



Scope of the Problem

Health Risks

Provider Strategies

Treatment Strategies

METHAMPHETAMINE and HIV

"If you [had] told me that I would go from being an executive at Macy's to [being on] the verge of homelessness, I never would have believed you," says Mike Rizzo, a recovering methamphetamine ("meth") addict and manager of Crystal Methamphetamine Recovery Services (CMRS) at the Los Angeles Gay & Lesbian Center. "Meth dismantled my life," he adds. "I was fired from a job, suffered psychosis and severe depression, and was unable to take care of myself."

Mike's story is not unique. The power of meth to destroy the lives of its users is seen in rural areas, in urban centers, and among the rich and the poor. And the intersection of the HIV and meth epidemics is posing major barriers to care for people living with HIV/AIDS (PLWHA) as well as considerable hurdles for HIV service providers across the country. To better identify—and treat—PLWHA who use meth, providers must understand the drug's allure, pharmacology, and health implications.

UNDERSTANDING METH

According to the United Nations, meth is now the most abused illegal drug on earth, excluding marijuana—it has more users than cocaine and heroin combined.¹ According to the 2005 National Survey on Drug Use and Health, an estimated 10.4 million Americans age 12 or older have tried it.^{3,4} Meth, also commonly known as "crystal," "crank," "glass," "ice,"

DID YOU KNOW?

Meth users, if smoking in confined spaces with little ventilation, may create an environment ripe for bacterial and viral infections, including treatment-resistant TB.²

Within its first few weeks online, the HIV and methamphetamine fact sheet for clinicians—available on the Health Resources and Services Administration (HRSA's) National AIDS Education and Training Center (AETC) Web site—received more than 4,000 downloads.

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Health Resources and Services Administration

The impact of methamphetamine on families, communities, and health care systems is devastating. With its low costs and potent highs, the drug has fueled a national epidemic that has reached every corner of society. Meth's intoxicating allure can mask the physical and mental consequences it can bring, including oral diseases, renal failure, and increased likelihood of suicide. Links between meth use and increased HIV risk, especially for men who have sex with men, are sobering. Meth use decreases judgment and increases the likelihood for unsafe sex. And with studies showing that 86 percent of inpatient treatment meth users are HIV infected, the sad realities of the epidemic are clear.

That is why providers must use substance abuse screening tools and counseling as well as address physical and psychological side effects as part of an effective treatment strategy. We have dedicated this issue of HRSA CARE Action to meth and HIV because to combat this complex problem, we must first understand how it affects the people we serve.

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Cover: An HIV-positive former meth user receives support at home from providers at the Tarzana Treatment Center, Los Angeles County, CA. Photograph © See Change.

Additional copies are available from the HRSA Information Center, 888.ASK.HRSA, and may be downloaded at www.hab.hrsa.gov.

This publication lists non-Federal resources to provide additional information to consumers. The views and content in those resources have not been formally approved by the U.S. Department of Health and Human Services (HHS). Listing of the resources is not an endorsement by HHS or its components.

"speed," "Tina," "chalk," and "tweak," is a Schedule II* psychostimulant affecting the central nervous system by increasing reuptake of dopamine, serotonin, and norepinephrine (which is related to adrenaline), the main neurotransmitters in the brain responsible for pleasurable feelings.^{2,4-9}

The amount of dopamine the brain releases following meth ingestion (about 1,200 to 1,300 units) is approximately 4 times the amount produced by cocaine in laboratory animals—a difference in magnitude that is likely similar in humans and that cannot naturally occur from any rewarding activity.^{10,11} In addition, meth is relatively cheap, has a long half-life (typically 9 to 12 hours), and produces a rapid high when ingested by smoking, snorting, or injecting.^{4,5,12}

Meth (pharmaceutically referred to as methylamphetamine or desoxyphedrine) can take the form of a powder, paste, capsule or pill.^{2,13,14} It can be snorted, smoked, injected intravenously, inserted anally, or eaten.⁵ Smoking meth is the most common mode of ingestion, yet nearly one-quarter of users inject the drug.¹⁵ Although rare, "Strawberry Quick," a pink-colored meth that resembles Pop Rocks candy, has been found in several States.^{2,16}

Meth production occurs in small, clandestine laboratories (known as "local" laboratories) or in large "super labs." It typically takes place in sparsely populated rural areas (e.g., the desert Southwest) so as to circumvent law enforcement.

Meth manufacturing can cause fires, toxic gases, and toxic waste that can affect manufacturers, law enforcement officials, and bystanders.¹⁴ Manufacturing 1 pound of meth in a local laboratory leaves behind 5 to 6 pounds of hazardous waste.¹⁷

Meth creates environmental clean-up and public safety issues and places enormous strains on resources relating to primary and mental health, substance abuse treatment, correctional settings, and foster care placements.¹⁸ In fact, children are present in 20 percent of homes with meth labs. Exposure to the drug and to the manufacturing chemicals and byproducts can increase

*Schedule II drugs, as defined by the Federal Controlled Substances Act, have high risk for abuse but may serve some medicinal purposes.

the risk for physical ailments such as nausea, dizziness, and burns; certainly, exposure to meth addicts and criminal activity increases the potential for child abuse and adverse psychological effects.⁹

The meth epidemic began on the West Coast and spread eastward. Meth-making operations have been found in all 50 States.^{15,19} Because of the Combat Methamphetamine Epidemic Act (CMEA) of 2005,²⁰ however, local production has been dramatically curtailed. (For more on the CMEA, visit the Web site www.deadiversion.usdoj.gov/meth/cma2005_general_info.pdf.) The CMEA regulated the sale of ephedrine and pseudoephedrine, commonly available drugs used as precursor chemicals in meth manufacture, by placing decongestant cold medicines behind the counter in pharmacies.²¹ Despite this improvement, the social, environmental, and health problems left behind by meth continue.

WHO'S USING METH?

The populations of people using meth are diverse. For example, methamphetamine use is 5 to 10 times more common among urban gay or bisexual men than among the general U.S. population.¹² Urban users are commonly transgendered persons and youth, particularly homeless youth.* But in rural areas, meth use is evenly distributed among men and women, and users are predominantly White, working class, and heterosexual.^{15†}

Trends show increased use among Latinos, women, rural youth,¹⁵ Hawaiian Islanders, and Native Americans.² According to the Bureau of Indian Affairs, more than 70 percent of people working with Native Americans cited meth as the primary drug problem among this population. Meth was also a factor in more than 40 percent of violent crimes investigated in Indian country.^{2,5} (To access information specific to Native Americans, visit the National Indian Country Methamphetamine Initiative Web site: www.ncai.org/meth/.)

In addition, "Youth of color, especially African-American and Latino youth, are often overlooked as many HIV clinicians still see crack cocaine as the primary threat in their community. While this is still true at many clinics, we are increasingly hearing in trainings and needs assessments that methamphetamine is now the drug of choice among young MSM of color in Los Angeles," says Tom Donohoe, director and principal investigator of the

HRSA-funded Pacific AETC. "We're also being asked to provide more trainings for HIV clinicians working along the U.S./Mexico border."

Meth is becoming an intergenerational drug.² According to the 2007 National Survey on Drug Use and Health, "In 2007, 44.3 percent of past year methamphetamine users aged 12 or older reported that they obtained the methamphetamine they used most recently from a friend or relative for free. Another 30.4 percent bought it from a friend or relative."²²

REASONS FOR USE

Reasons for meth use vary considerably among populations. Rural meth users are more likely to cite meth's ability to improve functioning at jobs that require long hours or tedious tasks. Women are more likely than men to use meth for weight loss or because of coercion, force, or threats of violence.² Men are more likely to cite meth use as a means of enhancing sexual libido¹⁵; increasingly, men who have sex with men (MSM) are turning to the Internet to solicit meth-induced sex, a practice commonly known as "Party n' Play" (PnP).²³ Meth is also popular in the "circuit party" culture.²⁴

For homeless youth, meth is a survival drug. "It allows them to stay awake, making them feel safer on the street at night. It staves off hunger and thirst and allows them to engage in survival sex and either make some money or get a place to spend the night," explains Rizzo.

Meth can also be used to escape from depression, isolation, loneliness, stress, and boredom—reasons commonly cited across demographics.^{15††} HIV-infected MSM report using meth as a way to deal with survival guilt, internalized homophobia, and prejudice; as a result, meth use is high among this group.^{24††} Many HIV-positive meth users also cite using meth to counter fatigue and other side effects of antiretrovirals.^{12,24}

HEALTH RISKS

Meth gives people energy, alertness, confidence, and euphoria. With long-term use, however, meth can damage cognitive functioning, create hallucinations, ravage the body, and increase the likelihood of violent behaviors. Meth's ability to increase energy, sexual libido, and disinhibition leads many users to have sex for hours.

* Rizzo R. Personal communication. December 10, 2008.

† Morris T. Associate Administrator of HRSA's Office of Rural Health Policy. Personal communication. December 5, 2008.

†† Disney E. Personal communication. December 1, 2008.

Types of Effects

Acute physical

Physiological Consequences

Increases: heart rate, blood pressure, body temperature (hyperthermia), convulsions, blood pressure, pupil size, sensory acuity, and energy
Decreases: appetite, need for sleep, and reaction time

Acute psychological

Increases: confidence, alertness, mood, sex drive, talkativeness, euphoria, impulsive behavior
Decreases: boredom, loneliness, and timidity or social inhibition

Chronic physical

Tremors, weakness and fatigue, dry mouth and drying of skin, weight loss, malnutrition, cough, sinus infection, sweating, burned lips, sore nose, acne, headaches, diarrhea, anorexia, heart attack, stroke, acute pulmonary hypertension, breakdown of skeletal muscle, hyperventilation, eye ulcers, chronic obstructive lung disease, renal failure, hepatic failure, and sudden death from cardiac arrhythmia

Chronic psychological

Anxiety, confusion, insomnia, mood disturbances, violent behavior, memory loss, impaired cognitive functioning, depression, paranoia, panic disorders, lack of concentration, increased risk for suicide, visual and auditory hallucinations, delusions (including “formication,” the abnormal sensation of insects crawling on skin that can lead to skin infections and sepsis from the scratching that results), and full psychosis

Drying out of the mucosa is also seen in the oral cavity as a result of xerostomia, or dry mouth. “If you eliminate the protective role of saliva from the oral mucosa, you open a gateway for all kinds of pathogens,” explains Fariba Younai, a faculty member of the Pacific AETC and a clinical professor of oral biology at the University of California, Los Angeles.

Xerostomia, combined with the toxic chemicals in meth, causes tooth and gum decay (especially when a person smokes or snorts meth) as well as tooth discoloration, breaks in the teeth, caries, periodontal disease, and oral candidiasis.^{25,26} Meth can also cause cravings for high-sugar drinks, shrinkage of gingival tissue, bruxism (grinding of the teeth), and poor oral hygiene, all of which lead to “meth mouth.”^{12,13} Rampant tooth decay in many users leaves few dental options other than extraction.²⁷

Meth also changes the pleasure centers in the brain, and although damaged dopamine receptors can regrow over time, the repair may never be fully complete.⁴ Meth abstinence can lead to severe depression, which in part fuels the addiction cycle because users will take meth repeatedly to avoid the horrible low that follows. “Coming off meth the crash is so bad,” says Gary, a recovering meth addict at the Los Angeles Gay & Lesbian Center’s CMRS. “I would try to quit and then I would find myself on the couch with so little energy, I thought I couldn’t get up.

I felt like I would never get out of this dark place and I just wanted to make it all end.” Former meth users may need the most help from mental health services months after going through detox: 62 percent of chronic meth users remain depressed for 2 to 5 years after abstinence because of severe disruption of dopamine and serotonin distribution in the brain.^{2,28}

Meth poses additional health complications in pregnancy. What little data are available show that meth crosses the placenta and can cause placental insufficiency, abruption, intrauterine growth retardation, preterm birth, prematurity, clefting, cardiac anomalies and, in some cases, death. Meth can also be secreted in breast milk, so mothers should not breastfeed if they may have meth in their system. “Meconium testing is the most accurate method [for testing for meth exposure] in newborns; a positive result indicates perinatal use in the second half of the pregnancy.”⁹

Meth and HIV

It is nearly impossible to discuss the health implications of meth independent of HIV. Comorbidity for meth abuse and HIV infection is far greater among MSM than among any other population. According to Elizabeth Disney, a clinical psychologist at Chase-Brexton Health Services in Baltimore, Maryland, all the clinic’s HIV-positive meth clients are MSM. Rizzo’s clients include MSM and

transgender persons. Little literature is available specific to meth use among HIV-positive women.

Because meth use increases sexual libido while decreasing judgment and inhibition, it is often accompanied by unsafe sex practices, thereby increasing risk for HIV transmission.^{4,24,29} Meth-using men are 4 times more likely to engage in unprotected sex than are non-meth-using men.³⁰ “Meth takes away all your worries,” says Gary. “I had tried other drugs before, but then I tried meth, and it was as if this was *the* drug for me. It gives you so much energy and makes you feel confident and attractive. I didn’t try it for its sexual allure, but once you have sex on meth, it’s as if the two can’t be separated from one another,” Gary explains.

Ironically, the constricting of blood vessels due to meth can cause temporary impotence and lead to use of sexual enhancement drugs like sildenafil (Viagra), tadalafil (Cialis), or vardenafil (Levitra).^{2*} According to a National Institute on Drug Abuse (NIDA)–funded study, MSM meth users were more likely than heterosexual meth-using men to report multiple sexual partners (72 percent versus 57 percent).²⁹ “Meth becomes a doorway to explore sexuality, so men engage in more extreme sexual behavior that might otherwise be fantasy,” explains Disney.

“Data on meth use and MSM has shown there is a time-to-response link where the longer or more heavily an individual uses meth, the more likely he is to have HIV,” says Steven Shoptaw, a faculty member of the Pacific AETC and professor of family medicine and psychiatry at the University of California, Los Angeles. A Los Angeles-based study Shoptaw helped conduct found the following:

- ▶ 40 percent of non-treatment-seeking “weekend warriors”[†] were HIV positive.
- ▶ 61 percent of meth users entering outpatient meth treatment facilities were HIV positive.
- ▶ 86 percent of users in inpatient programs for meth were HIV infected.^{5*}

Similarly shocking is that MSM meth users who inject the drug are 30 times more likely to be HIV positive than are non-MSM meth users who inject the drug. In California, risk for HIV infection is triple among meth-using MSM compared with non-meth using MSM.⁵

Clinical Interactions

Meth is doubly dangerous. It not only increases behavioral risks for HIV but also acts as an immunosuppressant, decreasing CD4 levels and allowing for more virus to get into cells.^{24,28} Meth users, particularly because of the drug’s long high, often fail to maintain a treatment regimen, causing their viral load to increase.³¹ Meth’s interaction with the HIV protease inhibitor ritonavir can result in a 3- to 10-fold increase in meth levels in the bloodstream. Ritonavir prolongs the meth high by increasing absorption and decreasing the metabolism of meth and therefore can cause increased toxicity and potentially severe reactions or overdose.^{12,24} Delavirdine, a non-nucleoside analog reverse transcriptase inhibitor, also slows the metabolism of meth.¹² Providers may need to review treatment regimens if patients are using meth or missing treatments.

PROVIDER STRATEGIES

Treating HIV-positive meth users requires intensive collaboration among mental health specialists, dentists, pharmacists, social workers, primary care physicians, substance abuse counselors and, in some cases, correctional employees. “Treating patients requires a team. We have an electronic medical record where we share everything, and we have case conferences almost every week,” says Disney. “The case manager makes sure the patient is connected with resources and . . . following their plan; the pharmacist meets with the client and checks to make sure they’re sticking with an HIV medication regimen; the physician is tracking the lab numbers; I’m helping them deal with the deeper emotional issues, and the dentist is working to improve oral health,” Disney adds.

Part of an effective strategy includes dispelling the myth that meth is harder to treat than other drugs. According to Shoptaw, meth users’ rate of retention in treatment is virtually the same as that for other drugs (3 out of 5 people complete treatment).⁵ Although no specific guidelines exist to screen for meth, some providers use general substance abuse screening tools, a modified CAGE questionnaire or, in some cases, diagnostic testing with informed consent.⁹

Shoptaw advises providers to use the “5 A’s”: *ask* if the patient uses meth, *assess* if he or she is willing to quit meth, *advise* in a clear voice that it is a good idea to quit,

* Shoptaw S. Personal Communication. December 10, 2008.

† People using meth regularly on a weekend or every-other-weekend basis.

From November 16 to 19, 2008, the Substance Abuse and Mental Health Services Administration (SAMHSA) convened “Methamphetamine: The National Summit to Promote Public Health, Partnerships, and Safety for Critically Affected Populations.” In attendance were representatives from the Health Resources and Services Administration, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services (HHS) Office on Women’s Health, Indian Health Services, National Institute of Health-National Institute on Drug Abuse, HHS Office of Minority Health, and U.S. Department of Justice. SAMHSA and its partners funded 20 State/territory action teams to attend the summit and develop methamphetamine action plans. The partnerships illustrate the intersection of public health and public safety around methamphetamine and the importance of linkages across sectors to better address this burgeoning epidemic. The summit also synthesized successes and examined challenges in an effort to strengthen and expand Federal, State, local, and tribal initiatives to combat methamphetamine. To learn more about the summit, visit <https://luxlead.luxcg.com/samhsa/siteMain.aspx>.

assist the patient with finding intervention, and *arrange* for followup. Providers should also become familiar with co-occurring disorders and create a referral system with medical professionals in their area who treat those disorders.⁶

Cultural competency is vital to help providers understand not only the drug but also the user population and the reasons for use. Equally important is detection of underlying mental health problems. Inclusion of mental health specialists extends to emergency rooms, where it is important to identify whether patients’ mental health problems are meth induced.

Providers are seeing a specific type of memory impairment among meth-using clients. According to a longitudinal memory performance test conducted by colleagues of Shoptaw, word recall and word recognition among meth users is worse than among clients who do not use meth—even after 6 months of abstinence. No real difference for picture recall and picture recognition tests was found between meth users and other clients.³² Providers should therefore use pictures and write down instructions as well as explain information to patients.

In addition to addressing psychological changes, providers can help counter physical changes resulting from meth use by advising patients to hydrate and to avoid wearing hats so as to lower base body temperature and reduce the risk of malignant hyperthermia. Similarly, patients should be advised to consume protein to help repair muscle fibers and naturally produce and replace dopamine.² To treat xerostomia, providers can

recommend the use of artificial saliva products or sugar-free citrus candies to stimulate saliva production.³³

TREATMENT STRATEGIES

Important in addressing mental health is treatment of depression following abstinence from meth. According to a NIDA-funded study, use of sertraline (Zoloft) actually made quitting meth harder.³⁴ Bupropion (Wellbutrin) is the only antidepressant thus far to show consistent results in improved mental health *and* meth abstinence.^{*4} Researchers are looking into substitution therapy; however, no conclusive evidence exists on the effectiveness of treatment options such as amphetamine and dextroamphetamine (Adderall) or methylphenidate (Ritalin) for “weaning” patients off meth. Modafanil (Provigil), however, has been shown to help patients fight HIV fatigue due to meth withdrawal or HIV regimen but has not been shown to affect treatment adherence.¹²

Because treatment options for meth addiction remain in the research phase, providers are looking to strategies that have been successful in combating cocaine, another stimulant. One of the most widely accepted approaches is the Matrix Model, an evidence-based, outpatient, cognitive-behavioral therapy listed by SAMHSA’s National Registry of Effective Programs and Practice. (For a step-by-step manual tailored to gay and bisexual men, see www.uclaisap.org/assets/documents/Shoptawetal_2005_tx%20manual.pdf; for the complete Matrix Model series, available free from SAMHSA, call 800-729-6686.)

* Shoptaw S. Personal communication. December 10, 2008.

The Matrix Model includes cognitive-behavioral therapy groups, family education groups, social support groups, individual counseling, and weekly breath and urine testing.³⁵ It combines motivational interviewing and contingency management (providing tangible incentives in exchange for biological samples documenting abstinence from meth) to provide a multifaceted and comprehensive treatment approach. Participation in 12-Step programs is also recommended. Thus far, the Matrix Model has resulted in significantly longer retention in treatment, consecutively more drug-free urine samples, and sustained reductions in unprotected receptive and insertive anal intercourse than usual treatment.^{12,31}

The unique experiences faced by users contributed to the creation of a specialized 12-step group, Crystal Meth Anonymous (CMA). Many receive help at CMA, but Rizzo and Disney warn that some meth users may find CMA participation to be a trigger that increases cravings for meth; in those cases, Alcoholics Anonymous or Narcotics Anonymous may be a better fit.

Avoiding triggers is paramount to abstaining from meth, and for many users, triggers include sex. Rizzo usually advises a period of abstinence from sex while patients get clean and generally recommends up to 1 year—a strategy that worked for him. Disney suggests lowering sexual expectations and emphasizing intimacy over prolonged sexual encounters.

In fact, there are no data on whether or how people should engage in sexual behaviors during recovery from meth addiction, and the issue is controversial for both professionals and patients. Research has found, however, that when addicts stop taking meth, they also stop engaging in risky sexual behaviors.³⁶ When triggers are present, patients can also practice positive change intervention, in which they are asked to *delay* 10 to 15 minutes before acting, *distract* themselves with something else, and then *decide*.

CONCLUSION

"It's been a long journey. Meth is a very difficult drug to stay away from, but I keep showing up no matter what. I held out hope that one day I would be clean, and now it's been 14 months. I may not have all that I used to, but I'm getting there. I'm taking it one day at a time, and that's all right," Gary says.

Fortunately, the addiction counseling offered at CMRS and, increasingly, across the United States is giving

many meth users like Gary a chance at getting clean and reclaiming their health—and lives. Perhaps more than any other drug, meth addiction demands the sharing of information and strategies both within a care team and across health, substance abuse, and correctional sectors. The amount of information readily available about meth abuse and meth treatment is rapidly increasing. With continued research, increasing access to treatment, streamlining of services, and a lot of hard work, providers are finding success in delivering the comprehensive HIV care that PLWHA with a history of meth use so desperately need.

➔ ONLINE RESOURCES

AIDS Education and Training Center National Resource Center, Substance Use/Abuse: <http://aidsetc.org/aidsetc?page=etres-display&post=1&restrict=topicSearch=substance&group=expanded-type&sort=title>

Getting Off: A Behavioral Treatment Intervention for Gay and Bisexual Male Methamphetamine Users: www.uclaisap.org/assets/documents/Shoptawetal_2005_tx%20manual.pdf

Psychiatric Medications and HIV Antiretrovirals: A Guide to Interactions for Clinicians: www.aidsetc.org/pdf/tools/nynj_psych-guide.pdf

Center for Substance Abuse Treatment: 800-662-HELP or <http://findtreatment.samhsa.gov>

National Clearinghouse for Alcohol and Drug Information: <http://ncadi.samhsa.gov>

National Institute on Drug Abuse: www.drugabuse.gov/drugpages/methamphetamine.html

Treatment for Stimulant Use Disorders: www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=hstat5.chapter.57310

Methamphetamine Resources: www.methresources.gov/

California Department of Justice Methamphetamine Clearinghouse: www.stopdrugs.org/sitemap.html



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