

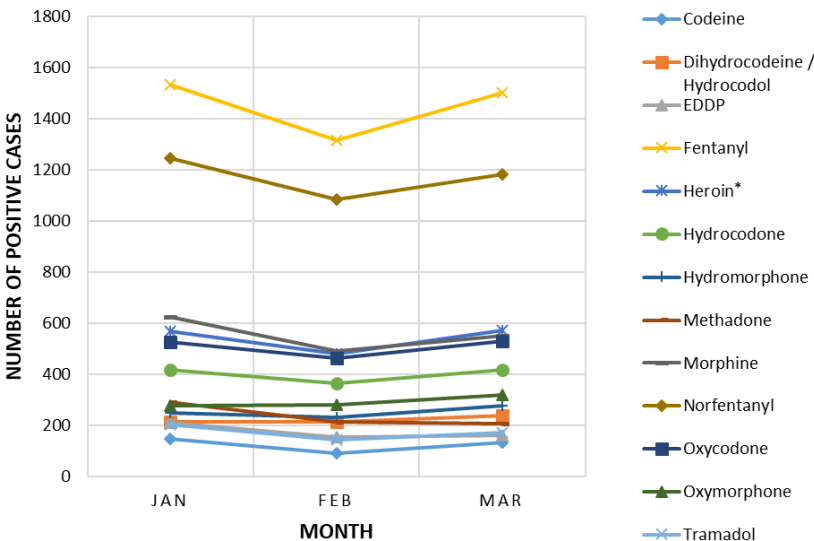
**Purpose:** The objective of this report is to provide timely information regarding the status of opioids including novel opioids and fentanyl analog prevalence, positivity, and discovery within the United States.

**Project Overview:** There are many indicators from emergency room admissions, poison center calls, drug treatment admissions, drug possession and trafficking arrests, crime laboratory statistics, and medical examiner data, that the illicit use and abuse of both prescription opioids such as morphine, fentanyl and oxycodone, and traditionally abused opioids, most notably heroin are increasing. In addition, many novel opioid agonists have been identified over the last three years that are now contributing to the opioid death statistics at an increasing but poorly documented rate. In collaboration with NMS Labs, this project sought to use de-identified raw electronic high resolution mass spectrometry data from postmortem and driving under the influence of drugs (DUID) case to develop trend reports and perform datamining and repeated interrogations of the raw data, against a continually updated database of common opioids and emerging opioid drugs. Data processed against a library containing 170 different opioids and/or fentanyl analogs.

## Opioid Positivity

Between January and March 2019, there were a total of 20,014 cases positive for one or more opioids that are part of routine testing. Fentanyl accounted for the highest positivity with 4,353 positive cases followed by heroin with 1,621 and morphine with 1,666.

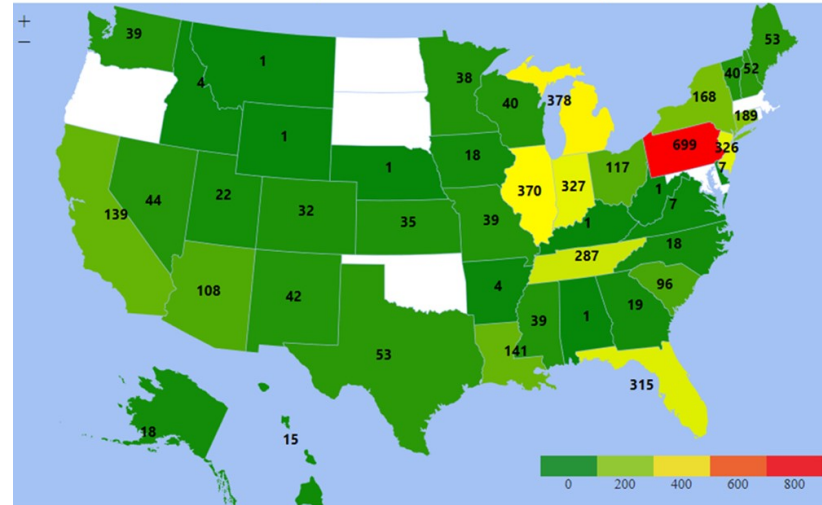
### OPIOID POSITIVITY JANUARY - MARCH 2019



\*Heroin positivity determined by detecting 6-MAM in any fluid and morphine in the blood.

## Fentanyl

Heat Map of Fentanyl Positive Cases January - March 2019



Data has not been normalized to account for testing volume. Geographical distribution may be limited by location of agencies submitting samples to NMS Labs and not necessarily representative of all jurisdictions.

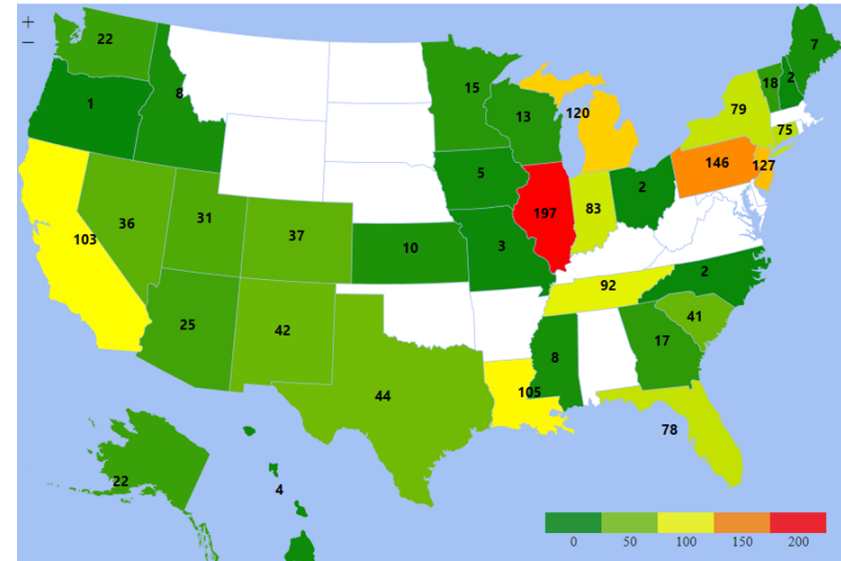
### Fentanyl Demographics (n= 4,353)

Sex	
Male	2,681
Female	1,050
Unknown	622
Age	
Average	40 (±13)
Median	43
Range	0-96

**82% of cases were death investigation; 14% were law enforcement**

## Heroin

Heat Map of Heroin Positive Cases January - March 2019



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### Heroin Demographics (n= 1,621)

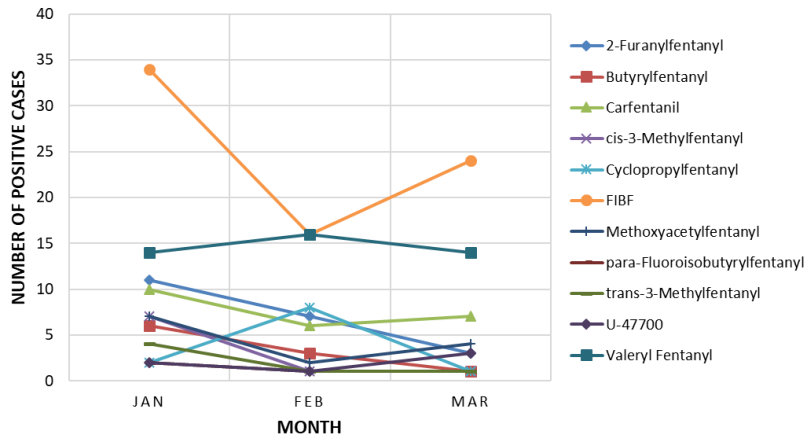
Sex	
Male	1,116
Female	343
Unknown	162
Age	
Average	40 (±12)
Median	43
Range	18-82

**93% of cases were death investigation; 4% were law enforcement**

## Novel Opioid Positivity

Between January and March 2019, there were a total of 221 cases positive for one or more novel opioid. Para-fluoroisobutyrylfentanyl (p-FIBF) accounted for the highest positivity with 74 cases followed by valeryl fentanyl with 44 cases and carfentanil with 23 cases.

**NOVEL OPIOID POSITIVITY JANUARY - MARCH 2019**

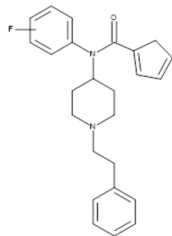


### Novel Opioid

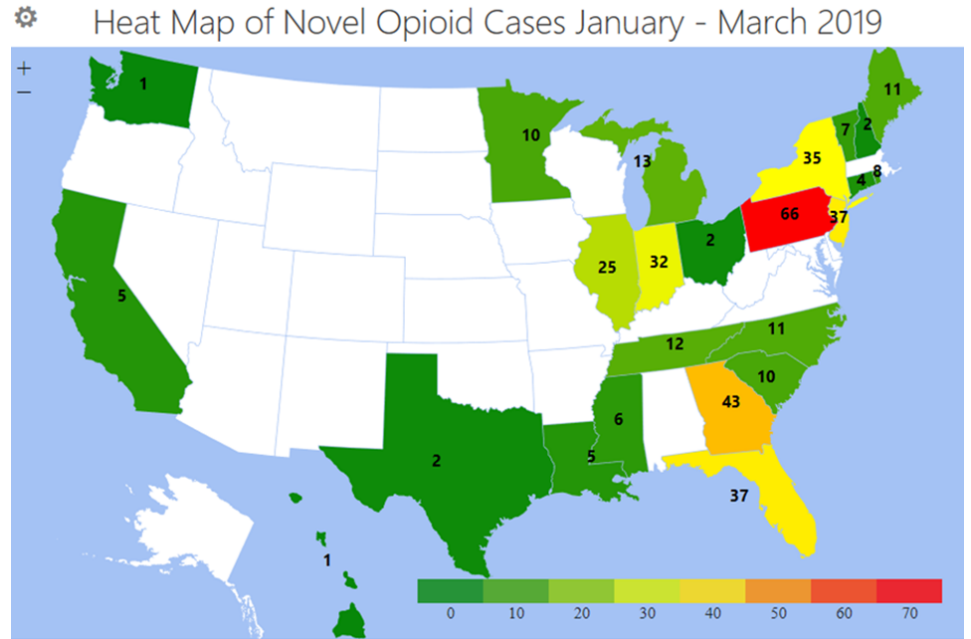
#### o/m/p-Fluorofuranylfentanyl

Identified in January 2019

Retrospectively identified two cases from December 2019



## Novel Opioids



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## Demographic Information for Top Three Novel Opioids

### p-FIBF Demographics (n=74)

Sex	
Male	19
Female	50
Unknown	5
Age	
Average	37 (±10)
Median	40
Range	17-56

### Valeryl fentanyl Demographics (n=44)

Sex	
Male	27
Female	12
Unknown	5
Age	
Average	41 (±13)
Median	40
Range	21-68

### Carfentanil Demographics (n= 23)

Sex	
Male	14
Female	7
Unknown	2
Age	
Average	36 (±11)
Median	40
Range	19-54

87% of cases were death investigation cases; 8% were law enforcement; 3% were hospital

Case Receipt Date	Demographics			Analytes Identified in Addition to o/m/p-Fluorofuranylfentanyl
	Age	Sex	State	
December 2018	N/A	F	FL	Naloxone, Methamphetamine, Alprazolam, Cocaine, Benzoylcegonine, Hydromorphone, Nortriptyline, THC, Citalopram
December 2018	62	F	PA	Naloxone, Oxazepam, Temazepam, Lorazepam, Morphine, 6-MAM, Fentanyl
January 2019	34	M	NJ	Ethanol, Naloxone, p-FIBF, Alprazolam
January 2019	27	M	NJ	Naloxone, THC
March 2019	39	M	NJ	THC, Amphetamine, Methamphetamine, p-FIBF