



Summary: Assessing the presence of novel psychoactive substances in patients

Q3 update, July – Sept 2025



Novel psychoactive substances (NPS) are compounds that are designed to mimic the effects of more traditional drugs of abuse, like cocaine and marijuana.¹ They change frequently to evade legality, which makes updating analytical laboratory methods essential to ensure clinicians know what a patient may have taken illicitly.²

To meet these challenges, Quest Diagnostics launched our Drug Monitoring, Novel Psychoactive Substances (NPS), Qualitative, Urine panel in November 2023.

We continue to update our assay, performing monthly analyses of our total results. This is the fourth in our series of quarterly reports, where we continue to provide monthly analyses identifying the presence of novel psychoactive substances in patient specimens.

In the third quarter of 2025, 3,039 specimens analyzed on the Quest Diagnostics NPS method were positive for at least 1 NPS. Xylazine (a compound in the other additives class) continued to be the analyte showing the greatest number of positive results, showing positive in 1,604 specimens. The other additives class was the most positive class generated the greatest number of positive results, 1,709 specimens.

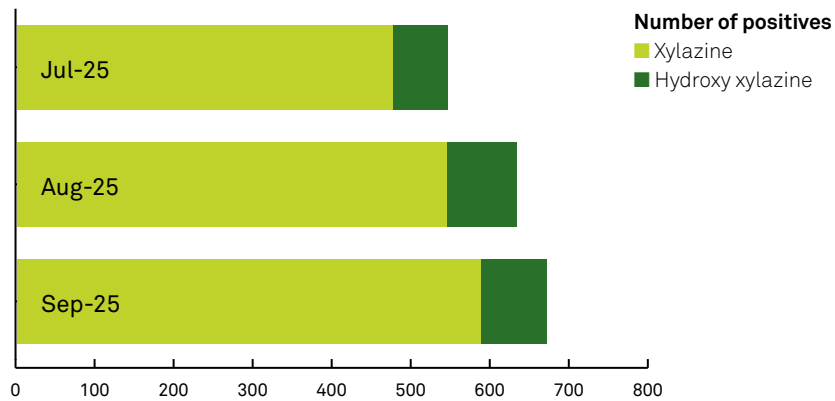


Other illicit additives (OI)

Xylazine (a compound in the other additives class) continued to be the most prevalent positive analyte and was positive in 1,604 specimens. The other additives class had the highest number of positives with 1,709 specimens.

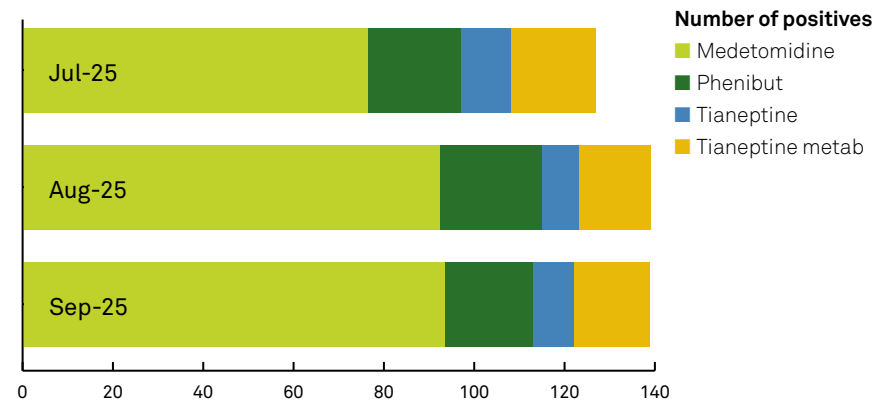
Over 475 patients were positive for xylazine each month in the third quarter of 2025.

Xylazine and hydroxy xylazine positivity



OI positivity

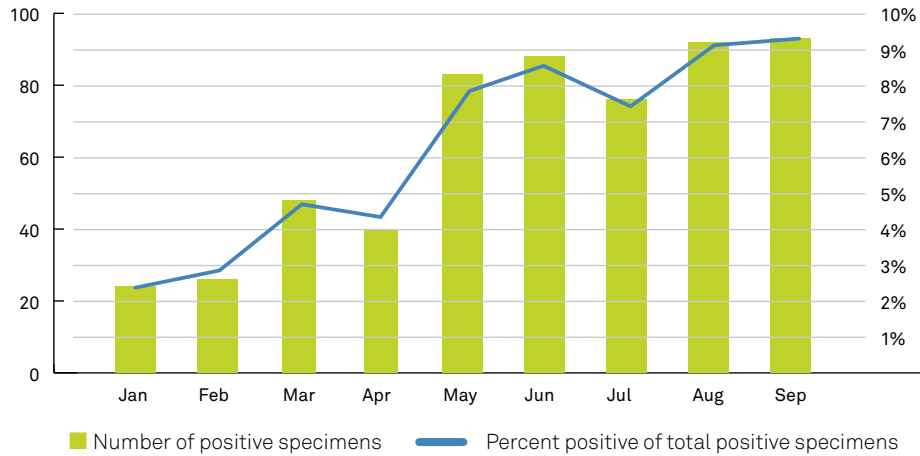
Medetomidine, phenibut, and tianeptine also saw positives in each month of the third quarter.



Medetomidine positivity

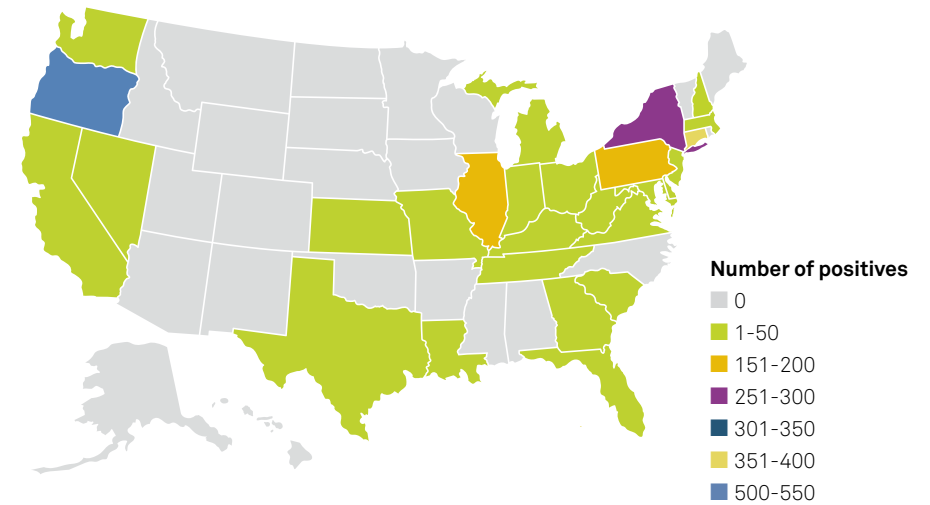
Medetomidine is a veterinary tranquilizer and some regions are reporting that medetomidine positivity is now higher than xylazine positivity. In clinical urine specimens, there has been a large increase in medetomidine positivity in 2025. In January, 24 specimens were positive for medetomidine, which accounted for 2.4% of positive specimens. In September, 93 specimens were positive for medetomidine, which accounted for 9.3% of positive specimens.

2025 medetomidine positivity



OI class number of positives by state July-Sept 2025

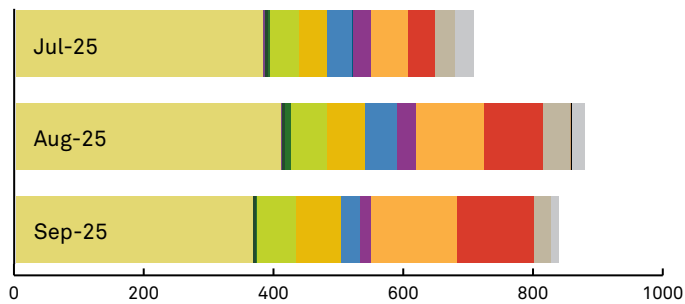
Compounds from the other additives class continued to be prevalent across the United States. Oregon was the state with the highest number of positive specimens.



Designer fentanyl analogs (FA)

Acetyl fentanyl continued to be the most prevalent positive designer fentanyl analog and was seen in at least 350 specimens each month during the third quarter. Fluorofentanyl positivity increased throughout the quarter, with 57 positives in July and increasing to 133 positives in September. Carfentanil and norcarfentanil positivity also continued to increase, with more than 60 specimens positive for each of these compounds in September.

Designer fentanyl analog positivity

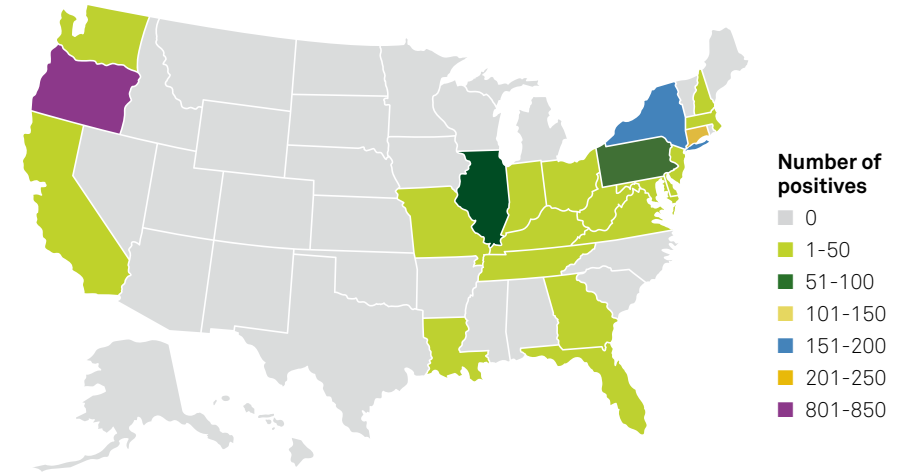


Number of positives

- Acetyl fentanyl
- Acryl fentanyl
- Benzyl fentanyl
- Butyryl fentanyl COOH metab
- Carfentanil
- Norcarfentanil
- Chlorofentanyl
- Cyclopropyl fentanyl
- Despropionyl bromofentanyl
- Fluorofentanyl
- Despropionyl fluorofentanyl
- Isobutyryl fentanyl/o-Methyl fentanyl
- Sufentanil
- Norsufentanil
- Valeryl fentanyl COOH metab

Fentanyl analog number of positives by state July-Sept 2025

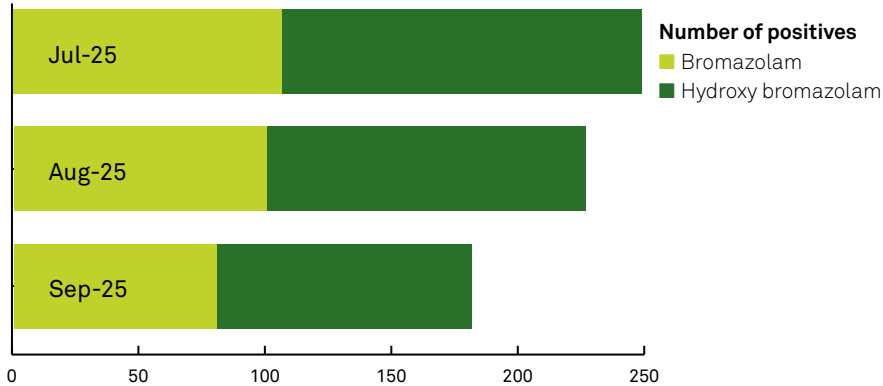
Fentanyl analogs have been seen in specimens from across the country. Portland had the highest number of positive specimens, with New York and Connecticut also showing multiple specimens with positive results for fentanyl analogs.



Designer benzodiazepines (DB)

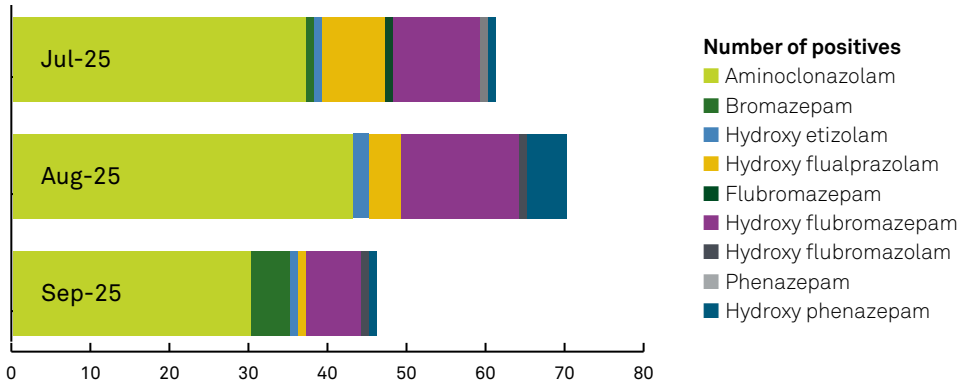
In the designer benzodiazepines class, bromazolam and its metabolite, hydroxy bromazolam, continued to be the most prevalent positive analytes, with over 80 specimens positive each month for each of these compounds.

Bromazolam and hydroxy bromazolam positivity



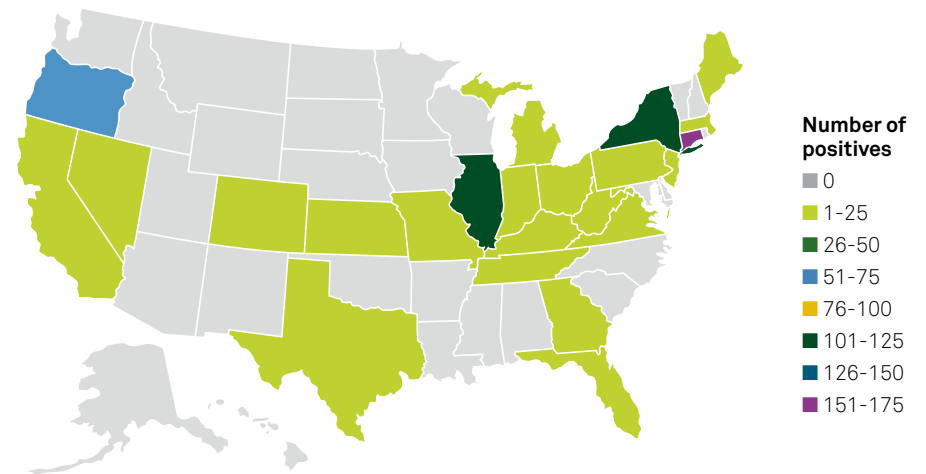
DB positivity

Nine other benzodiazepines and/or metabolites were also seen throughout the third quarter. There was an increase in hydroxy flubromazepam positivity, with at least 7 specimens positive each month in the third quarter.



DB class number of positives by state July-Sept 2025

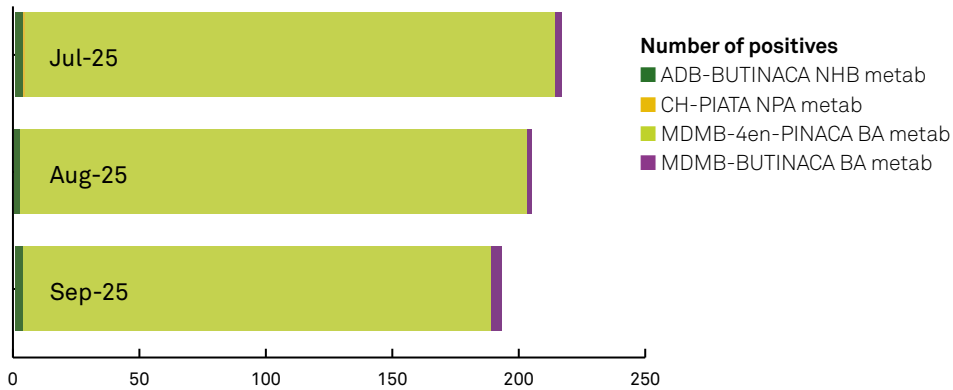
The majority of designer benzodiazepine-positive specimens were from the East Coast and Midwest, with New York and Connecticut seeing the highest number of positives. Oregon continued to have a higher prevalence of specimens positive for designer benzodiazepines than other West Coast states.



Synthetic cannabinoids (SC)

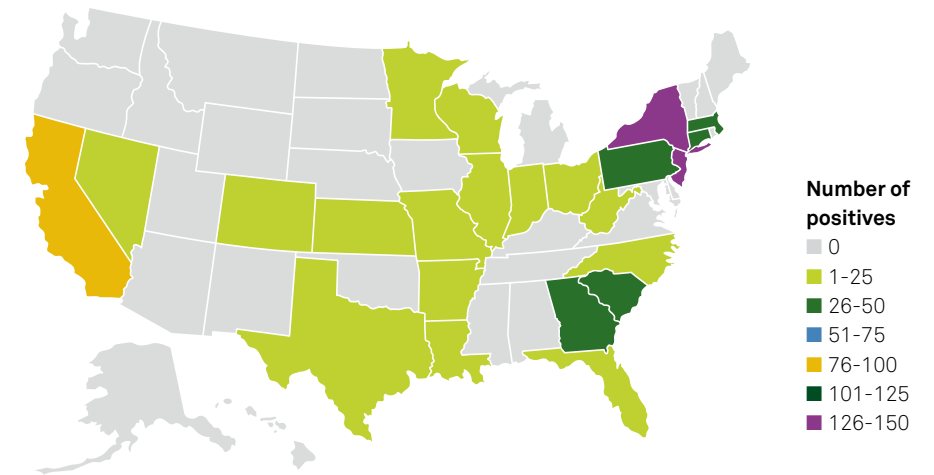
The metabolite for MDMB-4en-PINACA continued to be the most prevalent positive synthetic cannabinoid in the third quarter, with at least 180 specimens positive each month. Three other synthetic cannabinoids were seen in specimens analyzed during the third quarter. These additional synthetic cannabinoids were usually seen in combination with the MDMB-4en-PINACA metabolite.

Synthetic cannabinoid positivity



SC class number of positives by state July-Sept 2025

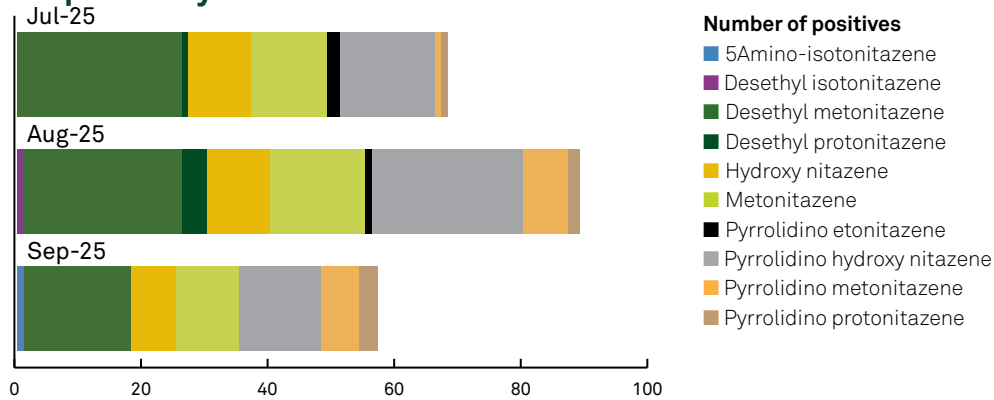
Specimens positive for synthetic cannabinoids were positive in states from across the United States, with a higher prevalence of positives from the Northeast.



Designer opioids (DO)

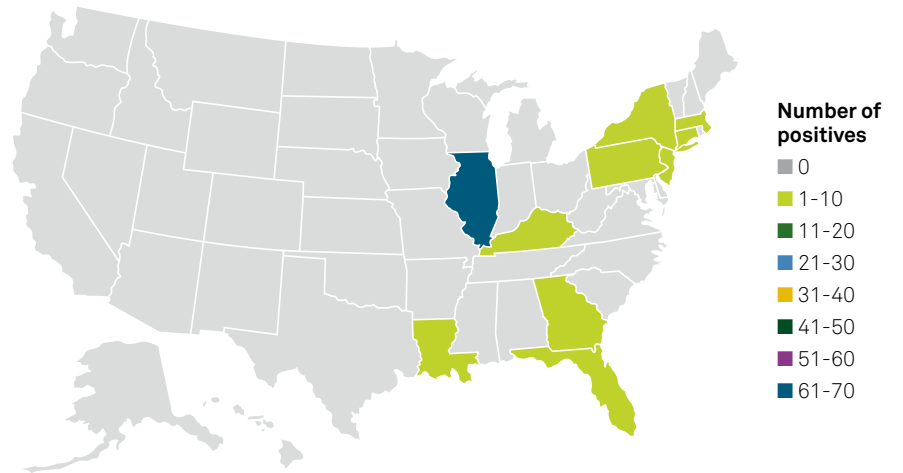
The designer opioid class saw a drop in specimens testing positive in September 2025, with over 35 specimens positive in July and August and only 19 specimens positive in September. Desethyl metonitazene and the metabolite pyrrolidino hydroxy nitazene continued to be the most prevalent designer opioids seen most often in positive test results.

DO positivity



DO class number of positives by state July-Sept 2025

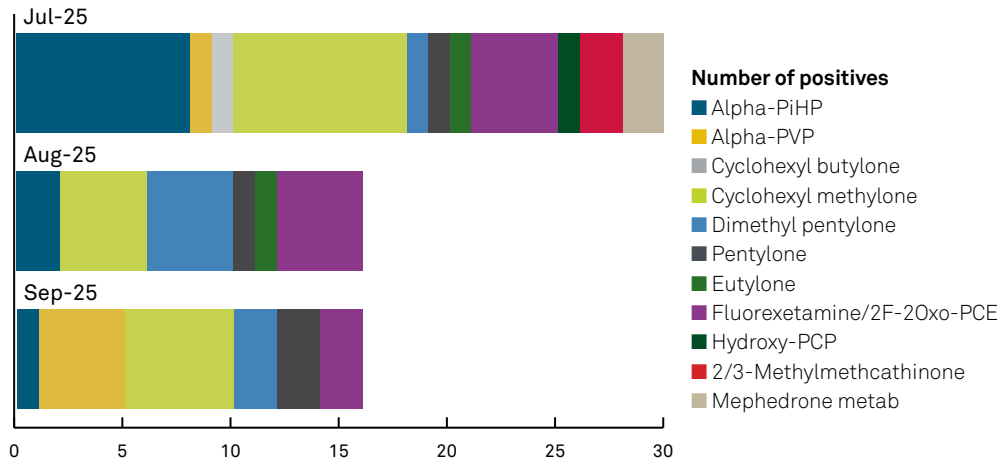
Designer opioid positive specimens were only seen in the eastern half of the United States, with the majority of positive specimens from Illinois.



Designer stimulants (DS)

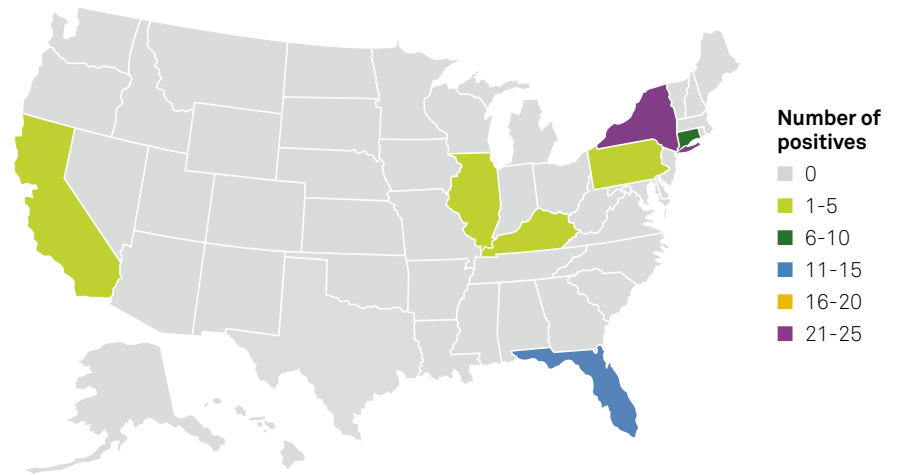
The designer stimulant class has shown some variability in positive analytes throughout 2025. In the first quarter, fluorexetamine and its isomer 2F-2oxo-PCE were the most prevalent positive analytes. In the second quarter, alpha-PiHP was the analyte found most often. In the third quarter, cyclohexyl methylone was the most prevalent positive designer stimulant. Overall, 11 different designer stimulants were seen in the third quarter.

DS positivity



DS class number of positives by state July-Sept 2025

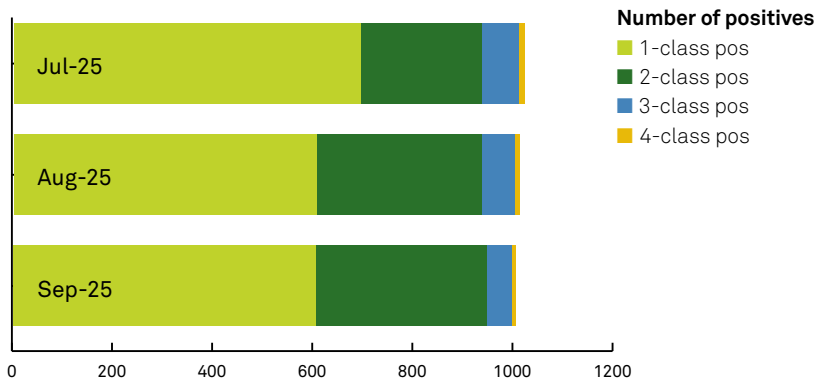
The majority of the designer stimulant–positive specimens were from the states of New York and Florida.



In conclusion

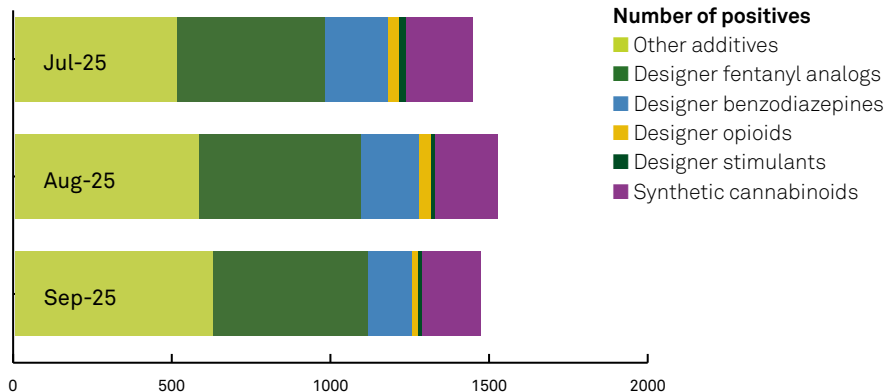
In total, 57 different NPS were seen throughout the third quarter of 2025. In total, 37.4% of NPS-positive specimens were positive for more than 1 NPS class, an increase over the previous quarters (29.6% in the second quarter and 24.5% in the first quarter).

NPS positivity



The other additives and designer fentanyl analogs classes continued to see the most positive specimens of all NPS classes. Synthetic cannabinoids was the third most positive NPS-class, with 19.6% of positive specimens containing a synthetic cannabinoid.

Positivity by NPS class



The NPS landscape is constantly changing. The specific analytes seen as positive change on a monthly basis, as do the states in which these compounds appear. Understanding all substances a patient may have ingested is essential for helping clinicians develop appropriate treatment plans, which becomes much more difficult without testing for all NPS classes.

Quest offers testing for 6 individual NPS classes as well as an NPS panel, which analyzes all 6 of these classes. Because the different NPS agents are continually changing, a full NPS panel may help to further ensure proper detection and appropriate treatment, as opposed to individual testing.



References

1. Shafi A, Berry AJ, Sumnall H, Wood DM, Tracy DK. New psychoactive substances: a review and updates. *Ther Adv Psychopharmacol*. 2020;10:2045125320967197. doi:10.1177/2045125320967197
2. Mohr ALA, Logan BK, Fogarty MF, et al. Reports of adverse events associated with use of novel psychoactive substances, 2017-2020: a review. *J Anal Toxicol*. 2022;46(6):e116-e185. doi:10.1093/jat/bkac023





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