



## K53 Postmortem Pediatric Forensic Toxicology

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**Learning Overview:** After attending this presentation, attendees will have gained an appreciation for the challenges unique to toxicological findings in postmortem pediatric cases. Attendees will learn interpretive guidelines for pediatric cases involving forensic toxicology in both a general and case-specific sense.

**Impact on the Forensic Science Community:** This presentation will impact the forensic science community by further delineating the interpretive aspects of toxicological findings in the pediatric population.

In this 21<sup>st</sup> Annual Special Session within the Toxicology section, pediatric cases involving toxicological findings are discussed. As a relative dearth exists of interpretive information involving toxicological findings in the pediatric population, this session is a forum to help elucidate and clarify such issues. The format is a short case presentation of issue-specific concern, including pharmacokinetic data and other relevant ancillary information, followed by attendee participation to provide interpretive clarity around case-specific impacts of the toxicological findings. This session, attended by various sections of the Academy, allows for various perspectives of case issues that lead to integrative consensus, or differing opinions, as to cause of death in children.

Due to the unusual circumstances of this year's meeting, the presentations this year will draw from the annals of cases at NMS Labs. Four cases of toxicological findings in postmortem pediatric cases will be presented. The first case involves the death of a newborn that was born at home and never received afterbirth care. Death occurred within days with toxicological findings that included heroin products and cocaine. Questions regarding *in utero* versus neonatal exposure needed to be addressed. The perimortem facts are unusual and complicated the ability to interpret the findings.

Dr. Michael Rieders will speak to the developing relationship between the emerging mix of toxic adulterant cutting agents in drugs of abuse and the rise in maternal and fetal morbidity and mortality. Over 20,000 pregnant substance use-dependent women expose themselves and their developing fetus to myriad toxic adulterant cutting agents during pregnancy. Umbilical cord tissue from the neonate may reveal these substances, allowing an appropriate treatment plan to be developed as well as assisting medical examiners in cases of stillborns.

Dr. Laura Labay will address a case of a 13-month-old who was found unresponsive in a shared room. The infant was extremely warm to the touch. Resuscitative efforts were unsuccessful, and the infant was pronounced dead. Analysis showed a melatonin result of 210ng/mL in blood. Melatonin is an endogenous hormone that regulates sleep patterns. It is available in varying formulations and dosages and is marketed as a natural substance that can alleviate insomnia. Melatonin has been administered without appropriate authorization in daycare settings and by care providers attempting to induce sleep.

Ms. Jenni Turri Swatek will address two cases in which over-the-counter cocktails of cold-related preparations were administered to young children. She will highlight the dangers of casual use of these substances for misguided purposes and fatal outcomes.

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### Pediatric, Toxicology, Postmortem