Presented at Annual Scientific Meeting (ASM) 2026 - Boston, MA
Published in J Med Toxicol 2026;22:43.

# 074. Characteristics of Overdoses in Patients Who Obtain Opioids From an Unfamiliar/Atypical Source Versus a Usual/Typical Source

Tricia Dowis[1], Daniel Tirado[1,2], Rachel Culbreth[2], Paul Wax[3], Jeffrey Brent[4], Kim Aldy[5,6], Alyssa Falise[2], Alex J Krotulski[7], Robert G Hendrickson[1], On Behalf of the ToxIC DOTS Study Group

*[1]Oregon Health & Science University, Portland, OR, USA. [2]Oregon College of Medicine, Portland, OR, USA. [3]University of Colorado School of Medicine, Denver, Aurora, CO, USA. [4]University of Colorado School of Medicine, Aurora, CO, USA. [5]Baylor University Medical Center, Dallas, TX, USA. [6]The Center for Forensic Science Research & Education, Horsham, PA, USA*

**Background:** People who use fentanyl often use multiple times a day and rely on a consistent source for this supply. Obtaining drugs from a new dealer or an unfamiliar source may increase the risk of overdose. There is little data describing the clinical characteristics and blood concentrations of fentanyl in patients that use fentanyl from an unfamiliar source.

**Hypothesis or Research Question:** Is using fentanyl from an unfamiliar source associated with higher blood fentanyl concentrations among subjects who overdose?

**Methods:** The Toxicology Investigators Consortium (ToxIC) Drug Overdose Toxico-Surveillance (DOTS) Reporting Program (2022 - 2024) consisted of ED patients ages 13 and older who presented to 17 U.S. medical centers with suspected opioid or stimulant overdose. DOTS data collection included chart reviews, chart interviews, and qualitative/quantitative toxicology analyses conducted by the Center for Forensic Science Research and Education. Summary data includes medians and interquartile ranges (IQR) for skewed data, and Wilcoxon Rank Sum Tests with Continuity Corrections and Chi-Square or Fisher's Exact Tests were used for testing statistical differences.

**Results:** Among 587 subjects with an opioid overdose presentation, 361 used drugs from their usual source, and 226 used from an unfamiliar source. Subjects who used fentanyl from an unfamiliar source generally used a single drug (61%) and by a usual route (66%). Of those who used fentanyl from an unfamiliar source, there was no difference in fentanyl concentrations amongst subjects who used someone else's medication (3.1 ng/mL; IQR 1.6, 9.9), usual dealer but usual brand (4.8 ng/mL; IQR 3.0, 11.0), not usual dealer but usual brand (4.0 ng/mL; IQR 2.1, 8.7), not usual dealer and not usual brand (4.9 ng/mL; IQR 2.8, 7.0). However, a higher percentage of subjects that used fentanyl from an unfamiliar source received 2 or more naloxone doses (36.9% vs. 43.3%, p=0.03) and had a higher average IN dose (unfamiliar source: mean: 0.5 mg, median: 4.0 mg; IQR: 4.0, 8.0 vs. usual source: mean 5.1 mg; median: 4.0 mg; IQR: 2.0, 8.0; p=0.02).

**Conclusion:** Subjects who used fentanyl from an unfamiliar source had similar characteristics to those who used from a usual source but were treated with more doses of naloxone and had

higher average IN naloxone doses. Our results are limited by subject self-report and the potential for recall bias.

***ToxIC: This research was performed by the ACMT Toxicology Investigators Consortium***