The Resurgence of Crystal Meth: Trends and State Responses

By Jeremy L. Williams

Crystal methamphetamine, perhaps one of the most addictive and dangerous drugs in existence, has continuously plagued rural and urban regions of the country for the last three decades. States have attempted to address the growing production and distribution of the drug, along with the destructive repercussions it has wrought in the lives of those who have become addicted to it, largely through tougher laws that restrict the sale of precursor drugs used in meth production. While these measures have been as a whole effective in temporarily reducing the production of crystal meth, producers have found new ways of circumventing existing laws. For this reason, states are examining new and innovative ways to combat this terrible drug.

Introduction

Methamphetamine is a highly addictive, synthetically produced, central nervous system stimulant. According to the U.S. Drug Enforcement Administration (DEA), it is the most common synthetic drug manufactured in the United States and is second only to marijuana in overall production and use.1 According to the National Survey on Drug Use and Health, the percentage of primary substance abuse treatment admissions for methamphetamine abuse in the United States more than doubled from 1995 (4 percent) to 2005 (9 percent).2 In addition, while only two states—Hawaii and California—reported more than 5 percent in meth-related treatment admissions in 1992, by 2003 that number had risen to 26. Eight states reported more than 20 percent and two states—Hawaii and Idaho—reported more than 40 percent of all drug treatment admissions related to methamphetamine use.3 According to the National Institute on Drug Abuse, approximately 10 million people in the United States ages 12 and older have abused methamphetamine and in 2005 about 500,000 people were current users.4

Methamphetamine has dozens of common nicknames, usually derived from the form the drug is in when it is consumed. These include “speed,” “crank,” “ice,” “crystal,” “glass,” “chalk” and “meth.”5 It can be snorted, injected, smoked or swallowed. The term “crystal meth” refers to the most common form methamphetamine takes—a crystallized formation. When consumed, methamphetamine creates a sense of euphoria by increasing the release of dopamine in the brain. The drug has profound effects on the user’s mood, metabolism, ability to concentrate and sex drive. The euphoric high is followed by a crash, which often leads to increased use of the drug. Eventually, meth abuse may lead to difficulty feeling any pleasure at all, except that which can be derived from the drug itself, which enhances the potential for addiction and continued abuse.6

History of Methamphetamine Use in the United States

Amphetamine was first synthesized in the late 1800s, and methamphetamine7 was first synthesized in Japan in 1919. Both drugs have been used throughout the last century to treat a variety of ailments, from narcolepsy to depression to obesity. Both were widely used as a stimulant during World War II. Following the war, the United States saw a slight rise in legal, prescribed use of amphetamine and methamphetamine, the dangerous effects of which were not fully known. It was not until the 1960s that the clandestine manufacturing of methamphetamine for recreational use was first discovered.8

The steady growth of methamphetamine use in the United States during the past 50 years largely is due to the ability to produce it using conventional, easily accessible chemicals and supplies. While other major illegal drugs—such as cocaine or heroin—are imported from South American or Asian countries, most methamphetamine consumed in the United States is produced locally with recipes that can be accessed through the Internet and readily available products like pseudoephedrine and ephedrine,9 iodine, rock salt, battery acid, anhydrous ammonia and many basic kitchen items.
like plastic bags, glass cookware, funnels and soda bottles. Other than marijuana, methamphetamine is the first major drug to have vast quantities produced in rural regions of the country. This is attributable to the fact that meth production requires discreet locations, such as abandoned farms, fields, vehicles, barns or old hotel rooms. According to the DEA, meth labs are, by far, the most common clandestine laboratories in the United States.10

The United States also has large amounts of methamphetamine, as well as precursor drugs, trafficked into the country from or through Mexico. In 2005, the Mexican federal government began implementing restrictions on imports of pseudoephedrine, ephedrine and other chemicals used in methamphetamine production. In 2007, Mexico prohibited ephedrine imports into the country and banned the use of the chemical by 2009. These restrictions have contributed to a significant decrease in methamphetamine production in Mexico and a corresponding decrease in the amount of meth trafficked into the United States. For instance, the amount of methamphetamine seized along the U.S.-Mexico border fell 38 percent between 2006 and 2007. According to the DEA, 80 percent of the methamphetamine produced in the United States is made in large production operations, or “super labs,” in Mexico or California. In most cases, these labs are operated or owned by organized crime syndicates.11 Estimates of the amount of methamphetamine smuggled from Canada into the United States are limited. The available data do not indicate increases in seizures along the border or increases in the amount of methamphetamine entering the United States from Canada.

**Effects of Methamphetamine Use**

Methamphetamine has serious physical and psychological implications for users, such as tooth decay, also referred to as “meth mouth.” Contrary to the popular belief that this condition is a result of the harsh chemicals contained in the drug, meth mouth is the result of the drying of saliva glands and grinding of teeth that occur during methamphetamine use, as well as lapses in personal hygiene and the consumption of sugary foods, which methamphetamine users typically desire. Methamphetamine also causes structural damage to regions of the brain that control motor skills and memory. Methamphetamine can produce euphoric effects from eight to 24 hours, depending on the amount consumed. In comparison to cocaine, which only produces a 20- to 30-minute “high” and after only one hour 50 percent has left the body, methamphetamine remains in the brain for long periods of time and can cause much more serious damage to blood vessels and dopamine transporters than other major drugs. Correspondingly, methamphetamine can cause significant visual hallucinations, violent behavior, paranoia and confusion that far exceed the degrees of negative side effects from other common illegal drugs. The long-term effects of methamphetamine, even after use has ceased, are also more severe, leading to profound anxiety, confusion, insomnia, cardiovascular problems and psychotic episodes, such as delusions.12

Although the euphoric effects of the drug are similar to those produced by cocaine and heroin, the rate of recovery from methamphetamine use is much lower than any other drug. According to the National Center on Substance Abuse and Child Welfare, approximately 50 percent of methamphetamine users relapse, 36 percent of those within the first six months of treatment. The center also indicates that the rates of treatment completion for methamphetamine users in the country are similar, if not lower, to treatment completion rates for drugs like heroin and cocaine.13 This is due, in part, to the fact that treatment options for methamphetamine, unlike those for heroin and cocaine, are largely behavioral therapies. Medical treatments similar to a methadone regimen to treat heroin addiction essentially are nonexistent for methamphetamine users.14 Also, unlike other drugs where greater tolerance comes with more frequent use, the addictive properties of methamphetamine mean the more individuals consume, the more they crave it. In addition, many rural areas where methamphetamine use is more prevalent do not have the health facilities necessary for treating addicts, leaving numerous users with no treatment options.15

Extended methamphetamine use also can lead to brain damage, with symptoms similar to those of Parkinson’s disease or Alzheimer’s disease. Methamphetamine damages nerve terminals in the brain that contain dopamine and serotonin, two chemicals essential for the central nervous system to function properly. Methamphetamine alters essential brain functions by impairing decision-making, memory and motor skills. It also can cause structural and functional deficits in brain areas associated with depression and anxiety. Studies have indicated that, in some tests, extended abstinence from the drug may allow some recovery from deficits in dopamine function in various
regions of the brain. Other tests, however, have shown little or no recovery in brain function even in cases involving up to two years of abstinence, suggesting that long-term and even permanent brain damage may result from methamphetamine abuse. In addition, methamphetamine use can cause death through the collapse of the cardiovascular system or hemorrhaging in the brain.

In addition to the immediate physical toll the drug can have on the body, methamphetamine is associated with higher rates of riskier sexual behavior and violence than other drugs. Methamphetamine simultaneously heightens the libido and lowers inhibition, therefore linking it to higher rates of domestic violence, including sexual abuse. For this reason as well, methamphetamine is inextricably linked to the spread of hepatitis C, HIV and other sexually transmitted diseases. Along with riskier sexual behavior, the use of contaminated injection equipment plays a role in the spread of these diseases among intravenous methamphetamine users. Some studies indicate that physiological changes in meth users, such as compromised immune systems, may make them more vulnerable to developing HIV if exposed. HIV-positive meth users also may develop AIDS sooner than other patients due to poor medication adherence or interactions between methamphetamine and HIV medications.

Moreover, the production of methamphetamine results in a host of environmental and health hazards, including airborne and persistent toxins and frequent explosions. The regular presence of children near meth labs compounds the risks of production by placing more vulnerable populations in danger.

The economic impact of crystal meth can be significant. A 2005 study issued by the Sam Walton College of Business at the University of Arkansas indicates that in Benton County alone, the home of Wal-Mart Stores Inc., absenteeism and loss in productivity related to methamphetamine addiction costs employers more than $21 million annually. The Centers for Disease Control and Prevention reports that the average age for first use is 22.1 years old and the highest rate of methamphetamine use is found in young adults, ages 18–25, followed by youth, ages 12–17. This shows the high potential for lifelong addiction and a large loss of productivity for communities. Overall, according to a study by the RAND Corporation, methamphetamine addiction costs reached $23.4 billion in 2005, including law enforcement, environmental cleanup and drug treatment expenditures.

Federal Legislation
The first federal law targeting the use of methamphetamine in the United States—passed in 1983—addressed the possession of cooking equipment and precursor drugs. Canada passed similar legislation the same year. In 1986, the U.S. Congress passed the Federal Controlled Substance Analogue Enforcement Act with the goal of curbing the rapidly growing designer drug market. The Anti-Drug Abuse Act of 1988 was the first piece of legislation to attempt to control the sale of precursor drugs used in methamphetamine production, but it did not regulate the over-the-counter sale of ephedrine and pseudoephedrine products.

The Crime Control Act of 1990, the Domestic Chemical Diversion and Control Act of 1993 and the Comprehensive Methamphetamine Control Act of 1996 all increased penalties for production and use of methamphetamine and established various provisions for tracking and prosecuting the buying or selling of large amounts of precursor products. However, these laws did not address exemptions in regulations pertaining to the retail sale of precursor drugs. These exemptions collectively became known as the “blister pack exemption,” referring to the unregulated sale of small amounts of ephedrine and pseudoephedrine products ostensibly for individual consumption. Despite these federal efforts, methamphetamine production, distribution and use continued to increase in various parts of the American West and Midwest, eventually spreading east and taking root in the South. Until recently, products containing precursor drugs, such as Sudafed and Claritin-D, continued to be sold as over-the-counter drugs.

In 2005, the U.S. Congress passed the Combat Methamphetamine Epidemic Act, which mandates all products containing precursor compounds be kept behind the counter or locked in a cabinet. President George W. Bush signed the act into law in March 2006. The act restricts individuals from purchasing more than 3.6 grams of precursor products in a single day, more than nine grams in any 30-day period, or more than 7.5 grams in a 30-day period from a mail-order pharmacy or “mobile vendor.” In addition, the Combat Methamphetamine Epidemic Act requires individuals to present a state or federal government issued photo identification card at the time of each purchase. Also, beginning in September 2006, pharmacies were required to keep written or electronic logbooks of all ephedrine and pseudoephedrine transactions, including the customer’s name and address; date of pur-
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**The Resurgence of Methamphetamine Use**

Methamphetamine laboratory seizures steadily decreased both nationally and in individual states from 2004 to 2007, due largely to restrictions on ephedrine and pseudoephedrine sales. However, according to the U.S. Department of Justice’s National Drug Intelligence Center, the United States saw an increase in lab seizures from 2007 to 2008. By midyear 2008, in many states, methamphetamine laboratory seizures significantly outpaced or exceeded seizures reported for all of 2007. For example, Alabama saw more laboratories seized from January through July 2008 (125 labs) than in all of 2007 (81 labs).

In addition to the increase of ephedrine and pseudoephedrine products being trafficked between states, increases in meth production most likely are attributable to several factors. First, the ability of customers to circumnavigate existing ephedrine and pseudoephedrine purchasing restrictions has continued to increase. Individuals and criminal groups have learned to get around these restrictions by making numerous, small quantity purchases of products containing precursor drugs, a strategy often referred to as “smurfing.” Often, smurfing operations are organized to sell the precursor chemical to methamphetamine producers or trade it for the drug.

The second major reason for the abrupt increase in methamphetamine use is the development of new ways to produce meth, namely the “shake-and-bake” method. Methamphetamine laboratories increasingly are shifting away from large production facilities to more portable ones. Shake-and-bake is a new method of production that replaces cooking the substances required to make methamphetamine by simply shaking the chemicals in a bottle to initiate the necessary chemical reaction. The method produces smaller amounts of meth, usually around 8 grams, but is easier to carry out and less likely to be detected by law enforcement personnel. Since this new process requires neither a large space nor as many materials as traditional cooking methods—producing meth with the shake-and-bake method only requires a few pills, a 2-liter bottle and some common household chemicals—this new method is quick, cheap and mobile, reducing the likelihood that producers will be apprehended.

This method of production requires far less ephedrine or pseudoephedrine than traditional cooking methods, making laws that restrict purchasing large amounts of precursor drugs obsolete. Smaller, low-capacity labs have been growing in popularity since the advent of illegal methamphetamine production, accounting for approximately 20 percent of all meth consumed in the U.S., according to the DEA. Correspondingly, the shake-and-bake method appeals to addicts, since their interest predominantly is producing small amounts for personal use, while minimizing risk, as opposed to producing large amounts required by dealers or distributors.

The shake-and-bake method allows producers to easily dispose of leftover materials once the substance is produced, often involving throwing the residue out of a vehicle in a plastic bag, which has given rise to the term “trash labs.” Trash labs come with serious environmental consequences since they contain noxious chemicals. Animals as large as deer have been found dead near disposal sites. They also can cause complications for law enforcement, since each trash lab becomes a crime scene. Evidence must be collected and the area must be cleared as quickly as possible to avoid explosions and other environmental damage that could further harm humans or wildlife. Cleanup of labs can cost thousands of dollars and can put personnel in danger. Also, when law enforcement personnel find remnants of a trash lab, the illegal product confiscated often is too small for state or federal prosecutors to initiate legal action.

Beyond the environmental complications produced by trash labs, their sheer prevalence indicates an alarming trend: Methamphetamine is becoming easier to make and existing meth laws are becoming easier to circumvent. Officials in many states have indicated the majority of meth lab seizures are now shake-and-bake operations. For instance, approximately 65 percent of all meth laboratory seizures in Tennessee are of the shake-and-bake variety. The state is among those that saw a decrease in lab seizures from 2005 to 2007, but are now seeing an increase. Similarly, the number of lab seizures in Oklahoma—which dropped from 1,200 in 2003 to 148 in 2006—rose to 743 in 2009 due in part to the pervasiveness of shake-and-bake labs. The DEA has stated the number of meth labs, which includes trash labs and remnants of production operations, rose nationally from
5,910 in 2007 to 6,783 in 2008, nearly a 15 percent increase. This followed nearly a 58 percent drop from 2003 to 2006, from 17,356 to 7,347 labs.32

**State Laws**

In addition to federal laws, at least 40 states have passed methamphetamine laws in recent years, such as restrictions on the sale of ephedrine or pseudoephedrine. Two states—Oregon and Mississippi—require a prescription for their purchases. Electronic monitoring of precursor drug purchases is growing in popularity, as it is an extremely useful surveillance device for both pharmacies and law enforcement personnel. States that have instituted electronic reporting systems have seen dramatic reductions in the rate of illicit manufacturing of methamphetamine. Most systems simply require pharmacists or police personnel to have Internet access, along with a username and password, to log onto secure Web portals that house the information. At least 10 states use databases to track ephedrine and pseudoephedrine sales.

States are experimenting with other avenues to combat this epidemic. Although some states restrict the number of packages of precursor drugs that may be purchased, others limit only the quantity based on weight. Some states are examining not only the sale of methamphetamine precursors but also the possession of precursor drugs. Some states have explored creating methamphetamine conviction registries, similar to those used to track sex offenders, and logs for tracking real estate that has been damaged by methamphetamine production.

While ephedrine and pseudoephedrine are the primary precursor drugs used in the production of methamphetamine, other harsh chemicals—such as hydrogen peroxide, iodine crystals and red phosphorous—are required as well. Many states have begun examining the benefits of restricting the sale of these compounds. For instance, Iowa has attempted to limit access to anhydrous ammonia, a primary ingredient in methamphetamine production in agricultural states where the chemical is routinely used as a fertilizer. In Iowa, more than 90 percent of all meth laboratories use the chemical in the production process. A $1.2 million national research project at Iowa State University, and confirmed by the DEA’s forensics lab, found that meth operations attempting to use anhydrous ammonia that has a calcium nitrate inhibitor added to it generally extract only 2 percent of ephedrine for conversion to methamphetamine, as opposed to an approximate 42 percent yield for production methods without the inhibitor. The inhibitor also reduces the purity of any amount of the drug produced from the ephedrine extraction. The chemical reaction between calcium nitrate and anhydrous ammonia that causes the decrease in ephedrine production actually continues even if more ammonia is added. In other words, if producers add more treated ammonia to the recipe to defeat the inhibitor, even less meth will be produced. The inhibitor is used on a voluntary basis in Iowa, but agriculture retailers who participate in the program receive the formula, along with signage for placement on their tanks, which could help dissuade potential users. Additionally, calcium nitrate is a common fertilizer compound used primarily for horticulture. It is nontoxic, safe for food supplies and has no adverse impact on the environment or farm equipment.33

**Oregon and Mississippi**

In 2006, Oregon became the first state to require a doctor’s prescription to purchase an ephedrine or pseudoephedrine product, essentially eliminating a once thriving meth industry in the state. In 2004, police seized 472 meth labs; by 2007, that number had decreased to 20. According to the Oregon Narcotics Enforcement Association, by 2010 the number of meth lab seizures in the state had dropped to 13, a 97 percent decrease from 2004.44 In addition, the state’s property crime rate, which has a direct correlation to methamphetamine use, declined by approximately 17 percent in 2006, the largest decrease in the country.35

In 2009, Mississippi became the second state to pass a law restricting access to ephedrine and pseudoephedrine products to patients possessing a prescription from a physician. The legislation states that medicine containing precursor drugs only can be dispensed after the buyer produces a doctor’s prescription to the pharmacy. According to the DEA, methamphetamine is the fastest-growing drug threat in the state. Although Mississippi experienced an 89 percent increase in lab seizures from 2007 to 2009, in six months following the implementation of this new law, many counties have reported 70 to 80 percent decreases in methamphetamine-related crimes.45

Like Oregon, the passage of Mississippi’s prescription bill was fairly contentious. Opponents argued the law would create undue additional costs for individuals paying for doctor’s visits and co-pays at the pharmacy in order to obtain these
medications. Opponents also argue it would simply drive methamphetamine producers and users, as well as innocent individuals who are ill, across state lines to purchase the medication. Proponents of the measure argued alternatives to decongestants and cold medications that contain ephedrine and pseudoephedrine are available for minor illnesses.37

Conclusion
Overall, the United States experienced a significant decrease in methamphetamine lab seizures from 2004 (17,170) to 2007 (5,910), a drop of 66 percent, but has seen a steady resurgence since then. The same is true for many states that have continuously fought this epidemic. The dynamic is likely due to the ability of methamphetamine producers to circumvent existing federal and state precursor laws. An independent study in 2003 concluded that while federal laws aimed at the sale or possession of large amounts of ephedrine and pseudoephedrine products used in the production of methamphetamine in “super labs” dramatically affected rates of meth-related hospital and treatment admissions, similar federal regulations aimed at the sale of individual purchases of these products had little or no impact on such admissions.38

For this reason, states are taking action to address this trend and have a variety of options to consider. The promising results seen in both Oregon and Mississippi are incentive for states to consider requiring a doctor’s prescription to purchase drugs containing ephedrine and pseudoephedrine. However, this drastic step comes with certain consequences, including increased medical costs associated with doctor visits and the general inconvenience to common cold sufferers.

States can further explore the benefits of implementing stricter ephedrine and pseudoephedrine purchasing laws, the use of electronic monitoring systems, as well as databases that provide information about offenders and other dangers associated with meth production and use. In addition, state governments can assess the impact of passing laws that restrict access to other precursor chemicals and materials, such as those implemented in Iowa.

Perhaps most importantly, states can work together to reduce the ability of traffickers to capitalize on looser methamphetamine laws in one state, thereby negating the efforts of surrounding states. A regional approach for coordinating information pertaining to ephedrine and pseudoephedrine sales is an effective technique for combating the rise of meth production and distribution. For instance, although Tennessee maintains a statewide monitoring computer database, no such system exists in Georgia. While ephedrine and pseudoephedrine products can be sold only as behind-the-counter products in pharmacies in Tennessee, gas stations and other stores in Georgia can sell these restricted products. Like Tennessee, Georgia collects buyer information, but the customer provides it and there is no guarantee the information is accurate. In Tennessee, a photo identification card is required. The restrictions on the allowable amount of ephedrine or pseudoephedrine purchased in Georgia easily can be circumvented, which means Georgia counties that border Tennessee are ideal hubs for smurfers to gather precursor drugs, returning to Tennessee to produce and/or distribute the product. Tennessee’s Methamphetamine Task Force is working with Georgia officials to produce a system to link the two states’ computer databases.

The methamphetamine epidemic does not appear to be slowing, and states must be poised to make critical decisions regarding prevention, education, enforcement, treatment and rehabilitation. A “one-size-fits-all” approach is not necessarily prudent, but states can learn from one another and work across jurisdictional lines in new ways, so together they might begin to address this disturbing trend.

States and local entities are in a unique position to play a pivotal role in addressing the myriad public safety and health needs associated with methamphetamine production and use, since states and local regulations, especially those aimed at practices that historically have circumvented existing federal laws, can be tailored to address the specific meth problems facing their pharmacies, doctors, law enforcement personnel and addicted population.
Notes


3 Hunt, iv.


5 For the purposes of this article, all the names for methamphetamine will be considered interchangeable under the umbrella terms “methamphetamine” or “meth.”


7 Methamphetamine, dextroamphetamine and amphetamine, as well as their various salts, are collectively referred to as “amphetamine.” Their chemical properties and effects are very similar. Methamphetamine is the most commonly abused of these substances.


9 Pseudoephedrine and ephedrine both have the same molecular formula and the same sequence of molecular bonds, but different three-dimensional spatial arrangements. They both, along with related compounds like phenylpropanolamine, or other salts, optical isomers, or salts of optical isomers, serve the same function in the production of methamphetamine. Pseudoephedrine is more widely used in sinus and allergy medications and ephedrine typically is used in asthma medications.

10 Hunt, 12.


12 National Institute on Drug Abuse, NIDA InfoFacts: Methamphetamine.


14 National Institute on Drug Abuse, Methamphetamine Addiction: Cause for Concern, 2.

15 Otero, 7.

16 National Institute on Drug Abuse, Methamphetamine Addiction: Cause for Concern, 2.

17 Ibid.

18 National Institute on Drug Abuse, NIDA InfoFacts: Methamphetamine.

19 Ibid.


About the Author

Jeremy L. Williams is a policy analyst at The Council of State Governments’ Southern office in Atlanta, Georgia, where he researches, analyzes and writes on issues related to health, human services, public safety, energy and environment, as they apply to Southern states. In addition, he tracks legislative issues and policy developments in Georgia, Louisiana, Texas and West Virginia. Williams has focused a great deal of attention on emerging issues, such as the resurgence of HIV/AIDS in Southern states and the continued fight against human trafficking.