

# Implementing Contingency Management in RAAM: A Quality Improvement Project

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Dr. Tanya Hauck MD PHD FRCPC, Centre for  
Addiction and Mental Health, Lecturer, Department  
of Psychiatry, University of Toronto

Stephanie Rochon RPHT Supervisor & Clinical  
Coordinator of the Brant Haldimand Norfolk RAAM  
Clinic

Himmat Singh Dhillon: Study Co-Ordinator

Basant Kaur Dhillon: Study Co-Ordinator

Dr. Tim Guimond: Co-Investigator

Dr. Ahmed Hassan: Co-Investigator



# 1

## Introduction

# Disclosure of Financial Support

- No financial support to disclose
- No conflict of interests identified

# Faculty/Presenter Disclosure

- Faculty: **Tanya Hauck**
- Relationships with financial sponsors:
  - **Other: Addictions fellowship funding from Bellwood Health Services**
- All other faculty have no disclosures to report

# Mitigating Potential Bias

- No potential sources of bias identified

# Objectives

**At the end of this session, participants will be able to:**

1. Describe the process of implementing a standard prize-based contingency management (CM) program in a RAAM clinic for the treatment of stimulant use disorder
2. Critique the outcomes of CM implemented in RAAM
3. Discuss the quality improvement processes used to improve human resource limitations to implementation of a contingency management program



# The Brant Haldimand Norfolk RAAM Clinic

## Rapid Access Addiction Medicine



Grand River  
Community  
Health Centre  
Brantford, Ontario



# Background: The Brant Haldimand Norfolk RAAM (BHN RAAM)

Located in Brantford, Simcoe and Dunnville Ontario

BHN RAAM supported by five agencies:

- St Leonard's Community Services
- The Brant Community Healthcare System
- The Canadian Mental Health Association
- De dwa da dehs nye's Aboriginal Health Centre
- Grand River Community Health Centre

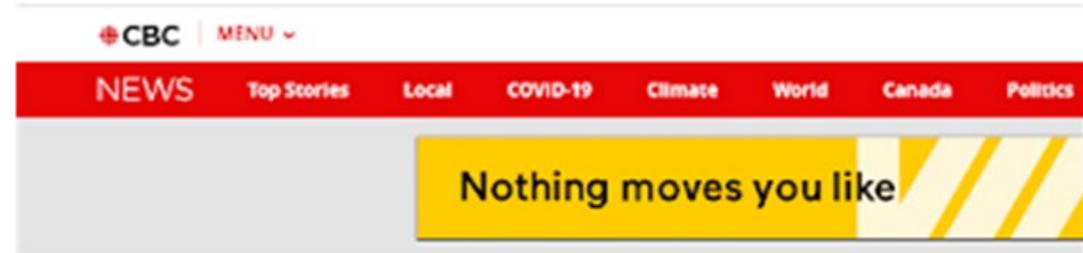
Patients are referred or self-refer to the BHN RAAM, which provides services to individuals with substance use/concurrent mental health disorders.

Psychiatry provided through an Integrated Care Model (ICM) Practice with the Centre for Addiction and Mental Health.

# Background: The Brant Haldimand Norfolk RAAM (BHN RAAM)

Opioids, alcohol and stimulants are common substances of concern, often with concurrent use.

Treatment of **stimulant use disorder** (often concurrently with opioid agonist therapy) is a common presenting concern in the RAAM.



Manitoba

**Man in meth psychosis sits in ER for 24 hours, given bus token to leave**



No place to take Winnipeg's meth addicts when they're hallucinating, advocates say

 Marina von Stackelberg · CBC News · Posted: Apr 30, 2019 6:00 AM CT | Last Updated: April 30, 2019



# 2

## Contingency Management: What is it and why offer it?

# Stimulant Use Is An Increasing Concern In Ontario

Rates of stimulant use and stimulant related ED visits have been increasing:

“Rates of psychostimulant-related ED visits increased from 2.2 visits per 10,000 population (95%CI 0.8–3.7) to 12.9 visits per 10,000 population (95%CI 7.3–18.4) ( $p < 0.001$ ).” (from 2008 to 2018)

(Suen et al. BMC Emergency Medicine (2022) 22:19)

**“Despite this clinical need, there is no well-established, broadly effective pharmacotherapy for stimulant use disorder.** Both clinical interest and scientific interest in pharmacological treatment continue to be stimulated by the often disappointingly low success rates and short duration of efficacy of current psychosocial treatments.”

ASAM Principles of Addiction Medicine, 2019

# Psychosocial Treatment

“We found that, compared to no intervention, **any psychosocial intervention probably improves treatment adherence and may increase abstinence at the end of treatment**; however, people may not be able to stay clean several months after the end of treatment. Finally, we found that people undergoing specific psychosocial interventions stay clean for a longer time without using stimulants. However, the vast majority of the studies we looked at assessed a specific psychosocial treatment added to treatment as usual or compared it to another specific psychosocial or pharmacological treatment. So, control groups were not really untreated. This could have led to an underestimation of the true effect of the psychosocial interventions.”

(Minozzi, 2016)

# Contingency Management

Contingency Management (CM) is based on the principles of operant conditioning, in which the frequency of a behaviour is modified by its consequences.

(McSweeney and Murphy, 2014)

Positive reinforcement is commonly used in behavioural therapy, treatment in child psychiatry and in marketing.

	Positive Event	Negative Event
Produces event	Reward learning	Punishment
Prevents event	Omission/Extinction	Avoidance/Escape

(adapted from figure 2.3, Kaplan and Saddock, 2015)

# CM Is The Application Of Behavioural Theory, Often Used In Substance Use Treatment

1. Identify a target behaviour that is **measurable and important** (e.g. drug abstinence as indicated by an immunoassay urine analysis)
2. **Frequently and objectively** monitor the behaviour that you are trying to change
3. Provide **concrete reinforcement** (vouchers, prizes, access to privileges etc.) contingent upon producing the target behaviour

**Contingent** reinforcement is effective (versus non-contingent)

Patients receiving methadone who also used cocaine

Random assignment of contingent or non-contingent vouchers

Same rewards used in both groups

6% abstinence in non-contingent group (and only for 2 weeks), versus 42% in contingent group (for 7-12 weeks)

(Silverman et al, 1996)

(Petry, 2012)

# General Principles of CM Implementation

## Consider timing for urinalysis:

Stimulants and opioids are ideal and can be measured a few times a week (2x/week), however, there are more effective evidence-based interventions for opioid use disorder, and abstinence or detoxification is not recommended due to risk of overdose.

Cannabis can only be measured after 30 days of abstinence.

Tobacco and alcohol are challenging, they have to be measured several times a day.

Benzodiazepines may not be reliably measured with immunoassay, may be prescribed, and may also persist for long periods of time.

Rapid UDS testing must be used, and the principles of CM (immediate reinforcement) preclude the use of urinalysis that is not immediately reportable.

# Contingency Management Is An Evidence Based Treatment

**CM has been extensively studied.**

“Among psychotherapeutic and behavioral treatments for stimulant use disorder, **CM has shown the most consistent and strongest evidence of efficacy compared to control conditions**, at least during treatment” (74).

(ASAM Principles, 2019)

**There are different variations of CM:** (1) voucher-based (2) prize-based

Voucher CM: receiving vouchers of a defined amount, which increase if the behaviour continues, and resets if the behaviour does not

Prize CM: drawing from a raffle for a prize in which the number of draws increase each time the behaviour continues, and resets if the behaviour does not

**Prize CM is equivalent to voucher CM and significantly cheaper** (\$585 contingent vouchers were similar to \$300 in contingent prizes).

(Petry et al, 2007)

# Contingency Management Is An Evidence Based Treatment

**Numerous meta analyses have demonstrated the effectiveness of CM.**

“Compared with other psychosocial treatments, CM has the largest effect size of Cohen’s  $d$  0.58, whereas the next largest effect size for relapse prevention interventions is substantially lower at  $d$  0.32 (Dutra et al., 2008).

(Petry, 2017)

(Dutra, 2008)

**CM has evidence in a variety of patient populations and is generalizable in patients with complex concurrent disorders:**

Tracy et al, 2007: Compared to assessment only, CM reduced cocaine and alcohol use in individuals experiencing homelessness.

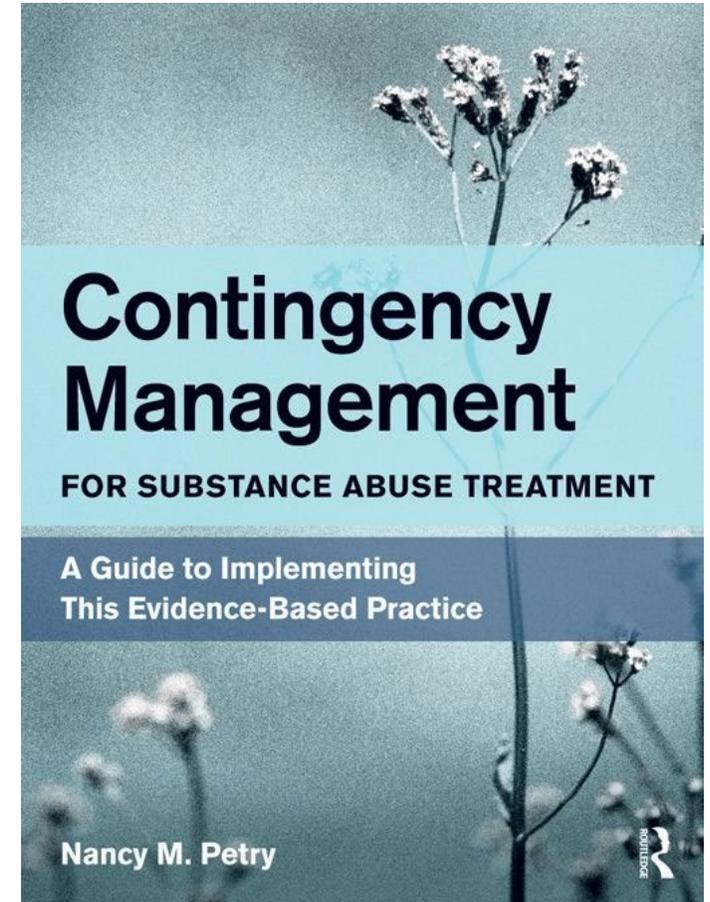
Sigmon and Higgins 2006: Demonstrated reduced cannabis use in a CM program for individuals with mental illnesses such as schizophrenia.

# 3

## Methods: Clinically Implementing Contingency Management in RAAM

# Standard CM Methods

- We used standard CM protocols for implementation, in order to be consistent with evidence based practice
- Most protocols involve 12 weeks of treatment, with twice-weekly testing for stimulants
- Prize CM is as effective as voucher CM but significantly more affordable



# Overall CM Setup

12 week program, twice weekly testing = 24 sessions

Referrals: from physicians or other team members

**Inclusion:** stimulant use disorder (cocaine, methamphetamine, other), self-identified goal of abstinence, able to come to clinic twice a week

**Exclusion:** gambling disorder, prescription stimulant use

Coordinated with physician visit (e.g. for medication or OAT)

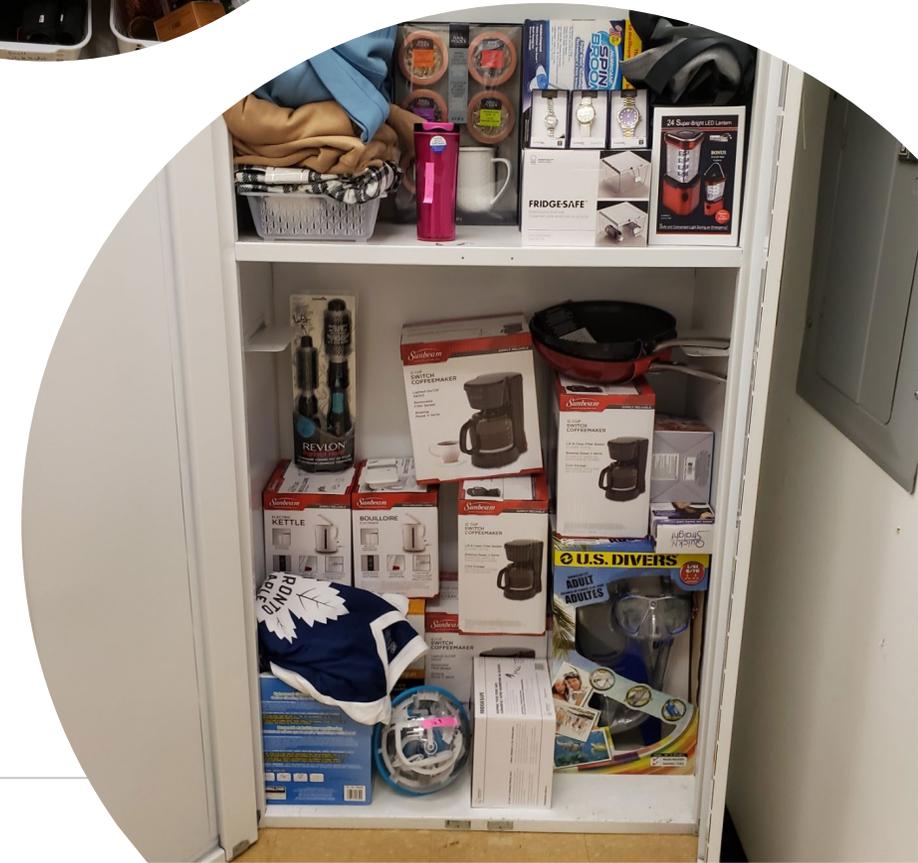




# Prizes: Other Considerations

- Prize cabinet is important, and clients should be able to look at or handle prizes to motivate themselves
- Prizes selected based on availability, donations, client requests, typical prizes in literature

**Prize selection is a different staff member than urine drug screening**



# Small Prizes



# Medium Prizes



# Large Prizes



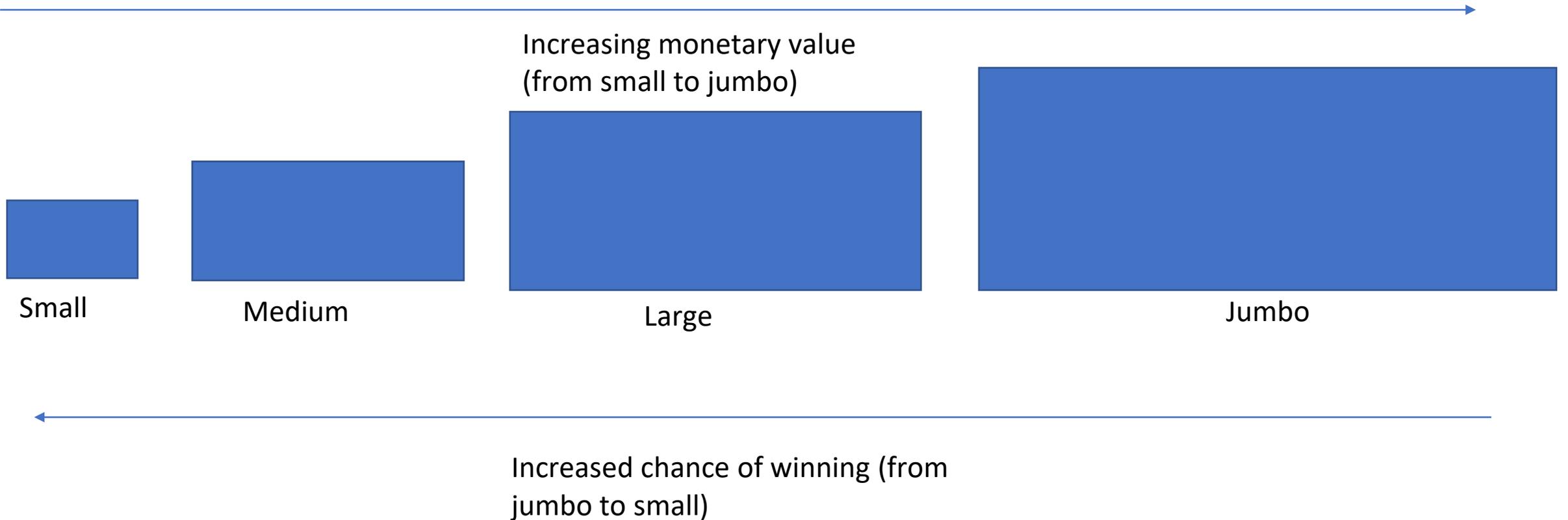
# Jumbo Prizes



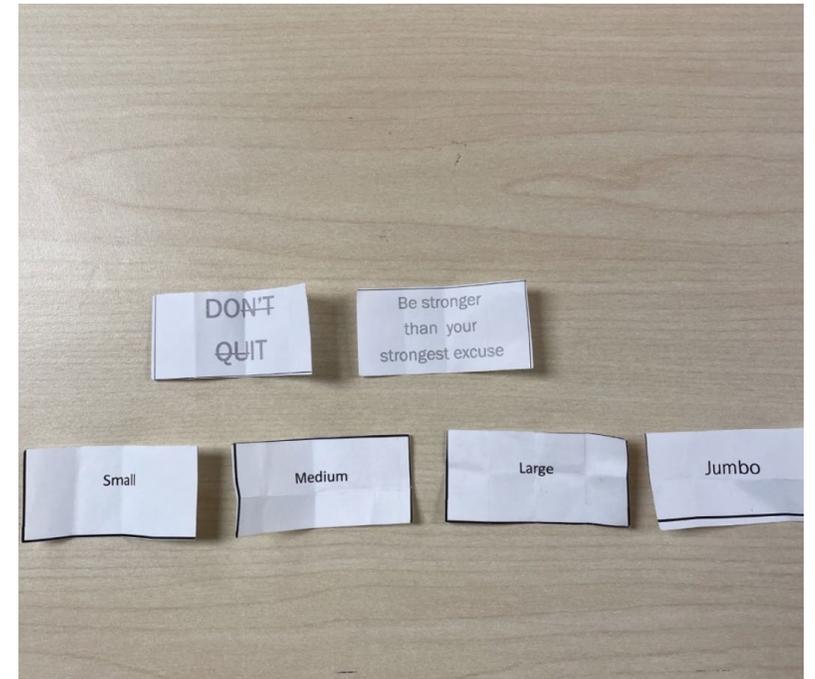
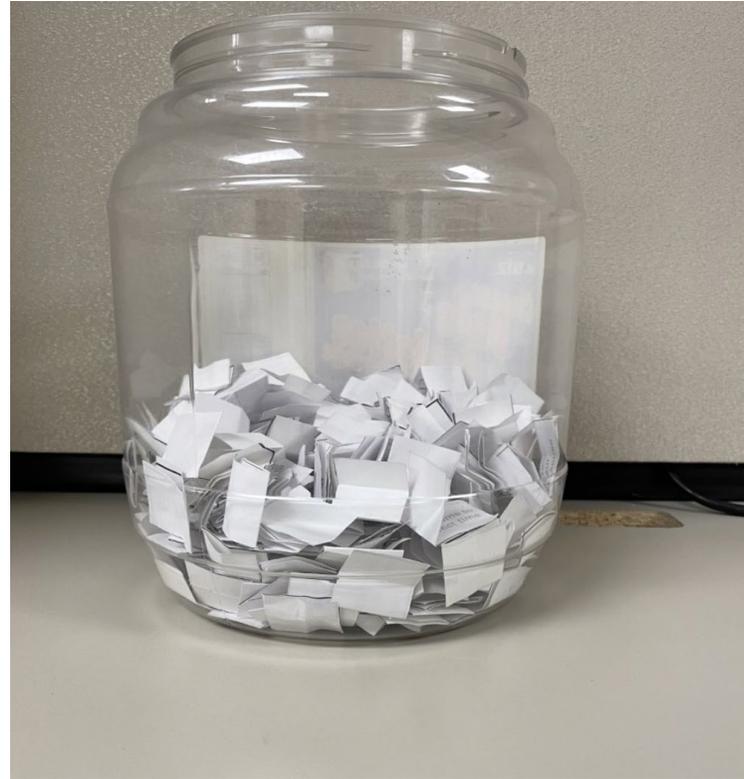
# Prize Composition

50% of prize bowl = motivational quotes

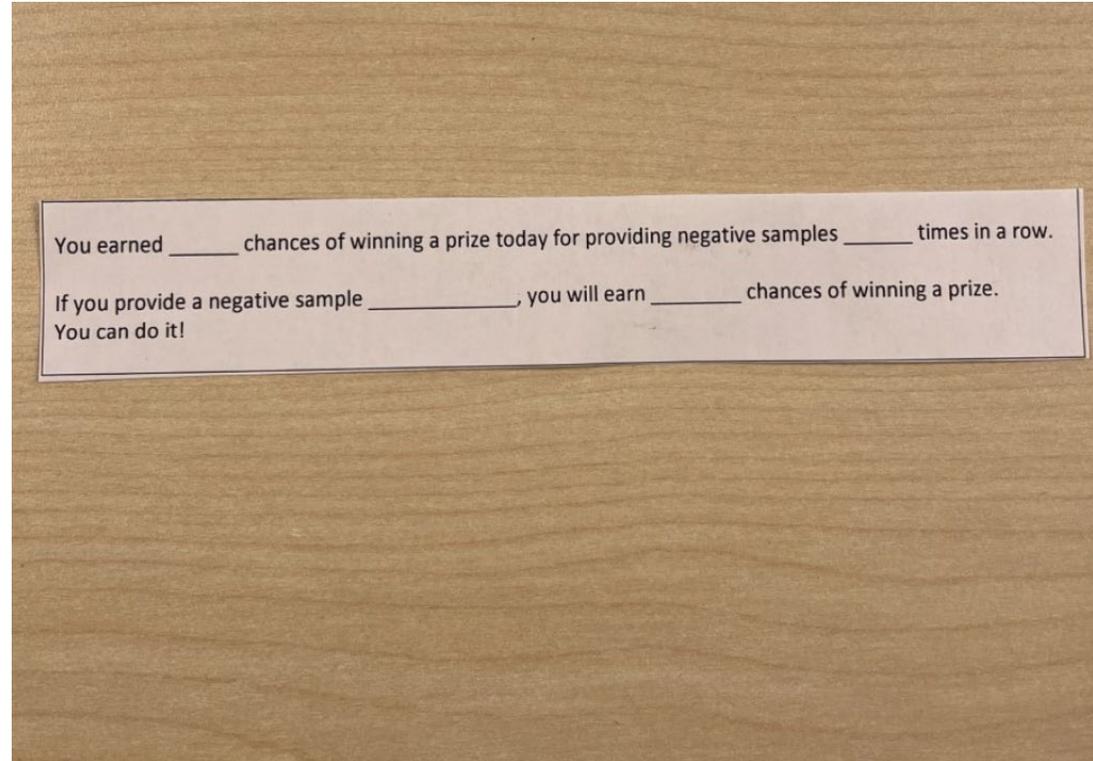
50% of prize bowl = tangible prizes



# Prize Jar



# Prize Tracking for Patients **\*we stopped!**



# Organizing Contingency Management Into Clinic Visits

◀ Mon, 2022-08-29 ▶ Calendar | Schedule | Today | Month Hello [User Name] ▾

W S [Time] Total: 5 | To Be Seen: 1 | Seen: 2 | Cancelled: 1

Time	Appointment Details
08:00	
08:05	
08:10	
08:15	
08:20	
08:25	
08:30	
08:35	
08:40	✓ Test,Ang   E   In   -B   M   Rx [Icon]   Others - Contingency Management Session 1  Ur.
08:45	✓ N Test,Crysta   E   In   -B   M   Rx [Icon]   Others - Contingency Management Session 3  Ur.
08:50	○ Test,Pudge   E   In   B   M   Rx [Icon]   Others - Contingency Management Session 2  Ur.
08:55	
09:00	📁 Test,Patric   E   In   B   M   Rx [Icon]   Others - Visit with Dr Test  Ur.
09:05	👤 Test,Patric   E   In   B   M   Rx [Icon]   Others - Counselling- CBT for Psychosis  Ur.
09:10	
09:15	

# Recording Results: Session Tracking Using Electronic Forms Built Into The EMR

<b>Week:</b>	1 -Session 2
<b>Date:</b>	August 29th
<b>UDS Result</b>	Negative
<b>Voucher(Y/N)</b>	Yes
<b>Voucher(Quantity)</b>	2
<b>Prize 1</b>	Quote
<b>Prize 2</b>	Small: Chocolate Bar
<b>Prize 3</b>	
<b>Prize 4</b>	
<b>Prize 5</b>	
<b>Prize 6</b>	
<b>Prize 7</b>	
<b>Prize 8</b>	
<b>Police Visits/Crisis</b>	No
<b>Hospilizations</b>	No

# Getting Creative with Implementation: Building Into Current Clinic Workflows

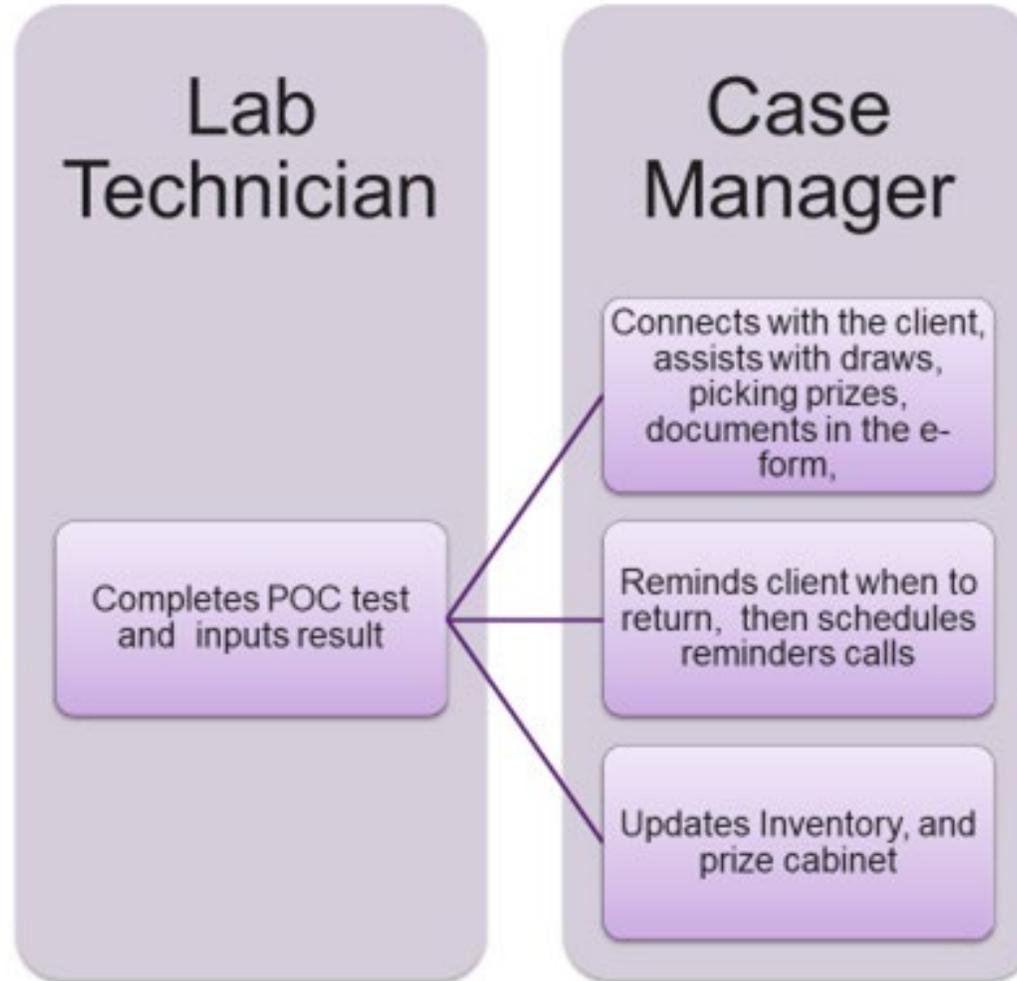
2 individuals in your clinic to support clients coming in for CM

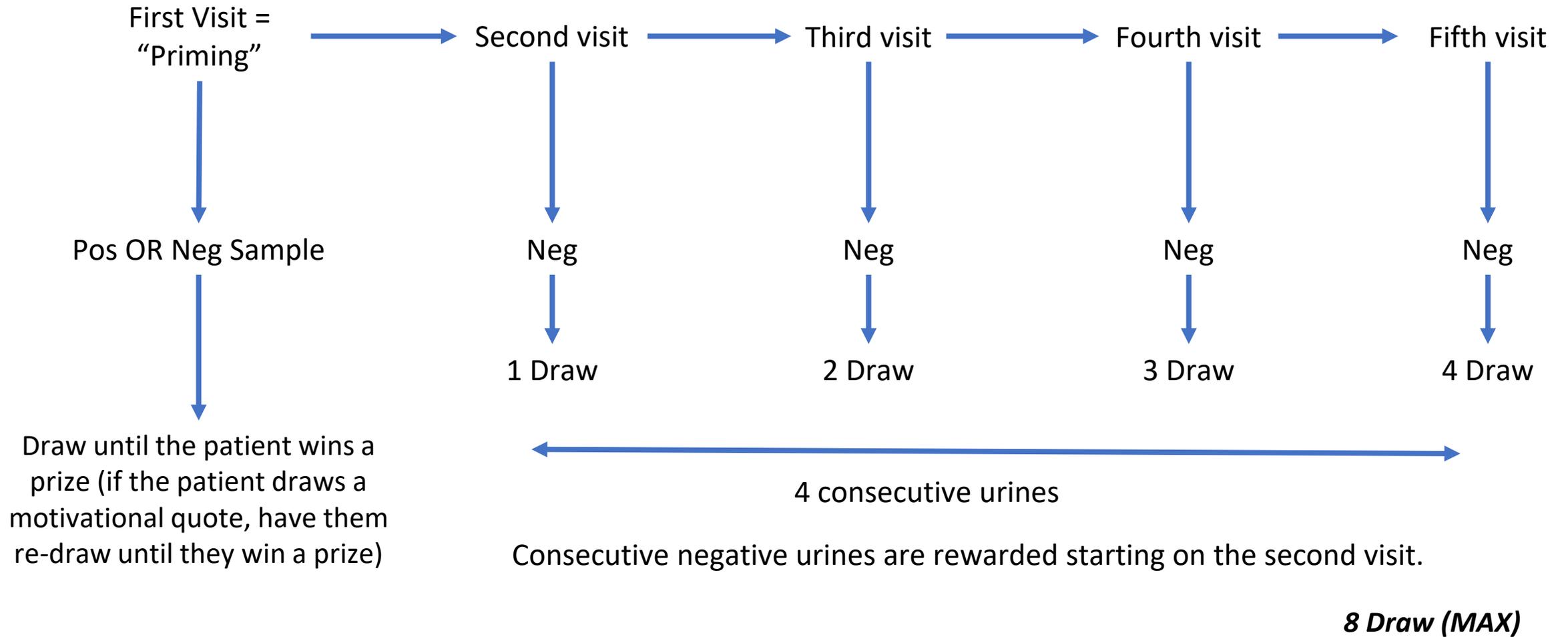
- One to complete point of care test and enter results (lab tech, nurse, personal support worker)
- One to assist the client with picking prizes and updating inventory (peer support, case manager, counselor etc)

***relates to clinic, staff, and physical set up available***

\*Try to reuse current templates, and processes to reduce adding additional work to staff.

\*Have reception, or case management call clients when they do not show, combine with calling another appointment no shows to reduce time and additional workload.





Session 1 (Priming)

Session 2

Session 3

Session 4

Session 5

Session 6

Session 7

Session 8

Session 9

Session 10

Pos or Neg

Neg

Neg

Neg

Pos OR  
unexplained  
absence

Neg

Neg

Neg

Neg

Neg

1 Draw

2 Draws

3 Draws

4 Draws

0 draws

1 Draw

2 Draws

3 Draws

4 Draws

5 Draws

4 consecutive N urines

5 consecutive negative  
urines since the  
pos/unexplained absence

For **explained** absence **ahead of time** = the treatment/testing is delayed until the next session. If the sample is N on the next session, there is no consequence (the tracker of consecutive negative urines picks up where it left off)

# Treatment Agreement for Contingency Management

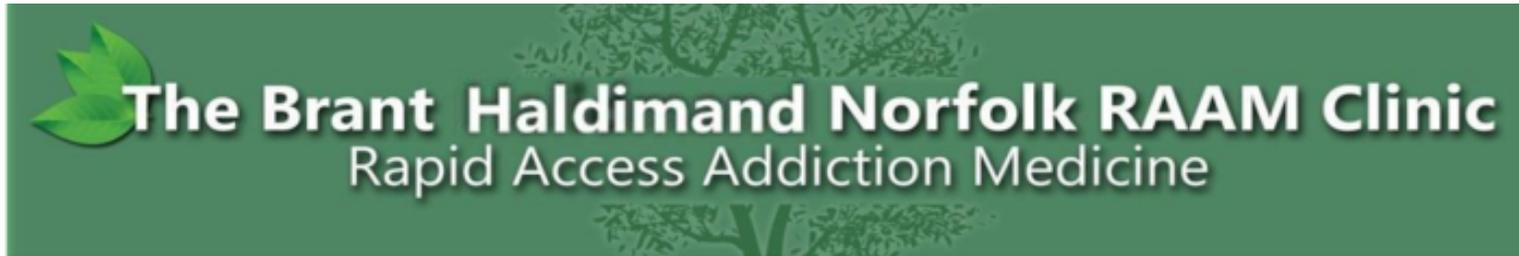
- A tool for clients and staff to understand the program guidelines, the benefits, and the contraindications of contingency management.

*“The only identified risk of CM is that it may increase gambling behavior. If you have a past problem with gambling, we do not recommend you participate in the program.”*

*“You cannot participate in this program if you are taking, or plan to take, any prescription stimulants such as Vyvanse, Adderall, Concerta or any other prescription stimulant, as this will be considered a stimulant in all samples”*

*“This program is based on the idea that participants have a goal of not using stimulant medications (abstinence). The program works by providing rewards for a urine sample that is negative for stimulant medications. Urines will be sampled twice a week (Tuesday and Friday). Each time a participant has negative urine for stimulants (amphetamine, cocaine, other) they will have "negative" urine and earn a draw. The first negative will result in one draw. If the next urine is also negative, two draws are earned that day. Draws increase with each negative urine to a maximum of eight (one month of abstinence). If any stimulants are detected, the participant receives no draws on that day, and the number of draws resets to one for the next negative sample. “*

# Rewarding Completion of CM



## *Certificate of Completion*

*awarded to* \_\_\_\_\_

*For the completion of the BHN- RAAM Clinic 12-Week Contingency Management Program*

× \_\_\_\_\_

(Name of Clinician/Physician)

× \_\_\_\_\_

# Initiating CM With A Patient

1. Have the patient sign a treatment agreement and explain the risks, rules and benefits to contingency management
  2. Give the patient a tour, explain urine sampling, view the prize cabinet, examples of vouchers etc.
  3. Set a twice a week schedule for sampling, offer flexibility in times.
  4. Provide them with a calendar to help them track when they come to the clinic.
  5. Have a counsellor or case manager help them create a weekly schedule and discuss strategies to avoid using.
  6. Record urine result each time the patient comes to the clinic and administer a prize(s) if the sample is negative
  - 7. Priming** at first visit (drawing until the patient wins a prize, regardless of sample result)
- Peer support was a major advantage in helping advocate for the program.***

# Costs and Human Resources: The Biggest Barriers to CM

**Average: \$265 per person for 12 weeks** (in our experience, with donations to offset the cost)

Prizes! (jumbo = tablet, large = coffee maker/crock pot, medium = toiletries, small = chocolate)

Urine testing, gloves, etc.

Cabinet – donations?

Slip bowl – donations? → **the plan is to move this all into the EMR**

Stationary:

- Stamps (can be symbols) for different prize categories
- Post-its to fold up for the slips
- Markers

Staff! Someone has to administer urinalysis, prizes, manage the cabinet.

Based on our experience in the RAAM, **two** staff members are needed to successfully implement CM with good adherence to the model, so that they can follow up with patients quickly, and follow up on no-shows

→ a rough estimate is 15 min needed per patient, twice a week

# 4

## BHN RAAM Contingency Management Assessment

# Interest In Implementing CM (starting in 2020)

- BHN RAAM offers treatment for any self-identified substance of concern
- Alcohol, opioids and stimulants are the most common presenting substances of concern (usually with overlap and concurrent use)
- Alcohol and opioids have readily available available and on-label first-line pharmacologic (and nonpharmacologic) treatment options
- There were **few available treatment options** for stimulant use disorder despite this need

and, CM offers:

- A low risk intervention
- Evidence in a variety of populations and concurrent disorders
- Combination therapy with pharmacological and psychotherapeutic interventions

Based on these factors, we implemented a **standard CM program** in January 2020, although it was disrupted by the Covid-19 pandemic.

# Identifiable Gaps In Current Research

- CM has not been shown to work in a RAAM clinic setting, and much of the data is now 20 years out of date
- The types and value of prizes needed should reflect temporal trends (much of this research is now several decades old) and specific communities
- The implementation of CM is labor intensive as it requires human resources to run the program (manage prize inventory, register patients, process urine samples and provide prizes)
- CM is expensive and difficult to fund

# Project Objectives

- CM has never been implemented or shown to work in a RAAM clinic setting

***Measure the outcomes of CM implemented in the BHN RAAM in terms of total and consecutive weeks of abstinence, and emergency department visits identified in the clinic charts.***

- The types and value of prizes needed should reflect temporal trends (much of this research is now several decades old) and specific communities

***Identify prizes most commonly selected, and the average cost of the program for clients stratified by their weeks of abstinence.***

- The implementation of CM is labor intensive as it requires human resources to run the program (manage prize inventory, register patients, process urine samples and provide prizes)

***Develop and test software which automates the process of drawing from a bowl so that the draw requires fewer human resources and inventory is automatically updated after patients draw prizes. The patient would still be selecting the prize, but the software would automate the process of updating inventory.***

# Additional Aims

- Expand the amount of funding and distribution of funding to other similar clinics by sharing implementation data and methods with Ontario Health Teams
- Understanding how to effectively spend resources (by understanding which specific prizes work best) in the clinic would allow a streamlined allocation of funding distribution in order to optimize the purchasing of specific prizes that are shown to be in demand.

# Research Ethics Approval

The Centre for Addiction and Mental Health (CAMH) Quality Projects Ethics Review (QPER) Board and the Brantford General Hospital Review Board approved this project.

# Methods

A standard CM protocol was used (Petry, 2012) involving 12 weeks with twice-weekly immunoassay testing of stimulants (amphetamines, methamphetamine, cocaine) for patients in the clinic as part of routine clinical care.

**Inclusion criteria:** stimulant use disorder, self-identified goal of abstinence from stimulants and interest in the program

**Exclusion criteria:** history or active gambling disorder, prescribed stimulant drugs

1. Retrospective analysis of patients at the BHN RAAM received CM for stimulant use disorder in 2020-2021.
2. Ongoing analysis of patients enrolled in CM for stimulant use disorder in 2022 and onwards

# Results: Retrospective Analysis

17 patients were enrolled in 2020-2021, with 76% identifying as male.

3 patients dropped out of the program (17.6%) and one patient was abstinent throughout the entire program.

Total weeks of abstinence: 2.65 (3.48)

Consecutive weeks of abstinence: 2.18 (2.64)

*In a comparable study of patients using stimulants who were using methadone, patients achieved 2.8 weeks of abstinence for CM vs. 1.7 weeks for standard care. (Petry, 2017)*

22 patients are currently enrolled actively in the 2022 CM program (rolling and ongoing admission).

# Implications and Discussion

- At approximately week 10 of the initial implementation, the Covid-19 pandemic was declared, dramatically impacting all in-person care (although the BHN RAAM remained open for in-person care throughout the pandemic)
- The results are comparable to a population of patients in a methadone clinic
- This is not a randomized trial, and is rather a pragmatic observational study which lacks a number of resources such as research staff who can call and remind patients to attend clinic
- The sample size is small
- The next round is pending (22 participants)

# Patient Feedback

Apart from helping to assist in drug abstinence:

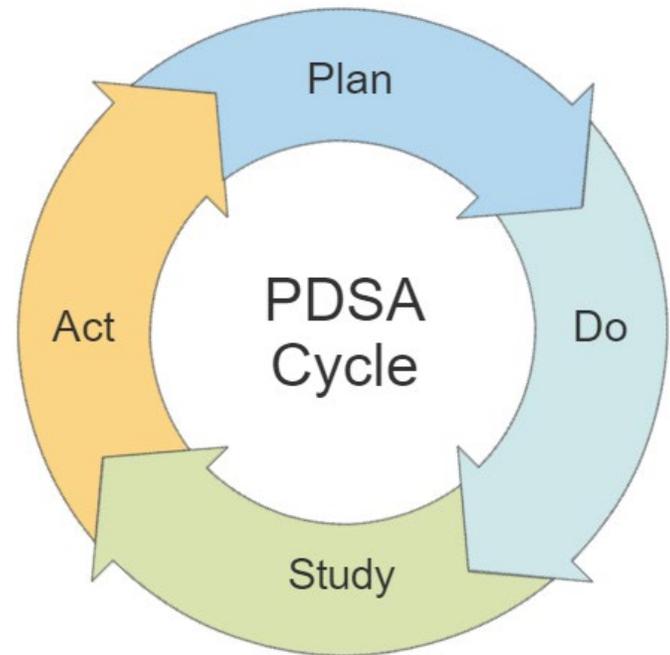
1. CM has “helped me psychologically and mentally as it gave me something to look forward to in the week”
2. “Before CM I used to skip clinic sessions”, but CM has “helped me attend doctor appointments as it kept me on a consistent clinic schedule”
3. “My kids love the snacks I bring home from CM so CM has made me accountable to my children...it wouldn’t be a good feeling if I couldn’t bring a snack home”
4. “I love the variety of prizes in the cabinet” ... and “the option to tell staff what prizes we would be interested in”
5. “Flexibility in days and clinic hours make it easier to come in especially with my job”
6. “I feel like sampling twice a week really helped me stay accountable because with just one sample a week I feel like I’d be tempted to use”

# 5

## Results: Quality Improvement Process

# Applying Quality Improvement Principles to CM Implementation

- Health care resources are limited
- The application of CM should be **timely, effective, efficient** and **patient-centered**



# Domains Of Quality For CM In RAAM

**Timely:** are patients receiving CM at the best time?

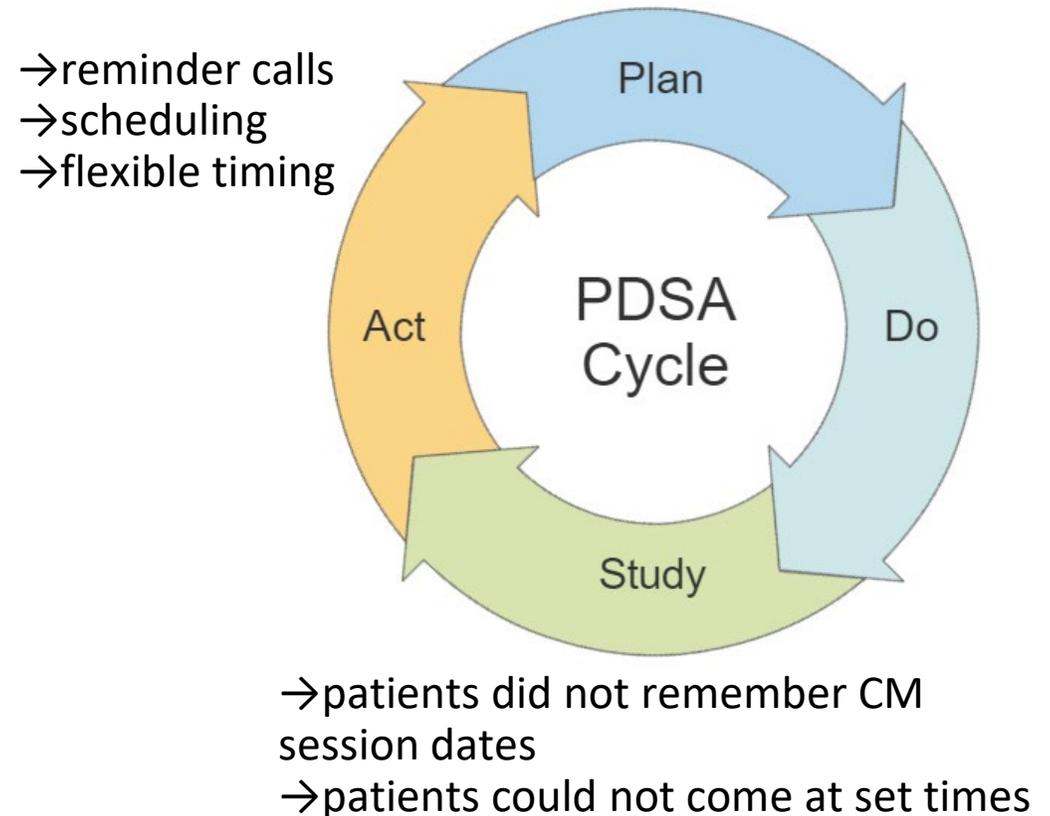
**Effective:** is the program equivalent to standard protocols for CM in stimulant use?

**Efficient:** is the program efficiently using limited resources?

**Patient-centered:** are patients satisfied with the program, are prizes consistent with patient requests?

# 1. Patients Dropping Out Of CM In 1-2 Sessions

- Aim: reduce dropouts in the CM program
- Measure: dropouts were occurring within 1-2 sessions of starting the program
- Change: reminder calls, using tracking tools in the EMR
- QI Domain: Effective



# Using EMR To Reduce Missed Appointment

◀ Mon, 2022-08-29 ▶ Calendar | Schedule | Today | Month Hello [dropdown]

W S [slider] Total: 5 | To Be Seen: 1 | Seen: 2 | Cancelled: 1

08:00

08:05

08:10

08:15

08:20

08:25

08:30

08:35

08:40 | ✓ Test,Ang | E | In | -B | M | Rx [cancel] | Others - Contingency Management Session 1 |Ur. |

08:45 | ✓ N Test,Crysta | E | In | -B | M | Rx [cancel] | Others - Contingency Management Session 3 |Ur. |

08:50 | ○ Test,Pudge | E | In | B | M | Rx [cancel] | Others - Contingency Management Session 2 |Ur. |

08:55

09:00 | [cancel] Test,Patric | E | In | B | M | Rx [cancel] | Others - Visit with Dr Test |Ur. |

09:05 | [cancel] [👤] Test,Patric | E | In | B | M | Rx [cancel] | Others - Counselling- CBT for Psychosis |Ur. |

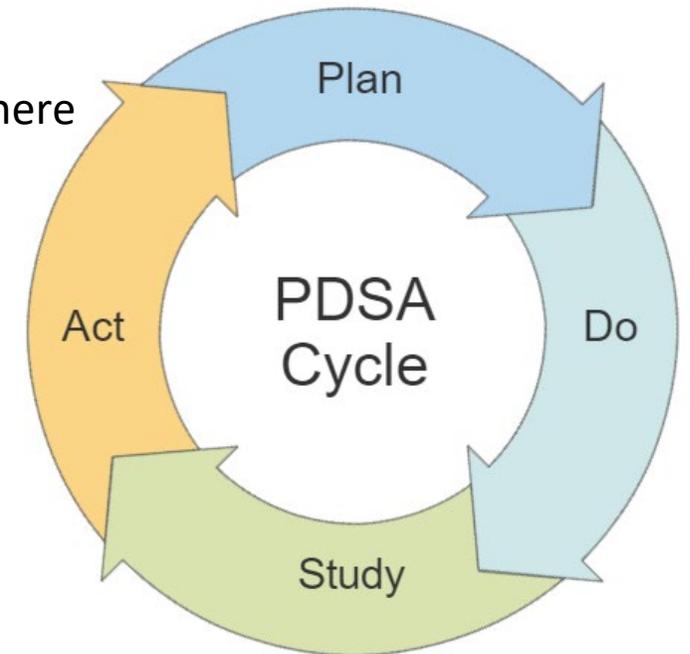
09:10

09:15

## 2. National Shortage Of MET Immunoassay

- Aim: continue CM with fluctuating MET immunoassay supply
- Measure: supply of immunoassays in clinic, where MET immunoassay is used
- Change: use of MET immunoassay throughout clinic
- QI Domain: Timely

→reduce dips elsewhere  
→schedule CM visits



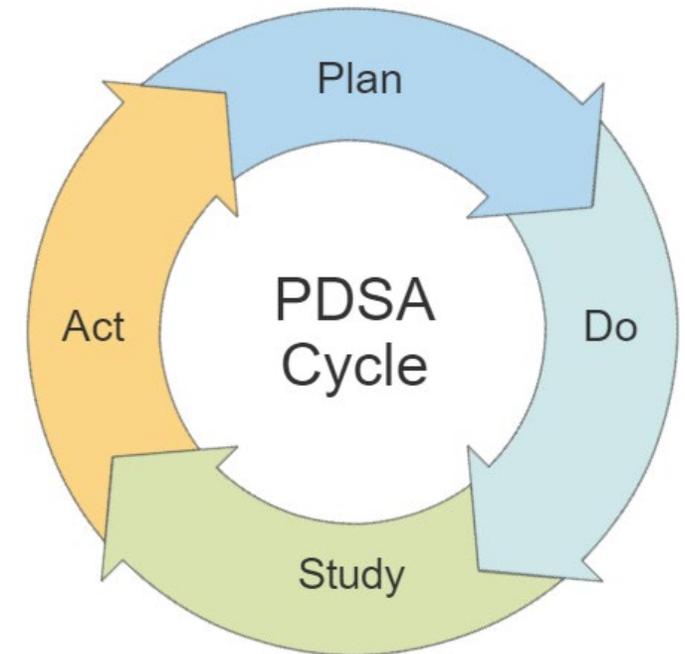
→use of dips in other areas may not be needed  
→tracking CM visits allows predictability in needs for CM

### 3. “Should I Start This Before I Go To Treatment?”

- Aim: determine best timing of CM program compared to residential treatment
- Measure: weeks of abstinence
- Change: offer/recommend use as aftercare when patients are imminently going to treatment
- QI Domain: Effective

#### ***Ongoing PDSA cycles***

Controlled environments:  
residential treatment, hospital,  
withdrawal management, mental  
health unit, incarceration



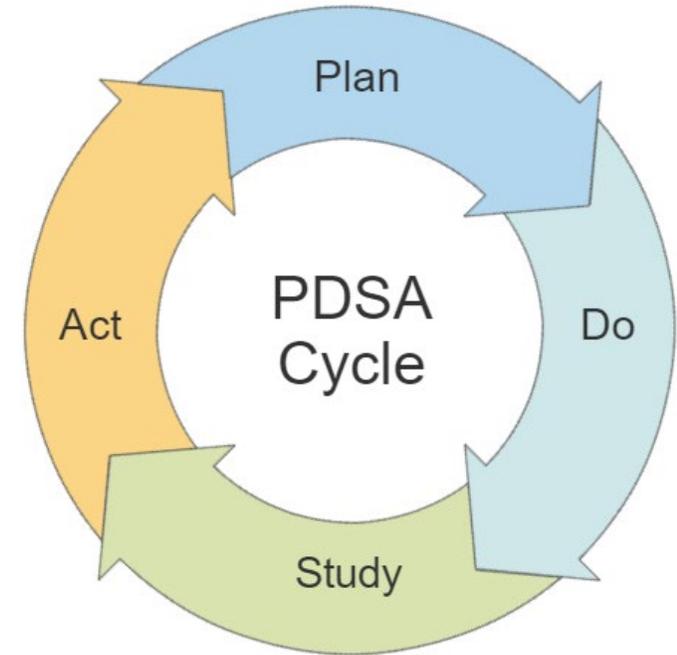
→track admission to a controlled environment prior to CM

→track response to CM (observational)

# 4. Staffing - How Can We Embed This Into The Clinic?

- Aim: Optimize time/human resources dedicated toward CM
- Measure: Staff time dedicated toward CM/patient/week
- Change: Development of software which automates the process of drawing from a bowl
- QI Domain: Efficient

One staff member  
5 min/patient \* twice a week  
= 10 min/patient/week



• **Two** staff members are needed to implement CM

rough estimate is 10 min/patient \* twice a week  
= 20 min/patient/week (time consuming!)

Full Time Equivalent for 20 patients = 6.5  
hrs/week = 16% of a 40 hr work week

# Software: Must Be Embedded In EMR

## OMA Burnout Task Force Top 5 System-Level Solutions to Physician Burnout

1



### Streamline and reduce required documentation and administrative work.

- Assess laws, regulations, policies, standards and documentation requirements collaboratively, regularly and systematically to evaluate the burden, complexity, redundancy and value to patient care of administrative requirements.
- Use medical scribes, particularly in relation to electronic documentation requirements.
- Explore technological innovations to reduce and simplify administrative demands, including billing administration.

Ontario Medical Association. Healing the Healers: System-Level Solutions to Physician Burnout. Recommendations of the Ontario Medical Association Burnout Task Force, Aug. 18, 2021.

# 5. Which Prizes Should We Use?

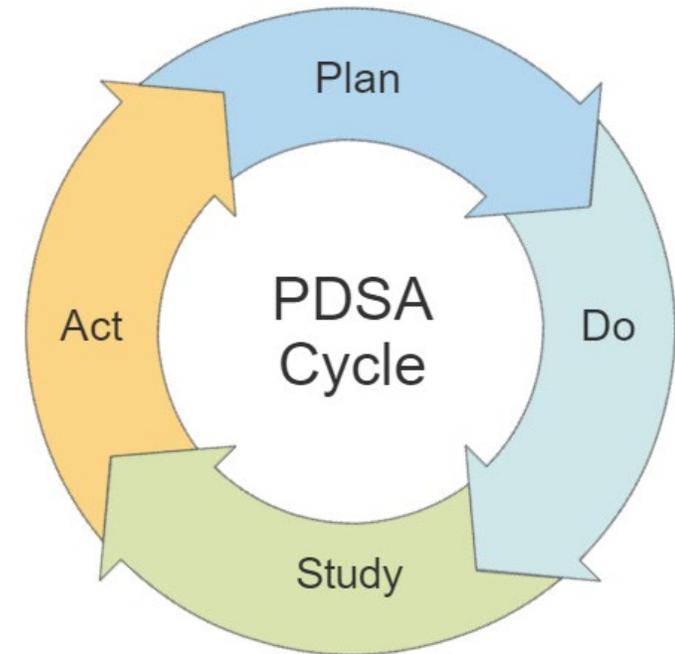
Aim: Select desired prize options for patients to incentivize them

Measure: Created an Excel spreadsheet to qualitatively and quantitatively track prizes being chosen

Change: More consistently restock highly sought after items

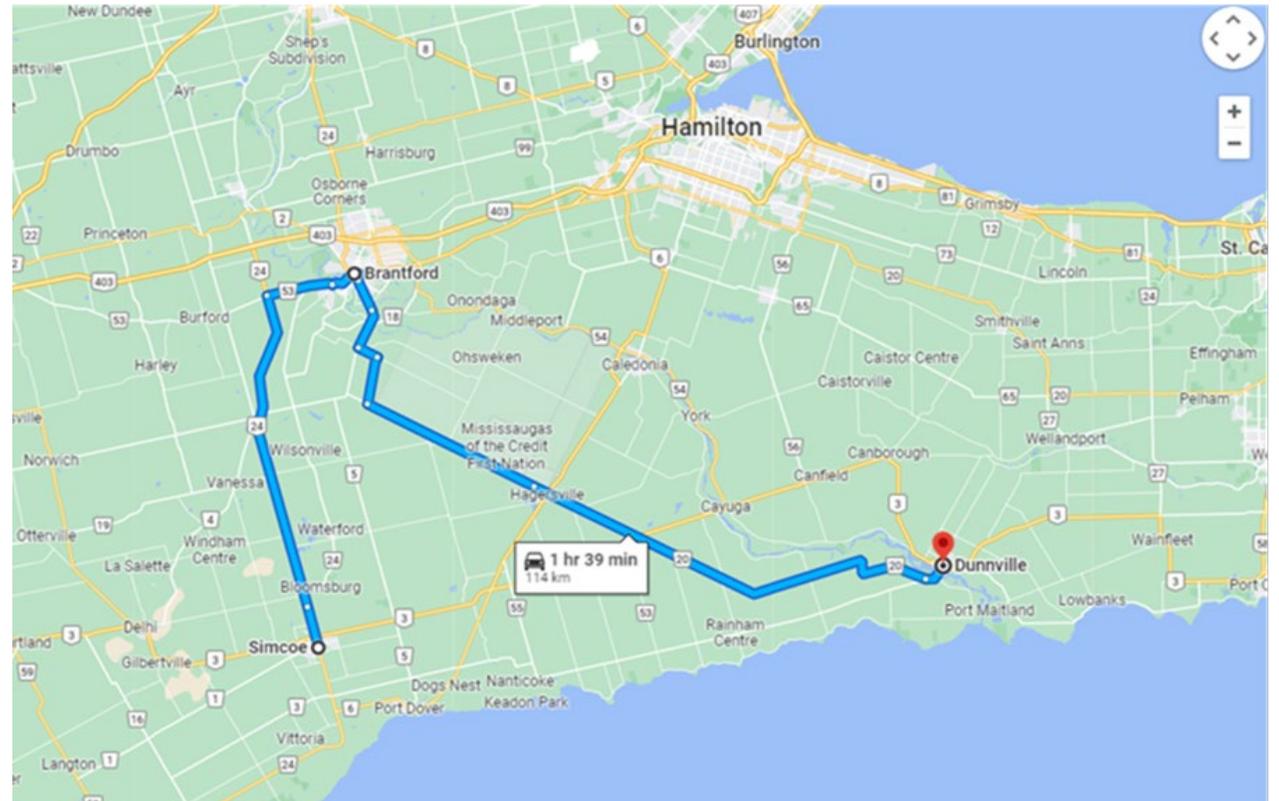
QI Domain: Patient-centered

***Ongoing PDSA cycles***



## 6. Brantford Is Too Far!

- Aim: Expand the scope of CM by offering BHN RAAM Simcoe patients to travel to Brantford twice a week for the program
- Measure: BHN RAAM Simcoe patients were interested in CM, but declined due to travel time
- Change: bring prizes to Simcoe and delegate one staff member to implement CM on a Monday/Thursday schedule
- QI Domain: Timely



Google (2022) *Brant Haldimand Norfolk region*. Available at: <http://maps.google.com> (Accessed: 5 Sept 2022).

# 6

Conclusions/Next  
Steps/Bigger Picture

# Strategies And Tips For Implementing Stimulant Treatment In The RAAM Clinic

1. Create an **intake** that is a combination of medical and psychosocial needs and address the patient's immediate goals on the first appointment.
2. Use **coordinated care plans** to communicate between agencies and services for high-risk patients.
3. Use a **multidisciplinary team-based approach** on the patient's short term and long-term goals, establish a case lead.
4. Follow up on patients that **stop attending** or miss appointments.
5. Set up case conferences or “patient rounds” for challenging cases.
6. **Job description** for CM should ideally be someone who directly handles the urine results and testing

# RAAM: The Bigger Picture



# 7

## References

# References

1. CBC News · Posted: Apr 30, 2019 <https://www.cbc.ca/news/canada/manitoba/hsc-meth-psychosis-1.5115291>
2. Suen et al. Emergency department visits and trends related to cocaine, psychostimulants, and opioids in the United States, 2008–2018 BMC Emergency Medicine (2022) 22:19
3. ASAM Principles of Addiction Medicine, Wolters Kluwer, Philadelphia, 2019
4. Minozzi S, Saulle R, De Crescenzo F, Amato L. Psychosocial interventions for psychostimulant misuse. Cochrane Database of Systematic Reviews 2016, Issue 9. Art. No.: CD011866.
5. The Wiley Blackwell Handbook of Operant and Classical Conditioning, First Edition. Edited by Frances K. McSweeney and Eric S. Murphy. 2014 John Wiley & Sons.
6. Kaplan and Sadock's synopsis of psychiatry: Behavioral sciences/clinical psychiatry, 11th ed. Sadock, B. J., Sadock, V. A., & Ruiz, P. (2015). (11th ed.). Wolters Kluwer Health.
7. Silverman et al, Arch Gen Psychiatry. 1996 May;53(5):409-15.
8. Petry, N. M. (2012). Contingency management for substance abuse treatment: A guide to implementing this evidence-based practice. Routledge/Taylor & Francis Group.

# References

9. Petry et al, Journal of Consulting and Clinical Psychology. 2007, Vol. 75, No. 6, 983–991.
10. Petry et al, Psychology of Addictive Behaviors, 2017, Vol. 31, No. 8, 897–906.
11. Tracy et al, The American Journal of Drug and Alcohol Abuse, 33: 253–258, 2007.
12. Dutra et al, Am J Psychiatry 165:2, February 2008.
13. Sigmon and Higgins, Journal of Substance Abuse Treatment 30 (2006) 291 – 295.
14. OMA Whitepaper, Healing the Healers: System-Level Solutions to Physician Burnout. Recommendations of the Ontario Medical Association Burnout Task Force Aug. 18, 2021  
<https://www.oma.org/uploadedfiles/oma/media/pagetree/advocacy/health-policy-recommendations/burnout-paper.pdf>