K22 Trends in Drug-Facilitated Crime and Sexual Assault in San Francisco, California

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Learning Overview: After attending this presentation, attendees will understand popularity trends in substances used in Drug-Facilitated Crime (DFC) and sexual assault in the San Francisco area.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by increasing awareness among forensic scientists of the trends in drug usage in drug-facilitated crime, including sexual assaults, in San Francisco from July 2015 to December 2018.

Drug-Facilitated Sexual Assault (DFSA) is a term used to describe a DFC where the sexual assault has occurred while the survivor was under the influence of a substance that incapacitated them to better control their faculties and engage them in non-consensual sexual activity. Drugs, including alcohol, compromise an individual's ability to consent to a sexual act by causing a diminished capacity. A perpetrator may take advantage of voluntary use of drugs or alcohol; alternatively, they may force or administer drugs or alcohol to the survivor unknowingly. Ethanol and marijuana are the two drugs most commonly detected in reported DFSA casework around the world; however, other drugs of interest include recreational drugs and hypnotic, sleep aid, and anxiolytic drugs.

The aim of this research was to determine if there were drug and demographic trends in reported DFSA cases in the City and County of San Francisco from July 2015-December 2018. Age, gender, time of incident and specimen collection, symptomology, voluntary and suspected drug use, and detected drugs in blood and urine data were obtained from the Office of the Chief Medical Examiner in San Francisco, who performs all DFSA forensic toxicological investigations within the city.

A total of 883 cases were examined; 745 identified as female, 116 identified as male, and 22 were not indicated. The median age of females was 26 and males was 29.5 years of age. The median elapsed time between the incident and specimen collection for the years 2015–2018 was 18.2 hours, with 13.5 hours, 20.6 hours, 19.3 hours, and 15.8 hours for 2015, 2016, 2017, and 2018, respectively.

The five most frequently occurring analytes in blood were cannabis and its metabolites (127), ethanol (118), methamphetamine (103), amphetamine (99), and cocaine and its metabolites (47). Urine analysis data showed several of the same substances within the five most frequent observations with ethanol (224), methamphetamine and amphetamine (200), cannabis and its metabolites (158), cocaine and its metabolites (142), and γ-hydroxybutyric acid (47) detections. In total, 448 analytes were detected through blood analysis and 669 analytes were detected through urine analysis.

Urine analysis data was used to determine trends in substances and gender. Ethanol was determined to be the most frequent drug used in DFSA within the female population, while methamphetamine was most commonly encountered in DFSA with males. Many substances used in DFSA can leave the body within 6 to 48 hours. As such, efforts to decrease the time between the incident and collection, as observed here, are beneficial.

Loss of consciousness, impaired memory, and drowsiness were the most common symptoms reported in these DFSA investigations. In cases involving loss of consciousness, the most common drugs detected were ethanol (156), marijuana (47), methamphetamine (31), and cocaine (12). Drugs associated with the loss of memory included the same drugs: ethanol (206), marijuana (62), methamphetamine (31), and cocaine (16). In investigations where drowsiness was reported, the most commonly detected drugs were also ethanol (121), marijuana (40), methamphetamine (21), and cocaine (12). It is notable that the Central Nervous System (CNS) stimulants methamphetamine and cocaine rank highly regarding reported sedative effects, although both drugs can be reported in this way as their concentrations decrease. In addition, it is known that there is some degree of overreporting of these effects based on victim symptomology.

In summary, demographic data from reported DFSA cases in San Francisco over a 3.5-year period indicate similar trends regarding age and sex to other DFSA reports. Unsurprisingly, alcohol and cannabis account for the highest number of drugs detected. Methamphetamine is very prevalent in DFSA cases in this region, particularly within the male population. Tracking drug use in DFSA casework can provide valuable information for the forensic science community, sexual assault survivor advocates, and controlled substance legislatures.

Drug-Facilitated Crime, Drug-Facilitated Sexual Assault, Trends