acetylcodeine	0%	6%	6%	8%	8%	10%	5%
BTMPS (Tinuvin 770)	0%	0%	2%	13%	37%	40%	30%
Caffeine	14%	30%	24%	24%	29%	30%	38%
Cocaine	23%	21%	17%	20%	29%	26%	29%
Diphenhydramine	9%	9%	4%	4%	2%	4%	1%
Heroin	5%	17%	12%	15%	19%	22%	12%
Lidocaine	9%	10%	15%	22%	43%	45%	43%
Medetomidine	0%	0%	8%	16%	18%	24%	19%
Metonitazene	0%	1%	2%	3%	3%	0%	0%
Procaine	0%	4%	6%	11%	15%	29%	24%
Quinine	5%	2%	2%	2%	2%	2%	3%
Tetracaine	0%	0%	8%	12%	13%	14%	11%
Xylazine	82%	72%	64%	53%	46%	36%	22%
para-Fluorofentanyl	14%	14%	18%	17%	16%	12%	3%

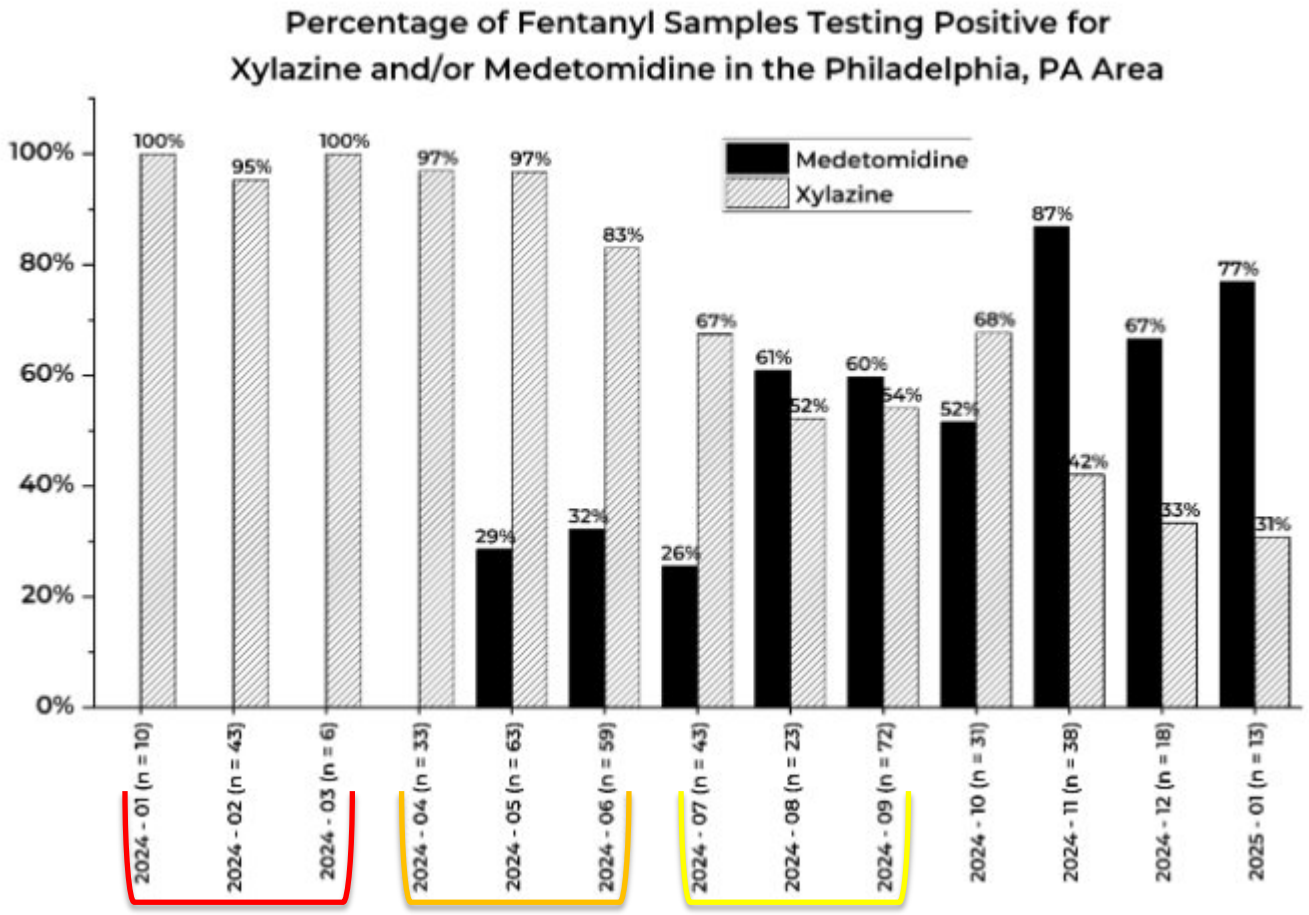


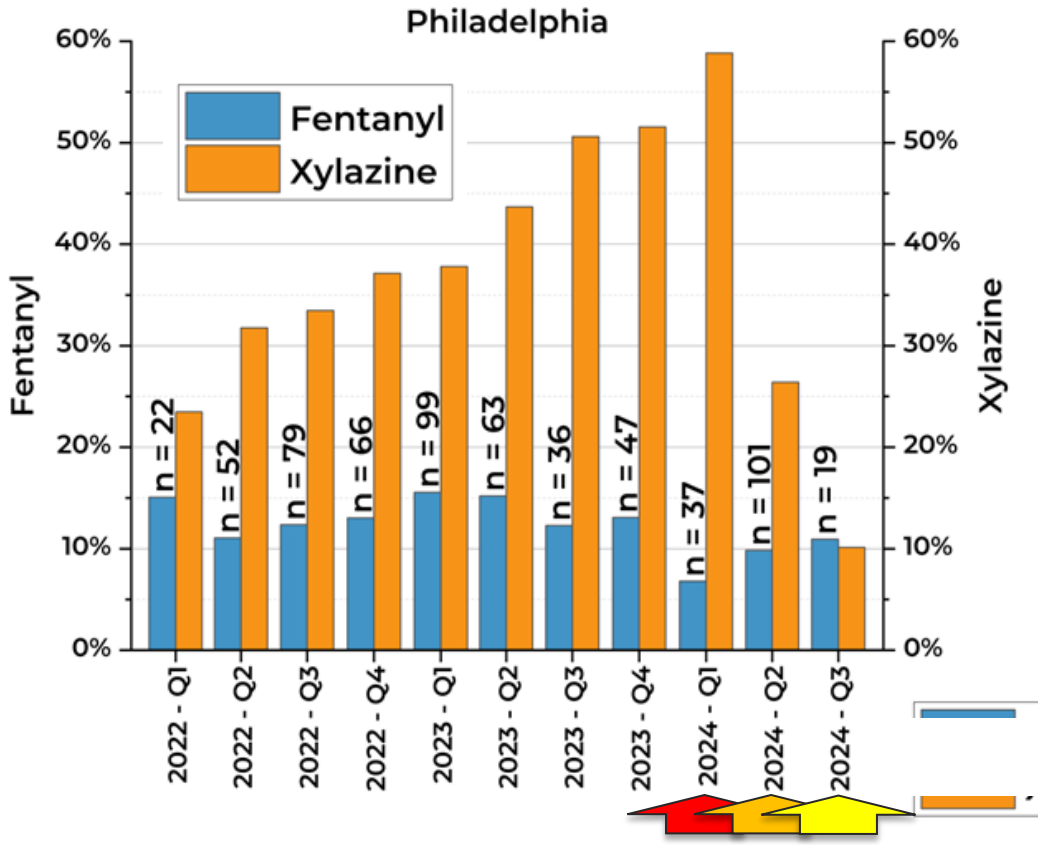
cfsre NPS DISCOVERY

NPS DISCOVERY

(CFSRE data; unpublished)

OPIOIDS & ALPHA-2 AGONISTS (PHILADELPHIA, PA)





(CFSRE data; unpublished)

PDPH Health Alert Hospitals and behavioral health providers are reporting severe and worsening presentations of withdrawal among people who use drugs (PWUD) in Philadelphia 12/10/2024
https://hip.phila.gov/health-alerts/hospitals-and-behavioral-health-providers-are-reporting-severe-and-worsening-presentations-of-withdrawal-among-people-who-use-drugs-pwud-in-philadelphia/

Thank you!

Questions?

www.cfsre.org

www.npsdiscovery.org

joshua.debord@cfsre.org

Submit your Questions

Scan for Q&A

Shifting Tides: The Continued Evolution of the “Fourth Wave” of America’s Overdose Crisis

Millennium Health Signals Report™

Eric Dawson, PharmD
Vice President, Clinical Affairs
Millennium Health

Millennium Health

- Clinical laboratory uniquely focused on providing clinical drug testing services for healthcare providers primarily in the areas of Substance Use Disorders, Behavioral Health, Pain Management and Primary Care
- With accounts in all 50 states and next day turn-around-time for laboratory results, Millennium has the capability to monitor large scale changes in drug use trends in real-time

CAP ACCREDITED
COLLEGE of AMERICAN PATHOLOGISTS

CLIA Certification

HITRUST CSF Certified

Methods: UDT Data & Sample Population

- Retrospective, cross-sectional analysis of definitive urine drug testing (UDT) results from **over 1.4 million specimens** representing **nearly 458,000 unique patients**
- Collected from patients aged 18 years or older in health care practices in all 50 U.S. states between January 1, 2016, and November 30, 2024
- Specimens were selected based on the presence of a substance use disorder (SUD) diagnosis code provided by the ordering physician
- Specimens collected within 30 days of a prior specimen for the same patient were excluded from analysis
- Specimens with reported prescriptions for any of the drugs or drug categories evaluated were excluded from all analyses

1. Millennium Health, LLC. Millennium Health Signals Report, Volume 7. *Shifting Tides – The Continued Evolution of the "Fourth Wave" of America's Overdose Crisis.* Published: February 2025. Available at: https://www.millenniumhealth.com/signalsreport/

Figure 1. Fentanyl Urine Drug Test Positivity Rates

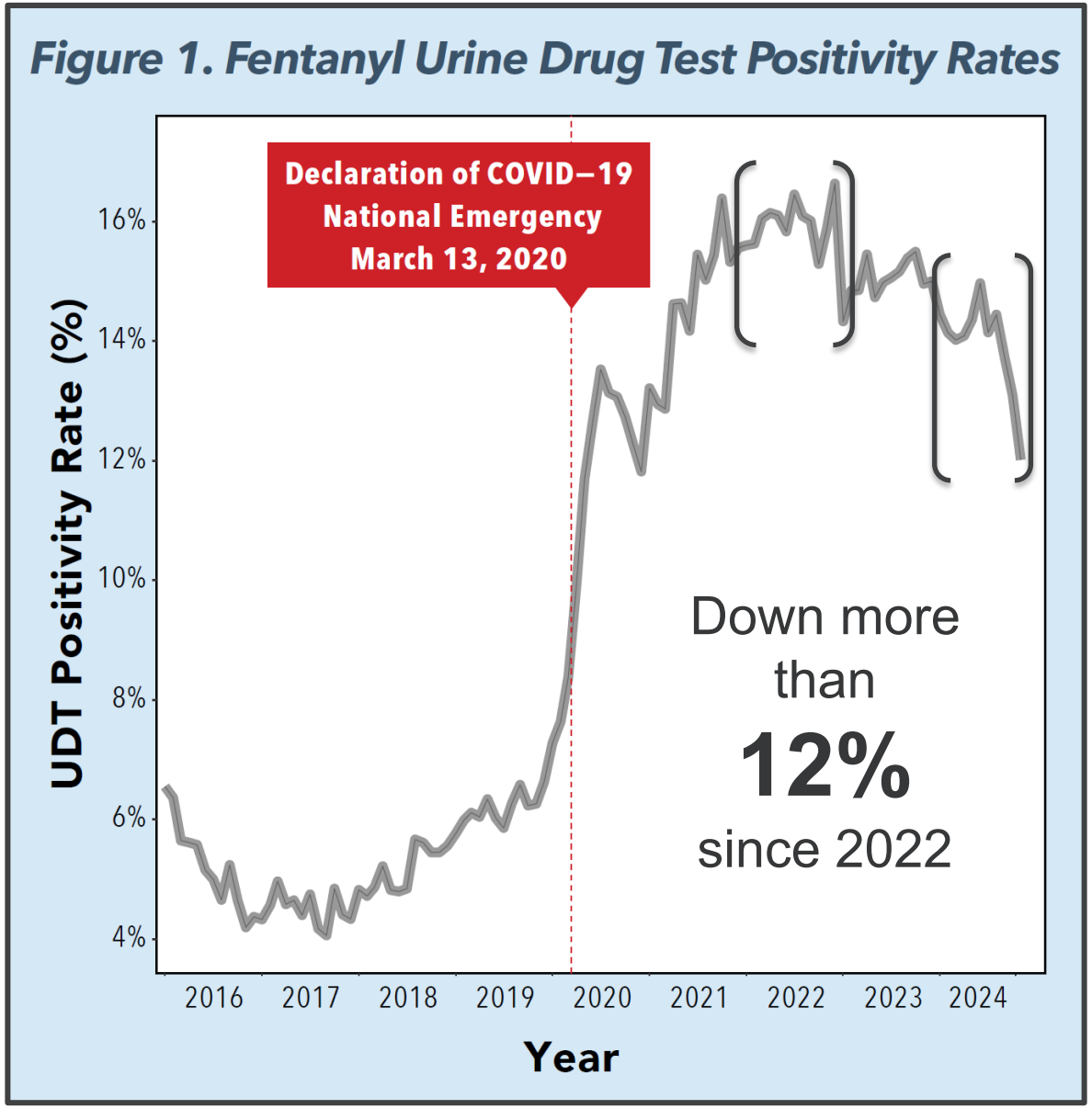


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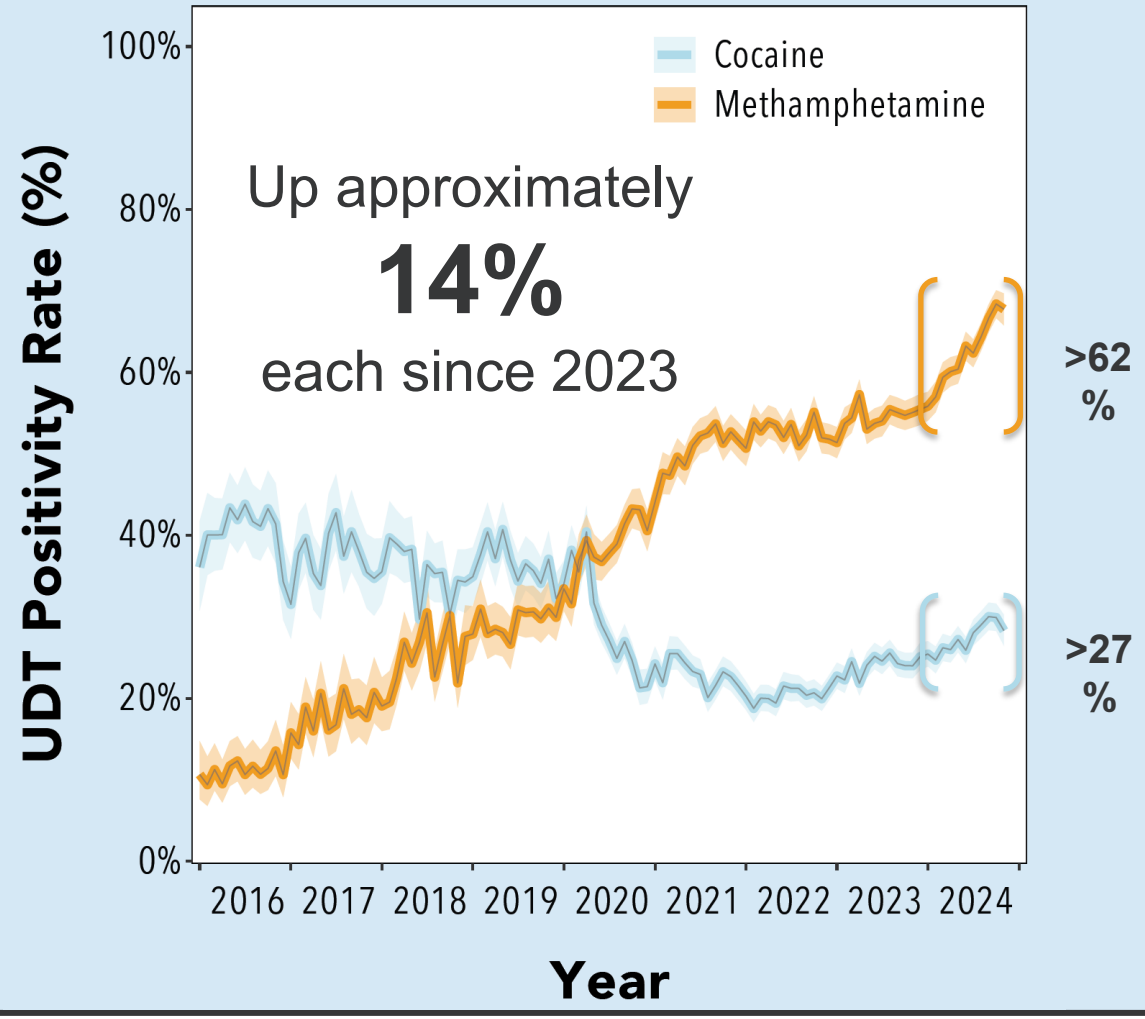
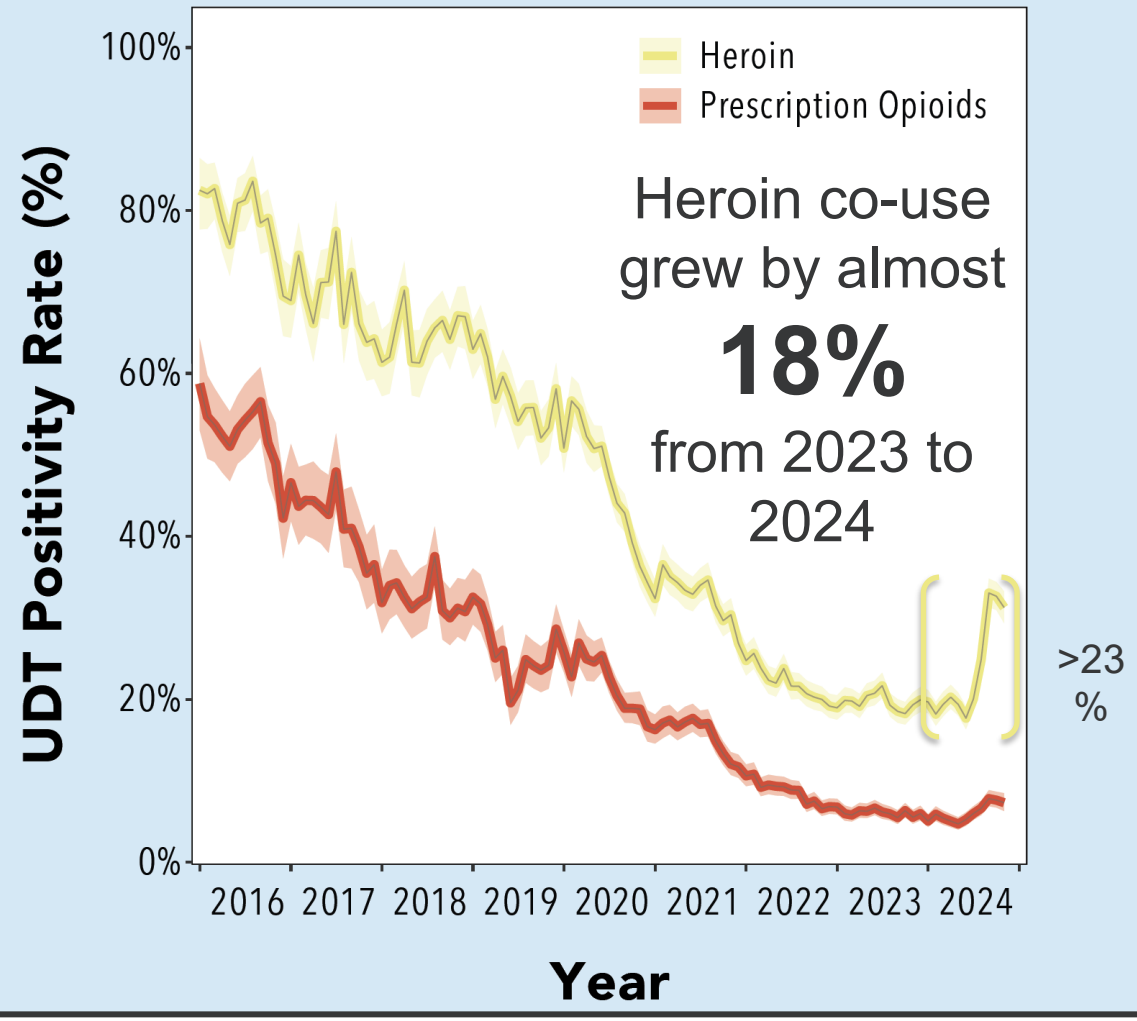
Figure 2. Co-Detection of Methamphetamine and Cocaine in the Population Using Fentanyl



1. Millennium Health, LLC. Millennium Health Signals Report, Volume 7. *Shifting Tides – The Continued Evolution of the "Fourth Wave" of America's Overdose Crisis.* Published: February 2025. Available at: https://www.millenniumhealth.com/signalsreport/

Figure 2. Co-Detection of Heroin and Prescription Opioids in the Population Using Fentanyl



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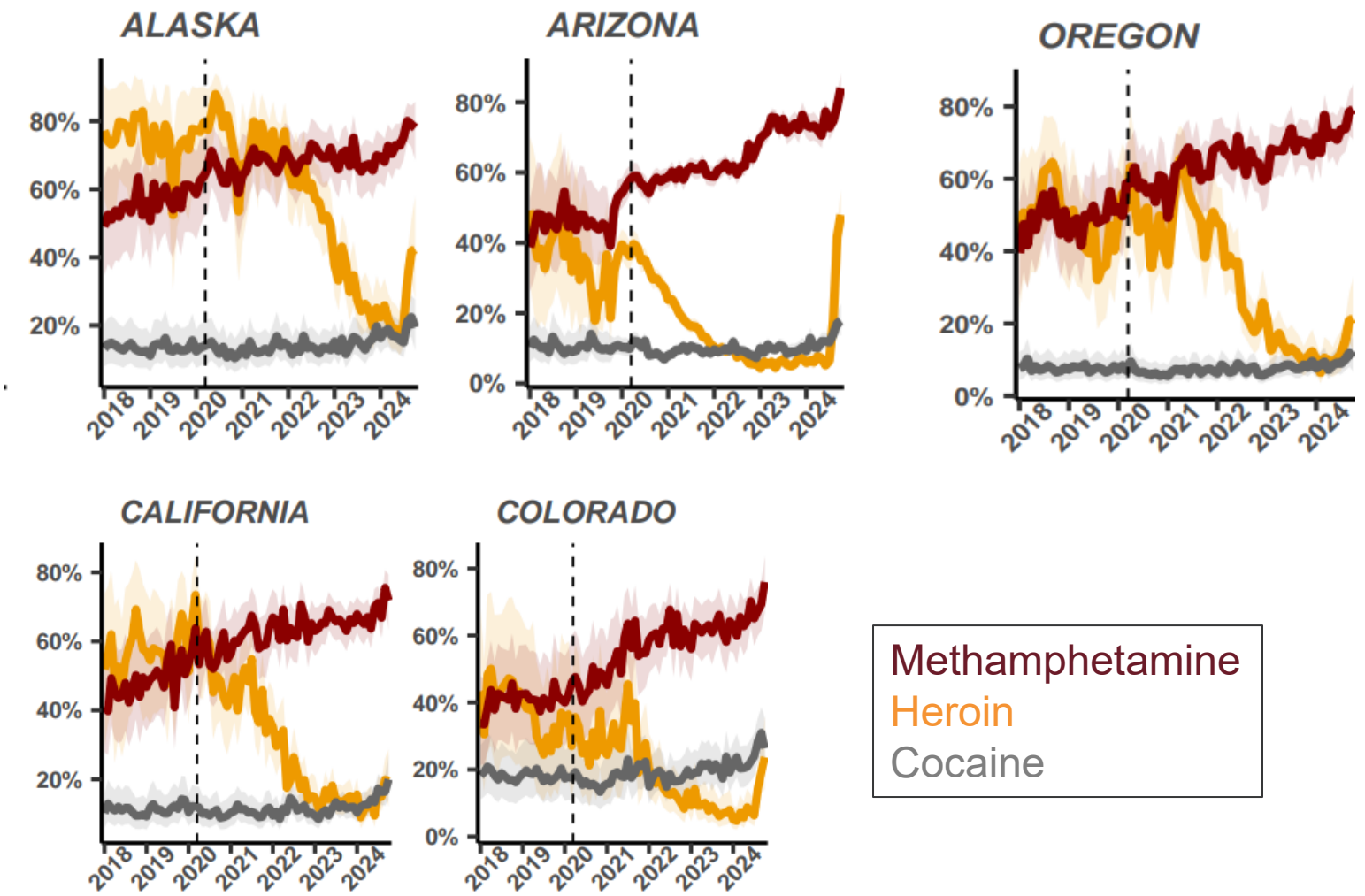
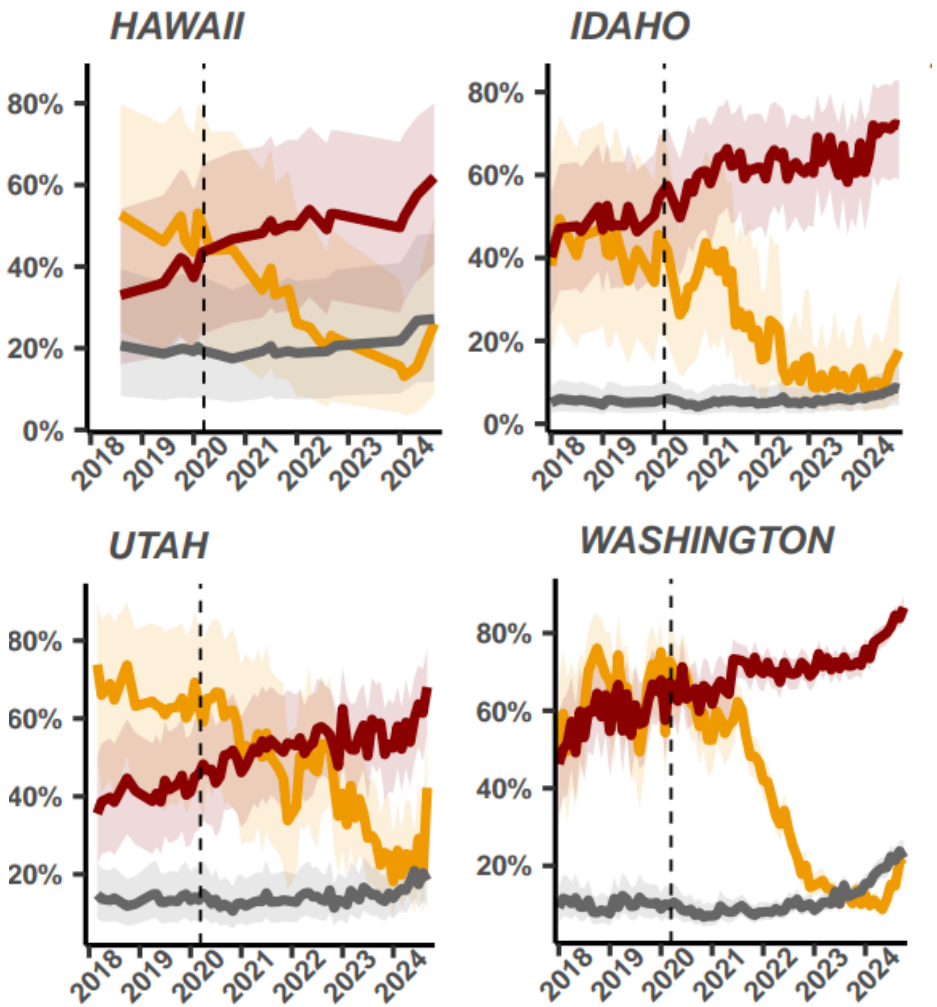
Drug Co-Detection in Fentanyl-Positive Specimens



Millennium Health, Data on file.

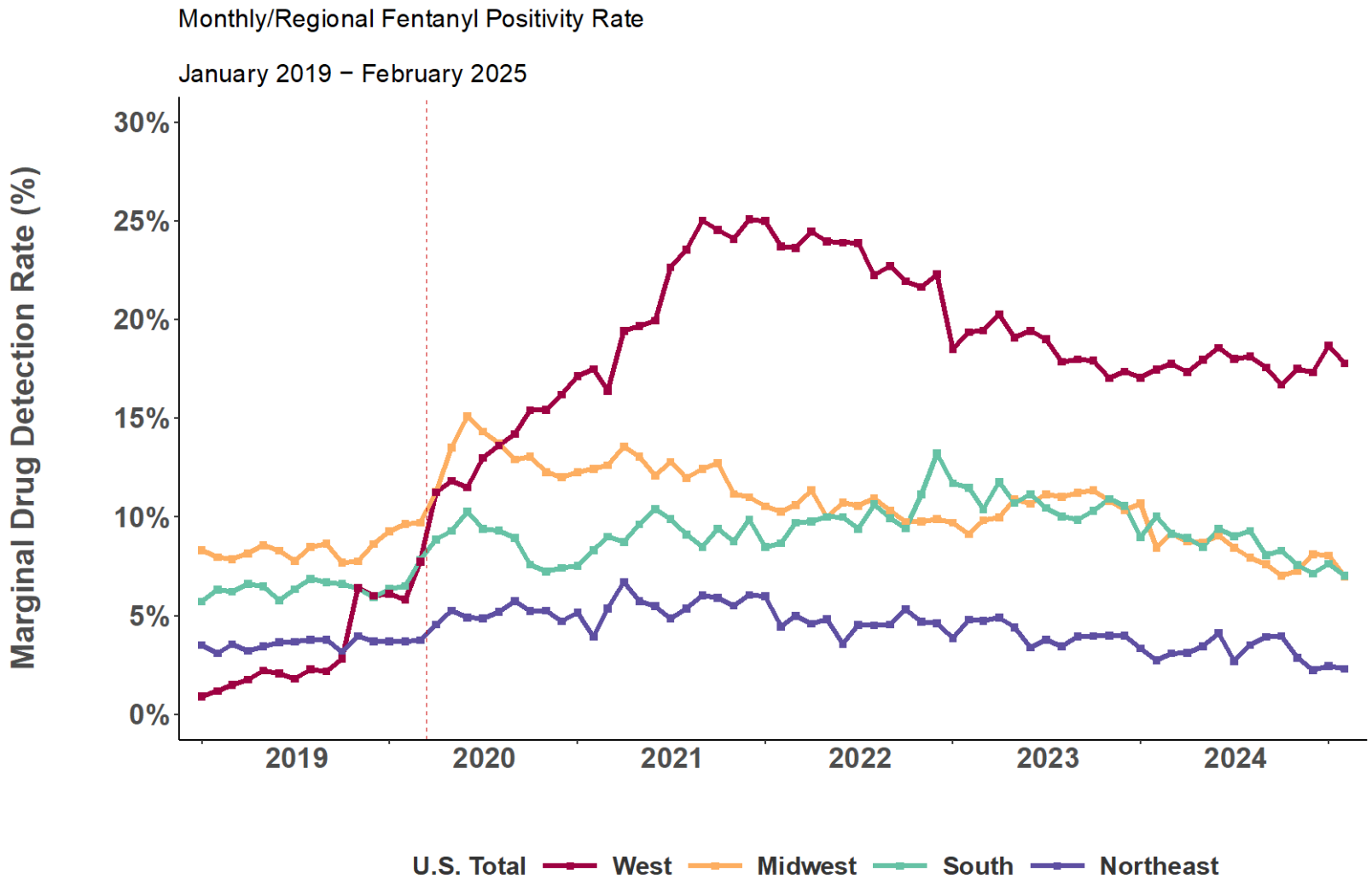
Drug Co-Detection in Fentanyl-Positive Specimens



Methamphetamine
Heroin
Cocaine

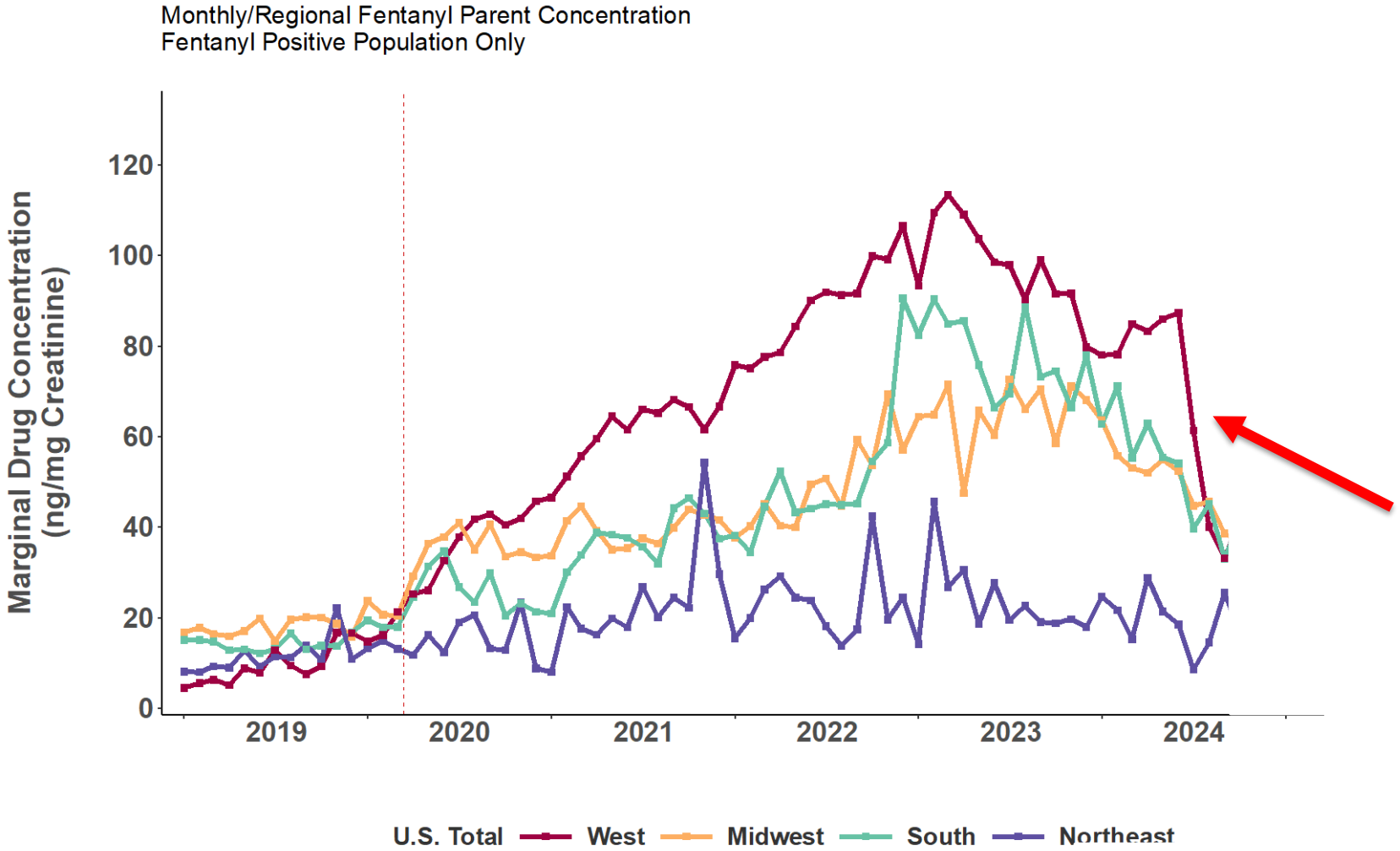
Millennium Health, Data on file.

Fentanyl Detection in UDT



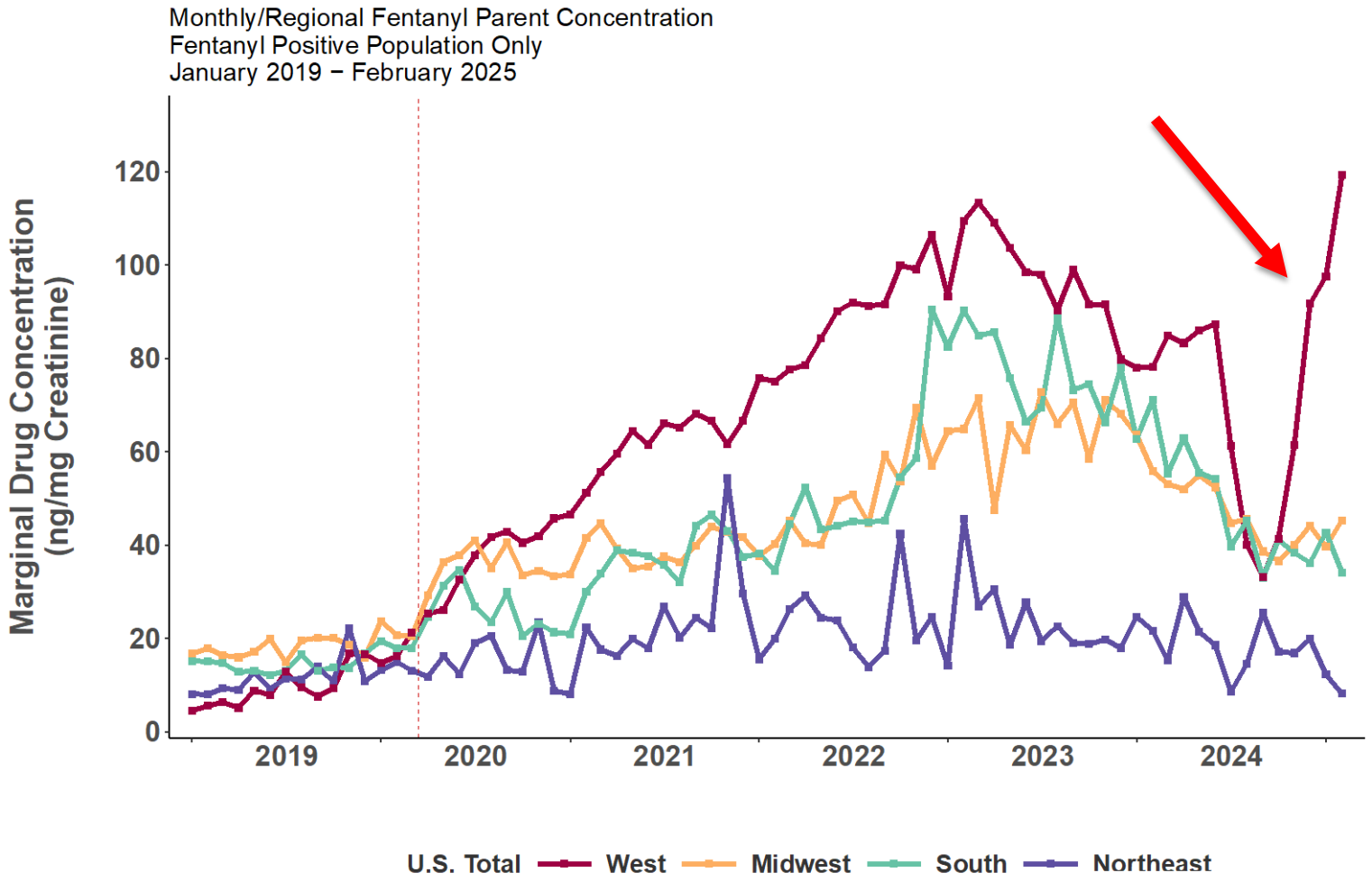
Millennium Health, Data on file.

Fentanyl Concentrations in UDT through October 2024



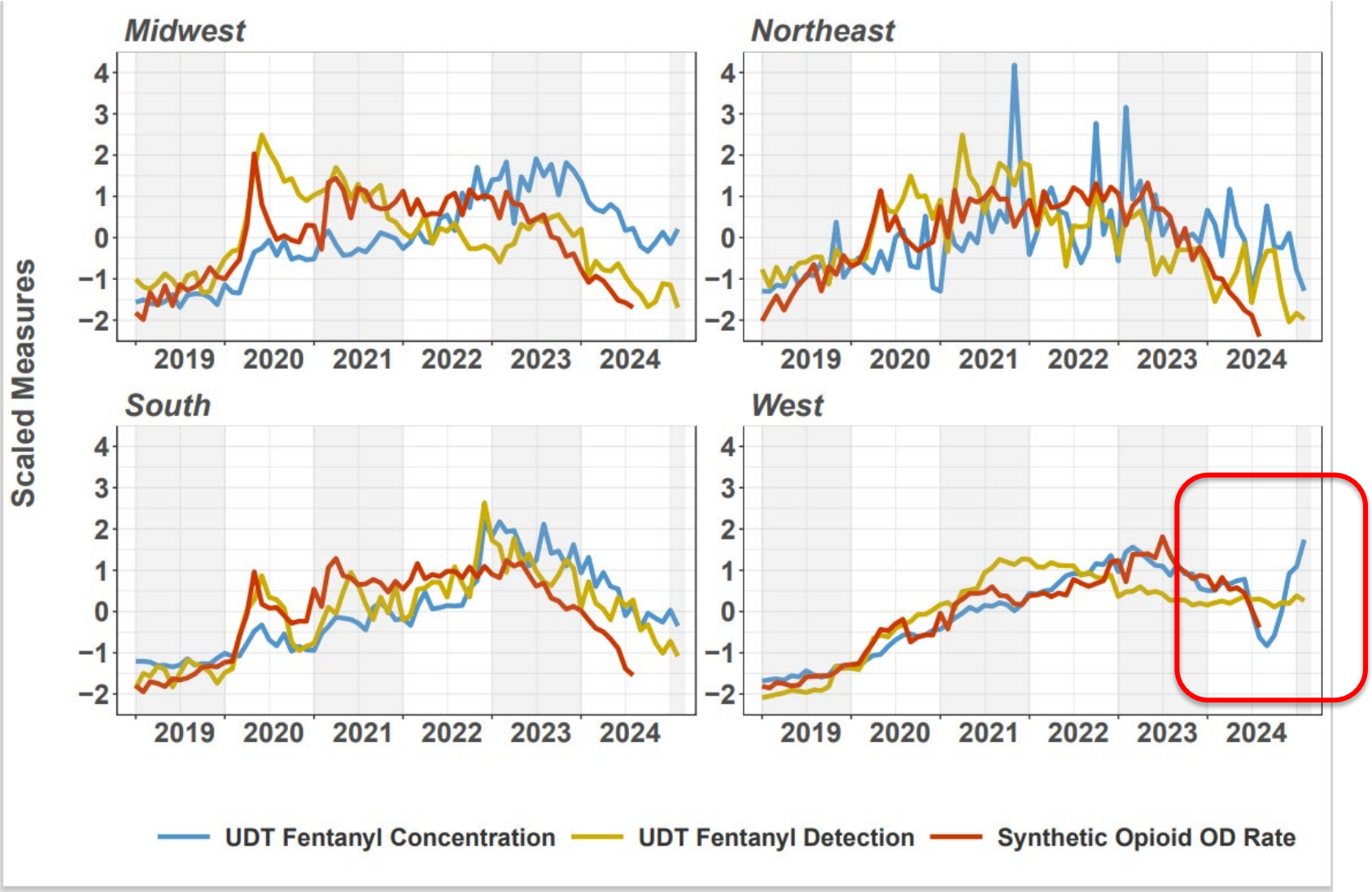
Millennium Health, Data on file.

Fentanyl Concentrations in UDT through February 2025



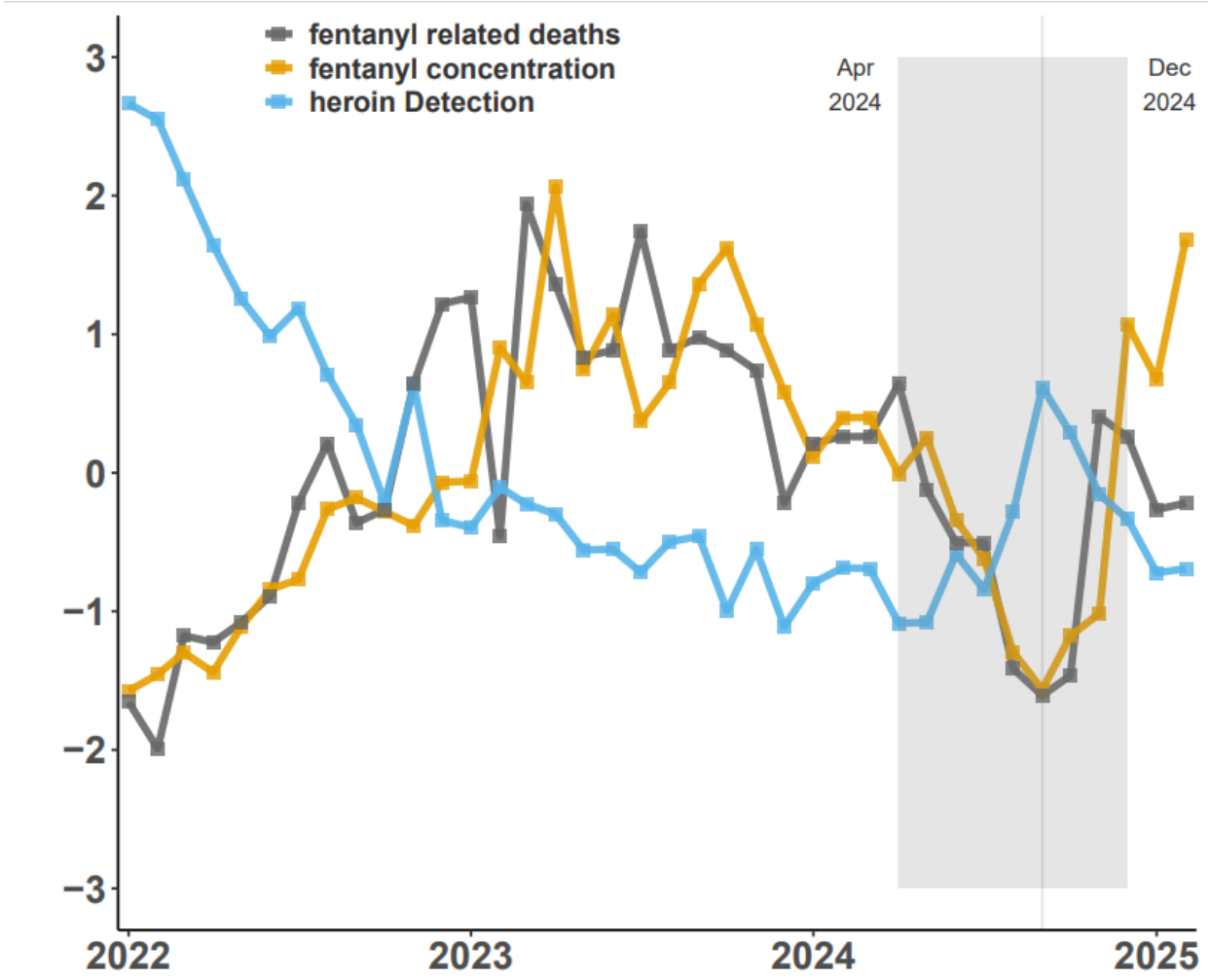
Millennium Health, Data on file.

Fentanyl Positivity, Concentration, and Synthetic Overdose Deaths – US Regions



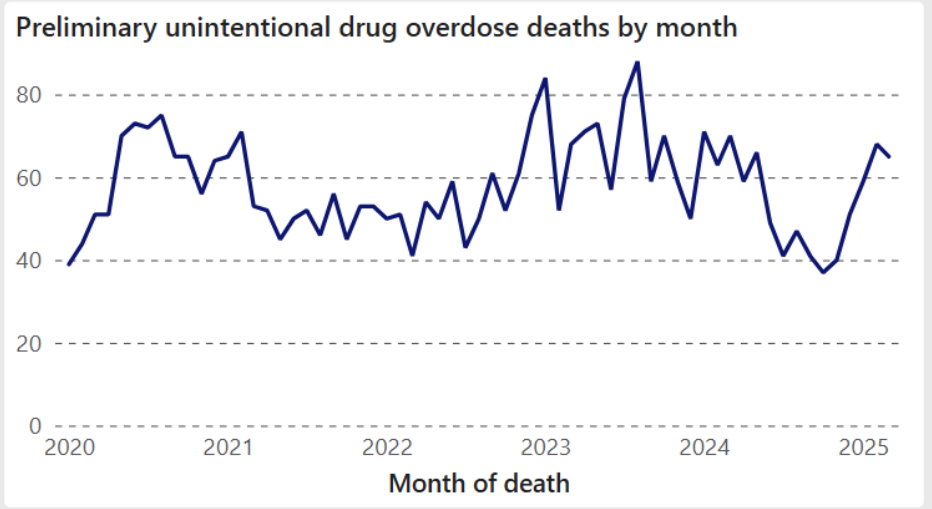
1. Millennium Health, Data on file. 2. https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm

King Co, WA analysis of fentanyl concentration, fentanyl related deaths, and heroin detection rates



1. Millennium Health, Data on file., 2. Overdose data dashboards - King County, Washington

San Francisco, CA Fatal Overdose Trends



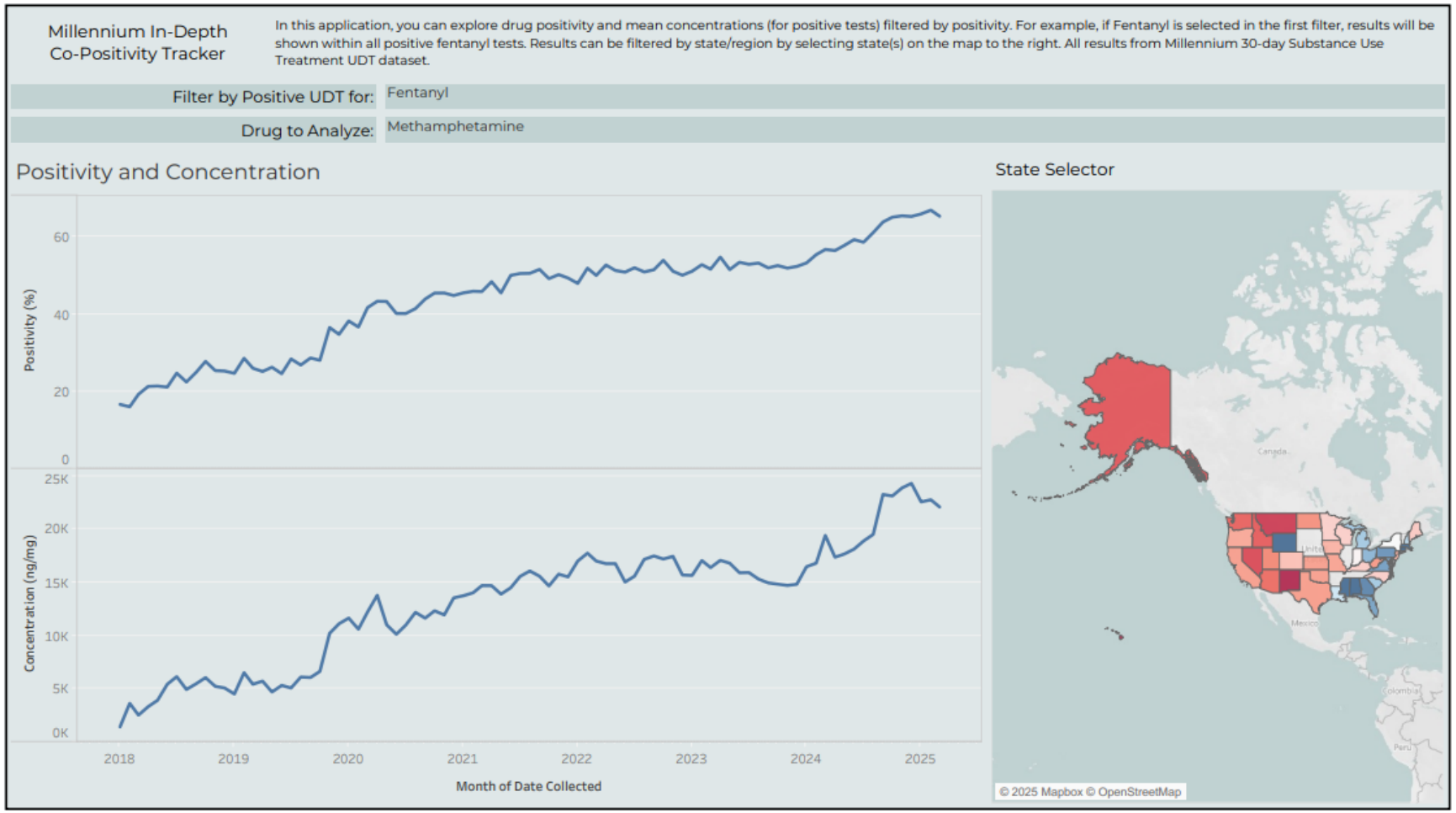
Preliminary unintentional drug overdose deaths

Month and year of death	Deaths
March 2025	65
February 2025	68
January 2025	59
December 2024	51
November 2024	40
October 2024	37

City and County of San Francisco
Data through March 2025
Updated monthly

https://www.sf.gov/data--preliminary-unintentional-drug-overdose-deaths

Methamphetamine Detection and Concentrations in the Population Using Fentanyl - US



Referenced Work

- millenniumhealth.com/signalsreport/
- millenniumhealth.com/publications/

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Millennium Health Signals Report™

Eric Dawson, PharmD
Vice President, Clinical Affairs
Millennium Health

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Trends, Analysis & Threats **Webinar Series**

UPCOMING CALLS

Wednesday, July 2 from 2PM-3PM
Wednesday, September 3 from 2PM-3PM
Wednesday, November 5 from 2PM-3PM

Feedback Requested

THANK YOU!

For any additional assistance, please reach out to us at ors-tat@nhac.org.