

# Contingency Management Research Update

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# Disclosure Information

## Michael McDonell, PhD

- No Disclosures

# Session Learning Objectives

## **At the end of the session, you will be able to:**

- Attendees will be able to describe new research on contingency management (CM) as an intervention for alcohol use disorder (AUD).
- Attendees will be able to synthesize recent studies of CM and its impact on substance use during and after treatment.
- Attendees will be able to describe changes to federal anti-kickback regulations that have clarified safe harbor guardrails for CM.

# Basics of CM for SUD



# CM Research Summary

- Largest effect size on abstinence of any other psychosocial treatment (all substances)
  - Stimulants (AshaRani et al., 2020; Bolivar et al., 2021; Dutra et al., 2008)
  - Nicotine (Dutra et al., 2008)
- Largest effect size on treatment retention (Bolivar et al., 2021; Dutra et al., 2008; Higgins et al., 1994)
- Newer evidence indicates large effects on alcohol abstinence (McDonnell et al., 2017a, 2021, 2021a)
- The effects can last for up to one year after the intervention ends (Ginley et al., 2021)
- CM is associated with reductions in off-target alcohol, drug, and nicotine use, depressive symptoms, and psychiatric hospitalizations (Higgins et al., 1994; McDonnell et al., 2020)
- CM is cost-effective (Olmstead & Petry, 2009)

# CM Research Summary: Cultural Factors

- CM has demonstrated efficacy in the US, Brazil, China, and other countries (Hser, 2011; Miguel, 2022)
- CM has been adapted, tested, and is tested in partnership with American Indian and Native communities with reductions in 1) alcohol, 2) stimulants & 3) cannabis (Hirchak et al, 2022; McDonnell 2021a,b)
- CM has demonstrated efficacy in reducing methamphetamine use among Men Who Have Sex With Men (MSM) (Shoptaw et al., 2006)

# CM for Alcohol Use Disorders

- In 2020, 28.3 million Americans experienced an AUD (SAMHSA, 2020)
  - 10 million more than all drug use disorders combined
  - 280 times more than those who have a methamphetamine use disorder (<1 million)
- 15.4% of people who used alcohol reported that they drank more than they did prior to the COVID-19 pandemic (SAMHSA, 2020)
- Due to a lack of a suitable alcohol biomarker, few studies investigated CM as an intervention for AUDs until recently

# Ethyl Glucuronide (EtG)

- Metabolite of alcohol that closely approximates a urine test for illicit drugs
- EtG levels are most strongly associated with recency of drinking (Alcover et al, 2022)
- Can be assessed in urine using immunoassay
  - Point of care dipcard (cutoff 300 or 500 ng/mL) - \$5
  - Benchtop analysis (linear from 0-2,000 ng/mL) - \$10
- At 100 ng/mL Can detected (Lowe et al, 2015)
  - 80% light drinking for 48 hours
  - 80% of heavy drinking for 5 days





# CM for Alcohol Use Disorders in Individuals with Co-occurring Disorders (COD)

- **Population:** Adults diagnosed with AUD and co-occurring SMI (i.e. schizophrenia, bipolar, or major depression)
- **Initially enrolled:** N= 121
- **Randomized:** N= 79
  - CM Rewards vs Non-Contingent Rewards
  - Reinforced behavior: uEtG <150 ng/mL
- **Duration of Treatment:** 3 samples per week for 12 weeks
- **Follow-up:** 3 Months

# CM for Alcohol Use Disorders in Individuals COD (Cont.)

FIGURE 1. Group Differences in Longest Duration of Continuous Alcohol Abstinence<sup>a</sup>

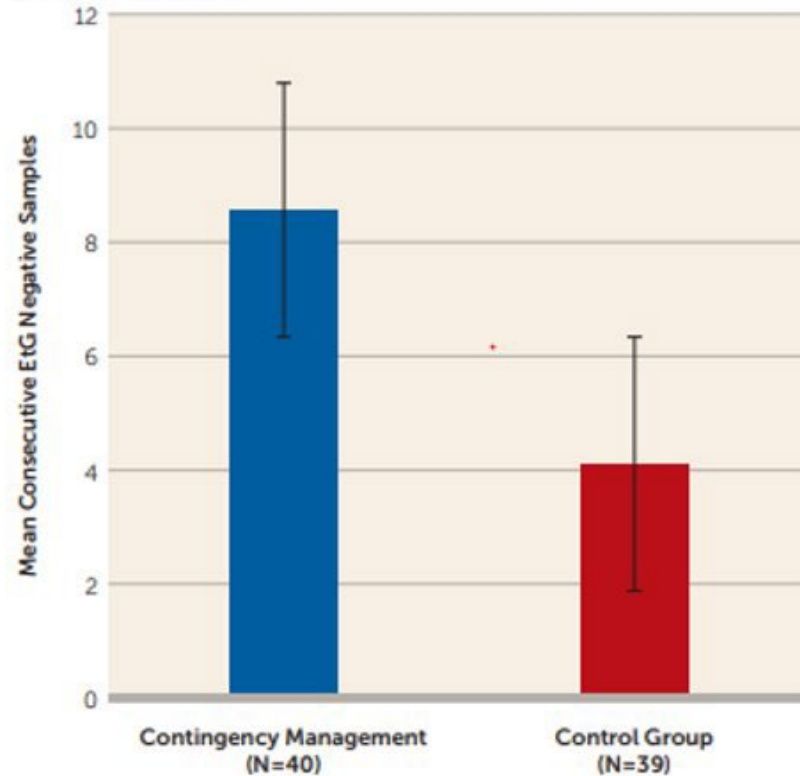
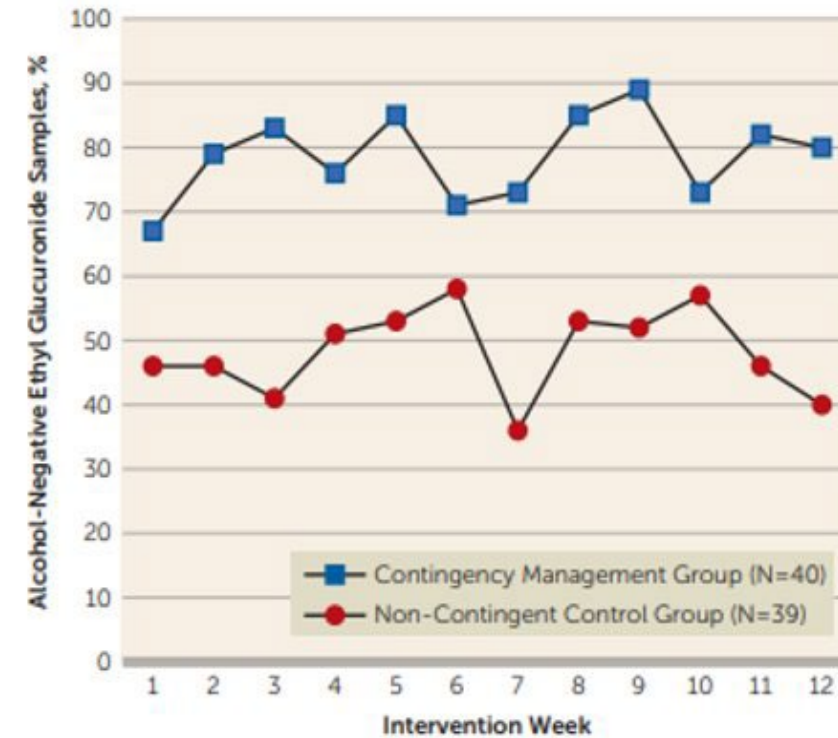
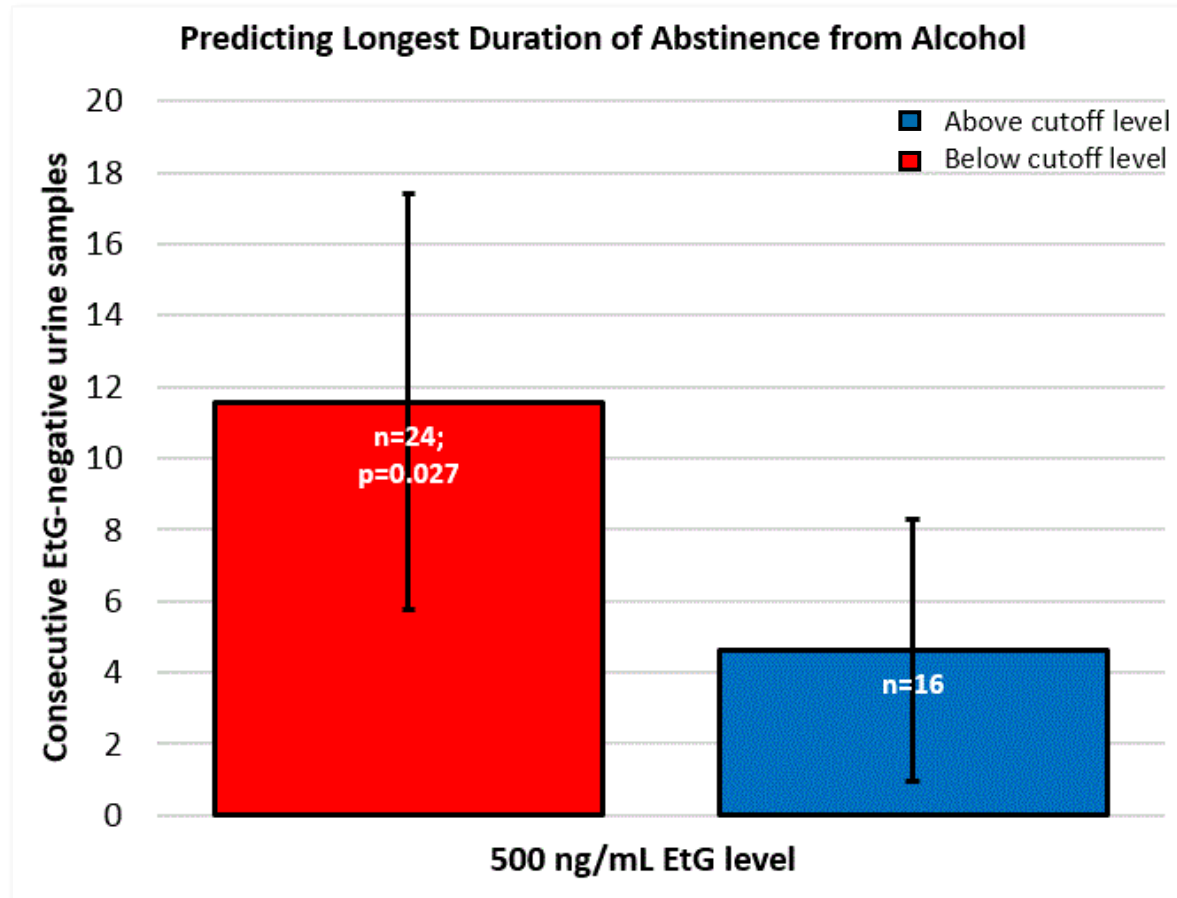


FIGURE 2. Group Differences in Alcohol-Negative Ethyl Glucuronide Urine Samples Across the 12-Week Intervention Period<sup>a</sup>



# Mean Number of Continuous EtG-Negative Samples in CM by Pre-treatment EtG Results



Those with an average pretreatment EtG level below EtG <500 ng/mL had a significantly longer LDA, relative to those with pretreatment EtG >499 ng/mL  $p < 0.05$ .

# Current Study: Individualizing Incentives

## *Initial Inclusion (n=400)*

- Age 18-65
- Moderate to severe AUD
- Dx of SMI

## *Addictions Neuroclinical Assessment*

- Cognition- NIH Toolbox
- Negative emotionally= NIH Toolbox
- Incentive salience: self-report/ performance-based measure

## *Criteria for Randomization*

- Average EtG >349 ng/mL over 4 weeks
- Associated with non-response to CM in initial AUD CM study

# Current Study: Individualizing Incentives

## *Usual CM*

- Standard CM dose
- Reinforcement = uEtG < 150 ng/mL

## *High Magnitude CM*

- 3x the standard CM dose
- Reinforcement = uEtG < 150 ng/mL

## *Shaping CM*

- Standard CM dose
- Reinforcement:
  - Reduction phase uEtG < 500 ng/mL
  - Abstinence phase < 150 ng/mL

## *Outcomes*

- 4 months CM
- 12 months follow up

# CM as an Intervention for AI/AN Communities

## *The Rewarding Recovery Study*

- 1 rural reservation in Northern Plains
- 114 Adults with AUD who used drugs
- CM focused on alcohol and other drugs (Cannabis/ Methamphetamine)

## *Helping Our Native Ongoing Recovery (HONOR) Study*

- 3 communities throughout the West
- 158 Adults with AUD
- CM focused on alcohol
- Largest multi-site CM for AUD study ever conducted

## **RESULTS**

- Less alcohol use
- Less stimulant (methamphetamine) use
- Less cannabis use

# Long-term Efficacy of CM for Drugs

- Meta-analysis of 23 CM for SUD studies at 1-year follow-up (Ginley et al., 2021)
- CM showed better long-term objectively measured outcomes (e.g., UDTs) than comparison treatments (e.g., community-based comprehensive therapy)
  - OR = 1.22, 95% confidence interval [1.01, 1.44]
- Longer length of active CM was the best predictor of long-term abstinence
  - Mean length of treatment = 14.5 weeks (with few CM studies >16 weeks)

# The VA CM Program

## *A Real-World Large-Scale Example*



**Veterans Canteen Service (VCS)**  
contributes **\$100,000**  
in voucher coupons

- 94 VAs have implemented CM
- >50% of CM sessions attended
- 91% UDTs drug negative



# Barriers to CM Implementation

- Staff resistance to incentives/ extrinsic motivation and/or targeting abstinence
  - Overcome with education and testimony clinician and client testimony
- Access to Training and Technical Support
  - Including tools to track escalating incentive schedule
- Funding the incentives
  - Currently a \$75 per patient limit if using SOR funds, likely to be removed in 2022
- Navigating anti-kickback regulations
  - The Office of Inspector General prohibits the use of incentives to pay clients for billable encounters, no matter the funding source!

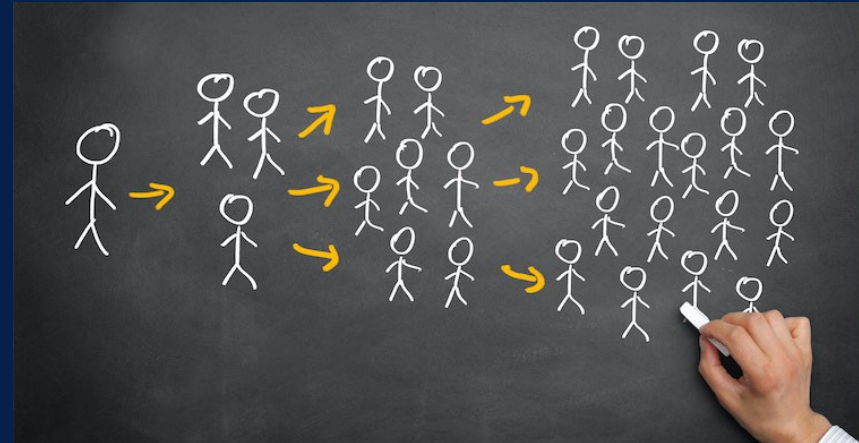
# CM and Safe Harbor Requirements

## *Our Advice:*

- Do not advertise the use of rewards.
- Document the need for CM in the treatment plan.
- Use a research-based CM program.
- Carefully document that rewards are linked to client outcomes.
  - Must closely document each UDT result and the corresponding reward that was given for that UDT negative test.
- Rewards cannot exceed > \$500 annually without a Medicaid Waiver.
- Regularly evaluate the impact of CM on client outcomes.
  - Do quality improvement to document CM effectiveness.
- Avoid tying CM with another Medicaid/Medicare billable encounter.

# CM Dissemination

- We are leading statewide training and technical assistance (TTA) efforts focused on implementing CM for SUD in Washington State, Montana, and support CM training in tribal communities
- California is implementing a >\$50 million CM pilot project
- There is great need to ramp up a CM training and implementation support infrastructure in the US



Thank you!

*Questions?*

# CM Literature

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