WS15: Uniting Forensic Toxicology and Medical Toxicology to Implement the Drug Overdose Toxico-Surveillance (DOTS) Reporting Program

Date: Tuesday, October 28

Time: 1:30 – 5:30 PM

Audience Knowledge: Intermediate - Involves more advanced concepts requiring some technical working knowledge or prior exposure to the subject matter Rates:

Membership	Early Bird (June 25 - Sep 10)	Late (Begins Sept 11)	Onsite (Begins Oct 9)
Member	\$150	\$175	\$200
Student	\$150	\$175	\$200
Non-Member	\$200	\$225	\$250

Workshop Chairs:

Alex Krotulski, PhD

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Center for Forensic Science Research and Education (CFSRE) Director – Toxicology and Chemistry

Paul Wax, MD, FACMT <u>paul.wax@acmt.net</u> American College of Medical Toxicology (ACMT) Executive Director

Abstract

Polydrug overdoses are increasingly common as the opioid crisis evolves to include stimulants, such as methamphetamine and cocaine, and central nervous system (CNS) depressants, such benzodiazepines and alpha-2 agonists. Clinical presentations of patients with non-fatal overdose are complicated by the presence of multiple drug classes and the emergence of novel psychoactive substances (NPS), particularly when patients are or are perceived to be non-responsive to multiple naloxone doses. Understanding the unique contribution of each drug is important for addressing interpretive questions related to polydrug overdoses, which can only occur when comprehensive drug testing is performed on biological specimens collected close in time to the overdose event. Clinical investigations of non-fatal overdoses have primarily focused on qualitative blood toxicology tests, but there remains a major gap in understanding the overdose presentation with only qualitative blood toxicology results. In contrast to forensic toxicology, quantitative toxicology tests for recreational drugs are rarely sought in medical toxicology practice, whereas obtaining quantitative concentrations for acetaminophen and acetylsalicylic acid overdoses are more typical. Limited research has been conducted using quantitative toxicology tests for illicit drugs in the non-fatal overdose population.

The American College of Medical Toxicology (ACMT) developed the Toxicology Investigators Consortium (ToxIC) as a multicenter Toxico-Surveillance and research network consisting of over 35 medical centers, each with a medical toxicologist site lead. ToxIC, led by medical toxicology physicians and research staff,

aims to detect new drugs of abuse, adverse effects of new medications, and emerging toxicological threats. ToxIC has several surveillance projects for examining non-fatal overdoses, including the Drug Overdose Toxico-Surveillance (DOTS) Reporting Program (2022-2024). This project aimed to assess sociodemographic characteristics, clinical information, and contextual data on opioid and/or stimulant overdoses, and to obtain biological specimens from patients presenting to 17 participating medical centers around the United States. Blood samples were submitted for quantitative toxicology tests, conducted at the Center for Forensic Science Research and Education (CFSRE).

The primary objective of this workshop is to demonstrate the complexities of clinical symptomology paired with the utility of obtaining comprehensive toxicology results. The goal is to better understand the patient's overdose presentation, particularly when complicated by polydrug use, and to interpret the non-fatal intoxication in the totality of case context. The secondary objective is to discuss how quantitative toxicology tests can help better understand naloxone effectiveness, the role of tolerance, the drug unmasking phenomenon, and other outcomes in the real-world setting. The presentations will include analytical testing in polydrug overdoses and individual case reviews, encouraging a lively discussion among forensic toxicologists, medical toxicologists, and attendees.

Learning Objectives

- 1. Recognize the role of a medical toxicologist in the emergency department and describe their approach to the assessment and treatment of non-fatal overdoses involving opioids, stimulants, and other substances.
- 2. Determine the utility in comprehensive toxicology results in understanding the overdose presentation and clinical outcomes.
- 3. Discuss current and future implications of quantitative blood toxicology tests for examining the effectiveness of naloxone in the real-world settings.

Speakers

Rachel Culbreth, PhD rachel.culbreth@acmt.net American College of Medical Toxicology (ACMT) Research Director

Sara Walton, MS <u>sara.walton@cfsre.org</u> Center for Forensic Science Research and Education (CFSRE) Forensic Toxicologist

Brianna Stang, MS brianna.stang@cfsre.org Center for Forensic Science Research and Education (CFSRE) Forensic Toxicologist

Workshop Agenda

Time	Торіс	Speaker	
1:30 – 1:40 PM	Welcome/Introductions	Alex Krotulski	
1:40 – 2:00 PM	Introduction to Medical Toxicology and ACMT/ToxIC	Paul Wax	
2:00 – 2:20 PM	The ToxIC DOTS Reporting Program	Rachel Culbreth	
2:20 – 2:40 PM	Collection and Analysis of Clinical Data from Non-Fatal	Paul Wax	
	Overdoses		
2:40 – 3:00 PM	Laboratory Testing and Analytical Workflows	Brianna Stang	
3:00 – 3:20 PM	Presentation of Quantitative Data for Drugs and Adulterants	Sara Walton	
3:20 – 3:30 PM	Q&A Panel	All	
3:30 – 4:00 PM	Break		
4:00 – 4:20 PM	Development of Case Review Criteria	Rachel Culbreth	
4:20 -5:20 PM	Case Review and Panel Discussion	Alex Krotulski	
		Paul Wax	
		Rachel Culbreth	
5:20 - 5:30 PM	Q&A Panel	All	