



Pathology/Biology Section - 2016

H104 Heroin-Related Deaths in Denver, Colorado

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After attending this presentation, attendees will understand the significance of the insidious nationwide rise in heroin abuse and heroin-related deaths. Attendees will also learn how this epidemic permeates the large urban community of the city and county of Denver, which has experienced a striking increase in heroin-related deaths over the last decade.

This presentation will impact the forensic science community by providing additional data for continued research of heroin-related deaths within the United States and its larger cities and by increasing the discussion among forensic professionals regarding heroin-related deaths. This increased discussion will hopefully lead to further epidemiological studies and assistance for programs or organizations to prevent such deaths.

Heroin use is reaching epidemic proportions in the United States as heroin use has greatly increased over the last decade among both men and women, most age groups, and all income levels, according to a recent report from the Centers for Disease Control. The increase in heroin use is understandably associated with a marked increase in heroin-related deaths. It is noted that between 2002 and 2013, the rate of heroin-related deaths nearly quadrupled, and in 2013 more than 8,200 people died due to heroin overdose in the United States.

Denver, CO, is the 21st largest city in the United States (population 663,862). At the Denver Office of the Medical Examiner (DOME), three board-certified forensic pathologists work to accurately determine cause and manner for unexplained, unexpected, and violent deaths in Denver. These forensic pathologists utilize investigation and autopsy, which is often supplemented by postmortem toxicologic studies and histology, in order to appropriately diagnose any contributing intoxication.

The DOME database includes a modified Systematized Nomenclature of Medicine (SNOMED) -based coding system for entry of major autopsy findings/diagnoses, as well as any contributing substances detected on postmortem toxicology within fields that are specific to the diagnoses or substances. The database can then be searched for cases with the presence of specific drugs and substances. To determine which deaths were potentially related to peri-mortem heroin use, a query of the database was performed. Codes for “heroin,” “6-monoacetylmorphine” (6-MAM), and “morphine” were searched, and the related cases were reviewed; heroin-related deaths certified at DOME from January 1, 2000 to July 1, 2015, will be discussed.

The large majority of cases positive for heroin metabolites were considered due to intoxication, either solely due to heroin present in combination with other substances detected (i.e., certified as “mixed drug intoxication” or “combined drug toxicity”). Some deaths were determined to be due to conditions which were entirely unrelated to the detection of heroin metabolites; however, these cases were rare. Of note, the query function of the database allows certain demographic data to be collected as well; therefore, comparisons of age, gender, and race will be provided, and any significant trends among these categories within the heroin-related deaths in Denver will be addressed, if present. Any associated substances and their role in the deaths will also be discussed.

Heroin, Death, Urban