H173 Accidental Overdose Deaths Involving Fentanyl and the Growing Trend of Counterfeit Prescription Pills in New Mexico

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Learning Overview: After attending this presentation, attendees will understand trends in fentanyl-related overdose deaths in New Mexico (NM) and describe the prevalence of counterfeit prescription pills in relation to demographics and region.

Impact on the Forensic Science Community: This study will impact the forensic science community by providing a better understanding of at-risk populations in relation to fentanyl overdose death and by providing analysis that will aid in the construction and implementation of targeted prevention strategies.

Background: Fentanyl is a potent synthetic opioid known to be illegally manufactured and used recreationally. It has become increasingly prevalent in the United States and has significantly contributed to the opioid epidemic. Various news sources have cited overdoses in which individuals are unaware of fentanyl contamination. Although counterfeit prescription pills mixed with fentanyl have been reported in other states, there has only recently been a spike in these cases in NM. NM has encountered several cases in which apparent prescription pills were found at the scene, yet toxicology reports have detected only a high concentration of fentanyl. To combat the evolving fentanyl epidemic, it is vital to characterize these cases to develop targeted interventions.

Purpose: The purpose of this study is to evaluate which counterfeit prescription pills are most commonly encountered, determine whether differences exist in concentrations of fentanyl in pill versus intravenous death, and determine if regional clusters exist.

Methods: Data for drug-related deaths, confirmed by epidemiology and forensic pathologists, were retrieved from the NM Office of the Medical Investigator database from 2014 to July 2018. All accidental deaths involving fentanyl were evaluated for the presence of pills found at the scene and a history of prescription abuse. Deaths involving probable injection of an illicit drug, such as heroin and/or methamphetamine, were used as a comparison for the concentrations against individuals taking counterfeit pills but were not the focus of this study. Cases in which fentanyl patches were observed, or the decedent was legitimately prescribed fentanyl, were excluded. In addition to statistical analysis, these cases were geocoded using Google® Fusion Tables.

Analysis was performed using Statistical Analysis Software (SAS). Categorical variables were compared using either a chi-square test or a Fisher exact test if an expected cell count was less than five. Continuous variables were compared using a Wilcoxon rank-sum test or a Kruskal-Wallis for multiple comparisons. P values of 0.05 or less were considered statistically significant.

Results: There were 158 cases of accidental overdoses involving fentanyl in NM. Of those cases, 55 involved prescription fentanyl patches (27 prescribed, 23 non-prescribed, and 5 had an unknown prescription status) and 29 involved suspected counterfeit pills. Decedents were primarily White non-Hispanic and Hispanic males ($p<0.02$, mean ages 38.1 and 38.4, respectively).

The cases involving suspected counterfeit pills were chosen based on the presence of pills at the scene or in which a substantiated history of illicit prescription pill purchase was available. Oxycodone was the most commonly encountered (14 cases), followed by alprazolam (10 cases), morphine (3 cases), and oxycontin (1 case). One case involved an unidentified pill. Fentanyl concentrations for cases of suspected pill overdose were not significantly different than those of intravenous drug use. The earliest case appeared in late 2014 and involved an oxycodone addict who died of a remarkably high fentanyl concentration. Afterward, the majority of cases appeared in 2016 and onward, with a spike in 2018 ($p<0.0001$). While this data is preliminary, there have been at least three cases in which the individual thought they were consuming oxycodone, but the pills actually contained fentanyl.

These cases were plotted by year and by drug using Google® Fusion Tables. A majority occurred near Albuquerque, NM, likely with population concentration a significant contributing factor. However, alprazolam and oxycodone mimics were noted to appear in southern NM in 2017 and are clustered near interstates. These data are being shared with the Drug Enforcement Agency and discussions are ongoing.

Fentanyl, Overdose, Counterfeit Pills