

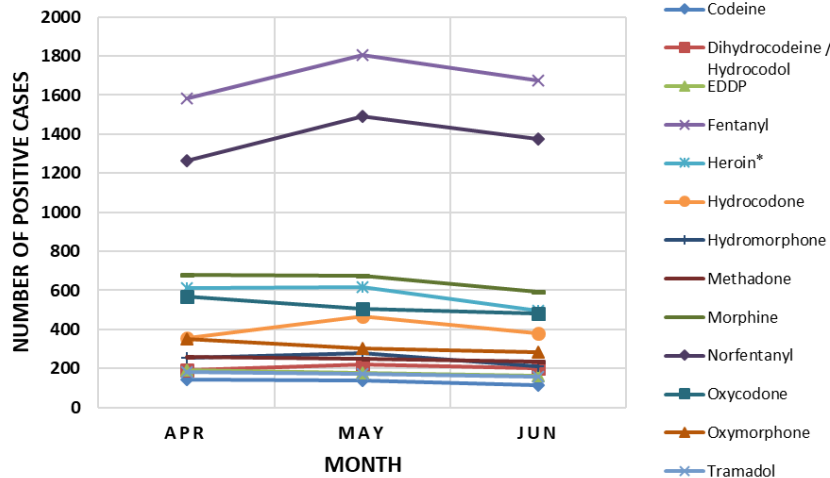
Purpose: The objective of this report is to provide timely information regarding the status of opioids including novel opioids and fentanyl analog prevalence, positivity, and discovery within the United States.

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

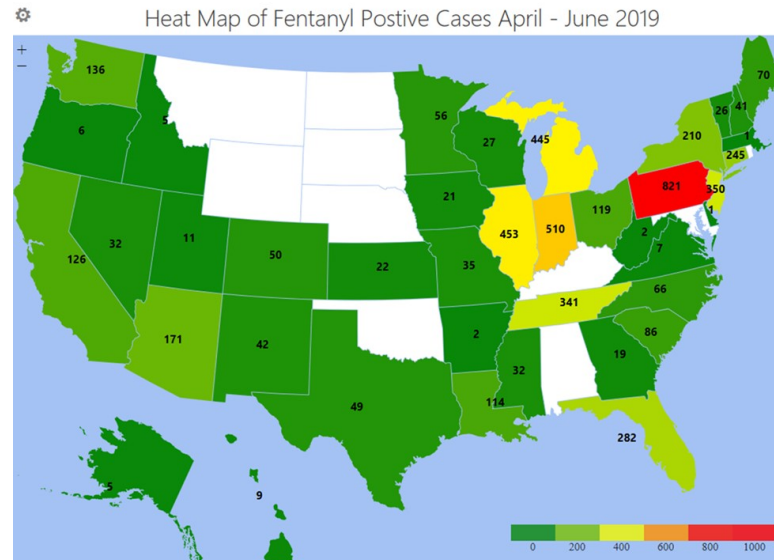
Between April and June 2019, there were a total of 20,079 cases positive for one or more routine opioid. Fentanyl accounted for the highest positivity with 5,061, up slightly from 4,353 cases in the previous quarter. There were 1,718 heroin positive cases, which was also an increase from quarter 1 (n=1,621). The number of positive morphine cases increased in quarter 2 to 1,947 from 1,666 in quarter 1.

OPIOID POSITIVITY APRIL - JUNE 2019



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

Fentanyl



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= 5,061)

Sex	
Male	2,960
Female	1,229
Unknown	872
Age	
Average	40 (±13)
Median	42
Range	0-107

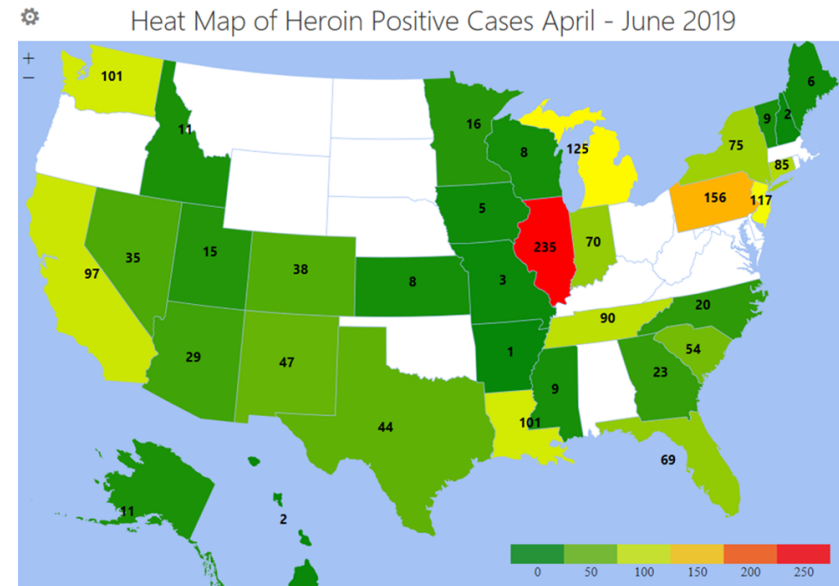
79% of cases were death investigation; 18% were law enforcement; 3% were other

Heroin Demographics (n= 1,718)

Sex	
Male	1,162
Female	393
Unknown	163
Age	
Average	40 (±12)
Median	42
Range	0-82

91% of cases were death investigation; 8% were law enforcement; 1% were other

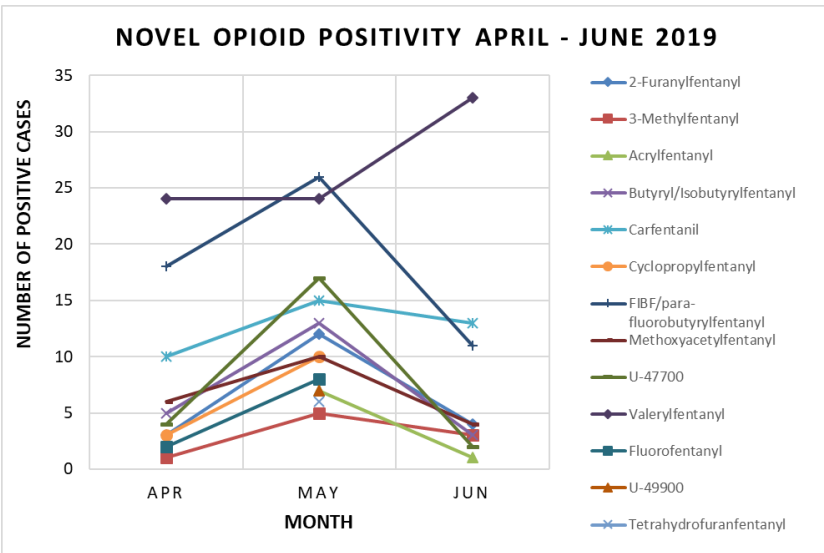
Heroin



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Novel Opioid Positivity

Between April and June 2019, there were a total of 310 cases positive for one or more novel opioid, which increased from 221 in the previous quarter. Valerylfentanyl accounted for the highest positivity with 81 cases, followed by para-fluoroisobutyrylfentanyl (p-FIBF) with 55 cases followed by carfentanil with 38 cases.

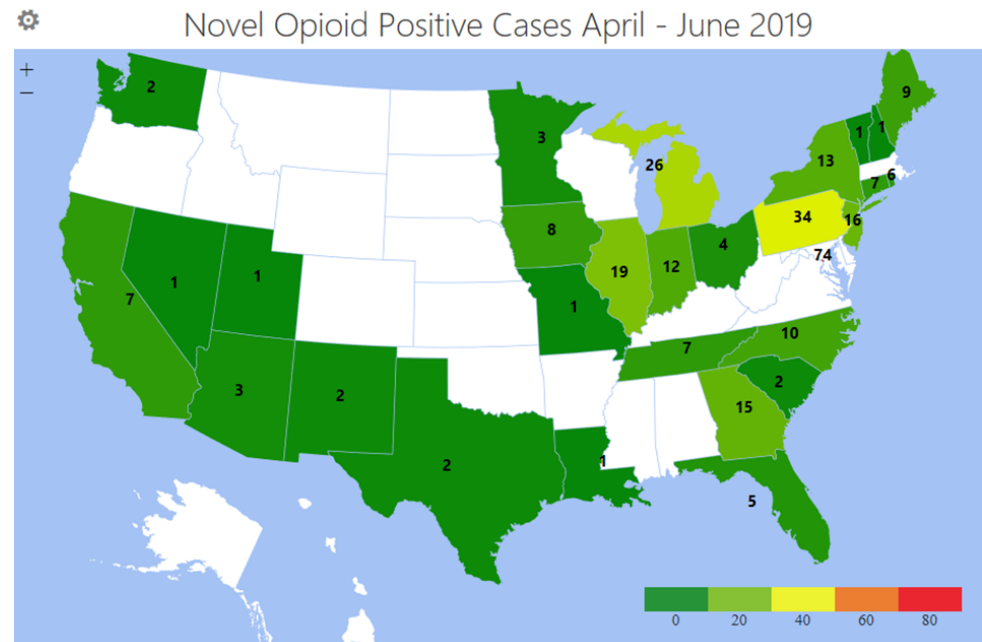


New Additions to Scope of Testing in Q2

The following novel opioids were added to our scope of testing in May 2019. No positive identifications for these compounds have been made in data acquired between February and April 2019. May and June 2019 data are still being processed.

Standards	
2-methyl AP-237	ortho-Methylacrylfentanyl
2'-Fluoro-ortho-fluorofentanyl	para-Fluoro-4-ANBP
3F-MT-45	para-Fluorocyclopropylbenzylfentanyl
Cyclopentenylfentanyl	Tetrahydrothiophenefentanyl
Furanyl UF-17	U-47109 (Desmethyl-U-47700)
N-methyl U-47931E	U-48520
ortho-Isopropylfuranylfentanyl	UF-17

Novel Opioids



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Demographic Information for Top Three Novel Opioids

Valerylfentanyl Demographics (n=81)

Sex	
Male	46
Female	22
Unknown	13
Age	
Average	36 (±15)
Median	42
Range	3-61

p-FIBF Demographics (n=55)

Sex	
Male	35
Female	15
Unknown	5
Age	
Average	34 (±13)
Median	42
Range	3-66

Carfentanil Demographics (n= 38)

Sex	
Male	22
Female	14
Unknown	2
Age	
Average	33 (±18)
Median	42
Range	3-74

81% of cases were death investigation; 8% were law enforcement; 8% were other; 3% were hospital