Contingency Management for Serious Mental Illness

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Mountain Plains ATTC (HHS Region 8)
ATTC Addiction Technology Transfer Center Network
Funded by Substance Abuse and Mental Health Services Administration

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MHTTC Mental Health Technology Transfer Center Network
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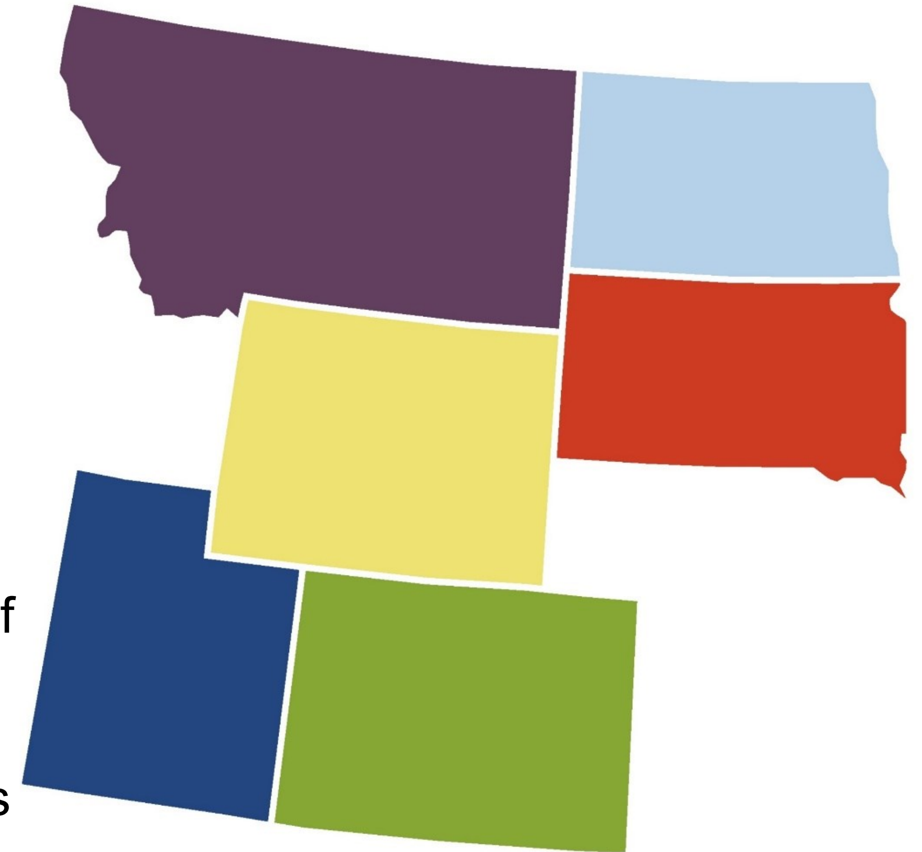
The Mountain Plains
Mental Health and Addiction Technology Transfer Centers

The Mountain Plains Mental Health Technology Transfer Center (Mountain Plains MHTTC) and Mountain Plains Addiction Technology Transfer Center (Mountain Plains ATTC) provide training and technical assistance to individuals who serve persons with mental health and substance use concerns throughout Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming).



The Mountain Plains MHTTC and ATTC belong to the Technology Transfer Center (TTC) Network, a national network of training and technical assistance centers serving the needs of mental health, substance use and prevention providers. The work of the TTC Network is funded under a cooperative agreement by the Substance Abuse and Mental Health Services Administration (SAMHSA).

The Mountain Plains MHTTC and ATTC are hosted at the University of North Dakota.

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The use of affirming language inspires hope and advances recovery.

Language Matters.

Words have power.

PEOPLE FIRST.

The ATTC Network uses affirming language to promote the promises of recovery by advancing evidence-based and culturally informed practices.

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Serious Mental Illness

- Definition
  - Schizophrenia
  - Bipolar Disorder
  - Re-occurring major depressive disorders
  - AKA people treated in community mental health centers

- In 2015, there were an estimated 9.8 million adults in the US with SMI, representing 4% of all US adults *(SAMHSA, 2015).*

- Associated with a median reduction in life expectancy of 10.1 years *(Walker et al., 2015).*

Substance Use Disorders

- Alcohol misuse is the third leading preventable cause of death in U.S.
- Estimated cost of $223.5 billion annually
- 85% of those with an substance use disorder never receive treatment

Co-Occurring Disorders

Co-Occurring Disorders

8.9

Million Americans
Living with a co-occurring disorder

Only 7.5% enroll in a treatment program

SAMHSA

Co-Occurring Disorders

- 50% of adults with SMI are diagnosed with from a co-occurring substance use disorder.
  - 46% will have an alcohol use disorder
- Individuals with co-occurring disorders have more severe substance use, psychiatric symptoms and psychiatric hospitalizations.
- Few individuals receive concurrent treatment for both conditions.
- Need feasible, effective treatments for co-occurring disorders.

Contingency Management

Pharmaco-Behavioral Theory of Substance Use

Psychoactive drugs:

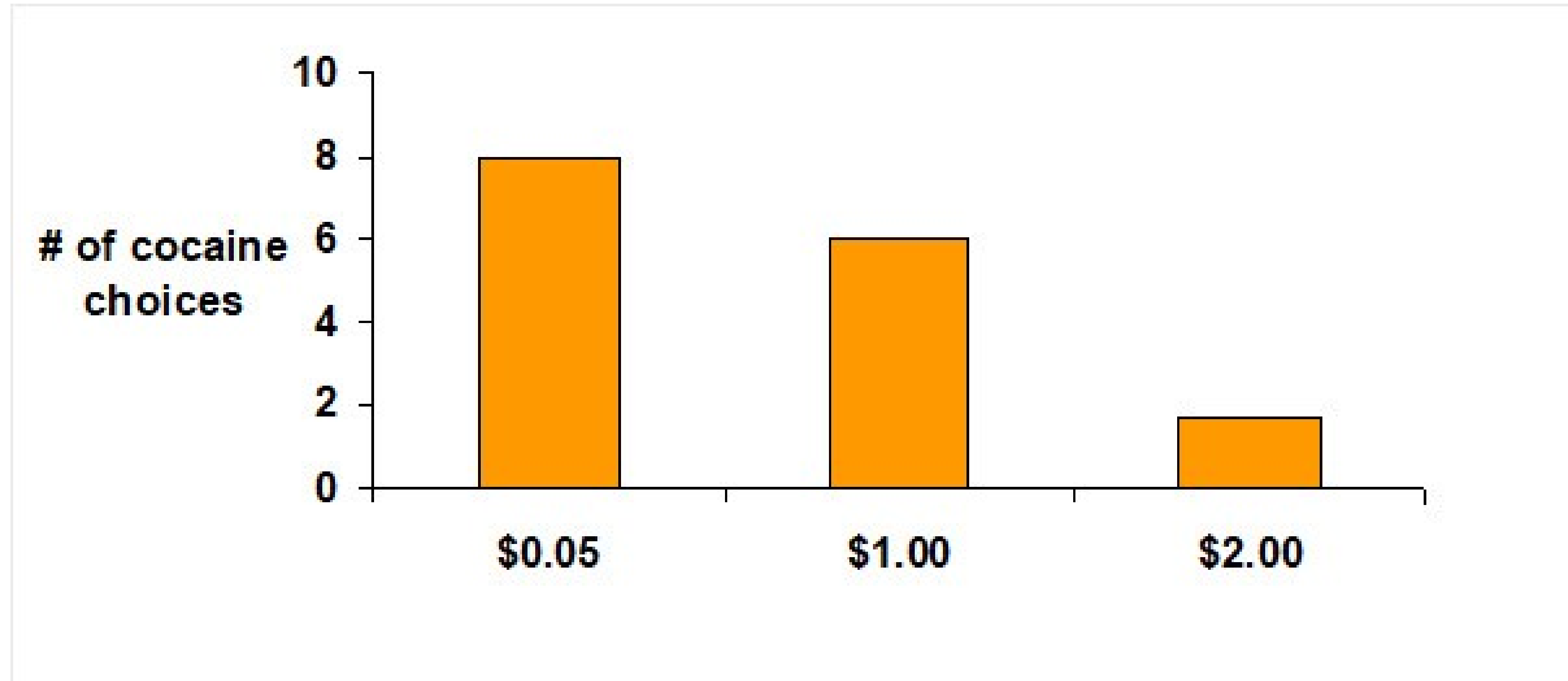
- Feel good (positive reinforcement)
- Remove negative feelings (negative reinforcement)
- Drug use result in loss of many other reinforcers (job, family, friends)

Conclusion: drugs are highly reinforcing and hijack the reward pathway in our brain

CM is Positive Reinforcement

CM offers a **non-drug reinforcer** in exchange for evidence of **drug abstinence**

of cocaine choices



Principles of CM for SUDs

1. Frequently monitor target behavior (drug abstinence)
   - Urine drug test (UDT) 2-3 times per week

2. Provide a reinforcer when the target behavior occurs

3. Remove the reinforcer when the target behavior does not occur

Basics of CM

CM: Benefits

- Increases morale of clients and staff
- Builds strong relationship between clients and staff
- Can be implemented by almost anyone
- Can be adapted to your clinical setting
- Makes treatment something that clients want

Key Elements of CM

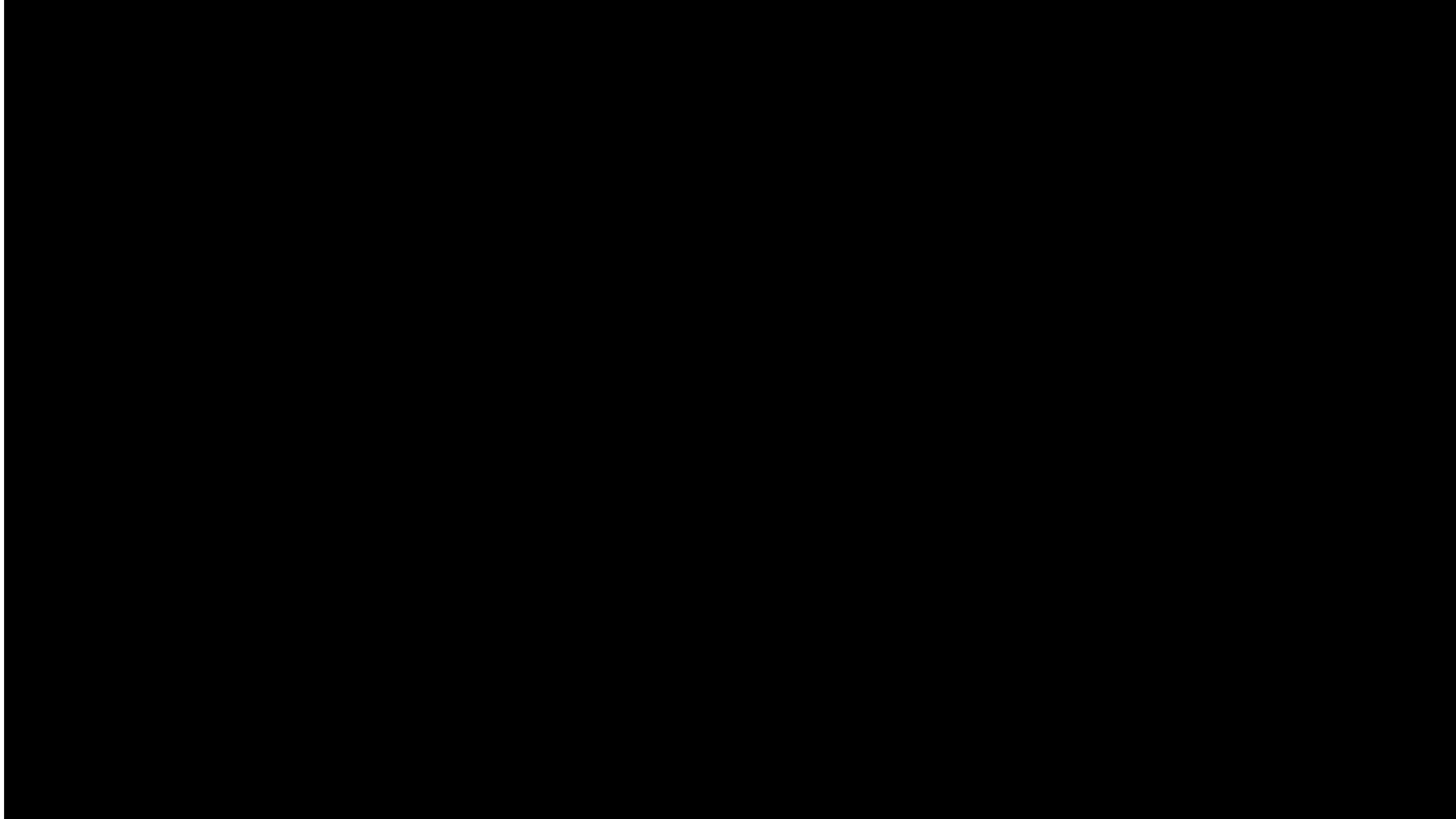
Target Behavior:

- Objective
- Measurable
- Achievable
- Feasible
- Consistent

CM Rewards:

- Contingent
- Immediate
- Tangible
- Desirable
- Escalating

Contingency Management



CM Models

Voucher CM: a pre-arranged voucher is provided for each stimulant negative UDT and voucher amounts escalate

- Example: $5 per neg UDT, escalation bonus $2/week
- Clients knows exactly what they will get for each negative UDT
- Vouchers can be banked and then exchanged for gift cards or tangible items

CM Models

Prize CM: a pre-arranged number of prize draws is provided for each stimulant negative UDT and the number of prize draws escalate

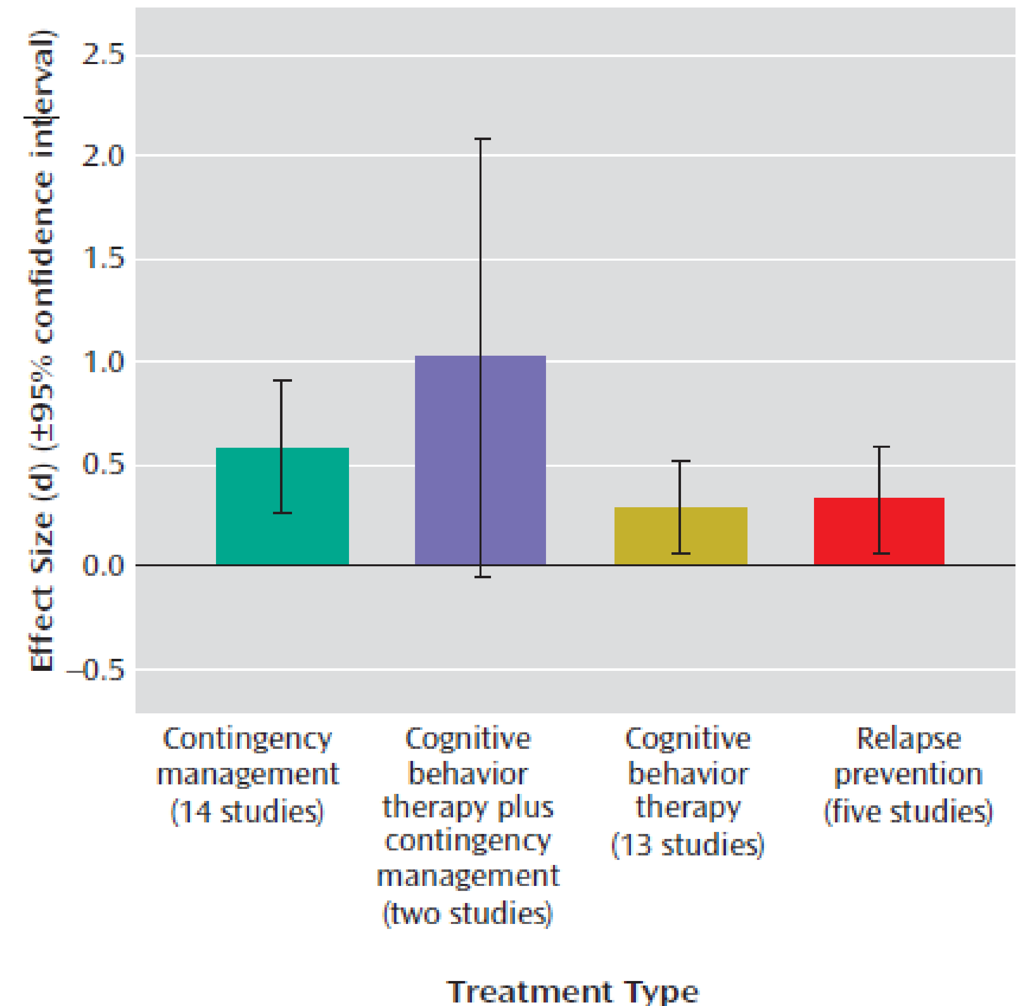
- Each prize draw you have a chance of
  - No prize (48%), $1 prize (42%), $20 prize (8%) $100 prize (<1%)
  - Client never knows exactly what they will get

Dutra et al. 2008: Meta-analysis of psychosocial interventions

Treatments analyzed:
Contingency Management (CM),
Cognitive Behavioral Therapy (CBT),
Relapse Prevention (RP)

Greatest Effect Size: CM+CBT, and CM

Best Treatment Retention: CM



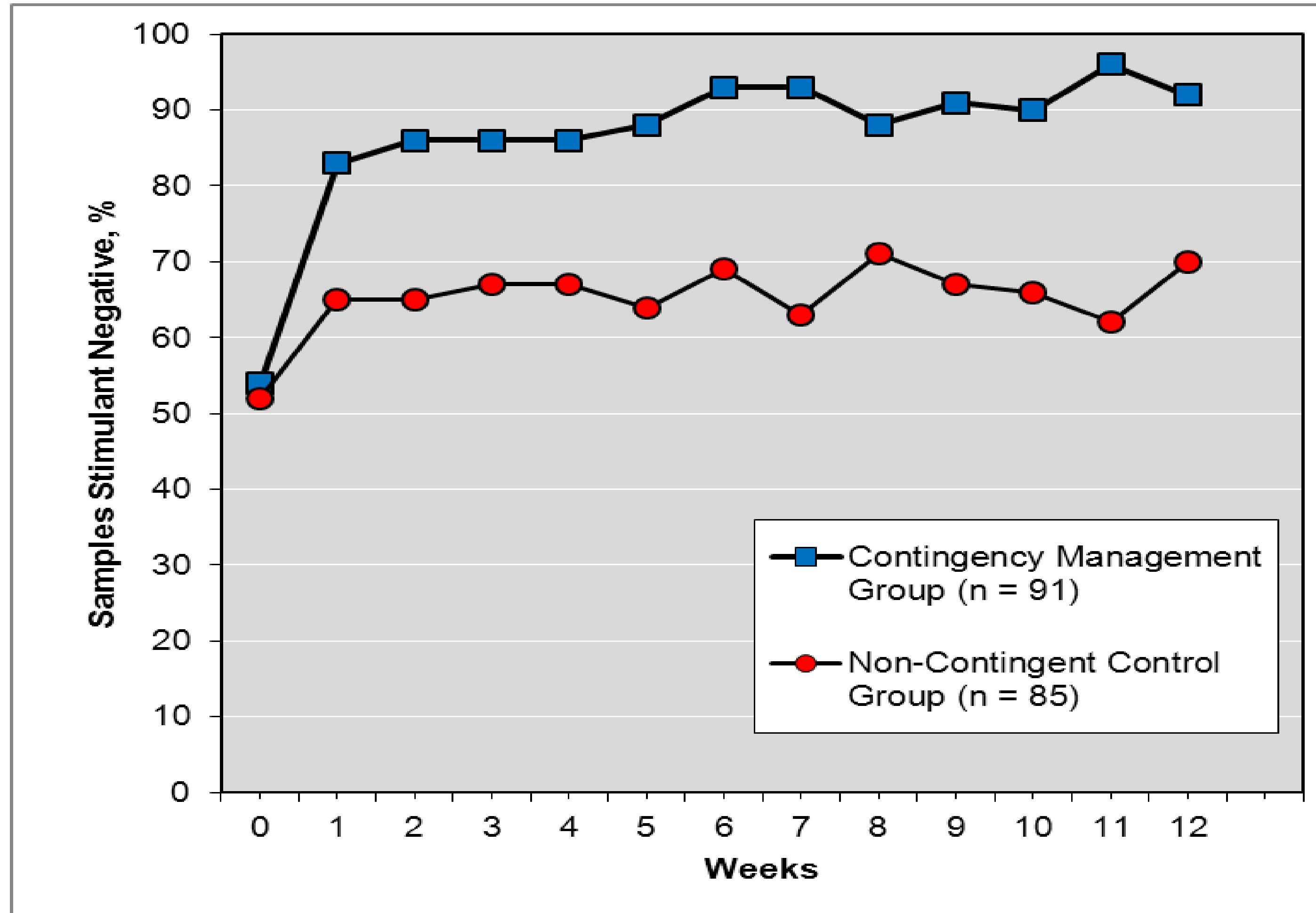
Contingency Management for Stimulant Use in Adults with Severe Mental Illness:

- McDonell et al 2013, American Journal of Psychiatry

- Primary Aim:
  - Determine if a 3-month Contingency Management intervention is successful in decreasing illicit stimulant use in adults with severe mental illness.

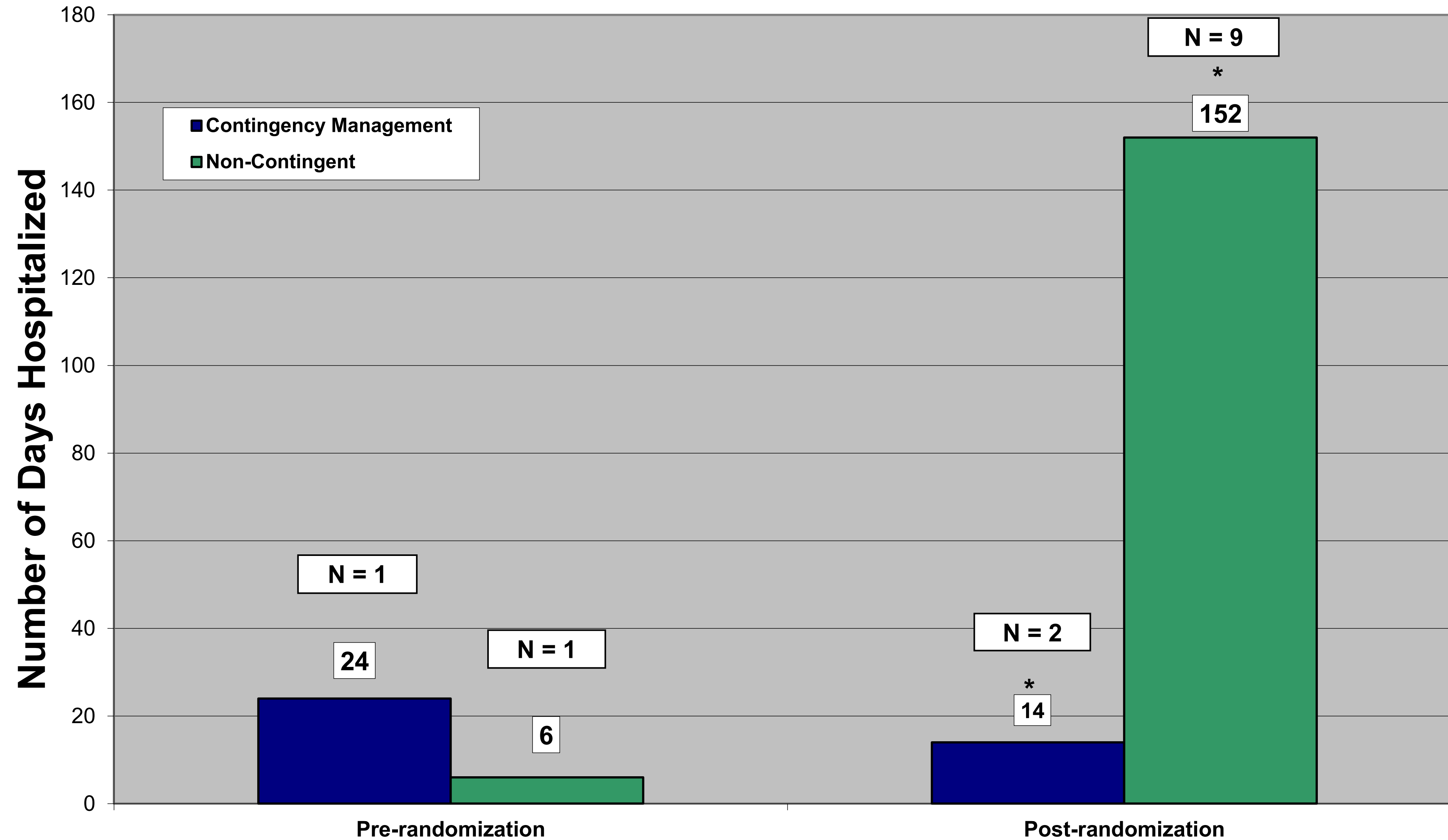
Percent of Participants with Stimulant Drug-Negative Urine Samples

(across the 12-week treatment period)



OR = 2.40, CI = 1.89-3.05

Number of Inpatient Days by Group Over Pre-Randomization (3 months) and Post-Randomization (6 months) Periods



*X^2 (1) = 5.4, p =0.02 (McDonell et al., 2013, Am. J. Psychiatry)

CM for Alcohol Use Disorders in Seriously Mentally Ill Adults Using the Ethyl Glucuronide (EtG) Biomarker

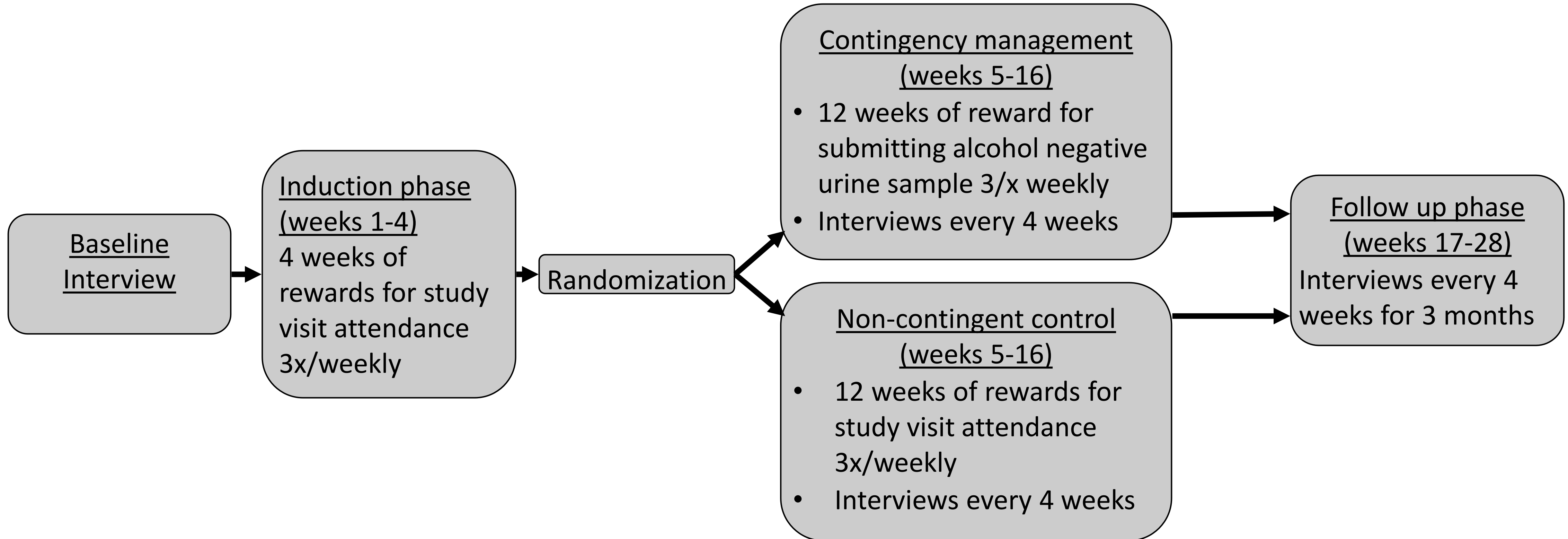
- McDonell et al. 2017
- American Journal of Psychiatry

Supported by NIAAA/OBSSR R01 AA020248, R01 AA022070

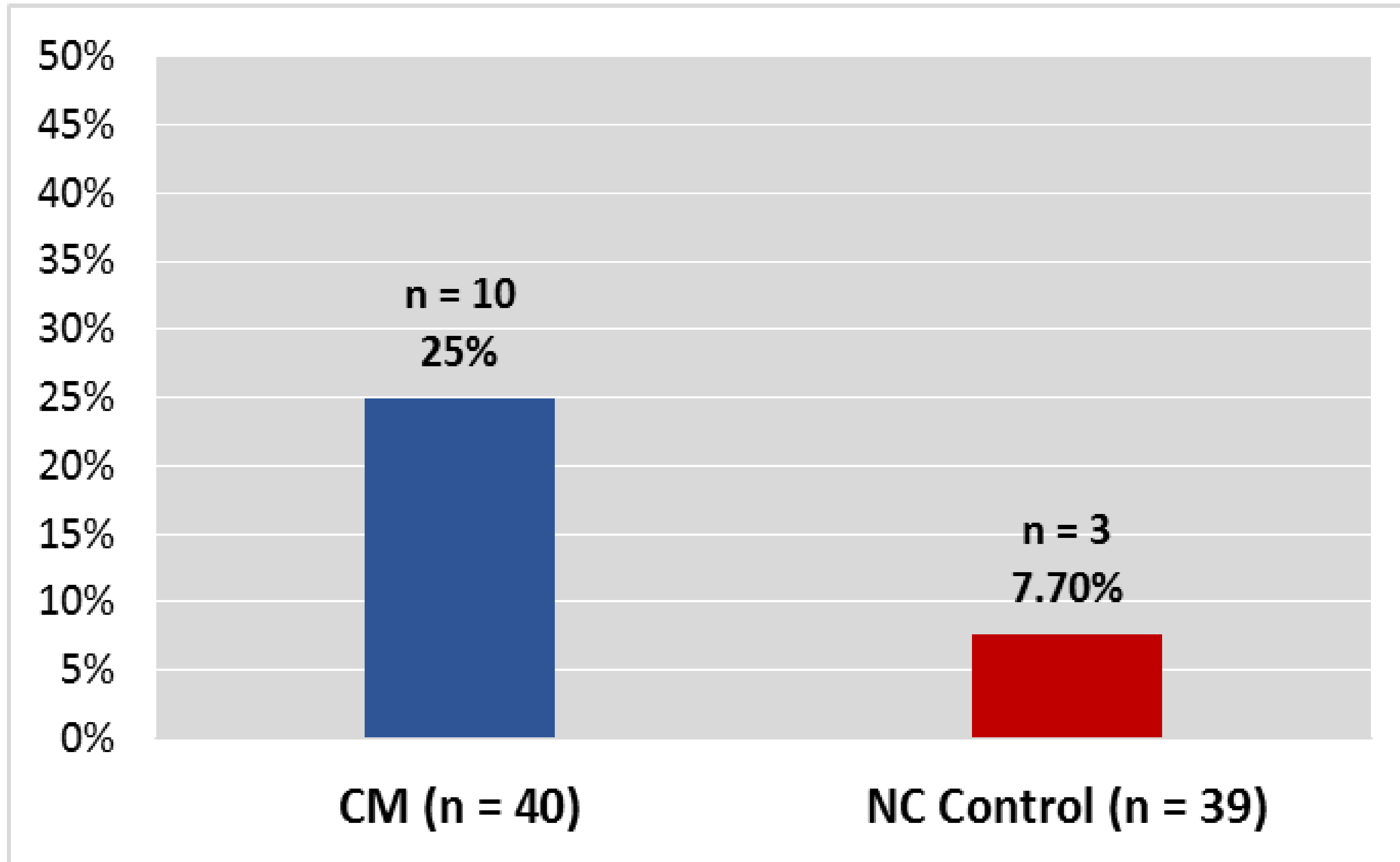
Ethyl Glucuronide (EtG)

- Alcohol metabolite detected in urine for 5 days when using low cutoffs (i.e.,100-200 ng/mL)
- Conducted using immunoassay in clinic setting *(Leickly et al., 2015)*
  - Concerns about "false positive" results are unwarranted
- Also available as point of care test
- EtG may be a suitable biomarker for verifying alcohol abstinence in CM

Study Flow Chart



Percent of Participants with Greater than 4 weeks of Abstinence



$\chi 2=4.30$, $p=0.04$

Other Alcohol Outcomes

	Contingency Management (n=40)		Non-Contingent Control (n=39)			
Outcome Variable	Mean	(SE)	Mean	(SE)		CI
% Alcohol Negative urine samples	50%	(3%)	24%	(3%)	OR:3.13	2.18:4.50
EtG Value (ng/mL)	408.86	(39.57)	734.79	(40.66)	B=325.9	213.35:438.51
Self-reported days Alcohol Use Last 30 days	3.72	(1.57)	12.01	(1.52)	B=8.29	3.97:12.60
Self-reported days Alcohol Intoxication Last 30 Days	2.92	(1.47)	9.35	(1.43)	B=6.43	2.40:10.47
Self-reported % Heavy drinking last 5 days	13%	(2%)	34%	(3%)	OR:3.48	2.32:5.23

Note. All differences were statistically significant, $p<0.05$

Conclusions

- CM is a feasible, low-cost (~$300 for incentives) and effective strategy for reducing stimulant drug and alcohol use in people who are living with SMI.

- Additional Benefits:
  - Fewer psychiatric hospitalizations
  - Lower levels of cigarette smoking
  - Lower psychiatric symptoms
  - Cost-effective
  - Clients like it
  - Clinicians like it

What Clients Say about CM

“When I’m at home and see them [prizes] I think ‘hey I got this for staying sober.’ ”

“Something to do besides thinking about everything wrong with the world, and being negative… it gave me a little peace of mind”

“I don’t care about the prizes, seeing myself getting clean, it helped me”

“I still wanted to be clean, even though I knew it wouldn’t be held against me and it wouldn’t be shared. I was conscious of that.”

“It gave me something to look forward to, a schedule.”

Challenges to using CM

- Staff resistance to the idea of incentives
  - Easily overcome
- Challenges of tracking escalation bonus, reset, and recovery
  - We will be providing you with the tools for doing this
- Where does the funding for incentives come from?
  - Up to $75 from SOR funding
  - $315 funding for some programs from State of Montana
- Office of the Inspector General prohibits the use of incentives to pay clients for billable encounters. Anti-kick back regulations.
  - Use of any kind of incentive (no matter the source of funding) must comply with an IOG defined Safe Harbor

CM and Safe Harbor Requirements

- Do not advertise use of rewards
- Document need for CM in 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, >$200 monthly
- 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

Thank you!

Questions? Comments?

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