H128 Fentanyl-Laced Heroin: A Maryland Public Health Problem

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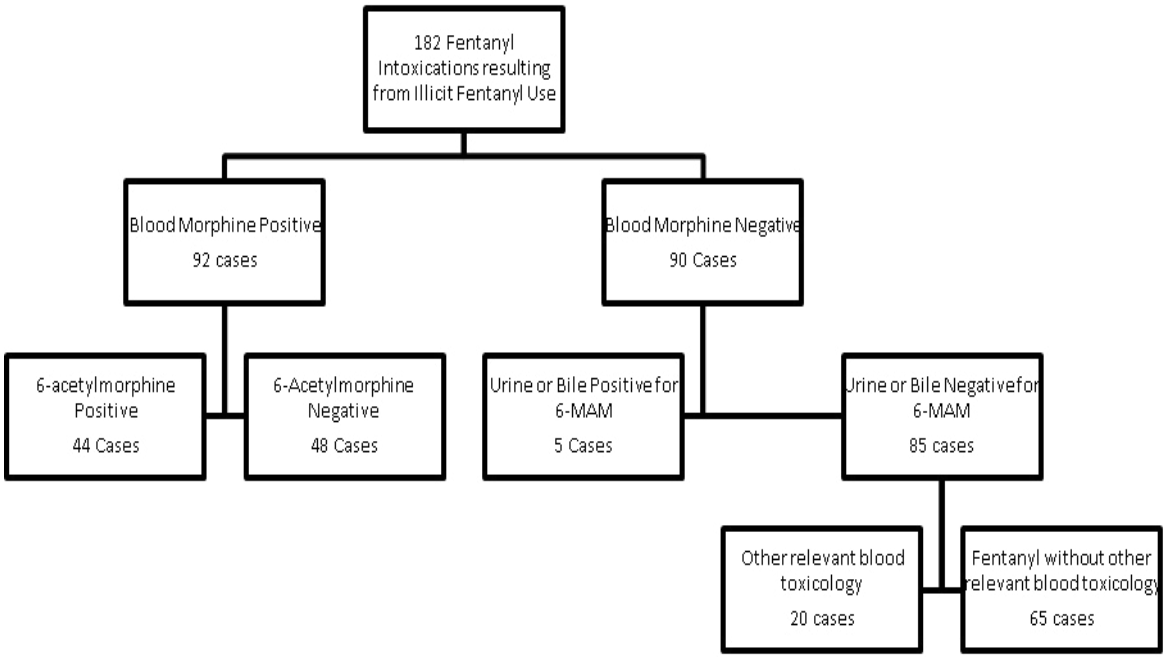
After attending this presentation, attendees will understand the importance and prevalence of synthetic drug combinations and their public health significance.

This presentation will impact the forensic science community by increasing awareness of newly emerging drug combinations and the role of the medical examiner in public health surveillance.

In January of 2014, the Office of the Chief Medical Examiner (OCME) reported that 37 Marylanders had died since September 2013 from fentanyl-laced heroin overdoses. The deaths accounted for 12% of the 318 total overdose deaths in that period. Since then, the cases have markedly increased. Nationally, there has been an increase in the number of deaths from substances variably mixed with fentanyl. In this presentation, deaths related to heroin mixed with fentanyl will be the focus. These deaths raise concerns because fentanyl is 30 to 50 times more potent than heroin and can reach the brain within minutes. Most of the users probably think that they are using just heroin and inject or snort the same amount as usual, but with deadly consequences.

A retrospective analysis of deaths investigated by the OCME from July 2012 through June 2014 (two years) was conducted. A search for cases with "fentanyl" in the Cause of Death field of the death certificate was performed. These cases were then reviewed and any case where fentanyl intoxication was not the cause of death, or those involving the abuse or use of prescription fentanyl, was excluded. This resulted in 182 cases for analysis. The cases were divided into groups based on the presence or absence of morphine and/or other drugs of toxicological significance. Ethanol was not considered for this grouping, as its presence was considered to be contributory rather than a primary intoxicant. This study identified an upward trend. There was an approximate six-fold increase in the number of deaths due to fentanyl.

The distribution of the cases is displayed below. Twenty cases had both fentanyl and quinine present with no other significant substances identified.



Overall, there did not appear to be consistency in the amount of fentanyl in the mixtures with postmortem blood fentanyl concentrations ranging from 3.0ng/mL to 380ng/mL. Most victims were from Baltimore City but other counties throughout the state were also affected. Areas along the Interstate 95 corridor, including Pennsylvania, Massachusetts, Connecticut, and Rhode Island, as well as states as far away as Washington, have also reported similar deaths. The source of the fentanyl is uncertain, however recent Drug Enforcement Agency (DEA) reports indicate that the majority of fentanyl-laced heroin is being illicitly produced in Columbia and shipped to Mexico and then smuggled into the United States. Reasoning behind the use of fentanyl may include: making money for the drug cartels and dealers; persons with addictions using it to ease the pain of withdrawal; or, as a more powerful drug to chase the ultimate high.

This deadly drug trend raises serious public health concerns. Primarily as a result of this trend, the OCME has instituted automatic monthly toxicology data dumps to the Maryland Department of Health and Mental Hygiene and to the DEA. Alerting the public can be a two-edged sword, either encouraging use or saving lives. The Health Department chose to err on the side of saving lives. Alerts have gone out to the press, hospitals, and drug-counseling agencies. If dealers realize that they are killing off their customers, maybe it will not seem as cost-effective for them anymore. The jury is still out on the implications. Emergency departments should also be aware because the urine screen could be negative yet the patients look like they are suffering from heroin overdoses. Hospital staff could then counsel the patients, suggest bystander administered naloxone, analyze the doses of the drugs, or suggest other preventive measures. This presentation will summarize the case findings over the last few years, suggest public health surveillance methods, and include a review of the current literature.

Heroin, Fentanyl, Public Health