2025

GROUNDHOGS

DRUG CHECKING

Annual Report

581 Samples · 15 States · 65 Cities · 50+ Unique Primary Drugs

A SAFER SUPPLY THROUGH SCIENCE

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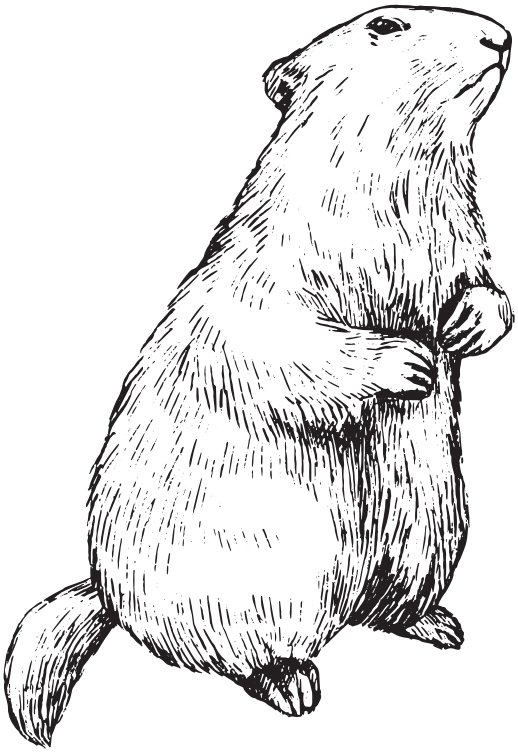
PHILADELPHIA PITTSBURGH TRENTON

About Us

Groundhogs Work Group is a privately funded public health initiative focused on drug checking, overdose prevention and real-time monitoring of the illicit drug supply. Founded in 2023 as PA Groundhogs, we operate in partnership with the Center for Forensic Science Research and Education (CFSRE)--the nation's leading lab for the discovery of new psychoactive compounds. Other partners include the PA Harm Reduction Network (PAHRN), The Everywhere Project and The Kind Collective, which operates NJ Groundhogs.

As of this report we have analyzed 1,386 samples from Pennsylvania, New Jersey and 13 other states. Groundhogs has offices in Philadelphia, Pittsburgh and Trenton.



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EXECUTIVE SUMMARY

In its second full year of operations, Groundhogs Drug Checking processed 581 drug samples originating from 65 cities across 15 states—a 12.6% increase in volume over 2024 and a dramatic expansion in geographic scope from 4 states to 15. The data reveals an illicit drug supply in constant flux, with medetomidine consolidating its position as the dominant adulterant in the opioid supply, ketamine emerging as the fastest-growing drug class in our dataset, carfentanil re-establishing itself in the Northeast corridor, and fentanyl purity remaining critically low.

KEY FINDINGS

- **Medetomidine dominates**: Detected in 205 samples, or 69.5% of all dope samples in 2025. In the dope supply, medetomidine appeared at a mean concentration of 12.4% by weight (median 10.8%), outweighing fentanyl itself in 83% of samples where both were quantified — at a median ratio of nearly 2:1, the typical bag of dope now contains roughly twice as much veterinary sedative as opioid.
- **Xylazine decline accelerates:** Dropped from 41.1% of all samples in 2024 to 16.0% in 2025, a 56% year-over-year decrease. In the dope supply specifically, xylazine fell from majority presence to just 30.5%.
- **Ketamine surges 165%:** Identified as primary drug in 61 samples (up from 23 in 2024), making it the second most common primary drug overall. Ketamine Precursor A in 87% of samples confirms clandestine manufacture.
- **Carfentanil expands 600%:** Detected in 21 samples vs. 3 in 2024—concentrated in Trenton, NJ (17 of 21) with additional detections in Newark, Paterson, and Philadelphia. All detections are in trace amounts and are accompanied by fentanyl as the primary drug. Carfentanil's presence is believed to be a potentiating tactic. Detections began declining in dope samples in the fourth quarter--from 8% of dope samples to 1%.
- **Fentanyl purity remains critically low:** Average 5.4% (median 5.4%); the remaining 94.6% of mass consists of adulterants, cutting agents, and manufacturing byproducts.
- **Para-fluorofentanyl declines sharply:** From 13.6% of samples in 2024 to 2.2% in 2025—an 84% drop—potentially signaling a shift in precursor supply chains.
- **75 adverse events reported:** Including ICU-level overdoses, seizures, hallucinations, severe skin reactions, and suspected medetomidine withdrawal syndrome.
- **Zero fentanyl in benzodiazepine submissions:** 33 samples sold as Xanax/benzos contained no fentanyl—countering the persistent myth of widespread fentanyl contamination in pressed pills.
- **New compounds detected:** First-time identifications include azaperone (veterinary tranquilizer), tetramethylnorfentanyl (TMNF), tetramethyl-4-AP, clonazolam, and methaqualone.

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1. Year at a Glance: 2025 By the Numbers

581
TOTAL SAMPLES
Up 12.6% from 516 in 2024

15
STATES
Up from 4 in 2024

65
CITIES
National reach

50+
UNIQUE DRUGS
Primary drugs identified

270
FENTANYL SAMPLES
46.5% of all submissions

61
KETAMINE SAMPLES
Up 165% from 2024

75
ADVERSE EVENTS
12 naloxone administrations

5.4%
AVG FENTANYL PURITY
Range: 0.7–12.0%

Primary Drug Distribution

Primary Drug	2025 Count	% of Total	2024 Count	YoY Change
Fentanyl	270	46.5%	284	-5%
Ketamine	61	10.5%	23	+165%
Cocaine	57	9.8%	58	-2%
Methamphetamine	55	9.5%	44	+25%
Alprazolam	19	3.3%	9	+111%
MDMA	19	3.3%	24	-21%
Delta-9 THC	13	2.2%	5	+160%
No Drug Detected	13	2.2%	4	+225%
Bromazolam	8	1.4%	14	-43%
Heroin	6	1.0%	10	-40%

Fentanyl remained the dominant primary drug at 46.5% of all submissions, though its raw count declined slightly from 284 to 270. The most dramatic shift was ketamine's 165% surge from 23 to 61 samples, making it the second most common primary drug in our dataset. Methamphetamine grew 25%, while bromazolam—once the dominant designer benzodiazepine—declined 43% as alprazolam submissions more than doubled. This is a rare case where a primary pharmaceutical agent is replacing the copycat analog designed to mimic it in counterfeit pressed pills. We believe this is the result of scheduling at the international level and DEA efforts in 2025 to designate bromazolam a schedule I controlled substance.

2. The Opioid Supply: Fentanyl, Adulterants, and the Medetomidine Shift

The 269 samples submitted and sold as dope, heroin, or fentanyl in 2025 paint a picture of a supply defined not by its intended drug but by the adulterants mixed into it. With an average fentanyl purity of just 5.4%, the typical dope sample is overwhelmingly composed of non-opioid substances—many of which carry their own serious health risks and none of which respond to naloxone.

5.4%
AVG FENTANYL PURITY
Median: 5.4% | Max: 12.0%

69.5%
DOPE WITH MEDETOMIDINE
Up from 30.8% in 2024

30.5%
DOPE WITH XYLAZINE
Down from 41.1% in 2024

The Medetomidine Takeover

Medetomidine has gone from present in roughly half the opioid supply in 2024 to present in more than two-thirds, firmly replacing xylazine as the dominant sedative adulterant. In 2025, 187 of 269 samples sold as dope, heroin, or fentanyl (69.5%) contained medetomidine, up from 49.3% of dope samples in 2024. Outside the dope supply, medetomidine appeared in only 18 samples, nearly all of which were fentanyl-based products sold under other names (including counterfeit oxycodone pills) or submitted without a label. The CDC's MMWR published two reports in 2025 documenting severe medetomidine withdrawal syndrome in Philadelphia and Pittsburgh, describing hospitalized patients with life-threatening autonomic dysfunction including severe hypertension and tachycardia resistant to standard withdrawal protocols. PAG's adulterant report was cited in both MMWR publications.

Xylazine's Continued Decline

Xylazine appeared in 93 of 581 total samples (16.0%), down sharply from 212 of 516 in 2024 (41.1%)—a 56% year-over-year decrease. Within the opioid supply, xylazine dropped to 30.5% of dope samples, compared to its near-majority presence in 2024. While xylazine's decline is notable, it has not disappeared, and the wound complications it causes remain a clinical concern for people with ongoing exposure.

Adulterant Landscape in the Opioid Supply

Adulterant	2025 Detections	% of All Samples	2024 Detections	Trend
Medetomidine	205	35.3%	159	↑ +29%
4-ANPP (fent precursor)	216	37.2%	261	↓ -17%
Xylazine	93	16.0%	212	↓ -56%
Lidocaine	128	22.0%	162	↓ -21%
Procaine	176	30.3%	78	↑ +126%
Tetracaine	118	20.3%	122	↓ -3%
BTMPS (Tinuvin 770)	69	11.9%	75	↓ -8%
Caffeine	85	14.6%	70	↑ +21%
Para-fluorofentanyl	13	2.2%	70	↓ -81%
Carfentanil	21	3.6%	3	↑ +600%
Benzocaine	25	4.3%	—	New/rare

Carfentanil Re-emergence

- 21 detections in 2025—a 600% increase from 3 in 2024. All found in dope samples.
- Geographic concentration: 17 of 21 detections in Trenton, NJ, with additional detections in Newark, Paterson (NJ), and Philadelphia (PA).
- Carfentanil is approximately 100x more potent than fentanyl. It disappeared from US markets after China's 2019 scheduling action and has now re-emerged in the Northeast.
- To date carfentanil has been found only in trace amounts detectable by sophisticated machinery. Officials in NY and Ontario have noted that the amounts detected have evaded FTIR machines and fentanyl test strips.
- PA Groundhogs first alerted stakeholders to the presence of carfentanil in the regional dope supply in 2024
- Believed to be synthesized in Mexico using precursors sourced from China. (*Council on Foreign Relations*)

Para-fluorofentanyl: A Dramatic Decline

One of the most striking shifts in 2025 was the near-disappearance of para-fluorofentanyl (pFF), which dropped from 70 detections in 2024 (13.6% of samples) to just 13 in 2025 (2.2%)—an 81% decline. This synthetic opioid analog, which was federally scheduled in early 2023, had been a persistent presence in the fentanyl supply. Its rapid decline may reflect upstream disruptions in precursor availability or shifting manufacturing practices in clandestine labs.

3. Local Anesthetics in the Dope Supply

Quarterly Trend: High-Load Local Anesthetic Adulteration

The chart below tracks the percentage of fentanyl-primary samples in which local anesthetics constitute a significant share of the total sample mass, measured at three thresholds. The trajectory is striking: local anesthetics were virtually absent before 2024, then surged rapidly through 2024 and into 2025. By Q4 2025, nearly 90% of fentanyl samples contained local anesthetics comprising at least 10% of the sample by weight, and over 80% had local anesthetics making up a quarter or more of the total mass. This is not trace contamination—it is a fundamental restructuring of what people are actually consuming when they buy dope.

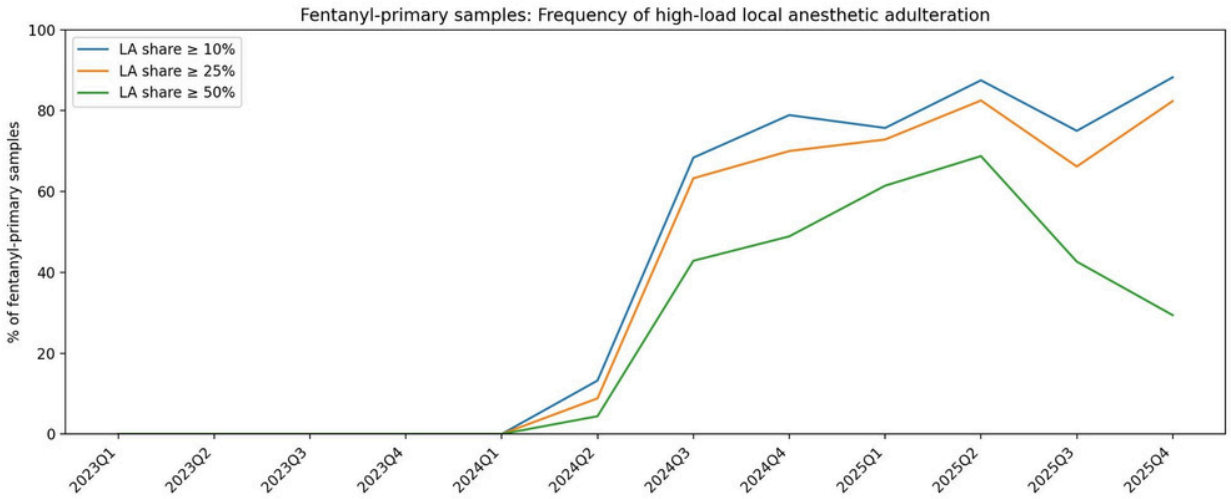


Figure: Percentage of fentanyl-primary samples where combined local anesthetic mass exceeds three thresholds (10%, 25%, and 50% of total sample weight), by quarter, 2023 Q1 through 2025 Q4. Source: Groundhogs/CFSRE quantitative LC-QTOF analysis.

Across the illicit opioid supply, we are seeing a pronounced increase in local anesthetics—drugs designed to numb tissue—showing up as adulterants. The most common ones we encounter in drug-checking data include lidocaine, procaine, tetracaine, and benzocaine (and occasionally related "-caine" compounds). They are not opioids, and they do not treat withdrawal. So why are they there? After careful consideration we concluded that it was most likely associated with declining fentanyl purity. Fentanyl purity roughly halved (8–9% → 4–6%) over the same period that local anesthetics went from near-zero to near-universal. The inflection point is sharp: between Q2 and Q3 2024, caine rates jumped from 26% to 83% and purity dropped from 9.2% to 6.9%.

Fentanyl (especially in inconsistent mixes) can feel too fast, too short, and kind of "hollow." Local anesthetics—lidocaine, procaine, tetracaine, benzocaine, and others—add a numbing, burning, or tingling sensation that users interpret as "it's strong, it's real, it's hitting." That sensory cue is extremely useful for sellers when potency is variable, because it helps the product "announce itself" even if the opioid effect is inconsistent. Local anesthetics are overrepresented because they are a cheap way to manufacture a consistent "this is strong" body signal in a market where the opioid dose is inconsistent and the product needs to sell on sensation.

From a public-health standpoint, local anesthetics are a signal of a supply that is being engineered not just for intoxication, but for marketability and repeat purchasing. They create no therapeutic benefit for people who use opioids and introduce new categories of adverse events—cardiac symptoms, neurologic toxicity, more tissue injury, and more adverse events driven by misleading potency cues.

88.5%
OF DOPE SAMPLES

Contain at least one local anesthetic

46.8%
CONTAIN 2 OR MORE

Multiple -caine adulterants layered

+167%
PROCAINE SURGE

22.9% to 61.1% in fentanyl samples

Local Anesthetics in Fentanyl-Primary Samples (n=270)

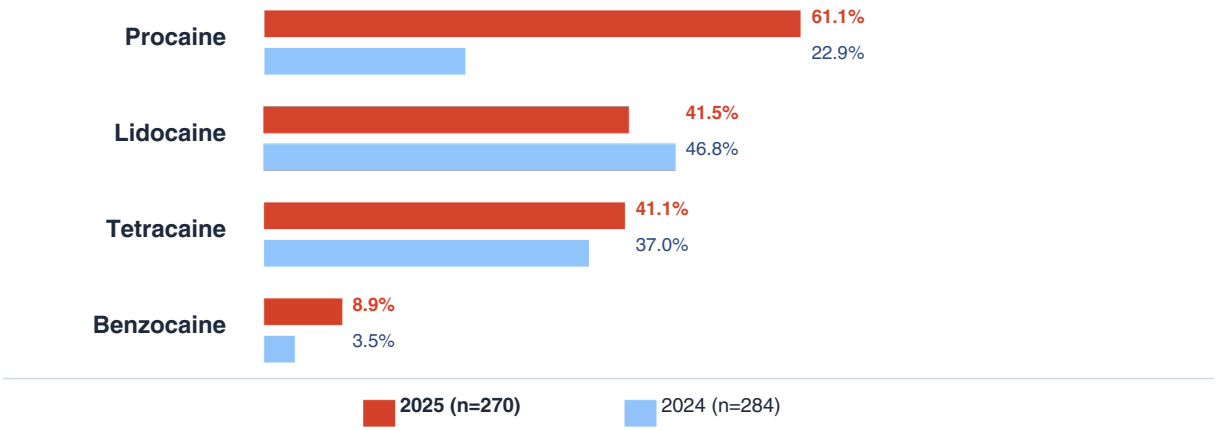


Chart compares the percentage of fentanyl-primary samples containing each local anesthetic in 2025 vs. 2024. Procaine shows the most dramatic increase, rising from 22.9% to 61.1% of fentanyl samples—a 167% year-over-year increase. Benzocaine also surged, more than doubling from 3.5% to 8.9%.

Why This Matters

- 88.5% of dope samples now contain at least one local anesthetic—making “-caines” more prevalent than any single adulterant category except fentanyl manufacturing byproducts.
- 46.8% of dope samples contain two or more different local anesthetics layered together, amplifying the sensory deception.
- Procaine’s 167% surge (22.9% → 61.1% of fentanyl samples) is the single largest year-over-year adulterant increase in the 2025 dataset.
- Local anesthetics carry independent toxicity risks: lidocaine and procaine can cause seizures and cardiac arrhythmia; tetracaine is neurotoxic even at low doses; benzocaine can cause methemoglobinemia (blood oxygen deprivation).
- The pattern suggests deliberate supply-chain engineering: sellers are using cheap “-caine” compounds to create a consistent “strong” sensation in a market where fentanyl purity averages just 5.4%.

4. The Rise of Ketamine

61	77	87%	59.1%
PRIMARY DRUG	TOTAL DETECTIONS	CONTAIN PRECURSOR A	AVERAGE PURITY
Up 165% from 23 in 2024	Including crossover	Marker of illicit manufacture	Range: 0.1%–78.6%

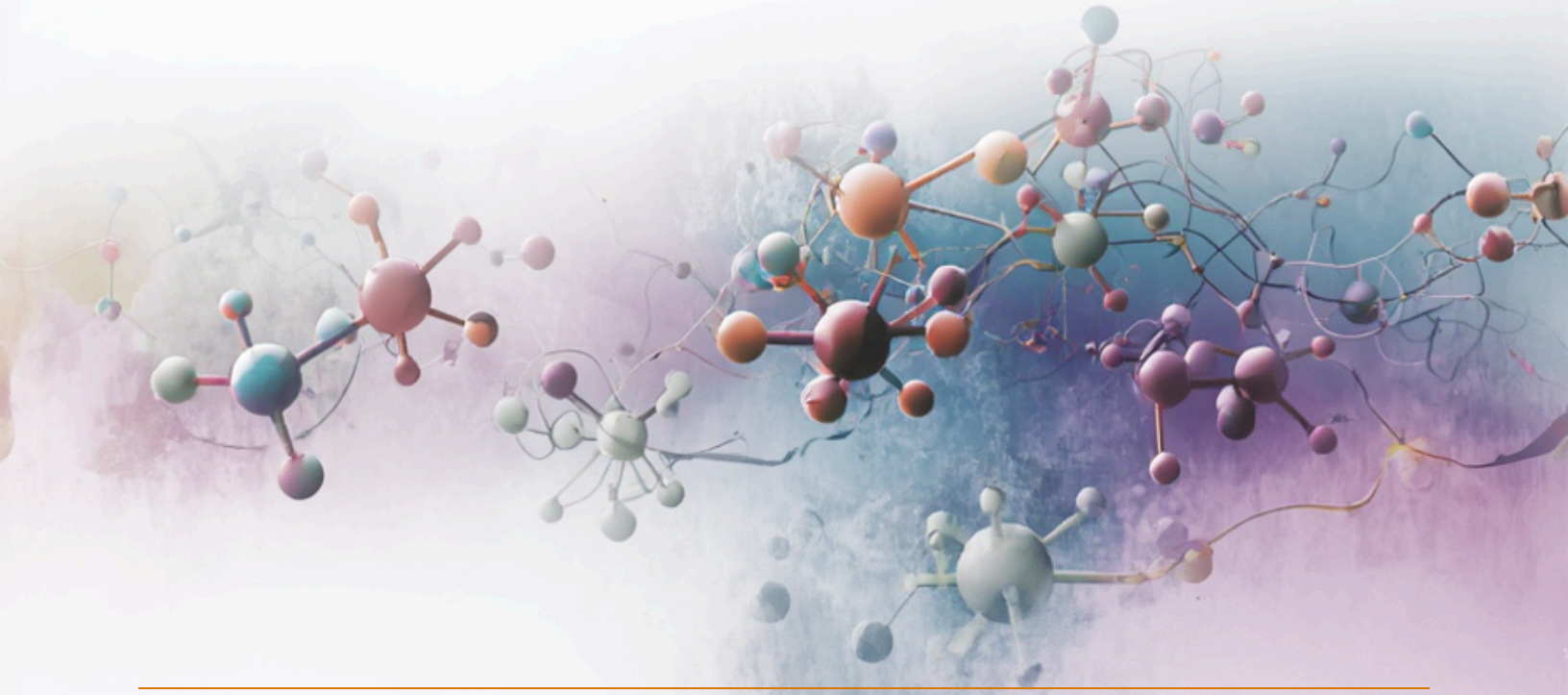
Ketamine underwent the most dramatic growth trajectory of any substance in the Groundhogs dataset. Identified as the primary drug in 61 samples—up 165% from 23 in 2024—ketamine is now the second most common primary drug overall, surpassing cocaine (57) and methamphetamine (55). When including all detections (crossover into other drug types), ketamine appeared in 77 total samples.

Ketamine Precursor A: Proof of Clandestine Origin

Ketamine Precursor A—a manufacturing byproduct from ketamine synthesis—was detected in 87% of ketamine samples. This compound is a binary forensic marker: its presence definitively indicates illicit manufacture rather than pharmaceutical diversion. Pharmaceutical-grade ketamine undergoes purification steps that eliminate this intermediate. The near-universal presence of Precursor A confirms that the ketamine reaching US communities originates from clandestine laboratories, consistent with UNODC reporting of 23.3 tons of illicit ketamine seized in East and Southeast Asia in 2023.

Ketamine in the Opioid Supply

Perhaps most concerning is ketamine's crossover into other drug markets. In 2025, ketamine was detected in samples sold as dope (5), methamphetamine (5), MDMA (4), cocaine (1), and heroin (1). In two cases, samples sold as MDMA turned out to be pure ketamine with Precursor A. In one case, a sample submitted as clonidine was pure ketamine. Two dope samples had ketamine as their primary drug—meaning buyers who believed they were purchasing fentanyl or heroin received a dissociative anesthetic instead.



5. Stimulants: Cocaine, Methamphetamine, and the Cutting Game

64.6%	60.0%	116
AVG COCAINE PURITY	AVG METH PURITY	TOTAL STIMULANT SAMPLES
n=38 | Median: 71.2%	n=34 | Median: 64.9%	20.0% of all submissions

Cocaine

Cocaine was identified as the primary drug in 57 samples (9.8%), essentially unchanged from 58 in 2024. These included 48 samples of powder cocaine HCL and ten of cocaine freebase (crack). The average purity of 64.6% (median 71.2%) indicates a relatively high-quality retail supply compared to fentanyl. However cocaine is highly variable, ranging in purity from 8.3% to 99.3%. Provenance is everything. Trace amounts of cocaine show up frequently in dope samples--most likely the result of cross contamination. However, **no cocaine samples contained fentanyl as an adulterant.** This suggests that drug sellers are well aware of the potential blowback of fentanyl contaminated cocaine and labor to avoid it. Our data has consistently supported the finding that deliberate fentanyl contamination of the cocaine supply is not a significant phenomenon at the retail level. Common adulterants in cocaine included phenacetin, caffeine, levamisole, and local anesthetics.

Methamphetamine

Methamphetamine was identified as primary drug in 55 samples (9.5%), up 25% from 44 in 2024. Average purity was 60.0% (median 64.9%), with dimethyl sulfone (MSM) as the most common cutting agent. Purity figures are controlled to include only samples sold as methamphetamine (n=34), excluding misrepresentation cases such as pressed pills sold as Adderall, oxycodone, or Xanax that contained meth at trace levels. Notable findings include two samples sold as oxycodone in Philadelphia that were actually medetomidine and xylazine cut with methamphetamine and cocaine—a dangerous misrepresentation that led to two ER visits for severe drops in blood pressure and heart rate. Thanks to our outreach partners at **The Everywhere Project,** Groundhogs was able to quickly identify the counterfeit pills, issue a statewide alert, and facilitate the removal of tainted stock from the supply chain.

6. Benzodiazepines: The Fentanyl Myth, Debunked

Zero Fentanyl in Benzodiazepine Submissions

- Of 33 samples sold as Xanax, alprazolam, bromazolam, or other benzodiazepines, **none contained fentanyl**.
- This finding is consistent with PAG's 2024 data and with published forensic evidence nationally.
- The persistent narrative that pressed "Xanax" pills are routinely laced with fentanyl is not supported by mass spectrometry analysis.
- This does not mean pressed benzodiazepine pills are safe—many contained designer benzodiazepines (bromazolam, phenazolam, clonazolam) with unpredictable potency.

Benzodiazepine submissions totaled 33 samples in 2025. The most common primary drug was alprazolam (17 samples), followed by bromazolam (8), phenazolam (2), diazepam (2), and clonazepam (2). One sample sold as "Farmapram" (Mexican Xanax) was tested. The decline of bromazolam from 14 detections in 2024 to 8 in 2025 (-43%) mirrors its observed decline in other US drug checking programs, likely due to scheduling pressure. The UN Commission on Narcotic Drugs voted on March 19, 2024 to place bromazolam under Schedule IV of the 1971 Convention on Psychotropic Substances, citing its lack of therapeutic use, and its widespread presence in counterfeit benzodiazepine products. In December 2025 the DEA temporarily classified bromazolam as a schedule I controlled substance..

Phenazolam, a potent designer benzodiazepine not previously seen in this dataset, appeared for the first time in 2025 in two samples: one sold as Xanax/alprazolam and one sold as bromazolam. Designer benzodiazepines differ substantially from pharmaceutical ones in onset, duration, and potency, and users may not recognize the difference in effect until it is too late.

Sold As	Primary Drug Found
Alprazolam / Xanax (15 samples)	Alprazolam (confirmed)
Alprazolam / Xanax (6 samples)	Bromazolam (mislabeled)
Xanax 3mg bars (2 samples)	Bromazolam (mislabeled)
Clonazepam / Klonopin (2 samples)	Diazepam (mislabeled)
Alprazolam / Xanax (1 sample)	Phenazolam (new in 2025)
Bromazolam (1 sample)	Phenazolam (new in 2025)
Dope (1 sample)	Flubromazepam (mislabeled)

7. New Compounds and Emerging Threats

One of Groundhogs' most critical functions is the early identification of novel or re-emerging substances in the drug supply. In 2025, our laboratory partner CFSRE identified numerous compounds appearing for the first time in the Groundhogs dataset. Several warrant particular attention.

New Compounds Detected in 2025

Compound	Count	Drug Class	Significance
Tetramethyl-4-AP (TM-4-AP)	14	Fentanyl byproduct	Novel manufacturing impurity, not previously tracked
Tetramethylnorfentanyl (TMNF)	8	Fentanyl byproduct	New synthesis marker indicating evolving precursors
Benzyl benzoate	9	Industrial solvent	Anti-parasitic/solvent; new carrier agent
Azaperone	2	Veterinary tranquilizer	Third veterinary sedative after xylazine and medetomidine
Clonazolam	4	Designer benzo	Ultra-potent; not previously in our data
N-Boc Norfentanyl	3	Fentanyl precursor	Protected precursor intermediate
Methaqualone	1	Sedative-hypnotic	Quaalude; nearly extinct globally; Pittsburgh
SR-17018	1	Novel opioid	Biased mu-opioid agonist; second CFSRE confirmation
25H-NBOMe	2	Hallucinogen	Potent NBOMe-class psychedelic
Promethazine	1	Antihistamine	First detection in dope supply

Spotlight: SR-17018 — Novel Opioid Identified

- PAG submitted a sample from Fort Worth, Texas that CFSRE confirmed as SR-17018—a biased mu-opioid receptor agonist originally developed as a research compound—marking CFSRE's second confirmed detection of this substance.
- CFSRE first identified SR-17018 in an unattributed drug material sample in May 2024 and published an NPS Discovery monograph in August 2024. PAG's submission represents the second confirmed case and the first linked to a specific geographic origin.
- SR-17018 is structurally related to other benzimidazolone opioids (brorphine, chlorphine) and is described in the literature as having similar potency to morphine with a 6–8 hour half-life and potentially less respiratory depression than conventional opioids. It is not currently scheduled in the United States.

Compounds That Disappeared

Equally notable are substances that declined significantly or vanished entirely from our dataset. Bupivacaine, a local anesthetic found in 14 samples in 2024, was absent in 2025. Metonitazene and N-pyrrolidino etonitazene—potent nitazene-class opioids that had generated alarm nationally—both dropped to zero from 3 detections each in 2024. Etomidate (2 detections in 2024) also disappeared. These shifts illustrate the speed at which the illicit supply chain adapts, cycling through substances as availability, cost, and enforcement pressure fluctuate.

8. Reports & Public Health Alerts

When our lab analysis identifies a dangerous new adulterant or an unexpected substance in the drug supply, we don't wait — we issue a Public Health Alert. These alerts are distributed directly to people who use drugs, harm reduction organizations, syringe service programs, and public health agencies across Pennsylvania, delivering actionable information as quickly as possible. Because our mail-in drug checking service uses mass spectrometry — one of the most sensitive and comprehensive detection methods available — we are often the first organization to raise the alarm on emerging threats. Sign up for Alerts at our website: pagroundhogs.org

January 31, 2025 | drug checking, organization news

PAG Report Exposes Major Disruption in Opioid Supply

PHILADELPHIA/PITTSBURGH – [JAN 30, 2025] – PA Groundhogs (PAG), Pennsylvania's statewide drug-checking organization, has released its First Annual Report, detailing groundbreaking findings from its inaugural year of oper...

Continue Reading

January 2025

PA GROUNDHOGS

PUBLIC HEALTH ALERT

Fake Pills Causing Adverse Effects in Philly

- COUNTY: Philadelphia
- DATE(S): November 2025
- DRUG: Counterfeit Oxycodone 30mg Pills ("Perc 30s")
- ADVERSE EVENTS: YES

Two different light blue pills, one with the imprint "A|51" and the other with the imprint "ALG" over "265," marketed in Philadelphia as oxycodone 30mg ("Perc 30s"), were obtained by PA Groundhogs (PAG) on Nov. 20 after reports began circulating about adverse events among consumers.

Email Campaign

The pills (pictured at right) were submitted to our partner lab The Center for Forensic Research, Science & Education, in Horsham, PA, for GC/MS & LC/MS analysis and found to contain the potent tranquilizers xylazine and medetomidine, as well as methamphetamine, and cocaine. No fentanyl was detected in either sample.

November 2025

PA GROUNDHOGS

PUBLIC HEALTH ALERT

Potent Synthetic Cannabinoids Reemerge Four Years After China Ban

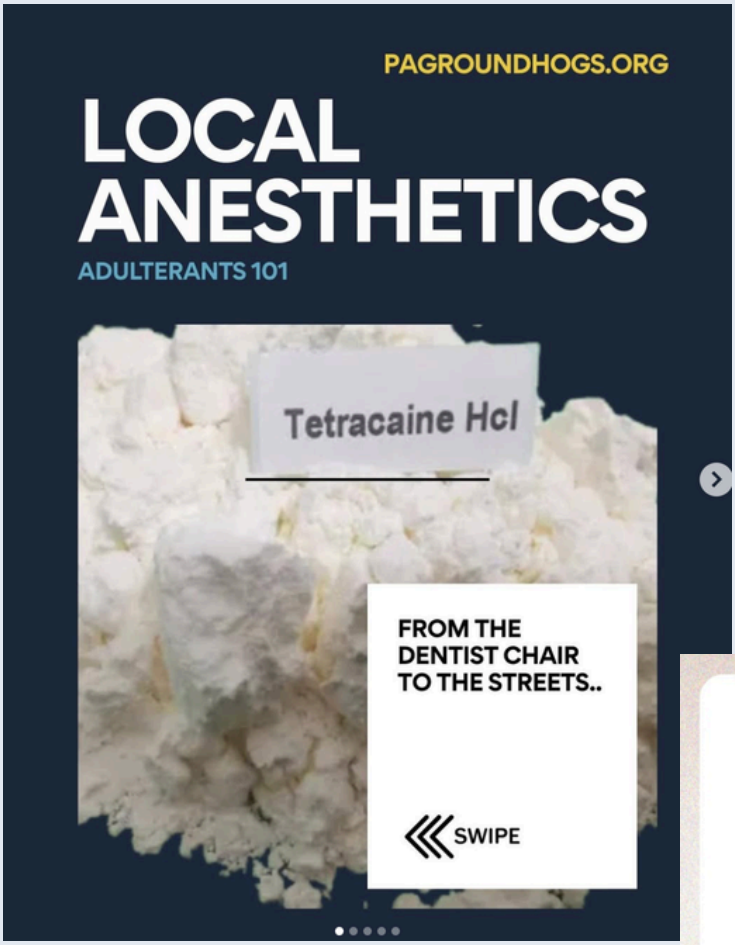
PAGROUNDHOGS is investigating a series of adverse drug events in Pennsylvania and New Jersey believed to be associated with high potency synthetic cannabinoids.

Over the past month, first responders in Lancaster County, PA, and communities we monitor in New Jersey–including the state capital of Trenton–have simultaneously reported upticks in K2-related overdoses. The most recent overdose clusters started in March and have continued into April. So far this month EMTs in Lancaster have responded to numerous calls of unconscious individuals in or near a park in the city's downtown area known for drug activity. On April 5, Lancaster Police arrested three people in the vicinity of the park after allegedly witnessing a drug sale. They confiscated four bags of suspected "K2" from a buyer, as well as the alleged dealer's stash.

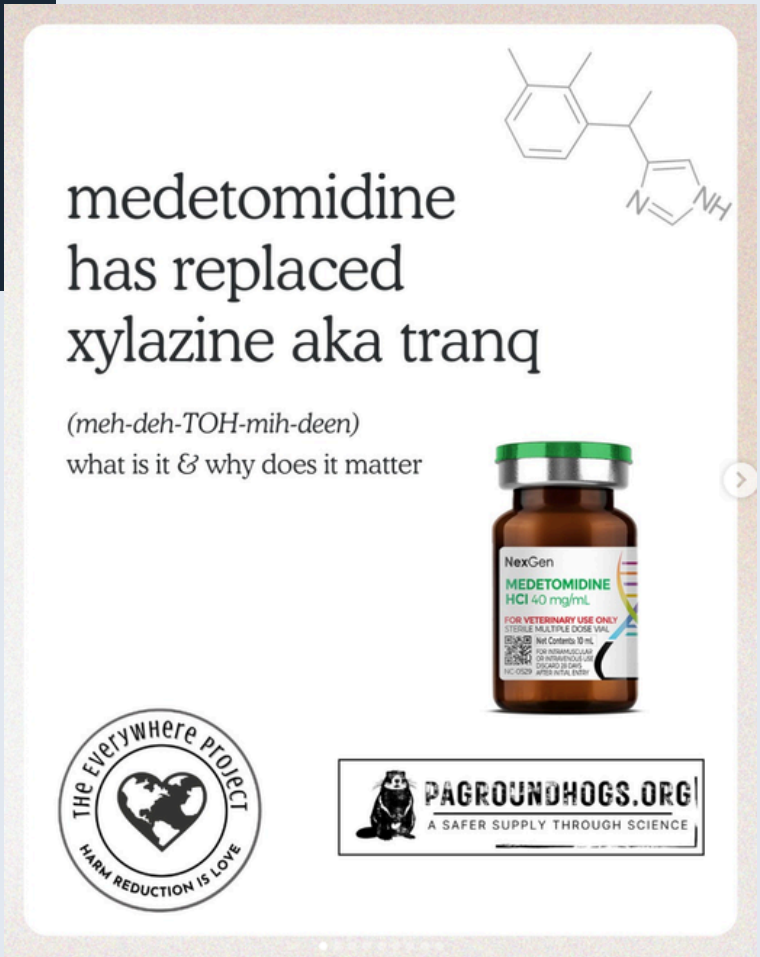
Around the same time PAGROUNDHOGS began receiving reports of K2-related overdoses in Mercer County, NJ. Fieldworkers with our partner group there, The Kind Collective, have obtained at least two samples of K2 in Mercer County, NJ. These will be forwarded to the Center for Forensic Science, Research and Education (CFSRE) for analysis. According to a source with knowledge of the issue, first responders in New Jersey are experiencing an increase in K2-related calls in 2025 compared to the previous five years.

April 2025

...continued



Local anesthetics came on the scene in force in 2025 as fentanyl purity declined precipitously. We look at the unique and dangerous side effects of LAs informing our stakeholders and clinicians on what to expect



October 2025

Medetomidine is a powerful veterinary sedative that has replaced xylazine as the alpha-2 agonist of choice among dope cutters. This thorough report from our partners at **The Everywhere Project** offers essential information for first responders & clinicians.

8. Geographic Expansion and Growth

15
STATES IN 2025
Up from 4 in 2024

+582%
NJ GROWTH
17 to 116 samples

12.6%
OVERALL VOLUME GROWTH
516 to 581 samples

2025 marked a transformative year for Groundhogs' geographic reach. While Pennsylvania remained the core service area (379 samples, 65.2%), New Jersey emerged as the second-largest state with 116 samples (20.0%)—a 582% increase from just 17 in 2024. This expansion was driven primarily by the Trenton site (89 samples) and the addition of Paterson (19 samples), operating under the gogroundhogs.org white-label platform.

State Distribution

State	2025 Samples	% of Total	2024 Samples	Change
Pennsylvania	379	65.2%	493	Core service area
New Jersey	116	20.0%	17	+582%
California	20	3.4%	—	New
Colorado	11	1.9%	—	New
Connecticut	10	1.7%	—	New
Maryland	9	1.5%	—	New
Ohio	7	1.2%	—	New
New York	6	1.0%	4	+50%
Florida	6	1.0%	—	New
Missouri	3	0.5%	—	New
Louisiana, OR, TX, WI, WV	5	0.9%	—	New

9. Adverse Events and Community Impact

75	12	8+
ADVERSE EVENTS	NALOXONE ADMINISTRATIONS	ICU HOSPITALIZATIONS
12.9% of all samples	Opioid reversals reported	Including multi-day stays

Adverse events were reported in 75 of 581 samples (12.9%), up from 74 in our 2024 data. Naloxone was administered in 12 cases. The nature of adverse events reflects the evolving adulterant landscape, with medetomidine-associated symptoms—profound sedation, hallucinations, "jelly legs," and withdrawal crises—increasingly prominent alongside traditional opioid overdose presentations.

Notable Adverse Event Reports

Selected Participant Reports (Direct Quotes)

- "Person ended up in ICU - coming back slowly but totally dissociated, staring at the wall talking to things that aren't there" — Fentanyl/medetomidine sample
- "Passed out, woke up to bloody vomit and bleeding through nose" — Fentanyl sample
- "Overdose - seizure" — Fentanyl/medetomidine dope sample
- "Jelly legs - auditory hallucination" — Fentanyl/medetomidine dope sample
- "Suspected medetomidine withdrawal - nausea/vomiting, high blood pressure, fast heart rate" — Fentanyl/medetomidine sample
- "People who smoked this had convulsions; one went to hospital" — 5-F ADB (synthetic cannabinoid) sold as K2
- "ER visit due to severe drop in heart rate and blood pressure from two users" — Methamphetamine/medetomidine sold as oxycodone
- "Terrible sickness, feels like skin's burning" — Fentanyl dope sample
- "Protracted withdrawal after buprenorphine initiation" — Fentanyl/medetomidine dope sample

Fentanyl Test Strip Accuracy

Among 114 samples tested with fentanyl test strips (FTS), 34 tested positive and 80 tested negative. Of the 34 FTS-positive results, 32 were confirmed by lab analysis to contain fentanyl (94% concordance). Critically, zero FTS-negative samples were found to contain fentanyl by lab analysis—indicating a 0% false-negative rate in this subset. This supports the continued value of community-distributed fentanyl test strips as a frontline harm reduction tool.

10. 2025 Organizational Milestones

2025 was a breakout year for Groundhogs Drug Checking, with significant growth in analytical volume, geographic coverage, public communications, and recognition from media and public health agencies. We distributed approximately **3,500 drug checking kits and 7,000 test strips** across the US, a 75% increase over 2024. Most went to harm reduction organizations, treatment providers and healthcare networks. At least 400 test kits were shipped directly to individuals. PAG and NJG also tabled or presented at numerous events across Pennsylvania & New Jersey where we educated stakeholders on the public health benefits of quantitative drug checking.

Additional Highlights included:

• **February 2025:** Released First Annual Report detailing findings from inaugural year of operations (2024), documenting analysis of 516 samples and the first identification of medetomidine as a dominant adulterant.

• **March 2025:** Featured in WHYY/NPR and WESA/NPR investigative reports on drug checking. CFSRE/PAG collaboration highlighted as a model for real-time drug supply surveillance.

• **May 2025:** Cited in CDC MMWR "Notes from the Field" on medetomidine withdrawal syndrome in Philadelphia & Pittsburgh

• **May 2025:** Announced low-cost gogroundhogs.org white-label platform for national drug checking services.

• **Spring 2025:** Partnered with the Pennsylvania Department of Health on a data collection project in Montgomery County, PA—expanding our institutional relationships with state-level public health agencies.

• **July 2025:** On information from the Philadelphia Department of Health, tested Rick & Morty Vape Pens and discovered Dipentylone, an undisclosed schedule I cathinone in an over-the-counter vape product.

• **Summer 2025:** Launched a Bilingual Adulterant Guide at *pagroundhogs.org/adulterant-guide* —a living document providing English and Spanish designed for community distribution and stakeholder education.

• **Summer 2025:** Added Spanish-language instructions and exterior labeling to all test kits, expanding accessibility for Spanish-speaking communities across our service area.

• **Winter 2025:** Partnered with Drexel University School or Public Health on a Smoke shop testing program; sample acquisition to begin in 2026

Winter 2025: Completed a reseller agreement with WiseBatch to begin distributing medetomidine test strips to organizations across the US at competitive wholesale pricing.

• **Winter 2025:** Joined CFSRE on #MontcoChecks, a county-wide drug checking program in Montgomery County, PA. Led by the Center for Forensic Science Research & Education & funded with opioid settlement dollars, Groundhogs will conduct outreach & engagement, as well as data management for our lab partners.

11. Looking Ahead

As we enter 2026, the data is unambiguous: the unregulated drug supply continues to evolve at a pace that outstrips most surveillance systems. Medetomidine has consolidated its dominance in the opioid supply and is now generating a clinical crisis of its own through severe withdrawal syndromes. Ketamine has exploded from a niche club drug to a fixture in our dataset, with clandestine manufacture confirmed by forensic chemical analysis. Carfentanil—an opioid 100 times more potent than fentanyl—has returned to the Northeast. And novel substances like SR-17018 demonstrate that the supply chain's capacity for innovation remains undiminished.

Groundhogs Drug Checking enters its third year with an expanded geographic footprint, a growing network of community and institutional partners, and a laboratory partnership with CFSRE that positions us at the cutting edge of drug supply intelligence. Our 2025 dataset of 581 samples across 15 states provides the most comprehensive picture we have ever produced of the drugs reaching American communities.

We remain committed to translating laboratory data into actionable community intelligence—information that helps people who use drugs make safer choices, helps clinicians understand what they're treating, helps policymakers craft evidence-based responses, and helps communities understand the complex, rapidly shifting reality of the drug supply in their neighborhoods.

STOP GUESSING. START CHECKING.

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