K51 Examining Demographics and Emerging Drug Trends on Accidental Deaths Due to Intoxication in Washington, DC

Samantha Tolliver, PhD, Office of the Chief Medical Examiner, Washington, DC 20024; Lucas W. Zarwell, MFS, Washington, DC 20011*

Learning Overview: After attending this presentation, attendees will understand how the proliferation of laced heroin has impacted intoxication deaths from 2013 to 2017 within the District of Columbia.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by examining drug trends and the demographic information of the decedent population within the District of Columbia.

At the District of Columbia Office of the Chief Medical Examiner (DC OCME) between the years of 2003 and 2012, the combination of natural (55%) and accidental (25%) deaths accounted for 80% of the case load. On average, accidental deaths were largely comprised of blunt injury, followed by intoxication. In the order of prevalence, cocaine, ethanol, and heroin were routinely detected among those cases. However, fentanyl was not commonly detected at that time, as it was only listed in 2010, as being identified in 3% of the cases. Fentanyl reappeared in 2013, when it was identified in 1% of the accidental death cases. This presentation will focus on accidental deaths that were specifically due to drug intoxications between the years of 2013 and 2017.

Table 1 lists the most commonly encountered analytes and/or analyte classes identified within the accidental drug intoxication population in the District of Columbia from 2013 to 2017. A review of the data indicated that deaths attributed to heroin usage were the most prevalent. Within that time, heroin deaths peaked in 2015, which is the same year that fentanyl analogs (4%) began to emerge within the decedent population. An examination of the race and gender demographics (Table 2) revealed that, on average, those most impacted by accidental drug intoxications were Black males (57%); followed by Black females (23%), White males (13%) and White females (3%).

Year	Cocaine & metabolites	Heroin & metabolites	Ethanol	Opioids	Fentanyl	Fentanyl Analogs	PCP
2013	25.34%	26.03%	15.75%	9.59%	1.37%	0.00%	8.22%
2014	22.86%	23.33%	15.71%	13.81%	3.81%	0.00%	4.76%
2015	14.39%	32.20%	15.15%	9.09%	7.58%	4.55%	2.65%
2016	15.37%	22.09%	14.78%	7.31%	13.88%	8.51%	6.27%
2017	16.39%	17.45%	12.03%	4.48%	20.05%	9.43%	4.13%

Table 1: *Commonly Encountered Drugs in Accidental Intoxication Deaths between 2013–2017*

Year	Black Male	Black Female	White Male	White Female
2013	54.64%	24.74%	17.53%	1.03%
2014	50.43%	24.35%	18.26%	4.35%
2015	53.33%	21.33%	20.00%	5.33%
2016	64.38%	18.30%	10.78%	2.61%
2017	56.59%	27.47%	9.07%	3.57%
Average	57.34%	23.17%	12.93%	3.38%

Table 2*: *Race and Gender Demographics from 2013–2017*
* All other race/ gender combinations that averaged less than 2% of the cases were excluded.

When compared to 2015, 2016 saw a decrease in the detection of heroin. However, this was met with an increase in fentanyl and its analogs. As a result, Black males, who accounted for 64% of the accidental intoxications, reached a record high within this cause of death. Conversely, Black females, White males, and White females all saw decreases within their populations. This seems to be in stark contrast to the demographic information generated throughout the United States, as reportedly White adults (aged 25–54 years old) are those most affected by the opioid crisis.[1,2]

As compared to 2016, 2017 continued the pattern of decreased identification of heroin with an increase in fentanyl and its analogs. Cases containing any combination of heroin, fentanyl, or fentanyl analogs accounted for nearly half (46%) of the intoxication deaths in the District of Columbia. Although Black males saw a 12% decrease in intoxication deaths during this time, they remained the most affected demographic. At 27%, Black females had their largest amount of intoxication deaths (range: 18%–27%) for the years examined. Conversely, accounting for 9% of these cases, White males had their lowest (range: 9%–20%) amount of intoxication deaths. White females, at 3% (range: 1%–5%), had the least amount of intoxication deaths among the race/gender demographics with 2% or more of the cases.

The impact that fentanyl and its analogs have had on drug deaths cannot be denied. The District of Columbia has experienced record highs among its intoxication deaths, as well as within the Black male population. These increases moved in parallel with the proliferation of laced heroin, thus further emphasizing how critical it is for a forensic toxicology laboratory to be able to provide analytical testing that is in line with the current drug market.

Reference(s):

1. https://www.cdc.gov/drugoverdose/pdf/pubs/2017-cdc-drug-surveillance-report.pdf.
2. https://www.whitehouse.gov/opioids/.

Demographics, Fentanyl, Drug Trends