

Meth in Iowa: Still Alive & Kicking



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Good News...Bad News

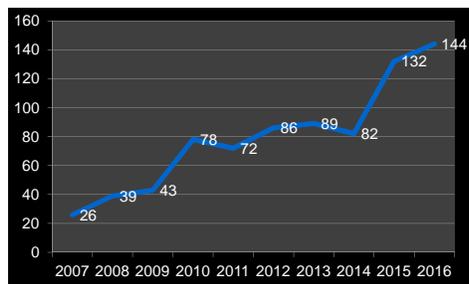


- Iowa is on pace to record the fewest number of meth labs in 20 years in 2017 **BUT...**
- Meth is reported as the primary substance of use by the largest ratio of Iowans ever in substance use disorder treatment (about 1 in 6, or >17%).
- The largest share of IA's drug-related prison admissions is driven by meth-related convictions (>60%).
- Increase in quantity and quality of meth smuggled into Iowa from Mexico and other states
 - Meth is more potent than ever
- Meth usage is up



Iowa Drug Control Strategy 2017; Governor's Office of Drug Control Policy

IPCC Meth Calls*



Vast majority of calls are from hospital ERs



Methland



Methland tells the heroic story of the small town of Oelwein, Iowa—and, through it, the story of drug abuse in Rural America. Once a railroad, meat-packing, and farming hub, Oelwein has been battered by the Farm Crisis and decimated by job losses. More recently, thanks to the lobbying of pharmaceutical companies in Washington, D.C., record amounts of methamphetamine are available on Oelwein's streets. Like thousands of other small towns across the United States, the drug's production has become one of Oelwein's principal business. Now, the town doctor, the mayor, and the prosecutor are fighting back.

–Nick Reding, *Methland: The Death and Life of an American Small Town* (Oelwein, Iowa)



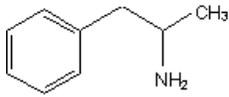
What is Methamphetamine?



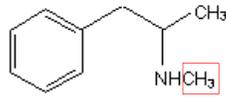
- First synthesized in Germany in 1887
 - Used as a stimulant during WW II
- Scheduled II synthetic (man-made), highly addictive stimulant with immense abuse potential
- Distributed in pill, powder, crystal and liquid forms
 - May have a foul rancid odor
- Limited medical use (obesity, narcolepsy, ADD)
- Differs from amphetamine by single methyl group



Structurally Related



Amphetamine



Methamphetamine

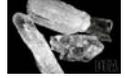
Meth contains an additional methyl group attached to its nitrogen which makes it more lipid-soluble so more potent (better penetration into the brain)



Smokeable Form



- Aka: crystal, ice, crank, glass
- Clear chunky crystals (“rocks”) of high purity meth and smoked in a glass pipe
- Smoke is odorless, leaves a residue that can be re-smoked and produces effects 12+ hours
- Has become the most popular form of the drug
 - Users include rural and small town across U.S.
- More concentrated and powerful form of the drug; purity is currently very high



Slang/Street Names:



- Chalk
- Crank
- Crystal
- Glass
- Ice
- Jib
- Meth
- Rock Candy
- Speed
- Whiz
- White cross



32A methamphetamine tablets



Methamphetamine powder



Crystal methamphetamine



Ice methamphetamine



Why do People Take Meth?



- Euphoria that can last >12 hours
- Powerful stimulant
 - Users feel euphoric, confident and energetic
- Increased wakefulness; don't need to sleep
- Increased alertness
- Taken at raves and dance parties
- Weight loss
- Readily available, ample supply; low price



Methamphetamine vs Cocaine



Methamphetamine	Cocaine
Stimulant	Stimulant and local anesthetic
Man-made	Plant-derived
Smoking produces a long-lasting high	Smoking produces a brief high
50% of the drug is removed from the body in 12 hours	50% of the drug is removed from the body in 1 hour
Increases dopamine release and blocks dopamine re-uptake	Blocks dopamine re-uptake
Limited medical use for ADHD, narcolepsy, and weight loss	Limited medical use as a local anesthetic in some surgical procedures



How is Meth Used?



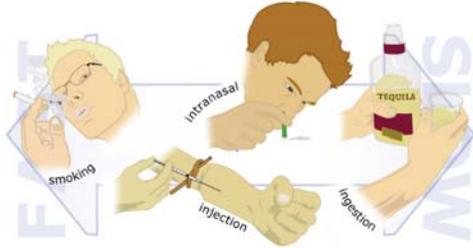
- **Injected:** Powder form is liquefied and injected into veins or into muscle tissue.
- **Smoked/Inhaled:** Crystal form is heated and the smoke is inhaled.
- **Snorted:** Powder form is snorted.
- **Swallowed:** Pill form, liquid form or meth powder is put in empty capsule; may be ingested in combination with alcohol.



Speed of Onset



Which route is the fastest to get the drug to the brain?



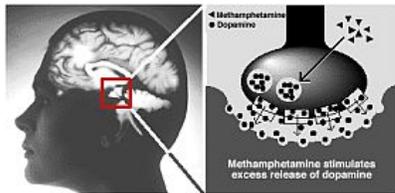
Drugs Mixed with Meth



- Over half of users report mixing with other drugs
- Most commonly mixed with meth
 - Alcohol
 - Marijuana
 - GHB
 - Amyl nitrite (“poppers”)
 - Cocaine
 - Methylenedioxymethamphetamine (MDMA) or Ecstasy
 - Heroin
 - Viagra



How the Drug Works



Meth causes an accumulation of the neurotransmitter dopamine in the pleasure areas of the brain and this excessive dopamine concentration produces the euphoria and stimulation experienced by the user.



General Use Effects



- Onset of effects on the brain depends on route taken
 - Meth is addictive no matter how you administer it
- Effects of meth can last 6-12 hours
- Metabolites can be detected in the body for 2-4 days after last dose (positive UDT)
- Rapid development of tolerance
- High risk for dependence



Psychological Effects



- Euphoria
- Anxiousness
- Nervousness
- Incessant talking
- Extreme moodiness/irritability
- Repetitious behavior
- Rapid flight of ideas
- Aggressive/violent behavior
- ↑ alertness
- ↑ energy
- ↑ libido
- ↑ confidence and power
- ↑ wakefulness/↓ sleep
- Meth-induced psychosis
 - Extreme delusions
 - Paranoia
 - Auditory hallucinations



Physiological Effects



- ↑ heart rate
- ↑ blood pressure
- ↑ respiration rate
- ↑ temperature
- Palpitations
- Irregular heartbeat
- Dry mouth
- Abdominal cramps
- ↓ appetite
- Twitching/seizures
- Dilated pupils
- Late phase:
 - Fatigue
 - Sleepiness
 - Itching/picking/scratching
 - Normal heart rate
 - Normal to small pupils



The Case

A 28 yo F presents to ER unresponsive with BP 160/120, HR 170, T 107.7° F and seizures. Her boyfriend states she has prior history of drug abuse. ER physician calls PCC.

The Case continued...

- How do we treat her anxiety/agitation?
- How do we treat her tachycardia?
- How do we treat her hypertension?
- How do we treat her hyperthermia?



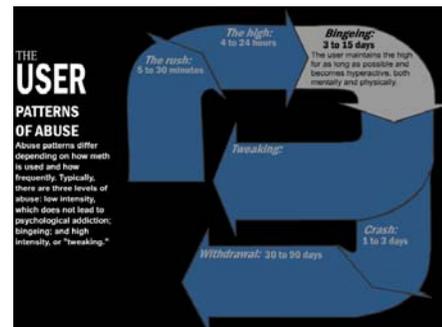
Patterns of Abuse

- Low Intensity User:
 - Uses the drug by snorting or swallowing
 - Believe they need a stimulant to finish a hard job/task, become less depressed, or lose weight
- Binge Abuser:
 - Typically inject meth
 - Rush and high extremely addictive
- High Intensity Abuser:
 - True addicts; their whole existence focuses on preventing crashes and seeking the perfect rush
 - Meth tolerance develops

Meth User

- Most often used in a “binge and crash” pattern
- Tolerance develops within minutes
- Euphoria begins to disappear even before the level of meth in blood falls significantly
- Users try to maintain the high by bingeing
- Terms:
 - Meth head: regular user
 - Meth monster: one who has a violent reaction to meth
 - Speed freak: habitual user of meth

Binge and Crash Cycle



The Rush/Flash



- 5 to 30 mins (longer than crack cocaine)
- Triggers release of epinephrine and explosive release of dopamine
 - Intense euphoria, sexual stimulation, high energy
 - ↑ heart rate, ↑ blood pressure
 - Obsessive/compulsive activity
 - Dilated pupils
- Abuser seeks the rush repeatedly



The High



- 4-16 hours
- Aka “The Shoulder”
- Less intense euphoria
- Feelings of aggression, heightened intellect and becomes argumentative, and/or violent
- May become delusional and experience hallucinations



The Binge



- 3-15 days
- Uncontrolled use; continuation of the high
- Abuser becomes hyperactive (mentally and physically)
- Larger doses required to achieve same intensity
- Each rush becomes smaller and each high is shorter until finally the rush and high disappear altogether



“Tweaking”



- Meth abuser is most dangerous when tweaking
- End of binge; meth no longer provides rush/high
- Feelings of emptiness and dysphoria
 - Often alcohol and heroin used to ease bad feelings
 - Person using alcohol + meth during tweaking stage may be identified by eyes jerking back and forth when they look out of corner of their eyes (horizontal-gaze nystagmus)
 - Intense craving but no dosage will re-create the high
 - Can result in days of delusions and hallucinations
 - Intense itching is common and user may be convinced that bugs are crawling under his/her skin



Dangerous Tweakers



- Abuser has probably not slept in 3-15 days
 - Often exists in a completely psychotic state
- May become hostile and dangerous to himself and others; potential for self-mutilation
- Law enforcement confronting the tweaker makes him more dangerous to officer and bystanders
 - Does not need provocation to react violently
 - Hostage situations can occur
 - If using alcohol, may become a disinhibited tweaker



The Crash



- 1-3 days
- Intense fatigue
 - Body's epinephrine has been depleted and the body uses the crash to “replenish” its supply
 - Uncontrollable sleepiness and catnapping
 - Even a violent abuser may become almost lifeless
- Continuing stimulation and drug craving
- May lead to “Meth Hangover”



The Hangover



- After the crash, may have a “normal” phase
- Can last from 2-14 days
 - As the frequency of bingeing increases, duration of the normal stage decreases
- User may feel starved, dehydrated and exhausted mentally, physically & emotionally
- Leads to the “solution” of taking more meth and experiencing another high



Withdrawal



- Often 30-90 days pass after the last drug use before user realizes he's in withdrawal
- Symptoms of depression, energy loss, reduced pleasure, waves of intense craving for the drug, exhaustion, extreme fatigue
 - Abuser often becomes suicidal
- Meth withdrawal is extremely intense and difficult since the drug is highly addictive
 - Relapses are common
 - 93% of those in treatment return to abusing meth



Other Risks



- Fatal overdoses
- Domestic violence incidents
- Dangerous situations for law enforcement become intensified when a tweaker is involved
- MVAs may involve tweakers
- Tweaker's tend to arm themselves for their personal safety (weapons in cars/residences)
- Risk of HIV and hepatitis with IV abusers

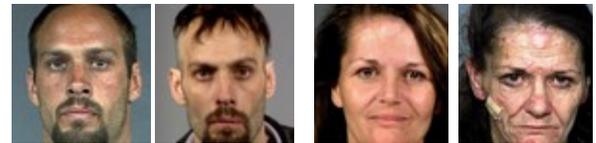


“Faces of Meth”



17 months later

3 months later



4 years later

3½ years later

“Meth Mouth”



- Rampant tooth decay
- Dry mouth
- Cracked teeth
- Gum disease
- ↓ ability to chew



Long-Term Effects



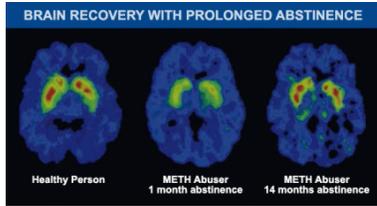
- Psychosis, including:
 - paranoia
 - hallucinations
 - repetitive motor activity
- Long lasting changes in brain chemistry
- Deficits in thinking and motor skills
- Memory loss
- Depression
- Anxiety
- Aggressive or violent behavior
- Mood disturbances
- Severe dental problems
- Weight loss



Chronic Damage to the Brain



Recovery of Brain Dopamine Transporters in Chronic Meth Abusers



Methamphetamine abuse greatly reduces the binding of dopamine to dopamine transporters (highlighted in red and green) in the striatum, a brain area important in memory and movement. With prolonged abstinence, dopamine transporters in this area can be restored. Some organ damage may be permanent.



Shake n' Bake or One-pot Method



Items used in the "shake-and-bake" method of manufacturing meth. This method uses far less of the drug pseudoephedrine than traditional methods. (AP)



Meth Production



- Iowa's meth precursor law led to new "shake and bake" ("one-pot") method
- Ingredients are combined into one container (ex. soda bottle)
 - Preparation time reduced
- Extremely dangerous
 - Risk of explosions, fires and exposure to dangerous chemicals
- Poor quality



What Can Be Done?



- **Prevention/Education:** Addiction can happen the first time meth is used; encourage people to make healthy choices.
- **Treatment:** Learn how to help someone struggling with drug abuse; refer to substance abuse treatment centers and mental health services.
- **Harm Reduction:** Learn about the strategies and ideas aimed at reducing negative consequences associated with drug use.



National 800 Phone Number



Works just like 911

Text "poison" to 797979 to save info in your smartphone



24 hours a day- 7 days a week
Federally funded by HRSA

