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71. Adulteration of Illicit Drugs in Emergency Department Patients With Acute Opioid Overdose: A Multicenter Cohort

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Background: Many illicit opioids contain adulterants that are potentially harmful. We describe analytically confirmed adulterants present in a cohort of ED patients presenting after an opioid overdose.

Methods: This case series includes adult ED patients who presented after a suspected opioid overdose to an emergency department at a participating site in the American College of Medical Toxicology's Toxicology Investigators Consortium (ToxIC) fentanyl study group between 10/6/20-3/9/21. Case exclusion criteria were unavailable specimens, non-toxicological alternate diagnoses (trauma, burns, sepsis), prisoners, and children <18. Participating sites include 5 facilities in 4 States (Pennsylvania, Missouri, New York, and Oregon). Discarded blood samples were collected and toxicological confirmation was performed via liquid chromatography quadrupole time-of-flight mass spectrometry for the presence of over 900 psychoactive substances and their metabolites, including adulterants. Patients included in this analysis were positive for at least one adulterant upon toxicological confirmation.

Results: Out of 760 patients screened, 81 met inclusion criteria; the median (IQR) age was 36 (34-49) years and the majority were men (59; 72.8%). Of the 81 samples tested, 61 contained illicit opioids Only 4 (4.9%) of the 61 lacked adulterants. Adulterants present are summarized in the Table, and included quinine (41; 50.6%), levamisole (25; 30.9%), xylazine (16; 20%), lidocaine (16; 20%), phenacetin (13; 16%), and diphenhydramine (12; 14.8%). Phenacetin was primarily confined to samples from PA, whereas levamisole, lidocaine, and xylazine were located in Pennsylvania and Missouri. Quinine was present from samples in all four states. While most samples that tested positive for either phenacetin or levamisole had the

presence of cocaine, 4 out of 25 (16%) samples that contained levamisole lacked any evidence of cocaine.

Conclusion: In this cohort, adulterants were detected often in the blood samples of patients with illicit opioid overdose, and variations of adulterants were based on the specific opioid as well as geographical region. The most consequential adulterants physicians should be aware of include phenacetin, quinine, levamisole, and xylazine.