# The Role of North American Drug Early Warning System for Tracking and Combatting New Synthetic Opioids

Second EMCDDA Technical Expert Meeting on New Synthetic Opioids – September 27, 2023

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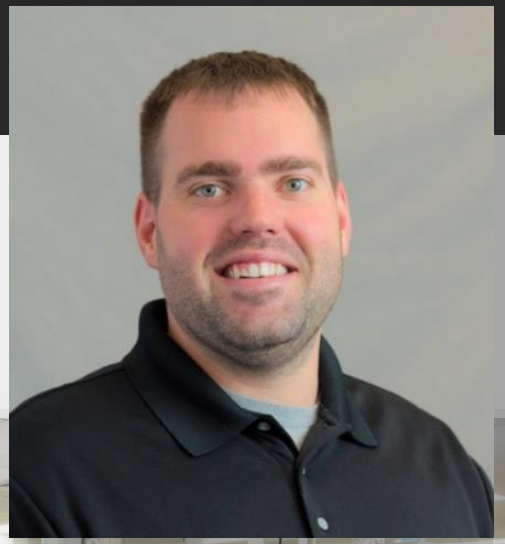
Center for Forensic Science Research and Education, Fredric Rieders Family Foundation, Willow Grove, PA, USA

# INTRODUCTION



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    - Toxicology & Chemistry
  - **Program Manager**
    - **NPS Discovery**
- **Thomas Jefferson University**
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    - MS in Forensic Toxicology
  - Faculty / Lecturer
- **Journal of Analytical Toxicology**
  - Associate Editor

# DISCLOSURES

- I have no conflicts of interest to disclose.
- I am a scientist and employee of FRFF / CFSRE, a 501(c)(3) non-profit research and educational facility.
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  - The opinions, findings, conclusions and/or recommendations expressed in this publication 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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# THE CFSRE & NPS DISCOVERY

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# THE CFSRE & OUR LAB

- The Center for Forensic Science Research and Education (CFSRE)
  - 501(c)(3) non-profit research and educational facility
  - **Surveillance vs. Casework**


Waters Xevo® G2-S LC-QTOF-MS


Sciex X500R LC-QTOF-MS


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Agilent 6495 LC-QQQ-MS


Agilent 6430 LC-QQQ-MS


Waters TQS LC-QQQ-MS

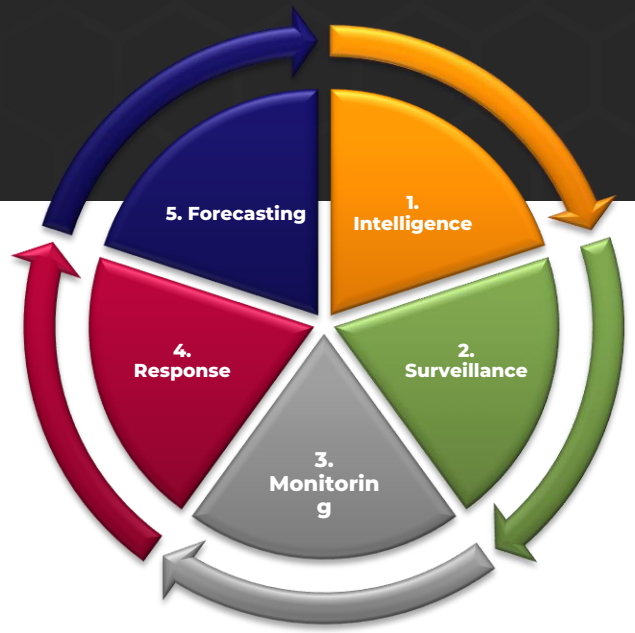

Waters TQD LC-QQQ-MS


Agilent 5975 GC-MS


Agilent 5975 GC-MS

# NPS DISCOVERY – THE CFSRE'S EWS

- Open-access drug early warning system (EWS)
  - Combine aspects of research & authentic cases
  - Analyze samples and generate data in-house
  - Develop a panel of high impact reports
  - Disseminate results and reports widely to stakeholders




| 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|
| U-47700 & Furanylfentanyl | *N*-Ethyl Pentylone | Cyclopropylfentanyl & Methoxyacetylfentanyl | Isotonitazene | MDMB-4en-PINACA | Metonitazene & Nitazene Analogues | *N,N*-Dimethylpentylone |
| Deadly outbreak investigation involving 20+ cases centralized in Midwestern states. | Investigation of deaths and impaired driving cases involving new stimulant drug linked to Ecstasy and Molly use. | Postmortem investigations involving new fentanyl analogues linked to 40+ deaths in Midwestern states and Florida. | First outbreak investigation in the U.S. involving 20+ deaths, primarily from Indiana and Illinois. | Investigation of 50+ cases involving deaths and hospitalizations from states in the South, Midwest, and Northeast. | Continued monitoring and investigations of 40+ deaths involving new nitazene analogues emerging in various regions across the U.S. | First outbreak investigations involving a new stimulant drug linked to 50+ cases, including deaths, primarily originating from Florida and Northeastern states. |

# BRIEF HISTORY & TIMELINE

**2017**
- Development of LC-QTOF-MS assay for >400 drugs (including many NPS)
- Began charactering NPS using GC-MS, LC-QTOF-MS, and/or NMR workflows

**2018**
- Development and dissemination of first new drug monograph for NPS
- **Formally launched our NPS Discovery program**

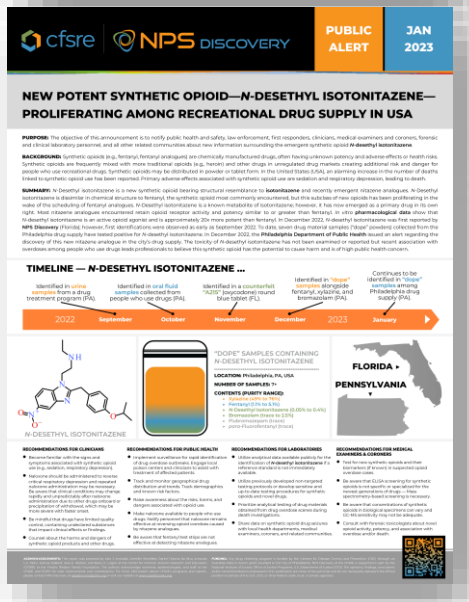
**2019**
- Launched first NPS Discovery website pages to archive reports and data
- Began issuing ***Public Alerts*** to scientific stakeholders and practitioners

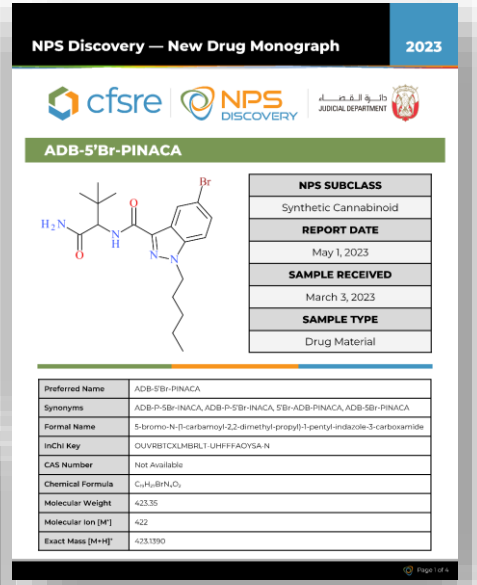
**2020**
- Expanded ***Trend Reporting*** to include all five major subclasses of NPS
- Continued data collections through onset of COVID-19 pandemic

**2021**
- Greatly expanding program outputs (including several new report types)
- Library database expanded to encompass >950 drugs and NPS

**2022**
- Advancements in ***Drug Checking*** initiatives (e.g., purity test, potency index)
- Expansion of drug checking and clinical monitoring with new collaborators

**2023**
- Continued expansion of ***Clinical*** **NPS investigations** (database >1,100 drugs)
- Launch of *NPS Discovery Quarterly Webinar Series*




# COMPONENTS OF OUR DRUG EARLY WARNING SYSTEM

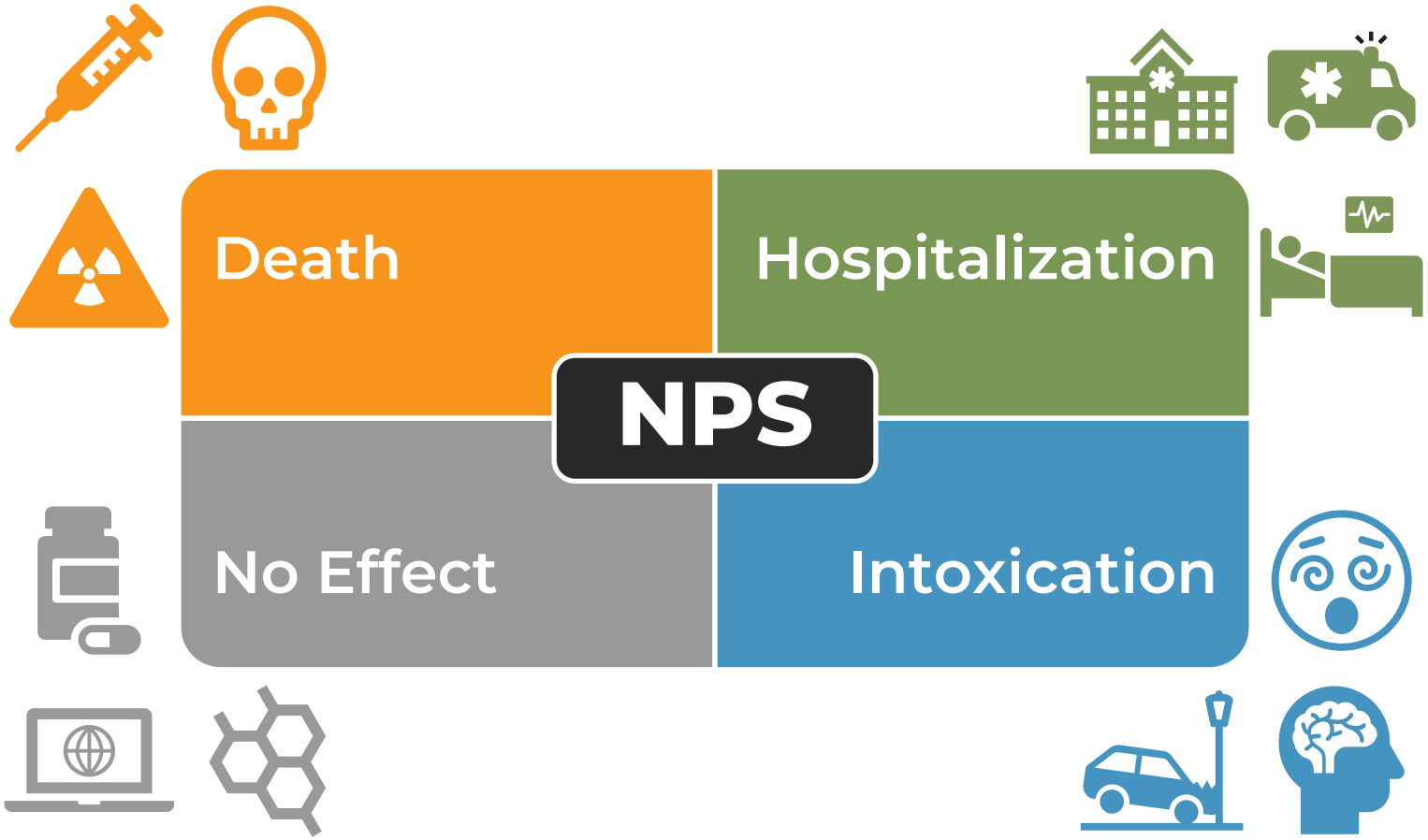
- **Access to sample populations & data sources**
  - Toxicology samples – forensic and clinical
  - Drug materials – various distribution points
  - Surveys and drug use information
  - Online sources – drug fora, gray market sites, etc.
- **Framework that defines drugs of interest**
  - NPS vs. traditional drugs vs. adulterants, etc.
- **Uniform reporting format and structure**
- **Research initiatives / research programs**

- **Dissemination avenues**
  - Scientific community
  - Public health and public safety
  - Drug consuming populations and general public
- **Scientific and health expertise**
  - Pharmacology
  - Toxicology
  - Medical treatment
- **Collaborations, cooperation, information sharing, and plan for action**
  - Drug control and scheduling actions

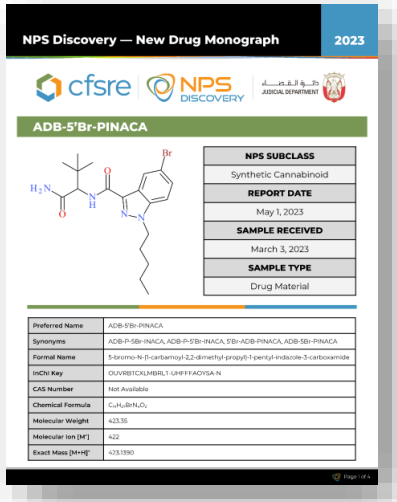
# EXAMPLES OF SAMPLE "POPULATIONS"

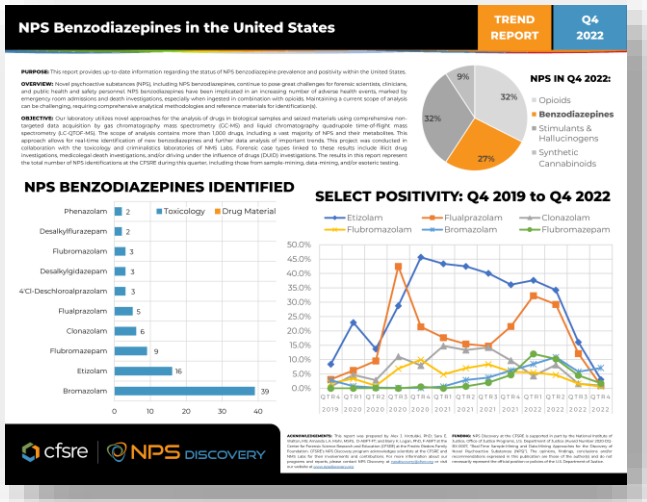
- **Important → Right populations paired with good intelligence**
- **Toxicology Specimens:**
  - Collaborations with medical examiner and coroner offices, other toxicology labs, clinical partners, and other
  - Example: Initial toxicology testing negative but "suspected overdose"
- **Drug Materials:**
  - Collaborations with crime labs, law enforcement agencies public health partners, and others
  - Routine analysis vs. chemical characterization (structural elucidation)
- **Intelligence & Surveillance:**
  - Monitor online surface web gray market sites, drug use forums, etc.
  - Some correlation between sites and drug markets but delayed

# WHERE DO NPS "POP UP"?

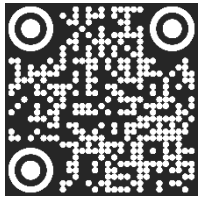


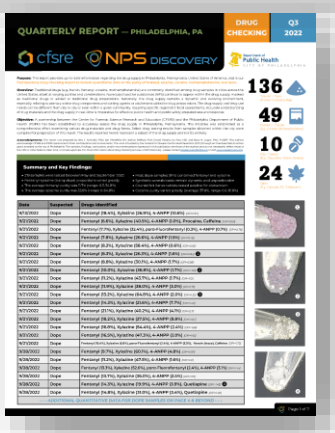
# NPS DISCOVERY REPORTS



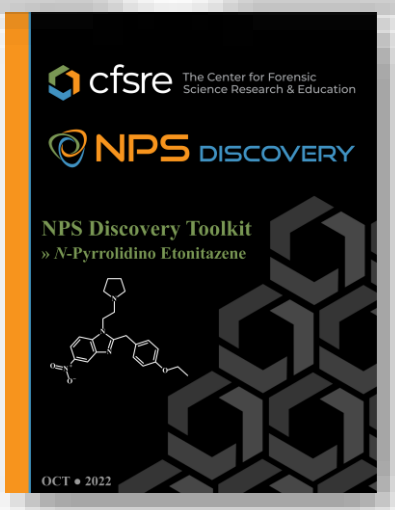





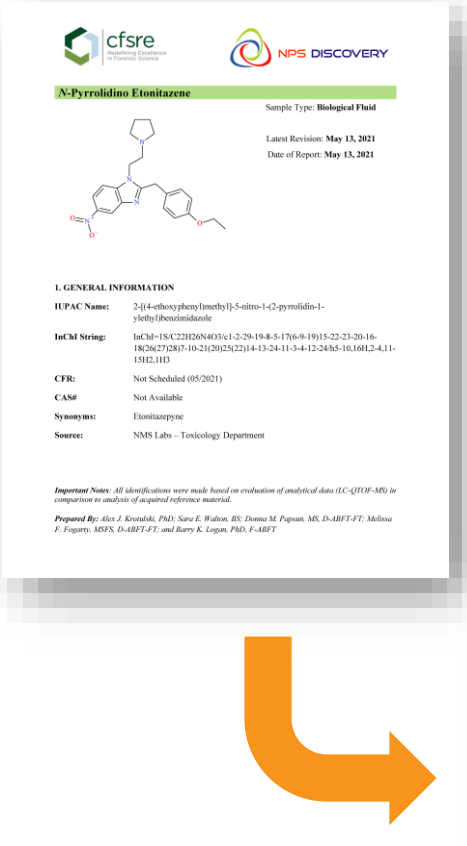








# EXAMPLE: *N*-PYRROLIDINO ETONITAZENE



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NPS DISCOVERY

***N*-Pyrrolidino Etonitazene**

Sample Type: **Biological Fluid**

Latest Revision: **May 13, 2021**

Date of Report: **May 13, 2021**

**1. GENERAL INFORMATION**

| | |
|---|---|
| **IUPAC Name:** | 2-[(4-ethoxyphenyl)methyl]-5-nitro-1-(2-pyrrolidin-1-ylethyl)benzimidazole |
| **InChI String:** | InChI=1S/C22H26N4O3/c1-2-29-19-8-5-17(6-9-19)15-22-23-20-16-18(26(27)28)7-10-21(20)25(22)14-13-24-11-3-4-12-24/h5-10,16H,2-4,11-15H2,1H3 |
| **CFR:** | Not Scheduled (05/2021) |
| **CAS#** | Not Available |
| **Synonyms:** | Etonitazepyne |
| **Source:** | NMS Labs – Toxicology Department |

***Important Notes**: All identifications were made based on evaluation of analytical data (LC-QTOF-MS) in comparison to analysis of acquired reference material.*

***Prepared By**: Alex J. Krotulski, PhD; Sara E. Walton, BS; Donna M. Papsun, MS, D-ABFT-FT; Melissa F. Fogarty, MSFS, D-ABFT-FT; and Barry K. Logan, PhD, F-ABFT*

June 2021

**New High Potency Synthetic Opioid *N*-Pyrrolidino Etonitazene (Etonitazepyne) Linked to Overdoses Across United States**

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**Purpose:** The objective of this announcement is to notify public health and safety, law enforcement, first responders, clinicians, medical examiners and coroners, forensic and clinical laboratory personnel, and all other related communities about new information surrounding the emergent synthetic opioid ***N*-pyrrolidino etonitazene.**

**Background:** Synthetic opioids are chemically manufactured drugs, often accompanied with unknown potency and adverse effects or health risks. New synthetic opioids may be mixed with more traditional opioids, creating additional risk and danger for recreational drug users. Synthetic opioids may be distributed in powder or tablet form. In the United States (U.S.), an alarming increase in the number of deaths linked to synthetic opioid use has been reported. The primary adverse effect associated with synthetic opioid use is respiratory depression, often leading to death.

**Summary:** *N*-Pyrrolidino etonitazene (etonitazepyne) is a new high potency synthetic opioid bearing structural resemblance to etonitazene, a synthetic opioid that is nationally and internationally controlled. *N*-pyrrolidino etonitazene is desnitrile in structure to other synthetic opioids typically encountered in forensic casework (e.g., fentanyl). Unlike the 2-benzylbenzimidazole analogues that were first synthesized and reported in the literature in the 1950's (e.g., metonitazene, etonitazene), *N*-pyrrolidino etonitazene does not appear in prior literature or patents. Recent *in vitro* pharmacological data suggest that this new opioid exhibits potency similar to etonitazene (~20x more potent than fentanyl). *N*-pyrrolidino etonitazene was first reported by **NPS Discovery** in May 2021 following initial detection in a toxicology case. To date, eight blood specimens associated with postmortem death investigations in the U.S. have contained *N*-pyrrolidino etonitazene; additional confirmations are pending. The toxicity of *N*-pyrrolidino etonitazene has not been examined or reported but recent association with death among people who use drugs leads professionals to believe this synthetic opioid retains the potential to cause widespread harm and is of public health concern. Identifications of *N*-pyrrolidino etonitazene have also been reported recently from agencies in Europe.

**Biomagnetics**

Case Type:
- Postmortem (n=8)

Sex:
- Male
- Range: 20s to 50s

Date of Collection:
- January to April 2021

Other Notable Findings:
- NPS Benzodiazepines (n=7)
- Fentanyl (n=4)
- Methamphetamine (n=4)
- Newly Drug of Interest (n=1)

| *N*-Pyrrolidino Etonitazene | |
|---|---|
| Case A | 8.3 ng/mL * |
| Case B | 2.4 ng/mL |

**Recommendations for Public Health**
- Implement surveillance for rapid identification of drug overdose outbreaks.
- Engage local poison centers and clinicians to assist with treatment of affected patients.
- Track and monitor geographical drug distribution and trends.
- Track distinguishable and known risk factors for fatal and non-fatal overdose patients.
- Make awareness about the risks and dangers associated with opioid use.
- Make naloxone available to recreational drug users.

**Recommendations for Clinicians**
- Become familiar with the signs and symptoms associated with synthetic opioid use (e.g. sedation, respiratory depression).
- Naloxone should be administered to reverse critical respiratory depression and repeated naloxone administration may be necessary. Be aware that clinical conditions associated with opioid use may quickly alter naloxone administration due to precipitation of withdrawal.
- Be mindful that illicit drugs have limited quality control, containing undeclared substances that impact the expected clinical effects or findings.
- Counsel about the dangers of synthetic opioid products and other drugs.

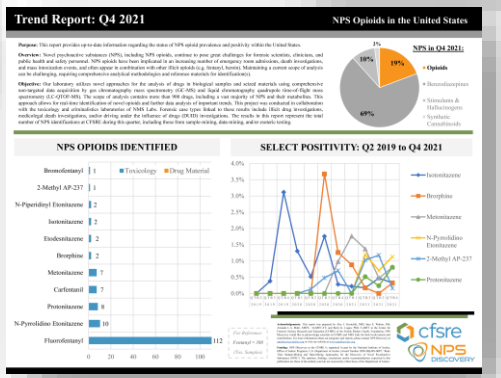
**Recommendations for MEs & Coroners**
- Test for/seek synthetic opioids and their biomarkers in suspected opioid overdose cases.
- Be aware that ELISA screening for synthetic opioids may not be specific or sensitive for the newest generation of compounds; consider mass spectrometry-based screening.
- Be aware that concentrations of synthetic opioids in biological specimens can vary and GC-MS sensitivity may not be adequate.

**Recommendations for Laboratories**
- Utilize analytical data available publicly for the identification of ***N*-pyrrolidino etonitazene** if a reference standard is not immediately available.
- Utilize previously developed non-targeted testing protocols or develop sensitive and up-to-date testing procedures for synthetic opioids.
- Prioritize analytical testing of seized drug samples obtained from drug overdose scenes during death investigations.
- Share data on synthetic opioid drug seizures with local health departments, medical examiners and coroners, and related communities.

**Geographical Distribution of *N*-Pyrrolidino Etonitazene**

*N*-Pyrrolidino Etonitazene

**Rapid NPS Testing Now Available:**



**Trend Report: Q4 2021** — **NPS Opioids in the United States**

**Purpose:** This report provides up-to-date information regarding the status of NPS opioid prevalence and proclivity within the United States.

**Overview:** Novel psychoactive substances (NPS), including NPS opioids, continue to pose great challenges for forensic scientists, clinicians, and public health and safety personnel. NPS opioids have been implicated in an increasing number of emergency room admissions, death investigations, and mass intoxication events, and often appear in combination with other illicit opioids (e.g. fentanyl, heroin). Maintaining a current scope of analysis can be challenging, requiring comprehensive toxicological methodologies and reference materials for identification(s).

**Objective:** Our laboratory utilizes novel approaches for the analysis of drugs in biological samples and seized materials using comprehensive non-targeted data acquisition by gas chromatography mass spectrometry (GC-MS) and liquid chromatography quadrupole time-of-flight mass spectrometry (LC-QTOF-MS). The scope of analysis contains more than 900 drugs, including a vast majority of NPS and their metabolites. This approach allows for real-time identification of novel opioids and further data analysis of important trends. This project was conducted in collaboration with the toxicology and criminalistics laboratories of NMS Labs. Forensic case types linked to these results include illicit drug investigations, medicolegal death investigations, and/or driving under the influence of drugs (DUID) investigations. The results in this report represent the total number of NPS identifications at CFSRE during this quarter, including those from sample-mining, data-mining, and/or esoteric testing.

**NPS Opioids in Q4 2021:**
- Opioids 19%
- Benzodiazepines 1%
- Stimulants & Hallucinogens 10%
- Synthetic Cannabinoids 69%

**NPS OPIOIDS IDENTIFIED**

| | Toxicology | Drug Material |
|---|---|---|
| Bromofentanyl | 1 | |
| 2-Methyl AP-237 | 1 | |
| N-Piperidinyl Etonitazene | 2 | |
| Isotonitazene | 2 | |
| Etodesnitazene | 2 | |
| Brorphine | 2 | |
| Metonitazene | 7 | |
| Carfentanil | 7 | |
| Protonitazene | 8 | |
| N-Pyrrolidino Etonitazene | 10 | |
| Fluorofentanyl | 112 | |

**SELECT POSITIVITY: Q2 2019 to Q4 2021**

Isotonitazene, Brorphine, Metonitazene, N-Pyrrolidino Etonitazene, 2-Methyl AP-237, Protonitazene

**ToxIC Fentalog Study Group — Quarterly NPS Report** — CLINICAL — Q2 2023

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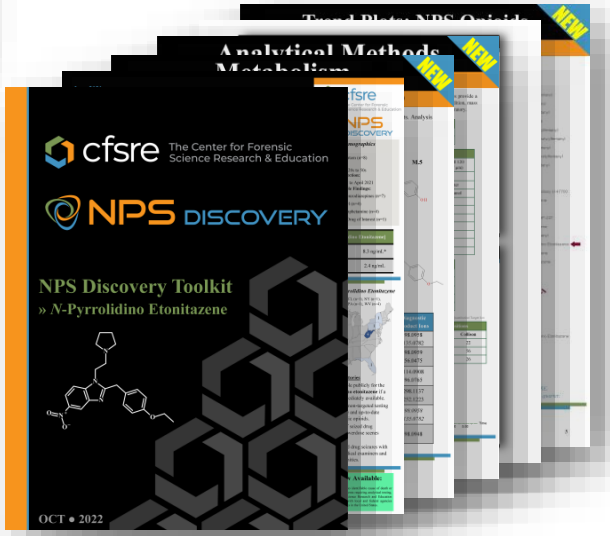

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NPS DISCOVERY

**NPS Discovery Toolkit**

**» *N*-Pyrrolidino Etonitazene**

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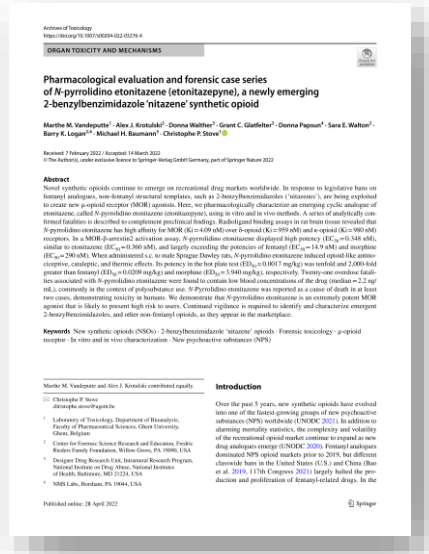
NEW



Archives of Toxicology

ORGAN TOXICITY AND MECHANISMS

**Pharmacological evaluation and forensic case series of *N*-pyrrolidino etonitazene (etonitazepyne), a newly emerging 2-benzylbenzimidazole 'nitazene' synthetic opioid**

Marthe M. Vandeputte[1] · Alex J. Krotulski[2] · Donna Walther[2] · Grant C. Glatfelter[3] · Donna Papsun[4] · Sara E. Walton[2] · Barry K. Logan[2,4] · Michael H. Baumann[3] · Christophe P. Stove[1]

Received: 7 February 2022 / Accepted: 14 March 2022

**Abstract**

Novel synthetic opioids continue to emerge on recreational drug markets worldwide. In response to legislative bans on fentanyl analogues, non-fentanyl structural templates, such as 2-benzylbenzimidazoles ('nitazenes'), are being exploited to create new μ-opioid receptor (MOR) agonists. Here, we pharmacologically characterize an emerging cyclic analogue of etonitazene, called *N*-pyrrolidino etonitazene (etonitazepyne), using in vitro and in vivo methods. A series of analytically confirmed fatalities is described to complement preclinical findings. Radioligand binding assays in rat brain tissue revealed that *N*-pyrrolidino etonitazene has high affinity for MOR ($K_i$ = 4.09 nM) over δ- opioid ($K_i$ = 959 nM) and κ-opioid ($K_i$ = 980 nM) receptors. In a MOR-β-arrestin2 activation assay, *N*-pyrrolidino etonitazene displayed high potency ($EC_{50}$ = 0.348 nM), similar to etonitazene ($EC_{50}$ = 0.360 nM), and largely exceeding the potencies of fentanyl ($EC_{50}$ = 14.9 nM) and morphine ($EC_{50}$ = 290 nM). When administered s.c. to male Sprague Dawley rats, *N*-pyrrolidino etonitazene induced opioid-like antinociceptive, cataleptic, and thermic effects. Its potency in the hot plate test ($ED_{50}$ = 0.0017 mg/kg) was tenfold and 2,000-fold greater than fentanyl ($ED_{50}$ = 0.0209 mg/kg) and morphine ($ED_{50}$ = 3.940 mg/kg), respectively. Twenty-one overdose fatalities associated with *N*-pyrrolidino etonitazene were found to contain low blood concentrations of the drug (median = 2.2 ng/mL), commonly in the context of polysubstance use. *N*-Pyrrolidino etonitazene was reported as a cause of death in at least two cases, demonstrating toxicity in humans. We demonstrate that *N*-pyrrolidino etonitazene is an extremely potent MOR agonist that is likely to present high risk to users. Continued vigilance is required to identify and characterize emergent 2-benzylbenzimidazoles, and other non-fentanyl opioids, as they appear in the marketplace.

**Keywords** New synthetic opioids (NSOs) · 2-benzylbenzimidazole 'nitazene' opioids · Forensic toxicology · μ-opioid receptor · In vitro and in vivo characterization · New psychoactive substances (NPS)

**Introduction**

Over the past 5 years, new synthetic opioids have evolved into one of the fastest-growing groups of new psychoactive substances (NPS) worldwide (UNODC 2021). In addition to alarming mortality statistics, the complexity and volatility of the recreational opioid market continue to expand as new drug analogues emerge (UNODC 2020). Fentanyl analogues dominated NPS opioid markets prior to 2018, but different chemotypes bans in the United States (U.S.) and China (Burns et al. 2019, 117th Congress 2021) largely halted the production and proliferation of fentanyl-related drugs. In the

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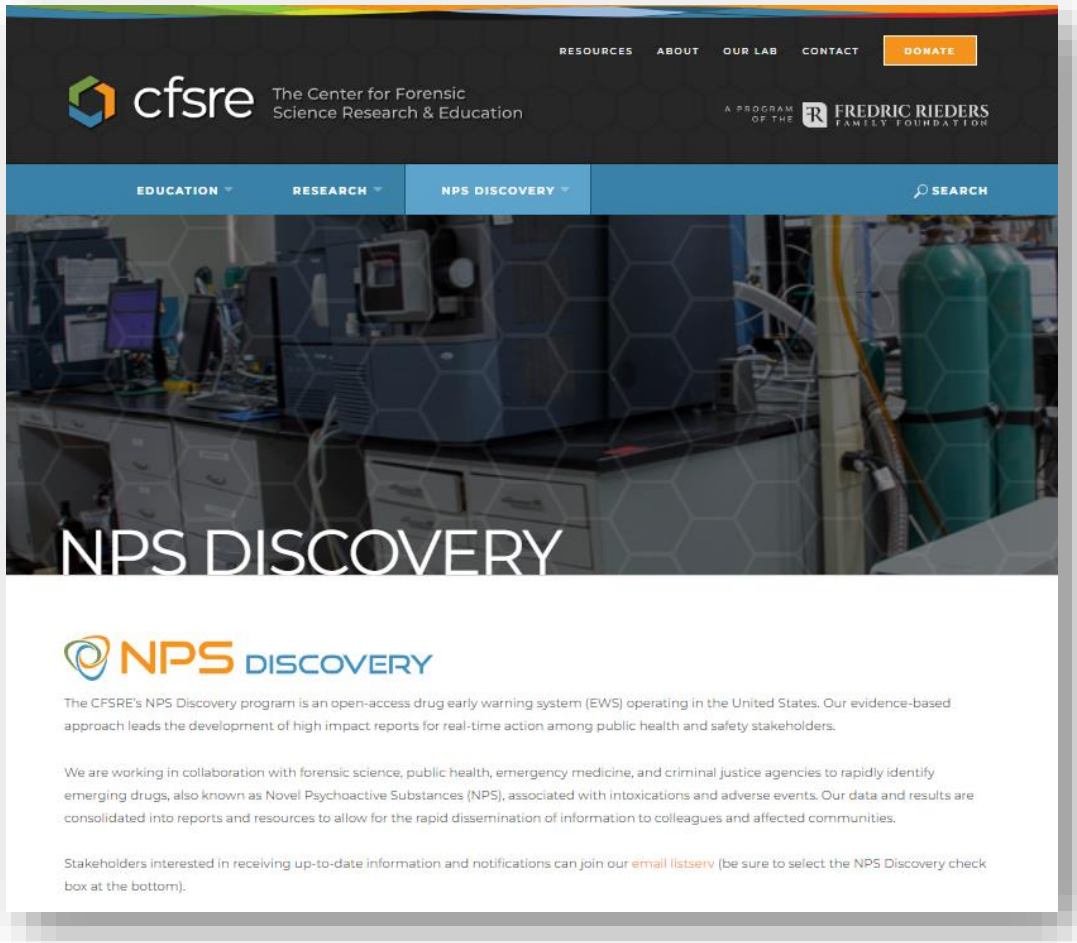


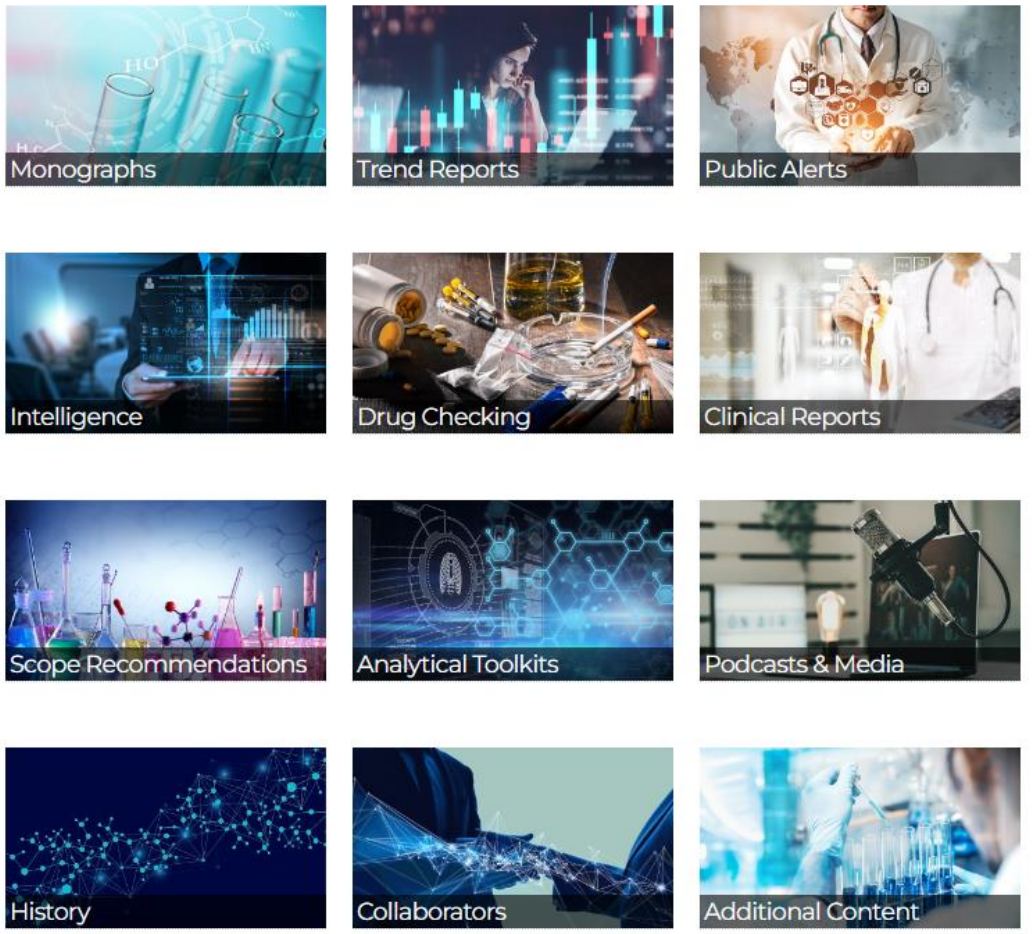

# NEW SYNTHETIC OPIOIDS IN THE U.S.A.

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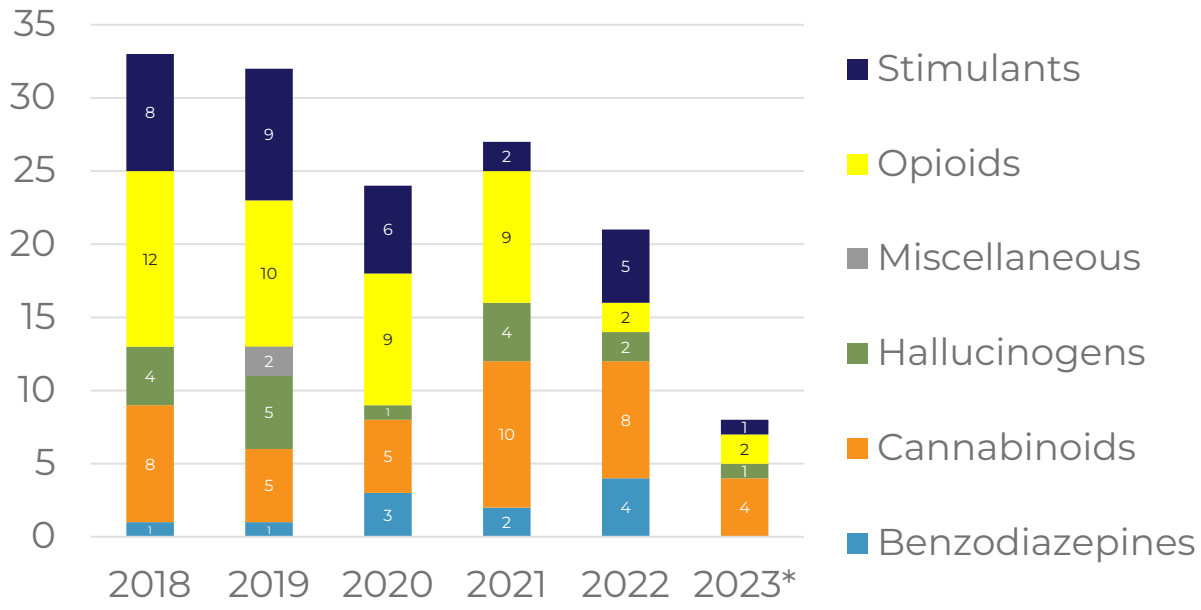
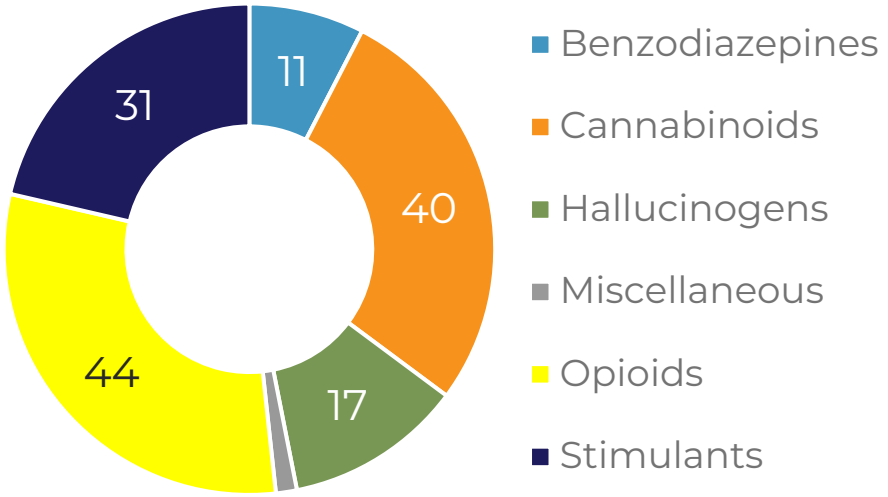
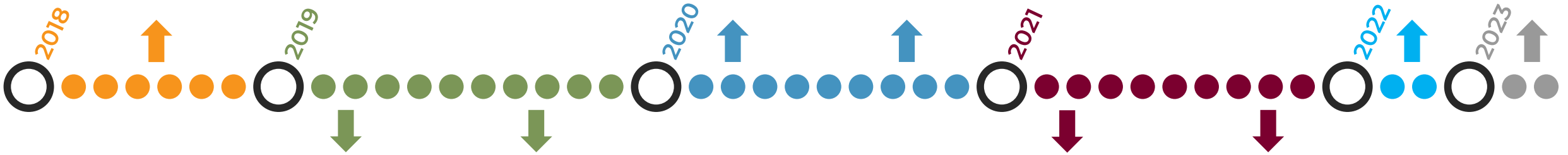
# EMERGENCE OF NPS IN THE U.S.A.

- Since 2018, NPS Discovery has reported **145** newly discovered NPS (and counting)
- **NPS opioids** remain the largest subclass of newly emerging drugs encountered



# EMERGENCE OF NPS OPIOIDS IN THE U.S.A.




- Isopropyl-U-47700
- Methylenedioxy-U-47700
- Phenylfentanyl
- U-47931E

- 3,4-Difluoro-U-47700
- N-Ethyl-U-47700
- para-Methyl AP-237
- Brorphine
- Metonitazene
- AP-238
- Fluorofentanyl
- Chlorofentanyl
- Bromofentanyl

- N-Pyrrolidino Protonitazene
- N-Pyrrolidino Metonitazene

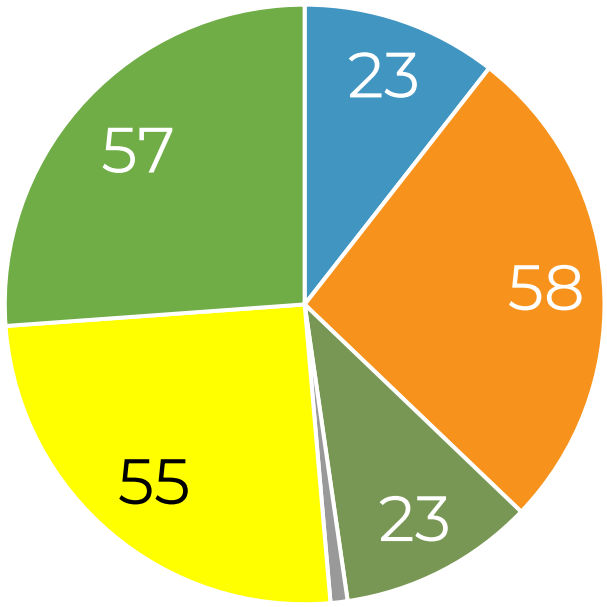
- Dipyanone
- N-Desethyl Isotonitazene

- Fluorofuranylfentanyl
- p-MeOfuranylfentanyl
- 2’,5’-Dimethoxyfentanyl
- 2-Methyl AP-237
- AP-237
- Piperidylthiambutene
- 2F-Viminol
- Isotonitazene
- N-Methyl U-47931E
- p-MeCyclopropylfentanyl

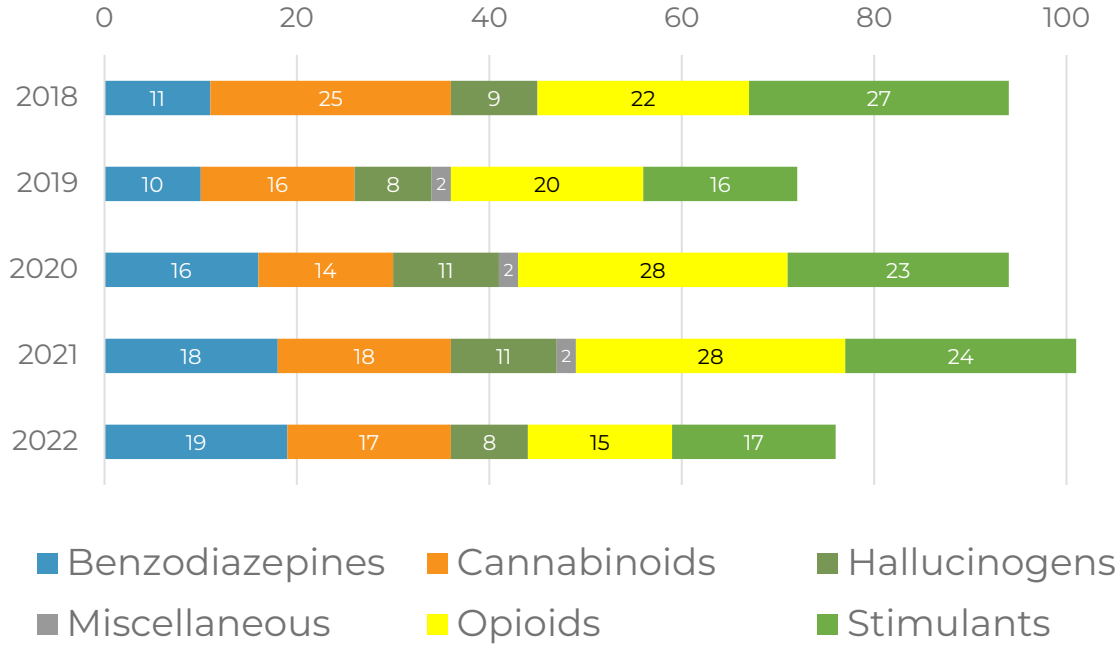
- Butonitazene
- Etodesnitazene
- Flunitazene
- N-Pyrrolidino Etonitazene
- Protonitazene
- Metodesnitazene
- N-Piperidinyl Etonitazene
- Trifluoromethyl-U-47700
- Napthyl-U-47700

# LANDSCAPE OF NPS IN THE U.S.A.

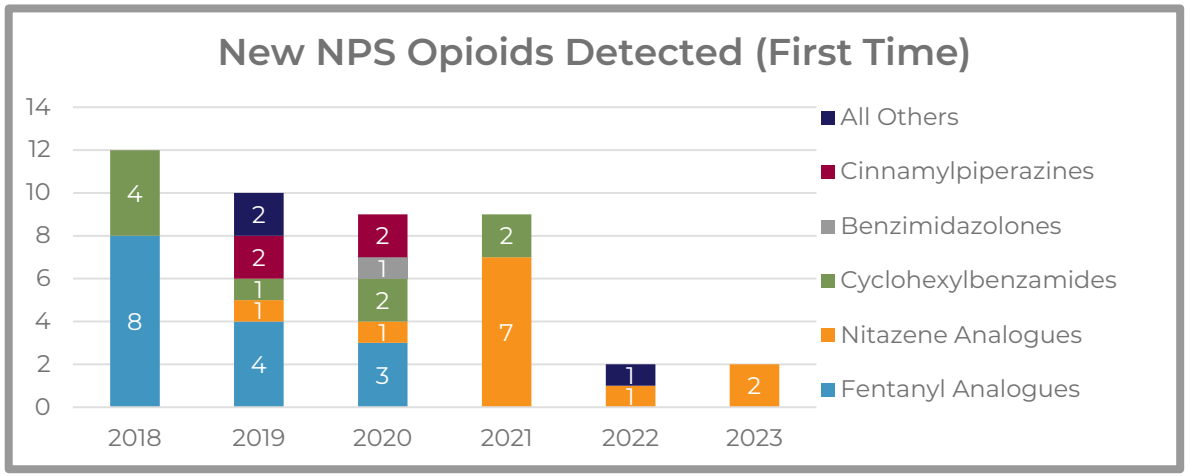
- Since 2018, NPS Discovery has identified **more than 225** NPS in forensic samples
- **NPS opioids** , **stimulants**, & **cannabinoids** represent the largest subclasses observed

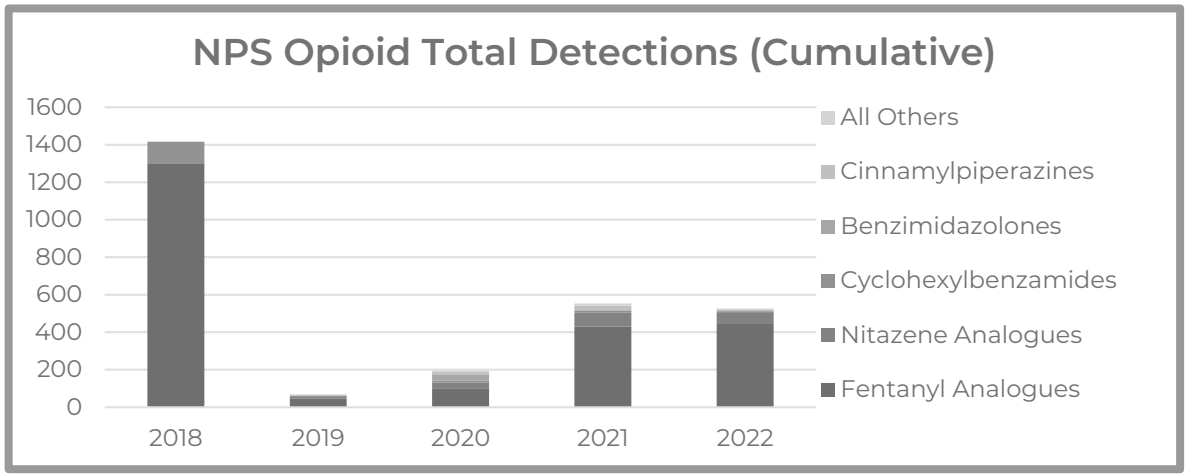


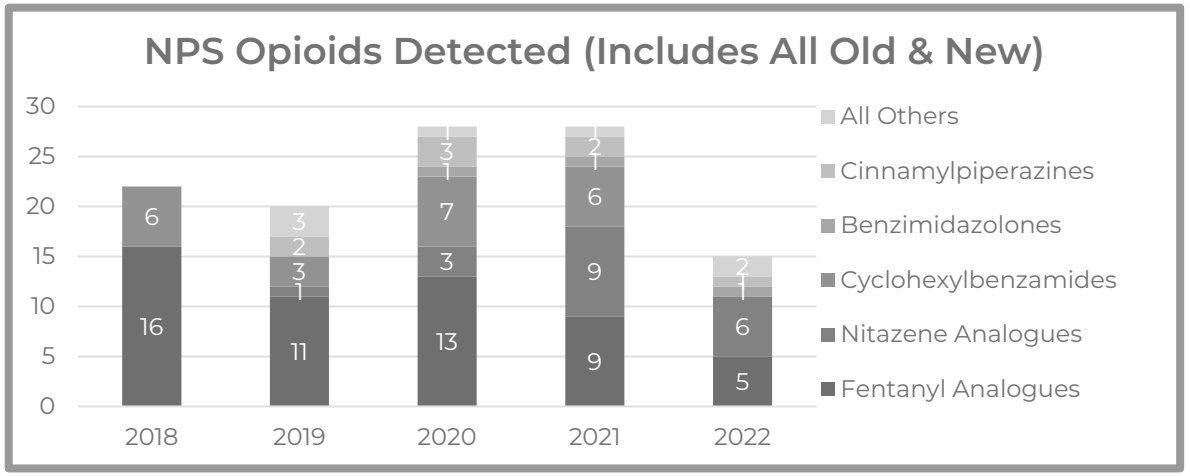

Benzodiazepines
Cannabinoids
Hallucinogens
Miscellaneous
Opioids
Stimulants

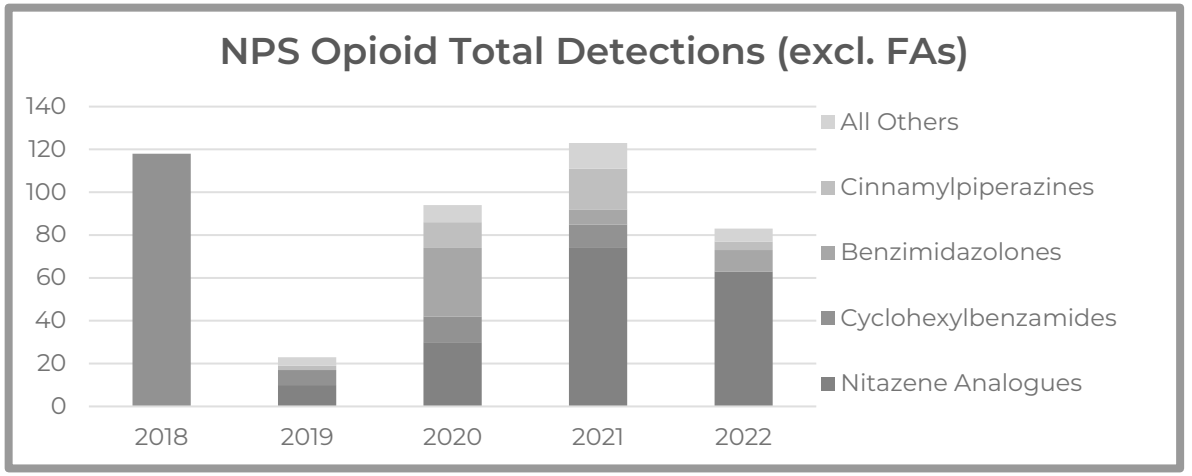


# BREAKDOWN OF NPS OPIOIDS BY SUBCLASS



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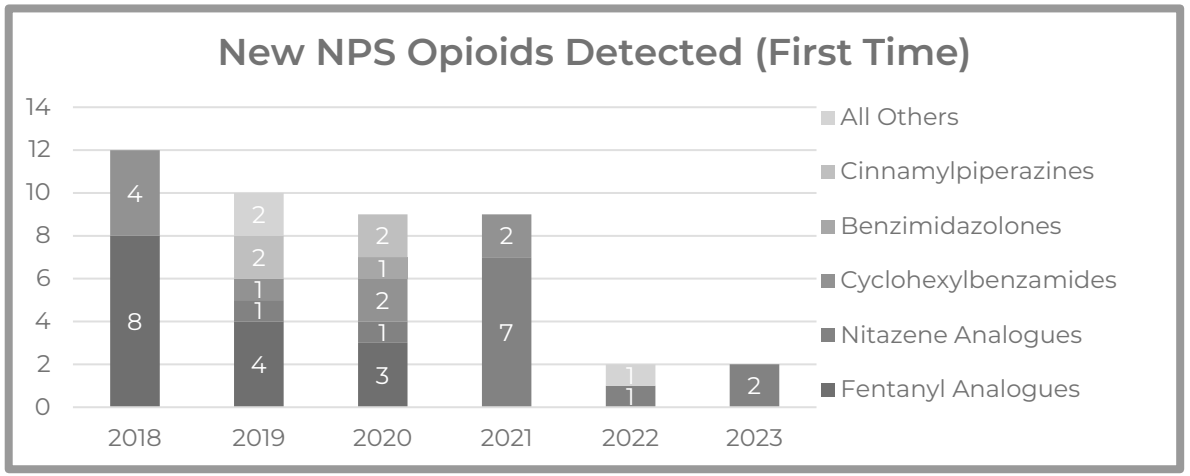
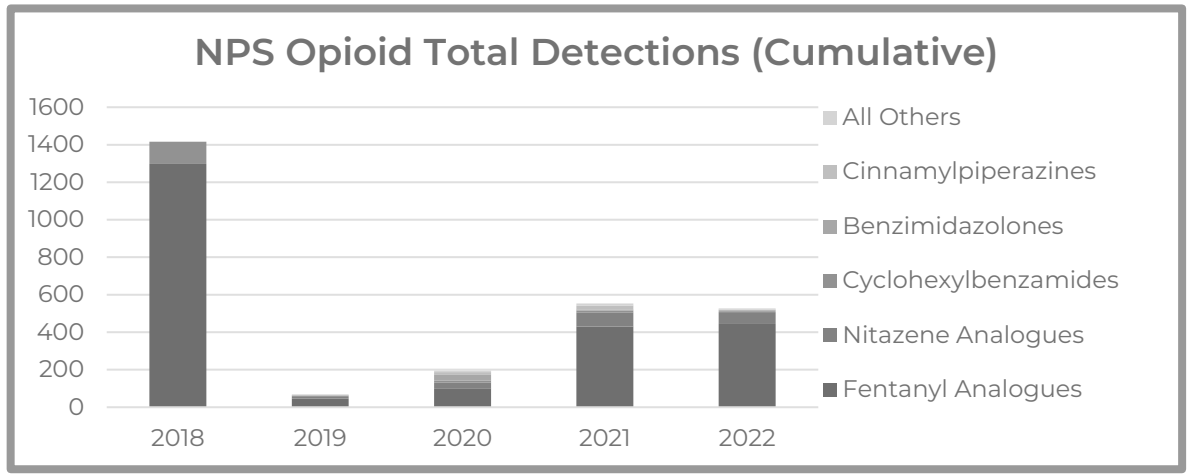
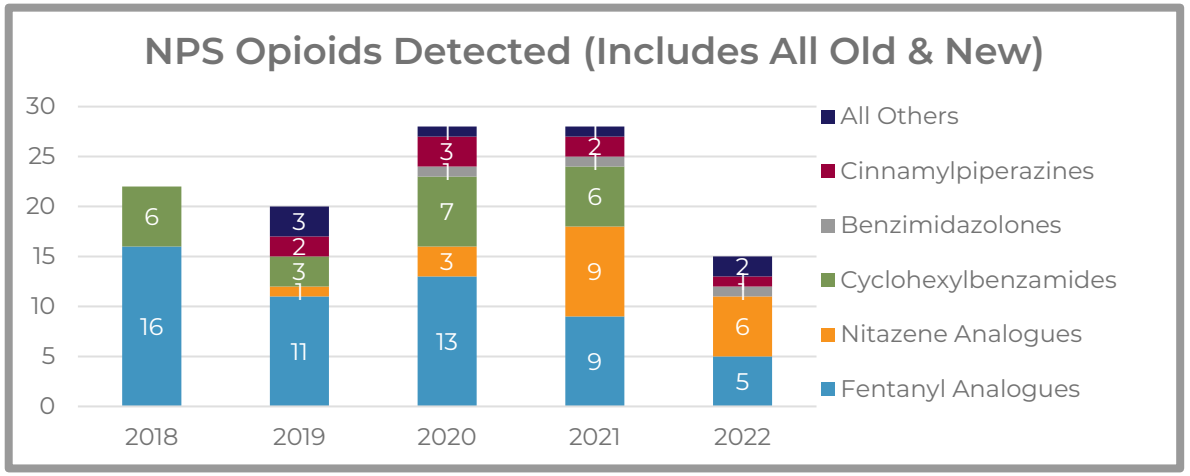
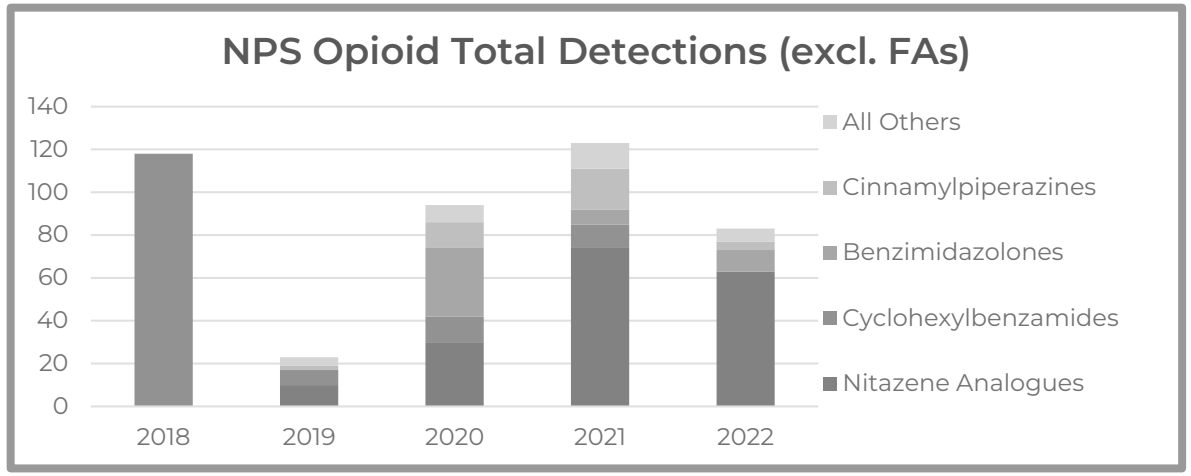
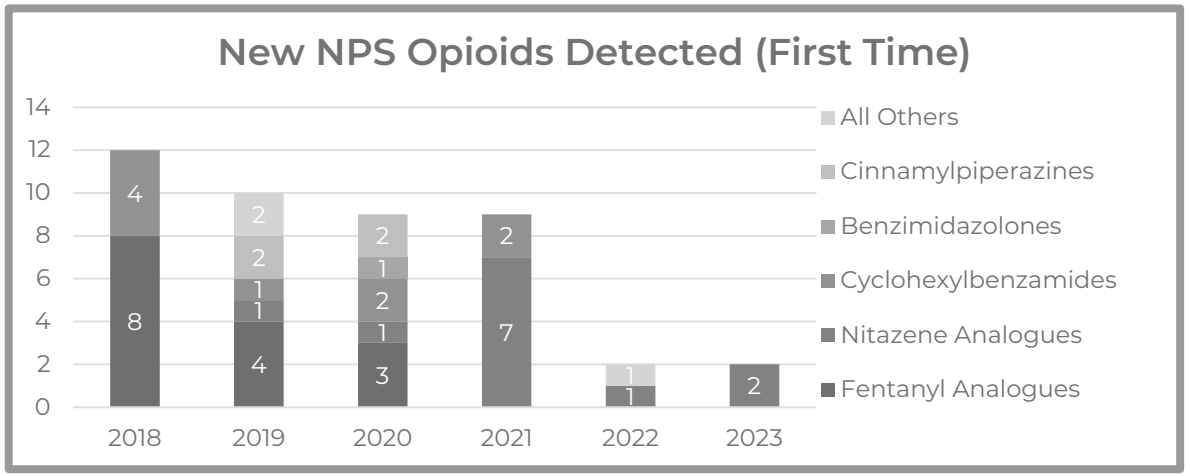


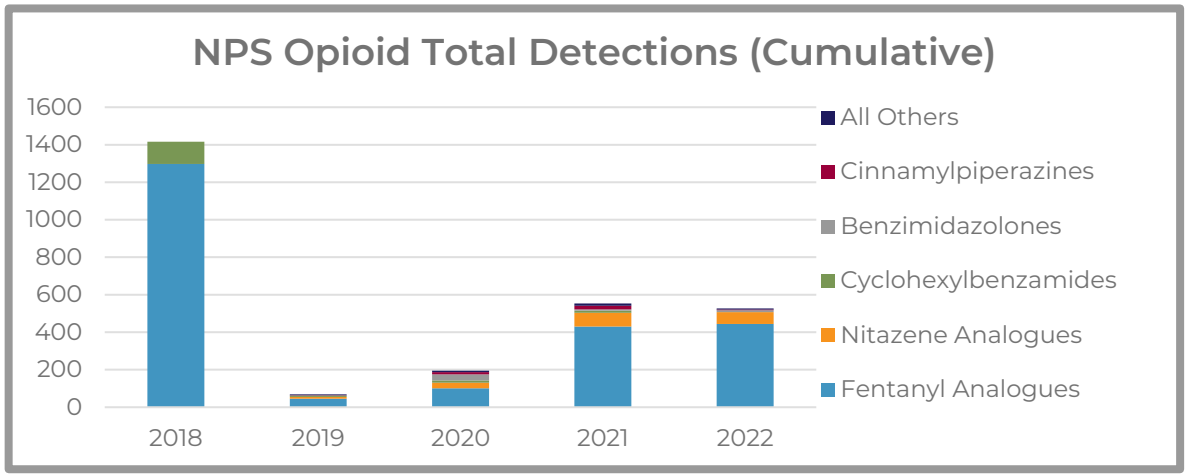



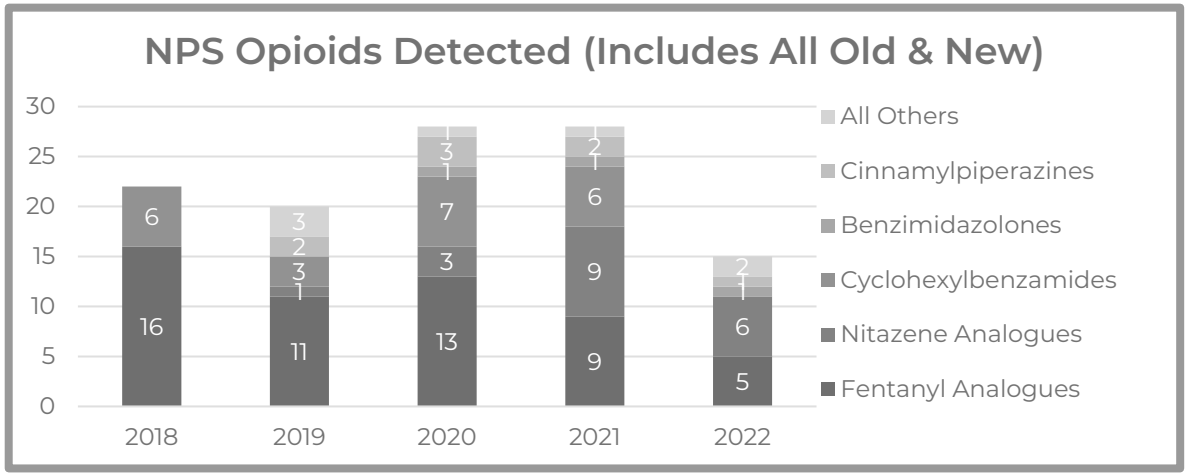



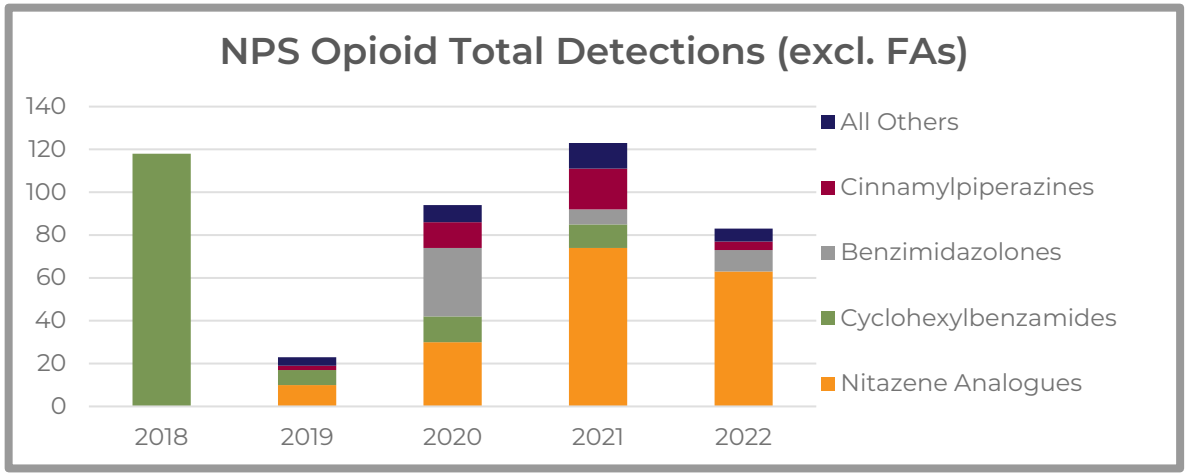



# BREAKDOWN OF NPS OPIOIDS BY SUBCLASS

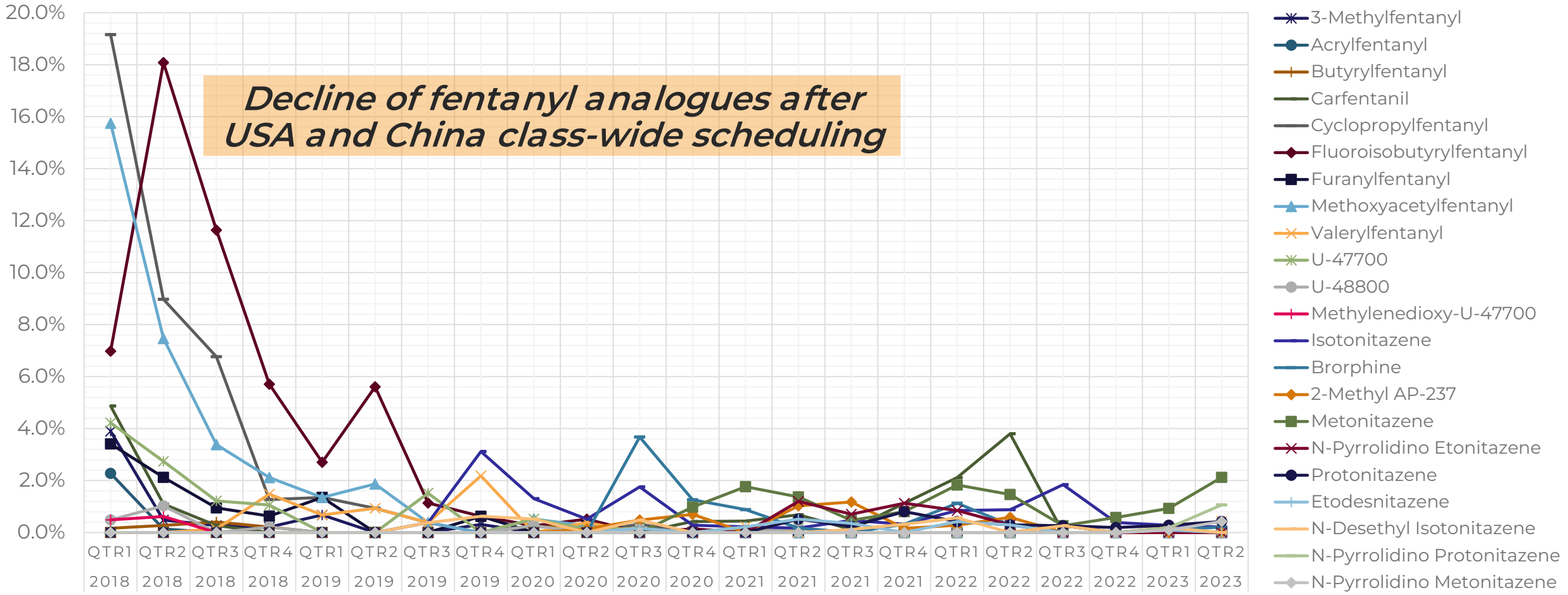


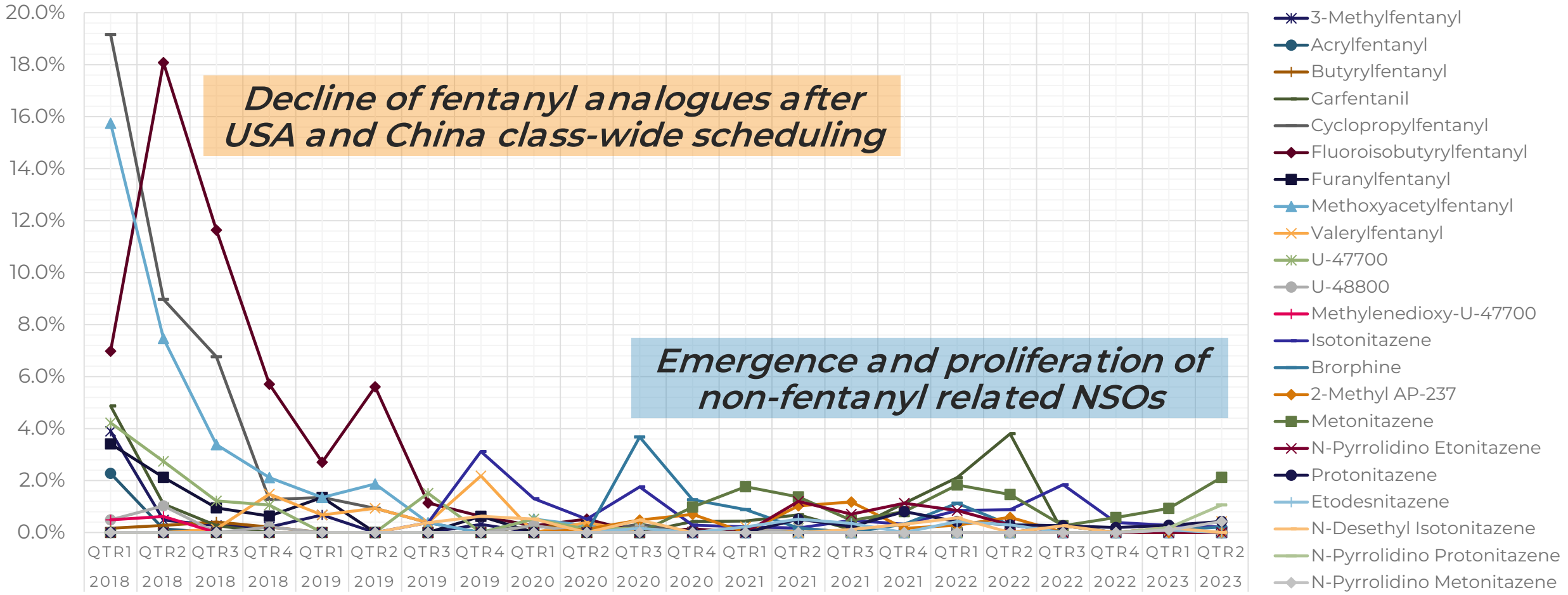



# POSITIVITY PLOTS – NPS OPIOIDS



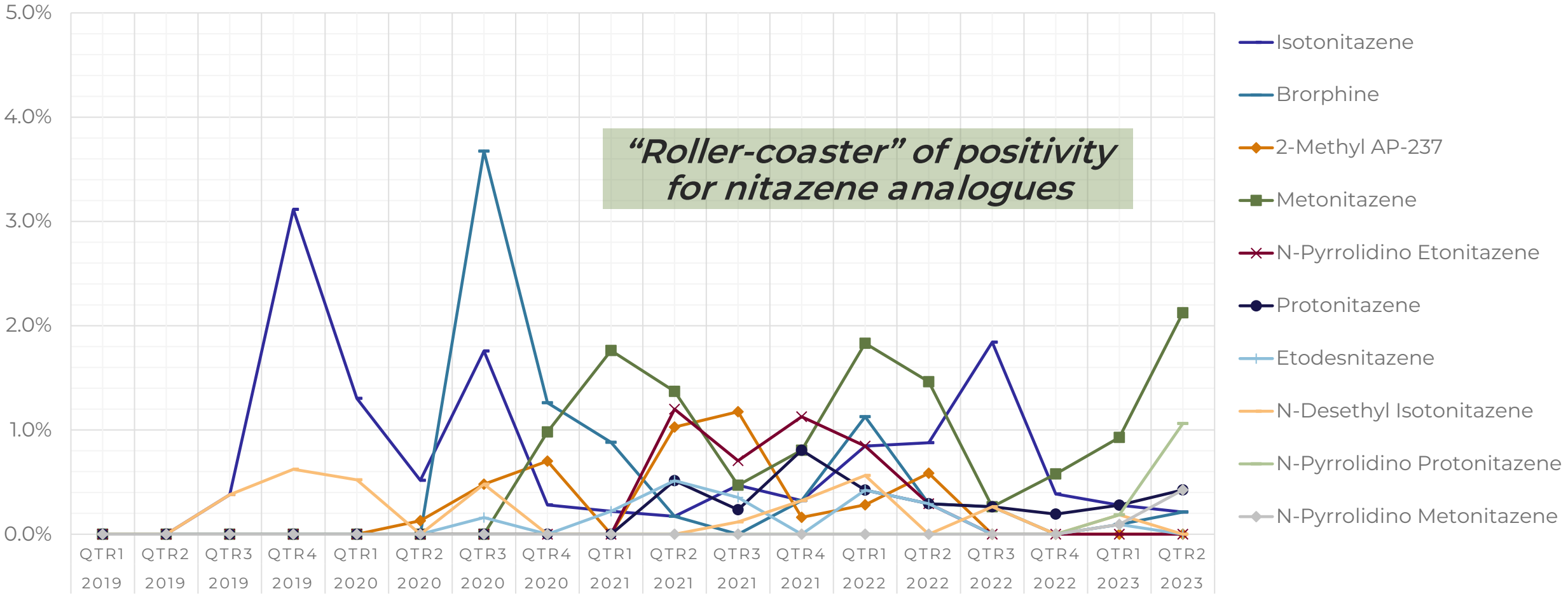

*Note: Fluorofentanyl Excluded*

# POSITIVITY PLOTS – NPS OPIOIDS

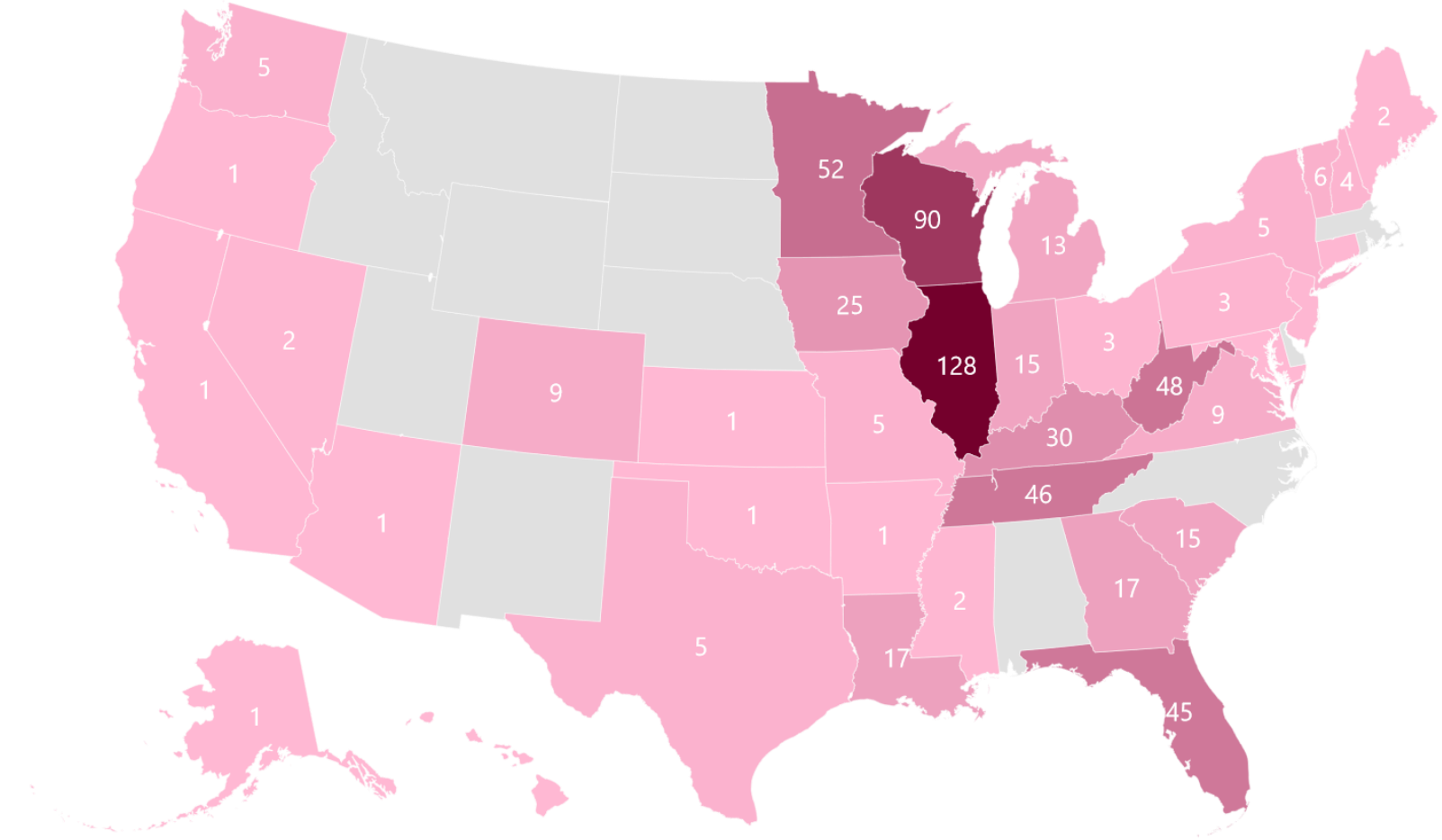


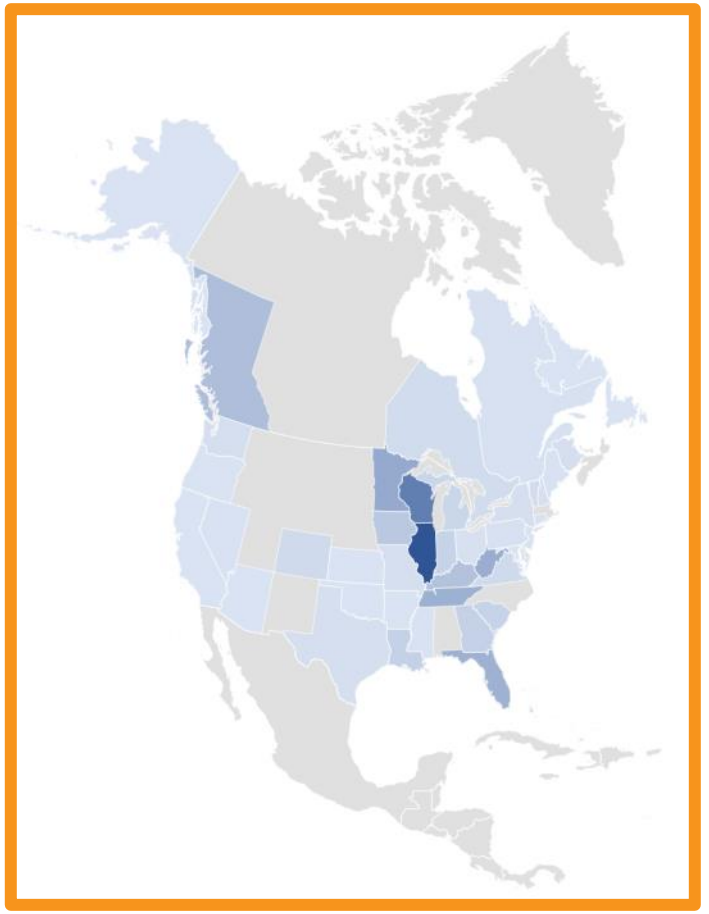

*Note: Fluorofentanyl Excluded*

# POSITIVITY PLOTS – NPS OPIOIDS (NEW GENERATION ONLY)



# PROLIFERATION OF NITAZENE ANALOGUES



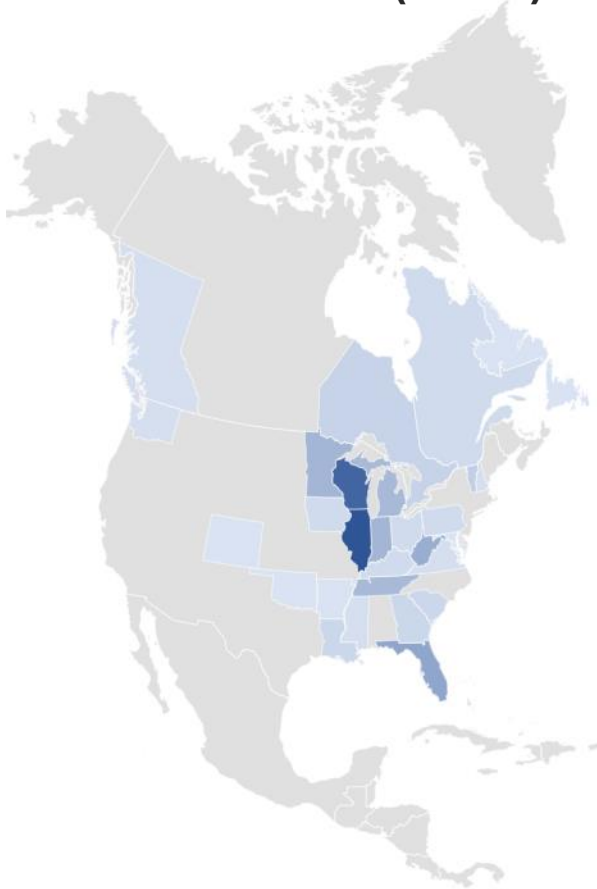



CASEWORK

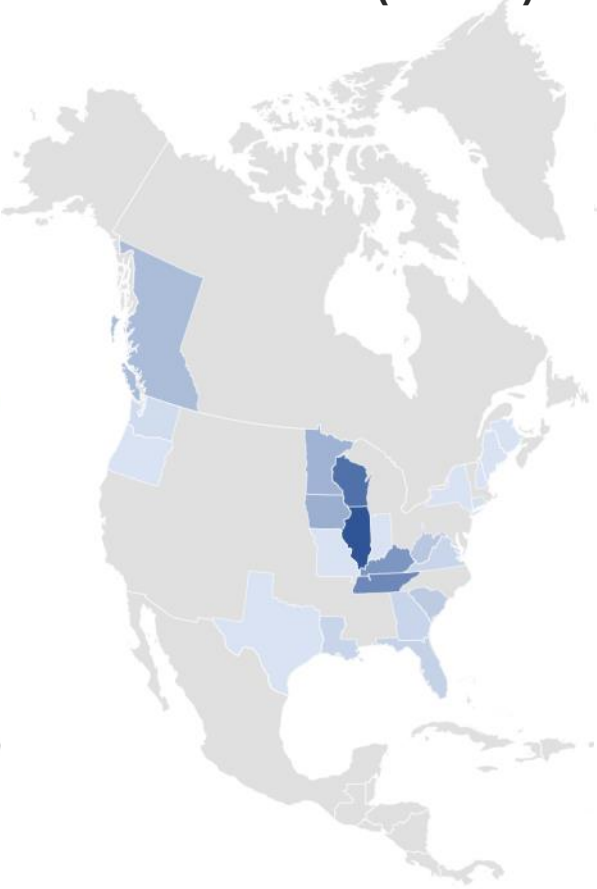
*Forensic toxicology cases. Data from ***NMS Labs***.
*Includes: isoto., brorphine, meto., N-pyro. eto., proto.

# VARIED GEOGRAPHICAL DISTRIBUTION

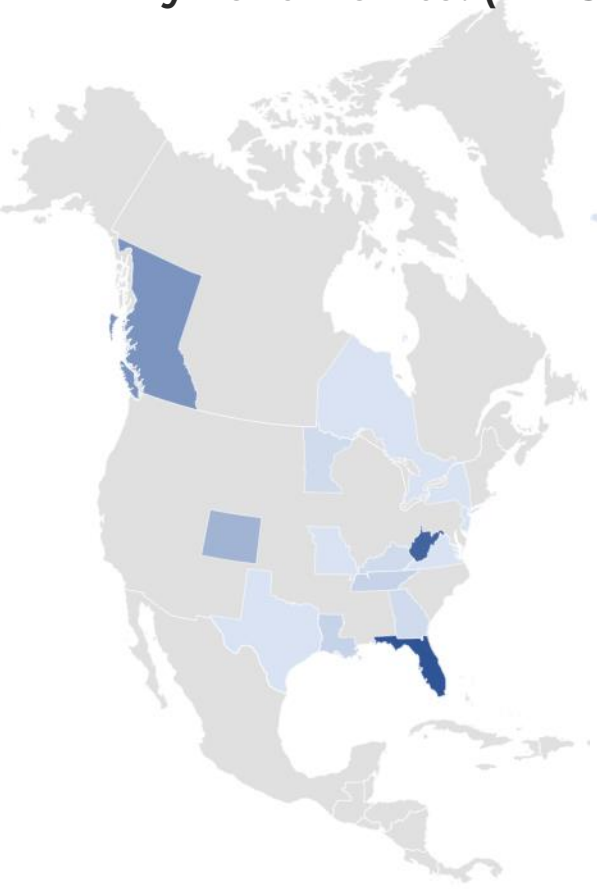
Isotonitazene (n=197)



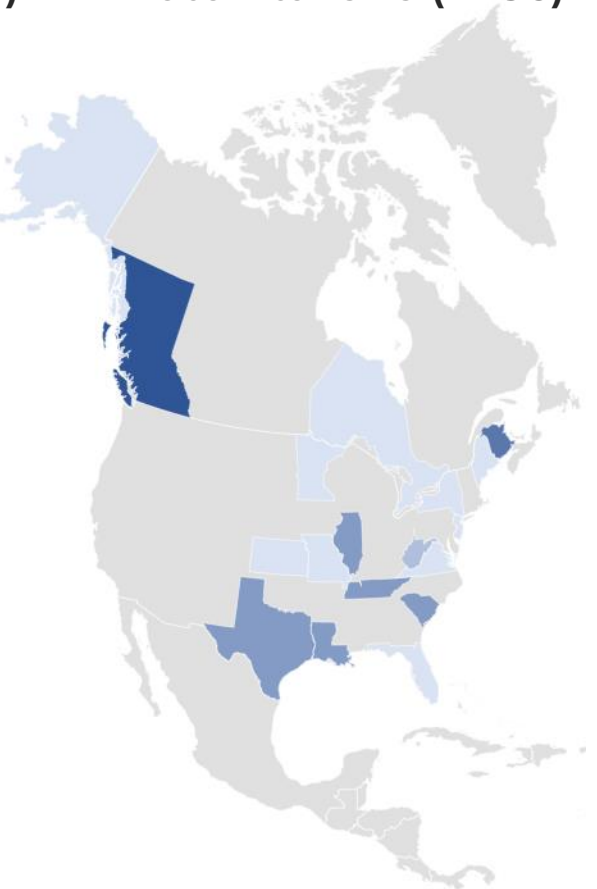
Metonitazene (n=220)



N-Pyrrolidino Eto. (n=73)



Protonitazene (n=36)

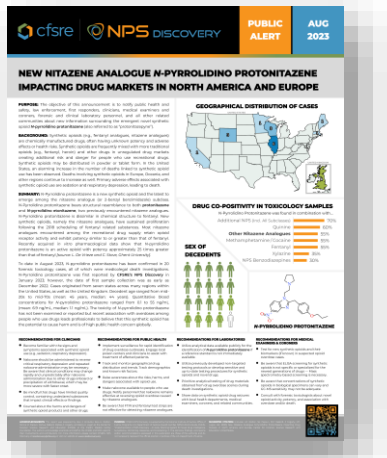


# THE NEWEST NITAZENE ANALOGUES TRENDING

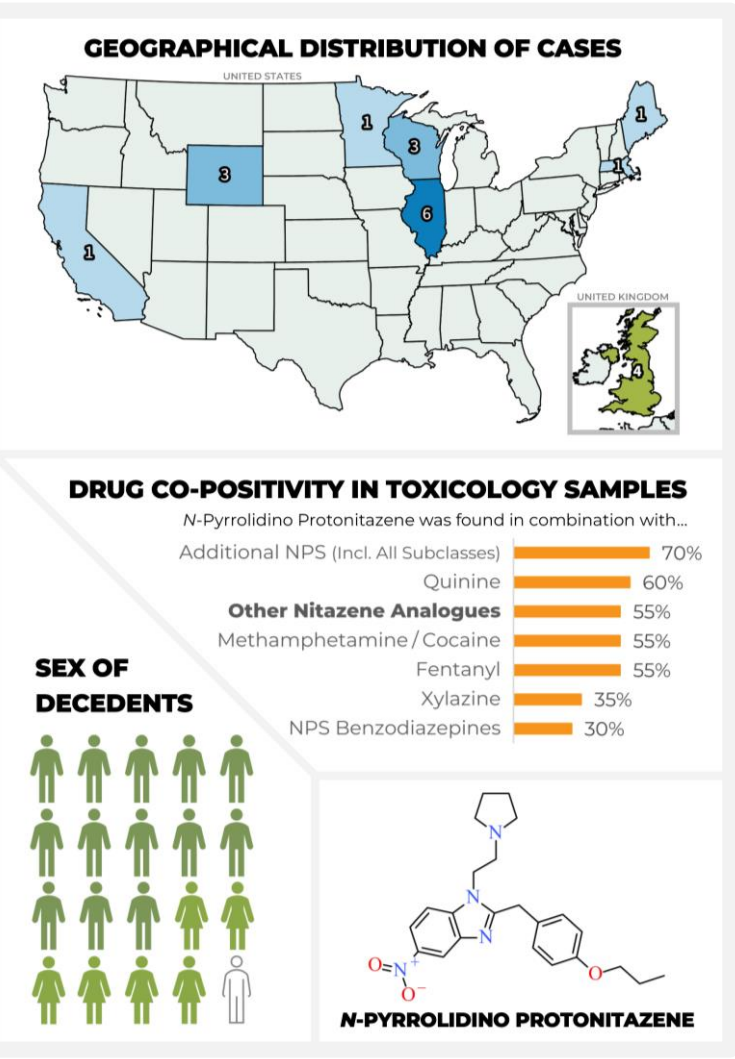
| Nitazene Analogue | CFSRE Cases | Estimated Potency to Fentanyl |
|---|---|---|
| *N*-Pyrrolidino Etonitazene | 16 | 43x more |
| **_N_-Pyrrolidino Protonitazene** | **27** | **25x more** |
| **_N_-Desethyl Isotonitazene** | **10** | **24x more** |
| Isotonitazene | 73 | 9x more |
| Protonitazene | 25 | 4x more |
| Metonitazene | 44 | 2x more |
| **_N_-Pyrrolidino Metonitazene** | **10** | **2x more** |
| *Fentanyl* | - | - |
| Butonitazene | 2 | 2x less |
| Etodesnitazene | 20 | 4x less |

# CURRENT NPS OPIOID THREAT IN NORTH AMERICA

- **N-Pyrrolidino protonitazene** is a new synthetic opioid
- First reported in January 2023, but first sample collection as early as December 2022
- Active opioid with potency ~25x greater than fentanyl *[source: L. De Vrieze and C. Stove, Ghent University]*
- Confirmed in 20+ medicolegal death investigations
- Age ranged from mid-20s to mid-70s
- Blood concentrations: 0.1 to 55 ng/mL (mean: 6.9 ng/mL, median: 1.1 ng/mL)
- Gathering data / information in real-time about the effects and toxicity


cfsre NPS DISCOVERY PUBLIC ALERT AUG 2023

NEW NITAZENE ANALOGUE *N*-PYRROLIDINO PROTONITAZENE IMPACTING DRUG MARKETS IN NORTH AMERICA AND EUROPE




CASEWORK

# NOTABLE DRUG COMBINATIONS

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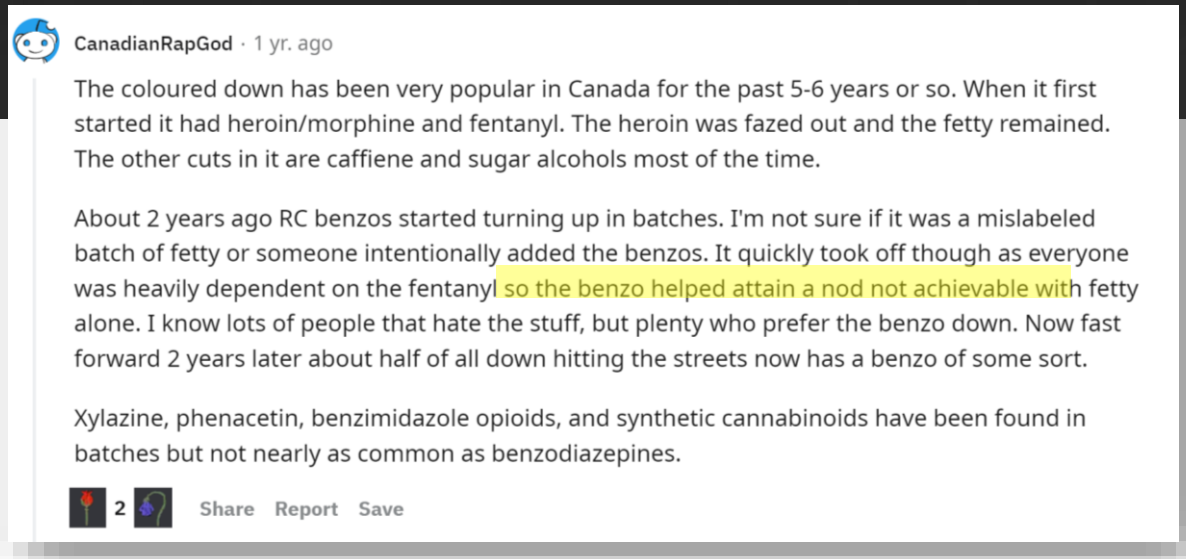
# “BENZO-DOPE”

- The co-occurrence of opioids and (typically) NPS benzodiazepines
- To make fentanyl and other high potency opioids “feel more like heroin”
- Anecdotal reports →



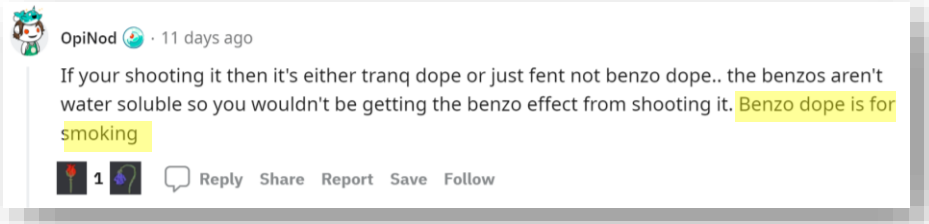
CanadianRapGod · 1 yr. ago

The coloured down has been very popular in Canada for the past 5-6 years or so. When it first started it had heroin/morphine and fentanyl. The heroin was fazed out and the fetty remained. The other cuts in it are caffiene and sugar alcohols most of the time.

About 2 years ago RC benzos started turning up in batches. I'm not sure if it was a mislabeled batch of fetty or someone intentionally added the benzos. It quickly took off though as everyone was heavily dependent on the fentanyl so the benzo helped attain a nod not achievable with fetty alone. I know lots of people that hate the stuff, but plenty who prefer the benzo down. Now fast forward 2 years later about half of all down hitting the streets now has a benzo of some sort.

Xylazine, phenacetin, benzimidazole opioids, and synthetic cannabinoids have been found in batches but not nearly as common as benzodiazepines.

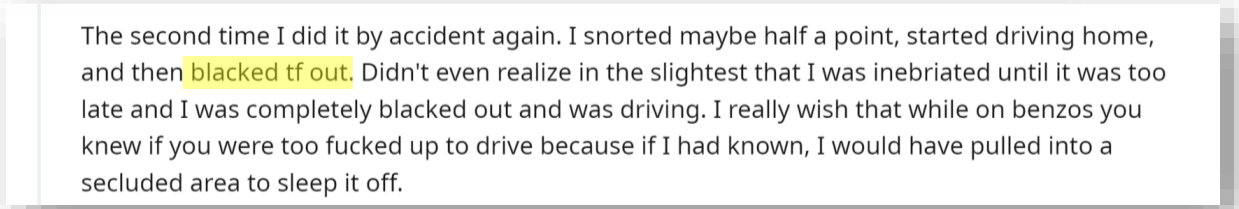
2 Share Report Save



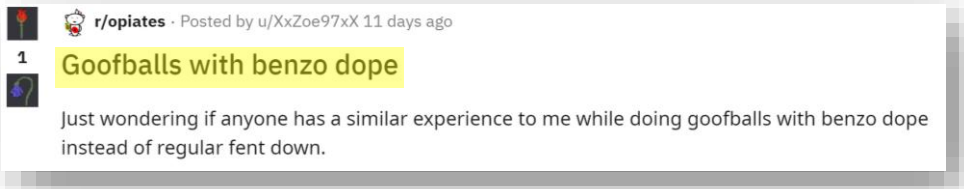
OpiNod · 11 days ago

If your shooting it then it's either tranq dope or just fent not benzo dope.. the benzos aren't water soluble so you wouldn't be getting the benzo effect from shooting it. Benzo dope is for smoking

1 Reply Share Report Save Follow



The second time I did it by accident again. I snorted maybe half a point, started driving home, and then blacked tf out. Didn't even realize in the slightest that I was inebriated until it was too late and I was completely blacked out and was driving. I really wish that while on benzos you knew if you were too fucked up to drive because if I had known, I would have pulled into a secluded area to sleep it off.

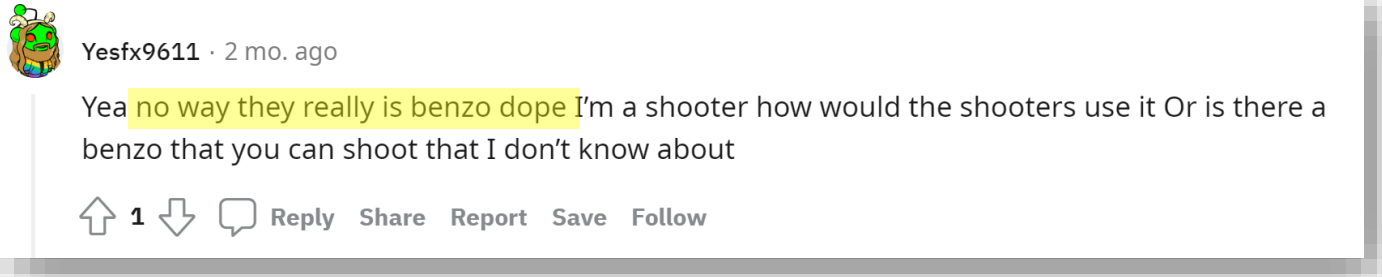


1

r/opiates · Posted by u/XxZoe97xX 11 days ago

Goofballs with benzo dope

Just wondering if anyone has a similar experience to me while doing goofballs with benzo dope instead of regular fent down.

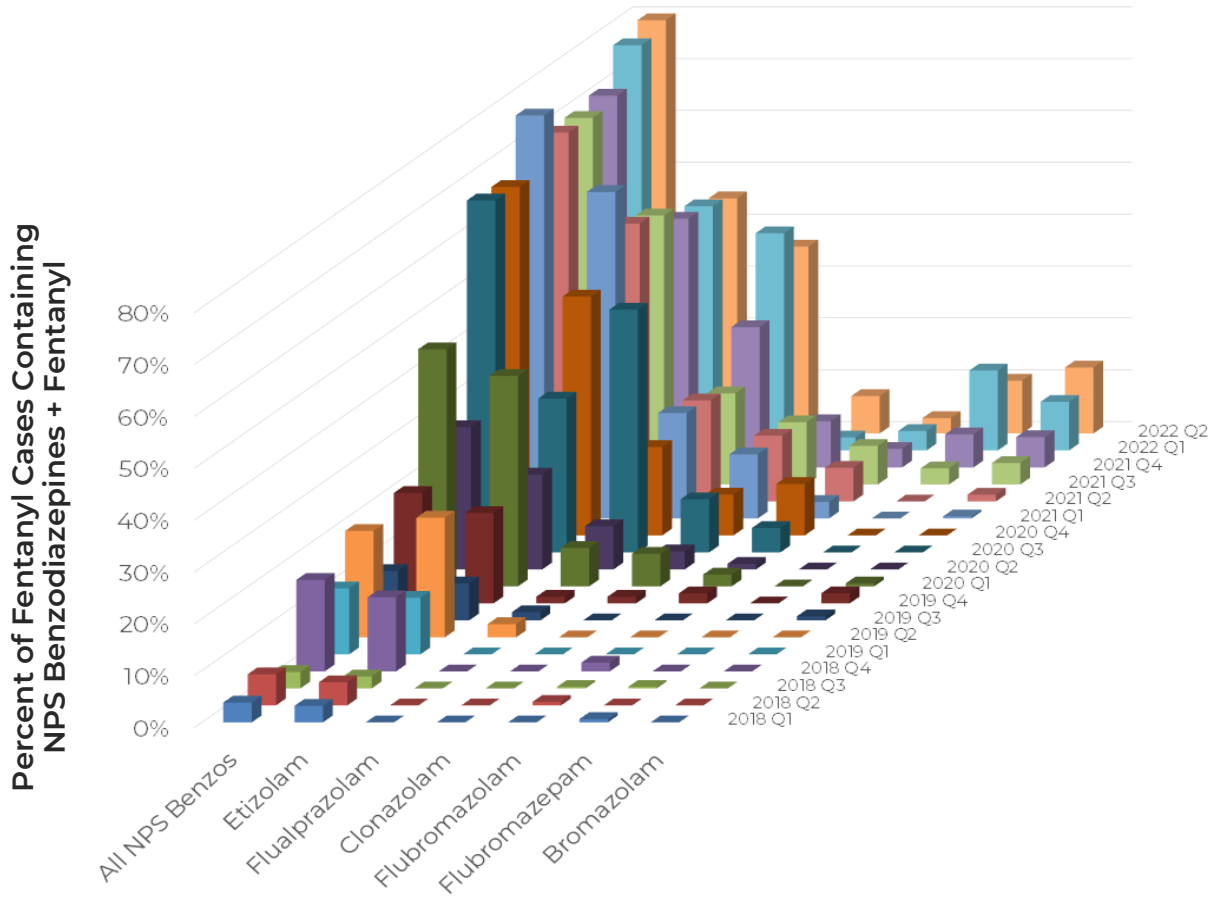


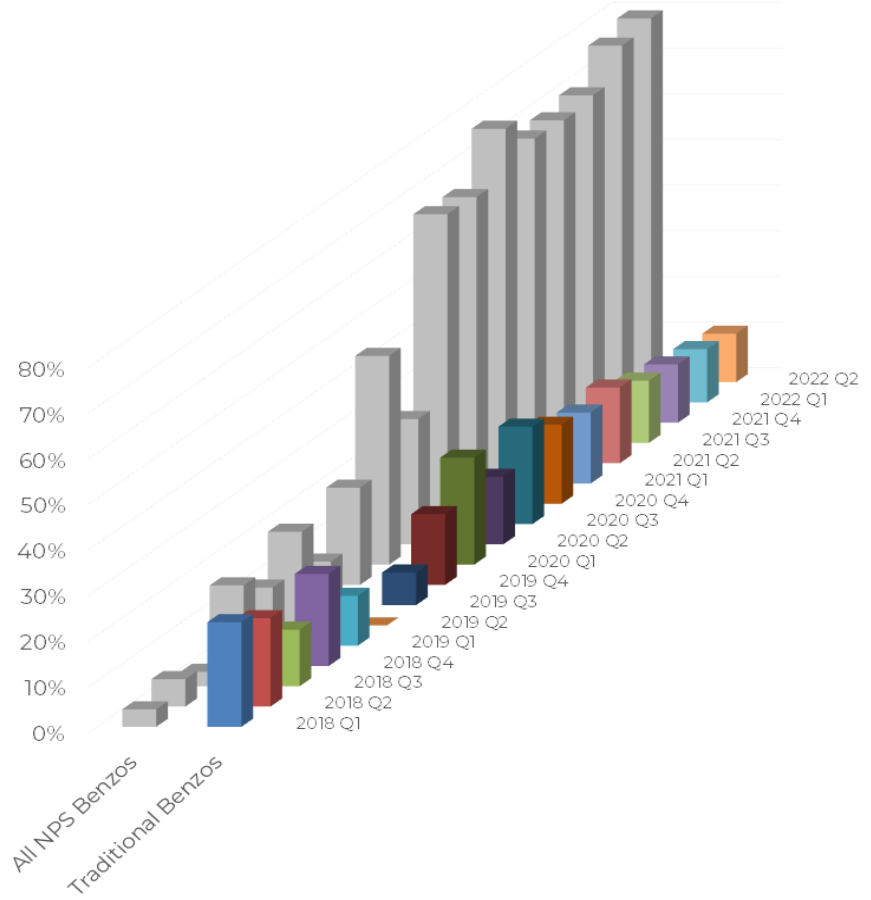
Yesfx9611 · 2 mo. ago

Yea no way they really is benzo dope I’m a shooter how would the shooters use it Or is there a benzo that you can shoot that I don’t know about

1 Reply Share Report Save Follow

# RISE OF COMBINED FENTANYL + NPS BENZO. USE






*Forensic toxicology cases. Data from the CFSRE.*

# NITAZENE ANALOGUES AND OTHER DRUGS

| Analogue | % Co-Positivity of Nitazene Analogue with... | | | | |
|---|---|---|---|---|---|
| | Fentanyl | NPS Benzo. | Methamp. | Cocaine | Xylazine |
| Isotonitazene | 57% | 89% | 30% | 32% | 11% |
| Brorphine | 84% | 100% | 43% | 29% | 10% |
| Metonitazene | 51% | 94% | 37% | 16% | 20% |
| *N*-Pyrro. Eto. | 59% | 89% | 48% | 37% | 15% |
| Protonitazene | 60% | 87% | 87% | 13% | 0% |
| Etodesnitazene | 50% | 92% | 58% | 17% | 17% |

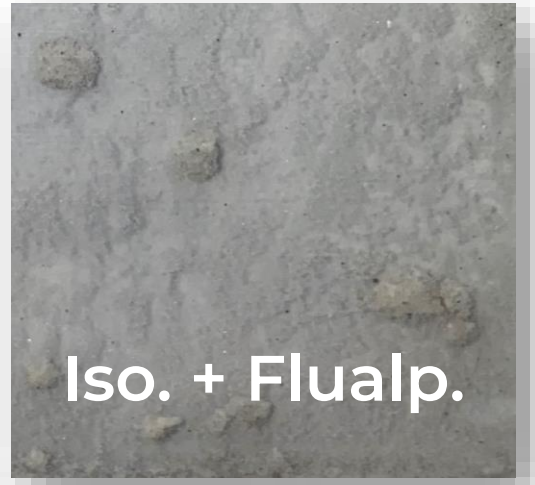


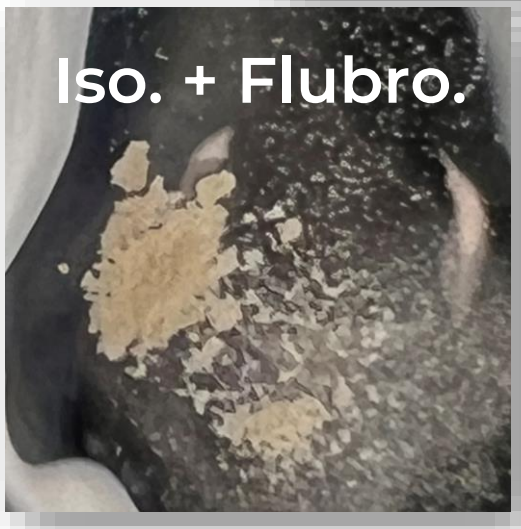
*Forensic toxicology cases. Data from the CFSRE.

# NPS OPIOID & NPS BENZO CO-POSITIVITY

- **Drug Material Testing:**
  - Isotonitazene + Flualprazolam (MN)
  - Isotonitazene + Flubromazepam (+ Fentanyl) (ME)

- **Toxicology Testing:**
  - Isotonitazene + Flualprazolam (WI)
  - Metonitazene + Clonazolam + Flualprazolam (IA)
  - N-Pyrrolidino Etonitazene + Clonazolam (FL)
  - Etodesnitazene + Flubromazepam (Canada)
  - 2-Methyl AP-237 + Flubromazolam (OH)
  - AP-238 + Clonazolam (CA)
  - N-Pyrrolidino Protonitazene + Bromazolam (WI)




# BENZO-DOPE: QUANTITATIVE DATA (NG/ML)

- Partnerships between the CFSRE, NMS Labs, toxicology laboratories, and medical examiner and coroner offices

| NPS Opioid | NPS Benzo | Other Notable Findings | Case Information |
|---|---|---|---|
| Isotonitazene (1.9) | Etizolam (15) | N/A | Bought “heroin” from Chicago |
| Isotonitazene (1.8) | Etizolam (30) | THC | Accident / Etizolam toxicity*** |
| Isotonitazene (0.4) | Flualprazolam (4) | N/A | Found slumped over a toilet |
| Isotonitazene (2.2) | Flualprazolam (10) | N/A | Unknown |
| Metonitazene (8.7) | Etizolam (6.3) | Tramadol (1,100), THC | Accident / Combined effects of meto., tramadol, and etizolam |
| Metonitazene (1.4) | Etizolam (54) | pFF (28), Methadone (130), Morphine (36) | Unknown |
| Metonitazene (3.5) | Pyrazolam (14), 8-Aminoclonazolam | Ethanol (13 mg/dL) | Unknown |
| N-Pyrrolidino Etonitazene (2.4) | Flualprazolam (6.7 ng/mL) | Fentanyl (14), Morphine (7.5), THC | Homicide / GSWs |
| N-Pyrrolidino Protonitazene (55) | Bromazolam (<20) | N/A | Unknown |

# CONCLUDING REMARKS

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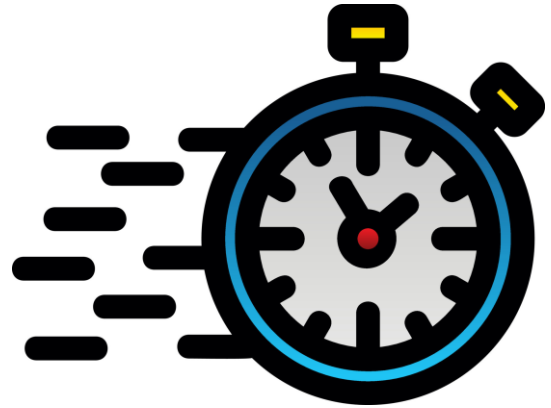
# WHAT'S OUR RESPONSE?

- The primary goal remains to **reduce harms** – but how?



- Dissemination of information key stakeholders and beyond
- Offer no-cost testing and produce reports to impact testing efforts
  - Counsel about the value of NPS testing and reporting
- Effects of drug scheduling:
  - There are direct links between national and international efforts as it relates to positivity
  - We know that individual drug scheduling results in turnover to new drug analogues
  - We know that class-based drug scheduling results in turnover to a new drug subclass
- *So much more…*

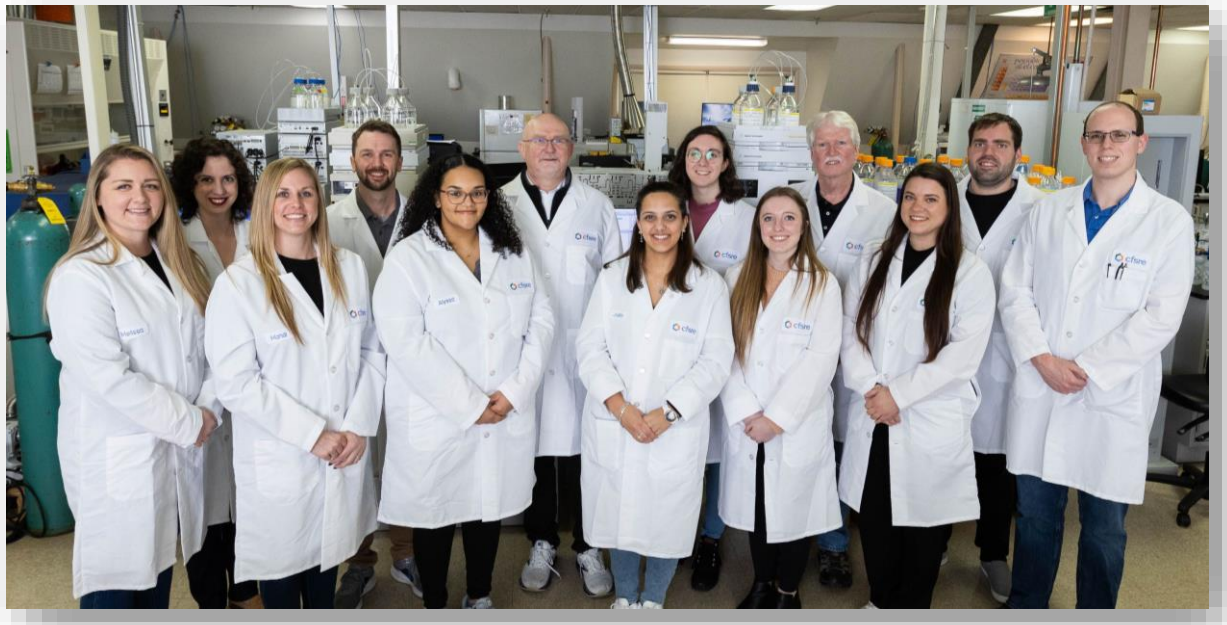
# CONCLUDING REMARKS

- Recreational drug supply in the U.S.A. remains **dynamic**, **volatile**, and (overall) increasingly **toxic**
  - True extent of NPS opioid impacts remains unknown (lack of testing)
- **NPS continue to appear** in fatal and non-fatal overdose scenarios and in forensic samples / specimens
  - NPS as the cause of death / culprit for overdose
  - Polydrug cases with NPS alongside other drugs
  - NPS may be "along for the ride" (alternative MOD and/or COD)
- **MAC-D** → Misrepresentation and adulteration continue for NPS in North America, especially NPS opioids
  - Nitazene analogues sold as "dope", "heroin", or "fentanyl"
  - NSOs added to fentanyl (e.g., increase potency of product)

# ACKNOWLEDGEMENTS


- **CFSRE Team**
  - Barry Logan
  - Sara Walton
  - Josh DeBord
  - Mandi Mohr
  - Melissa Fogarty
  - Alyssa Reyes
  - Brianna Stang
  - Alexis Quinter
  - Max Denn
  - Many others!
- **NMS Labs**
  - Donna Papsun
- **Funding Agencies**
  - NIJ, CDC, NIH, etc.
- **Collaborators & Partners**
  - Forensic
  - Clinical
  - Medical Examiners
  - Coroners
  - Public Health
  - Crime Labs

NIJ | National Institute of Justice
STRENGTHEN SCIENCE. ADVANCE JUSTICE.

cfsre | NPS DISCOVERY

# THANK YOU! QUESTIONS?

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