

COVID-19 Special Edition:

Significant Changes in Drug Use During the Pandemic

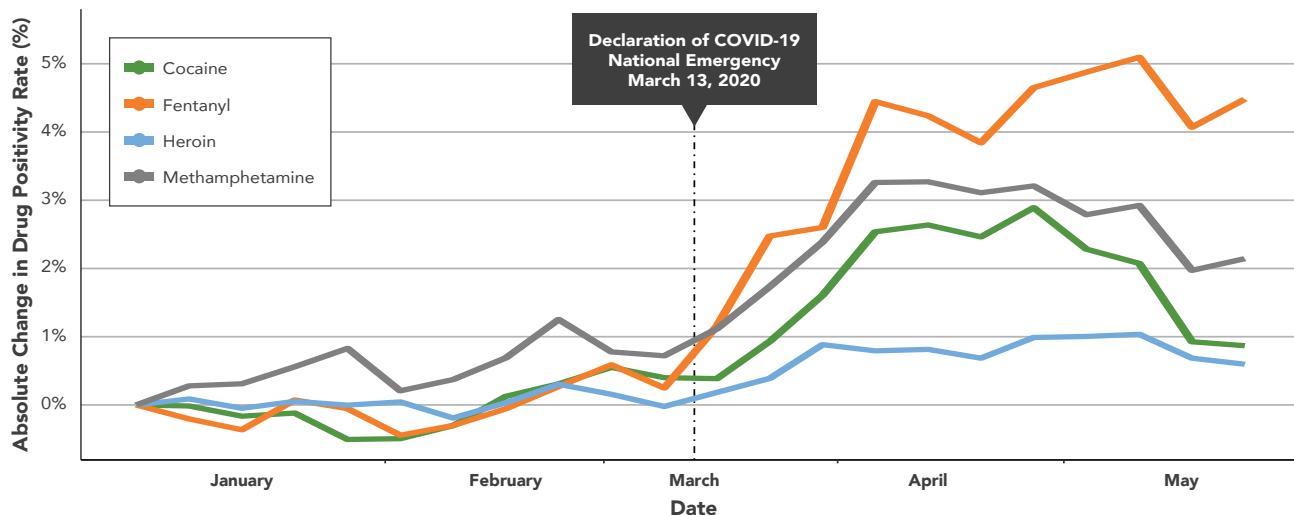
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Background

- Public health officials across the country are reporting spikes in drug overdose deaths that appear to be associated with the COVID-19 pandemic, with over 30 states reporting increases in opioid-involved overdose deaths primarily related to illicit fentanyl¹
- Public health emergencies typically affect communities and individuals in a variety of ways, including economic loss and instability, emotional or physical isolation, additional stressors from mass at-home confinement, and anxiety from fear of contracting disease.² The impact on mental health may be contributing to increased substance use in general
- Additionally, several experts have published op-eds or letters to the editors of medical journals warning of increased risks to patients with substance use disorders^{3,4}

In this analysis, we evaluate the urine drug testing (UDT) positivity rates of non-prescribed fentanyl, cocaine, heroin, and methamphetamine in the periods before and after COVID-19 was declared a national emergency.

Figure 1. Total Study Population Change in Unadjusted Positivity Rate for Cocaine, Fentanyl, Heroin and Methamphetamine



Methods

This cross-sectional analysis includes evaluation of over 500,000 definitive UDT results tested by LC-MS/MS from patient specimens across the U.S. and multiple health care specialties from samples collected between January 1, 2020 and May 31, 2020 for non-prescribed fentanyl, methamphetamine, cocaine and heroin. Specimens with reported fentanyl, cocaine or methamphetamine prescriptions were excluded from analysis. Figure 1 shows the change in unadjusted positivity rate calculated for each week of the study period, starting at 0% for the first week. Logistic regression was then used to look for statistically significant associations of drug positivity with specimens collected before (Pre-COVID-19) or after (COVID-19) the declaration of a national emergency on March 13, 2020. The regression models correct for differences in population characteristics including age, gender, and health care specialty. Tables 1 and 2 show percent change in national, regional, and state-level adjusted positivity rates between the pre-COVID-19 and COVID-19 periods.

Findings

- Nationally, unadjusted UDT positivity has increased during COVID-19 for all four drugs evaluated (Figure 1)
- The adjusted positivity rate changes nationally were: 31.96% for non-prescribed fentanyl, 19.96% for methamphetamine, 10.06% for cocaine, and 12.53% for heroin. All except heroin were statistically significant (Table 1)

Findings (continued)

- All U.S. census divisions had a significant increase in adjusted UDT positivity rate for at least one drug, except the South Atlantic and West North Central. Notably, the East North Central and the East South Central had significant positivity rate increases for all four drugs. The West North Central saw significant decreases in positivity rates for all four drugs (Table 1)
- 19 states had statistically significant increases or decreases in adjusted positivity rates for at least one of the drugs evaluated; some, such as Ohio and Kentucky, showed increases in more than one drug; in contrast, Minnesota showed decreases in all four drugs (Table 2)

Table 1. Percent Change (Increase or Decrease) in Adjusted Drug Positivity Rate for U.S. Census Divisions[†]

U.S. Census Division	Fentanyl (%)	Methamphetamine (%)	Cocaine (%)	Heroin (%)
East North Central	32.47*	17.60*	26.27*	41.55*
East South Central	46.36*	33.21*	37.64*	46.81*
Mid Atlantic	135.90*	30.79	22.12	39.12
Mountain	35.65*	16.75*	7.38	9.10
New England	96.44*	79.24*	46.72*	63.07
Pacific	64.19*	12.70*	20.27	46.51*
South Atlantic	4.65	-5.93	-1.89	-25.21
West North Central	-53.07*	-15.75*	-56.68*	-59.73*
West South Central	19.40	34.31*	34.53	26.72
Total U.S.	31.96*	19.96*	10.06*	12.53

* p<0.05

† Percent Change in Logistic Regression Model Adjusted Positivity Rates Between Pre-COVID-19 (Jan. 1, 2020 - March 12, 2020) and COVID-19 (March 13, 2020 - May 31, 2020) Time Periods

Table 2. Percent Change (Increase or Decrease) in Adjusted Positivity Rate for States with Statistically Different Rates* between the Pre-COVID-19 and COVID-19 Time Periods[†]

Fentanyl (%)	Methamphetamine (%)	Cocaine (%)	Heroin (%)
Iowa (561.72)	Nevada (194.61)	Texas (86.81)	California (48.08)
Mississippi (270.35)	Mississippi (82.58)	New York (60.80)	Washington (47.59)
New York (230.58)	Utah (73.19)	Kentucky (26.85)	Oregon (44.41)
North Carolina (135.50)	Montana (33.91)	Ohio (25.70)	Ohio (35.12)
Maine (134.43)	Alaska (29.57)	Virginia (-38.49)	Minnesota (-74.48)
Alaska (131.20)	Kentucky (21.42)	Minnesota (-65.06)	
Washington (69.41)	Ohio (19.27)		
Arizona (58.51)	Iowa (5.79)		
Kentucky (32.43)	Minnesota (-25.89)		
Ohio (29.10)			
Wisconsin (21.38)			
Minnesota (-73.96)			

* p<0.05; margins of error may vary based on state

† Percent Change in Logistic Regression Model Adjusted Positivity Rates Between Pre-COVID-19 (Jan. 1, 2020 - March 12, 2020) and COVID-19 (March 13, 2020 - May 31, 2020) Time Periods

Conclusions

There are several factors potentially impacting drug use in the pandemic that bear watching closely. In March and April of 2020, there were several reports of changes in illicit drug prices and production by drug trafficking organizations.⁵ Depending on where border or economic shutdowns are occurring worldwide, these changes could shift drug utilization to that which is cheapest and easiest to obtain. Additionally, a recent poll found that nearly half of Americans believe that COVID-19 is having a harmful impact on their mental health.⁶ Our data demonstrates that illicit drug use is on the rise in those seeking healthcare in certain regions of the country. Combined with the impact COVID-19 has on patients with mental health and substance use disorders, additional resources may be needed to address resulting public health consequences, including the risk of drug overdose. We recognize that drug use may evolve as the pandemic unfolds. We will continue to use our clinical and analytic capabilities as an aid in the identification of emerging trends.

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