Quest Diagnostics

Health Trends®

Drug Misuse in America 2023

The Growing Crisis of Novel Psychoactive Substances

December 2023

After more than 20 years, the opioid epidemic continues to evolve with dangerous unpredictability, passing through periods rife with misuse of prescription opioids followed by heroin and, in recent years, fentanyl. During that time, hundreds of thousands of Americans died from overdoses,[1] including nearly 111,000 in 2022 alone.[2]

Now, the epidemic is shifting yet again. Novel psychoactive substances (NPS) are fast seeping into the nation's drug supply. These synthetic or "designer" versions of established drugs, including opioids, benzodiazepines, cannabis, and cocaine, are routinely chemically altered to enhance drug effects and elude tracking by law enforcement. NPS can also include novel drug combinations, particularly involving fentanyl. As one example, the animal tranquilizer xylazine ("tranq") is an NPS that is routinely mixed with fentanyl, and has become notorious for causing disfiguring skin wounds among *in vitro* drug users. In addition, misuse of stimulants is on the rise—most notably, the combining of methamphetamines with fentanyl.[3]

NPS may evade detection by current laboratory test methods because their chemical composition frequently evolves. As a result, little is known about their long-term health effects or prevalence in communities. In short, America's opioid crisis has now entered a "fourth stage" characterized by polysubstance use of largely synthetic drugs.[4,5]

In this **Quest Diagnostics Health Trends® report**, we provide insights into the drug crisis based on more than 3.6 million clinical laboratory drug tests performed by Quest Diagnostics in 2022. Clinical drug testing (also referred to as "drug monitoring" or "toxicology testing") helps physicians and patients monitor for the safe and appropriate use of controlled prescription drugs, as well as unsafe drug use, including potentially dangerous drug mixing.

Though specialists at substance use disorder clinics order a portion of these laboratory tests from Quest, most are ordered by primary care, pain management, and behavioral health providers in general healthcare settings. Testing is routinely ordered for patients prescribed medications for conditions like chronic pain and anxiety.

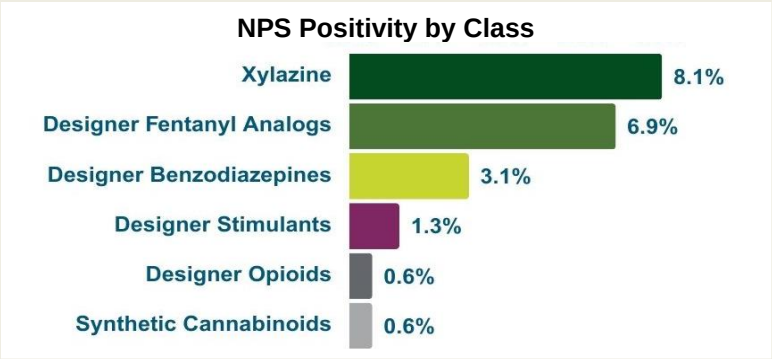
This novel Health Trends report provides insights into the growing NPS crisis, based on analysis of more than 3,730 randomly selected "remnant" specimens tested using a pilot version of our new **Novel Psychoactive Substances Test Panel** (see page 4 for details on the NPS Panel and Methodology for more information on remnant testing).

While illicit fentanyl drives most of the nation's overdose deaths, our research suggests providers and policy makers will need to adopt more creative solutions to contend with a drug crisis growing increasingly complicated by NPS.

Here's what we found.

1. Xylazine was found in nearly 1 in 12 remnant specimens tested, making it the most prevalent NPS, particularly in the Eastern United States.

Xylazine was detected in 8.1% of remnant specimens tested, or roughly 1 in 12 specimens. Among all NPS-positive remnant specimens, xylazine was detected in 3 of 5 (61.8%) specimens.



- Although xylazine was the most frequent illicit additive found within our NPS surveillance period, 5% of samples were positive for other NPS drugs, suggesting that xylazine is not the only concern.
- Other common NPS analytes detected include acetyl fentanyl (5.4%) within the designer fentanyl analogs class, bromazolam (2.3%) within the designer benzodiazepine class, and dimethyl pentylone (1.2%) within the designer stimulant class.
- No specimens tested contained only xylazine, suggesting those positive for the drug are also combining substances.

Additionally, xylazine was often found laced with illicit fentanyl. One-third (32.7%) of fentanyl positive specimens were also positive for xylazine and nearly all (97.7%) specimens positive for xylazine were also positive for fentanyl. Xylazine positivity among fentanyl-positive specimens was most prevalent in the Southeast (~90%), Northeast (~80%) and Eastern (~60%) US regions. Results in the Southwest (<30%) and on the West Coast (<20%) suggest xylazine has yet to fully penetrate these US regions.

These findings align with a recent report from the US Centers of Disease Control and Prevention (CDC) that shows xylazine is implicated in opioid overdose deaths among both men and women nationwide.[6]

2. Nearly 1 in 5 (19%) amphetamines-positive specimens showed fentanyl combining.

This concerning finding builds on other data suggesting an increase in the mixing of fentanyl with other drugs; in 2020, we reported a surge in drug combining involving nonprescribed fentanyl. Even without drug combining involving amphetamines, fentanyl continued to be a major problem on its own, found in 6.9% of specimens tested in 2022.

3. Heroin use is rapidly declining.

Heroin positivity declined by more than half, from 1.1% in 2021 to 0.4% in 2022. In interviews conducted by New York University, several people who use injected drugs "reported that the potency of heroin has declined, which may indicate a developing but unintended tolerance to fentanyl that heroin can no longer address."[7] Our data suggest that fentanyl's superior potency (fentanyl can be up to 50 times stronger than heroin[8]) and lower cost has, in effect, edged heroin out of the nation's drug supply.

4. Specimens collected in areas with demographics linked to low income levels had higher rates of positivity for nonprescribed drugs.

Specimens linked to high-income areas were less likely to test positive for nonprescribed substances than those linked to low-income areas. This was especially true if the specimens from individuals with higher income levels were from substance use disorder clinics. [Note: the terms "high income" and "low income" refer to certain geographies with median income levels falling in the highest and lowest quintile as determined by the US Census Bureau.][9]

Specimens linked to high-income communities were less likely to test positive for nonprescribed substances in every category examined except alcohol. These disparities were generally more pronounced in specimens from substance use disorder clinics.

For instance, specimens from substance use disorder clinics in low-income communities were nearly 7 times more likely to test positive for nonprescribed fentanyl than those from high-income communities.

We theorize these differences are due to comparatively higher quality of care and generally greater access to resources for individuals in high-income communities.

Quest Diagnostics recently debuted its **Novel Psychoactive Substance test panel**. In addition to screening for xylazine, the panel provides testing for up to 88 other compounds, including a range of designer benzodiazepines, opioids, and stimulants.

Quest's team of toxicologists, medical experts, and data analysts will periodically review and update the panel to include the most relevant and prevalent substances present in communities, as reflected by trends in the company's nationally representative dataset and the latest reports from public health, academic research, and law enforcement organizations.

To learn more about the NPS test panel, visit www.QuestDrugMonitoring.com.

Conclusion

The drug crisis shows few signs of abating. A new driver is polysubstance misuse, often involving NPS, that increases morbidity and mortality.[10] Most point-of-care and laboratory tests do not reliably identify NPS, complicating drug control strategies and raising risks associated with drug mixing, death by overdose chief among them.

To prevent harm in communities, these novel psychoactive substances must be monitored through both real-time data and new test methods developed by laboratories. This is essential as NPS may supplant traditional drugs of misuse and can be more potent and harder to detect.

While xylazine is the predominate NPS concern for many, our report posits it may be only about 60% of the full picture. Indeed, while our analysis found xylazine in 61.8% of positive test results, the remaining 38.2% were due to one or more of the other 88 compounds identified via our NPS test panel. In fact, among positive samples, about 42% were positive for more than 1 NPS compound. This also suggests combined substances or combined illicit additives being cut into illicit drug materials.

Providers concerned about drug misuse therefore need to consider all common and emerging NPS. To stay clinically relevant, providers should reevaluate their testing protocols at least annually to ensure inclusion of the most current NPS. Public health policymakers will also need to reevaluate their medical guidance periodically to ensure it reflects changes in NPS.

> **"Primary care physicians are often the first and only healthcare provider with whom a patient with substance use issues interacts. That means it is critical that primary care physicians understand and utilize the tools, including clinical drug testing, to identify and intervene at the first signs of drug combining and other forms of misuse." —Harvey W. Kaufman, MD, medical director and head of the Health Trends® research program**

The better public health policy keeps pace with the changing NPS landscape, the greater the likelihood of curbing a dangerous and evolving drug epidemic—before more lives are lost and more families and communities suffer irreversible harm.

Methodology

The clinical drug test services of Quest Diagnostics monitor for commonly prescribed drugs, including opioids and other pain medications, central nervous system depressant medications, and certain illicit drugs, such as marijuana (which is illegal federally and in some states), cocaine, and heroin. Drug test results provide objective information that can assist healthcare providers in assessing the patient's use of prescribed medications, other controlled prescription medications, and illicit drugs.

In this report, medical and scientific experts from Quest Diagnostics analyzed approximately 3.6 million deidentified patient test results performed in 2022 from patients in 50 states and the District of Columbia.

In addition, this study analyzed 3,734 remnant specimens using a pilot version of Quest's new NPS test panel between March and July 2023.[11] Remnant specimens are from patients whose physicians ordered clinical drug tests from Quest. All data was deidentified and aggregated prior to analysis.

The analysis of income was based on matching each patient's zip code with associated median income estimates obtained from the 2018 American Community Survey (5-year). This allowed for analysis of laboratory data by quintiles of community-level income.[12]

About Quest Diagnostics

Quest Diagnostics Health Trends is a series of scientific reports that provide insights into health issues, based on patient laboratory data, to empower better patient care, population health management, and public health policy. The reports are based on the HIPAA-compliant Quest Diagnostics database of more than 60 billion deidentified laboratory test datapoints. The Quest database is believed to be the largest of its kind in healthcare. Health Trends research has yielded novel insights into allergies and asthma, cancer, COVID-19, diabetes, heart disease, hepatitis, influenza, Lyme disease, prescription drug misuse and workplace wellness. Quest Diagnostics also produces the Drug Testing Index (DTI)™, a series of reports on national workplace drug positivity trends based on the company's employer workplace drug testing data.

For media inquiries, email MediaContact@QuestDiagnostics.com.

Providers interested in our clinical drug testing services may contact us at **1.877.40.RXTOX** or visit www.QuestDrugMonitoring.com.

For information on types of drug tests, please visit Clinical.QuestDiagnostics.com/WhyClinicalDrugTesting

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