

B195 A Comparison of Expected Drug and Confirmed Findings in Samples Submitted by Clients of Supervised Consumption Sites in British Columbia

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Learning Overview: After attending this presentation, attendees will understand the nature of the illicit drug supply in British Columbia, Canada, as it pertains to adulteration, contamination, and misrepresentation.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by addressing some common misconceptions about the nature of the illicit drug supply

Background/Introduction: Opioid-related deaths have increased dramatically in the past five years in British Columbia, which have mainly been driven by fentanyl and its analogs in the illicit drug supply. While there is speculation that fentanyl can be present in all types of illicit drugs, there is a paucity of literature that directly compares the expected drugs that are purchased illicitly with confirmed drug identification. Counterfeit tablets that resemble pharmaceutical opioids or benzodiazepines have been adulterated with fentanyl. Clinical and postmortem testing of biological samples often show co-occurrences of fentanyl and stimulants, which has led to speculation that stimulant drugs may also be adulterated with fentanyl. Identification of drug samples seized by border and police services in British Columbia has shown a co-occurrence of opioids and stimulants (such as cocaine and methamphetamine) of approximately 10%. However, it is not clear if seized drugs and toxicology results are representative of the local illicit drug supply. A better understanding of the drug supply is needed in order for policy makers, health care professionals, and harm reduction workers to assist in providing a less risky environment for people who use illicit drugs.

Objective: To characterize the illicit drug supply by comparing expected drug identity with results obtained from laboratory analysis.

Method: Clients at select supervised consumption sites in British Columbia, Canada, who utilize on-site drug checking services provided staff with information on the expected identity of their purchased street drug and approximately 5mg of sample. Powdered samples were submitted to the Provincial Toxicology Centre for analysis using Gas Chromatography with Mass Spectrometry (GC/MS) in full scan mode and compared to commercial libraries and in-house verified standards.

Results: In total, 223 samples were submitted for this study; 163 (73%) were primarily expected to be opioids, and 31 (14%) were expected to be cocaine or methamphetamine; the remaining 29 (13%) samples were not expected to contain opioids, cocaine, or methamphetamine. Among all expected opioids, 125 (77%) had fentanyl detected, 20 (12%) had methamphetamine detected, and 7 (4%) had cocaine detected. Fentanyl was the expected substance in 48% of submitted samples. Of those expected to contain fentanyl by clients ($n=107$), 83% contained fentanyl. Expected fentanyl samples that did not contain fentanyl had at least one of: diacetylmorphine (i.e., heroin), a fentanyl analog, or a synthetic cannabinoid. One expected fentanyl sample contained only methamphetamine. Heroin was expected in 23% of submitted drugs. Among the 30 samples that were purchased as heroin, 73% had heroin detected and 50% had fentanyl detected. Expected stimulants were generally in good agreement with detected substances. However, two expected cocaine samples contained fentanyl but did not contain any stimulants. Of the five counterfeit “Xanax” tablets that were submitted, none contained alprazolam but did contain other central nervous system depressants, including fentanyl analogs, etizolam, and antihistamines.

Conclusion/Discussion: Illicit opioids and benzodiazepines often contain fentanyl or its analogs, regardless of expected substance. Stimulants are generally not adulterated with opioids or other depressants. However, two cases were identified in which fentanyl but not cocaine was present in expected cocaine samples. This may be due to a number of reasons, including mislabeling, accidental misclassification, or intentional adulteration. Efforts to increase sample size for expected stimulants are underway.

Drug Identification, GC/MS, Illicit Drug Supply