How Does Treatment for Methamphetamines Differ from Opioid Treatment

Richard Rawson, Ph.D., Research Professor, Vermont Center for Behavior and Health, Professor Emeritus, UCLA Department of Psychiatry and Biobehavioral Sciences

Connie Priddy MA, RN, MCCN, Huntington QRT Program Coordinator, Cabell County EMS, Huntington, WV
Learning Objectives

• After this session, participants will be able to:
  • Participants will be able to explain the current epidemiology of cocaine and methamphetamine in the U.S.
  • Participants will be able to describe the most common clinical challenges in treatment people with stimulant use disorders
  • Participants will be able to review and discuss the current evidence-based practices for the treatment of individuals with stimulant use disorder
  • Describe how to utilize first responders as a “first point of contact” in the substance use disorder crisis
  • Recognize and provide appropriate medical intervention for all “overdose” events, including stimulant use
  • Identify first responder stress as related to substance use disorder
Methamphetamine 2020: New Risks, Current Treatments

Richard Rawson, Ph.D.
Research Professor, Vermont Center for Behavior and Health
Professor Emeritus, UCLA Department of Psychiatry and Biobehavioral Sciences
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Forms of Methamphetamine

**Methamphetamine Powder**
Description: Beige/yellowy/off-white powder

**Crystalline Methamphetamine**
Description: White/clear crystals/rocks; ‘crushed glass’ / ‘rock salt’
Methamphetamine Today

• The market is inundated with so much pure, low-cost meth that dealers have more of it than they know what to do with
• 2018 - United States border agents seizing 10 to 20 times the amounts they did a decade ago
• Methamphetamine, experts say, has never been purer, cheaper, or more lethal
• 2014–2018- Fentanyl-contaminated meth and cocaine
Cocaine overdose deaths, United States, 1999–2017

Source: United States, Centers for Disease Control and Prevention, National Center for Health Statistics, Wide-ranging Online Data for Epidemiologic Research (CDC WONDER).
Overdose deaths attributed to psychostimulants with and without opioids, 1999–2017

Source: United States, Centers for Disease Control and Prevention, National Center on Health Statistics, Wide-ranging Online Data for Epidemiologic Research (CDC Wonder).

Note: The category “psychostimulants” refers to psychostimulants with abuse potential and mainly includes methamphetamine; “any opioids” includes all prescription opioids and heroin; “other synthetic opioids” is dominated by fentanyl.
The Prevalence of Methamphetamine Use is Increasing Among Individuals Entering Medication-Assisted Treatment Programs for Opioid Use Disorders

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

- Data from the RADARS® System Opioid Treatment Program were used to assess the change in the prevalence of past month methamphetamine use among individuals entering medication-assisted treatment programs for opioid use disorders. Data from 39,312 valid surveys given to individuals entering treatment facilities from January 2012 through December 2018 were assessed.
The Prevalence of Methamphetamine Use is Increasing Among Individuals Entering Medication-Assisted Treatment Programs for Opioid Use Disorders

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

• The Census Region with the highest prevalence of past month methamphetamine use in 2018 was the West region (46.0%) followed by the South (16.8%), the Midwest (12.4%), and the Northeast (5.4%).
Association between methamphetamine use and retention among patients with opioid use disorders treated with buprenorphine

Journal of Substance Abuse Treatment
109 (2020) 80–85
Judith I. Tsui, et al.
Association between methamphetamine use and retention among patients with opioid use disorders treated with buprenorphine

• The study utilized data on adult patients receiving buprenorphine from Washington State Medication Assisted Treatment-Prescription Drug and Opioid Addiction program clinics between November 1, 2015 and April 31, 2018 (N=799). Past 30-day substance use data were collected at baseline and 6-months, as well as date of program discharge

• 30% (n=237) individuals reported meth use at admission. Baseline methamphetamine use was associated with more than twice the relative hazards for discharge in adjusted models (aHR=2.39; 95% CI: 1.94–2.93)
Association between methamphetamine use and retention among patients with opioid use disorders treated with buprenorphine
Clinical Challenges
Clinical Challenges with Stimulant Dependent Individuals

- Overdose death
- Limited understanding of stimulant addiction
- Ambivalence about need to stop use
- Impulsivity/poor judgement
- Cognitive impairment and poor memory
- Anhedonia
- Hypersexuality
- Violence and psychosis
- Powerful Pavlovian trigger-craving response
- Very poor retention in outpatient treatment
- Elevated rates of psychiatric co-morbidity
A lethal dose of carfentanil 1/100th of the amount shown next to the penny.

Source: Network Environmental Systems (NES)
Treatment for Individuals with Stimulant Dependence
Comparative efficacy and acceptability of psychosocial interventions for individuals with cocaine and amphetamine addiction: A systematic review and network meta-analysis

Franco De Crescenzo, Marco Ciabattini, Gian Loreto D’Alò, Riccardo De Giorgi, Cinzia Del Giovane, Carolina Cassar, Luigi Janiri, Nicolas Clark, Michael Joshua Ostacher, Andrea Cipriani

1 Department of Psychiatry, University of Oxford, Oxford, United Kingdom, 2 Oxford Health NHS Foundation Trust, Warneford Hospital, Oxford, United Kingdom, 3 Institute of Psychiatry and Clinical Psychology, Catholic University of the Sacred Heart, Rome, Italy, 4 School of Hygiene and Preventive Medicine, University of Rome Tor Vergata, Rome, Italy, 5 Institute of Primary Health Care (BiHAM), University of Bern, Bern, Switzerland, 6 Department of Dynamic and Clinical Psychology, Sapienza University of Rome, Rome, Italy, 7 Mental Health and Substance Abuse, World Health Organization, Geneva, Switzerland, 8 Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, California, United States of America, 9 Department of Psychiatry, VA Palo Alto Health Care System, Palo Alto, California, United States of America.
Meta-Analysis Findings

Network meta-analysis was used to analyze 50 clinical studies (6,943 participants) on 12 different psychosocial interventions for cocaine and/or amphetamine addiction.

The combination of contingency management and community reinforcement approach was the most efficacious and most acceptable treatment both in the short and long term.

Twenty-seven randomized controlled studies (3663 participants) fulfilled inclusion criteria and had data that could be used for at least one of the main comparisons.

The comparisons between different type of behavioral interventions showed results in favor of treatments with some form of contingency management in respect to both reducing dropouts and lowering cocaine use.
Responding to global stimulant use: Challenges and opportunities Lancet (Farrell et al, 2019)

Psychosocial **interventions other than contingency management** have weak and **non-specific effects** on stimulant problems and there are no effective pharmacotherapies. Substantial research investment is needed to develop more effective, innovative, and impactful prevention and treatment
Do Methamphetamine Users Respond Differently to Behavioral Treatments than Cocaine Users?
Nationwide Dissemination of Contingency Management: The Veterans Administration Initiative

Nancy M. Petry, PhD, Dominick DePhilippis, PhD, Carla J. Rash, PhD, Michelle Drapkin, PhD, James R. McKay, PhD

1University of Connecticut School of Medicine, Farmington, Connecticut
2Dept of Veterans Affairs and University of Pennsylvania, Philadelphia, Pennsylvania
Treatments for Stimulant Use Disorders (SUDs) with Empirical Support

- Contingency Management/Incentives (CM/I)
- Community Reinforcement Approach (CRA)
- Cognitive-Behavioral Therapy (CBT)
- Other approaches with interest
  - Physical Exercise
  - Matrix Model
  - Motivational Interviewing
  - Mindfulness Meditation
  - Transcranial Magnetic Stimulation
Contingency Management

(Also known as Motivational Incentives)
Contingency Management

A technique employing the systematic delivery of positive reinforcement for desired behaviors. In the treatment of methamphetamine dependence, vouchers or prizes can be “earned” for submission of methamphetamine-free urine samples.
Basic Behavioral Principles

1. Frequently monitor target behavior

2. Provide incentive when target behavior occurs

3. Remove incentive when target behavior does not occur
Contingency Management for the Treatment of Methamphetamine Dependence


• **METHOD:** The authors report data on 113 participants who were diagnosed with methamphetamine abuse or dependence. They were randomly assigned to receive 12 weeks of either treatment as usual (Matrix) or treatment as usual plus contingency management. The reinforcers for drug-negative samples were plastic chips, some of which could be exchanged for prizes.

• **RESULTS:** The participants in both groups remained in treatment for equivalent times, but those receiving contingency management in addition to usual treatment submitted significantly more negative samples, and they were abstinent for a longer period of time (5 versus 3 weeks).
Retention Rate: Roll et al 2006
Cognitive Behavioral Therapy and Contingency Management for Stimulant Dependence


• DESIGN: Randomized clinical trial
• PARTICIPANTS: Stimulant-dependent individuals (n = 171)
• INTERVENTION: CM, CBT, or combined CM and CBT, 16-week treatment conditions. CM condition participants received vouchers for stimulant-free urine samples. CBT condition participants attended three 90-minute group sessions each week. CM procedures produced better retention and lower rates of stimulant use during the study period.
• RESULTS: CM produced evidence of efficacy during treatment. There was no evidence of an additive effect when the two treatments were combined. The response of cocaine and methamphetamine users was comparable.
• CONCLUSIONS: This study suggests that CM is an efficacious treatment for reducing stimulant use and is superior during treatment to a CBT approach. CM is useful in engaging substance abusers, retaining them in treatment, and helping them achieve abstinence from stimulant use.
Stimulant-free UAs

Rawson et al 2004

Group ($F = 10.2, df = 2, p < 0.0001$)
% Who Achieve 3 Consecutive Weeks of Stimulant-free Uas  

Rawson et al 2004

![Graph showing percent stimulant-free for 3 consecutive weeks for CBT, CM, and CBT+CM groups.](image)

Group \( (X^2 = 15.46, df = 2, p = 0.0004) \)

**DESIGN:** Randomized clinical trial

**PARTICIPANTS:** Patients with cocaine dependence receiving methadone maintenance treatment (n=120)

**INTERVENTIONS:** Participants were randomly assigned to 1 of 4 conditions: CM, CBT, combined CM and CBT or methadone treatment as usual. The active study period was 16 weeks, requiring 3 clinic visits per week

**RESULTS:** Urinalysis results during the 16-week treatment period show that participants assigned to the 2 groups featuring CM had significantly superior in treatment urinalysis results, whereas urinalysis results from participants in the CBT group were not significantly different than those from the MMTP-only group

**CONCLUSIONS:** Study findings during treatment provide solid evidence of efficacy for CM (with and without CBT. There was no evidence of a combined effect
Stimulant-Free Uas Rawson et al, 2002

Group \( F = 6.8, df = 3, P < 0.0001 \)

Mean # Cocaine-free Urine Samples

- CBT: 19.8
- CM: 30.3
- CBT+CM: 26.1
- MMTP-only: 11
Contingency Management Apps

- **reSET** is a 90-day Prescription Digital Therapeutic (PDT) for Substance Use Disorder (SUD) intended to provide cognitive behavioral therapy (CBT), as an adjunct to a contingency management system, for patients 18 years of age and older who are currently enrolled in outpatient treatment. FDA approved. [https://peartherapeutics.com/products/reset-reset-o/](https://peartherapeutics.com/products/reset-reset-o/)

- **DynamiCare** Health is a platform for families and individuals that reinforces a person’s recovery from addiction and rewards healthy behavior. DynamiCare’s easy-to-use technology includes random breath and saliva tests submitted through the app, verified treatment attendance check-ins, a supportive Recovery Coach, rewards for healthy progress, and a dashboard for supporters. [www.dynamicarehealth.com](http://www.dynamicarehealth.com)
Community Reinforcement Approach (CRA)
Community Reinforcement Approach

• Community Reinforcement Approach (CRA) is a combination of behavioral strategies that address the role of environmental contingencies in encouraging or discouraging drug use and attempts to rearrange these contingencies so that a non-drug-using lifestyle is more rewarding than a using one
Components of CRA

• CRA Components include:
  – Behavioral skills training
  – Social and recreational counseling
  – Marital therapy
  – Motivational enhancement
  – Job counseling
  – Relapse prevention

• For application to the treatment of cocaine dependence, a voucher based reinforcement program is added
CRA and Contingency Management: Higgins et al., 1993

- Completed Treatment: 11% Standard Treatment, 58% CRA & CM
- 8 weeks continuous abstinence: 11% Standard Treatment, 68% CRA & CM
- 16 weeks continuous abstinence: 5% Standard Treatment, 42% CRA & CM
Therapy Manuals for Drug Addiction

Manual 2
A Community Reinforcement Plus Vouchers Approach: Treating Cocaine Addiction

U.S. Department of Health and Human Services
National Institutes of Health
Cognitive Behavioral Therapy (CBT)
Research on CBT for StUD


• CBT for CBT Website:  http://www.cbt4cbt.com/
Medications Considered for Cocaine Use Disorder

Positive/Under Consideration

- Topiramate
- Modafinil
- Bupropion
- Amphetamine salts
- Buprenorphine+naltrexone
Medications for Methamphetamine Use Disorder

Positive/Under Consideration

- Bupropion
- Mirtazapine *****
- Naltrexone
- Methylphenidate
- D-amphetamine
- Topiramate
Thanks for your attention
BEYOND THE OPIOID EPIDEMIC

A CONTINUING PUBLIC HEALTH CRISIS WITH STIMULANT USE
Presented By:

Connie Priddy MA, RN, MCCN
Huntington QRT Program Coordinator
Cabell County EMS
Huntington, WV

connie.priddy@ccems.org
A COMMUNITY IN CRISIS

*City population: 50,000
*County population: 100,000
*Cabell County EMS runs 35,000 calls annually (county-based EMS agency that serves all of Cabell County. This is all-inclusive of overdose calls in the City of Huntington.)
A COMMUNITY IN CRISIS

CABELL COUNTY EMERGENCY MEDICAL SERVICES
“SUSPECTED OVERDOSE” CALLS

2015
“Suspected Overdose” Calls – 480
Narcan Usage – 298

2016
“Suspected Overdose” Calls – 1,217
Narcan Usage – 768

2017
“Suspected Overdose” Calls – 1,831
Narcan Usage – 1,153
A COMMUNITY IN CRISIS

Gordon Merry, CCEMS Director
August 15, 2016 (A day that changed everything)

Not ONE person received follow-up treatment that day
INNOVATIVE APPROACHES

Huntington Police Department
Faith-Based Leaders  July 2018

QRT MODEL (First Responder Diversion Program)

Prestera Center
Recovery Point

Cabell County EMS
INNOVATIVE APPROACHES

EMS responds to overdose
OR
Outside Referral

QRT identifies the next day

QRT attempts to locate individual

If individual found, treatment offered, and information provided

Individual ready for treatment?

No

QRT continues to keep in contact and encourage in treatment

Yes

Individual linked to treatment by QRT through warm handoff
INNOVATIVE APPROACHES
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Cabell County EMS “suspected overdose” ambulance calls:

- 2017 – 1,831
- 2018 – 1,089
- 2019 - 878

QRT Statistics:

2017 (Dec) – 2019
- QRT Eligible – 1,869
- Contacts Made – 803
- Entered Treatment – 239

Approximately 30% enter formalized treatment

TOTAL REDUCTION FROM 2017-2019

52% REDUCTION IN AMBULANCE CALLS
NEW CHALLENGES

- Identifying “drug of choice” was evolving
- Stimulant use on the rise
- Two federal grants focused on opioid use
- Recognizing most individuals experiencing “polydrug use”
- Use of stimulants with opioids (goof-ball) - used at same time
- Use of a stimulant to keep alert until next opioid use, or use of a stimulant to come “down” from opioid use
- Limited facilities that treat “stimulant” use disorder
NEW CHALLENGES

FIRST RESPONDER CHALLENGES:

- Increasing stimulant use
- Escalating confrontation at scene of overdoses
- Individuals much more combative
- Physical harm to first responders
- No pharmecutical treatment (such as naloxone)
NEW CHALLENGES

FIRST RESPONDER CHALLENGES:

A. Assure scene safety. Do not engage patient unless risk of harm is minimized by law enforcement.

B. Implement SAFER mnemonic:
   - Stabilize the situation by containing and lowering the stimulus.
   - Access and acknowledge the crisis.
   - Facilitate the identification and activation of resources.
   - Encourage patient to use resources and take actions in his/her best interest.
   - Recovery or referral – leave patient in care of responsible person or professional.

C. Perform Initial Treatment / Universal Patient Care Protocol and follow the proper protocol for medical management based on clinical presentation.

D. For altered mental status, perform rapid glucose determination.

E. Control environmental factors: attempt to move patient to a private area free of family and bystanders. MAINTAIN ESCAPE ROUTE.

F. Attempt de-escalation, utilize an empathetic approach. Ensure patient safety and comfort. AVOID CONFRONTATION.

G. Physical Restraint: (Commercially available soft restraints are acceptable.)

1. Consider restraining patient, as needed, to protect life or prevent injury per MCP order with the following considerations:
   a. Restrain patient in the supine position or left lateral recumbent position only.
   b. Ensure method of restraint does not affect breathing or circulation.
   c. Use the least restrictive or invasive method of restraint which will protect the patient and others. In many instances, full restraints will be appropriate to ensure patient and provider safety during transport.

2. Continually monitor the restrained patient’s airway, circulatory, respiratory, and mental status frequently.

H. Chemical Restraint – Behavioral:
   1. If psychiatric/behavioral agitation is suspected, administer Midazolam (Versed®) 5 mg IV, IM or IN.
      NOTE: Midazolam may not be tolerated well in patients over 55 years of age. Doses should be initiated low and repeated as needed. Administration of these medications in patients > 55 years of age shall be as follows:
      - Midazolam (Versed®) 2 mg IV/IM or 5 mg (IN) via atomizer.
      - If patient remains agitated or aggressive in five (5) minutes, administer Haloperidol (Haldol®) 5 mg IM.
      - If dystonic reaction (dysskinesia) is noted secondary to Haloperidol (Haldol®) administer Diphenhydramine (Benadryl®) 25 mg IV or IM

I. Chemical Restraint – Excited Delirium:
   1. (OPTIONAL): If psychiatric/behavioral extreme excited delirium is suspected, administer Ketamine 5 mg/kg IM to a max single dose of 330 mg OR: IF IV/IO already in place, 2 mg/kg IV/IO to a max single dose of 200 mg.

   NOTE: If suspected or known presence of benzodiazepines in patient, consider half dose to minimize respiratory depression

II. Transport as soon as possible.

K. If patient is medically stable, in consultation with Medical Command, consider transporting to a facility with advanced psychiatric care capability.
NEW CHALLENGES

FIRST RESPONDER CHALLENGES:

“Suffered injury due to carbon monoxide exposure and possible Meth exposure”

“Paramedic assaulted by patient, hit in ribs and shoulder - restrained by HPD”

“Patient became combative, thrashing legs and arms -kicked in chest and scratched neck”

“Became combative, unbuckled himself and jumped out of back of ambulance”

Actual “Special Reports” submitted through emsCharts
NEW CHALLENGES

FIRST RESPONDERS ROLE:

▪ Ensure the scene is safe

▪ Recognize when an “overdose” involves stimulants

▪ Many calls involve both stimulant and opioid use. Potential for opioid overdose remains. Decreased respiratory drive, with possibility of full cardiac arrest

▪ Administer Naloxone as needed

▪ Support and utilize First Responder Diversion Programs (QRT)
LESSONS LEARNED:

• COLLABORATION WORKS TO BENEFIT THE ENTIRE COMMUNITY

• ADDRESSING THE OPIOID CRISIS PREPARES EVERYONE FOR ADDRESSING THE NEXT CRISIS...WHETHER STIMULANTS OR SOME UNFORESEEN THREAT

• IGNORING ISSUES DO NOT MAKE THEM DISAPPEAR: WORK PROACTIVELY BASED ON DATA (EVEN WHEN DATA REVEALS UNFAVORABLE TRENDS)

• GIVING “HOPE” IS THE STRONGEST TOOL WE HAVE IN THE TOOLBOX...
“INNOVATIONS NOW” AWARD 2019

https://www.coapresources.org/Learning/PeerToPeer/Diversion
Questions and Answers
Contact Information

Richard Rawson, Ph.D., Research Professor, Vermont Center for Behavior and Health, Professor Emeritus, UCLA Department of Psychiatry and Biobehavioral Sciences—RRawson@mednet.ucla.edu

Connie Priddy MA, RN, MCCN, Huntington QRT Program Coordinator, Cabell County EMS, Huntington, WV—connie.priddy@ccems.org
United We Stand
Responding to America’s Opioid Crisis

2020 COAP National Forum
March 10–12, 2020 | Arlington, Virginia