



Rapid Analysis of Drugs (RAD)

Collaborative Call

August 20th, 2025

Goals of Rapid Analysis of Drugs (RAD)

The Office of Harm Reduction (OHR) RAD project tests routine paraphernalia from Maryland Syringe Services Program (SSP) participants.

The goals of RAD are to:

- Increase stakeholder understanding of the Maryland drug market landscape.
- Empower people who use drugs with knowledge about the drug supply that enables them to make informed decisions and employ risk reduction strategies.
- Provide critical, timely information about new and emerging trends in the drug supply, informing the statewide and local response to mitigate harm.

Agenda

1. Updates and Reminders
2. Recent Results
3. Emerging Trends
4. Program Report Out

Updates and Reminders

Materials from Calls

- Materials from [September Training](#) can be found here.
- Materials from collaborative calls can be found in the folder corresponding to the meeting date [here](#).
- Here is the link to the [RAD submission Cognito form](#).
- Law enforcement [memo](#)
- [RAD Flyer](#)

Complete Cognito Webform

- The [Cognito web form](#) must be completed for EVERY sample **before** the sample is mailed.
- If a webform is not completed for a sample, you will receive an email - ***please stay alert to emails!***

Requesting Supplies

- Supply requests go directly to NIST.
- The link for the supply request is:
forms.gle/FHUxCT8GwrZhkWcw5

Mailing envelopes shipped in early August. If you did not receive yours, let Maggie know.

RAD Data/Publication Updates

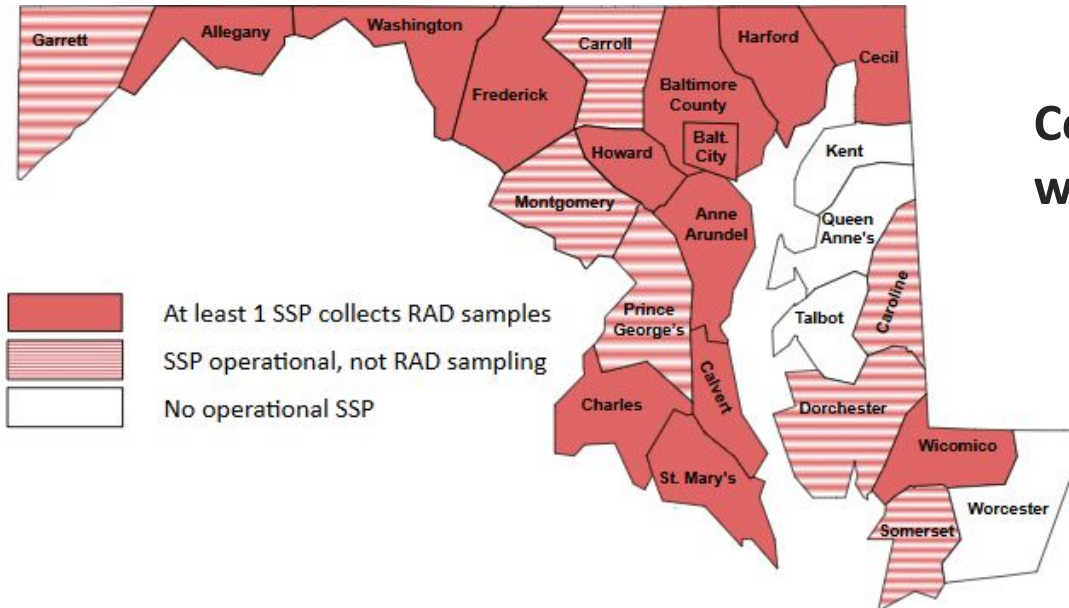
- Working on incorporating RAD on the public overdose dashboard.
- [Pre-print RAD Impacts Paper](#) - Journal of Harm Reduction
- [RAD CY2025 Q2 Newsletter](#)
- [NIST July Newsletter](#)

Results

- You are now receiving results directly from NIST.
- This helps reduce the lag time in results getting back to programs.
- All results are still available in the [RAD database](#).

Want to get started?

- If you are an SSP not currently sampling for RAD and you want to get involved, please reach out to Maggie



Congrats to JHU Check It who is now an SSP!

NPHL Maryland SSP Law Fact Sheet

- The Network for Public Health Law recently put out a fact sheet on the [Maryland SSP Law](#).

NIST Updates

- As a result of the Penn North, Mass Overdose Event (MOE), NIST now has a limited capacity to provide 1-day shipping labels for samples that are urgent.
- In the case of an MOE, please engage NIST (Ed) and OHR (Maggie) to coordinate the drug checking response.
- NIST Mobile Van Pilot

Mass Overdose Event Preparedness

- Thank you to all of the organizations that responded to both MOE's in Baltimore City.
- We want to incorporate MOE protocol into the standard RAD protocol document:
 - Collection and labelling protocol
 - Onsite testing options
 - One day mailing or drop offs to NIST
- Thoughts/feedback?

Recent Results

RAD Data Disclaimers

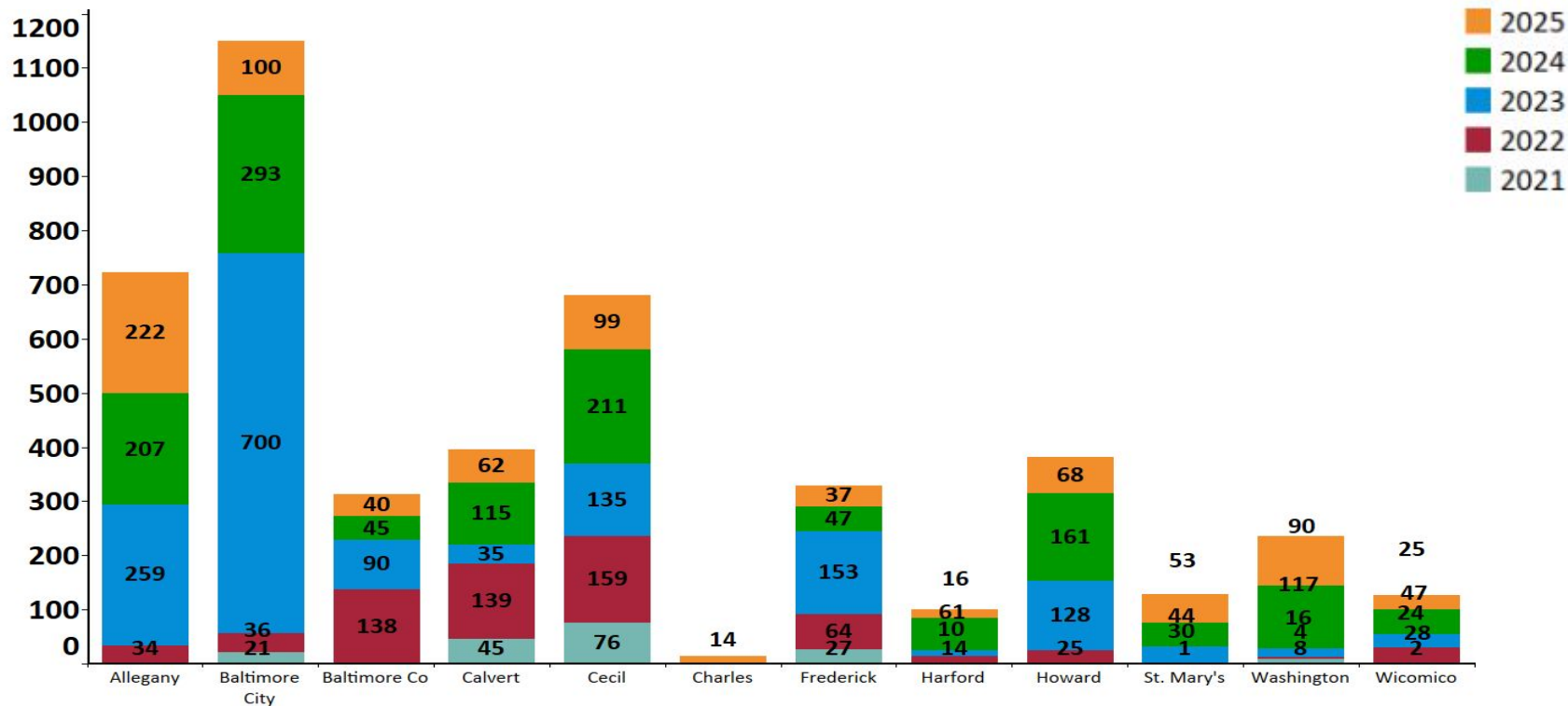
- Convenience Sampling -
 - RAD is a completely voluntary program that Maryland SSP participants can choose to engage in
 - Not all MD jurisdictions have an SSP that participate in RAD
- No personally identifiable data is collected, therefore we do not know how many participants are accounted for in the sample size

RAD gives us some indication of the near real time drug market in Maryland, but it should not be considered as fully representative.

Samples Collected

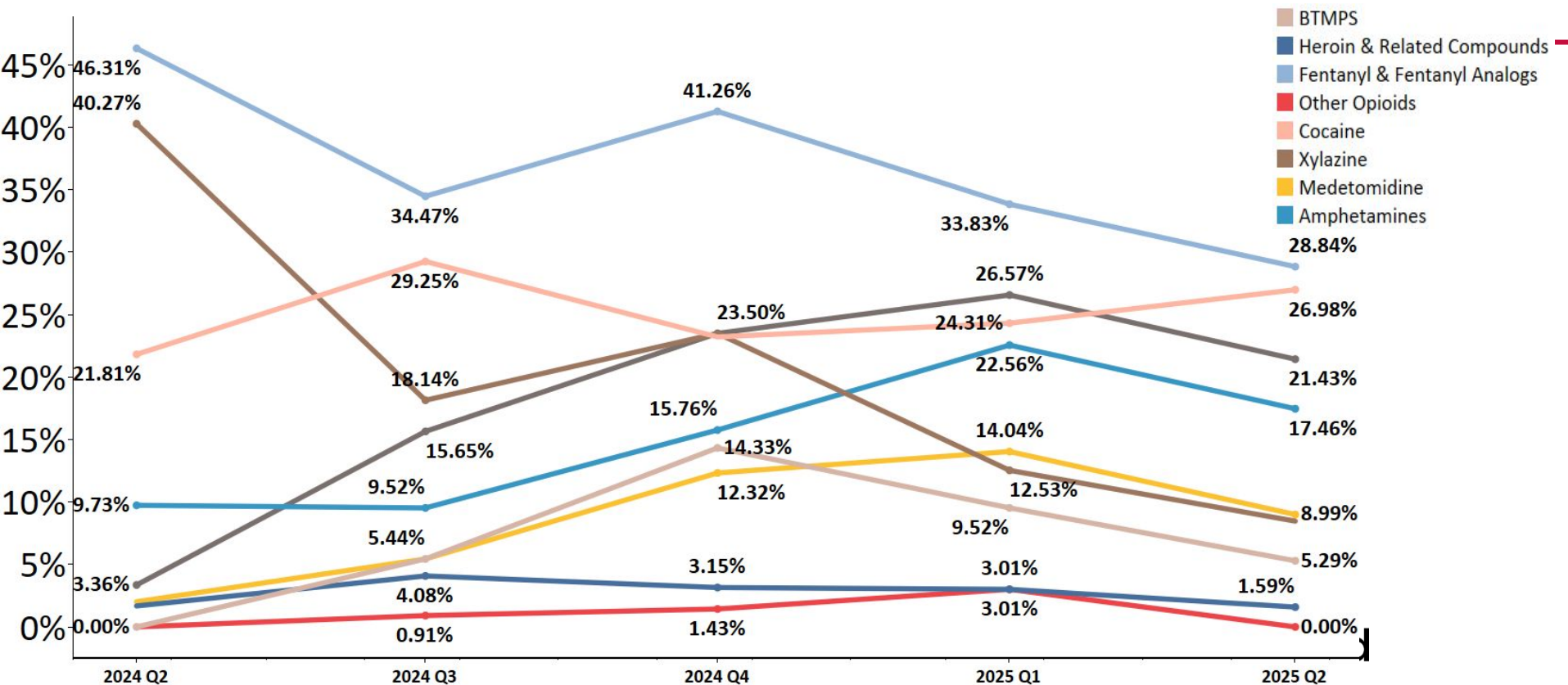
- Sample Collection began in October 2021 and is continuing
- As of August 7th, 4553 samples have been tested via NIST
- 18 of the 27 SSPs in Maryland collect samples.
 - Covering 12 jurisdictions

RAD Sampling by Jurisdiction, OCT 2021- JUL 2025



Note: Data is preliminary and subject to change.

RAD Compounds, APR 2024 - JUN 2025



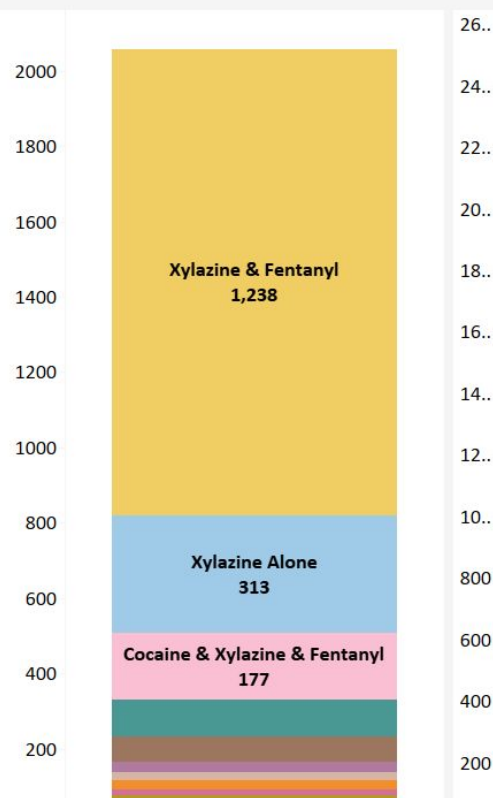
Note: Data is preliminary and subject to change.

Polysubstance in RAD Samples

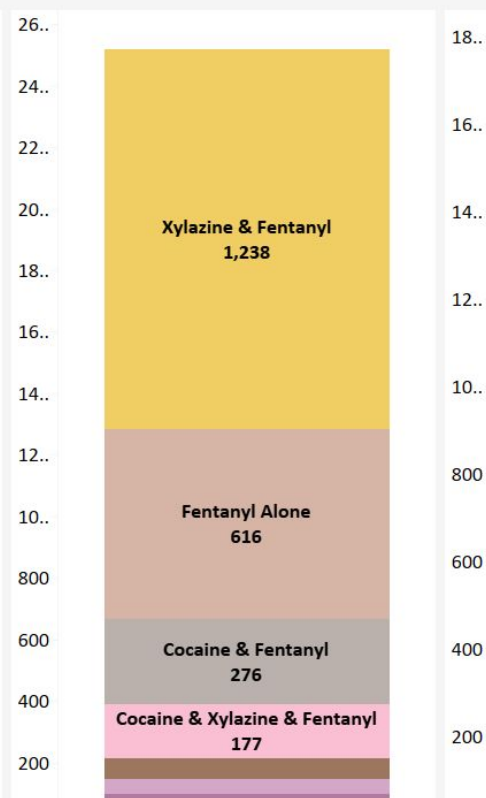
Polysub All Combos

Xylazine & Fentanyl	1,238
Cocaine Alone	1,116
Fentanyl Alone	616
Amphetamines Alone	341
Xylazine Alone	313
Cocaine & Fentanyl	276
Cocaine & Xylazine & Fentanyl	177
Null	116
Xylazine & Cocaine	98
Fentanyl & Xylazine & Amphetamines	66
Fentanyl & Amphetamines	50
Cocaine & Amphetamines	34
Other Opioids & Xylazine & Fentanyl	27
Xylazine & Cocaine & Fentanyl & Heroin	24
Xylazine Detected & Amphetamines	24
Other Opioids & Cocaine & Fentanyl & Xylazine	16
Other Opioids & Xylazine & Cocaine & Fentanyl &..	15
Medetomidine Alone	18
Cocaine & Xylazine & Amphetamines	12
Other Opioids & Fentanyl	12
Xylazine & Cocaine & Fentanyl & Amphetamines	12
Xylazine & Heroin	12
Cocaine & Heroin	10
Heroin Alone	9
Cocaine & Fentanyl & Heroin	6
Other Opioids & Xylazine	6
Other Opioids Detected & Cocaine & Fentanyl	6
Xylazine & Cocaine & Fentanyl & Amphetamines ..	5
Cocaine & Fentanyl & Amphetamines & Heroin	4
Other Opioids & Amphetamines	4
Other Opioids & Fentanyl & Heroin & Xylazine	4
Other Opioids Alone	4
Amphetamines & Fentanyl & Heroin	3
Cocaine & Xylazine & Heroin	3
Other Opioids & Xylazine & Cocaine	3
Other Opioids & Xylazine & Heroin	3

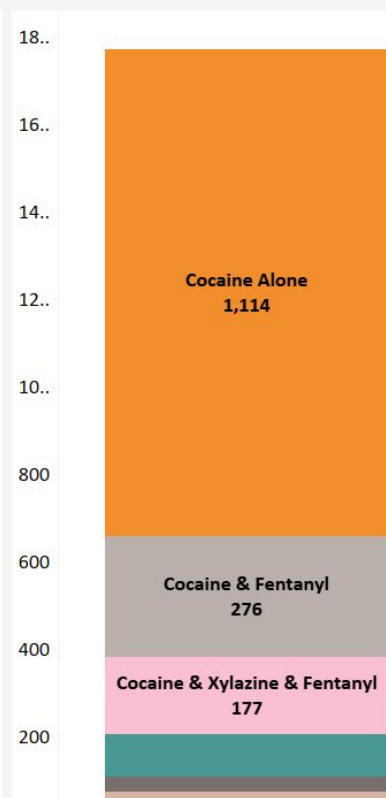
Xylazine



Fentanyl



Cocaine

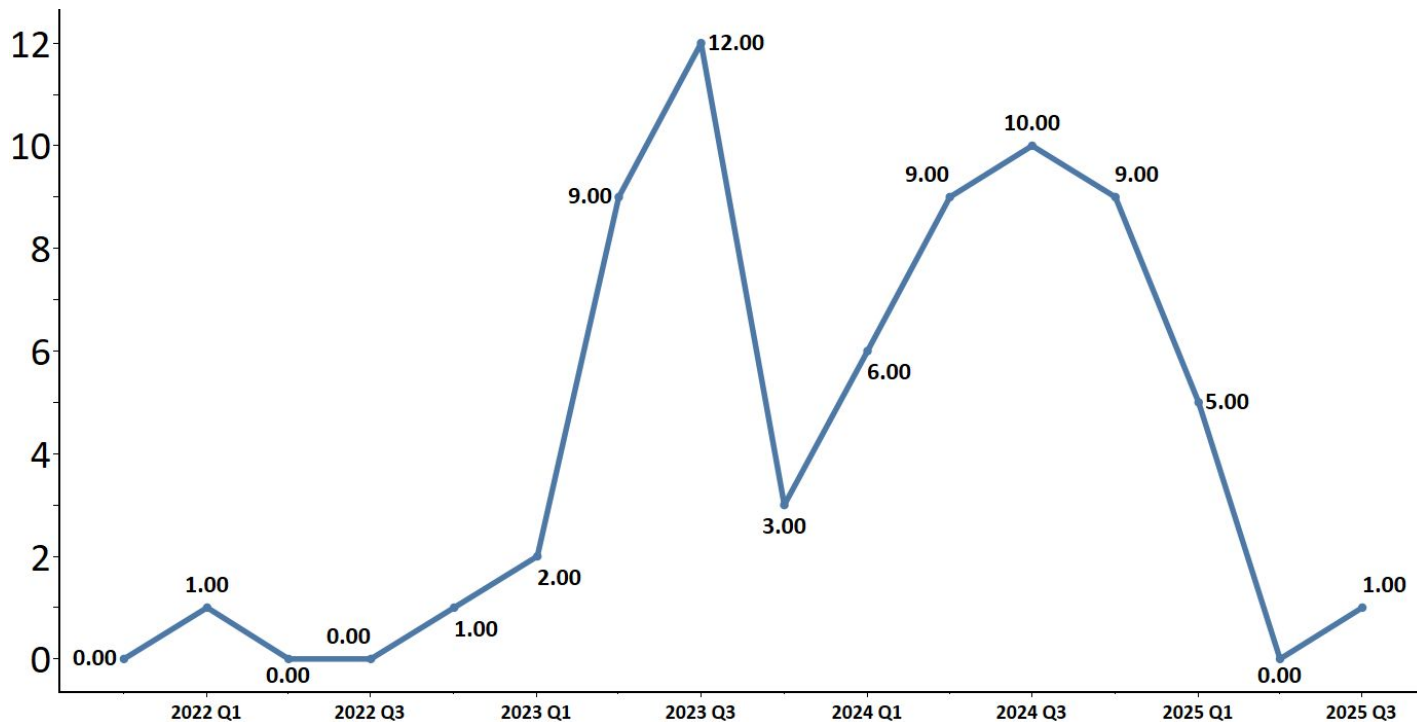


Bromazepam, OCT 2021 - JUL 2025

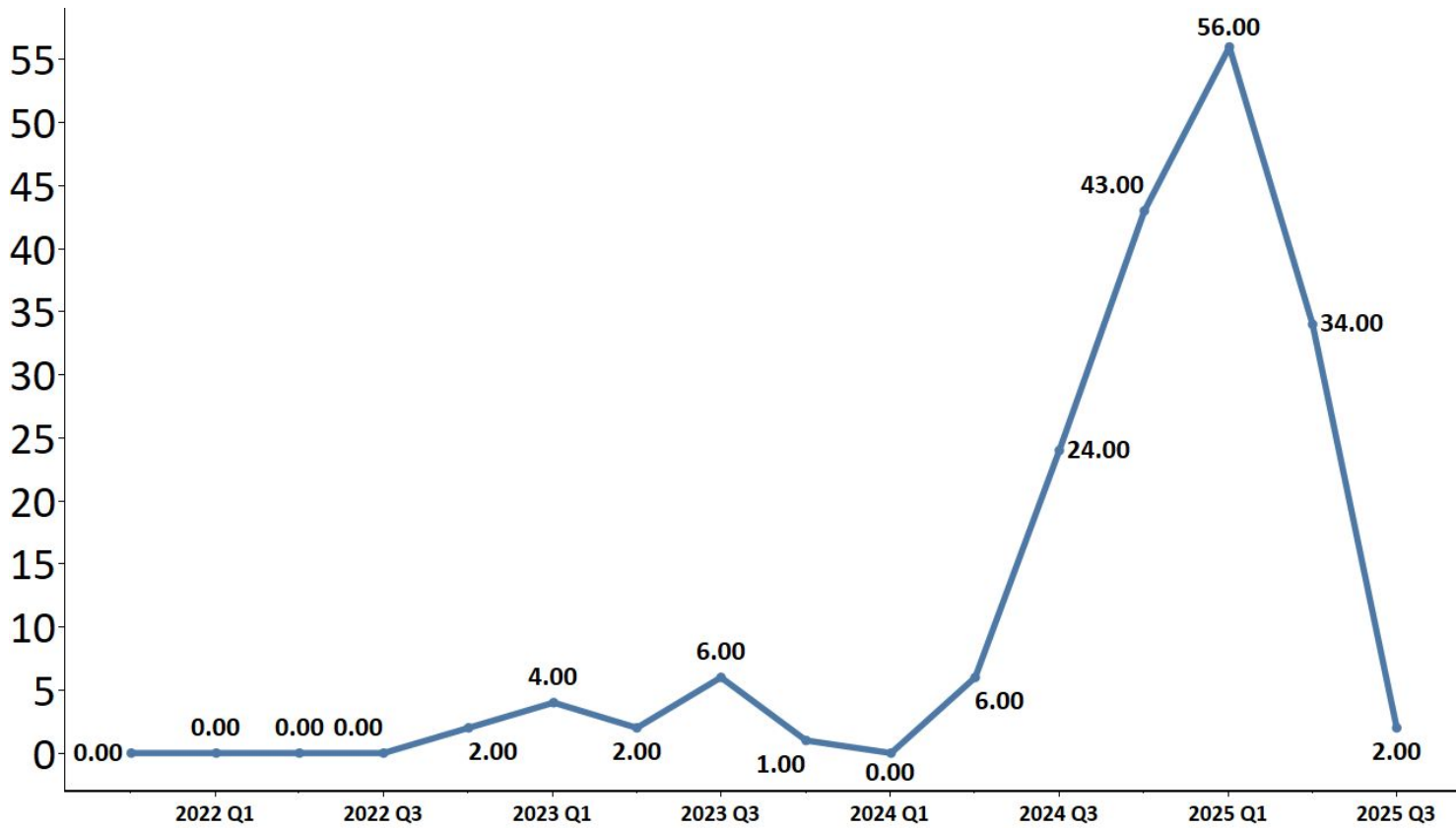
SFY24 Counties:

- Allegany County
- Baltimore City
- Baltimore County
- Calvert County
- Cecil County
- Frederick County
- Harford County
- Howard County
- St. Mary's County
- Washington County
- Wicomico County

Bromazepam is a type of benzodiazepine (sedative)



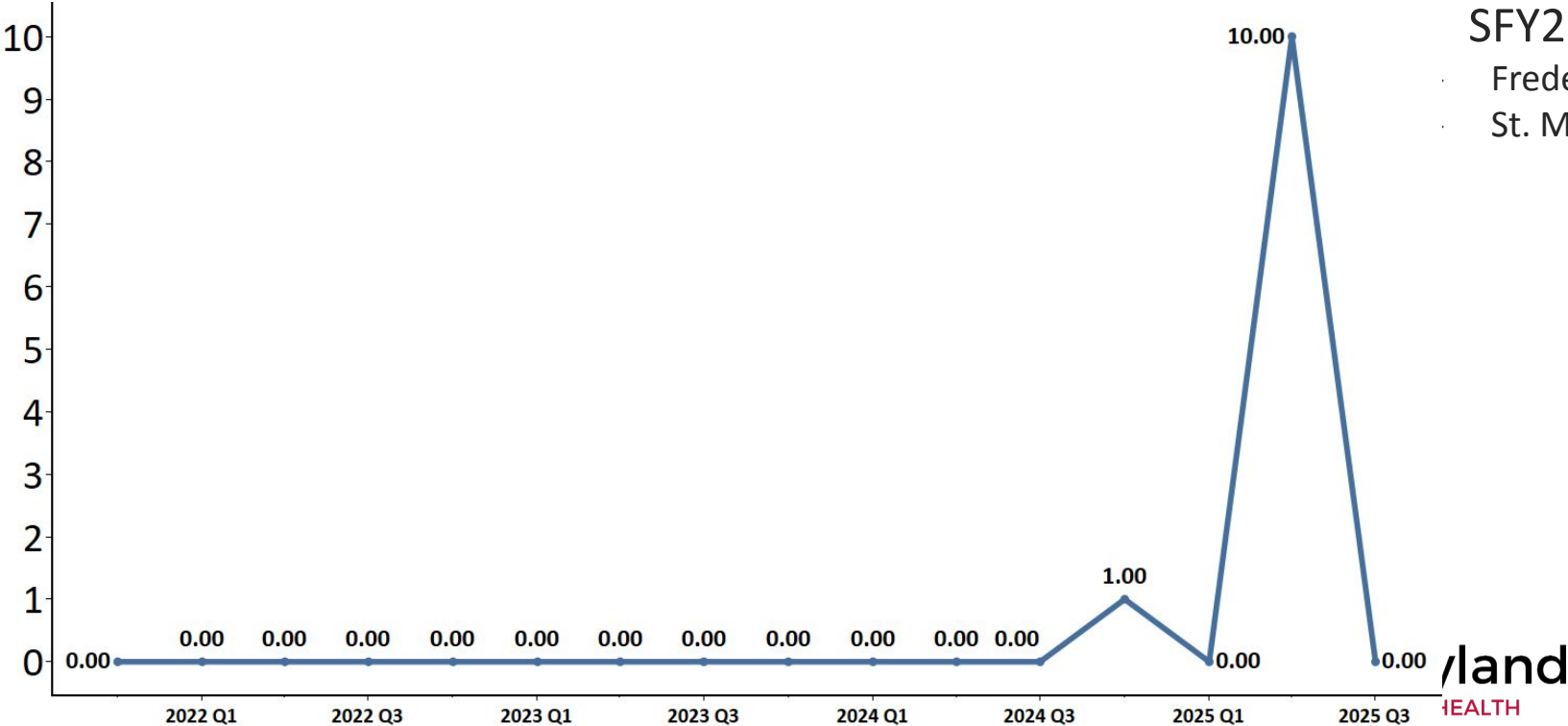
Medetomidine, OCT 2021 - JUL 2025



SFY25 Counties:

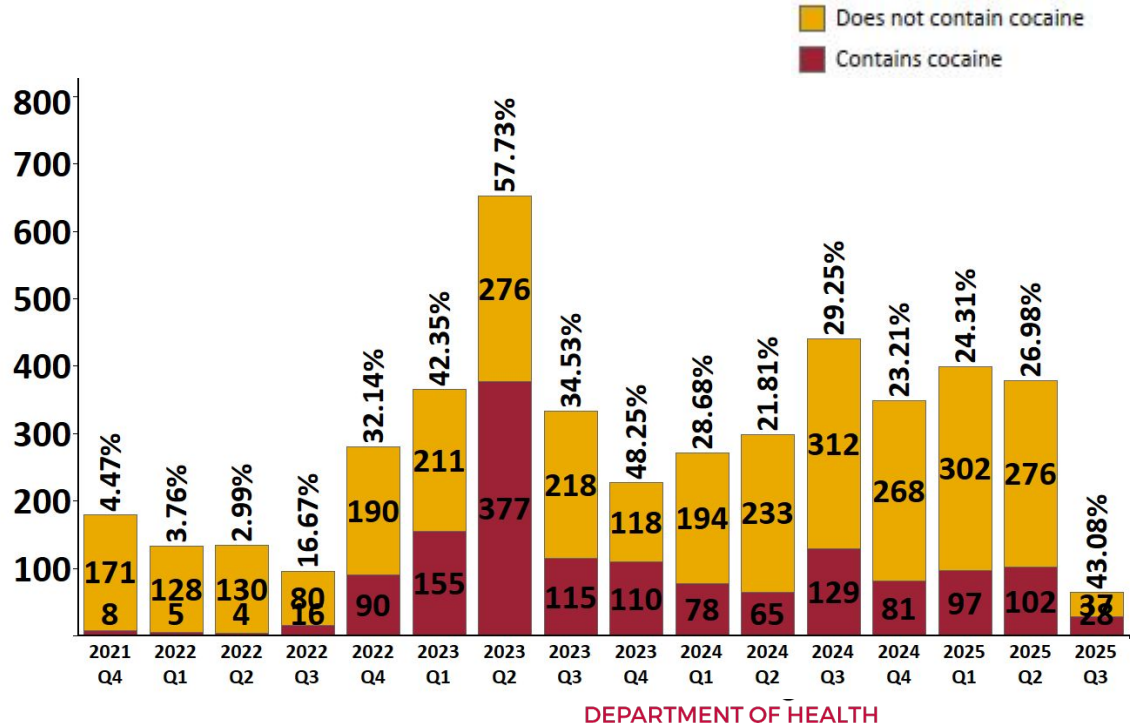
- Allegany County
- Baltimore City
- Baltimore County
- Calvert County
- Cecil County
- Frederick County
- Harford County
- Howard County
- St. Mary's County
- Washington County
- Wicomico County

5-fluoro ADB, OCT 2021 - JUL 2025



Samples Containing Cocaine

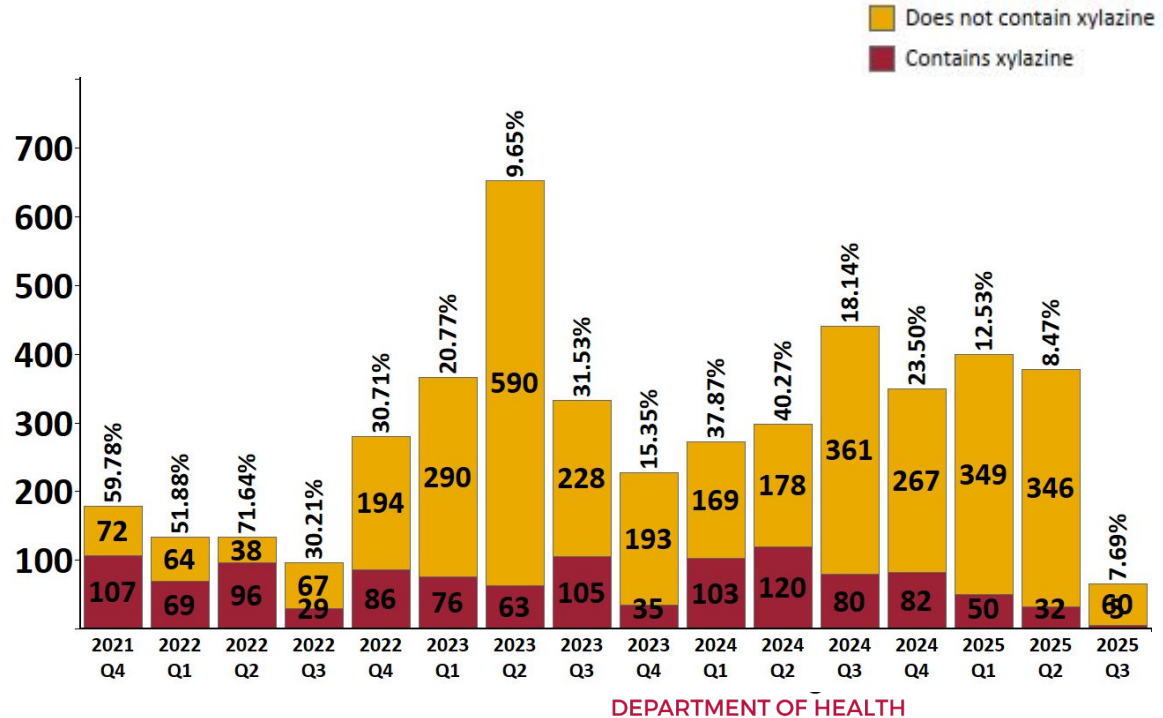
- 26.98 % of samples tested in Q2 of CY 25 contained cocaine
- There were a total of 102 samples that contained cocaine in this time period
- So far in Q3 of CY 2025 28 samples have contained cocaine.
- Comparing Q2 of CY 2024 to Q2 of CY 2025 there was a 56.9% increase in samples that contained cocaine.



Note: Data is preliminary and subject to change.

Samples Containing Xylazine

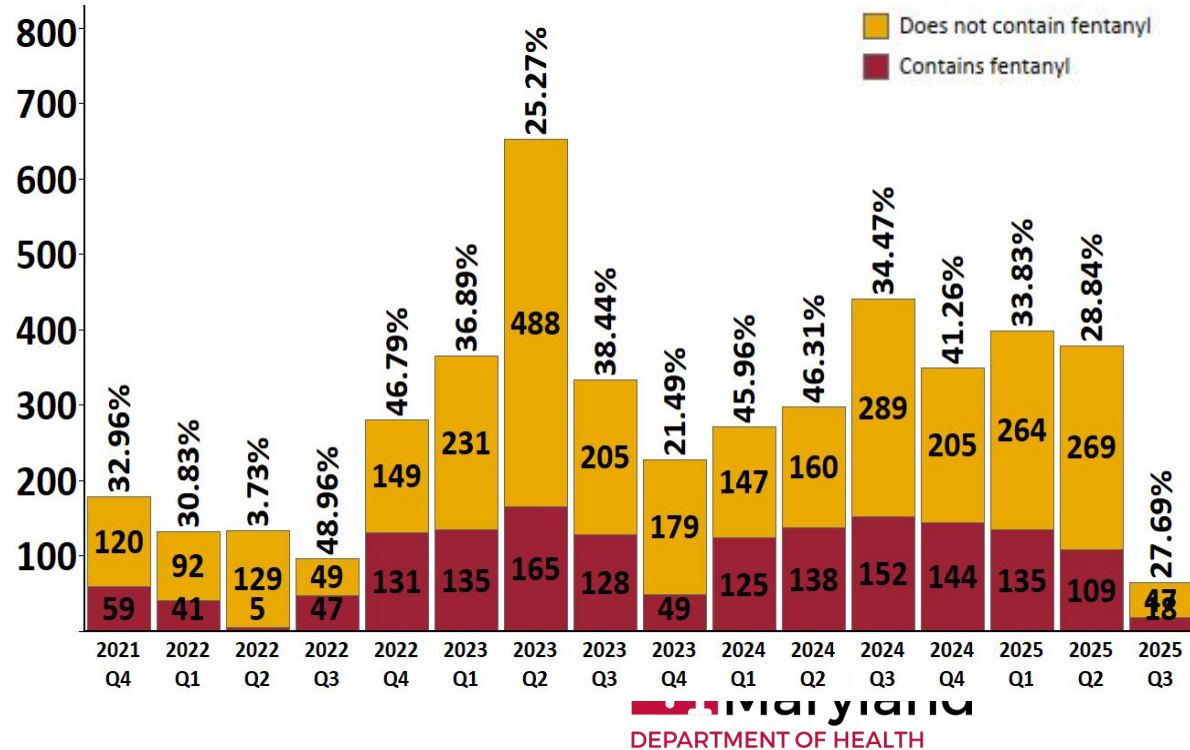
- 8.47% of samples tested in Q2 of CY 25 contained xylazine
- There were a total of 32 samples that contained xylazine in this time period
- So far in Q3 of CY 2025 5 samples have contained xylazine.
- Comparing Q2 of CY 2024 to Q2 of CY 2025 there was a 73.3% decrease in samples that contained xylazine.



Note: Data is preliminary and subject to change.

Samples Containing Fentanyl & Fentanyl Analogs

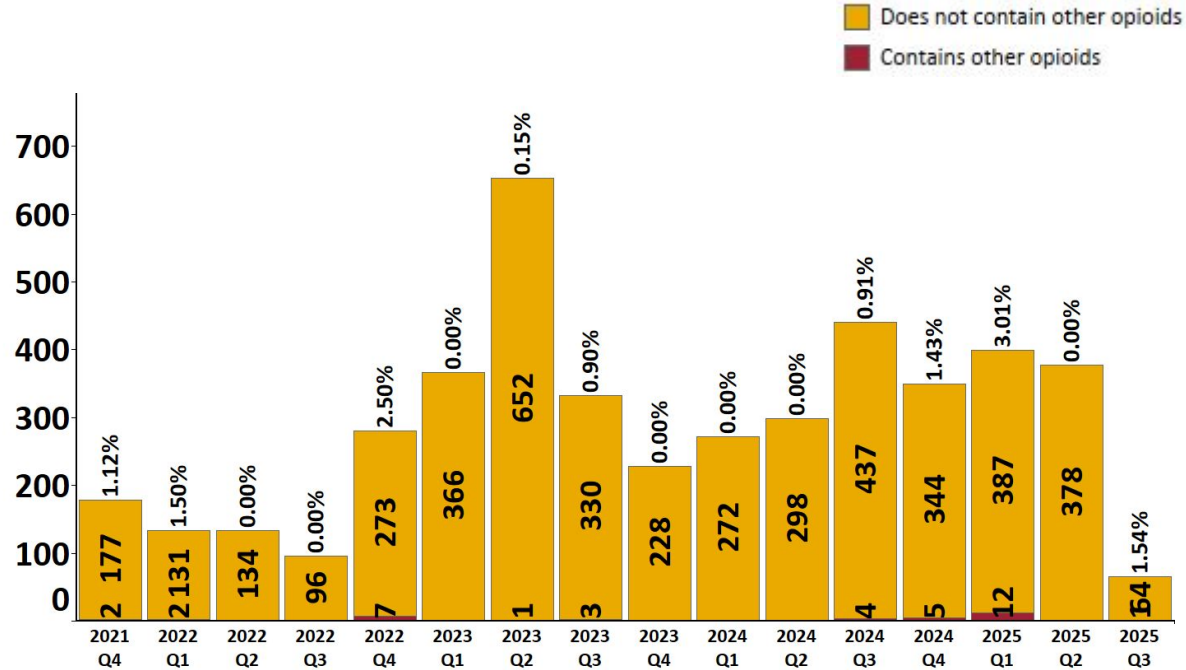
- 28.84% of samples tested in Q2 of CY 25 contained fentanyl & fentanyl analogs.
- There were a total of 109 samples that contained fentanyl & fentanyl analogs in this time period
- So far in Q3 of CY 2025 18 samples have contained fentanyl & fentanyl analogs.
- Comparing Q2 of CY 2024 to Q2 of CY 2025 there was a 21 % decrease in samples that contained fentanyl & fentanyl analogs.



Note: Data is preliminary and subject to change.

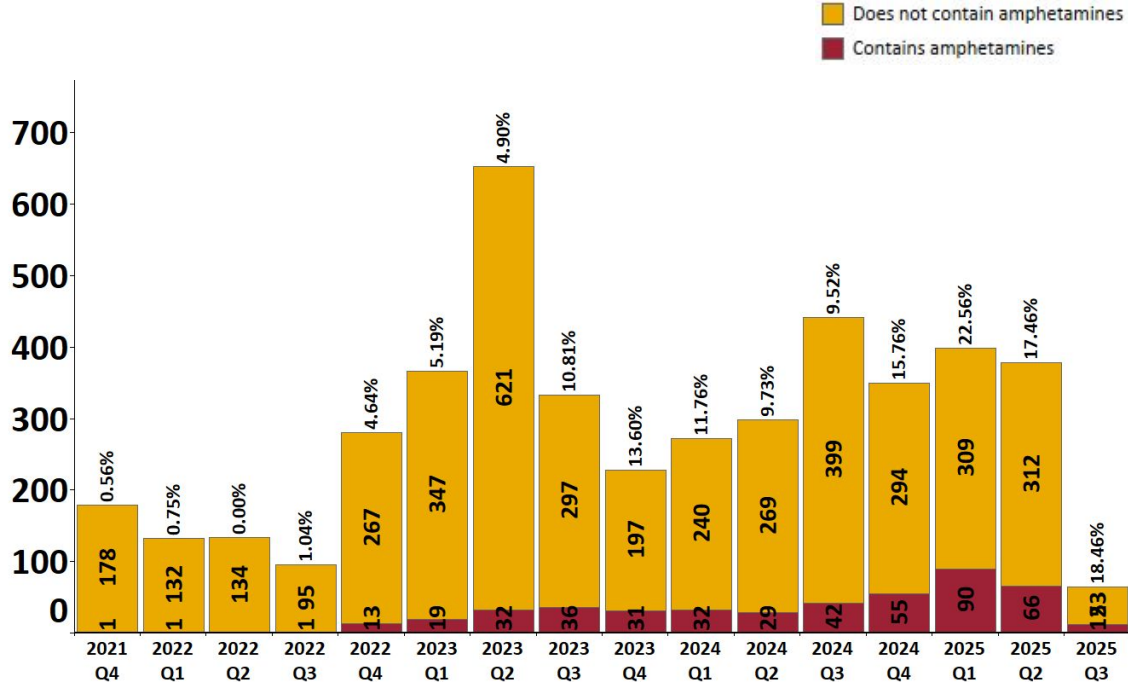
Samples Containing Other Opioids

- 0% of samples tested in Q2 of CY 25 contained other opioids.
- So far in Q3 of CY 2025 one sample has contained other opioids.



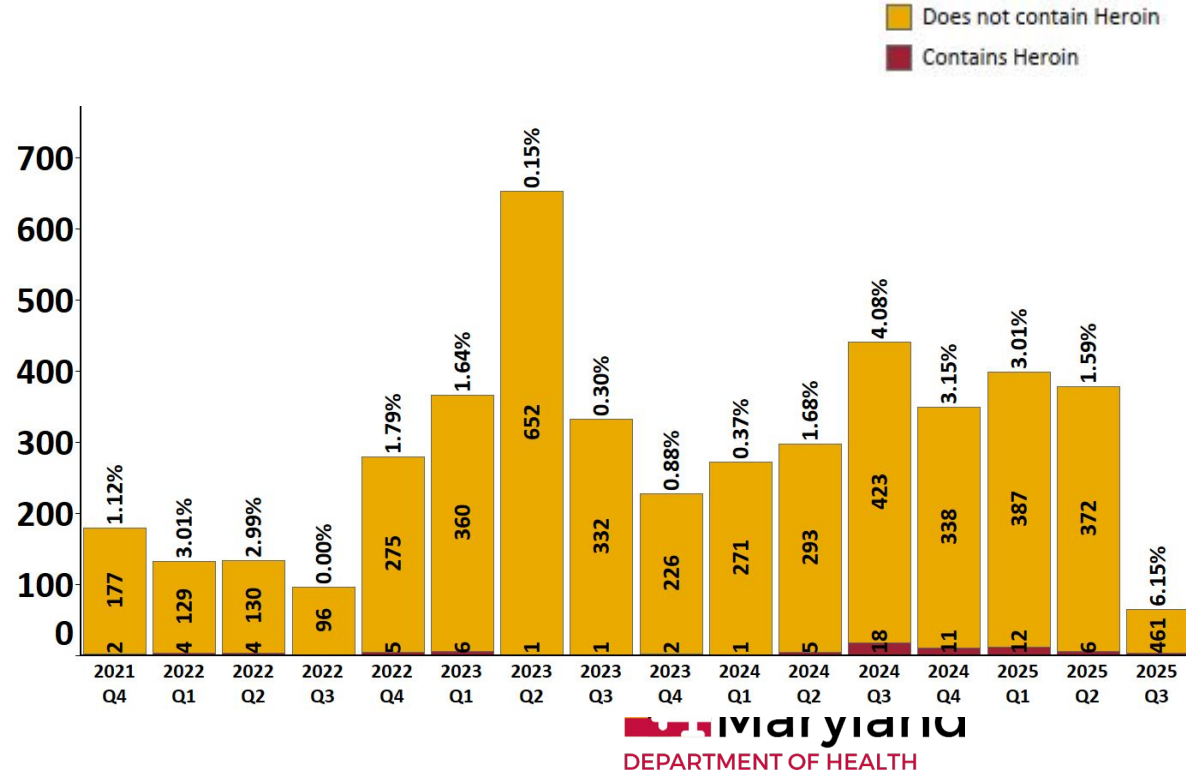
Samples Containing Amphetamines

- 17.46% of samples tested in Q2 of CY 25 contained amphetamines
- There were a total of 66 samples that contained amphetamines in this time period
- So far in Q3 of CY 2025 12 samples have contained amphetamines
- Comparing Q2 of CY 2024 to Q2 of CY 2025 there was a 127.6% increase in samples that contained amphetamines.



Samples Containing Heroin & Related Compounds

- 1.59 % of samples tested in Q2 of CY 25 contained heroin & related compounds
- There were a total of 6 samples that contained heroin in this time period
- So far in Q3 of CY 2025 4 samples have contained heroin
- Comparing Q2 of CY 2024 to Q2 of CY 2025 there was a 20% increase in samples that contained heroin.



Note: Data is preliminary and subject to change.

Emerging Trends Discussion

Carfentanil in RAD Samples

3 samples collected between 8/4/2025 and 8/6/2025 contained carfentanil.

- Two samples were collected in Baltimore City and one sample was collected in Cecil County.
- These are the first RAD samples to have identified carfentanil in Maryland
- Previously only seen in Maryland's fatal overdose data.
- Carfentanil made up less than 2% of the sample and there were a number of other substances in the sample

Carfentanil in RAD Samples

Sample 1	Sample 2	Sample 3
Caffeine	Caffeine	Ethyl 4-ANPP
Cocaine	Mannitol	Fentanyl
Mannitol	Medetomidine	Lidocaine
Medetomidine	Procaine	Medetomidine
Methamphetamine	Quinine	Procaine
Procaine	BTMPS*	Tetracaine
Quinine	Carfentanil*	Xylazine
BTMPS*	Fentanyl*	4-ANPP*
Carfentanil*		Carfentanil*
Fentanyl*		
Lidocaine*		

Penn North MOE RAD Results

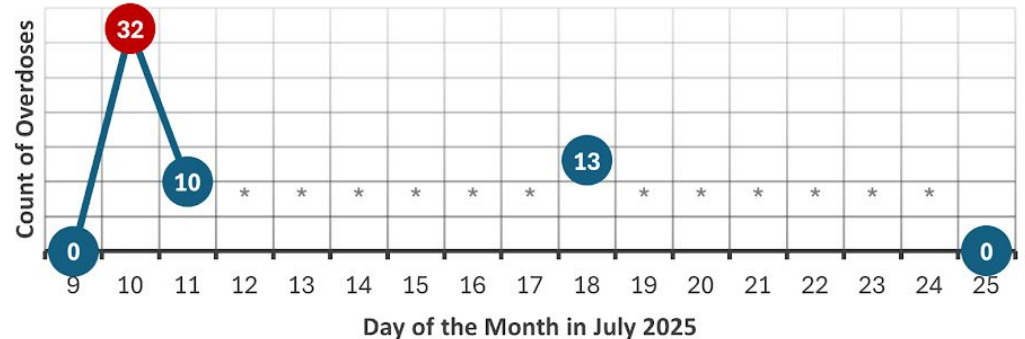
Thank you to BHRC, BCHD, and JHU Check It who worked collaboratively to collect samples on 7/10 during the Penn North overdose incident.

These samples gave us incite to what might have caused the increase in overdoses that day.

Count of All-Drug Overdoses in 21217 by Date, July 9-25, 2025

** Counts <10 are suppressed.*

Data from ESSENCE as of 7/25/25 1:31 PM.



Penn North MOE RAD Results

Two syringes were submitted for RAD testing that day from the Penn North area, both produced the following results:

- **Acetaminophen** - pain and fever reducer
- **Caffeine** - a central nervous system stimulant
- **Fentanyl** - a highly potent synthetic opioid
- **Mannitol** - an osmotic diuretic
- **N-Methylclonazepam** - a benzodiazepine derivative with intense sedative effects (substantial amount, similar molecular weight to acetylfentanyl)
- **Quinine** - an antimalarial drug

Almost all of the other samples came back with no compound detected or only cocaine detected.

Semi- Quant Results from 7/10 Samples

NIST performed semi-quantitative analysis on the syringe samples from 7/10 - not enough drug product for full quantitative analysis.

The semi-quantitative results give us a relative quantification between the major components of the samples. In this case, that was fentanyl, quinine, and N-methylclonazepam.

- Approximately an equal amount of N-methylclonazepam and quinine in both samples
- Approximately $1/10^{\text{th}}$ the amount of fentanyl in the sample, compared to quinine.
- **Meaning there was approximately 10 times more N-methylclonazepam than fentanyl in the sample.**

Benzodiazepines

- We continue to see low but variable growth in numbers of Bromazepam.
- Methylclonazepam was the benzodiazepine seen in the samples collected in Penn North during the 7/10 MOE.
- Benzodiazepines seen in RAD sampling are almost always seen in combination of a opioid (mainly fentanyl) and naloxone should still be administered.
- The increased sedation caused by a benzodiazepine may result in the need to administer rescue breathing during an overdose response.
- We are working on centrally procuring benzodiazepine test strips, and having NIST test them against the benzos common in MD.

Medetomidine Increase

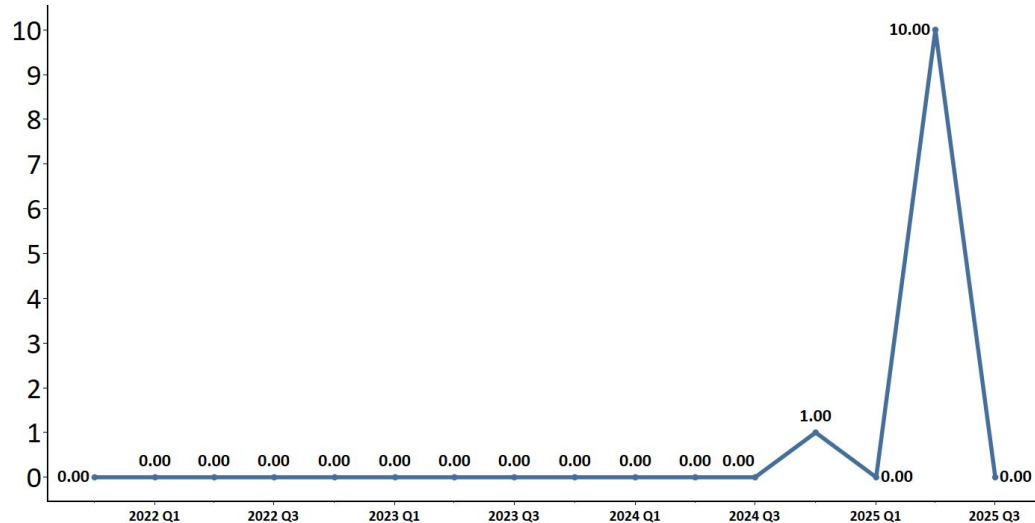
- Medetomidine has now been seen in 11 of the 12 jurisdictions that sample for RAD.
 - Cecil and Harford Counties remain the hardest hit jurisdictions.
- We encourage emphasis on still administering naloxone and responding with rescuing breathing/ CPR.
- Philadelphia has published [comprehensive withdrawal management protocols](#) for medetomidine.
- CDC Epi Aid Project is currently deployed to Cecil County to investigate Maryland's medetomidine outbreak. We will share the results of this project back with you.

5-fluoro ADB (Synthetic Cannabinoid)

RAD has seen 11 samples of 5-fluoro ADB in Frederick and St. Mary's Counties.

5-fluoro ADB is a potent synthetic cannabinoid.

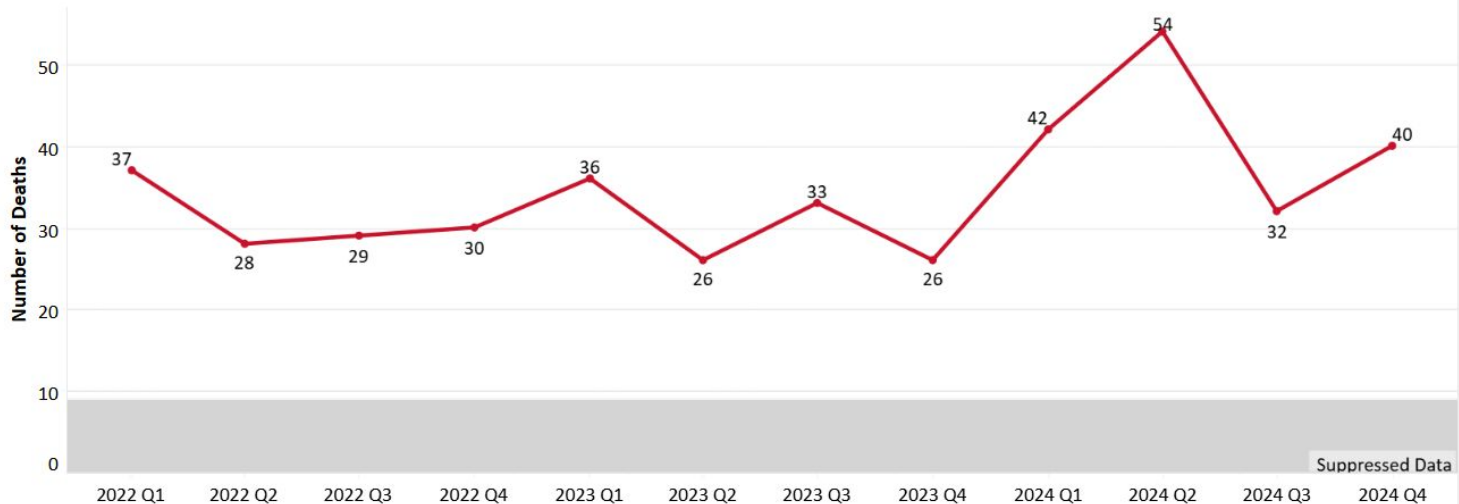
We will continue monitoring this emergence. Please reach out if you have additional information.



Heroin Increase

- RAD has seen an increase in heroin in samples in 2024.
- Heroin is now consistently present in 2-4% of the sample.
- This is being seen in fatal overdose trends in Maryland as well.

Total Overdose Deaths Over Time



**Have you heard of any other
emerging trends?**

Program Report Out

How are things going?

How is testing going?

- Any new barriers?
- Any new successes?
- How can we support?

Future Collaborative Call Schedule

The next call will be Wednesday, October 15th at 11 a.m.

CHRS Contacts

Maggie Rybak - margaret.rybak@maryland.gov (programmatic)

Janelle Acevedo Hodgson - janelle.hodgson@maryland.gov (data)

Thank you! We appreciate you!