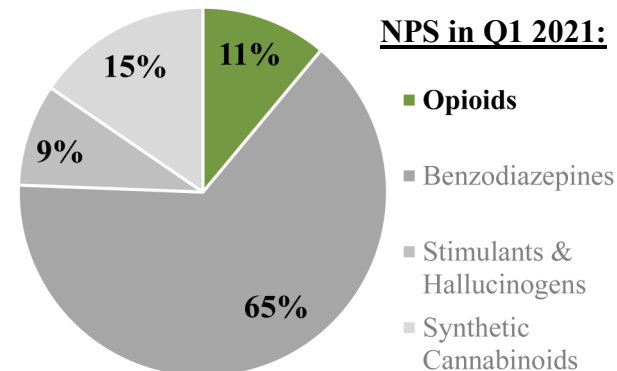


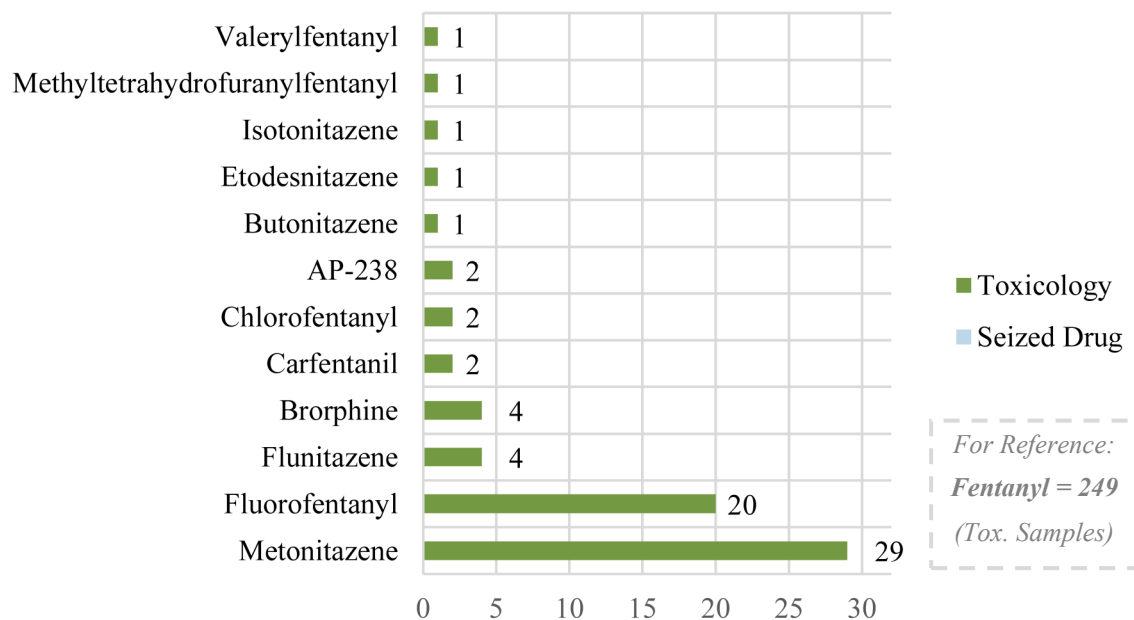
**Purpose:** This report provides up-to-date information regarding the status of NPS opioid prevalence and positivity within the United States.

**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 analytical 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.



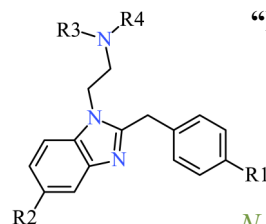
## NPS Opioid Positivity



## NPS Opioid Combinations

Combination	Frequency
Fluorofentanyl + Fentanyl	18
Fluorofentanyl + NPS Benzodiazepine(s) (e.g., Etizolam, Flualprazolam)	16
Metonitazene + NPS Benzodiazepine(s) (e.g., Clonazolam, Flualprazolam)	13
Metonitazene + Fentanyl	12
Metonitazene + Flunitazene	4

## Continued Emergence of New Opioid “Nitazene” Analogues



### “Nitazene” Analogues Reported:

Isotonitazene: 11/19/2019

Metonitazene: 07/30/2020

Butonitazene: 01/15/2021

Etodesnitazene: 02/23/2021

Flunitazene: 03/26/2021

N-Pyrrolidino Etonitazene (Pending)

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