

The Resurgence Of Methamphetamines: Methamphetamine Abuse Associated With The Opioid Crisis



**Considerations, analyses,
and recommendations for law
enforcement agencies and
public health officials.**

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I. Abstract

A resurgence in methamphetamine abuse has raised significant concerns in medical and legal communities throughout the United States. Under the direction of the Bureau of Justice Assistance, the Global Justice Information Sharing Initiative (Global) formed a national task team of subject experts to review these concerns. The findings of the task team confirmed a recent, significant rise in mortality, morbidity, and violence directly attributed to methamphetamine abuse. These findings also support concerns that the detrimental impact may be even greater than that of the original methamphetamine epidemic in the early 2000s.

The causes of the current increase of methamphetamine abuse in the United States, as with all episodes of illicit drug use, are complex. The working group contends that examining the long-term shift in production and distribution practices combined with the follow-on effects of the concurrent opioid crisis will provide the most pertinent information to law enforcement agencies, first responders, and public health officials. In choosing the two major factors, the working group acknowledges that these are not the only factors that merit consideration for further study in relation to the resurgence of methamphetamine abuse.

The primary factor is a long-term shift in production and distribution practices of methamphetamine. In previous decades (the 1980s, 1990s, and early 2000s), methamphetamine production occurred primarily in relatively small domestic laboratories (e.g., “one-pot” or “shake-and-bake” labs.). During the mid-2000s, a production shift began that affected methamphetamine availability, price, purity, and potency. Enhanced eradication efforts by state, local, and federal law enforcement agencies, combined with improved national and international regulations targeting precursor chemical agents, pushed methamphetamine production to so-called “super labs” in northern Mexico operated by Mexican transnational criminal organizations (TCOs). The comparatively lax legal and regulatory situation that prevails in northern Mexico provided an ideal environment for the establishment of super labs. Over time, these laboratories perfected various production techniques, which led to the increased yield of highly potent and relatively inexpensive methamphetamines. These factors heighten the potential for increased substance abuse. The ability of Mexican-based labs to transform the drug into an innocuous-appearing liquid, the relative ease of transport across U.S. borders, and the minimal effort needed to convert the liquid into its original state created an optimal scenario for methamphetamine distributors.

The second factor is associated with the concurrent opioid epidemic. Producers of methamphetamine have been known to form collaboratives with opioid manufacturers to obtain the drug outright or to obtain the precursors for opioid synthesis. They produce a methamphetamine/opioid mixture also known as a “speedball.” Polysubstance abuse is a common finding in toxicology reports. Other consequences relative to the opioid epidemic include decreased access to overburdened treatment centers, lack of medication-assisted treatment (MAT) specifically for methamphetamine addiction, and a perception by abusers that methamphetamine may be a safer alternative than potential exposure to fentanyl, a powerful synthetic opioid.

In addition to providing a national level review of the reemerging meth crisis, this paper includes a section dedicated to exploring the surging methamphetamine crisis in rural parts of the country. This section seeks to highlight the issues faced by communities that have been disparately impacted by both the opioid epidemic and methamphetamines. While many law enforcement and public health officials cope with a lack of resources, rural communities—especially those pummeled by the economic downturn that began in late 2008 and those that have not benefitted from the nationwide economic recovery—have been forced to deal with rising crime rates and an influx of illicit drugs with fewer resources. Compounding the situation is the fact that some rural communities cannot support the increased cost of investigating, apprehending, adjudicating, incarcerating, and, in many cases, treating individuals who have developed severe narcotic-related dependencies. Despite these issues, rural communities have developed some innovative approaches, repurposed existing tools and strategies, and routinely share information with their regional local counterparts in an effort to stem the tide of the methamphetamine use before it spirals out of control.

This white paper is based on findings from the Global task team that assessed the prevalence and impact of methamphetamine abuse in the United States. These findings led to recommendations intended to assist legal and legislative entities in mitigating the risk represented by the concurrent substance abuse epidemics while also furthering Global's mission of information sharing at all levels of law enforcement.

II. Statement of the Problem

A. Increased Mortality

Methamphetamine abuse reached its peak in the early 2000s. However, health care and legal professionals are currently reporting methamphetamine abuse that equals or exceeds its former prevalence in many areas of the country. Psychostimulant poisoning deaths have increased 387 percent since 2005 and 32 percent between 2015 and 2016. Between 2010 and 2015, 85 to 90 percent of psychostimulant poisoning deaths cited methamphetamine on the death certificates.¹ (Figure 1)

¹ Drug Enforcement Administration. 2018 National Drug Threat Assessment. October 2018. Page 63. Available at <https://www.dea.gov/sites/default/files/2018-11/DIR-032-8%202018%20NDTA%20final%20low%20resolution.pdf>.

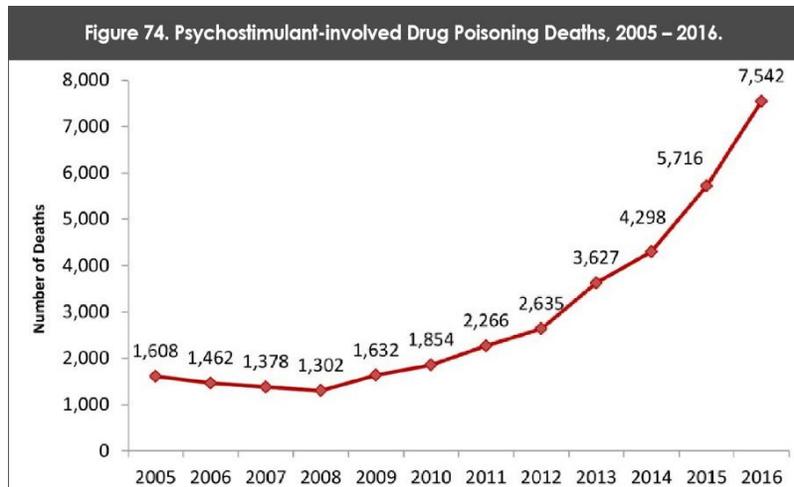


Figure 1. National Center for Health Statistics/Centers for Disease Control and Prevention

The graph below (Figure 2) further confirms the rise in psychostimulant deaths.² This specific study identified psychostimulants (e.g., caffeine, phenylethylamines [MDMA, amphetamine, and methamphetamine] and cathinones) as well as concomitant use of drugs such as opioids. Ingestion of multiple substances, polysubstance abuse, is common as verified by sources such as the Drug Abuse Warning Network (DAWN), the Drug Enforcement Administration (DEA), and various medical examiners.³

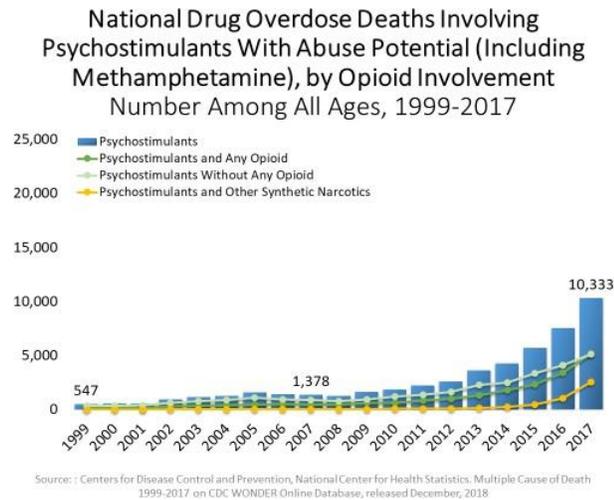


Figure 2. National Drug Overdose Deaths Involving Psychostimulants, 1999–2017

Other concerns include evidence that methamphetamine abuse is again becoming more widespread. As seen in the illustration below, law enforcement sources report that

² National Institute on Drug Abuse. *Overdose Deaths Rising*. Revised January 2019. Available at <https://www.drugabuse.gov/related-topics/trends-statistics/overdose-death-rates>.

³ Indiana University Fairbanks School of Public Health. *Polypharmacy Among Prescription Drug Users*. August 2017. Available at <https://fsph.iupui.edu/doc/research-centers/polypharmacy-among-prescription-drug-users.pdf>; Franklin, R. “Fentanyl Deaths From ‘Mexican Oxy’ Pills Hit Arizona Hard.” NBC News. February 14, 2019. Available at <https://www.nbcnews.com/news/us-news/fentanyl-deaths-mexican-oxy-pills-hit-arizona-hard-n971536>; Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. (June 19, 2014). *The DAWN Report: Emergency Department Visits Involving Methamphetamine: 2007 to 2011*. Rockville, MD.

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methamphetamine-related deaths are rising in areas such as the Northeastern states, where they have not been prevalent in the past. (Figure 3)

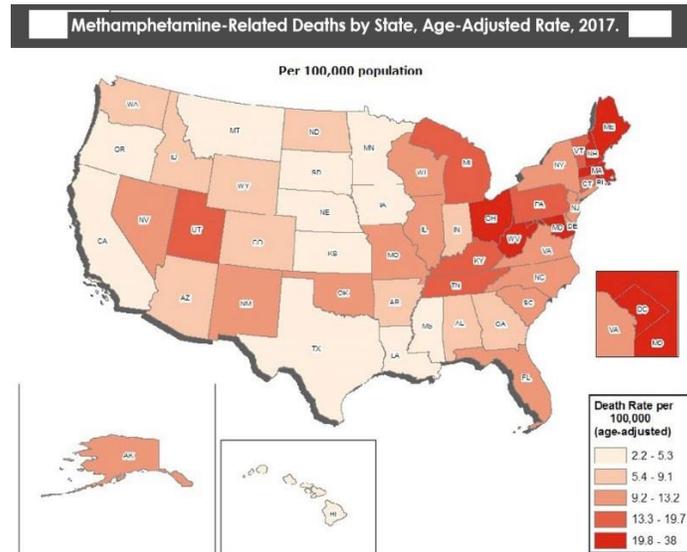


Figure 3. National Center for Health Statistics/Centers for Disease Control and Prevention

The resurgence of methamphetamine may also suggest a trending away from opioid abuse. Data from Texas, for example, indicates that methamphetamine deaths are now exceeding those from heroin.⁴ (Figure 4)

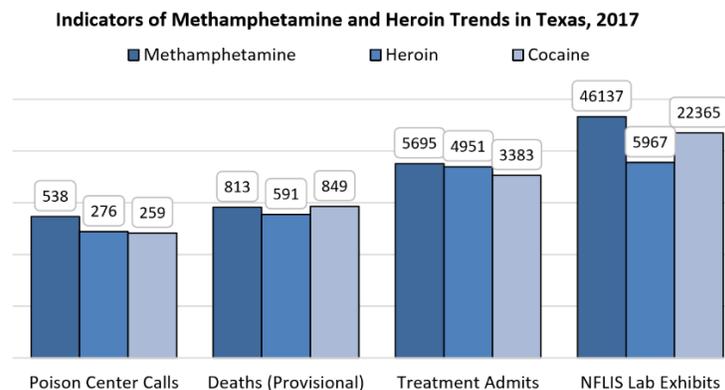


Figure 4. Source: HHSC, DSHS, NFLIS, NDEWS Texas SCS Drug Use Patterns and Trends, 2018

Increased Morbidity (Disease)

Desoxyn (methamphetamine hydrochloride) may be prescribed for treatment of certain conditions (e.g., narcolepsy, attention deficit hyperactivity disorder, weight loss).⁵ However, the majority of methamphetamine use is illicit and has led to significant increases in morbidity. Amphetamine, including derivatives such as methamphetamine, is now cited

⁴ Maxwell, J. *Drug Use Patterns and Trends*, 2018. National Drug Early Warning System (NDEWS). State of Texas Sentinel Community Site (SCS). November 2018; Ingold J., "More Coloradans Died Last Year From Drug Overdoses Than Any Year in the State's History. That Shows How The Opioid Epidemic is Changing," *The Denver Post*, April 4, 2018.

⁵ RxList. *Desoxyn*. Last revised: 04/25/2019. Available at <https://www.rxlist.com/desoxyn-drug.htm#description>.

as the fourth most-common drug for which treatment is sought.⁶ Substance abuse treatment facilities report an increase in patient census as dependency transitions into addiction.⁷

Emergency departments are also reporting an increase in methamphetamine-related visits. According to DAWN, the number of emergency department visits rose from 67,954 in 2007 to 102,961 in 2011.⁸ In a 2016 study conducted by the University of California, Davis Medical Center, the most common categories of disorders noted in patients abusing methamphetamine were acute cardiovascular, psychiatric (e.g., agitation, hallucinations, suicidal behavior), toxicologic, neurologic, and traumatic.⁹ (Figure 5)

Presenting complaints of MAP-positive patients, 2016 versus 1996.

	2016 n (%)	1996 n (%)	% change	95% CI	P
Blunt trauma	78 (12.2)	152 (33.0)	-20.8	15.7-25.9	<0.0001
Altered LOC	185 (29.0)	108 (23.4)	5.6	0.2-10.9	0.04
Abdomen pain	54 (8.5)	58 (12.6)	-4.1	0.3-8.0	0.03
Suicide attempt/ideation	67 (10.5)	38 (8.2)	2.3	1.4-5.8	0.2
Chest pain	102 (16.0)	36 (7.8)	8.2	4.2-12.0	0.0001
Skin infection	45 (7.0)	28 (6.1)	0.9	-2.3-3.9	0.55
Penetrating trauma	30 (4.7)	20 (4.4)	0.3	-2.4-2.9	0.81
Miscarriage	7 (1.1)	8 (1.7)	-0.6	-0.9-2.4	0.4
Ingestion	47 (7.4)	8 (1.7)	5.7	3.2-8.2	<0.0001
Headache	23 (3.6)	5 (1.1)	2.5	0.6-4.4	0.009

Figure 5. Journal of Addiction, Volume 2017, Article ID 4050932

Specific disease states and complications associated with methamphetamine abuse include the following:

1. Acute cardiovascular events. An acute methamphetamine overdose cannot be reversed in the same manner as an acute opioid overdose, since no specific antagonists exist. Management of methamphetamine toxicity is complex because both physiologic and psychologic manifestations must be managed simultaneously.¹⁰ The lack of knowledge by medical personnel as to the presence

⁶ National Admissions to Substance Abuse Treatment Services. Treatment Episode Data Set (TEDS). 2004–2014. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2016.

⁷ Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. *Treatment Episode Data Set (TEDS): 2004–2014*. National Admissions to Substance Abuse Treatment Services. BHSIS Series S-84, HHS Publication No. (SMA) 16-4986. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2016.

⁸ Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. (June 19, 2014). *The DAWN Report: Emergency Department Visits Involving Methamphetamine: 2007 to 2011*. Rockville, MD; Richards, J., Hamidi, S., Grant, C., et al., “Methamphetamine Use and Emergency Department Utilization: 20 Years Later,” *Journal of Addiction*, vol. 2017, Article ID 4050932, 8 pages, 2017. <https://doi.org/10.1155/2017/4050932>; Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. (June 19, 2014). *The DAWN Report: Emergency Department Visits Involving Methamphetamine: 2007 to 2011*. Rockville, MD.

⁹ Richards, J., Hamidi, S., Grant, C., et al., “Methamphetamine Use and Emergency Department Utilization: 20 Years Later,” *Journal of Addiction*, vol. 2017, Article ID 4050932, 8 pages, 2017. <https://doi.org/10.1155/2017/4050932>.

¹⁰ Richards, J. R., & Laurin, E. G., Methamphetamine Toxicity. [Updated March 2, 2019]. In: StatPearls [Internet].

of methamphetamine further complicates treatment. Abusers may deny abuse or present in altered states of consciousness. Hospital laboratories may not have the capability to confirm the presence of methamphetamine.

2. Skin infections. Intravenous use of methamphetamine and “skin picking” may lead to necrotizing fasciitis, which is associated with skin infections, abscesses, and cellulitis. Methicillin-resistant staphylococcus aureus (MRSA) is a prominent bacterial pathogen in meth abusers. MRSA represents a threat to those in contact with them as well.¹¹
3. Extreme tooth decay leading to infection and permanent tooth loss. Other negative conditions include trismus, bruxism, myofascial, and temporomandibular joint pain.¹²
4. Pulmonary infections due to depressed immune response and inhalation.¹³
5. Trauma due to altered levels of consciousness and impaired judgment.¹⁴
6. Acquisition of infectious diseases such as the Hepatitis C virus (HCV) and HIV transmission.
7. Sexually transmitted infections (STIs). Heterosexual syphilis and abuse of drugs, particularly methamphetamine, are considered by the CDC as being “interrelated epidemics.”¹⁵ (Figures 6 and 7)

Treasure Island (FL): StatPearls Publishing; January 2019. Available at <https://www.ncbi.nlm.nih.gov/books/NBK430895/>.

¹¹ Salamanca, S. A., Sorrentino, E. E., Nosanchuk, J. D., & Martinez, L. R., “Impact of Methamphetamine on Infection and Immunity.” *Front Neurosci.* 2015;8:445. Published January 12, 2015. doi:10.3389/fnins.2014.00445; Matt McCarthy, *Superbugs: The Race to Stop an Epidemic*, Avery, New York, 2019.

¹² Rommel, N., Rohleder, N., Koerdts, S., Wagenpfeil, S., Härtel-Petri, R., Wolff, K., & Kesting, M., “Sympathomimetic Effects of Chronic Methamphetamine Abuse on Oral Health: A Cross-Sectional Study.” *BMC Oral Health.* 2016 May 26;16(1):59. doi: 10.1186/s12903-016-0218-8.

¹³ Salamanca, S. A., Sorrentino, E. E., Nosanchuk, J. D., & Martinez, L. R., “Impact of Methamphetamine on Infection and Immunity.” *Front Neurosci.* 2015;8:445. Published January 12, 2015. doi:10.3389/fnins.2014.00445.

¹⁴ Salamanca, S. A., Sorrentino, E. E., Nosanchuk, J. D., & Martinez, L. R., “Impact of Methamphetamine on Infection and Immunity.” *Front Neurosci.* 2015;8:445. Published January 12, 2015. doi:10.3389/fnins.2014.00445.

¹⁵ Salamanca, S. A., Sorrentino, E. E., Nosanchuk, J. D., & Martinez, L. R., “Impact of Methamphetamine on Infection and Immunity.” *Front Neurosci.* 2015;8:445. Published January 12, 2015. doi:10.3389/fnins.2014.00445.

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Prevalence* of selected drug-related behaviors among women, men who have sex with women only (MSW), and men who have sex with men (MSM) with reported primary or secondary syphilis.					
Behavior during past 12 months	No. (%)				
	2013	2014	2015	2016	2017
Used methamphetamine					
Women	69 (6.2)	92 (6.8)	184 (10.6)	317 (13.7)	456 (16.6)
MSW	88 (5.0)	151 (7.4)	194 (7.6)	347 (11.1)	482 (13.3)
MSM	805 (9.2)	867 (8.7)	855 (7.5)	1,039 (7.9)	1,132 (8.0)
Total†	987 (7.9)	1,136 (7.9)	1,253 (7.4)	1,738 (8.5)	2,106 (9.6)

Figure 6. National Notifiable Diseases Surveillance System, United States, 2013–2017

Prevalence* of selected drug-related behaviors among women with reported primary and secondary syphilis, by U.S. Census region†—National Notifiable Diseases Surveillance System, United States, 2013–2017					
Behavior during past 12 months/Region	No. (%)				
	2013	2014	2015	2016	2017
Used methamphetamine					
West	50 (21.7)	63 (19.2)	119 (26.8)	230 (30.7)	310 (34.8)
Midwest	1 (0.8)	6 (3.4)	11 (6.6)	18 (7.7)	31 (13.0)
South	18 (2.7)	22 (3.0)	54 (5.5)	68 (6.0)	112 (8.0)
Northeast	0 (0.0)	1 (0.8)	0 (0.0)	1 (0.5)	3 (1.4)
Total women	69 (6.2)	92 (6.8)	184 (10.6)	317 (13.7)	456 (16.6)

Figure 7. National Notifiable Diseases Surveillance System, United States, 2013–2017

Escalation of Violence

Violence and crime attributed to methamphetamine abuse are a growing public health concern.¹⁶ Methamphetamine is an extremely addictive drug with a high profile for schizophrenia and psychotic disorders. In 2017, law enforcement officers were cited as considering methamphetamine to be the drug most responsible for violent crimes. (Figure 8)

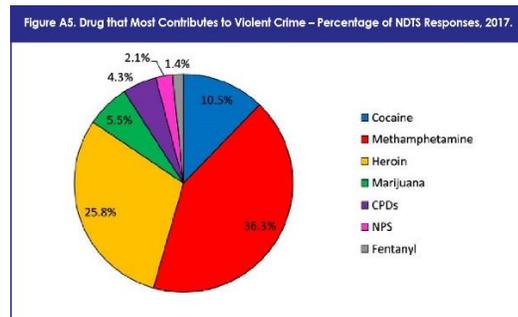


Figure 8. 2017 National Drug Threat Survey, DEA

¹⁶ Yi Liu, Bo Hao, Yanwei Shi, Li Xue, Xiaoguang Wang, Yefei Chen, & Hu Zhao. “Violent Offences of Methamphetamine Users and Dilemmas of Forensic Psychiatric Assessment,” *Forensic Sci Res*, 2017; 2(1): 11–17. DOI: 10.1080/20961790.2017.1287155. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6197090/>.

The physiologic damage caused by methamphetamine varies and is dependent upon dosage and frequency. While low to moderate doses of 5–30 mg may result in euphoria or hyperactive presentations, higher or more frequent doses may trigger psychotic episodes, auditory and visual hallucinations, paranoia, and delusions of reference. These result in a higher risk of violent behavior, including the potential for criminal activity. Diminished inhibition is associated with increased risk-taking behavior. These findings suggest a correlation between methamphetamine abuse and increased acts of violence.¹⁷

This correlation is also supported by geographical data, which demonstrates increased acts of violence in areas with high methamphetamine abuse.¹⁸ This threat to the community typically is manifested by one, or a combination, of the following:

1. By the abuser while under the influence of the drug, primarily due to the psychological effects of the drug (e.g., anxiety, paranoia, delusions, hallucinations, mood swings, insomnia, and violent behavior).¹⁹
2. By the abuser committing acts of violence to obtain the drug (e.g., battery, theft, robbery, assault).²⁰ The “tweaking” phase is considered the most dangerous time for those encountering methamphetamine abusers for violent, erratic behavior.²¹
3. By distributors who use violence as a means of intimidation or retaliation to achieve higher productivity. In February 2019, Arkansas federal prosecutors indicted gang members for methamphetamine trafficking and violence perpetrated to intimidate witnesses. These acts included attempted murder, kidnapping, battery, and, in one case, permanent disfigurement of a victim’s face with a hot knife.²²

¹⁷ Kidd, S. E., Grey, J. A., Torrone, E. A., & Weinstock, H. S., “Increased Methamphetamine, Injection Drug, and Heroin Use Among Women and Heterosexual Men with Primary and Secondary Syphilis—United States, 2013–2017.” *MMWR Morb Mortal Wkly Rep* 2019;68:144–148. Available at <https://www.cdc.gov/mmwr/volumes/68/wr/mm6806a4.htm>; Cruickshank, C. C., & Dyer, K. R., “A Review of the Clinical Pharmacology of Methamphetamine.” *Addiction*, 2009; 104: pp. 1085–1099; Hermens, D. F., Lubman, D. I., & Ward, P. B., “Amphetamine Psychosis: A Model for Studying the Onset and Course of Psychosis.” *Med J August*, 2009; 190(4 Suppl): S22–25; Lapworth, K., Dawe, S., Davis, P., et al. “Impulsivity and Positive Psychotic Symptoms Influence Hostility in Methamphetamine Users.” *Addict Behav*, 2009; 34: 380–385.

¹⁸ U.S. Department of Justice Drug Enforcement Administration, *Methamphetamine Situation in the United States*, March 1996, <https://fas.org/irp/agency/doj/dea/product/meth/production.htm>; Brecht, M. L., & Herbeck, D., “Methamphetamine Use and Violent Behavior: User Perceptions and Predictors,” *Journal of Drug Issues*, 2013, 43(4): 468–482. Available at <https://journals.sagepub.com/doi/10.1177/0022042613491098>.

¹⁹ Yi Liu, Bo Hao, Yanwei Shi, Li Xue, Xiaoguang Wang, Yefei Chen, & Hu Zhao. “Violent Offences of Methamphetamine Users and Dilemmas of Forensic Psychiatric Assessment,” *Forensic Sci Res*, 2017; 2(1): 11–17. DOI: 10.1080/20961790.2017.1287155. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6197090/>.

²⁰ Rodriguez, D., “Methamphetamine and Related Crime: The Impacts of Methamphetamine Abuse,” Northwest High Intensity Drug Trafficking Area Program, Threat Assessment, March 2006.

²¹ Methamphetamine. Center for Substance Abuse Research. University of Maryland, at <http://www.cesar.umd.edu/cesar/drugs/meth.asp>.

²² “U.S. White Supremacist Gang Tangled in Meth-Trafficking Charges,” Aljazeera, February 13, 2019, <https://www.aljazeera.com/news/2019/02/white-supremacist-gang-tangled-meth-trafficking-charges-190213154247102.html>.

Enhanced Risk of Toxic Exposure

In previous years, law enforcement and public health organizations were concerned about the threat of fire or chemical exposure when encountering domestic “labs” found in residences, cars, etc. While the number of domestic labs has decreased substantially, conversion labs are an emerging threat.²³

Conversion labs are not designed for production but for converting liquified methamphetamine back into crystal methamphetamine. It is common for traffickers to smuggle liquid methamphetamine, mixed with gasoline or acetone, into the United States in large barrels. Once in the United States, the flammable solvents are boiled off over an open heat source, and crystal methamphetamine reforms. The liquid methamphetamine may also be transported in household or commercial containers that appear innocuous. (Figures 9 and 10). This represents a unique threat, since the clear liquid can be mistaken for water or nontoxic substances such as ethanol (Figure 10) and be accidentally ingested by adults or children.



Figure 9. National Drug Threat Assessment, DEA, 2018

²³ Drug Enforcement Administration. 2018 National Drug Threat Assessment. October 2018. Page 63. Available at <https://www.dea.gov/sites/default/files/2018-11/DIR-032-18%202018%20NDTA%20final%20low%20resolution.pdf>.



Figure 10. Source: University of Arizona, MethOIDE

In 2017, DEA agents seized 182 kilograms of methamphetamine in the Dallas–Fort Worth area. Large quantities of liquid methamphetamine were hidden inside vehicle gas tanks and were recrystallized using household turkey fryers. Eight to ten gallons of methamphetamine in liquid form will convert to approximately 64 pounds of crystal methamphetamine, with a street value of \$3 million.²⁴

The conversion laboratories require only common household items, which are inexpensive, ubiquitous, and portable. The conversion laboratories have been detected in California and other Southwest border (SWB) states; however, authorities in Georgia and Kansas also have reported the existence of conversion laboratories. In September 2017, the Georgia Bureau of Investigation reported dismantling a multimillion-dollar conversion lab, and in February 2019, the DEA Atlanta Field Office broke down a large conversion lab run by illegal aliens working for a Mexican cartel.

Based on the flammable agents involved, the threat still exists for fire, explosions, and contamination of other liquids. As previously mentioned, this represents a serious threat to law enforcement, fire, and other first responders, as well as the public.

Escalation of Domestic Criminal Activities Associated With Methamphetamines

According to the 2017 National Drug Threat Survey, 30 percent of local governments reported methamphetamine to be a significant threat requiring increased numbers of law enforcement officers to address the issue.²⁵

In Portland, Oregon, arrests for methamphetamine were the only classification of arrest to demonstrate an increase between 2011 and 2015. Methamphetamine abuse demonstrated

²⁴ Campbell, W., “DEA: Liquid Meth No. 1 Drug Smuggled Across the Border.” Television interview. July, 8, 2015. Available at <https://www.ksat.com/news/dea-liquid-meth-no-1-drug-smuggled-across-the-border>.

²⁵ Drug Enforcement Administration. 2018 National Drug Threat Assessment. October 2018. Page 63. Available at <https://www.dea.gov/sites/default/files/2018-11/DIR-032-18%202018%20NDTA%20final%20low%20resolution.pdf>.

the highest correlation with serious crimes. More than one in five burglars and approximately 40 percent of car thieves were charged with methamphetamine crimes.²⁶

In April 2019, federal, state, and local authorities arrested seven San Antonio Eastside Bloods gang members and charged them with trafficking methamphetamine, cocaine, and marijuana.²⁷

In February 2019, members of the AZ Boys gang were arrested for allegedly “wreaking havoc” and violence associated with their methamphetamine distribution operation. Criminal charges included murder, trafficking in narcotics, money laundering, attempted bribery of a law enforcement officer, and arson.²⁸

In May 2018, defendants with ties to the Aryan Brotherhood, the Aryan Circle, the Aryan Brotherhood of Texas, the Peckerwoods, the Soldiers of Aryan Culture, and the Dirty White Boys were indicted for kidnapping and using a hatchet to chop off a portion of a victim’s left index finger. Law enforcement officials seized 190 kg of methamphetamine, 31 guns, and \$376,587 in cash. The indictment alleges that defendants conspired together as part of a meth trafficking ring.²⁹

Association With Human Trafficking

Numerous articles report an association between methamphetamine abuse, human trafficking, and drug distribution. One research study, conducted among North American tribes in western states, focused on trafficking, distribution, and the use of methamphetamine. Seventy percent of those participating in the study related that casinos in the tribal jurisdictions were targeted by methamphetamine dealers for narcotics sales and sex trafficking. According to the head researcher, a criminal justice professor at Northeastern State University, “Meth is unlike any other drug because of the harm it inflicts on people other than the user.”³⁰

In February 2018, a grand jury indicted a man in Kansas for allegedly trying to purchase an 11-year-old girl for \$250 and methamphetamine.³¹ In June 2018, a Wisconsin woman

²⁶ Robles, F. “Meth, the Forgotten Killer, Is Back. And It’s Everywhere.” *The New York Times*. February 13, 2018. Available at <https://www.nytimes.com/2018/02/13/us/meth-crystal-drug.html>.

²⁷ “Federal, State and Local Authorities Arrest Seven San Antonio Eastside Bloods Gang Members and Associates on Drug Trafficking Charges.” U.S. Attorney’s Office for the Western District of Texas. April 18, 2019. Available at <https://www.justice.gov/usao-wdtx/pr/federal-state-and-local-authorities-arrest-seven-san-antonio-eastside-bloods-gang>.

²⁸ Gallagher, M. “The AZ Boys: A legacy of meth and murder in Alamogordo.” *Albuquerque Journal*, February 4, 2019. Available at <https://www.alamogordonews.com/story/news/2019/02/04/az-boys-legacy-meth-and-murder-alamogordo/2762397002/>.

²⁹ Martinez, M. “57 White Supremacist Gang Members Charged in ‘Staggering’ Texas Meth Case, Feds Say.” *Star Telegram*. May 1, 2018. Available at <https://www.star-telegram.com/news/local/crime/article210200934.html#storylink=cpy>.

³⁰ Proctor, Amy L., & Candice McCollum. 2018. “Perceptions of Methamphetamine in Indian Country: Interviews With Service Providers in Ten Western Tribes.” Washington, DC: Office of Community Oriented Policing Services. Published 2018.

³¹ “Kansas Man Accused of Trying to Buy Child for \$250, Meth,” February 7, 2018, Newsmax, <https://www.newsmax.com/us/kansas-human-trafficking-meth/2018/02/07/id/841885/>.

pleaded “no contest” to human trafficking for administering methamphetamine to runaways to persuade them to commit theft or sexual acts.³²

In March 2019, a 14-year-old girl was given methamphetamine and sexually assaulted. Three suspects are in custody for human trafficking.³³

Negative Economic Impact

In 2005, the Rand Corporation conducted a study relative to the economic impact of methamphetamine on society.³⁴ (Figure 11) as observed, the “best-estimate” cost was approximately \$23.4 billion, and the true economic burden fell between \$16.2 billion and \$48.3 billion.

Following are some of Rand’s conclusions:

Intangible/premature death: Approximately 70 percent of the \$23.4 billion (\$16.6 billion) was attributed to the “intangible burden” of addiction (\$12.6 billion) and the cost of premature mortality (\$4 billion).

Criminal justice: Criminal justice costs were 18 percent (\$4.2 billion), including administrative costs to process defendants, violent/property crime losses, parole and probation costs, etc.

Child endangerment: The costs for child endangerment were estimated at \$905 million and include foster care, medical care, and detrimental impacts on quality of life.

Productivity loss: A “best estimate” for total productivity loss was \$687 million, including absenteeism (\$275 million), incarceration (\$305 million), and miscellaneous costs such as drug testing.

Drug treatment: Drug treatment costs were approximately \$546 million, including \$491 million for community-based specialty treatment.

Health care: Health care costs were estimated to be approximately \$351 million, which included \$250 million for health administration and support.

Meth production/hazards: Costs unique to methamphetamine abuse included \$61 million for damages during synthesis and \$32 million for injuries/fatalities arising from chemical reactions. Approximately half of the casualties were to first responders. The

³² “Woman Found Guilty in Runaway Meth and Human Trafficking Cases.” Action News, Outagamie County, Wisconsin. June 25, 2018. Available at <https://www.wbay.com/content/news/Woman-found-guilty-in-runaway-meth-and-human-trafficking-cases-486484921.html>.

³³ Coello, S., “3 Accused of Trafficking 14-Year-Old from Garland for Sex and Giving Her Meth.” Dallas News. March 2019. Available at <https://www.dallasnews.com/news/crime/2019/03/30/trio-accused-trafficking-14-year-old-garland-sex-giving-meth>.

³⁴ “The Costs of Methamphetamine Use: A National Estimate.” Rand Corporation. Research Brief RB-9438. Available at https://www.rand.org/pubs/research_briefs/RB9438/index1.html.

remaining \$29 million was attributed to costs required to clean up and dispose of hazardous waste.

Cost Contributors	Cost of Meth Use in the United States in 2005 (millions of dollars)			
	Lower Bound	Best Estimate		Upper Bound
	n	n	%	n
Intangibles/premature death	12,514	16,625	71	28,549
Crime and criminal justice	2,578	4,210	18	15,741
Child endangerment	312	905	4	1,166
Lost productivity	379	687	3	1,055
Drug treatment	299	546	2	1,071
Health care	116	351	2	611
Meth production/hazards	39	61	< 1	89
Total	16,237	23,384	100	48,281

Figure 11. The Cost of Methamphetamine Use. Rand Corporation

Workplace impairment: Data on workplace drug testing shows an increase in “positive” screens for amphetamine, including methamphetamine. The percentage increased from 1.11 percent in 2015 to 1.25 percent in 2016. This percentage has climbed 33 percent since 2012.

Insurance: An emergency department study, conducted by the University of California, Davis Medical Center, compared methamphetamine patients between 1996 and 2016. When their medical insurance status was reviewed, 56 methamphetamine-positive patients in 1996 were found to have Medi-Cal/MediCare insurance. That number rose to 396 in 2016. Medi-Cal is the state’s Medicaid health care program, while Medicare is a federally funded program. This differential between 1996 and 2016 represented a 49.6 percent increase in methamphetamine-positive patients using government-funded medical insurance. (Figure 12) the increased reliance on publicly funded health care programs to treat methamphetamine abuse presents an additional burden to already underresourced public health care programs.

Demographics, mode of arrival, disposition, and coingestions of MAP-positive patients, 2016 versus 1996.

	2016 n (%)	1996 n (%)	% change	95% CI	P
Prevalence	638/20,203 (3.2)	461/32,156 (1.4)	1.8	1.5–2.1	<0.0001
Positive MAP screen	638/3013 (21.2)	461/3102 (14.9)	6.3	4.4–8.2	<0.0001
<i>Insurance</i>					<0.00001
None/Self-pay	172 (27.0)	385 (83.5)	-56.5	51.3–61.2	<0.0001
MediCal/MediCare	396 (62.0)	56 (12.2)	49.6	44.7–54.5	<0.0001
HMO/MCO	70 (11.0)	20 (4.3)	6.7	3.4–9.8	0.0001

Figure 12. Journal of Addiction, Volume 2017, Article ID 4050932

B. Evidence Supporting the Resurgence of Methamphetamine

Law enforcement and public health resources around the country, including forensic laboratories, have reported marked increases in the use, abuse, and availability of methamphetamine. According to the 2018 National Threat Assessment, 13 of 21 DEA field offices reported increases in methamphetamine availability. (Figure 13)

Figure 3. DEA Field Division Reporting of CPD Availability in 2017 and Comparison to Previous Period.

Field Division	Availability During First Half of 2017	Availability Compared to Second Half of 2016
Atlanta Field Division	High	Stable
Caribbean Field Division	Moderate	Stable
Chicago Field Division	High	Stable
Dallas Field Division	High	Stable
Denver Field Division	Moderate	Stable
Detroit Field Division	High	Stable
El Paso Field Division	Moderate	Stable
Houston Field Division	High	Stable
Los Angeles Field Division	High	Stable
Miami Field Division	High	More
New England Field Division	High	Stable
New Jersey Field Division	Moderate	Stable
New Orleans Field Division	High	Stable
New York Field Division	Moderate	Stable
Philadelphia Field Division	High	Stable
Phoenix Field Division	Moderate	Stable
San Diego Field Division	High	More
San Francisco Field Division	High	Stable
Seattle Field Division	High	Stable
St. Louis Field Division	High	Stable
Washington Field Division	High	Stable

Figure 13. National Drug Threat Assessment, 2018, DEA

According to the BCI London Drug Chemistry Laboratory in Ohio, methamphetamine prevalence increased dramatically from 2010 through 2019. The statistics listed below (Figure 14) reflect this observation. Of significance is the amount of methamphetamine noted in 2019. This number, 2,618 cases, represents testing only in the first quarter of 2019. Yet the number of cases in one quarter was larger than the total number of cases in each full year from 2010 to 2015.

Result	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Methamphetamine	535	552	997	1,172	1,634	2,050	3,038	5,328	12,377	2,618
Fentanyl and Fentanyl-Related Compounds	34	31	27	39	387	1,110	2,559	4,183	6,324	1,156
Heroin	2,378	2,791	3,951	4,971	6,471	6,832	5,768	4,193	5,296	909
Cocaine	3,871	3,585	3,202	3,420	4,133	4,072	4,771	4,747	6,843	1,062

Figure 14. Statistics Through March 25, 2019. BCI Drug Chemistry Laboratory. London, Ohio

The United States Sentencing Commission, the body responsible for articulating the sentencing guidelines for U.S. federal courts, notes that the number of methamphetamine offenders in federal custody increased by 33 percent between FY 2013 and FY 2017. According to the Commission, there were 7,093 methamphetamine trafficking offenders, which accounted for 36.9 percent of all offenders sentenced under federal drug trafficking guidelines.³⁵ (Figure 15)



Figure 15. Rise in Number of Methamphetamine Trafficking Offenders

C. Transnational Criminal Organizations (TCOs)

In the early 2000s, the United States experienced a significant rise in the abuse of methamphetamine because of the widespread availability of chemicals and precursors such as pseudoephedrine, acetone, anhydrous ammonia, ether, red phosphorus, and lithium.³⁶ The widespread abuse led to the creation and enactment of the Combat Methamphetamine Epidemic Act (CMEA) of 2005. This law resulted in a significant immediate decline in domestic methamphetamine production, mortality, morbidity, and associated economic losses.

According to a 2016 report from the Appalachia High Intensity Drug Trafficking Area (HIDTA), even though local clandestine methamphetamine production was almost nonexistent, crystal methamphetamine was readily available.³⁷ In 2018, domestic laboratory seizures were at their lowest level in 15 years. (Figure 16) manufacture and distribution had transitioned to “super labs” operated by Mexican TCOs. These organizations are responsible for trafficking in numerous illicit substances (e.g., marijuana, cocaine, heroin) and utilize their large-scale distribution networks to market methamphetamine throughout the United States. Seizures of methamphetamine have increased dramatically since 2012 and have now occurred in every U.S. state.

³⁵ United States Sentencing Commission. “Quick Facts: Methamphetamine Trafficking Offense,” 2017. https://www.ussc.gov/sites/default/files/pdf/research-and-publications/quick-facts/Methamphetamine_FY17.pdf.

³⁶ NIDA. Methamphetamine. National Institute on Drug Abuse website. <https://www.drugabuse.gov/publications/research-reports/methamphetamine> September 19, 2013. Accessed April 29, 2019.

³⁷ Appalachian High Intensity Drug Trafficking Area. *CY 2016 Annual Report*. <https://ahidta.org/sites/default/files/2016%20AHIDTA%20Annual%20Report%20-%20Final.pdf>.

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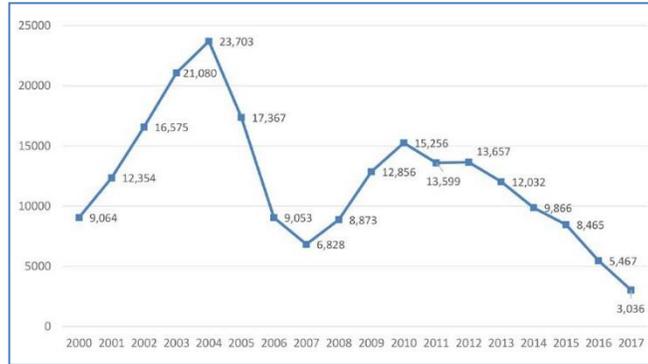


Figure 16. Number of Methamphetamine Laboratory Domestic Incidents, 2000–2017 NSS

The methamphetamine produced by TCOs is extremely pure and potent. (Figures 17 and 18) mass production resulting in widespread availability and lower consumer cost make methamphetamine more attractive to those who are addicted to opioids, which are becoming more expensive and more difficult to obtain.

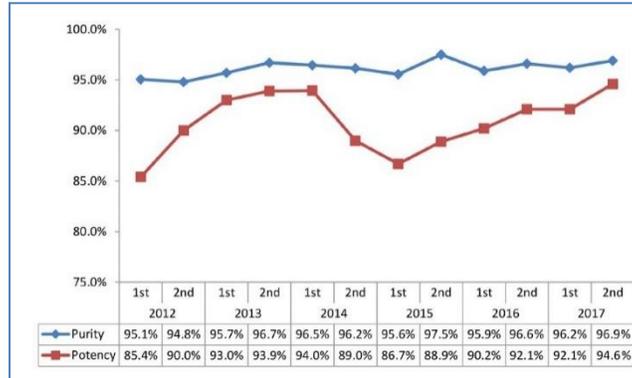


Figure 17. Methamphetamine Purity and Potency 2012–2017

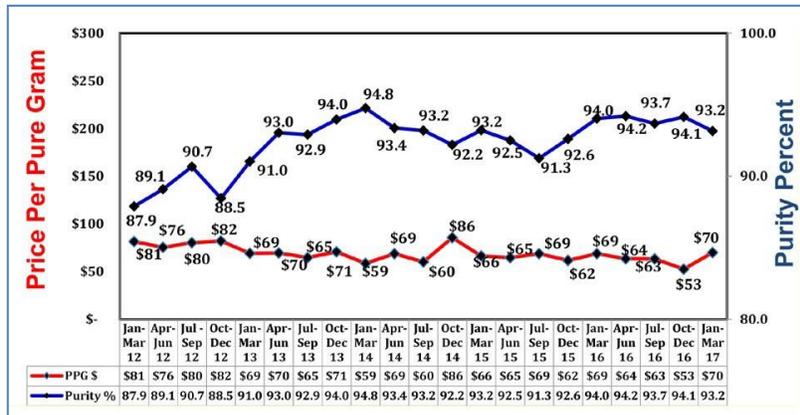


Figure 18. Price Per Gram in Comparison With Purity, January 2012–March 2017

D. The Role of Precursors

Subsequent to the U.S. enforcement of CMEA, the Mexican government enacted similar legislation targeting the control of precursors. The Mexican TCOs responded by transitioning to “reductive amination,” which uses phenyl-2-propanone (P2P) rather than

pseudoephedrine. Analyses of samples analyzed subsequent to this transition showed that 97 percent of the sampled methamphetamine was synthesized using this method and that both purity and potency were extremely high. In October 2015, the Mexican government controlled the new precursors, which resulted in a 300 percent price increase on the black market. This measure resulted in a 17 percent decline in P2P synthesis. In advance of the Mexican government's laws to limit the precursors utilized in the P2P process, TCOs began using the nitrostyrene method as an alternative. The nitrostyrene method uses benzaldehyde and nitroethane as precursors, both of which are easily obtainable and/or synthesized. Benzaldehyde is the chief component of bitter almond oil, and nitroethane can easily be manufactured by treating propane with nitric acid. (Figure 19)

The Mexican TCOs continue to adapt by seeking alternative methods of manufacture, importing precursors from other countries such as China, or seeking to synthesize their own precursors, such as monomethylamine.

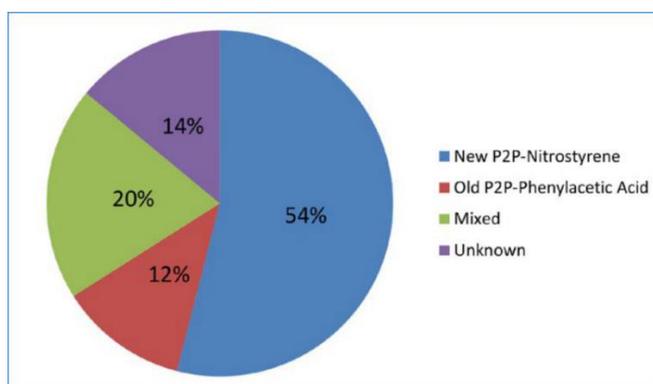


Figure 19. Phenyl-2-Propanone (P2P) Subcategory Results for the Second Half-2017

E. Surveillance of the Mexican Southwest Border (SWB)

Mexican TCOs currently control wholesale distribution of methamphetamine in the United States. Mexican and U.S.-based criminal factions are responsible for retail methamphetamine distribution within the United States. As noted below, the amount of methamphetamine seized by U.S. Customs and Border Protection (CBP) has risen consistently from FY 2012 through FY 2017. The bar denoting methamphetamine (Figure 20) reflects seizures only through August 2018, but these were almost equal to the seizures of FY 2017.

Pounds of Drugs Seized by Customs and Border Protection, FY2012–FY2018TD (as of 8/31/2018)

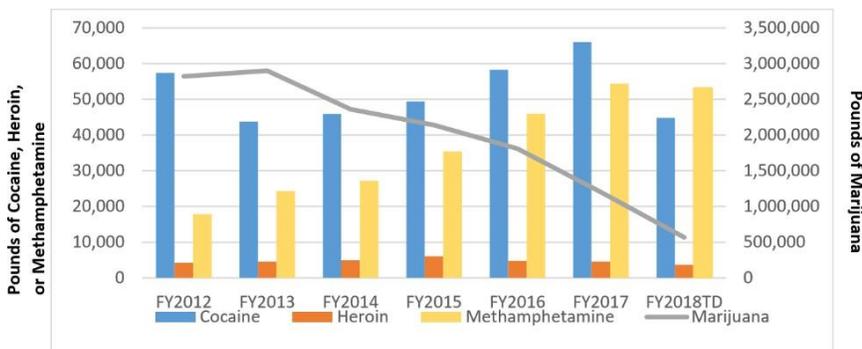


Figure 20. Source: <https://www.cbp.gov/newsroom/stats/cbp-enforcement-statistics-fy2018>

On May 22, 2019, agents from the CBP seized a shipment of methamphetamine worth \$18.5 million crossing the U.S. border with Mexico. (Figure 21)

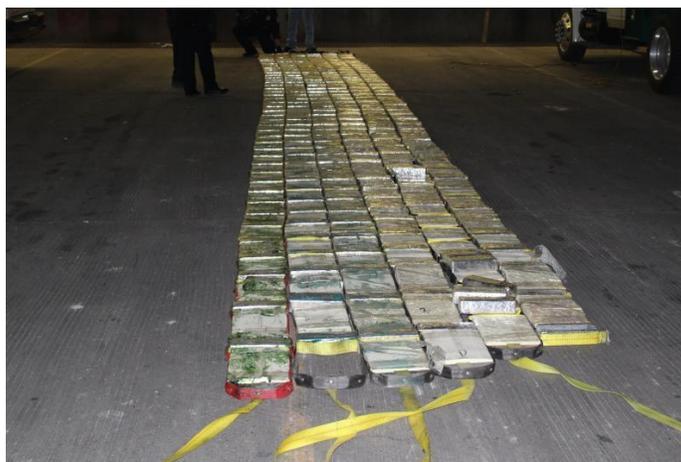


Figure 21. Source: <https://www.newsweek.com/methamphetamine-bust-us-customs-and-border-protection-pharr-international-1432404>

The number of seizures has increased 256 percent between 2012 (8,213 kilograms) and 2017 (29,235 kilograms). (Figure 22)

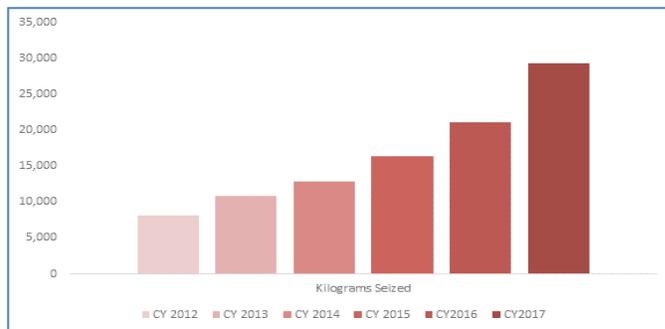


Figure 22. Customs and Border Protection Southwest Border Methamphetamine Seizures, 2012–2017

According to the 2018 National Drug Threat Assessment, 97 percent of methamphetamine seizures occur at, or near, the SWB. (See Figure 23) in 2017, 54 percent of those seizures occurred in the San Diego corridor.



Figure 23. Customs and Border Protection. SWB Methamphetamine Seizures

Traffickers use various methods to conceal the methamphetamine they are transporting. They commonly transport small, multikilogram shipments of methamphetamine in personally owned vehicles (POVs). As recently as February 2019, a resident of Waynesboro, Virginia, pleaded guilty to attempting to possess and distribute methamphetamine. The methamphetamine load weighed 9.9 kg and was hidden in the spare tire of a motor vehicle being transported via I-40 in New Mexico.³⁸

Traffickers may use human couriers (“mules”), air travel, boats, parcel services, commuter buses, and automobiles to transport their drugs. While the use of drones is not widespread because of noise, short battery life, and limited payload, advances in technology may make drone delivery more feasible. Using drones to transport drugs across the border could significantly increase the difficulty in identifying and apprehending traffickers. According to DEA, CBP, and open-source reporting, there have been several instances of the use of drones with multiple types of drug loads. In 2015, two people pleaded guilty to dropping 28 pounds of heroin into Calexico, California, via a drone. The same year, U.S. Customs and Border Patrol observed a drone dropping 30-pound bundles of marijuana in San Luis, Arizona. In August 2017, a 25-year-old U.S. citizen was arrested near San Diego for flying 13 pounds of methamphetamine across the border using a drone. Employing drones, some of which have GPS, keeps operators far from the area where the drugs are dropped, decreasing the likelihood of apprehension.

F. Analytical Challenges

Analytical challenges and the ability to accurately report the mortality and morbidity of methamphetamine include the following:

1. Methamphetamine deaths may be underreported because methamphetamine is metabolized to amphetamine in the body. Therefore, a death may be attributed to

³⁸ U.S. Department of Justice; Title: (U) Waynesboro Man Faces Mandatory 10-Year Prison Sentence on Federal Meth Charges; Posting Date: 25 February 2019; Page/Paragraph Number: N/A; URL: <https://www.justice.gov/usao-wdva/pr/waynesboro-man-faces-mandatory-10-year-prison-sentence-federal-meth-charges> Date of Access: March 5, 2019.

use, or abuse, of legally prescribed amphetamines.³⁹ This pattern of attribution may misrepresent epidemiology as it relates to the prevalence of methamphetamine deaths. This, in turn, can affect factors used to determine public health policies.

2. During the chemical analysis of selected methamphetamine samples, DEA analysts can capture specific data that helps establish trends such as manufacturing processes. Unlike morphine or cocaine, which are derived from plants endemic to certain locales, methamphetamine analysis will not reveal its origin. However, the chemicals involved as precursors can be identified, which could assist efforts to limit the availability of required precursors.

G. Synergism With the Opioid Abuse Epidemic

Methamphetamine and opioid abuse share similarities and differences, which may provide the impetus for opioid abusers to transition to methamphetamine abuse.

1. Because methamphetamine is a central nervous system (CNS) stimulant, rather than a CNS depressant, acute deaths are less prevalent than those arising from opioid toxicity.
2. In comparison with opioids, methamphetamine provides a prolonged sense of euphoria resulting from a longer pharmacologic duration. This feature may attract opioid abusers to methamphetamine.
3. Compared with opioid overdoses, methamphetamine overdoses are likely underreported. Because methamphetamine overdoses are not nearly as lethal as opioids. Among others, meth leads to the congenital heart disease instead of an instant death. In 2017, for example, 47,600 people died of opioid-related overdoses. By comparison, 10,333 people died from methamphetamine-related use.
4. Substance abusers sometimes combine methamphetamine with a CNS depressant such as heroin or fentanyl. This practice, known as “speedballing,” may be used to alleviate the sedating effects of opioids or to elevate the effects of methamphetamine.⁴⁰ The following figures show a rise in methamphetamine combinations with both fentanyl and fentanyl/heroin mixtures. Mexican cartels now import both methamphetamine and fentanyl precursors from China and then manufacture both drugs in their laboratories and distribute them at a lucrative profit.⁴¹ The finding of multiple drugs in one sample may be a result of contamination during packaging or as a response to a buyer’s request for polysubstances. (Figure 24) it also may be the result of unwitting purchase by an

³⁹ Medical Examiners Commission, Florida Department of Law Enforcement, *Drugs Identified in Deceased Persons by Medical Examiners: 2017 Interim Report*, April 2018, <https://www.fdle.state.fl.us/MEC/Publications-and-Forms/Documents/Drugs-in-Deceased-Persons/2017-Interim-Drug-Report.aspx>.

⁴⁰ Lamonica, A. K., & Boeri, M., “An Exploration of the Relationship between the Use of Methamphetamine and Prescription Drugs,” *J Ethnogr Qual Res.* 2012;6(3):160.

⁴¹ Stewart, S. “The Chinese Connection to the Flood of Mexican Fentanyl.” Stratfor. November 9, 2017. Available at <https://worldview.stratfor.com/article/chinese-connection-flood-mexican-fentanyl>.

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addict of multiple drugs when the buyer thought that he or she was buying only one.

Figure 72. Number of Reports Analyzed by DEA Laboratory Containing Fentanyl and Methamphetamine (as of 3/28/18).

Methamphetamine combinations	CY 2013	CY 2014	CY 2015	CY 2016	CY 2017	TOTAL
Fentanyl	0	0	0	16	18	34
Heroin & Fentanyl	0	3	4	18	30	55
Cocaine & Fentanyl	0	0	0	1	0	1
Cocaine, Heroin, & Fentanyl	0	0	1	1	3	5
Fentanyl-related substances	0	3	0	4	3	10

Figure 24. Source: National Drug Threat Assessment, 2018, DEA

5. Some abusers may mistakenly believe that methamphetamine use will deter opioid cravings.
6. There is no medication-assisted treatment (MAT) for methamphetamines like those available for opioid abuse and addiction (suboxone, methadone). A reversal agent, naloxone (Narcan), is available for acute opioid overdoses, but no agent exists for acute methamphetamine overdoses.⁴²
7. The opioid epidemic has created an enormous burden on facilities treating substance abuse disorders. This limits availability for methamphetamine substance abuse treatment. (Figure 25) There was a substantial reduction of methamphetamine services needed immediately subsequent to the CMEA but, as discussed above, those numbers are again on the rise.⁴³

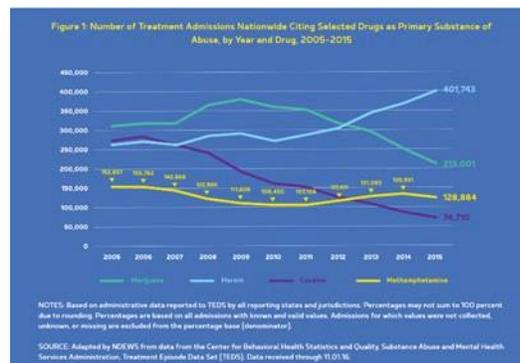


Figure 25. Admissions 2005–2015. Treatment Episode Data Set (TEDS)

⁴² Accelerated Development of Additive Pharmacotherapy Treatment (ADAPT-2) for Methamphetamine Use Disorder. Study number: CTN-0068, Status: Active, ClinicalTrials.gov ID: NCT03078075, principal investigator: Madhukar H. Trivedi, M.D., professor, University of Texas Southwestern Medical Center. Available at <https://www.drugabuse.gov/about-nida/organization/cctn/ctn/research-studies/accelerated-development-additive-pharmacotherapy-treatment-adapt-2-methamphetamine-use-disorder>.

⁴³ National Drug Early Warning System (NDEWS). Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, *Methamphetamine: A Regional Drug Crisis*. Treatment Episode Data Set (TEDS). Data received through November 1, 2016. Available at <https://ndews.umd.edu/sentinel-sites/sentinel-sites-reports-and-community-contacts>.

A similar trend is observed below, where a dramatic decrease in admissions is noted immediately subsequent to the CMEA. (Figure 26) The admissions increased as a trend between 2011 and 2014. Similar data indicates that the rates have increased since 2015.

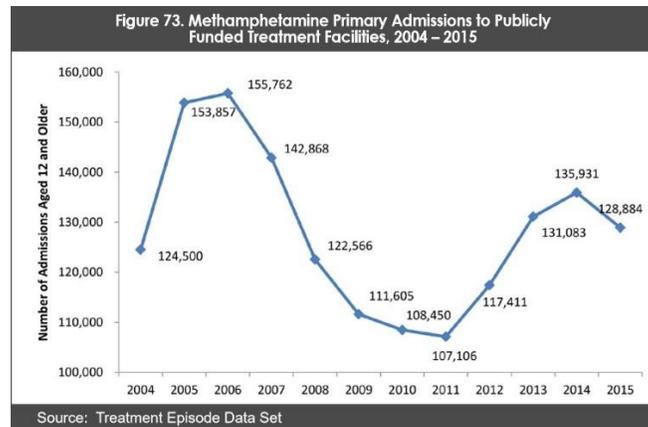


Figure 26. Admissions from 2004–2015. Treatment Episode Data Set (TEDS)

H. Impacts in Rural America: Lessons From the Appalachian Region

The greater Appalachian region is located relatively close to several major metropolitan areas within the Eastern, Southeastern, and Midwestern United States. High unemployment rates, low median household incomes, relatively low education levels, and higher-than-average poverty rates are the primary socioeconomic conditions present in the region. The average poverty rates in the greater Appalachian region are consistently (and persistently) higher than state and national averages. The poverty rates for counties in the “heart” of Appalachia are more than double the overall state rate and nearly double the national poverty rate.⁴⁴ These factors are integral to the prevalence of drug-related activity in Appalachia.⁴⁵

Since 2002, opioid-based narcotics have plagued the region. Although some recent data suggests that the opioid epidemic (excluding fentanyl and its analogues) may have reached an apex during 2016–2017, these drugs continue to be significant threats to the area. Seizure data from local and state law enforcement agencies and the Appalachia High Intensity Drug Trafficking task forces indicate that since the end of 2016, with the exception of heroin in West Virginia, opioid-derived narcotics, particularly diverted

⁴⁴ For example, Lee and Wise counties have poverty rates of 23.3 and 28.3 percent, respectively. The same is true of counties in Kentucky. The census bureau estimates that Bell County has a poverty rate of 36.7 percent and Harlan County, 41.5 percent. Similar statistics are reported in numerous Appalachian counties in Tennessee (Hancock County 28.4 percent and Clairborne County 22.5 percent). Mingo (31.0 percent) and McDowell (31.7 percent) Counties in West Virginia have poverty rates nearly treble that of the national rate. Data for the specific states and counties is available from the United States Census Bureau, Small Area Income and Poverty Estimates (SAIPE) database, and reports available at https://www.census.gov/data-tools/demo/saibe/#/?map_geoSelector=aa_c&s_state=21,47,51,54; AHIDTA, “Threat Assessment and Strategy 2018,” 3–5.

⁴⁵ Data for the specific states and counties is available from the United States Census Bureau, Small Area Income and Poverty Estimates (SAIPE) database, and reports available at https://www.census.gov/data-tools/demo/saibe/#/?map_geoSelector=aa_c&s_state=21,47,51,54

prescription medications, have become slightly less prominent.⁴⁶ Improved legislation, prescription monitoring, increased public awareness of the dangers of opioid medications, slightly improved access to treatment, and law enforcement activities aimed at shutting down suppliers and over-prescribing by doctors have yielded remarkable results in this arena.

Although the demand for opioid based narcotics has decreased slightly during the preceding 12–18 months, DEA statistics indicate that supply remains high in the region.⁴⁷

The largest increase in drug-related activity has, perhaps surprisingly, been caused by a resurgence of crystal methamphetamine (ice, meth) into the region. Reporting from 2014 to 2016 reflects a 275 percent increase in seizures by Appalachia High Intensity Drug Trafficking Area (AHIDTA or Appalachia HIDTA) task forces and other local and state law enforcement agencies.⁴⁸ During the 2016 reporting period, law enforcement officers removed 283.2 kilograms of crystal methamphetamine from the marketplace.⁴⁹ Responses derived from the AHITDA threat survey illustrate that 70.7 percent of respondents reported increased availability and demand of crystal methamphetamine. Moreover, 26 percent of all respondents cited crystal methamphetamine as the biggest drug threat in their areas of responsibility.⁵⁰

Task forces that operate within the 86-county Appalachia HIDTA region seized 125 percent more crystal methamphetamine in 2016 than in the previous year—a trend with an upward trajectory. Law enforcement entities report that a large portion of methamphetamine arrives in to the greater Appalachian region by transiting through Atlanta, Georgia, along the Interstate 75 corridor.⁵¹ Analysis and research, as well as law enforcement case data, indicate that groups traditionally involved in the heroin trade are actively transitioning to crystal methamphetamine trafficking and distribution. This shift seems directly related to the intense national scrutiny and surveillance placed upon heroin, fentanyl and its analogues, and other opioids. The climate surrounding opioids and their devastating effects has caused a significant 54 percent decrease in opioid (especially heroin) trafficking investigations, while a rise in investigations into organizations trafficking crystal methamphetamine increased significantly (+17 percent through the end of 2016 for the Appalachian region).⁵² In response to the Appalachian High Intensity Drug Trafficking Survey (AHIDTS), 53 percent of all law enforcement indicated that drug trafficking organizations (DTOs) previously involved in the trafficking of heroin are now engaged in the trafficking of crystal methamphetamine. According to DEA analysis, prices

⁴⁶ AHIDTA, “Threat Assessment and Strategy 2018,” 6.

⁴⁷ Drug Enforcement Administration, “2018 National Drug Threat Assessment” (NDTA). Despite the recent downward demand trend for controlled prescription drugs (CPDs), CPDs are still responsible for the most drug-involved overdose deaths and are the second most commonly abused substance in the United States. As CPD abuse has increased significantly, traffickers are now disguising other opioids as CPDs in attempts to gain access to new users. Most individuals who report misuse of prescription pain relievers cite physical pain as the most common reason for abuse; these misused pain relievers are most frequently obtained from a friend or relative.

⁴⁸ AHIDTA, “Threat Assessment and Strategy 2018,” 7.

⁴⁹ AHIDTA, “Threat Assessment and Strategy 2018,” 7.

⁵⁰ AHIDTA, “Threat Assessment and Strategy 2018,” 7.

⁵¹ AHIDTA, “Threat Assessment and Strategy 2018,” 7, 10–11.

⁵² AHIDTA, “Threat Assessment and Strategy 2018,” 15.

for ultra-pure and highly potent methamphetamine produced in super labs in northern Mexico and subsequently linked to Mexican TCOs remain low.⁵³

Downward pressure on wholesale and street prices will likely intensify because of increased competition as more trafficking organizations transition to wholesale-level methamphetamine trafficking.

The observed shift is a problematic harbinger. In one respect, the movement away from heroin trafficking and distribution is a positive development for law enforcement and local communities more generally. Fewer individuals engaged in the heroin trade generally indicates that it is less lucrative and that fewer people are seeking the narcotic. If the reduction in heroin distribution is a positive development for the region, the simultaneous increase in methamphetamines indicates that a lucrative market exists to encourage (at least some) heroin distributors to engage in the methamphetamine market. While the Appalachian region is not methamphetamine-naïve, the increase in methamphetamine produced by various cartels in northern Mexico indicates a rapidly changing situation on the ground.⁵⁴ The introduction of ultra-pure, highly potent, and cheap meth is a threat to the fragile communities currently grappling with the opioid epidemic. Furthermore, the introduction of large quantities of meth creates a new set of problems for health care professionals, public health officials, law enforcement, and first responders. This is especially true because law enforcement and public health officials have spent the last few years (and scarce resources) developing strategies, devising information sharing protocols, and deploying technology to combat the opioid crisis. While some of the lessons learned, technologies developed, and monitoring programs set up during the opioid crisis at the local level will transfer to the battle against methamphetamines, many may not because the use patterns and effects of the two narcotics are very different from one another. Communities, local health officials, and law enforcement agencies in the economically distressed region will be hard pressed to retool to counter the growing threat of methamphetamines while maintaining a robust, effective response to the omnipresent threat of opioids.

⁵³ Drug Enforcement Administration, “2017 Domestic Methamphetamine Threat Assessment Key Findings”; Findings repeated in DEA’s “2018 National Drug Threat Assessment” (NDTA), 59–61. According to the 2018 NDTA, methamphetamine sampled through the MPP in the second half of 2017 averaged 96.9 percent purity and 94.6 percent potency. At the same time, all analysis of domestic methamphetamine purchases from January 2012 through March 2017 indicates the price per pure gram of methamphetamine decreased 13.6 percent— from \$81 to \$70—while the purity increased nearly 6 percent—from 87.9 percent to 93.2 percent. Purity is defined as a measure of the amount of an illicit substance present in a sample compared with other substances in the sample such as adulterants, diluents, or solvents. Potency is defined as the measure of drug activity in terms of the dosage required to exert an effect on the body and is measured by the amount of the highly potent isomer present in the drug substance.

⁵⁴ The threat posed to the Appalachian region by the illicit production and abuse of methamphetamine has significantly changed over the last decade. Appalachia HIDTA investigative reporting for 2016 documented 100 fewer laboratories than in 2014 and a 21 percent decrease from 2015. Legislative measures taken by the states to limit or prevent the purchase of products containing the necessary elements to produce methamphetamine have resulted in sustained decreases in clandestine methamphetamine laboratory “dismantlements.” Throughout 2016, the AHIDTA task forces seized less than 1,000 grams of methamphetamine and dismantled roughly 150 labs. The decrease in amount of manufactured methamphetamine seized represents an 89 percent decrease from the previous calendar year.

While opioid-derived narcotics are destructive for individuals and society, these drugs produce a sedative “high.” In contrast, methamphetamines as stimulants produce a much different type of high and resulting personal behaviors. As mentioned elsewhere in this paper, methamphetamine use frequently leads to socially destructive and violent behaviors by abusers. While violent behaviors in the pursuit of opioids are common (e.g., theft, robbery, burglaries), once opioids are ingested, users are not typically a direct threat to others or the community. Methamphetamine use has the potential for violence throughout the entire production-procurement-use cycle. This is particularly problematic for rural regions that lack the fiscal resources (or requisite tax base) to support the law enforcement infrastructure necessary to adequately address the violence associated with the cycle. The frequency with which crimes are committed to acquire money or other valuables to ultimately procure meth poses a significant challenge; however, this pales in comparison to the level of violence regularly displayed by those that routinely abuse meth.⁵⁵ The violence associated with meth use also increases the potential for violent interactions with law enforcement.

Unlike opioid-derived narcotics that produce sedative highs, methamphetamine use produces anxiety, paranoia, delusions, hallucinations, mood swings, insomnia, and violent behavior during the “high” phase.⁵⁶ The “tweaking” phase is considered the most dangerous time for those encountering methamphetamine abusers. The tweaking phase typically includes violent and erratic behavior. It is during the tweaking phase that users are most likely to encounter/interact with law enforcement. “Tweakers” exhibit incoherent speech and thought patterns and erratic behaviors; are unable or unwilling to comply with law enforcement instructions; and frequently resort to irrational, violent behaviors. In short, they pose an immediate danger to themselves and others.

Knox and Anderson Counties in Tennessee and Wise and Lee Counties in Virginia⁵⁷

Like many communities across Appalachia, Anderson and Knox Counties in Tennessee and Wise and Lee Counties in Virginia are grappling with a sustained drug crisis. In Anderson County alone, drug deaths involving opioids nearly quadrupled between 2010 and 2017.⁵⁸ While opioid drugs (including fentanyl and its analogues) have been the primary driver of drug deaths in the region, the number of deaths caused by methamphetamine abuse have drastically increased since 2016. For context, from 2010

⁵⁵ Brecht, M. L., & Herbeck, D., “Methamphetamine Use and Violent Behavior: User Perceptions and Predictors,” *Journal of Drug Issues*, 2013, 43(4):468–482. Available at <https://journals.sagepub.com/doi/10.1177/0022042613491098>.

⁵⁶ Yi Liu, Bo Hao, Yanwei Shi, Li Xue, Xiaoguang Wang, Yefei Chen, & Hu Zhao. “Violent Offences of Methamphetamine Users and Dilemmas of Forensic Psychiatric Assessment,” *Forensic Sci Res*, 2017; 2(1): 11–17. DOI: 10.1080/20961790.2017.1287155. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6197090/>.

⁵⁷ Knox and Anderson Counties were chosen as a spotlight for this project because the data sources for these counties are the most complete and routinely updated by the Knox County Regional Forensic Center. Knox County Regional Forensic Center, “Drug Related Death Report 2017 for Knox and Anderson Counties August 2018.” Available online in pdf format at https://knoxcounty.org/rfc/pdfs/KCRFC_DRD_Report_2017.pdf. Lee and Wise Counties were chosen because the local sheriffs’ departments in both counties willingly shared data and relayed information about the evolving methamphetamine crisis plaguing those counties.

⁵⁸ Knox County Regional Forensic Center, “Drug Related Death Report 2017 for Knox and Anderson Counties August 2018,” 55. Available online in pdf format at https://knoxcounty.org/rfc/pdfs/KCRFC_DRD_Report_2017.pdf.

through 2015, oxycodone was listed as the number one cause of drug-induced deaths in the region. In fact, during the period 2010–2015, opioid-based narcotics held five of the six top spots on the Knox regional medical examiner’s “Top Ten Drugs Found in Drug Related Deaths” chart.⁵⁹ Although fentanyl maintains its ignominious grip on the top spot of the chart as the most deadly drug in the region, other opioid narcotics have been supplanted by the stimulants cocaine and methamphetamine.⁶⁰

Cocaine has been on the deadliest drug list since at least 2010; however, methamphetamine is a recent addition, and its march to the top of chart has been remarkable. Methamphetamine was not on the list in 2010 or 2011. It briefly entered the rankings in 2012 (in tenth position) and remained at the bottom on the list in 2013. The drug did not appear in 2014 or 2015 but returned to the list in fifth position in 2016. In the span of a year, meth supplanted heroin, morphine, hydrocodone, and cocaine on the list compiled by the Knox regional medical examiner’s office.⁶¹ According to the same data, by 2017, methamphetamine became the fourth-deadliest drug, accounting for nearly 20 percent of all drug-related deaths in the region. For the first half of 2018 (January 1—June 30), statistics are even more telling. The early data for 2018 clearly demonstrate a shift to methamphetamines and the dangers associated with the drug. While much of the region and the nation more generally is focused on the scourge of opioids (including fentanyl and its analogues), meth was making a silent, but quite deadly comeback in popularity.⁶²

Based on his office’s caseload, Anderson County’s District Attorney General, Dave Clark, observes that Anderson [county] “is at a convergence point with methamphetamine and opioids. The region seems to have both in abundance.”⁶³ Simon Byrne, director of the Seventh Judicial District Crime Task Force, funded in part by a grant from the Bureau of Justice Assistance (BJA), notes that the drug problem in Anderson County mirrors those facing hundreds of communities across the country. Specifically, agents have seen a distinct change in methamphetamine trafficking over the years. Five years ago, task force agents found meth labs scattered throughout the county, but that is a rare occurrence in 2019. The labs found today are old and abandoned. Instead, the methamphetamine currently available in Anderson County is produced by one of the various Mexico-based cartels and trafficked into the region by the same cartels or through distribution networks controlled by the cartels. Meth produced by Mexican DTOs is highly sought after because of its potency, purity, and low price.⁶⁴

⁵⁹ Knox County Regional Forensic Center, “Drug Related Death Report 2017 for Knox and Anderson Counties August 2018,” 54.

⁶⁰ “Drug Related Death Report 2017 for Knox and Anderson Counties August 2018,” 54.

⁶¹ “Drug Related Death Report 2017 for Knox and Anderson Counties August 2018,” 54.

⁶² “Drug Related Death Report 2017 for Knox and Anderson Counties August 2018,” 56, 64, 101. In 2010, methamphetamine deaths accounted for 0.5 percent (n=1 death of n=209) of the drug-related deaths reported by the Knox regional medical examiner’s office. By the end of 2017, the rate increased to 19 percent (n=71 deaths of n=362 reported).

⁶³ Bureau of Justice Assistance (BJA), “Addressing the Drugs Crisis in East Tennessee,” n.p. Initially published on June 25, 2019, available at: https://www.bja.gov/SuccessStory/addressing-the-drug-crisis-in-eastern-tn.html?utm_source=announcements_bja.gov&utm_medium=web&utm_campaign=successtories.

⁶⁴ Bureau of Justice Assistance (BJA), “Addressing the Drugs Crisis in East Tennessee,” n.p.

A similar scenario is playing out in other parts of Appalachia. Across the state line in Wise and Lee Counties, Virginia, counties that waged a prolonged struggle against opioids (particularly diverted prescription drugs), sheriffs' departments and state officials have witnessed a decline in opioid abuse and a concomitant rise in meth abuse. Because of improved policing, legislative changes that enhanced prescription drug monitoring programs, better regional cooperation, and partnerships with federal authorities, the opioid crisis seems to have reached an apex in Lee and Wise Counties. Undoubtedly, opioids (especially fentanyl and its analogs) are still at problematic levels, but the recent trend has been for individuals to turn to cheap, ultra-pure, highly potent meth in lieu of opioids.

The result in Wise County, Virginia, is that officers are currently battling the opioid epidemic alongside the meth crisis. Because of prevailing economic conditions, the Wise County Sheriff's Department is dealing with two very different narcotics problems with a resource-limited set of tools. In particular, the violence associated with meth use is a major concern. Methamphetamine use places law enforcement officers at a greater risk for injury and increases the likelihood that violence (or violent behaviors) will metastasize throughout the local community/region. Assistant Sheriff Grant Kilgore (Wise County, Virginia) notes that while the opioid epidemic wreaked havoc in his area, meth currently "touches every family" [in Wise County] in one way or another.

Despite the rising tide of methamphetamine use in these areas, local and state authorities have worked in concert with various federal authorities to deal with the rising meth crisis. While the war against meth is in its infancy, law enforcement and public health officials are trying to be proactive in their responses to the problem. Successful early strategies include improved coordinated activities between various law enforcement agencies at all levels. Several local departments developed or enhanced information sharing programs to relay information (in near real time) from one area to other jurisdictions. In some cases, with the financial and technical support of federal authorities, local and state authorities have been able to work across jurisdictional lines to apprehend suspected traffickers.

III. Recommendations

A. Medical/Public Health

1. Expand access to treatment facilities that specifically focus on both treatment and prevention of methamphetamine abuse.
2. Enhance research for pharmaceuticals capable of inhibiting the effects of methamphetamine.
3. Encourage those who perform drug testing to utilize presumptive tests that specifically screen for methamphetamine. A positive finding from tests that screen only for amphetamines would indicate the presence of amphetamine but also could represent the metabolite of methamphetamine. Distinguishing the presence of methamphetamine will provide not only a better estimation of prevalence but also better guidance as to which samples should be submitted for the more expensive confirmatory testing.

B. Legal

1. Create allocated, dedicated law enforcement resources for developing intelligence and information sharing protocols regarding methamphetamine production and distribution. Ideally, this would occur at the state, local, and federal levels simultaneously.
2. Conduct additional training for new officers regarding the recognition of laboratories and essential precursors.
3. Provide enhanced training to detect and deter known pathways of distribution across the Mexican/U.S. border by the Mexican TCOs and others, including detection and interception of drones.
4. Support international agreements for reduction of chemicals used as precursors for methamphetamine and other illicit substances.
5. Train law enforcement officers and first responders to identify and respond to child victims of sex trafficking.
6. Use law enforcement diversion programs, instituted in response to the opioid abuse crisis, as a model for connecting those with methamphetamine use disorders to treatment.
7. Facilitate interagency cooperation through information sharing and providing near-real-time surveillance of known and suspected overdose events. Expand current capabilities of ODMAP to include suspected methamphetamine overdoses.
8. Expand and utilize the latest technologies to counter the resurgence of methamphetamine distribution.

C. Legislative

1. Consider increasing federal and state penalties specific to methamphetamine trafficking.
2. Support legislative funding for law enforcement to provide adequate security for the Southwest border and to prevent illegal entry.
3. Monitor treatment providers to ensure utilization of evidence-based treatment interventions.
4. Expand access to treatment for underserved and special populations, such as pregnant women and Native American/tribal communities.
5. Provide continued legislative support and funding of therapeutic treatment courts, including drug courts and veterans' courts.

6. Ensure continued political focus on the development of pharmacological treatments for methamphetamine use disorders.
7. Increase legislative support to encourage international agreements that regulate methamphetamine precursor availability.
8. To account and plan for changes in use patterns of substance abusers, ensure increased treatment funding for all substance abuse disorders to avoid lack of funding for any specific disorder.

D. Local and Regional Specific Recommendations

1. Provision of long-term state and federal funding to help state, local, tribal, and territorial law enforcement agencies retool to counter the specific threats posed by methamphetamine use.
2. Legislative support to increase/improve regional cooperation within and between individual states to prevent traffickers/dealers from using state lines to inhibit effective law enforcement.
3. Increased cooperation (and necessary requisite legislation) among state, local, tribal, and federal authorities to establish field-based task forces that stand up quickly to counter specific threats covering multiple jurisdictions simultaneously.
4. Increased cooperation with technology companies to help counter threats as they emerge.
5. Funding and support to create and maintain effective intelligence, analysis, and information sharing operations at the local level.
6. Expand current capabilities of ODMAP to include suspected methamphetamine overdoses and enhance the “forecasting” abilities of ODMAP to alert local and state law enforcement.
7. Expand and rationalize event and target deconfliction capabilities.

IV. Conclusion

The resurgence of methamphetamine abuse poses a serious threat to public health, community safety, and law enforcement. Current data from medical and legal entities indicate that the rate of methamphetamine abuse may exceed that of the original methamphetamine epidemic in the early 2000s.

A methamphetamine “metamorphosis” has occurred with regard to the production and distribution of methamphetamine. Large super labs, operated by Mexican TCOs, have replaced domestic manufacturing laboratories. While the production shift to northern Mexico predates the current resurgence of methamphetamine abuse in the United States,

the link between the current upsurge and the mostly unrestrained production capacity in Mexico is clear. The “industrial” approach has resulted in methamphetamine that is more potent, with increased purity, higher yields, reduced costs, and widespread accessibility. Moreover, the use of well-established smuggling routes and methods allows Mexican-based TCOs to transport vast quantities of ultra-pure, highly potent methamphetamines into large geographic areas of the United States that have not traditionally been affected by widespread meth use. The TCOs have used their relatively secure operating environments and large production capacities to both dominate traditional meth markets and establish new markets by flooding entire geographic regions with inexpensive methamphetamine.

Although the strategy employed by the TCOs and affiliated distributors is certainly not new, it has had a disparate effect on many rural communities throughout the country. In many cases, these are the same communities that have borne the brunt of the opioid epidemic in recent years.

The concurrent opioid epidemic has impacted the methamphetamine epidemic in a variety of ways. The attraction of polysubstance use, the fear of overdose from potent opioids such as fentanyl, overburdened treatment facilities, and vast resources being directed toward opioid abuse have factored into the current methamphetamine crisis.

U.S. medical, legal, and legislative professionals should work in concert to deter production of methamphetamine through enhanced enforcement and international diplomacy; to deter transport and availability through surveillance of the Southwest border; to direct funding to polysubstance abuse treatment, including availability at each stage of the justice system; and to strengthen individuals as a whole, including their physical, mental, and spiritual needs.