



**ACCEPT**  
**Addiction & Co-morbid Conditions: Enhancing Prevention & Therapeutics**

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Meeting number/Access code: 120 276 9209

Password: 12345

**For attendance, purposes please text the following code: TEDPEV to 608-260-7097**

**Session Date:** Friday, November 19, 2021

**Didactic Topic and Presenter:**

Strategies to Address Cocaine and Methamphetamine Use Disorder

Richard Rawson, PhD

*Department of Psychiatry*

*Larner College of Medicine*

*University of Vermont*

**Content Experts:**

Ritu Bhatnagar, MD; Lindsey Peterson, MS, CRC; Sheila M. Weix, MSN, RN, CARN

- 
- 12:15 PM: Attendance text-in – Introductions
  - 12:25 PM: Case Presentation and Discussion
    - Presenter: David Leinweber, MD
  - 1 PM: Didactic Presentation
    - Presenter: Richard Rawson, PhD
  - 1:15 PM End of Session

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**ECHO ACCEPT**  
**Addiction & Co-morbid Conditions: Enhancing Prevention & Therapeutics**  
**2020-2022**  
**Strategies to Address Cocaine and Methamphetamine Use Disorder**  
**11/19/2021**

**Didactic Presenter:** Richard Rawson, PhD  
**Case Presenter:** David Leinweber, MD

*Provided by the University of Wisconsin–Madison Interprofessional Continuing Education Partnership (ICEP)*

**Intended Audience:**

Nurses, Nurse Practitioners, Pharmacists, Physicians, Physician Assistants, Pharmacy Technicians, Psychologists, Social Workers, Patient/Caregivers, Students

**Objectives:**

As a result of this educational regularly scheduled series, learners as members of the healthcare team will be able to:

1. Explain the current epidemiology of cocaine and methamphetamine in the US
2. List the most common clinical challenges in treatment people with stimulant use disorders.
3. Explain the current evidence-based practices for the treatment of individuals with stimulant use disorder.

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Name	Role	Financial Relationship Disclosures	Discussion of Unlabeled/Unapproved uses of drugs/devices in presentation?	COI completion date
Randall Brown	RSS Chair	No relevant financial relationships to disclose	Yes	3/11/21
Nada Rashid	RSS Coordinator	No relevant financial relationships to disclose	No	3/11/21
Kathleen Maher	Planner	No relevant financial relationships to disclose	No	3/15/21
Ritu Bhatnagar	Planner	No relevant financial relationships to disclose	Yes	3/12/21
Paul Hutson	Planner	No relevant financial relationships to disclose	Yes	3/11/21
Susan Mindock	Planner	No relevant financial relationships to disclose	No	3/11/21
Lindsey Peterson	Planner	No relevant financial relationships to disclose	No	3/11/21
Sheila Weix,	Planner	No relevant financial relationships to disclose	No	3/11/21
Kellene Eagen	Planner	No relevant financial relationships to disclose	No	6/23/21

Joseph Galey	Planner	No relevant financial relationships to disclose	Yes	6/23/21
Richard Rawson	Presenter	No relevant financial relationships to disclose	No	11/8/2021
David Leinweber	Presenter	No relevant financial relationships to disclose	No	11/10/2021

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# Case Presentation

David Leinweber

University of Wisconsin Department of  
Family Medicine and Community Health

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# Case Introduction

- ▶ One-liner (including age/sex):
  - 24 y/o male with pmh of methamphetamine use disorder severe, cocaine use, marijuana use, HIV who presents for follow up of his methamphetamine induced psychosis
- ▶ Primary question for discussion:
  - What is your approach to methamphetamine induced psychosis in the outpatient setting?

## Medical & Behavioral Health Diagnosis:

- Methamphetamine use disorder severe
- Cocaine use
- Marijuana use
- HIV
- Anxiety

## Current Medications:

- Risperidone – 3.5 mg HS and 0.5 mg BID PRN
- Prazosin 2 mg HS
- Biktarvy (Bictegravir-Emtricitab-Tenofovir)



# Substance Use

## ▶ Alcohol

- Reports occasional alcohol use “a beer every now and then”
- Denies history of complicated withdrawals
- Per chart review recently stated using 1 pint of vodka daily
- First use was age 12 y/o
- Per chart review has been trialed on naltrexone within the last year but is not currently using

## ▶ Methamphetamine

- First use January of 2020
- Recreational use at parties. Per chart review initial use was with brother and sister.
- Uses by inhalation and injection. Prefers to use by injection per chart review.
- At current visit states he would not like speak about if he is currently using or last use of methamphetamine
- Longest period of abstinence from methamphetamine per chart review 14 days

## ▶ Cocaine

- Intermittent use by insufflation. States use is intermittent due to cost
- First use July of 2020

# Substance Use

- ▶ Marijuana use
  - First use age 13 y/o
  - Daily use by inhalation
- ▶ Tobacco Use – 1-2 PPD
- ▶ Dextromethorphan/Chlorphenamine (Coricidin)
  - History of use as teenager
  - Per chart review had overdose due to dextromethorphan/chlorphenamine at age 16 y/o
- ▶ Hallucinogen – history of use
- ▶ Opiates – denies
- ▶ Benzodiazepines – denies

# Substance Use

## ► Consequences of Substance Use:

- Social/occupational/educational:
  - Suicide attempt May of 2021 in setting of methamphetamine induced psychosis
  - Age 15 y/o was involved in a robbery in setting of alcohol intoxication. Led to being court ordered to adolescent residential center.
  - Currently unemployed due to inability to work due to methamphetamine induced psychosis
- Physical (including evidence of tolerance/withdrawal):
  - Methamphetamine Induced Psychosis. Endorses visual and auditory hallucinations
    - Visual Hallucinations described as “negative”. Refuses to describe visual hallucinations.
    - Auditory Hallucinations – described at visit as “negative” and constant. When asked further states he would not like to say what voices are saying. When asked directly if voices are telling him to hurt himself he nods.
    - Denies having hallucinations prior to use of methamphetamine
    - First noted from chart review on 10/2020
  - Suicide Attempt in May of 2021 led to forearm injury from laceration. This has led to hand weakness which led to loss of factory job he had due to hand weakness
  - Incarcerated for past month for unknown reasons. During incarceration states he was not able to take his risperidone which led to increased hallucinations.

# Substance Use

## ► Past treatments:

- risperidone 3.5 mg HS and 0.5 mg BID PRN – patient notes he continued to hallucinate while at this dose prior to incarceration. Note risperidone not taken past month during incarceration
- Prazosin 2 mg HS (for nightmares)
- Olanzapine
- Gabapentin
- Naltrexone
- Zoloft
- Seroquel

# Social History

- ▶ Social Factors/History: housing unstable
- ▶ Family History: denies family history of psychiatric conditions, endorses family history of substance use
- ▶ Education/Literacy: completed high school
- ▶ Income source: unemployed

## Patient strengths & protective factors:

- Engaged in outpatient mental health treatment
- Engaged in substance use treatment
- Denies having made preparatory acts based on command auditory hallucinations
- States he feels “safe” and denies having plans or acts to harm himself or others
- Endorses that risperidone in the past has helped with hallucinations
- Endorses that prazosin in the past has improved nightmares

## Risk factors:

- Housing Unstable
- Unemployed
- History of suicide attempt
- Little support system
- Family History of substance use

# Labs

- ▶ Last Urine Drug Screen: May 2021
  - Amphetamines – positive
  - Barbiturates – negative
  - Benzodiazepine – negative
  - Cocaine Metabolite – negative
  - Opiates – negative
  - Phencyclidine – negative
  - Cannabinoids – negative
- ▶ HIV RNA <30 – June 2021

# Patient Goals & Motivations for Treatment

- ▶ Patient would like to restart risperidone and prazosin as he has not used in past month. Hope is to decrease auditory and visual hallucinations as well as nightmares.



# Proposed Diagnoses

- ▶ Methamphetamine induced psychosis
- ▶ Did consider

# Proposed Treatment Plan

- 4 mg risperidone HS and 0.5 mg BID PRN
- Prazosin 2 mg HS
- Follow up in 1 week
- Offered inpatient psychiatric admission which patient declined.
- Created safety plan with patient regarding when to present to emergency department

# Discussion:

- ▶ Primary question: What is your approach to methamphetamine induced psychosis in the outpatient setting?

# DSM-5 Substance Use Disorder ("Addiction")

- ▶ Tolerance
  - ▶ Withdrawal
- } **Physical Dependence  $\neq$  Use Disorder**

- ▶ Larger amts/longer periods than intended
- ▶ Persistent desire/failed attempts to quit/control use
- ▶ Much time obtaining/using/recovering
- ▶ Important activities sacrificed
- ▶ Continued use despite known adverse effects
- ▶ Failure to fulfill major obligations
- ▶ Recurrent hazardous use
- ▶ Craving
- ▶ Ongoing use despite interpersonal problems

2-3 = mild

4-5 = moderate

$\geq 6$  = severe

By initialing here DQL you have acknowledged that Project ECHO case consultations do not create or otherwise establish a provider-patient relationship between any ECHO clinician and any patient whose case is being presented in a teleECHO clinic.



# Strategies to Address Cocaine and Methamphetamine Use Disorder

Richard Rawson, PhD  
Department of Psychiatry  
Larner College of Medicine  
University of Vermont

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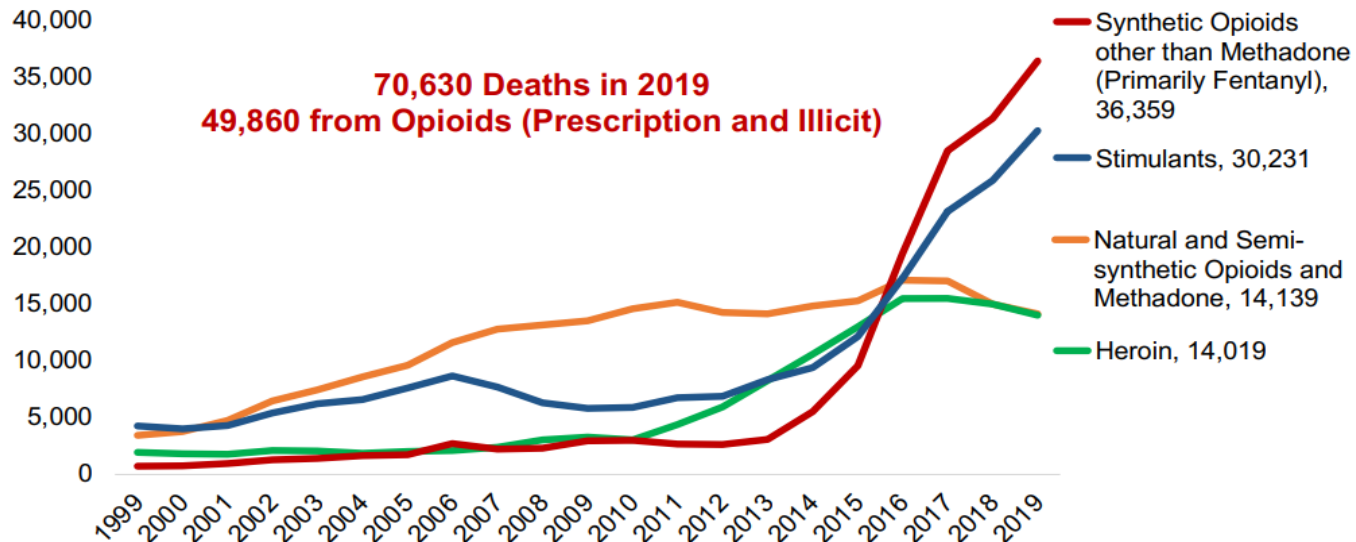
# Center on Rural Addiction

UNIVERSITY OF VERMONT



# Evolution of Drivers of Overdose Deaths, All Ages

Analgesics → Heroin → Fentanyl → Stimulants



Source: The Multiple Cause of Death data are produced by the Division of Vital Statistics, National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention (CDC), United States Department of Health and Human Services (US DHHS).



# Clinical Challenges

# **Clinical Challenges for Individuals with Methamphetamine Use Disorder**

Overdose death

Limited understanding of stimulant addiction

Ambivalence about need to stop use

Impulsivity/Poor judgement

Cognitive impairment and poor memory

Paranoia

# Clinical Challenges with Individuals with Methamphetamine Use Disorder

Anhedonia

Hypersexuality/Hyposexuality

Violence and psychosis

Powerful Pavlovian trigger-craving response

Very poor retention in outpatient treatment

# **Special Treatment Consideration Should Be Made for the Following Groups**

**People who inject methamphetamine.**

**People who use methamphetamine daily.**

Women (high rates of physical/sexual abuse).

Homeless, chronically mentally ill and/or individuals with high levels of psychiatric symptoms at admission.

Men who have sex with men (MSM).

People who use stimulants who are under the age of 21.

Individuals in medication treatment for OUD.

# Interest in Reducing Methamphetamine and Opioid Use among Syringe Services Program Participants in Washington State

McMahan et al, 2020 Drug and Alcohol Dependence

- ▶ In a sample of 583 participants at a Washington State syringe exchange program (443 opioids; 140 methamphetamine), survey data were collected on their attitudes about stopping drug use.
- ▶ 82% of the individuals who reported opioids as their main drug expressed an interest in reducing/stopping opioid use
- ▶ 46% of individuals who reported methamphetamine as their main drug expressed an interest in reducing/stopping their meth use.

# **Treatment for Individuals with Stimulant Use Disorder**

- ▶ DO NO HARM
- ▶ FOR PATIENTS IN TREATMENT FOR OUD WITH METHADONE OR BUPRENORPHINE, KICKING PEOPLE OUT OF TREATMENT FOR STIMULANT USE DRAMATICALLY INCREASES THEIR RISK OF DEATH BECAUSE OF THE PERVASIVE PRESENCE OF FENTANYL IN THE DRUG SUPPLY.
- ▶ WHEN PEOPLE ARE KICKED OUT OF MOUD TREATMENT IN 2021, THEY DON'T GET BETTER, THEY GET DEAD.

- ▶ Information about medical and psychiatric effects of meth
- ▶ Overdose education (fentanyl)
- ▶ Syringe exchanges
- ▶ Naloxone (for opioid overdose)
- ▶ Quiet rooms and wash up/shower rooms
- ▶ Condoms/safe sex education
- ▶ Topical antibiotic creams and ointments for injection sites
- ▶ Water (dehydration)
- ▶ Toothpaste/toothbrush



# Current Status of Treatment Approaches for Stimulant Use Disorder

- ▶ **Contingency management** unanimously (7 recent systematic reviews and meta-analyses) found to have best evidence of effectiveness.
- ▶ Other approaches with lesser but evidence of support: Cognitive Behavioral Therapy (CBT) and Community Reinforcement Approach (CRA)
- ▶ Approach with recent studies showing benefit to methamphetamine users: Physical Exercise (PE). (eg. Rawson et al, 2015)

# Non-pharmacological interventions for methamphetamine use disorder: a systematic review

Drug and Alcohol Dependence,  
AshaRani, PV, et al. 2020

- ▶ 44 Studies reviewed.
- ▶ Conclusions: While Contingency Management (CM) interventions showed the strongest evidence favoring the outcomes assessed, tailored CBT alone or with CM was also effective in the target population.

**Bentzley BS, Han SS, Neuner S, Humphreys K, Kampman KM, Halpern CH. Comparison of Treatments for Cocaine Use Disorder Among Adults: A Systematic Review and Meta-analysis. *JAMA Netw Open*. 2021;4(5):e218049. doi:10.1001/jamanetworkopen.2021.8049**

**Results** A total of 157 studies comprising 402 treatment groups and 15 842 participants were included.

Only contingency management programs were significantly associated with an increased likelihood of having a negative test result for the presence of cocaine (OR, 2.13; 95%)

**Conclusions** In this meta-analysis, contingency management programs were associated with reductions in cocaine use among adults.

**Bolivar, H.A., Klemperer, E.M., Coleman, S.R., Skelly, J., Higgins, S.T. Contingency Management for Patients Receiving Medication for Opioid Use Disorder: A Systematic Review and Meta-analysis. *JAMA Psychiatry*. Published online August 4, 2021. doi:10.1001/jamapsychiatry.2021.1969**

These results provide evidence supporting the use of contingency management in addressing key clinical problems among patients receiving MOUD, including the ongoing epidemic of comorbid psychomotor stimulant misuse.

Chan B, Freeman M, Ayers C, Korthuis PT, Paynter R, Kondo K, Kansagara D. A systematic review and meta-analysis of medications for stimulant use disorders in patients with co-occurring opioid use disorders. *Drug Alcohol Depend.* 2020 Nov 1;216:108193. doi: 10.1016/j.drugalcdep.2020.108193. Epub 2020 Aug 1. PMID: 32861136.

- ▶ An examination of multiple classes of medications used for the treatment of cocaine and methamphetamine use disorders in people with OUD found **no strong evidence that any medication was effective in increasing abstinence, reducing use, or improving retention.**
- ▶ There is almost no evidence regarding treatment of methamphetamine use disorder in people with OUD.
- ▶ Antidepressants and disulfiram may worsen treatment outcomes when used for treatment of cocaine use disorders in patients with OUD.



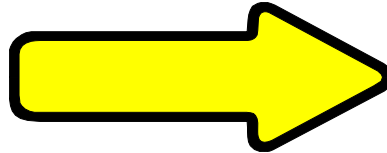
# Contingency Management

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.

It is the CONTINGENCY  
that matters.....



BEHAVIOR



REWARD,  
PUNISHER

*Learning occurs best when  
the behavior is followed  
**immediately** by the  
consequence.*

# Basic Behavioral Principles

- 1. Frequently monitor target behavior**
- 2. Provide incentive when target behavior occurs**
- 3. Remove incentive when target behavior does not occur**



A common protocol for using CM is to provide reinforcers (rewards, incentives) for stimulant negative urine samples.

*The American Journal on Addictions*, 23: 205–210, 2014  
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ISSN: 1055-0496 print / 1521-0391 online  
DOI: 10.1111/j.1521-0391.2014.12092.x

# **Nationwide Dissemination of Contingency Management: The Veterans Administration Initiative**

**Nancy M. Petry, PhD,<sup>1</sup> Dominick DePhilippis, PhD,<sup>2</sup> Carla J. Rash, PhD,<sup>1</sup>  
Michelle Drapkin, PhD,<sup>2</sup> James R. McKay, PhD<sup>2</sup>**

<sup>1</sup>University of Connecticut School of Medicine, Farmington, Connecticut

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