H174 A Five-Year Retrospective Study of Drug Abuse Deaths in Maryland (2013–2017)

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Learning Overview: After attending this presentation, attendees will better understand the epidemiological characteristics and current trend of drug abuse deaths in America.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by highlighting the urgent need for more aggressive regulatory, educational, and treatment measures to address the tremendous increase in fatal drug abuse deaths, especially fentanyl-related deaths.

Deaths involving drug use have been rapidly rising over the years, especially with the introduction of fentanyl into the drug community. In 1992, drug deaths accounted for 249 cases in the State of Maryland, while 25 years later, drug-related deaths were 2,333 in total, approximately a ten-fold increase in 2017.[1] This accounts for nearly 50% of deaths investigated by the Office of the Chief Medical Examiner (OCME) in Maryland.

Using OCME death records for the State of Maryland, a retrospective study was performed to examine drug-related deaths over a five-year period from 2013 to 2017. The OCME is a statewide medical examiner's system, and therefore has jurisdiction over the entire state with a total population of 6,052,177.[2] This study showed that there were 7,869 drug-related deaths from 2013 to 2017, which was a 60.2% increase from 928 in 2013 to 2,333 in 2017. Death rates were analyzed as fatalities per 100,000 population. There was a consistent rise in death rate across the state of Maryland; however, Baltimore showed the most significant rise, from 43.8/100,000 in 2013 to 127.2/100,000 in 2017.

Total drug deaths steadily increased from 2013 to 2015 (31.2%), with a sharp rise between the years 2015 to 2017 (approximately 73%). The White and African American ratio was 2.4:1. The male and female ratio was 2.3:1.

The deaths were arranged by age into ten-year intervals. Data showed that the age of the decedents increased, with the highest percentage (76.7%) in the age group 61–70 years old. This may indicate a new trend in drug abuse deaths for the elderly. The age group of 31–40 years old also increased significantly by 65%.

Fig. 1 shows the trend of all the drug abuse deaths in the past five years. The data revealed that the sharp rise in drug abuse deaths was caused by fentanyl/fentanyl analogue intoxication. In 2013, there were only 60 deaths due to fentanyl intoxication, while in 2017, there were 1,610 fentanyl-related deaths, nearly a 27-times increase. Of the 1,610 fentanyl-related deaths, 820 (50.1%) were caused by mixed fentanyl with cocaine and/or heroin/methadone. The OCME also witnessed a significant increase in deaths due to multiple fentanyl analogues, including acetylfentanyl, butyrylfentanyl, despropionyl fentanyl, furanyl fentanyl, 4-fluoroisobutyryl fentanyl, arylfentanyl, tetrahydrofuran fentanyl, methoxyacetyl fentanyl, and cyclopropyl fentanyl, as well as carfentanil.

Fentanyl/fentanyl analogues and fentanyl mixed with heroin and/or cocaine abuse has become an epidemic in Maryland. This study recommends that more aggressive regulatory, educational, and treatment measures are necessary to address the tremendous increase in fatal drug abuse deaths, especially fentanyl-related deaths.

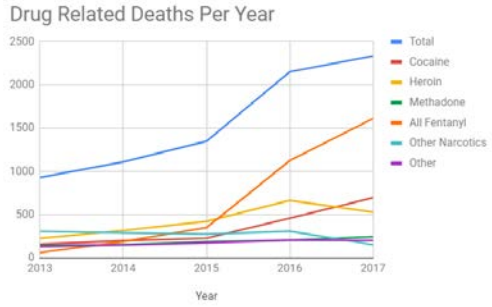

Figure 1

Reference(s):

1. Li, Ling, and John E. Smialek. Observations on Drug Abuse Deaths in the State of Maryland. *Journal of Forensic Sciences* 41, no. 1 (1996). doi:10.1520/jfs13903j.
2. Commerce, U.S. Department of. 2010. *United States Census Bureau.* Accessed June 3, 2018. https://www.census.gov/.

Drug Death, Overdose, Fentanyl