Poster

## [P27-6] P27-6: Clinical toxicology (2)

Chair: David William Kinniburgh, Canada

Wed. Sep 27, 2017 12:30 PM - 1:30 PM Annex Hall (1F)

(Wed. Sep 27, 2017 12:30 PM - 1:30 PM Annex Hall )

## [P27-6-5] A response to the rapid emergence of deadly designer opioids in the U.S.

Matthew McMullin (NMS Labs)

Keywords: Designer Drug, Fentanyls, Designer Opioids, Furanyl Fentanyl

### Background

In the U.S., designer drugs continue the cycles of regulatory scheduling and replacement with new chemicals in the illicit market; but the emergence of designer opioids has dramatically changed the landscape by significantly increased fatalities. The increased potency of the designer opioids with the lack of thoughtful dosing adjustments has opioid related deaths skyrocketing.

### Methods

Routine screening of post mortem and DUID blood samples using LC-MS/TOF allowed for retrospective data mining of previously tested samples to identify designer drug use. Using validated confirmation methods we initiated an Out-of-Scope findings process where we confirmed, and where feasible quantitated, positive screening findings. 1499 samples were in the data set of sample files that were mined.

### Results

The most frequent opioids detected were furanyl fentanyl (408), U-47700 (189), Carfentanil (146), p-fluoro isobutyl fentanyl (72), and 3-methyl fentanyl (25). Carfentanil is of particular concern as it is estimated to be approximately 10,000 times more potent than morphine and 100 times more potent than fentanyl. Carfentanil fatalities are seen at concentrations as low as 0.10 ng/mL blood and values are usually less than 1.0 ng/mL blood. Emerging non-opioid designer drugs found were etizolam (72), dibutylone (18), N-ethyl pentylone (17), butylone (12) and 3-fluorophenmetrazine (10).

### Conclusions

Designer opioids are intensifying the opioid epidemic in the U.S. with the emergence of high potency synthetic opioids. Laboratories need to use creative processes to stay current with the rapidly changing deadly drugs. This information and the process should be useful in clinical screening.