



Third Quarter, 2019

The Prevalence of Methamphetamine Use is Increasing Among Individuals Entering Medication-Assisted Treatment Programs for Opioid Use Disorders

Key Findings

- Among individuals enrolling in medication-assisted opioid treatment programs, past month use of methamphetamine increased from 7.8% of respondents in 2012 to 21.3% of respondents in 2018
- The odds of a respondent endorsing past month methamphetamine use in the Midwest, South, and West significantly increased between 2012 and 2018
- The Census Region with the highest prevalence of past month methamphetamine use in 2018 was the West region (46.0%) followed by the South (16.8%), the Midwest (12.4%), and the Northeast (5.4%)
- In 2018, past month use of methamphetamine was highly associated with past month injection use of an opioid (prescription or illicit), past month heroin use, and past month non-medical use of a prescription stimulant

Introduction

In 2017, drug overdoses were responsible for more than 70,000 deaths in the United States and have nearly doubled since 2010 [1]. Though recent increases are driven primarily by non-pharmaceutical opioids such as heroin and illicit fentanyl, deaths involving methamphetamine are also increasing. In 2016 there were three times as many deaths involving methamphetamine than in 2011 [2]. Findings by Ellis and colleagues [3] suggest that methamphetamine use is increasing among individuals who abuse opioids. The prevalence of past month methamphetamine use among individuals entering primarily private treatment facilities for opioid use disorder has increased since 2012. This increase was observed nationally and across different geographic regions and demographic groups [3]. This analysis examines changes in the prevalence of methamphetamine use among individuals entering medication-assisted treatment programs for opioid use disorders across the four Census regions. Individual characteristics associated with greater risk of methamphetamine use in 2018 are also assessed.

Methods

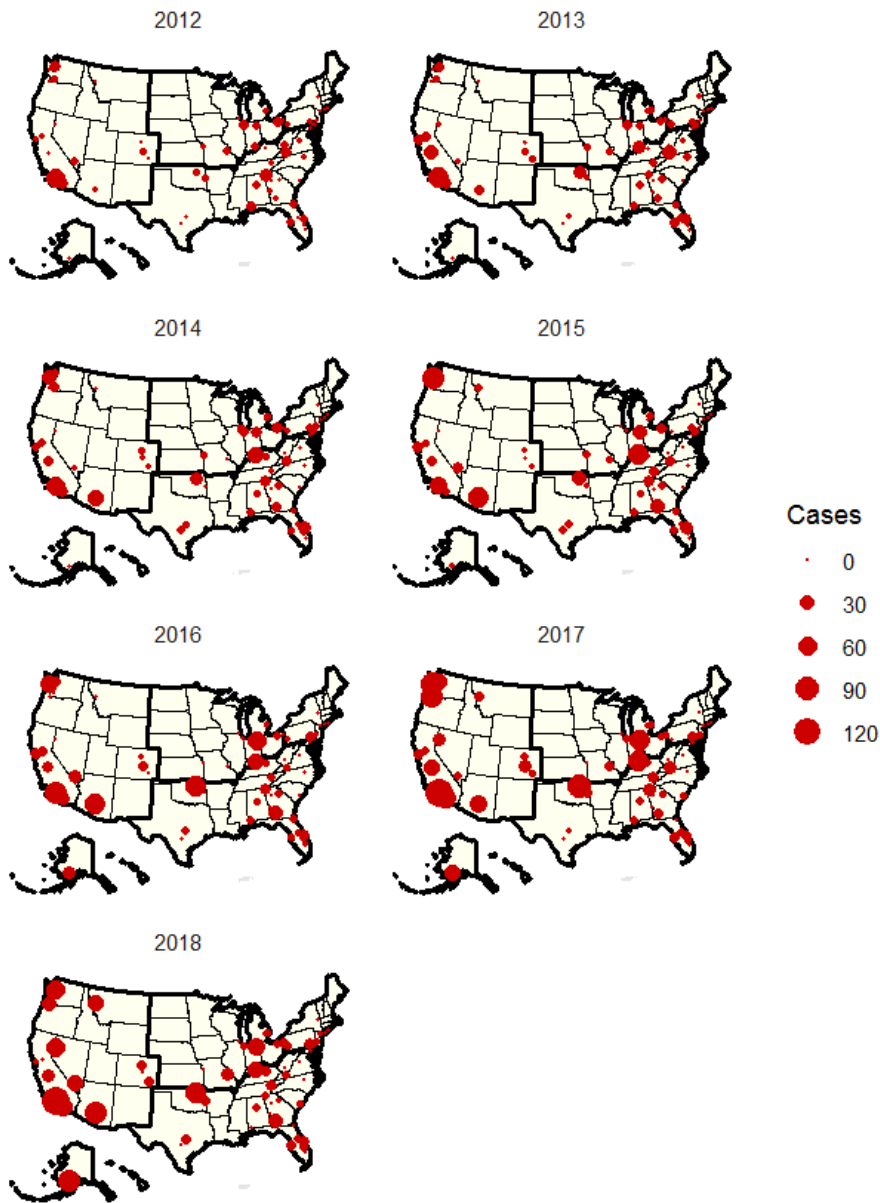
Data from the RADARS® System Opioid Treatment Program were used to assess the change in the prevalence of past month methamphetamine use among individuals entering medication-assisted treatment programs for opioid use disorders. Data from 39,312 valid surveys given to individuals entering treatment facilities from January 2012 through December 2018 were assessed. Cases of methamphetamine use were defined as any respondent who endorsed past month use of "crystal meth." Surveys were considered invalid if the respondent did not provide a valid ZIP code for their residence, reported a ZIP code of a US territory as their residence, provided an invalid age (age less than 18 or missing age), endorsed both or neither gender item, or if item endorsement on the questionnaire was indicative of careless response [4]. Analyses were restricted to sites that submitted surveys in four or more quarters during the study period.

Center specific random-intercept logistic regression models were conducted. This was done to account for similarities in the patients enrolling at each site. We examined trends from January 2012 through December 2018 to determine if methamphetamine use was increasing and if it was differential across Census region. Center-specific prevalence of methamphetamine use was regressed on time (year divided by total years in the analysis, six), therefore odds ratios represent the change from 2012 to 2018. An additional analysis was run examining demographic and other individual-level characteristics associated with methamphetamine use in 2018.

Results

The number of respondents reporting past month use of methamphetamine increased from 402 (7.8%) in 2012 to 1,166 (21.3%) in 2018. Areas with the greatest increases in the number of cases appeared to be in the West (California, Montana, Nevada), the Midwest (Indiana) and South (Oklahoma) (Figure 1).

Figure 1. Number of respondents reporting past month methamphetamine use by treatment facility location from 2012 through 2018



Between 2012 and 2018, centers in all regions except the Northeast showed statistically significant increases in prevalence of methamphetamine use. The largest increases were observed among centers in the West (OR=3.20, 2.71 to 3.78, p<0.001), followed by the South (OR=2.28, 95% CI: 1.90 to 2.73, p<0.001) and Midwest (OR=2.26, 95% CI: 1.78 to 2.86, p<0.001) (Table 1).

Table 1. Change in odds of past-month methamphetamine use among individuals entering medication-assisted treatment programs from 2012 through 2018

Census Region	Number of Centers	Number of Surveys	Change in odds (95% CI)	p-value
Northeast	19	10,787	0.92(0.65,1.30)	0.621
Midwest	12	8,866	2.26(1.78,2.86)	<0.001
South	31	12,406	2.28(1.90,2.73)	<0.001
West	19	7,253	3.20(2.71,3.78)	<0.001

Demographic variables significantly associated with past month methamphetamine use in 2018 included female gender (OR=1.33, 95% CI: 1.14-1.55, p<0.001) and white ethnicity (OR=1.40, 95% CI: 1.15-1.71, p=0.001) (Table 2). Strong associations were observed with past month use of heroin (OR=2.58, 95% CI: 2.00-3.33), past month injection use of an opioid (prescription or illicit) (OR=2.26, 95% CI: 1.89-2.70), and past month non-medical use of a prescription stimulant (OR=2.46, 95% CI: 1.83-3.31). The only variable assessed that was not statistically significantly associated with methamphetamine use was past month use of a prescription opioid (OR=1.13, 95% CI: 0.95-1.36, p=0.165).

Table 2. Respondent characteristics associated with past month methamphetamine use in 2018

Variable	Value	N	N (%) endorsing crystal meth	Adjusted OR	p-value
Gender	Male	3,056	606 (19.8%)	Reference	---
	Female	2,423	560 (23.1%)	1.33(1.14,1.55)	<0.001
Ethnicity	Non-white	1,512	248 (16.4%)	Reference	---
	White	3,967	918 (23.1%)	1.40(1.15,1.71)	0.001
Age category	18-25 years	590	145 (24.6%)	Reference	---
	26-35 years	2,235	539 (24.1%)	1.27(1.00,1.63)	0.053
	36-45 years	1,357	298 (22.0%)	1.37(1.05,1.78)	0.021
	45+ years	1,297	184 (14.2%)	0.90(0.67,1.19)	0.450
Past month non-medical use of a prescription stimulant	No	5,154	1044 (20.3%)	Reference	---
	Yes	325	122 (37.5%)	2.46(1.83,3.31)	<0.001
Past month use of cocaine	No	4,212	928 (22.0%)	Reference	---
	Yes	1,267	238 (18.8%)	1.62(1.31,2.00)	<0.001
Past month abuse of a prescription opioid	No	2,117	498 (23.5%)	Reference	---
	Yes	3,362	668 (19.9%)	1.13(0.95,1.36)	0.165

Variable	Value	N	N (%) endorsing crystal meth	Adjusted OR	p-value
Past month use of heroin	No	1,250	140 (11.2%)	Reference	---
	Yes	4,229	1026 (24.3%)	2.58(2.00,3.33)	<0.001
Past month non-medical use of an anti-anxiety medication	No	4,445	870 (19.6%)	Reference	---
	Yes	1,034	296 (28.6%)	1.51(1.25,1.84)	<0.001
Past month injection use of an opioid	No	2,675	331 (12.4%)	Reference	---
	Yes	2,804	835 (29.8%)	2.26(1.89,2.70)	<0.001
Census Region	Northeast	1,120	60 (5.4%)	Reference	---
	Midwest	1,324	162 (12.2%)	2.36(1.00,5.59)	0.049
	South	1,547	261 (16.9%)	5.12(2.45,10.69)	<0.001
	West	1,488	683 (45.9%)		<0.001

Conclusions

Methamphetamine use is increasing among patients seeking medication-assisted treatment for opioid use disorders in all Census regions except in the Northeast. Within this population, use of methamphetamine is associated with other high risk behaviors including past month injection use of an opioid, use of cocaine, and past month use of heroin. Use is also associated with non-medical use of other pharmaceuticals such as prescription stimulants and anti-anxiety medications. This study is limited in that the Opioid Treatment Program is not a representative sample of medication-assisted treatment facilities in the United States. However, these analyses use data collected nearly 40,000 surveys over seven years from sites in each Census region. In addition, statistical analyses reduce potential biases that could be introduced by center-specific patterns in drug use. Given substantial increases in drug overdose deaths involving multiple drugs of abuse, targeted interventions aimed at reducing polysubstance abuse are needed.

Suggested Citation

Severtson SG, Kreider SED, Olsen H, Ellis MS, Cicero TJ, Dart RC (2019). Changes in the prevalence of methamphetamine use among individuals entering medication-assisted treatment programs for opioid use disorders. RADARS® System Technical Report, 2019-Q3.

References

1. Hedegaard, H., A.M. Minino, and M. Warner, Drug Overdose Deaths in the United States, 1999-2017. NCHS Data Brief, 2018(329): p. 1-8.
2. Hedegaard H, B.B., Trinidad JP, Spencer M, Warner M., Drugs most frequently involved in drug overdose deaths:, in National Vital Statistics Reports. 2018.
3. Ellis, M.S., Z.A. Kasper, and T.J. Cicero, Twin epidemics: The surging rise of methamphetamine use in chronic opioid users. Drug Alcohol Depend, 2018. 193: p. 14-20.
4. Severtson SG, Schwarz J, Dasgupta N, Dart RC (2018). Rates of Abuse for Opioids with Low Dispensing are Overestimated due to Careless Response Patterns on Treatment Center Program Surveys. RADARS® System Technical Report, 2018-Q2.

