W11 A New Realm of Novel Psychoactive Substance (NPS) Opioids and NPS Benzodiazepines—Analytical and Interpretive Considerations

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Learning Overview: After attending this workshop, attendees will be able to: (1) discuss current drug trends for NPS, specifically benzodiazepines and opioids; (2) discuss the difficulties in interpreting NPS benzodiazepines and opioids in Driving Under the Influence of Drugs (DUID), death investigation, and Drug-Facilitated Sexual Assault (DFSA) cases; and (3) assess different instrumentation for the analysis of NPS benzodiazepines and opioids.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing updated information on the ever-changing presence of NPS benzodiazepines and opioids. Presentations will cover a variety of topics, including emergence drug trends, pharmacology, analytical methods, case findings, interpretation, NPS combinations, and more.

Accurate and timely identification of NPS are critical for forensic, clinical, public health, and public safety communities. In the past year, the emergence of new NPS benzodiazepines and NPS opioids have challenged the forensic science community, as these substances have been found among drugged driving, sexual assault, and death investigation casework. Most notably, flualprazolam emerged as a new NPS benzodiazepine and has since become the more prevalent substances in its class. The NPS opioid landscape has not been the same since the core structure scheduling of fentanyl-related substances. Fentanyl analogs are substances of the past and new drugs, like isotonitazene and brorphine, have become common names. These shifts in NPS markets—the cat and mouse games—have left laboratories scrambling to stay ahead of new substances with quick life cycles of just three to six months. While detection remains an important issue, interpretation of NPS results can be equally as challenging. New NPS benzodiazepines and opioids emerge so quickly there is often no scientific data about activity, potency, and toxicity. In addition, these two classes become exceedingly more challenging when found in combination, allowing for additive Central Nervous System (CNS) depressive effects. Information sharing and discussion about emerging NPS results in essential for forensic scientists to remain aware of new trends, overall impact, and toxicological interpretation.

This workshop will provide information related to the prevalence and distribution of NPS benzodiazepines and NPS opioids in the United States and interpretation of important results. Analytical methods and tools for NPS detection in forensic chemistry and forensic toxicology will be discussed, along with timely results from the analysis of casework specimens, primarily in biological fluids. Additional topics included in the program will focus on trends, history, and pharmacology of these important NPS classes, as well as methodologies for the compilation and distribution of data and findings.

NPS, Toxicology, Forensic