Is Evidence-Based Contingency Management a Game Changer for SUD?

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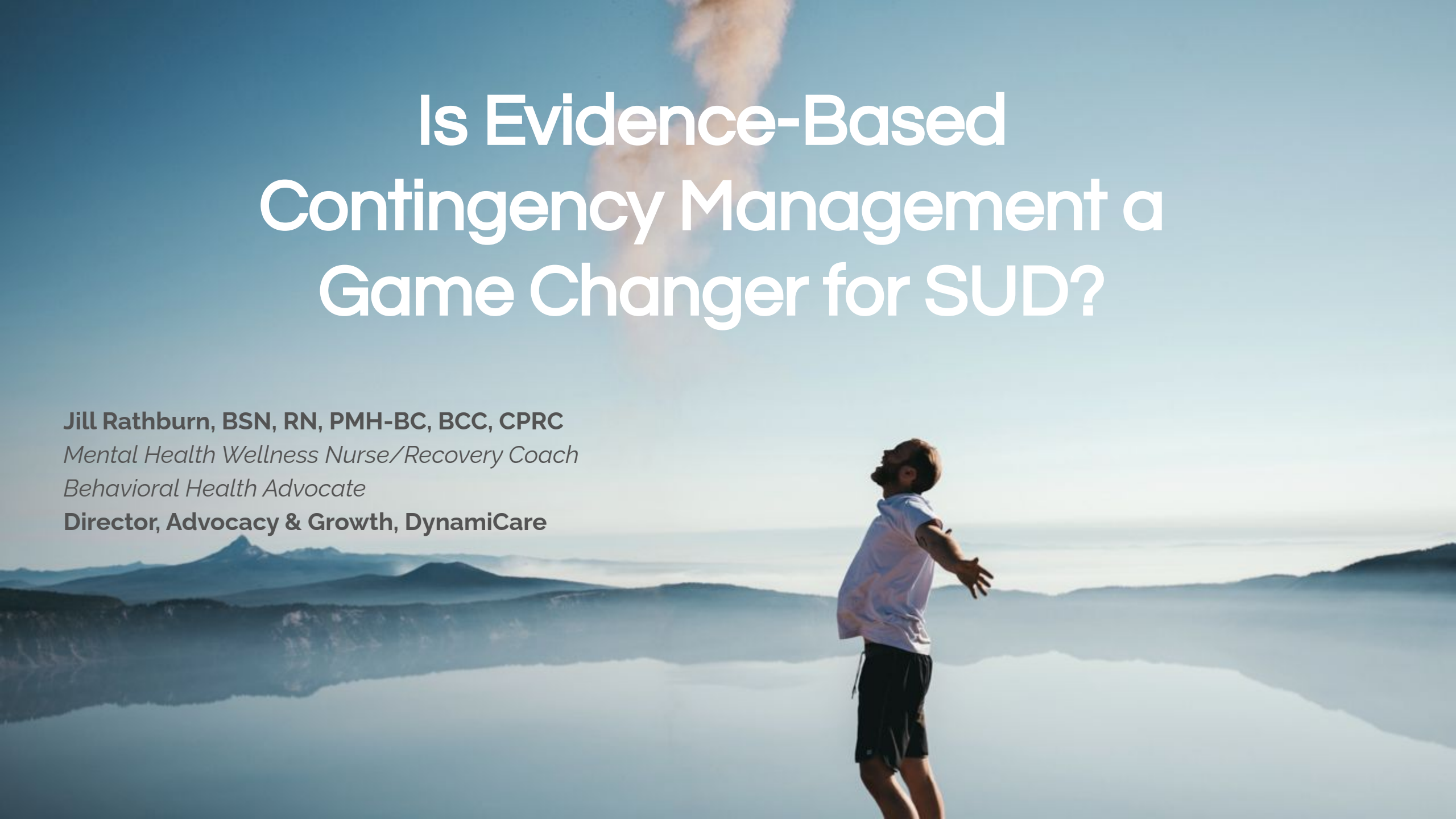


Objectives

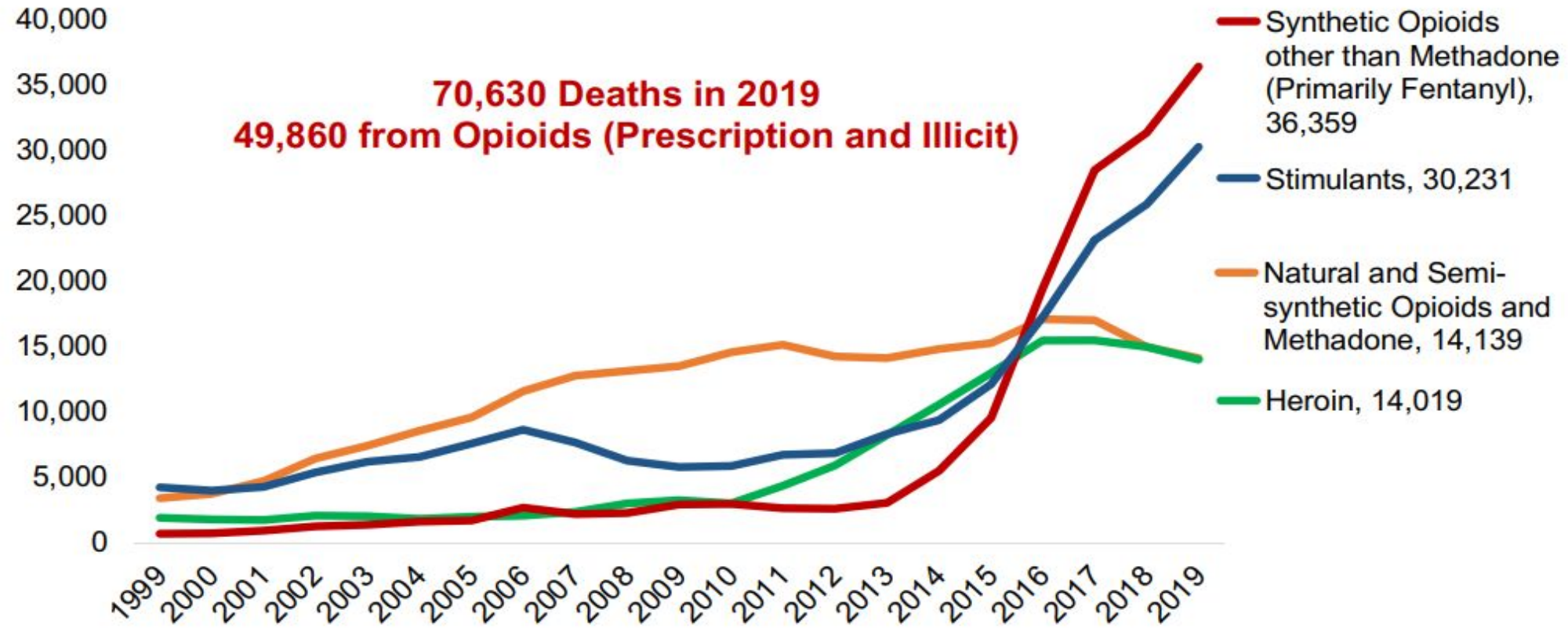
- Describe the process of creating behavior change through contingency management (CM).
- Name the 3-5 features of an effective CM system.
- State a few key obstacles to CM and the current solutions to resolve.

  Also….

- Identify patient populations with SUD that are good candidates for CM.

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).

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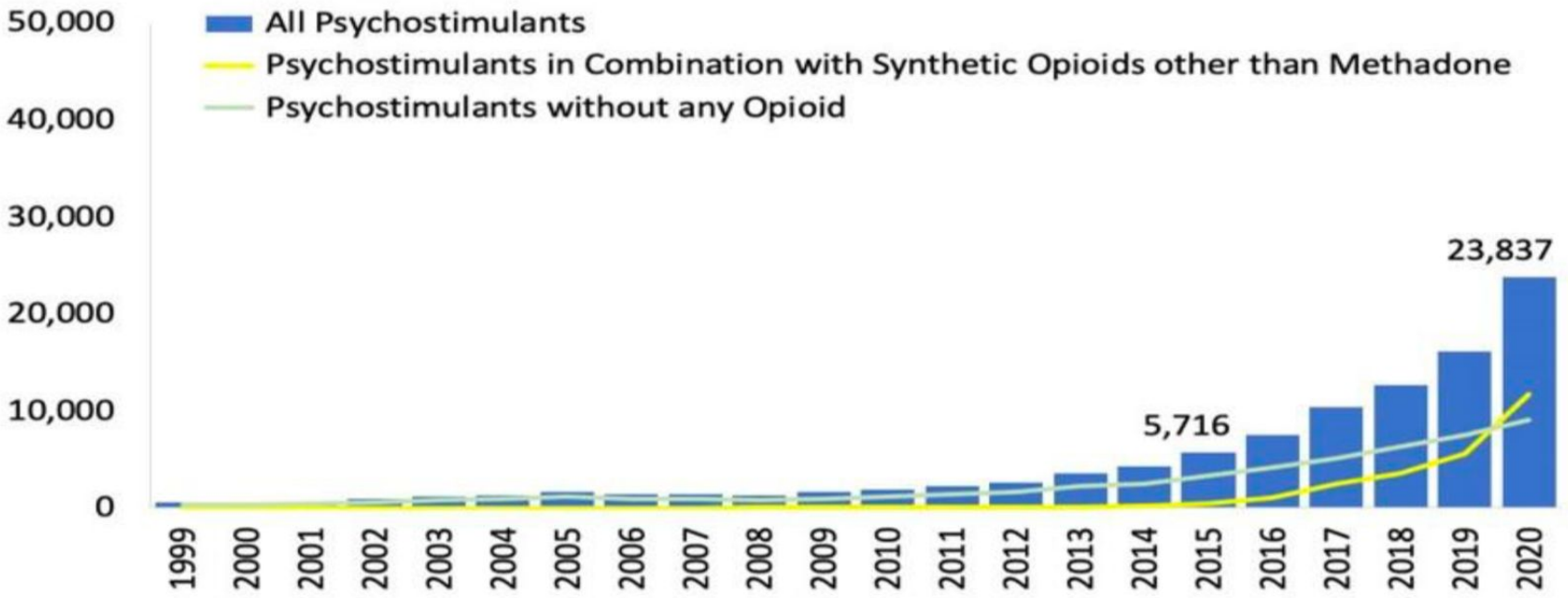
The University of Vermont

NATIONAL OVERDOSE DEATHS INVOLVING PSYCHOSTIMULANTS WITH ABUSE POTENTIAL (PRIMARILY METH)*, BY OPIOID INVOLVEMENT



*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 1999-2020 on CDC WONDER Online Database, released 12/2021.

SOURCE: NATIONAL INSTITUTES OF HEALTH, 2021

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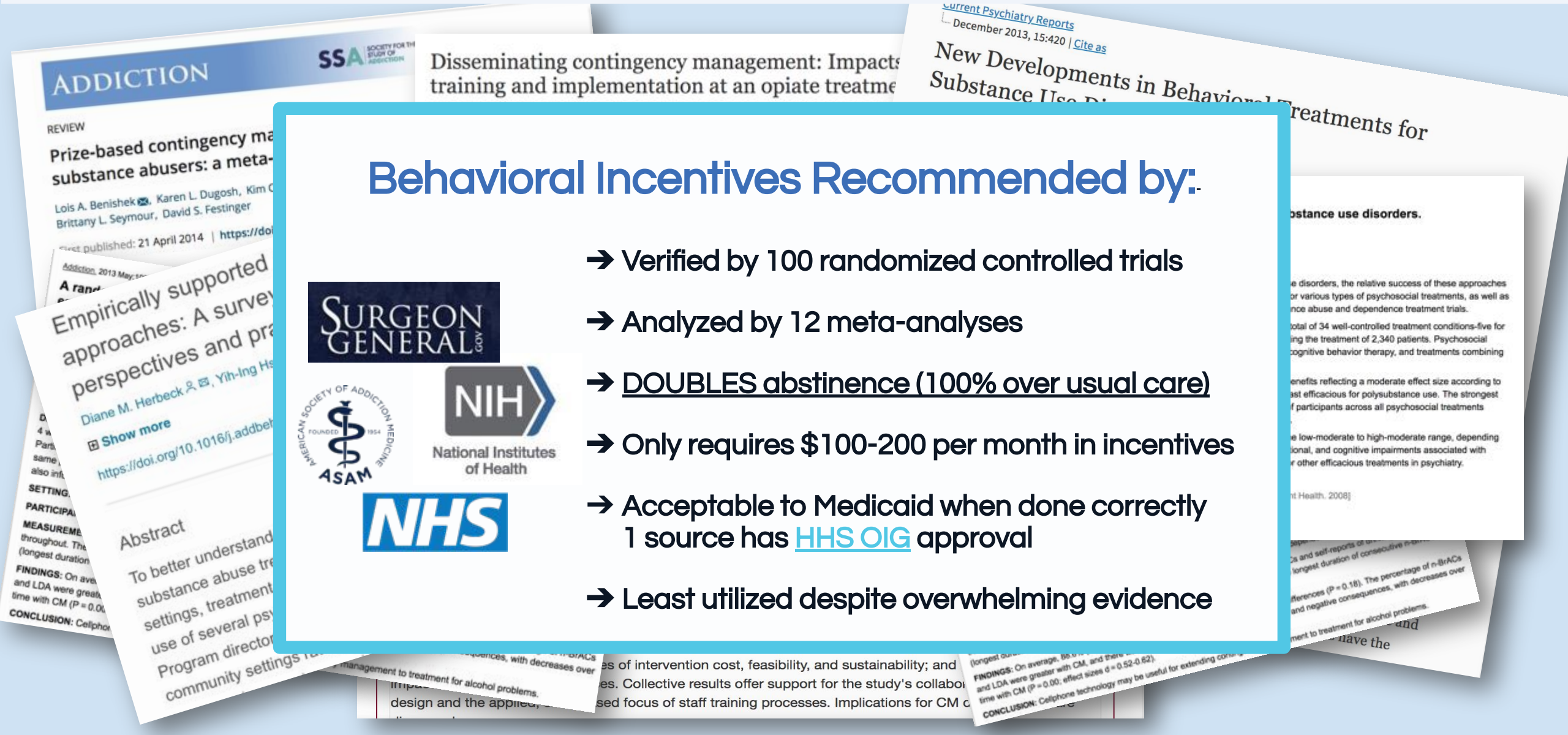
SUD Therapeutic Interventions

- Pharmaceuticals/MAT
- Counseling/Psychotherapy
- Coaching via Peer Support Specialist (PSS) or Certified Recovery Coaches
- Behavioral Health
- Community Support Groups (12-steps, SheRecovers)
- Recovery Community Organizations (RCOs)
- Community Naloxone Distribution
- Harm Reduction

Behavioral Health

- Cognitive Behavior Therapy
- Contingency Management
- Motivational Interviewing
- Community Reinforcement Approach

CM: The Strongest Evidence Base in SUD



Behavioral Incentives Recommended by:

- ➔ Verified by 100 randomized controlled trials
- ➔ Analyzed by 12 meta-analyses
- ➔ DOUBLES abstinence (100% over usual care)
- ➔ Only requires $100-200 per month in incentives
- ➔ Acceptable to Medicaid when done correctly
  1 source has HHS OIG approval
- ➔ Least utilized despite overwhelming evidence

Contingency Management for StimUD

CM is behavioral strategy w/robust evidence of efficacy in treatment of StimUD… *(Rawson, et al. 2023)*

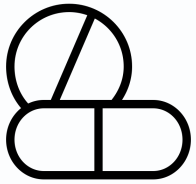
- ➔ Research supporting CM for StimUD is extensive; in fact no other behavioral (or med) intervention has as strong evidence as CM.
- ➔ Provider stigma lingers but improving
- ➔ "paying addicts not to use drugs" outdated
- ➔ offers recommendations to overcome obstacles to facilitate CM for StimUD

Journal of Ambulatory Care Management

Contingency Management Has Broad Application

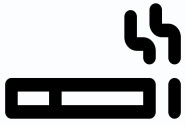
Substances Use Disorder

Opioids



Stimulants

Alcohol



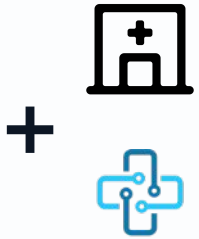
Cannabis
Nicotine
Vaping

Flexible Tx Goals

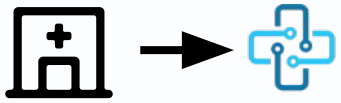
Abstinence/
Recovery

Moderation/
Harm Reduction

Multiple Settings



Complementary to
Any Treatment



Continuing Care

Standalone
Program

Broad Availability/Equity

Rural/Urban

All Ages

TYPES OF LEARNING/CONDITIONING

CLASSICAL CONDITIONING

- Association between a stimulus and a response
- In substance use, this explains the development of "triggers", which are stimuli that produce a conditioned response (thoughts/cravings of the substance)

OPERANT CONDITIONING

- Positive reinforcement (increases targeted behavior)
- Negative reinforcement (increases targeted behavior)
- Punishment (decreases targeted behavior)

Contingency Management utilizes *positive reinforcement*

REINFORCEMENT VS. PUNISHMENT

Both can change behavior

Most people prefer reinforcement over punishment

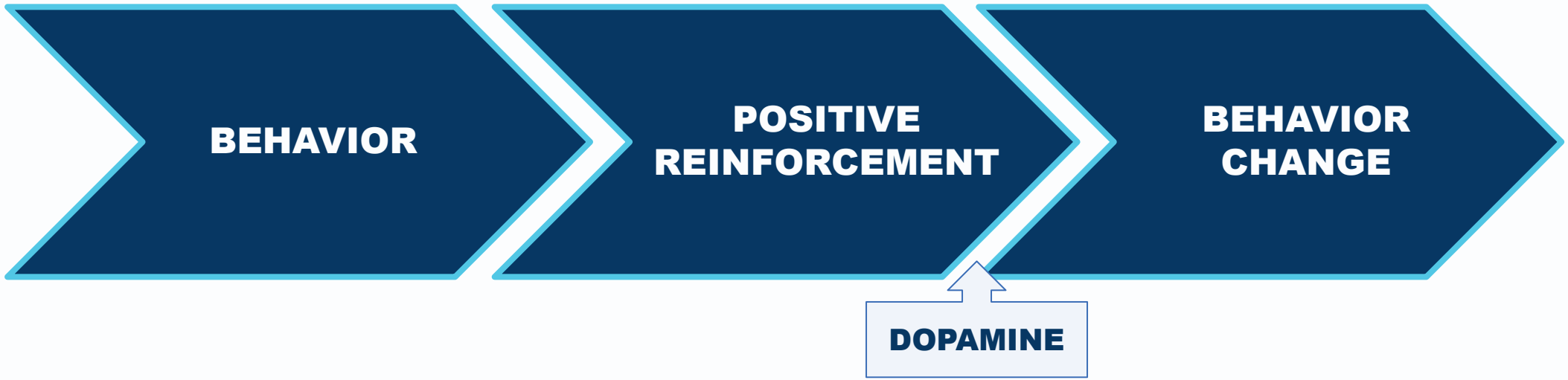
Punishment does not teach a new behavior (only tells you what *not* to do)

Most punishers lack the immediacy to be effective

Punishment has unnecessary side effects, i.e., reduced self-esteem

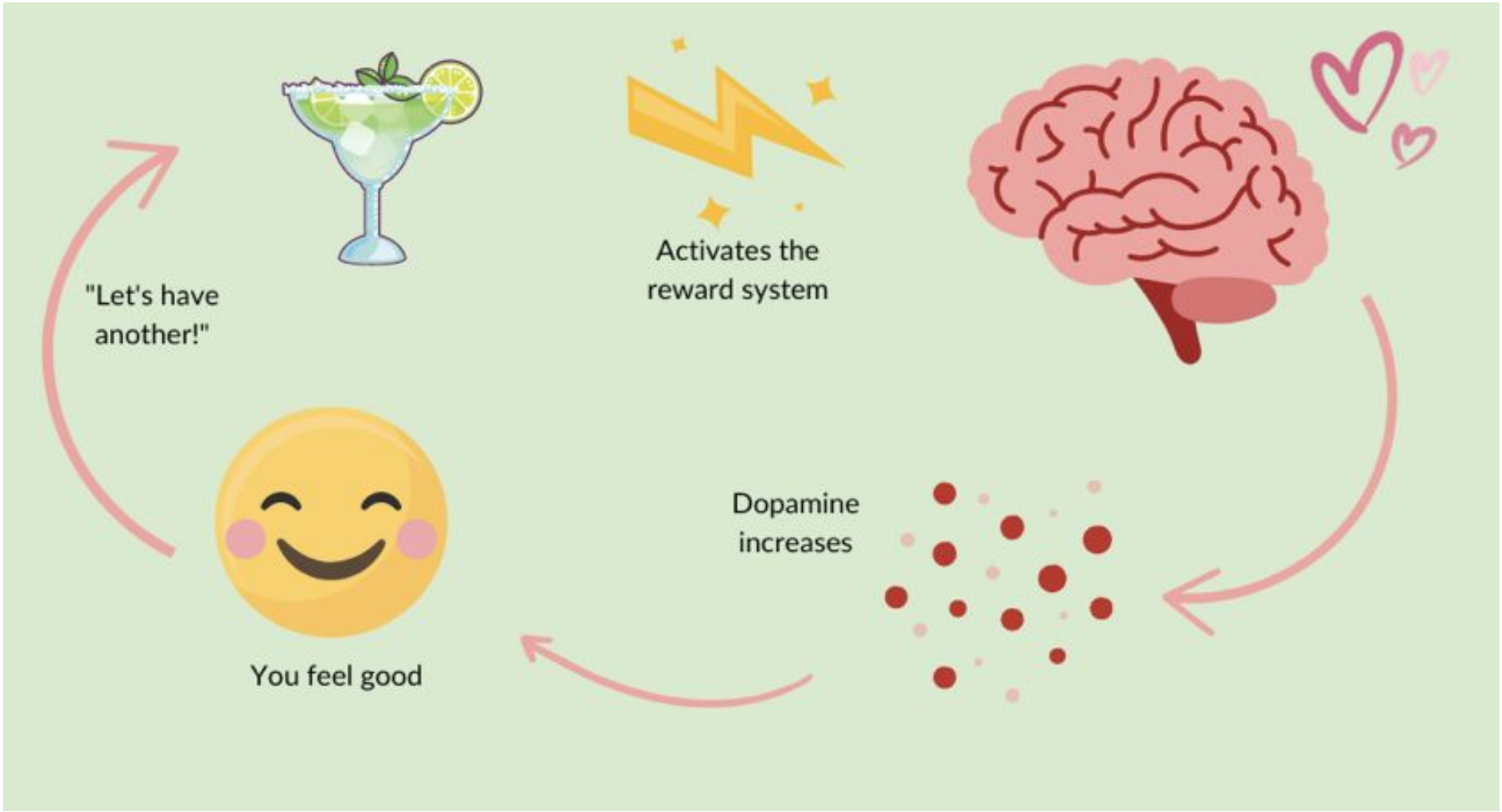
Only positive reinforcement teaches new behaviors in a way that builds self esteem, and self-efficacy

Contingency Management



- ➔ Behavioral health technique via operant conditioning
- ➔ Systemic delivery of **positive reinforcement for target behavior**
- ➔ Engages the Brain Reward System (dopamine release)
- ➔ Within 3-6 months, system creates a new behavior (forms a HABIT!)

Brain Reward Pathway



PHARMACO-BEHAVIORAL THEORY OF SUBSTANCE USE

Psychoactive drugs:

- Feel good (positive reinforcement)
- Remove negative feelings i.e., anxiety, depression (negative reinforcement)
- Drug use results in loss of many other reinforcers (job, family, friends)

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

Brain Reward: The Missing Link in Addiction Treatment

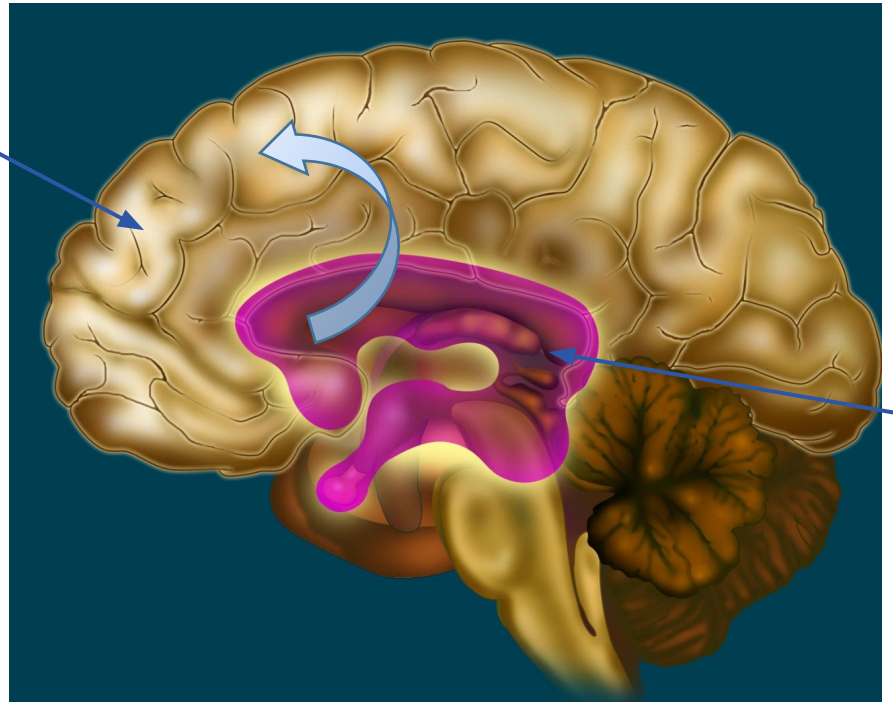
Pre-Frontal Cortex

Role:

- Reasoning
- Learning
- Decision-making

Interventions:

- Counseling
- Psychotherapy
- Self-help groups



Limbic/Brain Reward System

Role:

- Signals reward
- Triggers pleasure

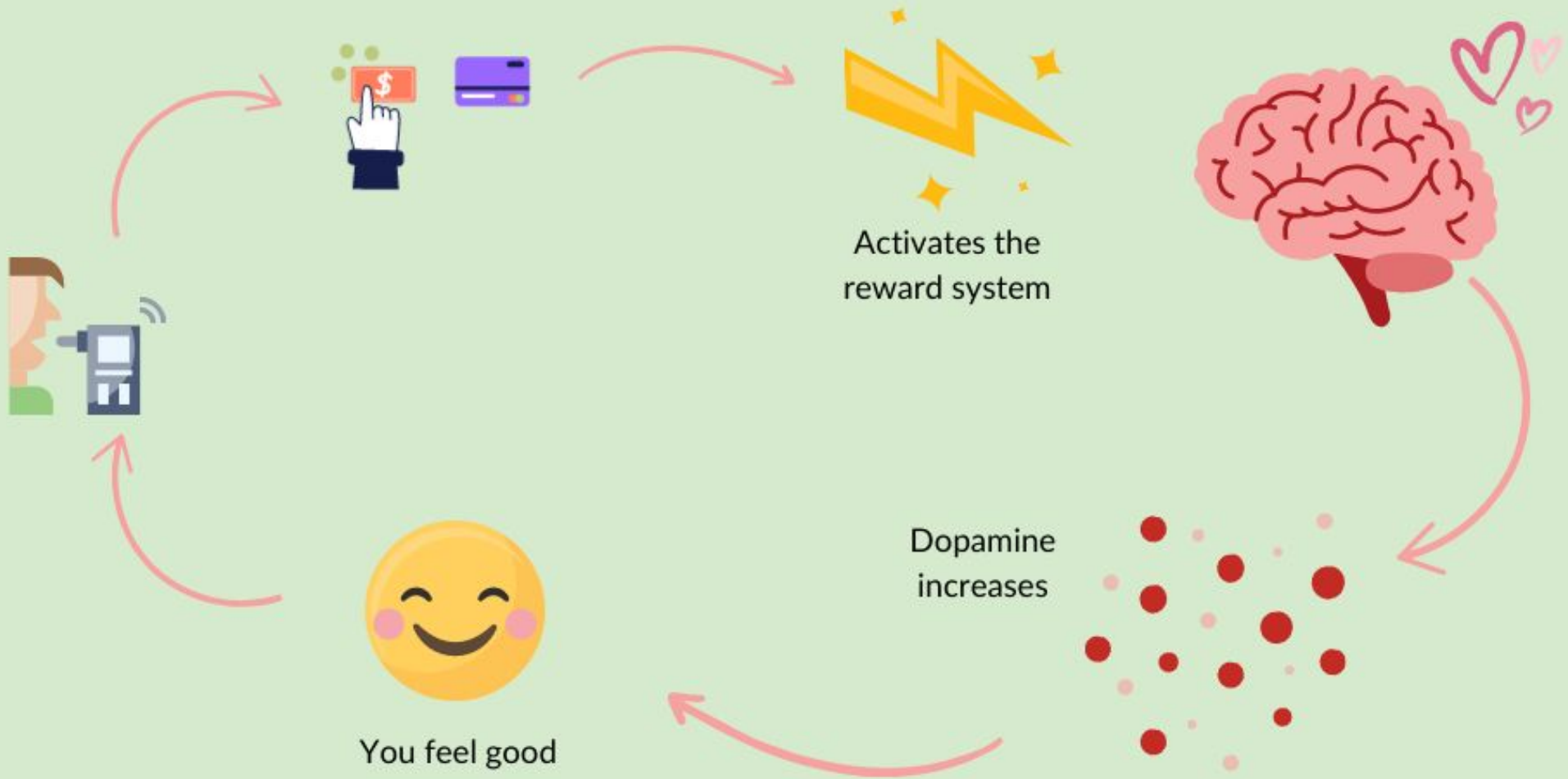
Interventions:

- Medications
- Rewards (CM)
- Sanctions

Evidence-based Contingency Management

- ➔ Stimulates the dysfunctional Brain Reward System
- ➔ Offers reward for new behavior to replace substance-linked reward
- ➔ Evidence-based: Protocol-driven w/ preset schedule of incentives ($599/yr)
- ➔ Value of incentives increases as participants demonstrate abstinence
- ➔ For all SUD, but especially for StimUD (b/c no FDA approved meds)

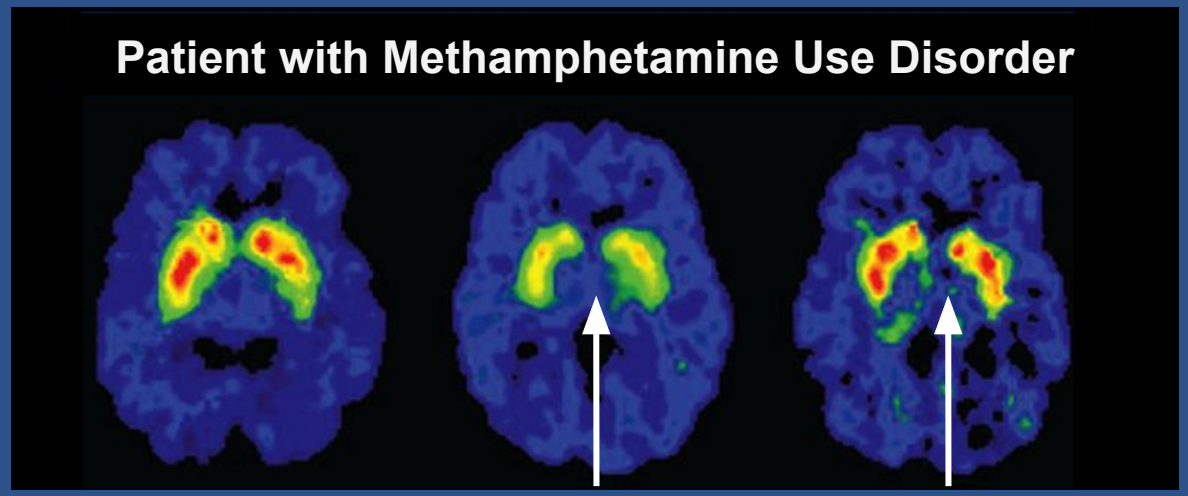
Brain Reward Pathway in CM



DynamiCare HEALTH

Addiction is a disease of the motivation system
One year of abstinence shows promising returns

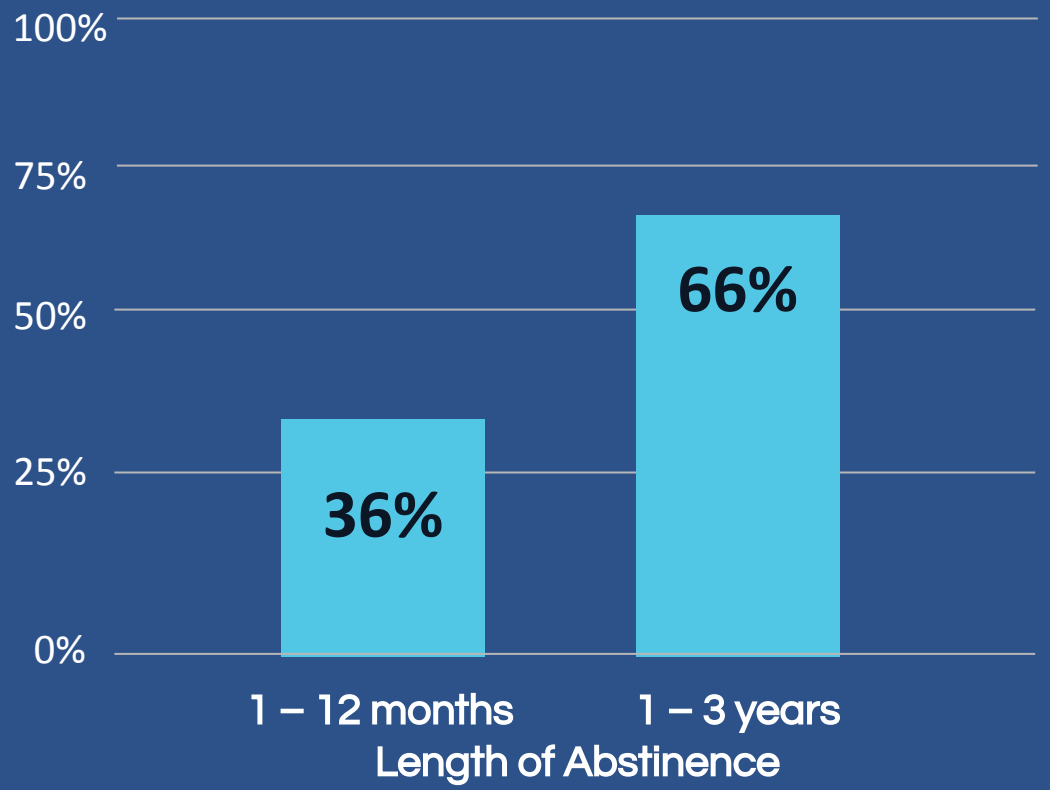
Brain heals after 1 year of recovery



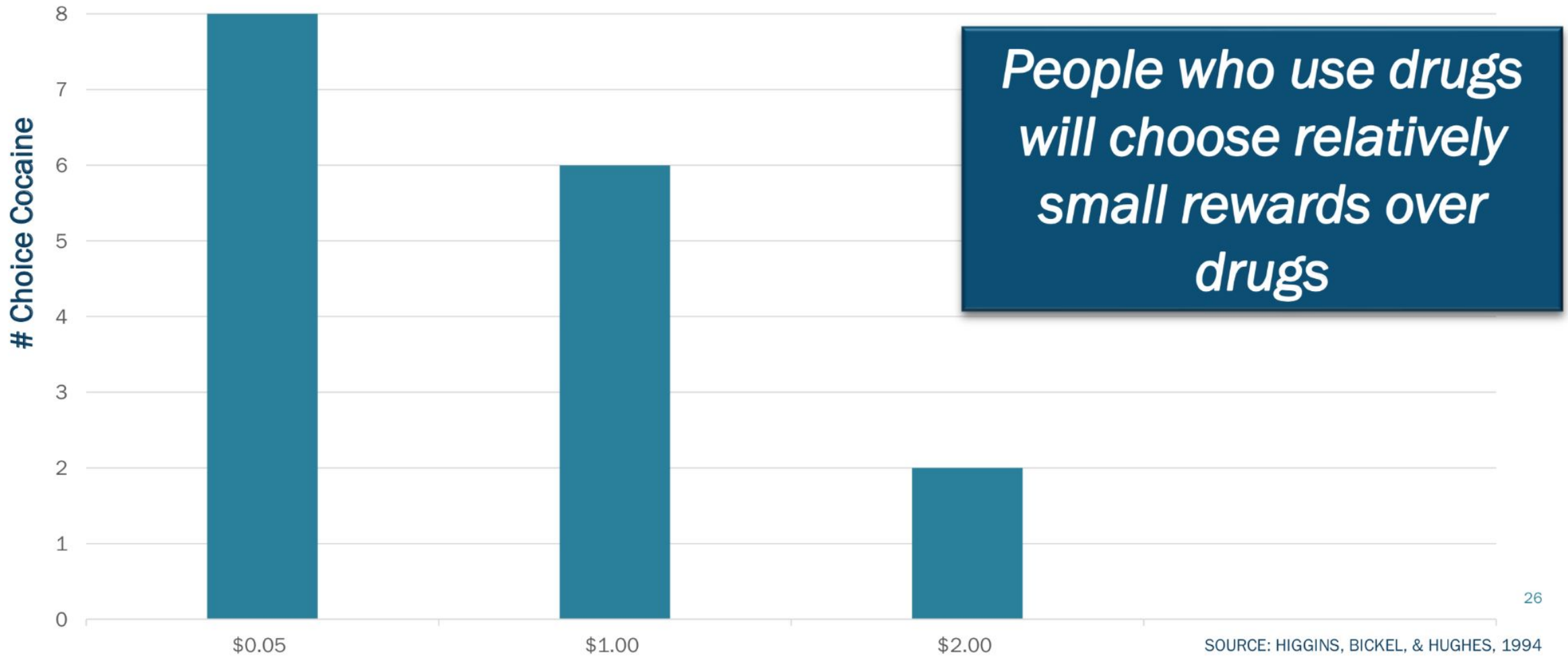
Healthy Control | 1 month of Abstinence | 14 months of Abstinence

Sources: NIDA 2019, Dennis 2007

Chances for long-term recovery double after 1 year of abstinence



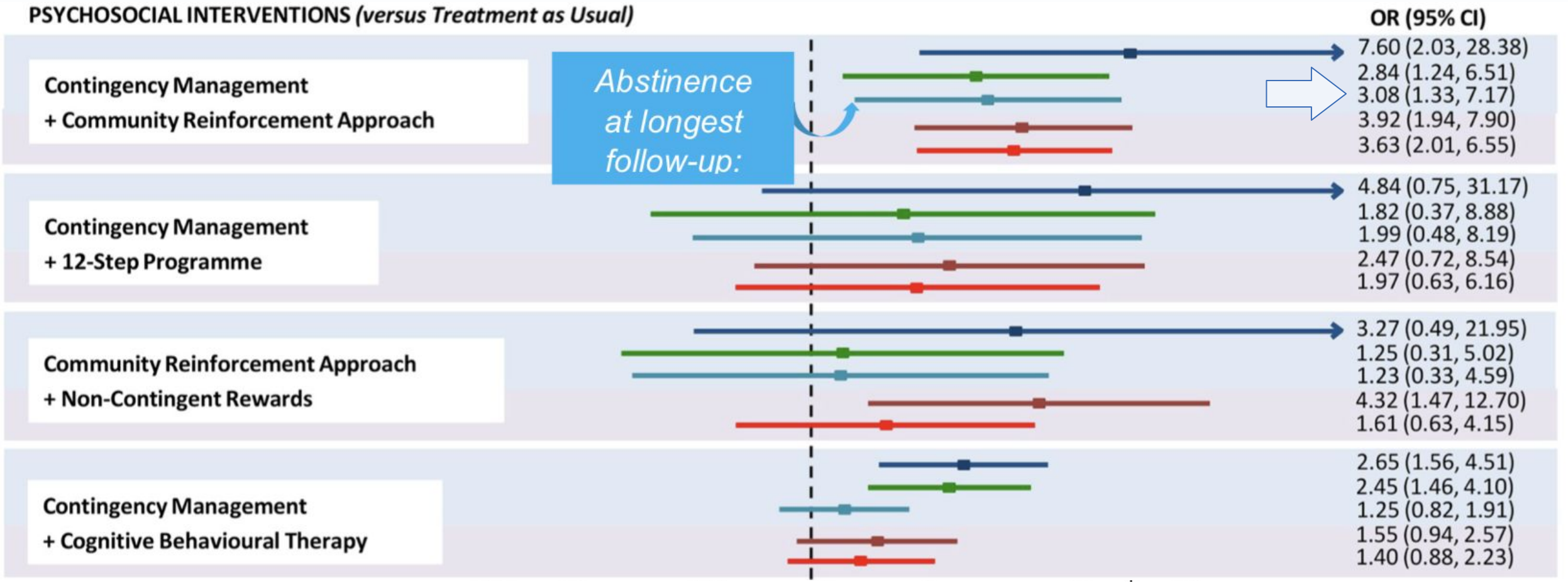
COCAINE VS. REWARD



People who use drugs will choose relatively small rewards over drugs

SOURCE: HIGGINS, BICKEL, & HUGHES, 1994

CM + CRA: 3.08 odds ratio over TAU



Estimates are reported by odds ratio (OR). An OR above 1 favours the psychosocial intervention indicated on the left side over treatment as usual. For each intervention, efficacy outcomes are reported in the blue-shaded area, while acceptability outcomes are reported in the pink-shaded area.

https://doi.org/10.1371/journal.pmed.1002715.g004

Psychosocial interventions for cocaine and amphetamine addiction

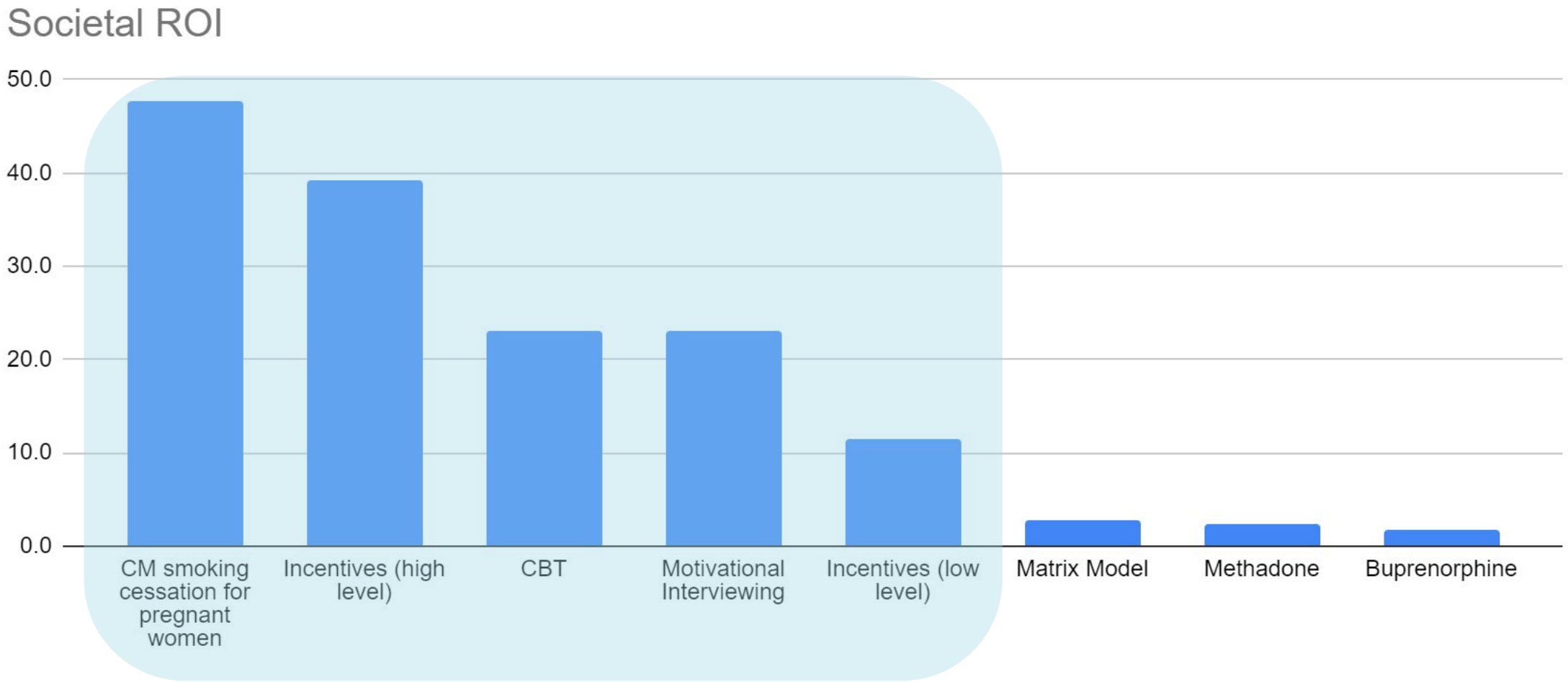
PLOS Medicine | https://doi.org/10.1371/journal.pmed.1002715 December 26, 2018 15 / 24

- Abstinence at 12-weeks
- Abstinence at the end of treatment
- Abstinence at the longest follow-up
- Dropout at 12-weeks
- Dropout at the end of treatment

(De Crescenzo, PLOS Med 2018)

Cost-Benefit - the Payers' Perspective

Massive cost-benefit, already in the 1st year



Source: Wash. State Inst. for Public Policy, 4/2021

CM is the Safety Net of Addiction Treatment

- ➔ Reduces risk of treatment drop-out.
- ➔ Reduces risk of relapse esp during transitions.
- ➔ Offers continuity of care & bridges treatment programs.
  - ◆ Transitions from IP to IOP/OP or home (at discharge)
  - ◆ Transitions from arrest/indictment to drug court
  - ◆ Transitions from incarceration to re-entry (at release)
  - ◆ Complementary to IOP/OP
  - ◆ Adjunctive to MAT, counseling & peer support groups
  - ◆ Standalone recovery

CM Patient Populations

CM is effective in numerous SUD populations

- Emergency Department discharge to IOP
- Pregnancy and postpartum women
- Adolescent
- All SUD, especially StimUD or polysubstance due to no FDA-approved meds
- Criminal Justice
- Chronic relapsers with any SUD
- Healthcare Professionals and Pilots (professions with higher public standards)

Contingency Management Incentives (Rewards)

Specific:	Clearly defined & achievable behavior
Desirable:	Universally desirable & tangible incentive
Immediate:	Timely pairing of behavior with motivational incentive
Contingent:	Incentives provided only when behavior demonstrated
Consistent:	Behavior is frequently observed & incentivized

Contingency Management Process

Define:	Clearly define target behavior
Measure:	Frequently measure behavior
Immediate:	Provide tangible incentives soon after behavior is observed
Contingent:	Withhold incentive when behavior is not observed; and maintain support
Repeat:	Repeat using a protocol-driven w/ preset schedule

CM: Best Practices – Setting Goals

Goals should be:

1. **Frequent** (>1 time per week)

2. **Attainable**

3. **Objective**
   - Attending a therapy session
   - Attending a support group meeting
   - Completing a drug screen
   - Having a negative drug screen
   - Taking prescribed medication

4. The system must be designed to **prevent gaming** of the system

CM: Best Practices – Setting Rewards

Rewards should be:

1. **Immediate** - immediate rewards are twice as effective as delayed rewards (Lussier 2006)

2. **Tangible** and matched to participant needs.

3. Intermittent or **direct monetary** rewards
   (Pulling a ticket from a fishbowl that may contain a prize, of varying values – less expensive, but less potent than immediate, full value rewards.)

4. **Valuable** - low value rewards are half as effective as high-value rewards (Lussier 2006).

The Motivational Incentive Policy Group

Financing & Implementing CM for StimUD: The Case for using Opioid Settlement Funds

- ➔ Recommend states with high StimUD or OD rates use opioid funds to finance CM for StimUD
- ➔ Endorsed by Johns Hopkins Bloomberg School of Health Principles
- ➔ “4th wave” based on 50-fold increase in meth
- ➔ Stimulant use….

Obstacles and Solutions

Obstacle	Solutions
– SAMHSA policy ($75 limit)	– Guardrails/Monitor & Evaluation; NDCP
– Stigma	– Education
– Financing	– State/commercial payer; SOR; opioid funds
– Management Logistics	– Tech (digital health) platform
– Variable Efficacy	– Fidelity & Consensus for Evidence-based

CM in the National Drug Control Policy!

Principle 2: Improving Treatment Quality Including Payment Reform

"…motivational incentives, which utilize tangible rewards to reinforce positive behaviors such as abstinence from opioids and to motivate and sustain treatment adherence …should be more widely available."

"These incentives are an integral part of protocol-driven and evidenced-based contingency management programs and can be offered through smartphone applications and smart debit card technology."

(ONDCP National Drug Control Policy, April 2022, p. 49;
ONDCP Drug Policy Priorities for Year One. ONDCP April 2021)

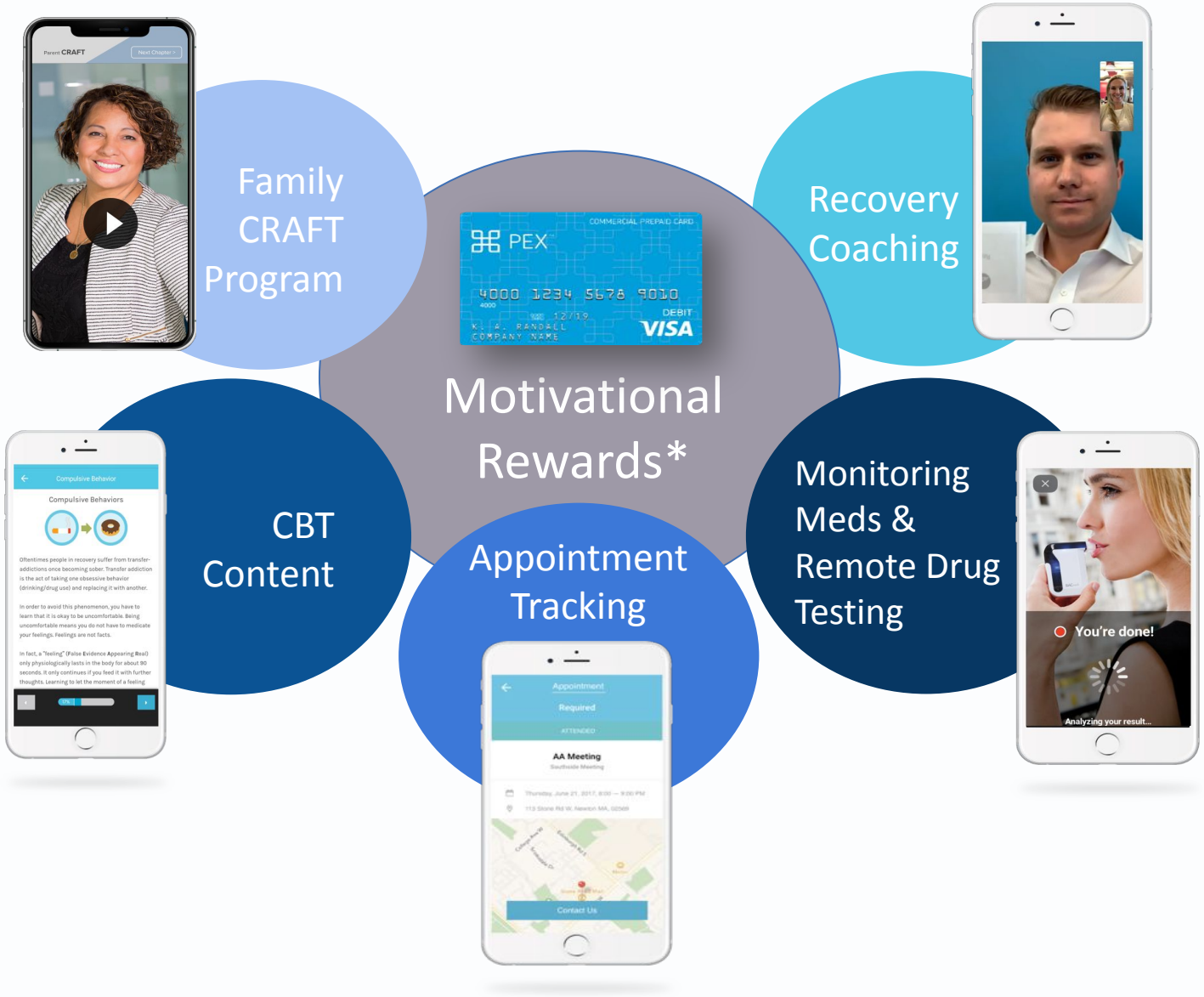
OIG: The CM Guardrails Checklist…

- ❑ Research-validated, evidence-based, written protocol
- ❑ Rewards should not exceed $200/month per patient
- ❑ Documented clinical diagnosis & care plan from a licensed professional/clinician
- ❑ Individualized care plans documenting behavioral targets, amounts and schedules
- ❑ Full accounting of every payment, its purpose, the expectation & patient's effort
- ❑ Incentives & their distribution must be accurately inventoried & audit-ready
- ❑ Protections against recruitment, rebates, refunds, or kick-back offers

DynamiCare is the only CM platform expressly permitted by HHS-OIG (March 2022)

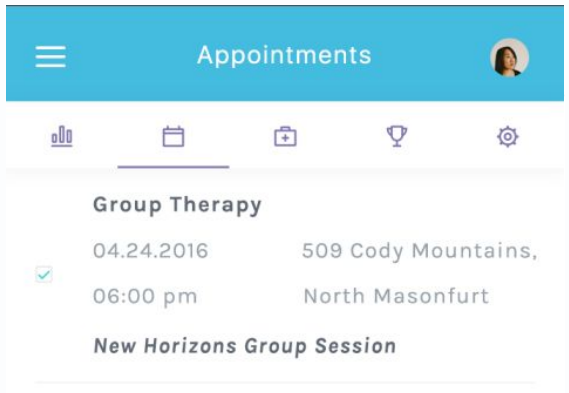
"The app-based CM program developed by DynamiCare Health Inc., a digital therapeutics and telehealth company, will not incur a risk of sanctions."

Tech-Enabled CM Example: DynamiCare



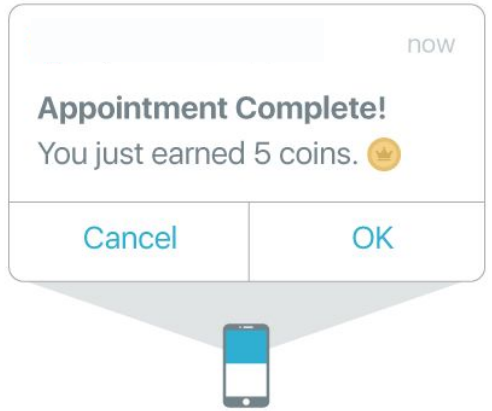
U.S. Department of Health and Human Services
Office of Inspector General

CM + Tech: Reinforcing Attendance



Automatically gather dates, times, locations of appointments

User receives reminder alerts for upcoming appointments

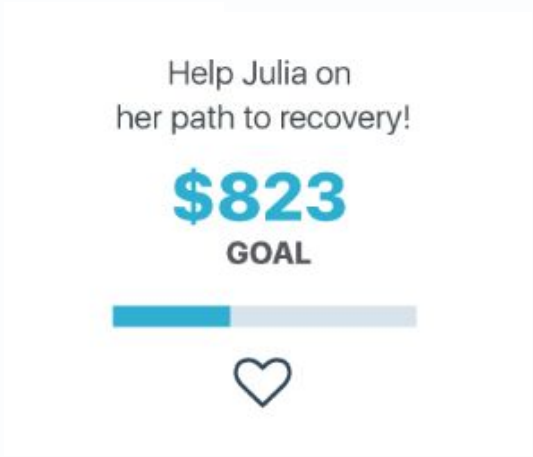


User is "checked-in" to appointment using GPS – right time, place & duration

REWARDS:

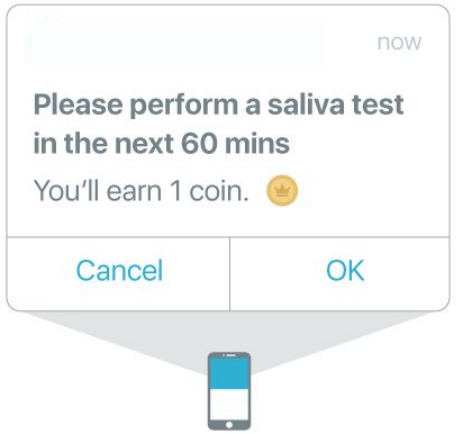
Money is deposited onto a debit card

CM + Tech: Reinforcing Abstinence



Fund incentives from patient, family, employer, or payer

User receives app & drug testing device



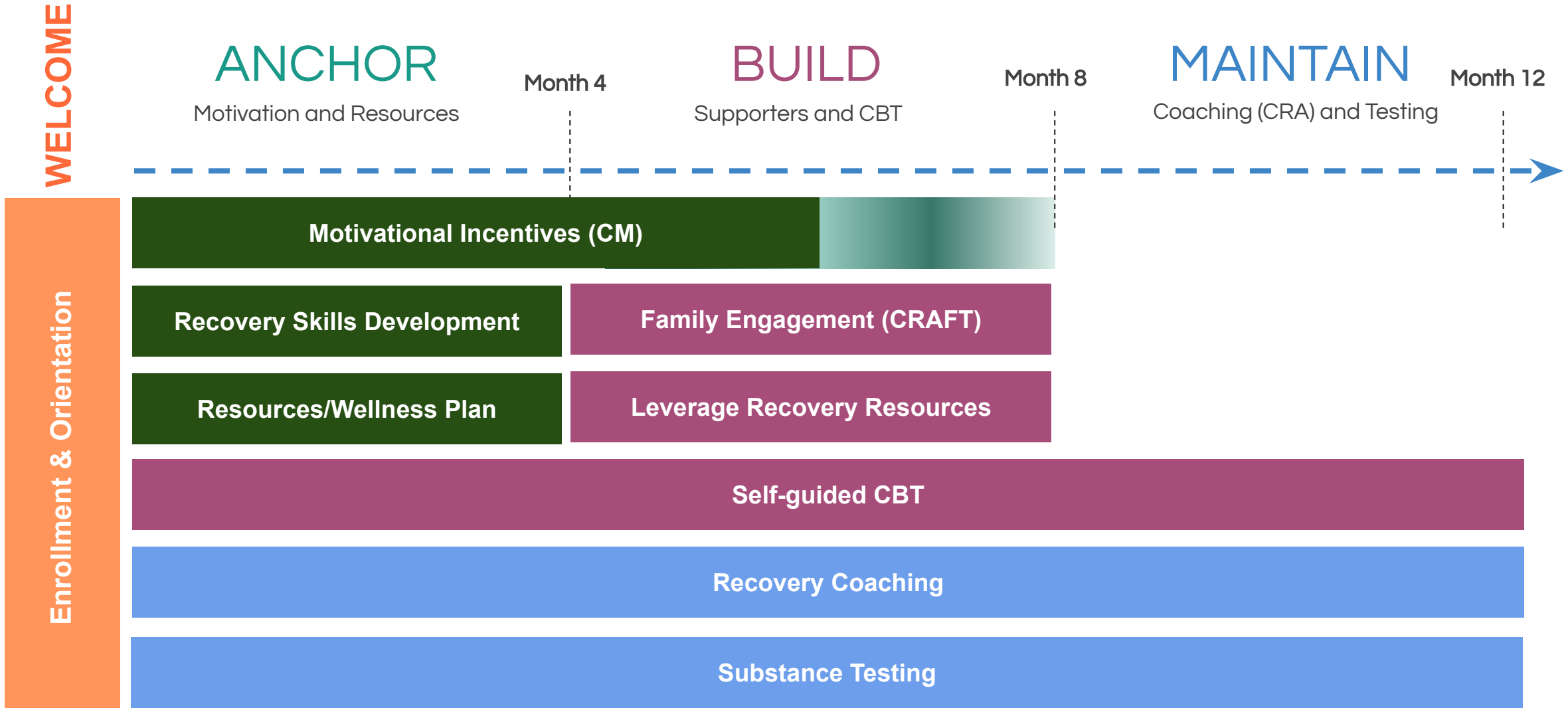
User gets "random" alerts for drug testing

User performs drug test with selfie, app verifies it

REWARDS:

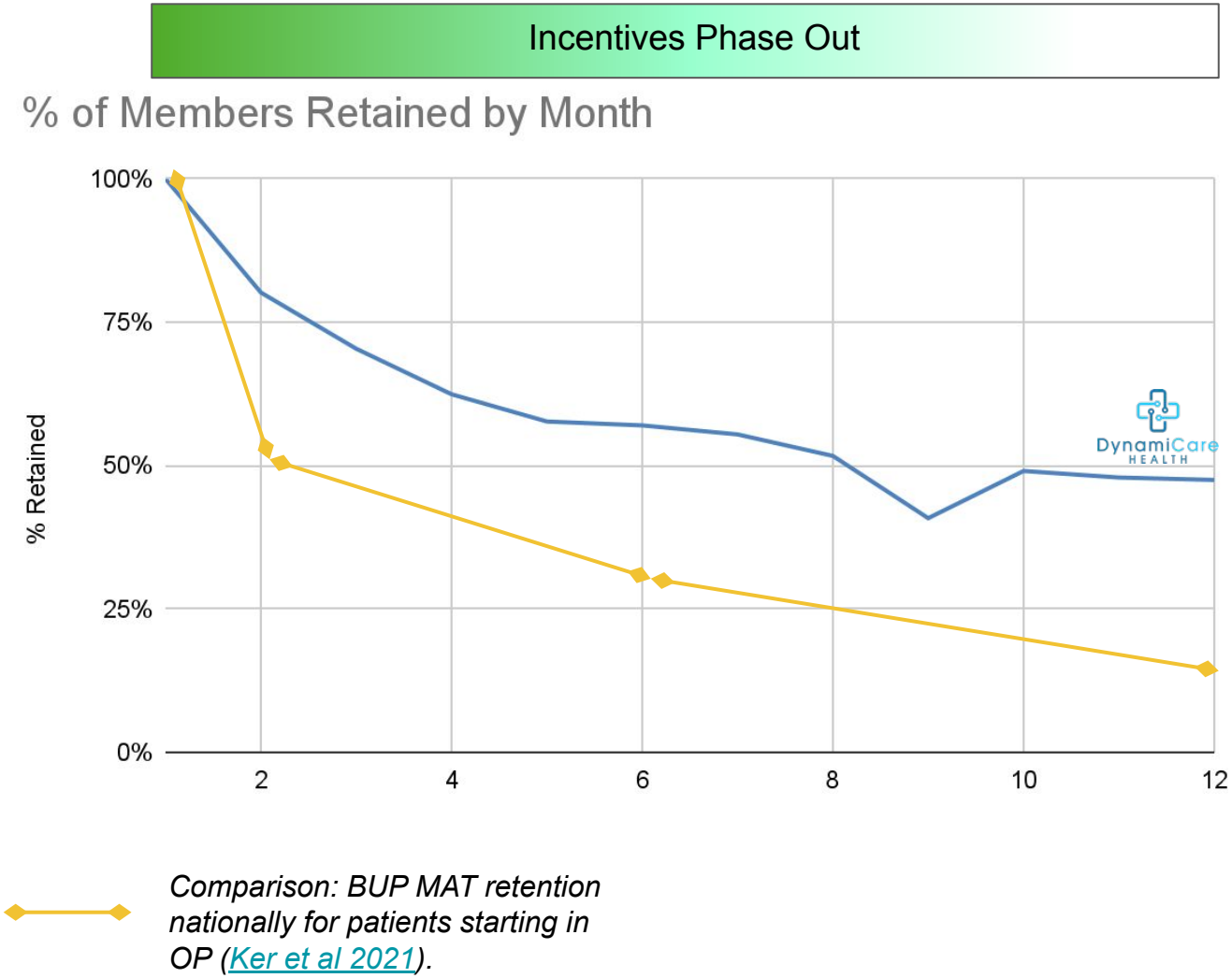
Money is deposited onto a debit card

Example: 12-month DynamiCare CM Program



CM (DynamiCare) more effective than BUP MAT

- **Half** of members complete the 12-month program
- **Most** (55%) active members perform remote, random tests **and** test negative
- Thousands of members have used the DynamiCare CM platform across >50 treatment systems and 45 states
  - 51,237 appointments tracked
  - 64,116 sub. tests performed
  - $380,407.33 in CM funds earned



Data updated as of 2022-04-28.

Digital Health Options

Various tech-enables options w/remote monitoring:

- DynamiCare Health (12 months): CM + CBT + CRAFT + Coaching
- Affect Therapeutics (6 months): CM + CBT + MAT/telemed + Counseling
- Q21: CM tech primarily
- Pear Therapeutics w/Reset & Reset-O (3 months): CBT + CM (off market)
- Quit Genius (3 months): MAT/telemed + CBT + app
- Workit Health (insurance driven): MAT/telemed + coaching + app

Summary

Contingency Management offers:

- Most effective available treatment when stimulants are involved.
- Highly effective treatment with opiates, stimulants, alcohol, nicotine, and vaping.
- Technology offers ideal CM guardrails.
- Funding is weak; change SAMHSA $75 cap to evidence-based CM ($100/mon).
- Stigma and unfounded bias are barriers to usage
- CM is an easy and effective behavioral health system (CHANGES BEHAVIOR)

Behavioral Health is the pathway to transformation!

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