

Presented at the ACMT Annual Scientific Meeting 2021 – Virtual

Published in J Med Tox 2021; 17:143

160. Fatality Trends Using the Toxicology Investigators Consortium (ToxIC) Registry: a 6-year Review of Demographics and Clinical Characteristics

Jennifer S Love¹, Kim Aldy², On Behalf of the ToxIC Investigators Consortium (ToxIC)³

¹ Oregon Health & Science University, Portland, OR, USA.

² University of Texas Southwestern Medical Center, Dallas, TX, USA.

Background: Unintentional poisoning deaths are the leading cause of injury-related mortality in the United States. However, little is known about demographic trends and clinical characteristics of deaths related to poisonings/toxicologic exposures.

Research Question: Have demographic and clinical characteristics of toxicologic deaths entered into the ToxIC database changed from 2014 to 2019?

Methods: This is a retrospective review of ToxIC Registry cases with a fatal outcome between 2014 and 2019. Cases were compared by year with a focus on demographics, exposure, intent, and clinical characteristics. Descriptive statistics and comparisons were gathered using SPSS.

Results: Between 2014 and 2019, 616 deaths were reported. Total annual fatalities ranged from 89 to 128. Most deaths (70–75%) occurred in adults age 19–65 years old across all years, except in 2019 (58% deaths). Deaths in patients <18 years old accounted for 10–15% most years, except in 2019 (22% deaths). Deaths were generally split evenly across all genders (49% males) each year. Race and ethnicity was comprised of 58.1% White, 12.5% Black, and 9.9% Hispanic. The top three reasons for toxicologic exposure included intentional use of pharmaceutical product (49.9%), intentional use of a non-pharmaceutical product (15.1%), and organ system dysfunction (14.4%). The top three primary exposure agent classes included analgesics (17.4%), opioids (14.3%), and cardiovascular (9.3%). The leading reasons for fatal toxicologic exposures remained relatively constant over time. However, the primary agents showed some variation, with opioid and non-opioid analgesics varying as the leading agent over time.

Conclusion: The number of fatal cases seen by medical toxicologists has remained relatively constant over six years. Most fatal cases are adult age and have an intentional exposure to a pharmaceutical product, which is commonly an opioid or non-opioid analgesic. Understanding the evolving demographics and clinical characteristics of fatal toxicologic exposures can inform targeted public health messaging and interventions around poisonings.