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### **Sociodemographic Characteristics Associated with Reported Heroin Use and Discrepancies between Heroin Use and Toxicological Drug Detection among ED Patients Experiencing Non-Fatal Overdose.**

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**Aims:** This study investigated sociodemographic characteristics associated with self-reported heroin use (SRHU) among ED patients who used opioids immediately preceding a non-fatal overdose. Discrepancies between SRHU and toxicological opioid detection were also investigated.

**Methods:** The Toxicology Investigators Consortium (ToxIC) Drug Overdose Toxico-Surveillance (DOTS) Reporting Program enrolled patients with suspected opioid and/or stimulant-related overdose who presented to one of 17 participating emergency departments in the United States. One-on-one patient interviews and chart reviews were conducted. Patients' blood samples were analyzed for over 1200 drugs and metabolites using liquid chromatography quadruple time-of-flight mass spectrometry at the Center for Forensic Science Research & Education (CSFRE). Patients enrolled between 4/2023-7/2024 who reported opioid use contributing to an overdose (n=229) were included. Differences in sociodemographic (race/ethnicity, age cohort, sex) and use (form, route) characteristics among patients with SRHU were studied, as were discrepancies between SRHU and toxicological opioid detection.

**Results:** Sixty-two (27.1%) of 229 patients who reported taking opioids prior to overdose indicated SRHU. Significant differences in SRHU were noted by age cohort (18-25: 4.0%; 26-34: 10.0%, 35-49: 27.4%, 50-64: 34.3%, 65+: 61.9%;  $p < 0.01$ ) and race/ethnicity, with the highest prevalence among Black (n=44, 37.3%) and White patients (n=14, 18.2%;  $p = 0.01$ ). Of the 62 patients with SRHU, the majority reported using powder (n=52, 88.1%) and most snorted it (n=43, 71.7%). Toxicological analyses showed none of the patients with SRHU used heroin, but 95.2% (n=59) had one or more fentanyl/fentanyl analogs detected. The most detected opioids were fentanyl (n=58, 93.5%), norfentanyl (n=47, 75.8%), and para-fluorofentanyl (n=13, 21.0%).

**Conclusions:** More than one in four patients who experienced an opioid overdose had SRHU, however these toxicological analyses showed no heroin detection – rather there were high rates

of fentanyl/fentanyl analog detection. SRHU rates increased with age, indicating older adults may be experiencing overdose due to unintended fentanyl/fentanyl analog exposures.