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# Center on Rural Addiction

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**Community Rounds Workshop Series**

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**Rural Center of Excellence  
on SUD Treatment**

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**The fourth wave of the U.S. overdose crisis:  
Disseminating incentive-based interventions for stimulant use  
disorder into rural community settings**

**Tyler Erath, PhD**

Vermont Center for Behavior and Health, University of Vermont, Burlington, VT

# Objectives

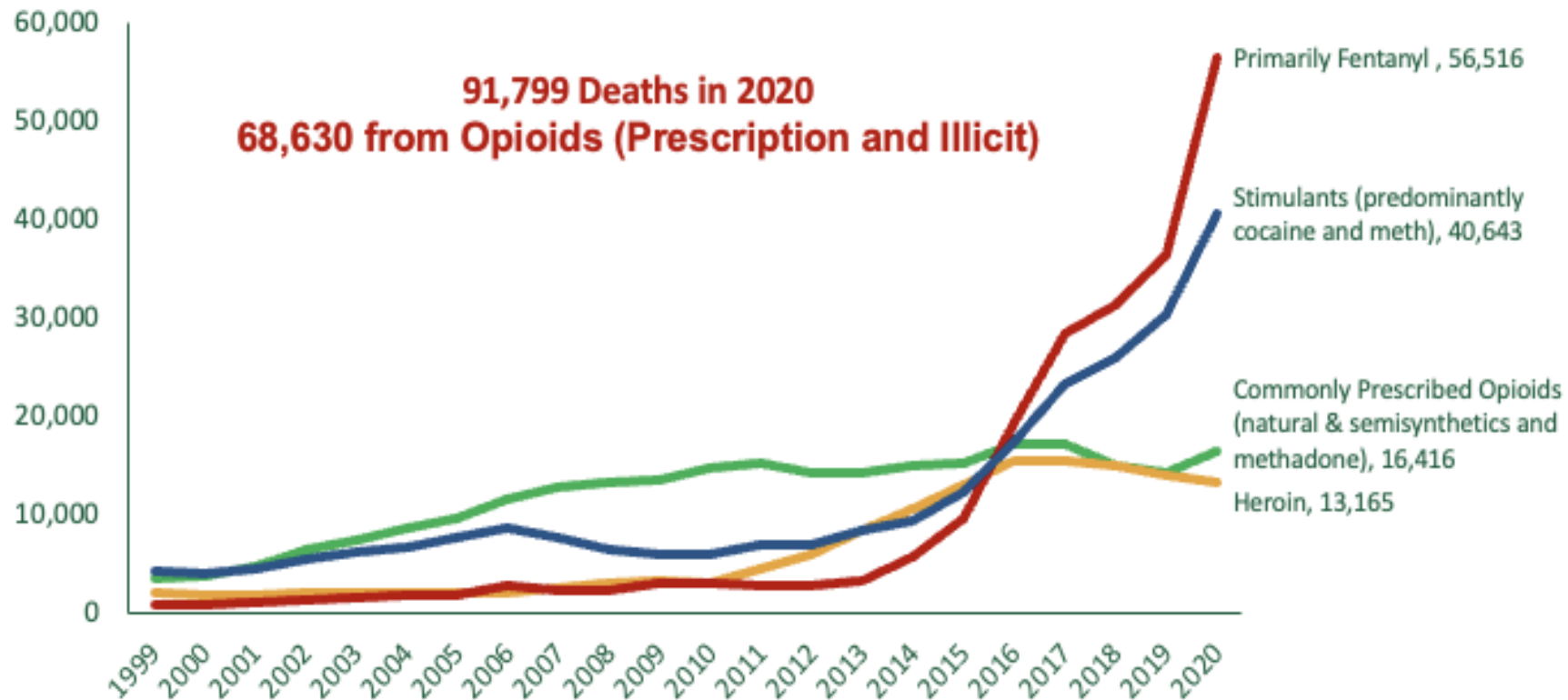
- Review the current role of stimulants in drug-involved U.S. overdose deaths
- Define and describe contingency management (CM) as a treatment for stimulant use disorder
- Describe current challenges to using CM and some efforts to overcome them
- Explore CM components such as financing, protocol considerations, using technology-based CM apps, and ways to implement CM in rural areas
- Discuss the role of certificate programs as training opportunities for health professionals including in rural areas

# **Why should we be concerned about stimulant use (cocaine and methamphetamine)?**

# The Fourth Wave of the US Overdose Crisis

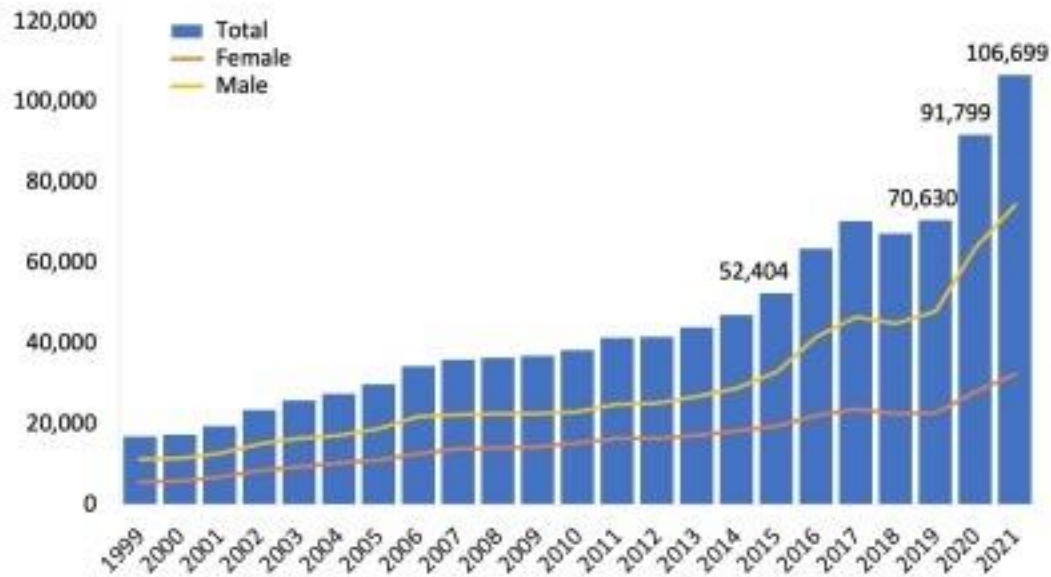
## Evolution of Drivers of Overdose Deaths, All Ages

Analgesics → Heroin → Fentanyl → Stimulants



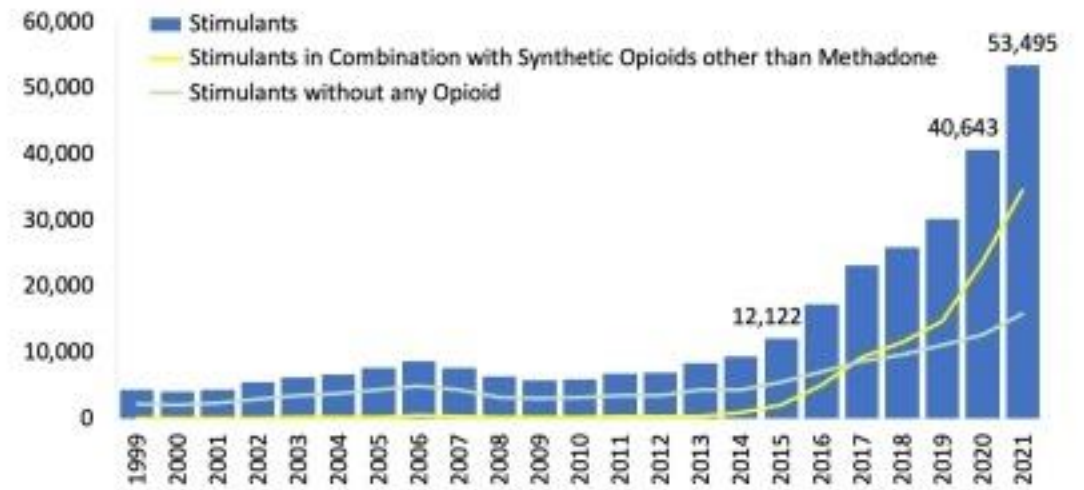
# The Fourth Wave of the US Overdose Crisis

Figure 1. National Drug-Involved Overdose Deaths\*, Number Among All Ages, by Gender, 1999-2021



\*Includes deaths with underlying causes of unintentional drug poisoning (X40-X44), suicide drug poisoning (X60-X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10-Y14), as coded in the International Classification of Diseases, 10th Revision. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2021 on CDC WONDER Online Database, released 1/2023.

Figure 6. National Overdose Deaths Involving Stimulants (Cocaine and Psychostimulants\*), by Opioid Involvement, Number Among All Ages, 1999-2021



\*Among deaths with drug overdose as the underlying cause, the psychostimulants with abuse potential (primarily methamphetamine) category was determined by the T43.6 ICD-10 multiple cause-of-death code. Abbreviated to psychostimulants in the bar chart above. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2021 on CDC WONDER Online Database, released 1/2023.

DOI: 10.1111/add.16318

DATA INSIGHT

ADDICTION

SSA

## Charting the fourth wave: Geographic, temporal, race/ethnicity and demographic trends in polysubstance fentanyl overdose deaths in the United States, 2010–2021

Joseph Friedman<sup>1</sup>  | Chelsea L. Shover<sup>2</sup> 

Purpose: examine polysubstance use in overdose deaths from 2010–2021 by year, state and demographics.

# Study on Polysubstance Use in Overdose Deaths

## Methods

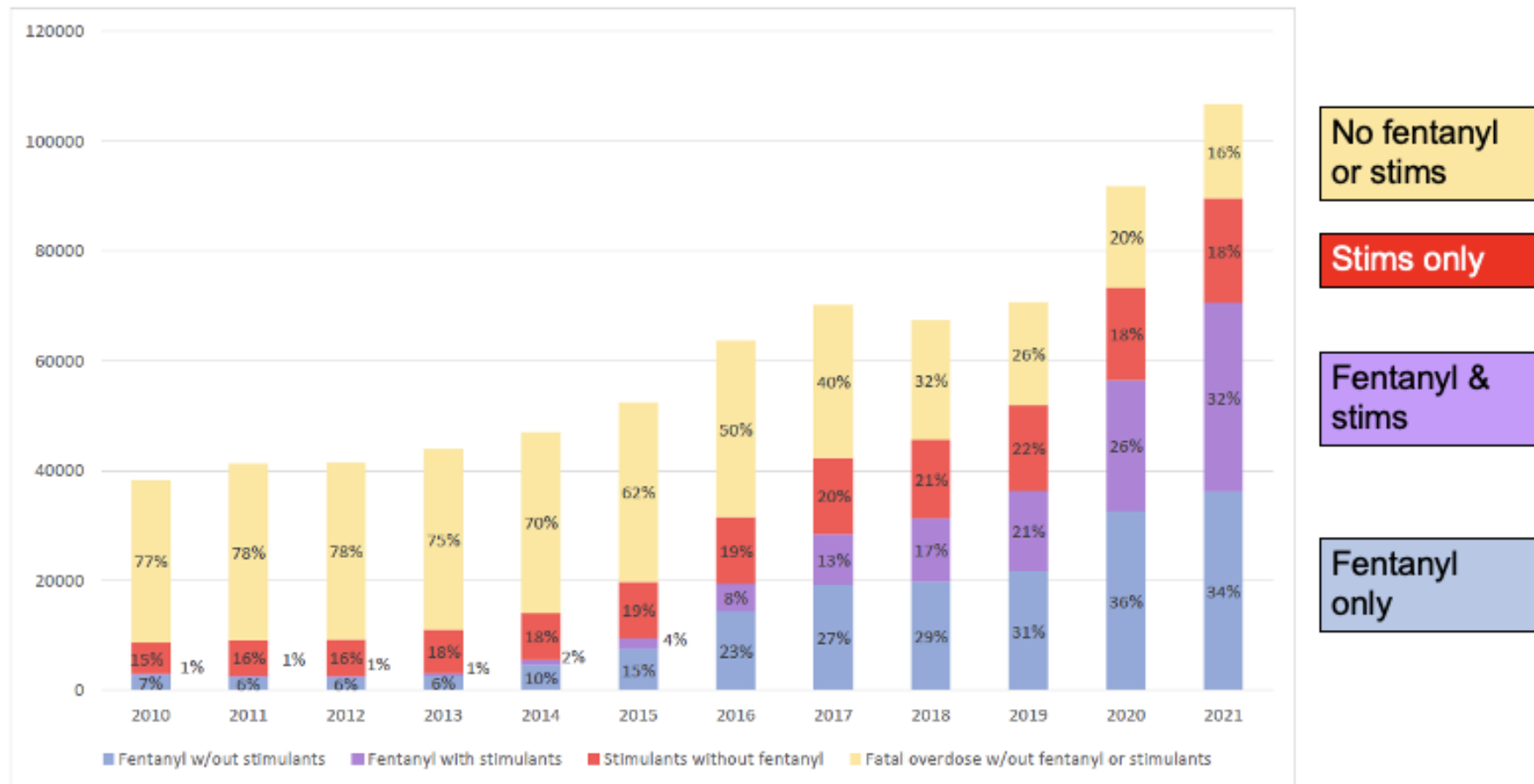
- Data were obtained from the CDC Wide-ranging Online Database for Epidemiological Research (WONDER) from 2010 through 2021.
- All deaths with underlying cause of overdose were selected.
  - Among those, deaths with multiple causes were then selected.
- Annual percentage of overdose deaths were measured for those involving: (1) fentanyl, (2) stimulants, (3) fentanyl and stimulants, and (4) neither fentanyl or stimulants.



# Study on Polysubstance Use in Overdose Deaths

## Results

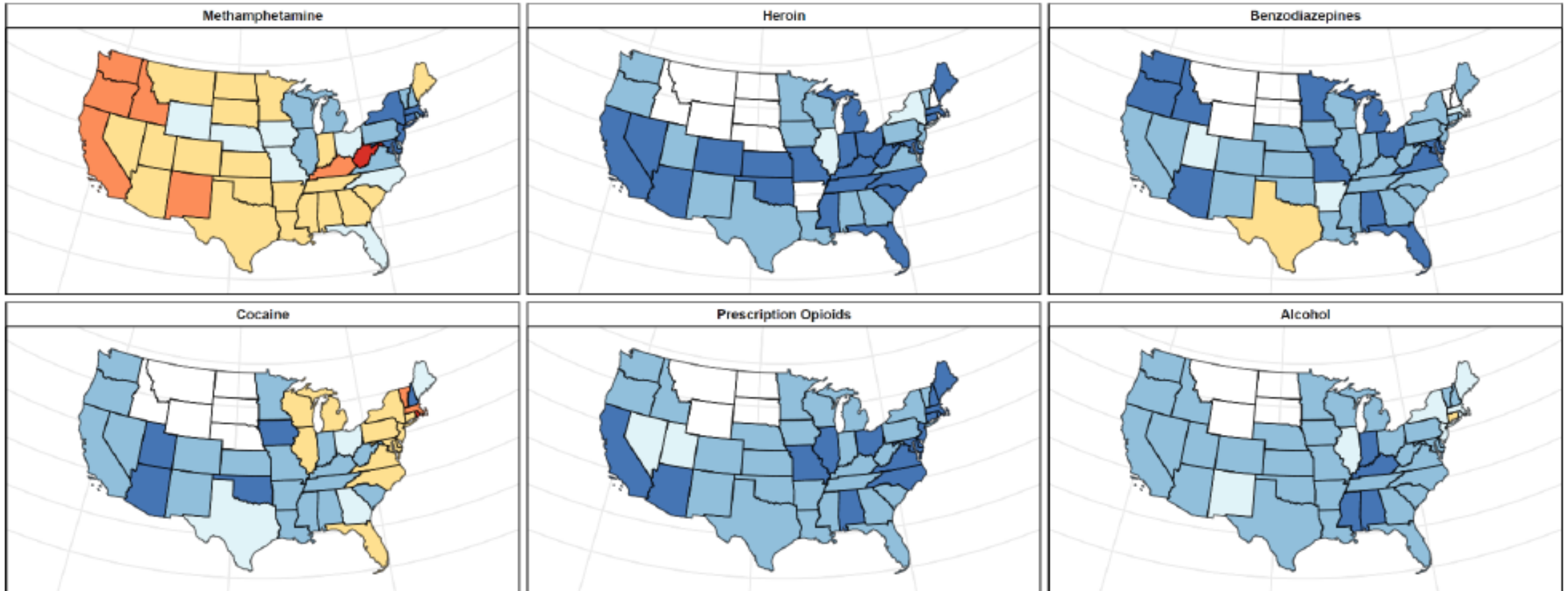
### Overdose Deaths by Fentanyl and Stimulant Presence, 2010-2021



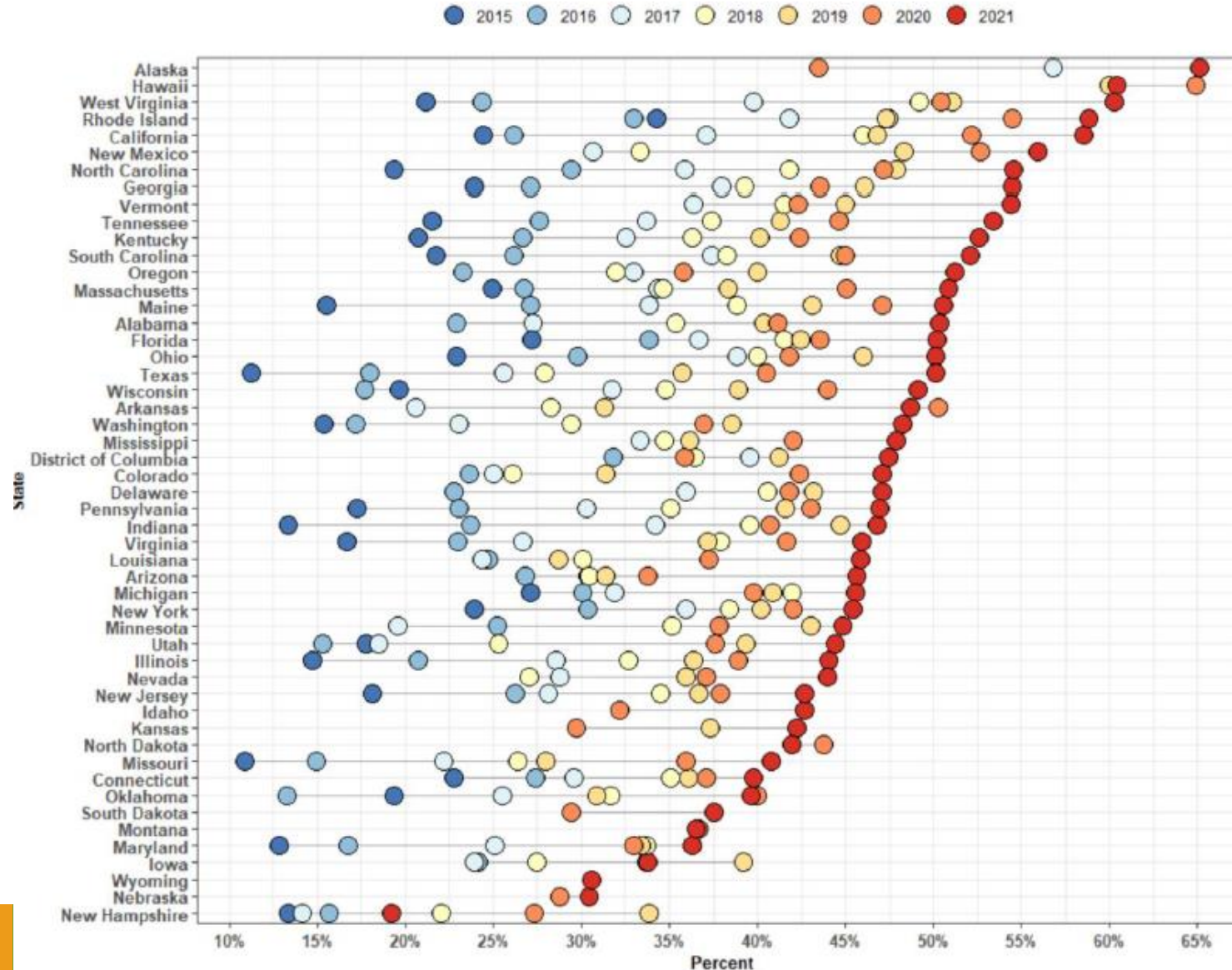


# Percent of Fentanyl Overdose Deaths Containing Other Drug Classes by State, 2021

0-10% 10-20% 20-30% 30-40% 40-50% 50-60%

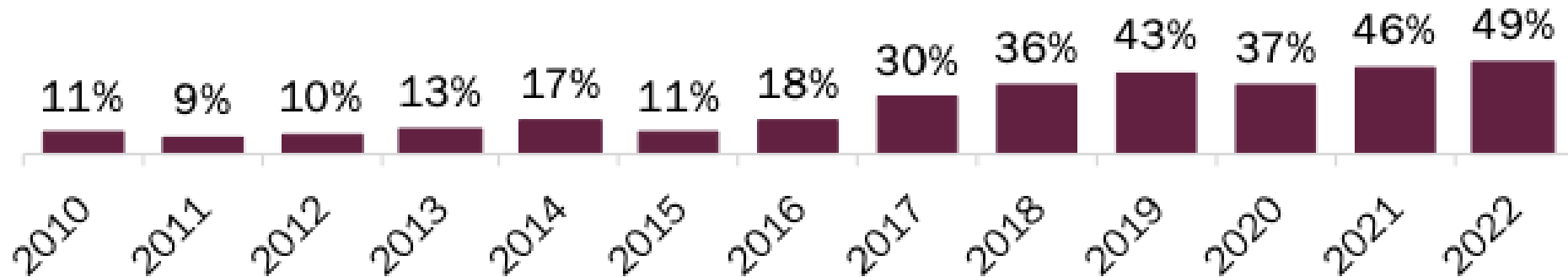


# Percent of Fentanyl Overdose Deaths involving Stimulants by State and Year, 2015-2021



# Fatal Overdoses Among Vermonters

**Figure 6: Cocaine is involved in many opioid-related fatal overdoses**



# Study on Methamphetamine & Opioid Use with Nonfatal Overdose

## Key Findings

- Nonfatal overdose was highest among people using both methamphetamine and opioids (22%) vs opioids alone (14%) or methamphetamine alone (6%).
- Individuals using both methamphetamine and opioids reported the least access to treatment
- Past 30-day cocaine use was commonly reported for all three groups
- Only 17% of individuals using methamphetamine alone had naloxone

Original Investigation | Substance Use and Addiction

### Association of Methamphetamine and Opioid Use With Nonfatal Overdose in Rural Communities

P. Todd Korthuis, MD, MPH; Ryan R. Cook, PhD, MSPH; Canyon A. Foot, BA; Gillian Leichtling, BA; Judith I. Tsui, MD, MPH; Thomas J. Stopka, PhD, MHS; Judith Leahy, MPH; Wiley D. Jenkins, PhD, MPH; Robin Baker, PhD; Brian Chan, MD; Heidi M. Crane, MD, MPH; Hannah L. Cooper, PhD; Judith Feinberg, MD; William A. Zule, DrPH, MPH; Vivian F. Go, PhD; Angela T. Estadt, MPH; Robin M. Nance, PhD; Gordon S. Smith, MD, MPH; Ryan P. Westergaard, MD, PhD; Brent Van Ham, MS, RN; Randall Brown, MD, PhD; April M. Young, PhD, MPH

# General Takeaways

- Overdose deaths involving fentanyl and stimulants grew 60-fold between 2010 and 2021.
- By 2021, cocaine was the most widely used stimulant in the Northeast and upper Midwest; methamphetamine was the most common stimulant in the rest of the country.
- In most of the US, the cocaine and methamphetamine supply contains highly variable amounts of fentanyl.
- Individuals with stimulant use disorders are at very high risk for fentanyl overdose. Effective treatment for stimulant use disorder is an essential component of overdose prevention efforts.

# Treatment for Stimulant Use Disorder

There are currently no FDA-approved medications for treating individuals with stimulant use disorder

Effective Treatment for Individuals with Stimulant Use Disorder is **Contingency Management**



# Contingency Management defined

A behavioral technique employing the systematic delivery of positive reinforcement for desired behaviors that are incompatible with stimulant use. In the treatment of stimulant use disorder, tangible items (e.g. giftcards) can be “earned” for submission of stimulant-negative urine samples or for completion of other target behaviors.

## Results

- A total of 157 studies comprising 402 treatment groups and 15,842 participants were included
- Only contingency management was significantly associated with an increased likelihood of having a negative test result for the presence of cocaine (OR, 2.13)
- Conclusions: In this meta-analysis, contingency management programs were associated with the highest reductions in cocaine use among adults.

# Study Reviewing CM Treatment for Methamphetamine Use Disorder

Contingency management for the treatment of methamphetamine use disorder: A systematic review

Hayley D. Brown, Anthony DeFulio \*

*Western Michigan University, United States*

- A review of 27 studies, all including a contingency management intervention for individuals who use methamphetamine
- Outcomes assessed:
  - Drug abstinence
  - Retention in treatment
  - Attendance/treatment engagement
  - Sexual risk behavior
  - Mood/affect
  - Treatment response predictors

# Study Reviewing CM Treatment for Methamphetamine Use Disorder, cont.

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## Results

- Reduced methamphetamine use in 26 of 27 studies.
- Longer retention in treatment.
- More therapy sessions attended; higher use of medical and other services.
- Reductions in risky sexual behavior.
- Increases in positive affect and decreases in negative affect.

## Conclusion

“Evidence suggests strongly that outpatient programs that offer treatment for methamphetamine use disorder should prioritize adoption and implementation of contingency management intervention”

Brown & DeFulio, 2020



# Study Reviewing CM Treatment for Patients Receiving MOUD

JAMA Psychiatry | [Original Investigation](#)

## Contingency Management for Patients Receiving Medication for Opioid Use Disorder A Systematic Review and Meta-analysis

Hypatia A. Bolívar, PhD; Elias M. Klemperer, PhD; Sulamunn R. M. Coleman, PhD; Michael DeSarno, MS; Joan M. Skelly, MS; Stephen T. Higgins, PhD

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.

# Current Challenges to the Use of CM

## Limits on Federal Funds

- SAMHSA/HRSA \$75 cap per person per year
- Incentives are taxable income, risking interference with entitlement benefits

## Other issues

- Confusion regarding OIG Anti-Kick/Inducements regulations
- Resistance to the use of incentives to promote behavior change
  - Stigma associated with: “Paying individuals to not use drugs”
- Absence of Evidence-based Training and Implementation Strategies
- Optimal parameters for CM protocol design currently not well established

# Financing CM

Where does the money come from? Currently, SAMHSA money, SOR grants and Block grants have a \$75 max per patient. This is inadequate per the research literature (Petry et al., 2004).

In many of the published research studies for treatment for stimulant use, CM protocols were 12-16 weeks in duration with max possible earnings of \$1000-\$1200.

In the ongoing, first statewide CM project in California, the incentive program is \$599 max per patient per 6-month protocol. \$599 is used as the max to avoid issuing 1099 tax forms since as present the IRS classifies incentives earned as taxable income.

# Financing CM

## Strategies for Financing CM

- Change in HHS policy about \$75 limit on reinforcers
- Use of opioid settlement funds
- 1115 waiver to CMS to allow use of Medicaid funds
- Use of state funds
- Foundations



# States with CM Funding Strategies Underway or in Development

## Medicaid Waivers

- California
- Washington
- Montana
- Delaware
- West Virginia
- Hawaii

## Opioid Settlement Funds

- Vermont
- Rhode Island

# CM Safe Harbor proposal



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## View Rule

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HHS/OIG

RIN: 0936-AA13

Publication ID: Fall 2023

Title: •Medicare and State Health Care Programs: Fraud and Abuse; Establishment of New Safe Harbors Under the Federal Anti-Kickback Statute

**Abstract:**

The proposed rule would: (i) Propose a safe harbor to implement a statutory exception, enacted through the Consolidated Appropriations Act of 2023, to protect certain bona fide mental health and behavioral health improvement or maintenance programs provided by hospitals, ambulatory surgical centers, community health centers, rural emergency hospitals, skilled nursing facilities, or similar entities, as determined by the Secretary, to physicians or other clinicians; and (ii) propose a safe harbor to protect certain evidence-based contingency management programs for the treatment of substance use disorders.

**Agency:** Department of Health and Human Services(HHS)

**Priority:** Substantive, Nonsignificant

**RIN Status:** First time published in the Unified Agenda

**Agenda Stage of Rulemaking:** Proposed Rule Stage

**Major:** No

**Unfunded Mandates:** No

**CFR Citation:** [42 CFR 1001.952](#)

**Legal Authority:** [42 U.S.C. 1320a-7b\(b\)\(3\)\(L\)](#) [42 U.S.C. 1320a-7d\(a\)\(3\)](#) [42 U.S.C. 1302, 1320a-7](#)

**Legal Deadline:** None

**Timetable:**

Action	Date	FR Cite
NPRM	08/00/2024	

# Contingency Management Fraud Prevention Guardrails

## What is permissible

- Incentives that have a direct connection to the coordination and management of care of the target population.
- CM incentives for objective, validated measures consistent with positive outcomes (e.g., abstinent drug tests, and other confirmed behavioral measures).

## What is not permissible

- Incentives that result in medically unnecessary or inappropriate services.
- Advertising patient incentives to recruit or steer patients away from other providers.
- Using incentives for the purpose of increasing fees.
- Inadequate protection against fraud.

# Fraud Prevention “Guardrails”

- Research-validated evidence-based practices
- Formal implementation using a written protocol
- Rewards of appropriate magnitude
- Each patient must have a documented clinical diagnosis
- Ongoing attention to and audit-ready processes for (e.g., electronic health records, attendance records, established accounting procedures, etc.)
- Clear protections to avoid using incentives for recruitment (e.g., no advertisements) or suggestions of rebates, refunds, or kick-back
- Individualized care plans should document specific behavioral targets, amounts and schedules
- For each patient, a complete, written accounting of every payment, its purpose, the related behavioral expectation and the patient’s actual effort for which the reward has been received.
- Gift or monetary incentives and their distribution must be accurately inventoried.

# Some CM Protocol Questions

- Type of CM model used (voucher or Prize CM)
- Duration of the CM treatment
- Goal behavior (e.g., negative urinalysis, attendance)
- Urinalysis target (e.g., stimulants only)
- Frequency of visits
- Incentive magnitude
- Use of escalation, reset, and recovery to promote extended periods of abstinence
- Use of CM in combination with other behavioral treatments

# Characteristics of Effective CM

- Clearly defined and achievable behavior
- Desirable and tangible incentive
- Timely pairing of behavior and incentive
- Contingent (incentives provided only when behavior is demonstrated)
- Consistent (behavior is frequently observed and incentivized)

# Clearly Defined Target Behavior

- **Focused:** abstinence from only stimulants
- **Objective:** relies on UAs (not self report)
- **Immediate results:** quickly provide positive reinforcement with point-of-care test results
- **Feasible:** cost effective for frequent use, does not take specialized training
- **Achievable:** a 2 to 4-day stimulant metabolite detection window means rewards can be earned within first few days of abstinence

## Current Recommendation:

Stimulant abstinence measured by point-of-care urinalysis (UA)

# Frequently Measure the Behavior

- Collect urine tests and provide recovery incentives:
  - at least 2x per week is recommended
- Communicate attendance requirements (missed visit = missed opportunity for reward; reset incentive value to base level)
- Scheduled equally throughout week (e.g., Mon/Thurs; Tues/Fri)



# Provide Desirable/Immediate Rewards

## **Desirable:**

- Provide a wide array of reinforcer options
- Starting value of appropriate magnitude per stimulant-negative UA, increasing for every week of non-use of stimulants

## **Immediate:**

- Incentives can be electronically delivered
- Also have the option to print gift cards (e.g., unreliable access to technology)

# Incentive Programs that are NOT CM

- Coffee/donuts provided at meetings
- Certificate and party given at “graduation”
- Incentive “programs” using small, low-cost incentives
- Random drawing for all clients given monthly (no defined criteria for being entered in the drawing)

# Use of a CM Coordinator

## (California protocol)

In each site where CM is conducted, one individual (or more) has primary responsibility for all aspects of contingency management. This individual has excellent skills and training in:

- Understanding all details of the CM protocol
- Interacting with service recipients in a positive, respectful and constructive manner
- Performing all CM-related tasks
  - Collecting urine samples
  - Recording results and discussing with patient
  - Entering results
  - Following all aspects of the fraud prevention protocol
  - Connecting patients with clinical issues to appropriate program staff

# Some considerations for CM in rural settings

- Access to substance use treatment and providers in rural settings
  - Generally, less access to methadone, buprenorphine, and behavioral treatment
  - Transportation and driving distance
- CM education and training
- Who will comprise the CM workforce?
- What types of reward/reinforcers to offer?
- Expanding access to CM treatment? Adapting mobile methadone van delivery? Technology-assisted app delivery?

# Several Examples of CM Apps

- AFFECT Therapeutics: <https://www.affecttherapeutics.com>
- CHESS HEALTH: <https://www.chess.health>
  - <https://ajp.psychiatryonline.org/doi/abs/10.1176/appi.ajp.20230055>
- DYNAMICARE Health: <https://www.dynamicarehealth.com>
  - <https://link.springer.com/article/10.1007/s40617-022-00730-8>
  - [https://www.jsatjournal.com/article/S0740-5472\(20\)30445-1/pdf](https://www.jsatjournal.com/article/S0740-5472(20)30445-1/pdf)
- Q2i Digital Health: <https://q2i.com/>

# Considerations regarding CM apps in rural applications

- Emerging technology with great potential benefit
- Potential to expand access to effective StimUD treatment to more people
- Requires smartphone and internet/cellular service
- How will samples be collected?  
Current saliva testing limitations
- Referral processes, overseeing treatment, coordination of services, billing, funding, etc.

# CM Training and Implementation: CA example

01

CM Overview  
(2-hours; self-  
paced)

02

Implementation  
(6-hours live  
virtual)

03

Readiness  
Self study,  
Interview,  
Practice Cases

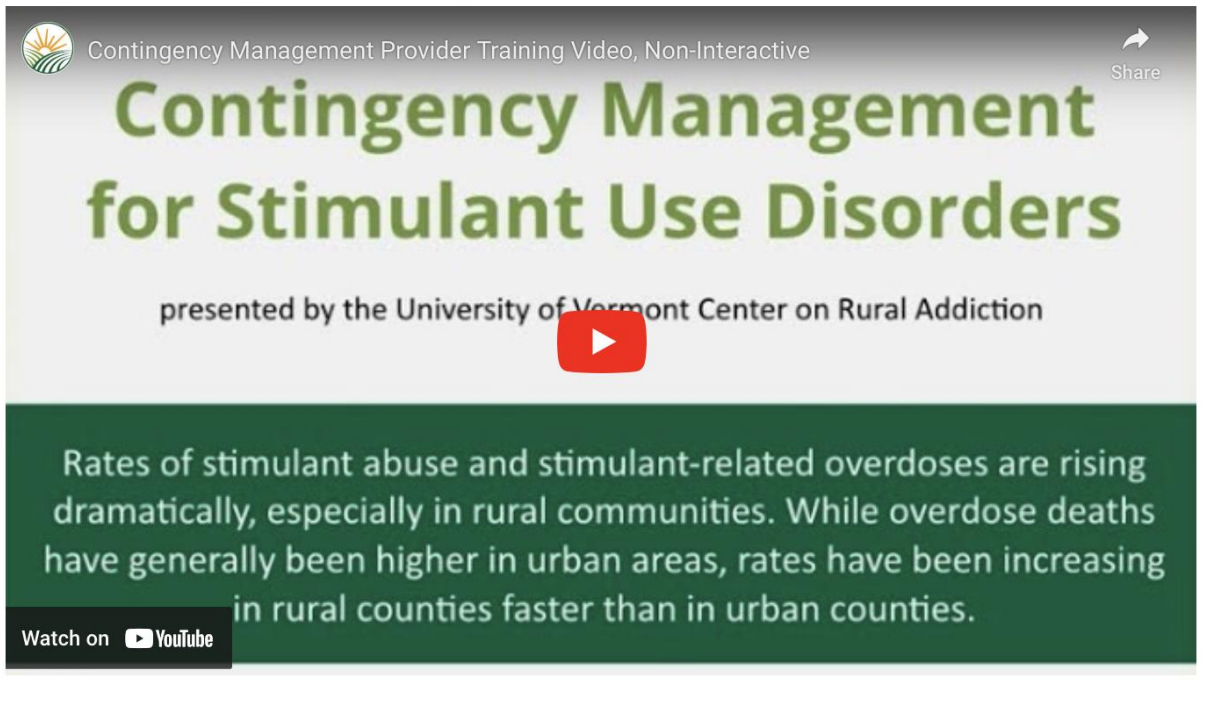
04

Monthly  
Coaching  
Implementation  
Zoom Sessions

05

Fidelity Monitoring  
(2x month for first 6  
months,  
1x month every 6  
months after)

# CORA CM Resources




Contingency Management Provider Training Video, Non-Interactive

## Contingency Management for Stimulant Use Disorders

presented by the University of Vermont Center on Rural Addiction

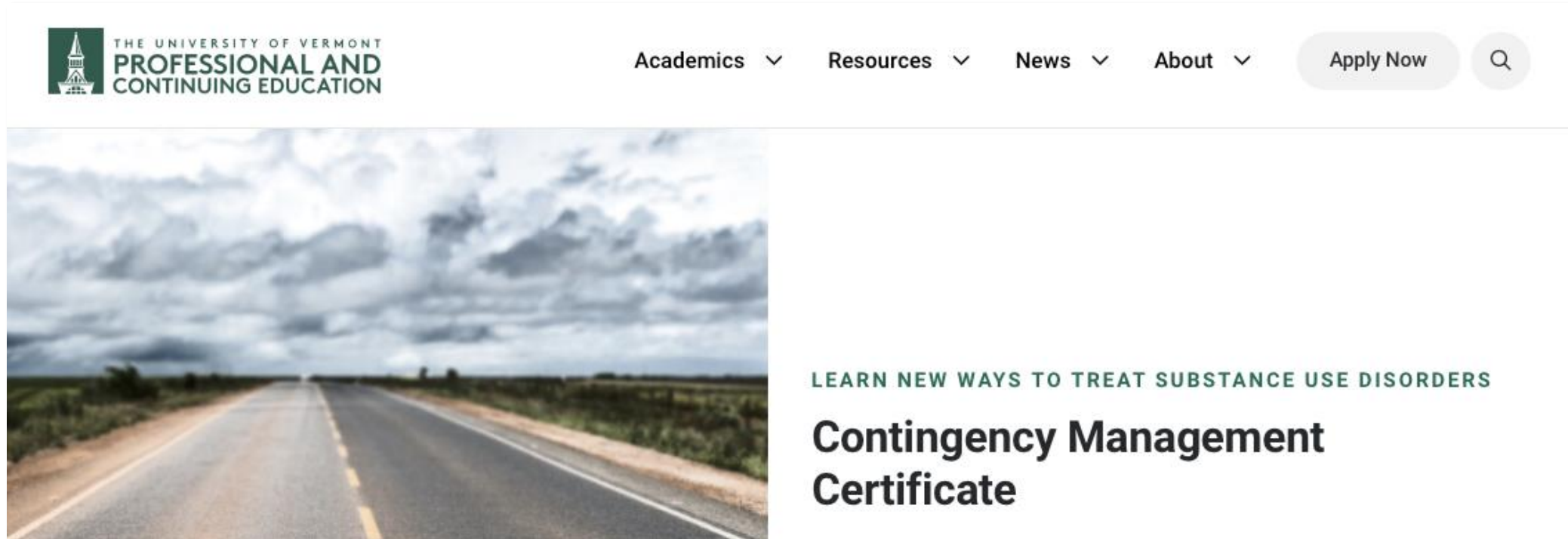
Rates of stimulant abuse and stimulant-related overdoses are rising dramatically, especially in rural communities. While overdose deaths have generally been higher in urban areas, rates have been increasing in rural counties faster than in urban counties.

Watch on  YouTube

- Approx. 40-min video that highlights:
  - Basic elements of CM approach
  - Why providers should consider CM for their patients who struggle with substance use
  - Evidence supporting the use of CM
  - Important steps and considerations for using CM
- Continuing education credits available soon!




# CM Training: Certificate programs?



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## Contingency Management Certificate

# CM Training: UVM Certificate program

- Currently envisioned as a four-module asynchronous program to be completed over four weeks
  - Module 1: Overview of CM theory, principles, terminology
  - Module 2: Core elements of CM
  - Module 3: Implementing evidence-based CM
  - Module 4: Implementation barriers and solutions, including for rural providers and settings
- Will be submitted for continuing education credit review
- Tentatively scheduled to go live in Fall/Winter 2024

# Other CM Resources on CORA website

Available at:

[https://www.uvmcora.org/  
resources-tools/contingency-  
management/](https://www.uvmcora.org/resources-tools/contingency-management/)

- Findings from a state-by-state review of laws related to providing incentives to patients for healthy behaviors
  - Read the laws – [Interactive Map of US State Laws Relevant to Incentives for Health Behavior](#)
  - Read the journal article – [US State Laws Relevant to Incentives for Health Behavior: A Qualitative Analysis](#)
  - View the poster presentation – [US State Laws Regulating Incentives Related to Substance Use](#) (The College on Problems of Drug Dependence (CPDD) 85th Annual Scientific Meeting)
- Expert-led seminars and video curricula with CME credits available (UVM CORA Community Rounds)
  - [Treatment of Stimulant Use Disorders](#)
  - [Smartphone-based Financial Incentives to Promote Smoking Cessation Among Pregnant Women](#)
  - [Recommendations for Culturally Recentering Reinforcement-Based Substance Use Disorder Interventions in Collaboration with Rural Tribal Communities](#)
  - [A Qualitative Analysis of US State Laws Regulating Incentives for Health Behavior](#)
- A guide to evidence-based resources to learn more about CM
  - [Contingency Management Resource Guide](#)
- Research Spotlights on the latest publications relevant to rural providers
  - [Financial Incentives for Smoking Cessation in Pregnancy](#)
  - [COVID-19 Vaccine Uptake in Rural Populations with Substance Use Disorder](#)
- A scholarship-based program to facilitate in-person training for providers and their clinical teams on science-based practices for addiction treatment
  - UVM CORA [Clinical & Translational Scholarship Program](#)



**Thank you!**  
**Questions?**

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