Results from a pilot period of a drug identification program as a harm reduction initiative

Background

- Adulterants in the illicit drug supply remain a primary concern.
- People with substance use disorders are being exposed to drugs without their knowledge that may cause unintended effects.
- In 2023, Hamilton County Public Health (HCPH) partnered with the Centers for Disease Control and Prevention, the University of North Carolina Street Drug Analysis Lab (UNC), and community-based organizations to pilot a drug checking program.
- The primary purpose of this study was to describe drugs identified in participant submitted samples

Methods

- Participants could voluntarily submit samples of drug at three different community sites.
- This study included samples collected from 1/24 -12/24.
- Samples included drug residues, powder, or used paraphernalia.
- All samples were submitted anonymously but included a questionnaire.
- The samples were then sent to the UNC Drug Analysis lab that performed gas chromatography/mass spectrometry.
- Substances were classified as potentially psychoactive, metabolite, precursor, or likely cutting agent by a medical toxicologist (SY)
- Participants could then access their results directly from a UNC website

Results

- 79 samples were submitted for identification
- In addition to fentanyl, heroin, cocaine, and methamphetamine, 47 other substances were identified
- 3 samples had no substances of any kind identified.
- All potentially psychoactive adulterants were found only in samples submitted that were believed to contain an opioid.
- Only 1 sample believed to be an opioid contained only the opioid (with precursors)
- 15 samples were submitted believed to contain methamphetamine.
- 12 contained only methamphetamine and 3 contained methamphetamine and dimethyl sulfone (likely a cutting agent)
- 3 samples were submitted believed to contain cocaine and all 3 only had cocaine identified.

Substances with Psychoactive Effects

Substance	n
Xylazine	42
Medetomidine	17
p-Fluorofentanyl	11
N-desethyl etonitazene	6
N-pyrrolidino-etonitazene	4
Bromazolam	3
Ortho-methyl fentanyl	3
2-Fluoro-2-oxo PCE	2
Protonitazene	2
Gabapentin	2
N-pyrrolidino-protonitazene	1
Ketamine	1
Pregabalin	1
2-fluoro deschloroketamine	1
MMB-FUBINACA	1
Etaqualone	1
Pending nitazine	1
Tramadol	1

Cutting Agents Detected

Substance	n
Diphenhydramine	20
Dimethyl sulfone	13
Acetaminophen	12
Lidocaine	12
Caffeine	7
1,3 Diacetin	6
Quinine	5
Aniline	2
bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate (BTMPS)	2
Tetracaine	2
Erythritol	2
Ibuprofen	1
Benzocaine	1
Acetanilide	1
Nicotine	1
N-Isopropylbenzylamine	1

Precurser Compounds Detected

Substance	n
4-anilino-N-phenethylpiperidine (4-ANPP)	50
Phenethyl 4-ANPP	29
ethyl 4-ANPP	7
p-Fluoro phenylethyl 4-ANPP	5
4-anilinopiperidine	4
N-Phenethyl-4-piperidone (NPP)	2
N-Phenylpropanamide	1

Metabolites Detected

Substance	n
6-mono acetyl morphine	8
despropionyl p-fluorofentanyl	6
despropinyl ortho-methylfentanyl	5
acetylcodeine	4
benzylecognine	1
methyl ecogaine	1

Discussion

- In this sample of drug samples submitted in Hamilton County, OH, the majority of samples believed to be an opioid were adulterated with other substances with potentially harmful effects. Alpha-2 agonists, fentanyl analogs, and benzimidazole opioids were common. Information given to participants may aid in harm reduction. In addition, knowledge of the composition of the local drug supply may aid health care providers. Furthermore, we may be able to identify temporal trends. For example, there were 9 of 17 samples identified with medetomidine were submitted after September. In addition, ortho-methylfentanyl was first identified in a sample in September and has been identified 2 more times.
- Limitations of the study include the following: The participants in this study may not reflect people who use drugs in the overall larger community of Cincinnati and Hamilton County. The drug identifications are largely qualitative (some were identified as trace amounts).

References

1.Moon KJ, Whitehead HD, Trinh A, Hasenstab KA, Hayes KL, Stanley D, Carter B, Barclay R, Lieberman M, Nawaz S. Enhancing drug checking services for supply monitoring: perspectives on implementation in syringe service programs in the USA. Harm Reduct J. 2024 Jan 13;21(1):11. doi: 10.1186/s12954-023-00924-5. PMID: 38218980; PMCID: PMC10788002.

2. Laing MK, Tupper KW, Fairbairn N. Drug checking as a potential strategic overdose response in the fentanyl era. Int J Drug Policy. 2018 Dec;62:59-66. doi: 10.1016/j.drugpo.2018.10.001. Epub 2018 Oct 22. PMID: 30359874.

3.Reed MK, Borne E, Esteves Camacho T, Kelly M, Rising KL. Recommendations from people who use drugs in Philadelphia, PA about structuring point-of-care drug checking. Harm Reduct J. 2024 Jan 30;21(1):26. doi: 10.1186/s12954-024-00937-8. PMID: 38287409; PMCID: PMC10825997.

4.Collins AB, Wightman RS, Macon EC, Guan Y, Shihipar A, Krieger M, Elmaleh R, Smith MC, Morales A, Badea A. Comprehensive testing and rapid dissemination of local drug supply surveillance data in Rhode Island. Int J Drug Policy. 2023 Aug;118:104118. doi: 10.1016/j.drugpo.2023.104118. Epub 2023 Jul 7. PMID: 37422985.

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