Innovations in Substance Abuse Treatment and Abstinence Reinforcement

February 25, 2014
3:00-4:00 p.m. ET

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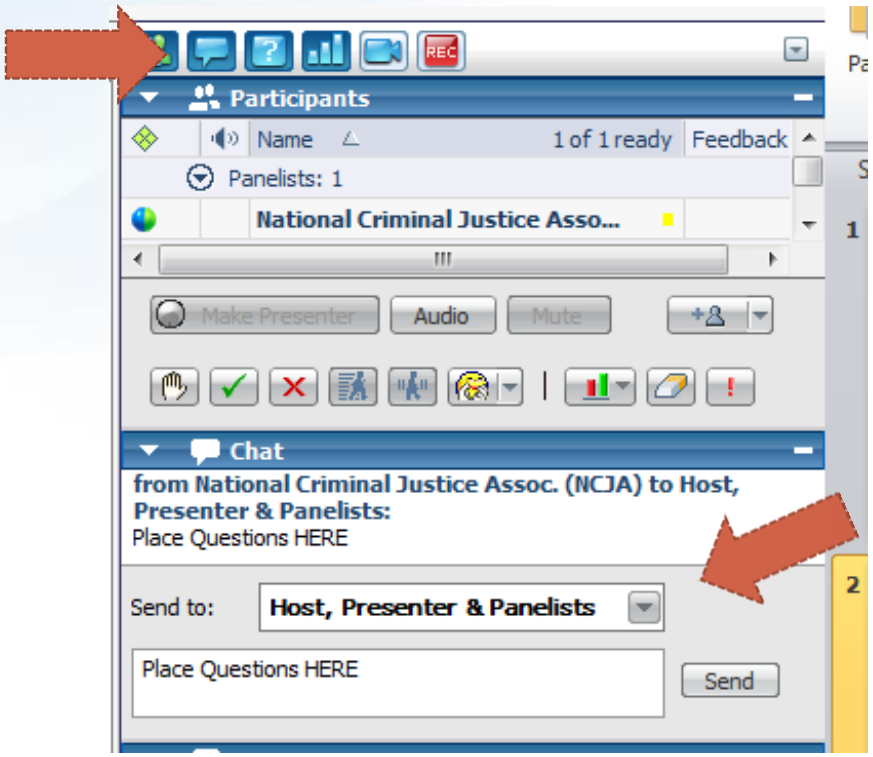

Please remember to select Host, Presenter & Panelists

Moderator

David Marimon
Policy Analyst
National Criminal Justice Association

Presenters

Kathleen M. Carroll Ph.D.,
Albert E. Kent Professor of Psychiatry
Yale University School of Medicine

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CBT4CBT

Computer-Based Training for Cognitive Behavioral Therapy

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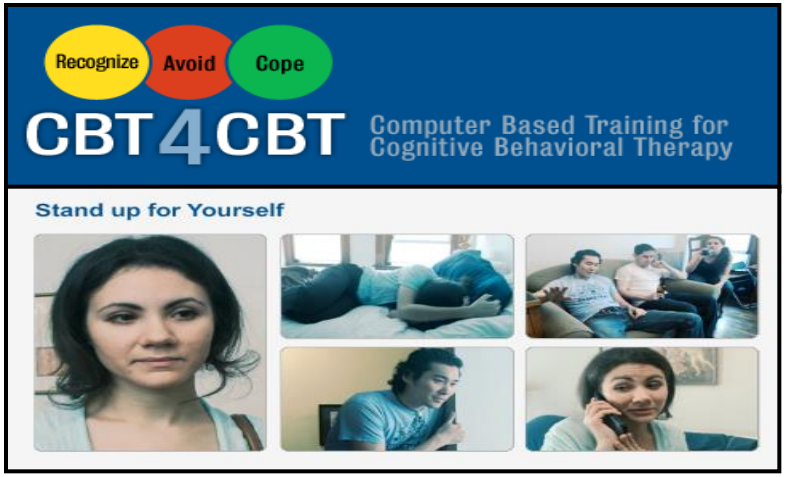
Supported by NIDA grantsR3715969, K05-DA00457, P50-DA09241 & NIDA CTN

Overview

- Why computer-based delivery of CBT?
- Overview of CBT4CBT
- Supporting evidence
- Ongoing work and opportunities for collaboration



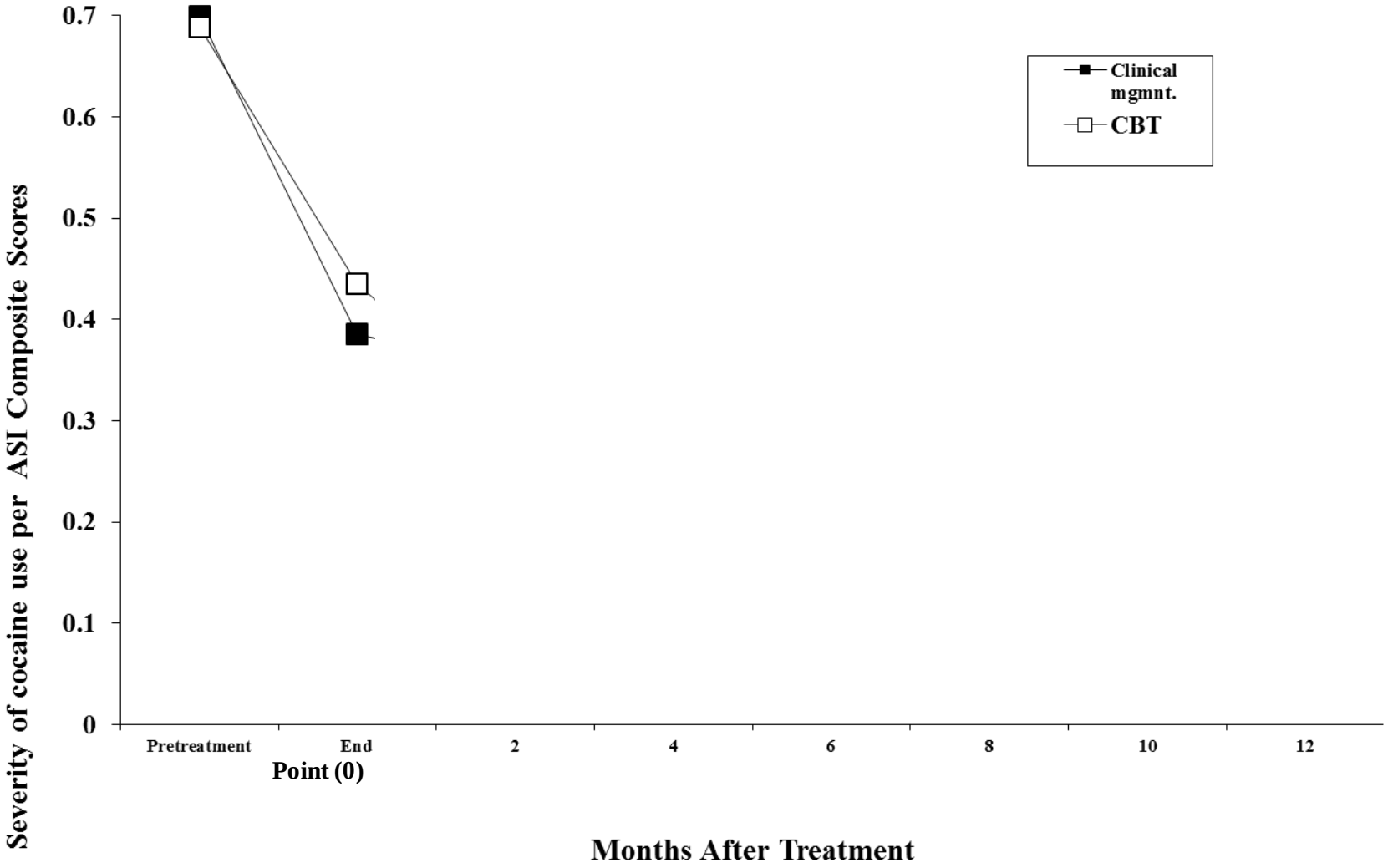
Cognitive-behavioral Therapy: CBT

Based on functional analysis of substance use

Emphasis on learning/implementation of coping skills

- Functional analysis and patterns of use
- Coping with craving
- Addressing ambivalence and coping with thoughts
- Refusal skills
- Seemingly irrelevant decisions
- Problem solving skills

CARROLL ET AL (1994) Arch Gen Psychiatry,
121 cocaine users, 1 year follow-up



Cognitive behavioral therapy

- Empirically validated therapy
- Safe, broadly effective across many populations (including criminal justice)
- Durable effects

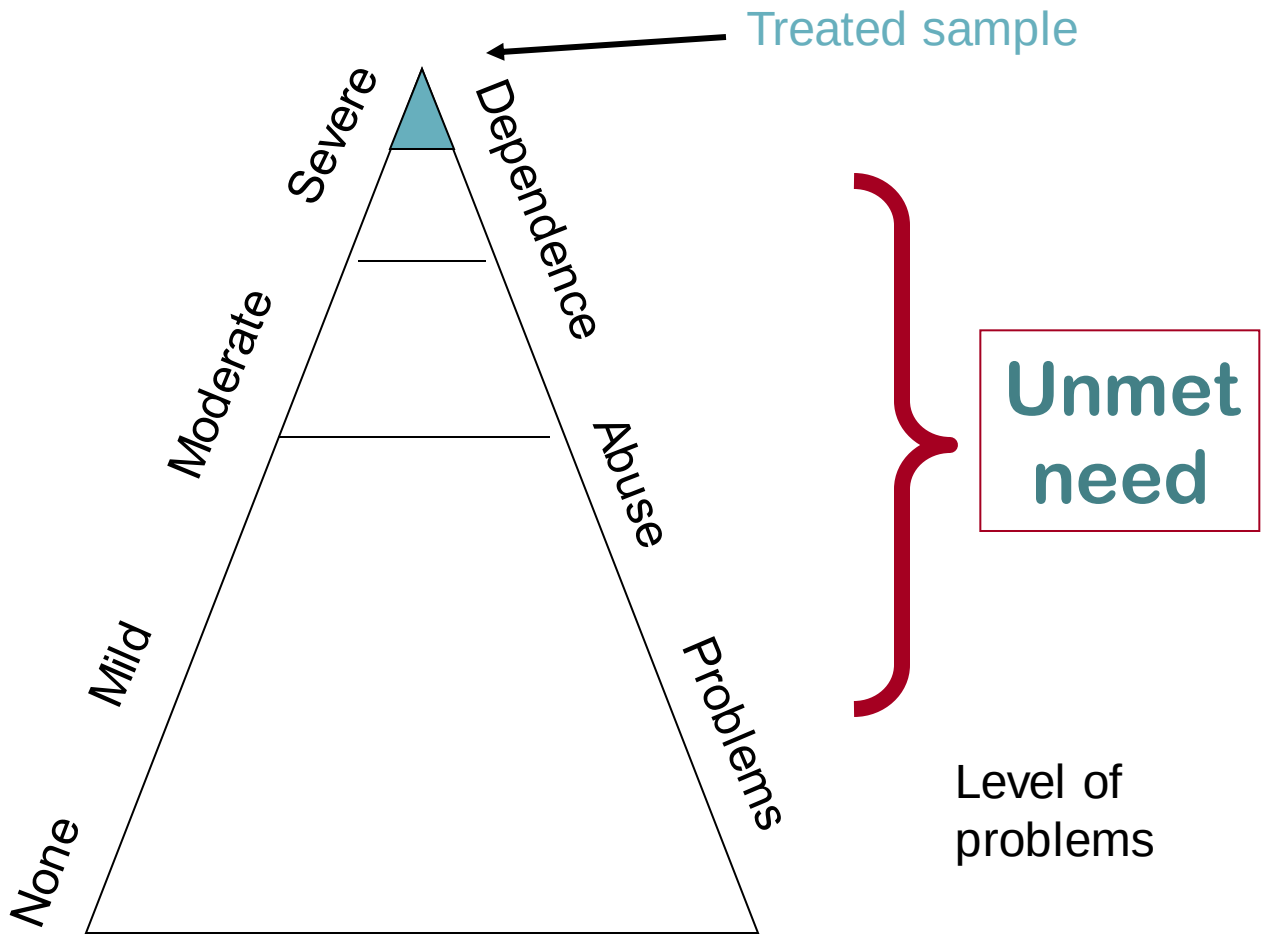
Challenges to dissemination

- Training time, clinician turnover
- Complexity
- Weak fidelity
- Limited clinician time, access

Why computer facilitated delivery of evidenced based treatments?

- **Effective implementation of CBT very rare in clinical practice
- Only a small fraction of people with addiction-related problems access treatment
- Save clinicians time, use as clinician extenders
- Broadly accessible, available 24/7
- Facilitated delivery via multimedia presentation
- Individualization, repetition, flexibility
- Facilitation of systematic evaluation of components (moderators & mechanisms of action)
- Standardization

Broadening the base



Core principles: CBT4CBT development

- Highly **engaging-capture attention** of substance users, retain them in treatment
- Deliver potent dose of evidence based cognitive and behavioral strategies-focus on **key generalizable skills**
- **Durability of effects-skills** practice
- Modeling-demonstration of skills in realistic situations under stress
- **Breadth of users-all** drugs, balance of gender and ethnicity
- Security- **NO identifying information, no HIPPA issues**

‘CBT 4 CBT’
Computer Based training for CBT

- 7 modules, ~1 hour each, high flexibility
- Highly user friendly, no text to read, linear navigation
- Based on NIDA CBT manual
- Multiple strategies for presenting skills
- Video examples of characters struggling real life situations
- Repeat movie with character using skills to change ‘ending’
- Interactive exercises, quizzes
- Multiple examples of ‘homework’

Recognize Avoid Cope

CBT4CBT Computer Based Training for Cognitive Behavioral Therapy

Logout

Topics | Workbook | Help

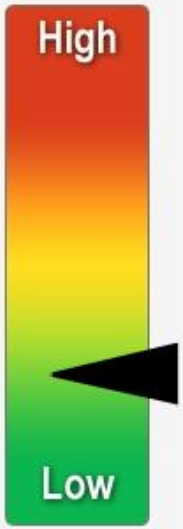
Topics Menu

- Recognize the Triggers
- Stop and Think
- Deal with Craving
  - Check In
  - What To Expect
  - What Would You Do?
  - Think About This
  - See The Difference
  - Ask Yourself
  - Try It
  - Keep Practicing
  - Exit
- Stand up for Yourself
- Go Against the Flow
- Plan Don't Panic
- Stay Safe

Back to Topics Selection page > Deal with Craving

Deal with Craving

Crave Meter



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Recognize Avoid Cope

Restart Page | Restart Topic

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Internet

Overview: First randomized clinical trial

- 8 week randomized clinical trial
- Outpatient community treatment program
- Standard treatment (weekly individual + group therapy) (TAU) vs. CBT4CBT + TAU
- CBT4CBT offered in up to 2 weekly sessions
- 6 month follow-up

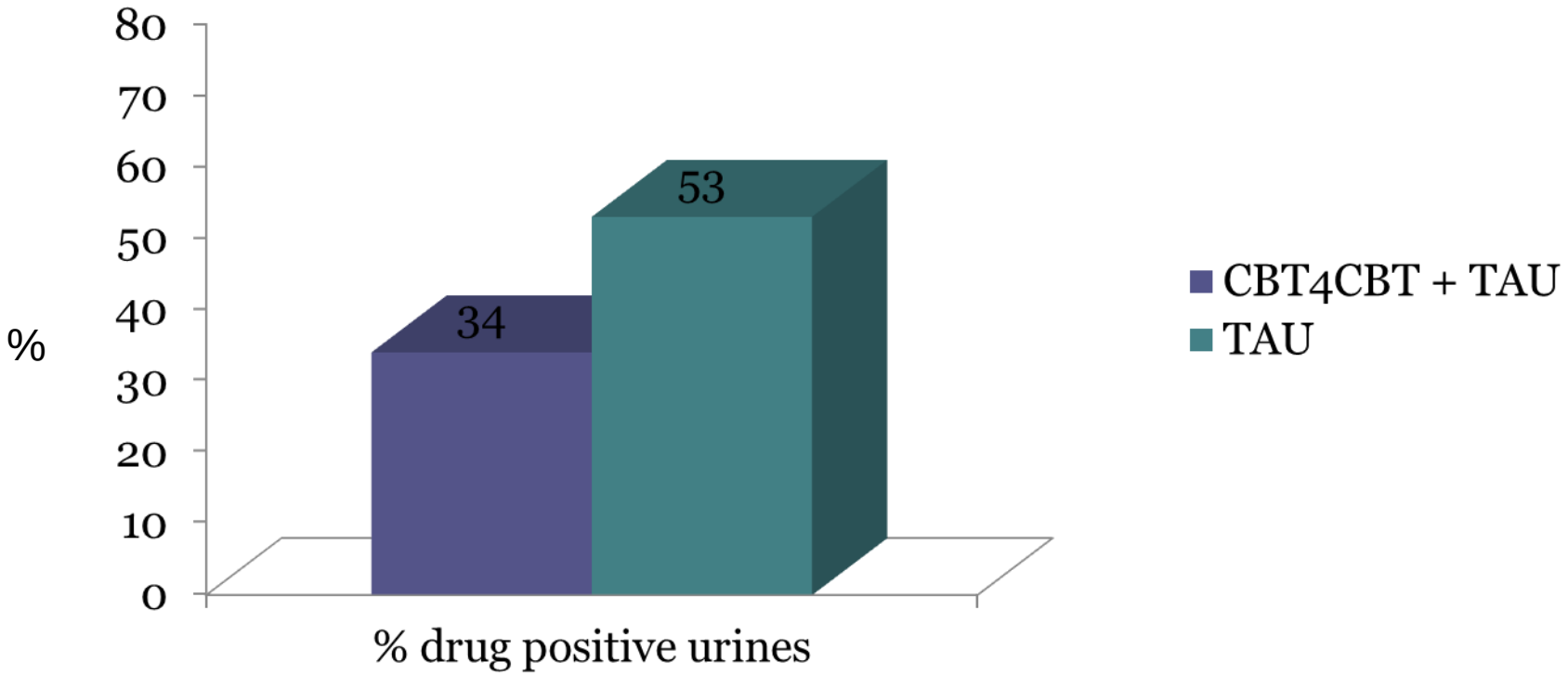
Carroll et al., Am J Psychiatry, 2008

Participants, first trial

"All comers": few restriction on participation, only require some drug use in past 30 days

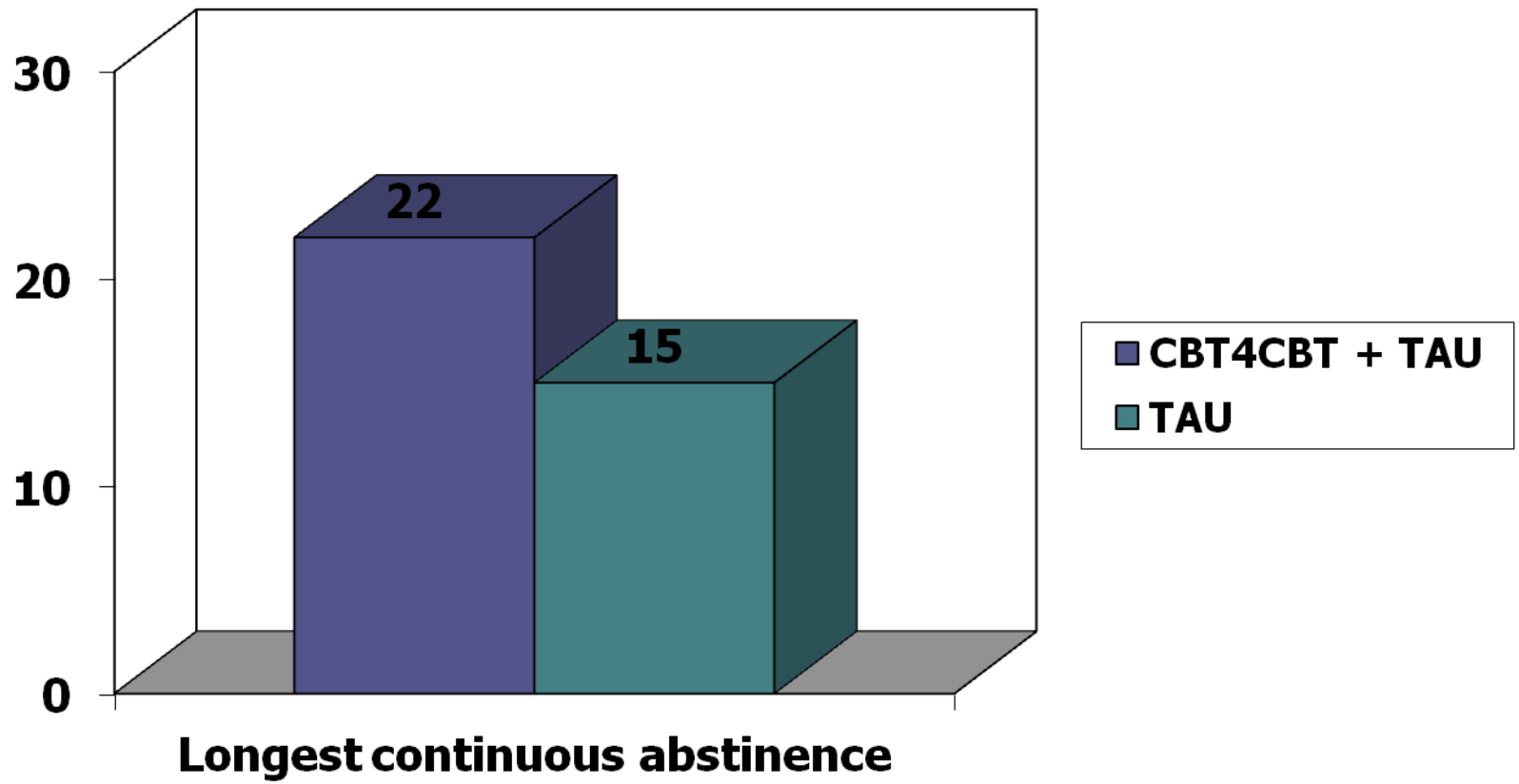
- 43% female
- 45% African American, 12% Hispanic
- 23% employed
- **37% on probation/parole**
- 59% primary cocaine problem, 18% alcohol, 16% opioids, 7% marijuana
- 79% users of more than one drug or alcohol

Primary outcome (% drug-positive urine toxicology screens), 8 weeks, CBT+TAU versus TAU



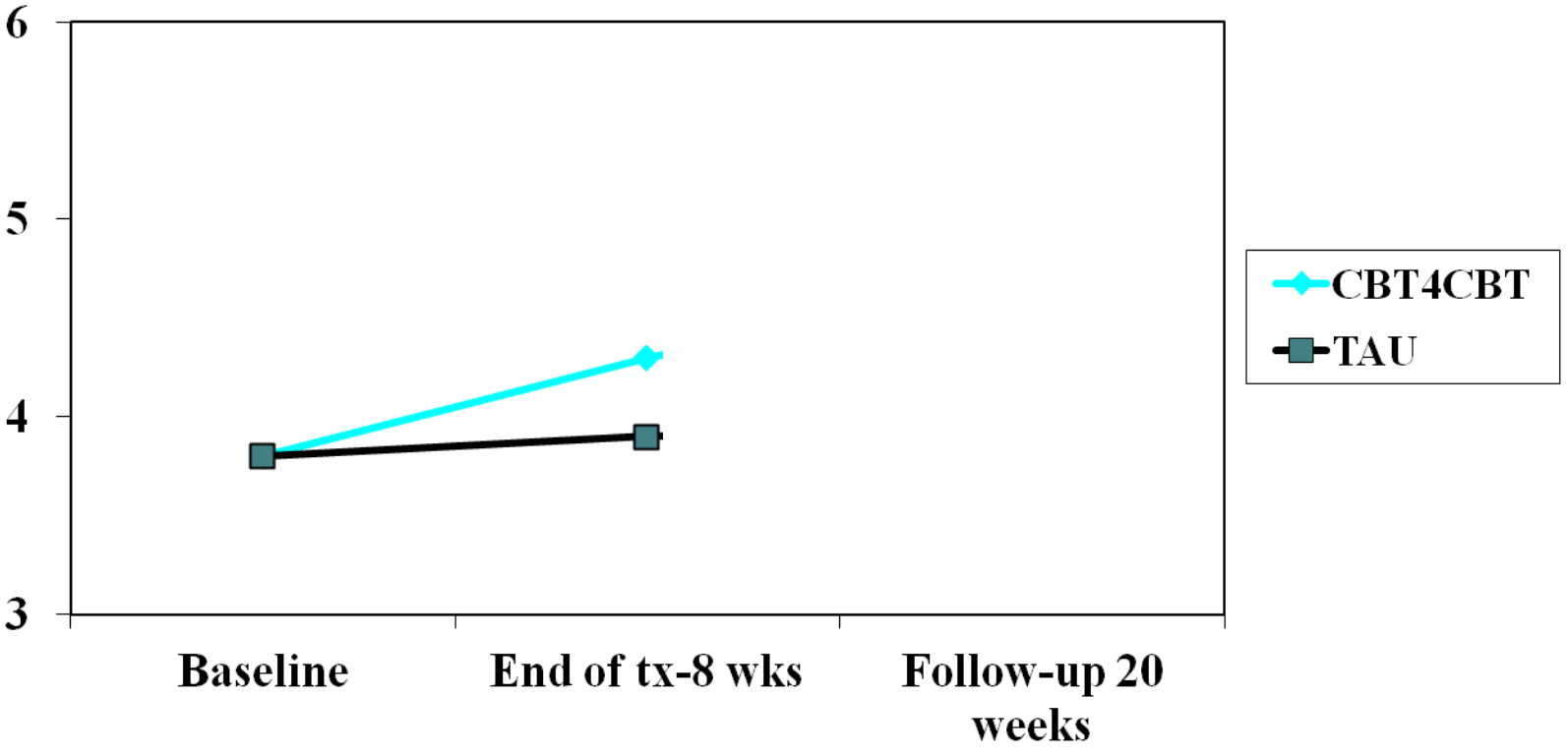
Carroll et al., 2008, *Am J Psychiatry*

Primary outcome: Longest consecutive abstinence, in days, at 8 weeks by condition



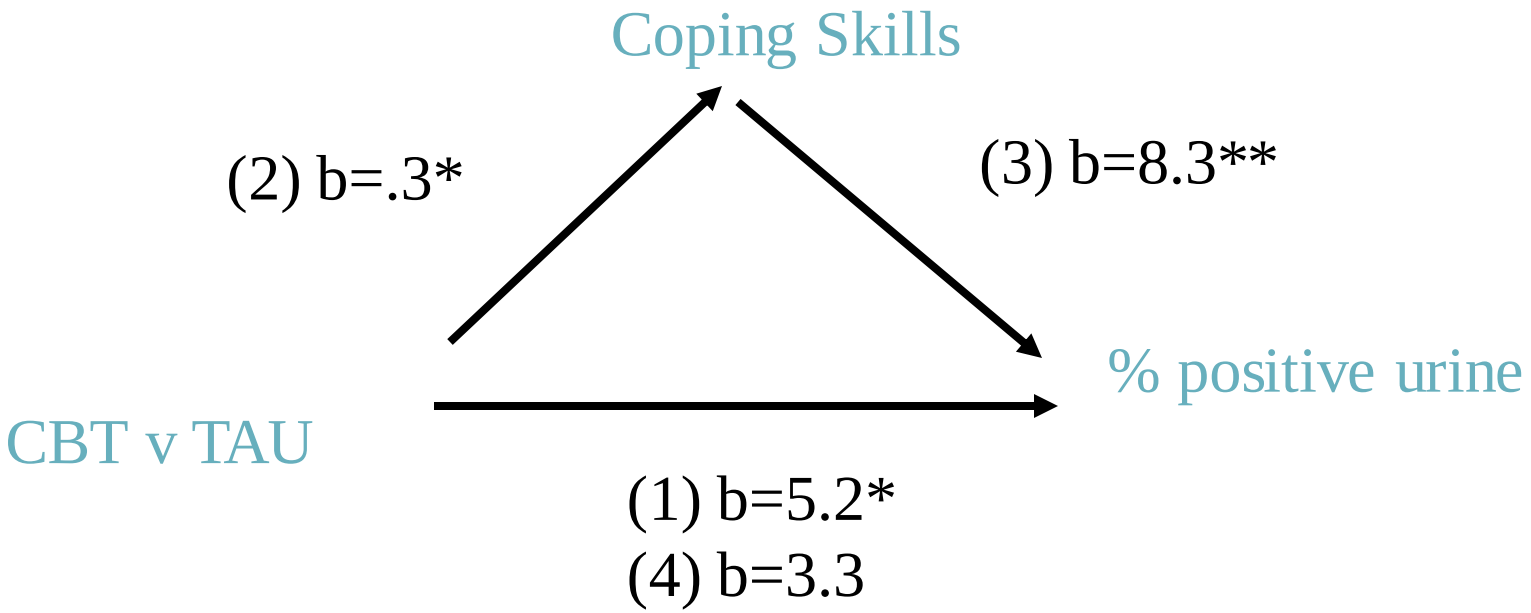
Carroll et al., 2008, *Am J Psychiatry*

Skill level though 6 month follow-up: Quality of best response by condition



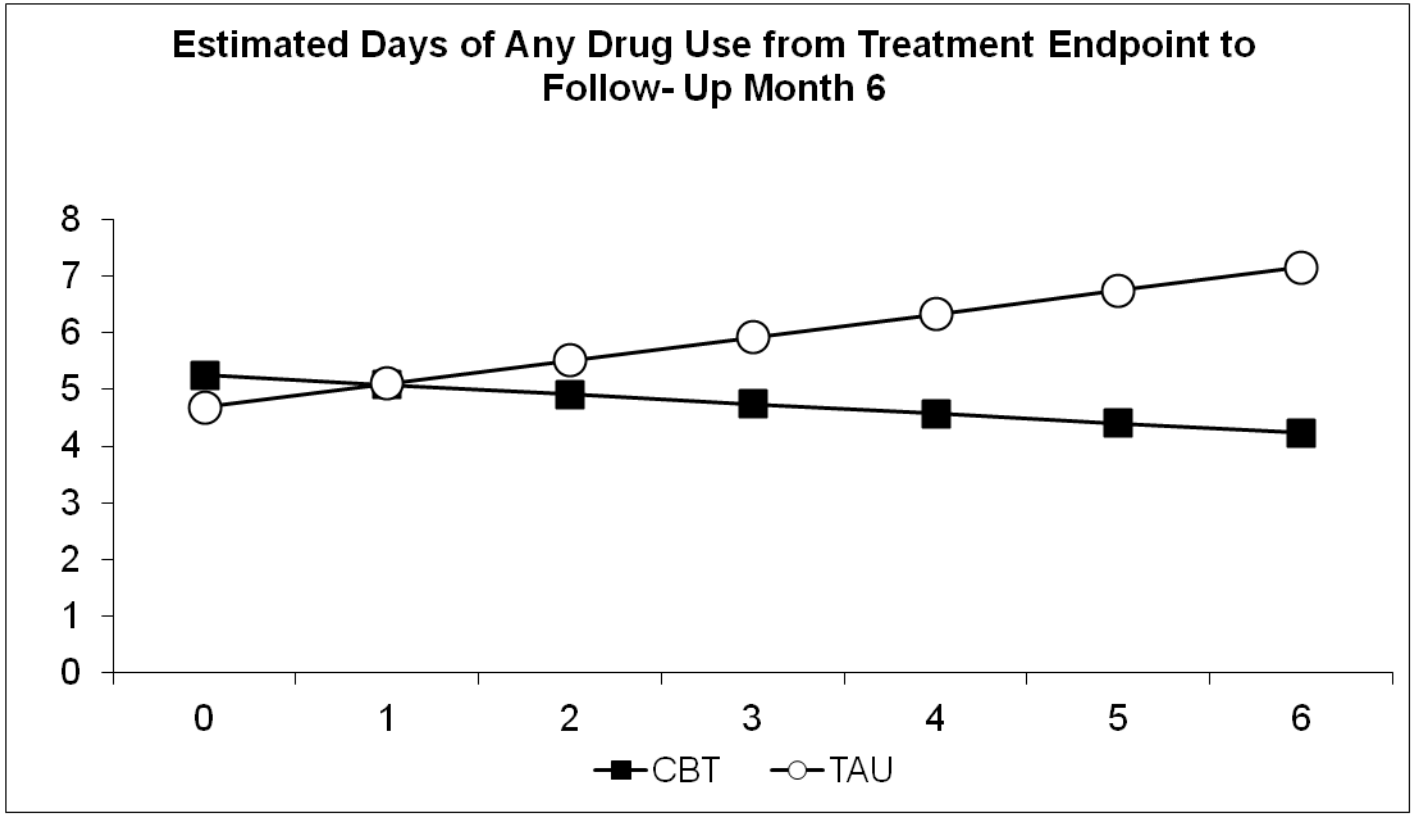
Kiluk et al, Addiction, 2010

Quality of coping skills as mediator of outcome in CBT4CBT



Kiluk et al, *Addiction, 2010*

Durability of Effects: 6 month follow-up



Carroll et al., 2009, DAD

Comparison of cost to other empirically supported therapies when brought to scale: Olmstead et al., DAD, 2010

(Outcome=Longest Days Abstinence (LDA) Incremental Cost Effectiveness Ratios (ICERS)

Treatment	Base Case ($)	Favorable Scenario ($)
CBT4CBT	50	-31
MET/CBT[a]	102	77
Prize CM – MM[b]	141	115
Prize CM – DF[c]	258	163

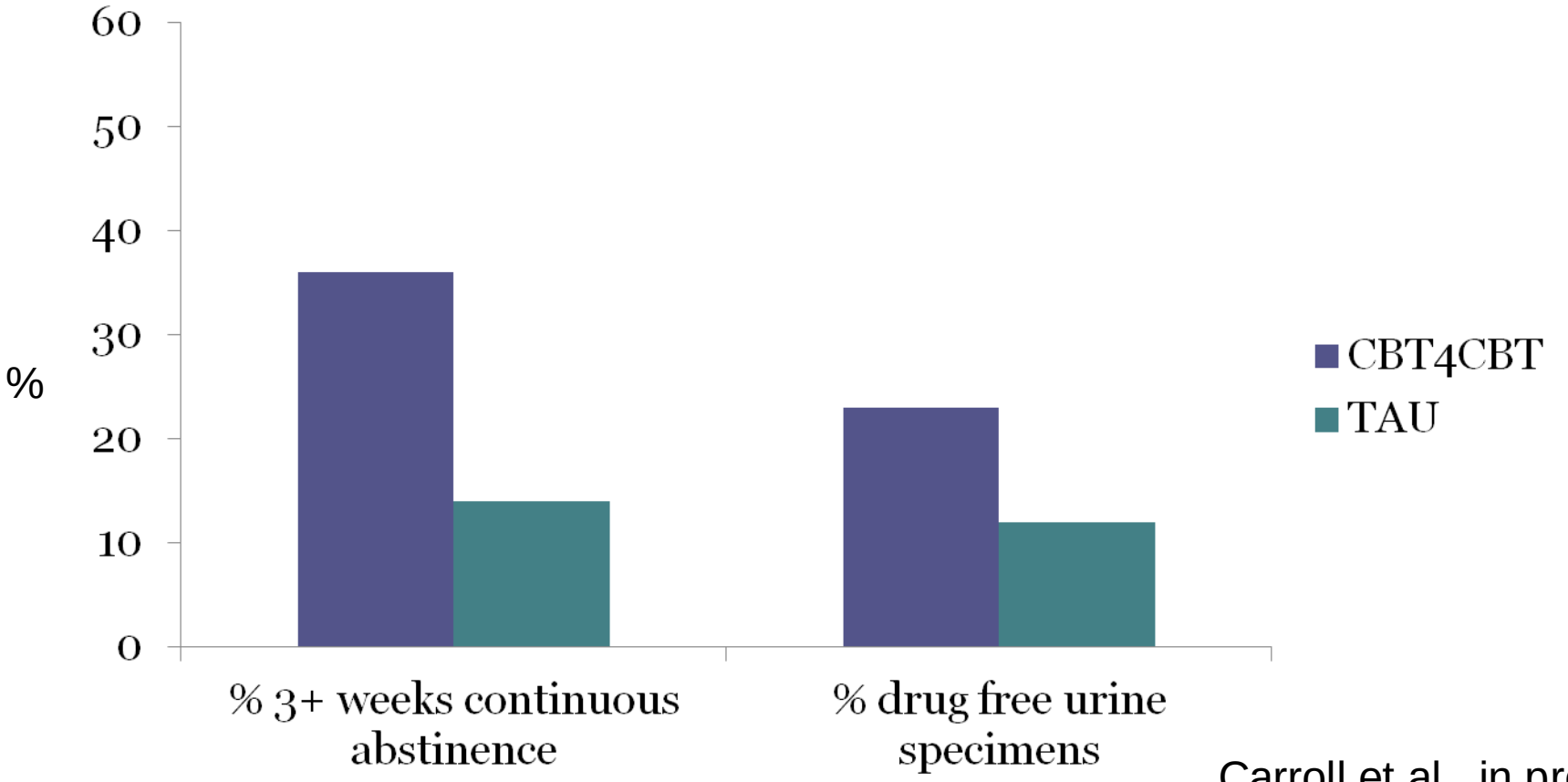
[a]MET/CBT = motivational enhancement therapy + clinician-delivered CBT
[b]Prize CM – MM = prize-based contingency management in methadone clinics
[c]Prize CM – DF = prize-based contingency management in drug free clinics

Overview: Second randomized trial

- 101 DSM-IV cocaine-dependent methadone maintained opioid users population
- Standard methadone maintenance (TAU) vs. CBT4CBT + TAU, 6 month follow-up
- Sample: 60% female, 40% minority, 89% unemployed, higher levels psychiatric comorbidity (29% depressive disorder, 30% anxiety disorder), multiple other substance use

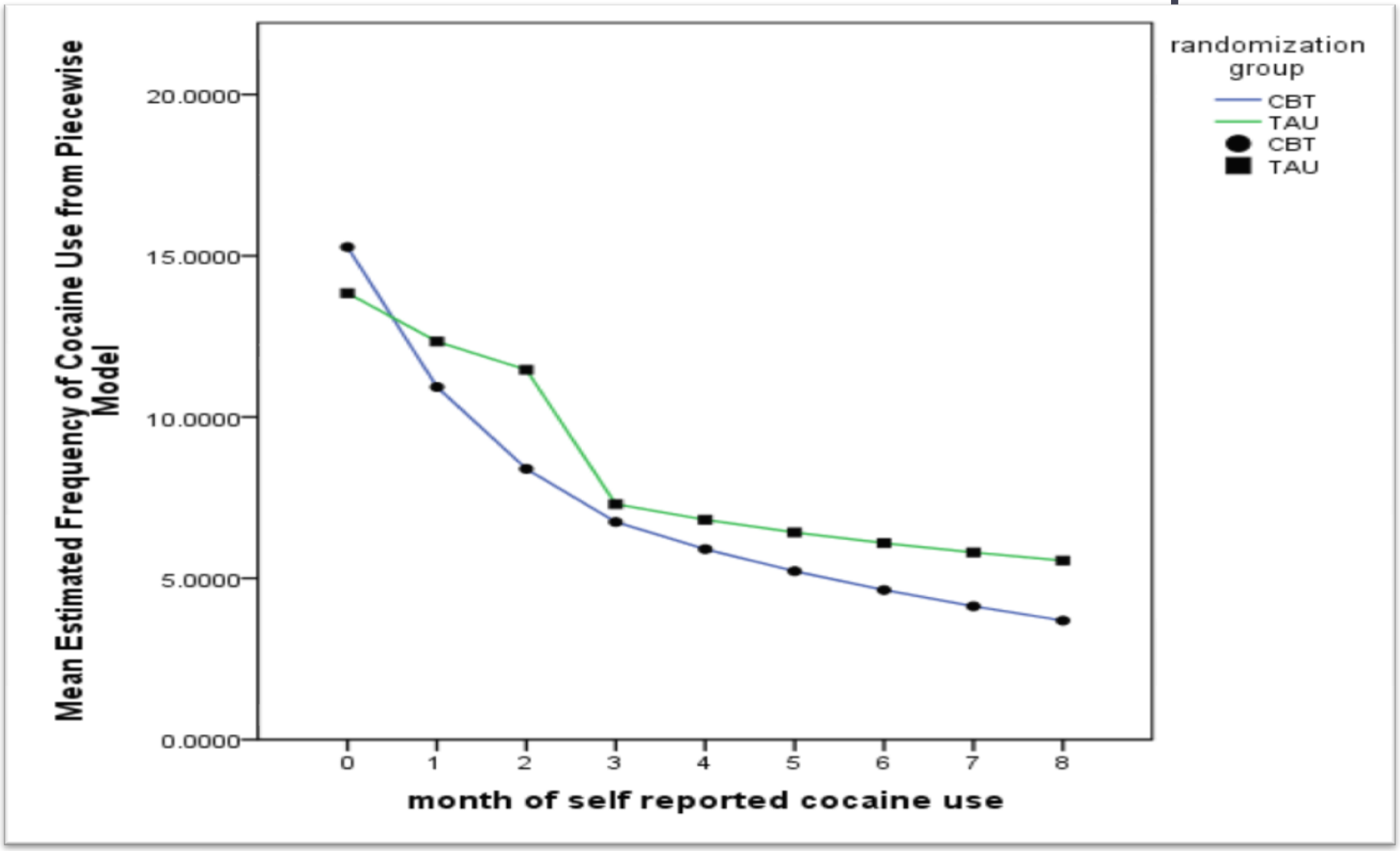
Carroll et al., Am J Psychiatry, in press

Primary post treatment outcomes: Cocaine-MMP sample



Carroll et al., in press

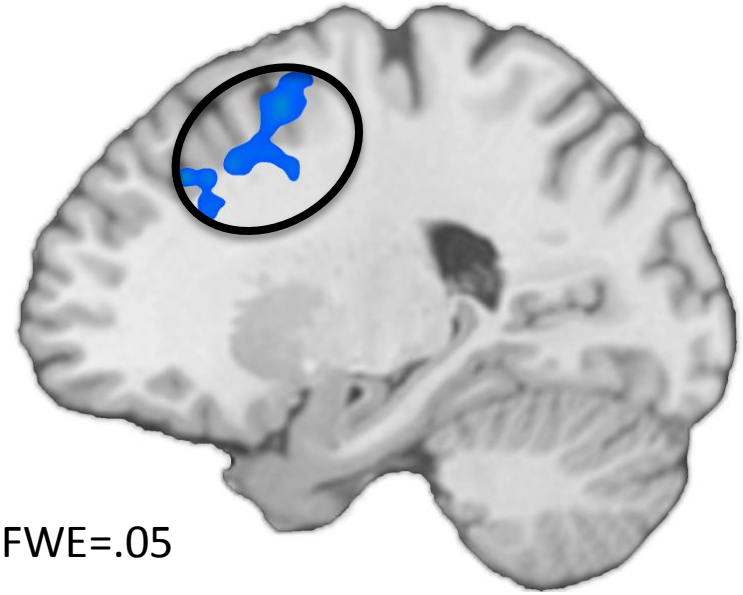
Change over time by group- Within treatment and 6 month fup



Changes in brain activity via fMRI:
Comparison of Post- to Pretreatment, CBT4CBT versus TAU

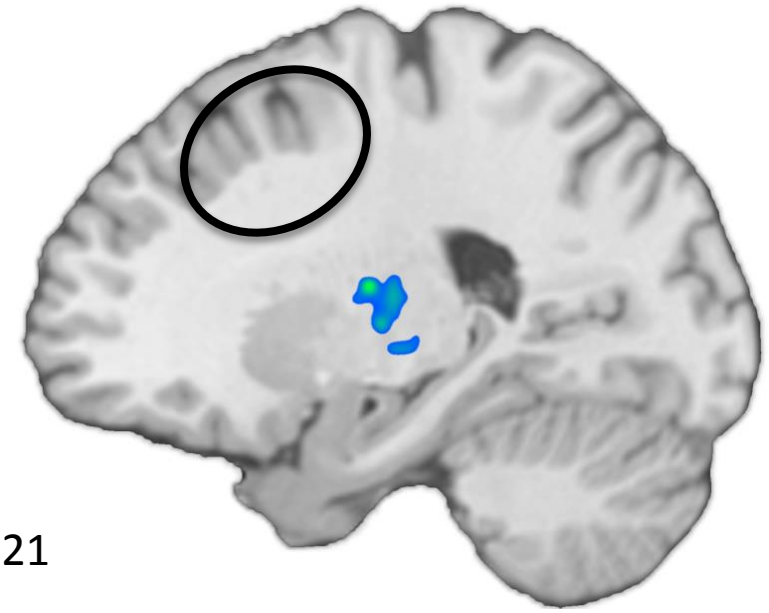
Stroop related activity dlPFC decreases from pre- to post-CBT4CBT **but not TAU**

CBT Stroop Post > Pre



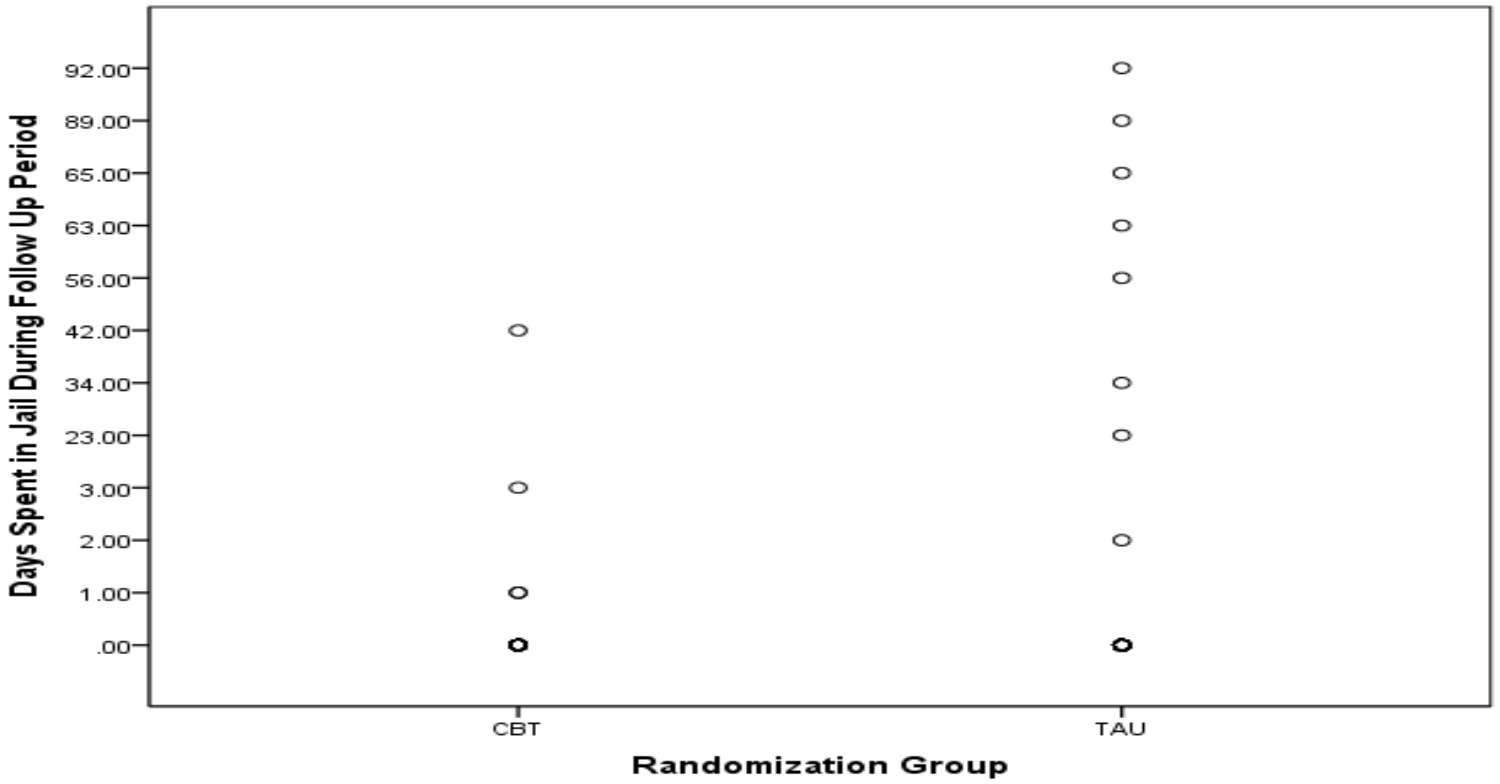
pFWE=.05

TAU Stroop Post > Pre



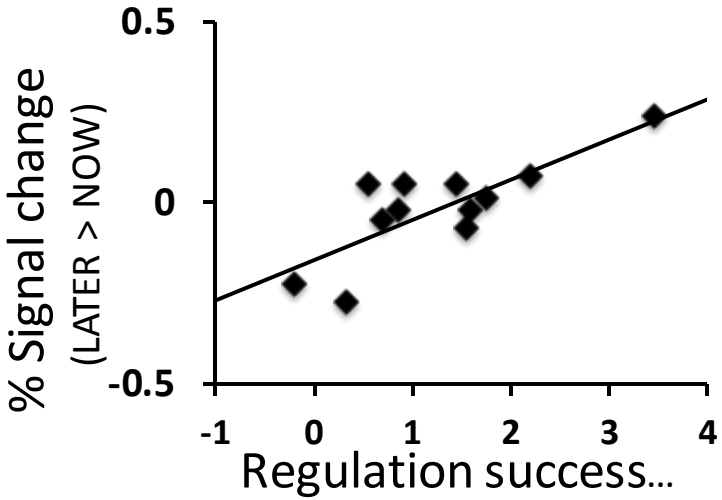
X-=21

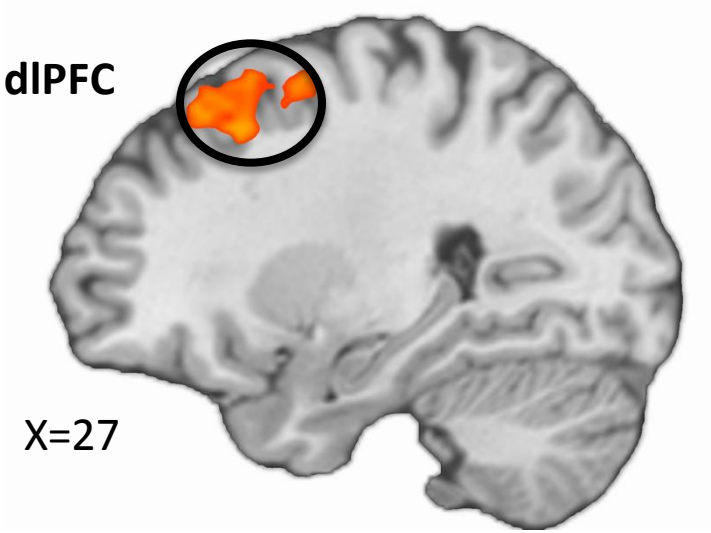
Days in jail during 6 month follow-up by treatment condition (P<.05)



Kober Regulation of Craving Task: Preliminary data data, N=11

Increases in dlPFC activity correlate with decreased craving (effective regulation)





pFWE=.05

Activity in dorsolateral PFC correlates with regulation success:
Greater activity pre-treatment →
Better regulation → Lower craving

Status: CBT4CBT

- Completed:
  2 RCTs indicating efficacy and durability of CBT4CBT
  - No treatment related adverse effects
  - Variety of populations: Outpatient, methadone maintenance, and VA
  - Demonstration of skill acquisition, cost effectiveness and durability

- Ongoing:
  - P50 Center: Enhance CBT4CBT outcome with galantamine (placebo controlled RCT), fMRI, neurocog, genetics (RNP, Bridgeport)
  - Evaluation of HIV module on drug/sex risk reduction (Hartford Dispens)
  - Man versus Machine: CBT4CBT versus traditional therapist delivery (SATU)
  - New R01 (Potenza)/Carroll): Neural mechanisms of the Sleeper Effect
  - Validation of alcohol-only versions (SATU)

- Initiated January 2014 randomized trial of Spanish version (Paris, Silva, Anez, Ortega)

CBT4CBT :: Reconociendo los desencadenantes - Windows Internet Explorer provided by Yale Managed Workstation

http://test.cbt4cbt.10speedlabs.net/contents/page/52

File Edit View Favorites Tools Help

Favorites Web Slice Gallery

CBT4CBT :: Reconociendo los desencadenantes

Reconocer Evitar Manejar

CBT4CBT Computer Based Training for Cognitive Behavioral Therapy

Salir

Temas Prácticas Ayuda

Temas

- Reconociendo los desencadenantes
  - Hola
  - Lecciones de hoy
  - ¿Qué harías tú?
  - Piénsalo
  - ¿Viste la diferencia?
  - Pregúntate
  - Inténtalo
  - Sigue practicando
  - Hasta pronto
- Haciendo valer tu punto de vista
- Manejando el deseo de beber o consumir
- Para y piénsalo bien
- Resolviendo los problemas
- Nadando contra la corriente
- Practicando responsabilidad

Página Principal > Reconociendo los desencadenantes

Reconocer Evitar Manejar

Página Principal Reiniciar Tema

Ayuda Reiniciar Página

Pág. 5 de 27

Done Internet 100%

start Silva, Michelle - Outlo... CBT4CBT :: Reconoci... Document1 [Compati... 9:37 AM

Potential uses of computer-assisted therapies

- Extending treatment benefits/ links to aftercare
- Clinician extenders
- Additional patient support
- Ongoing monitoring/relapse prevention
- Address overlooked issues (smoking)
- Linking systems of care
- Behavioral platforms for pharmacotherapies
- Early intervention/prevention for mild cases

Thanks.

What's next? Integration in clinical practice, research on effectiveness in other settings:

- Kathleen.carroll@yale.edu
- Links to our work in therapy development, manuals, traiing tapes, publications: www.pdc.yale.edu
- More information on CBT4CBT and access to demo:
- CBT4CBT.com

Improving substance abuse treatment outcomes with contingency management: A focus on the CJ population

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Professor of Medicine
University of Connecticut Health Center

Supported by NIH grants P30-DA023918, P50-DA09241, R01-DA13444, R01-DA016855, R01-DA14618, R01-DA018883, R01-DA022739, R01-DA027615, P60-AA03510

Outline

1) Punishers and reinforcers
2) Prize CM
3) CM for criminal justice system populations

Punishers are most often used in substance abuse treatment

Examples of positive reinforcers used in substance abuse treatment

AA

- coffee, food
- group recognition and approval
- 30-day pins/certificates
- act as sponsor for others

Out-patient treatment

- certificates, praise

Methadone maintenance

- take-home doses
- early dosing windows

Why are reinforcers and punishers often ineffective in changing substance use?

- Often, behaviors are not specifically defined.
- The same reinforcers and punishers may be provided for a variety of different behaviors.
- Consequences may not be applied for each instance of the behavior.
- Tangible reinforcers are rarely utilized.

Although both can be effective, everyone would rather receive reinforcers rather than punishers.

Contingency management principles

1.) Frequently monitor a specific *objective* target behavior.

2.) Provide tangible positive reinforcement each time the target behavior occurs.

3.) Withhold reinforcement if the target behavior does not occur (slight punisher).

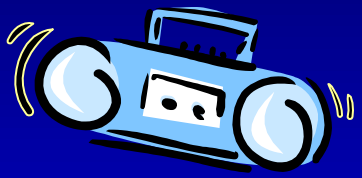
Prize-based contingency management (CM)

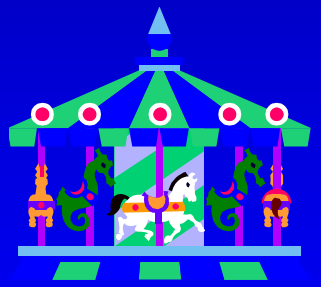
Reinforce abstinence frequently (2-3 times per week):

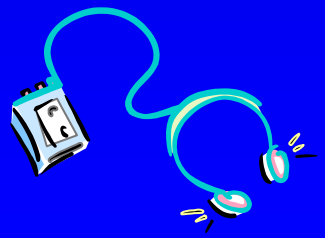
- One draw for each negative sample provided.
- Draws escalate for consecutive negative samples.

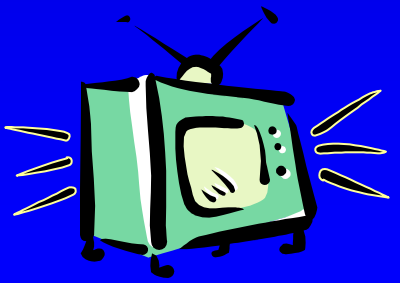
Half the cards are winning

- ~1/2 chance of winning a small $1 prize
- ~1/13 chance of winning a large $20 prize
- 1/500 chance of winning a jumbo $100 prize



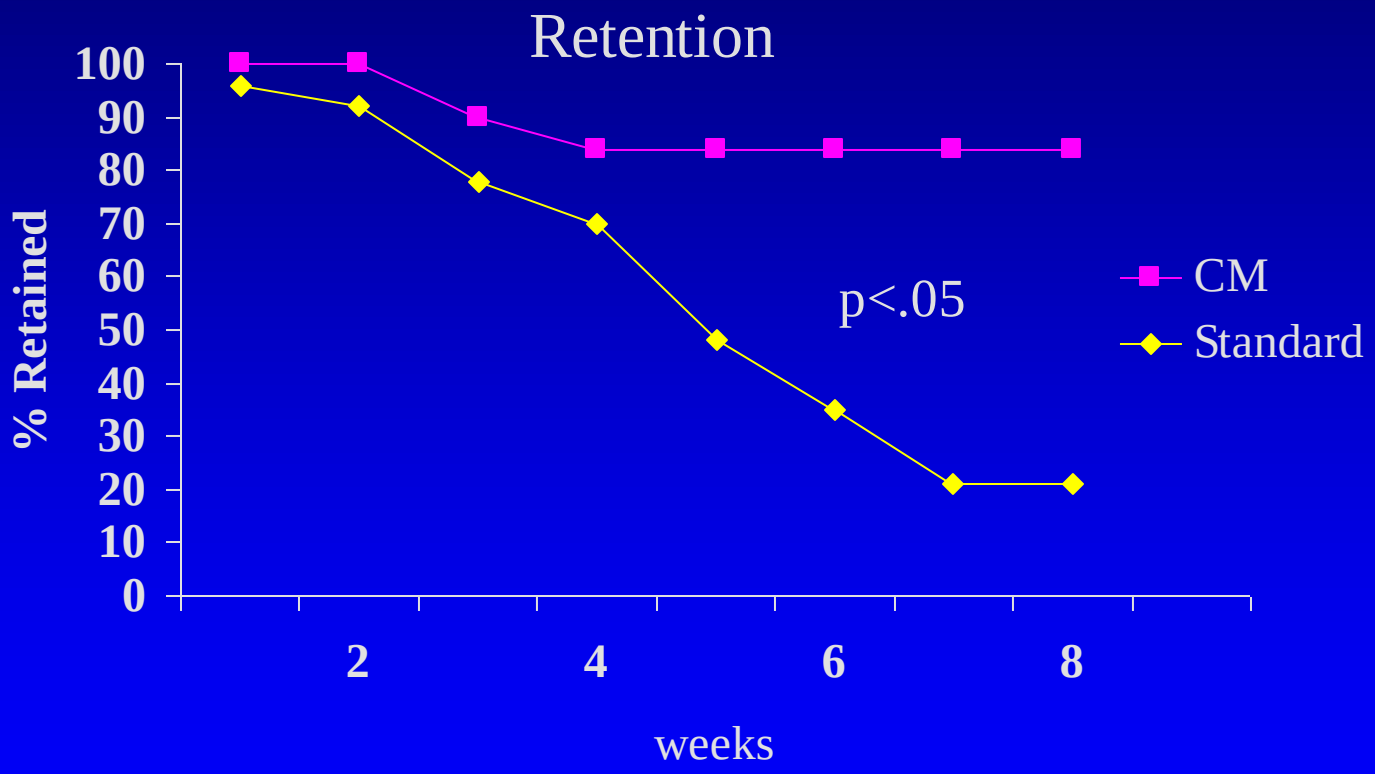






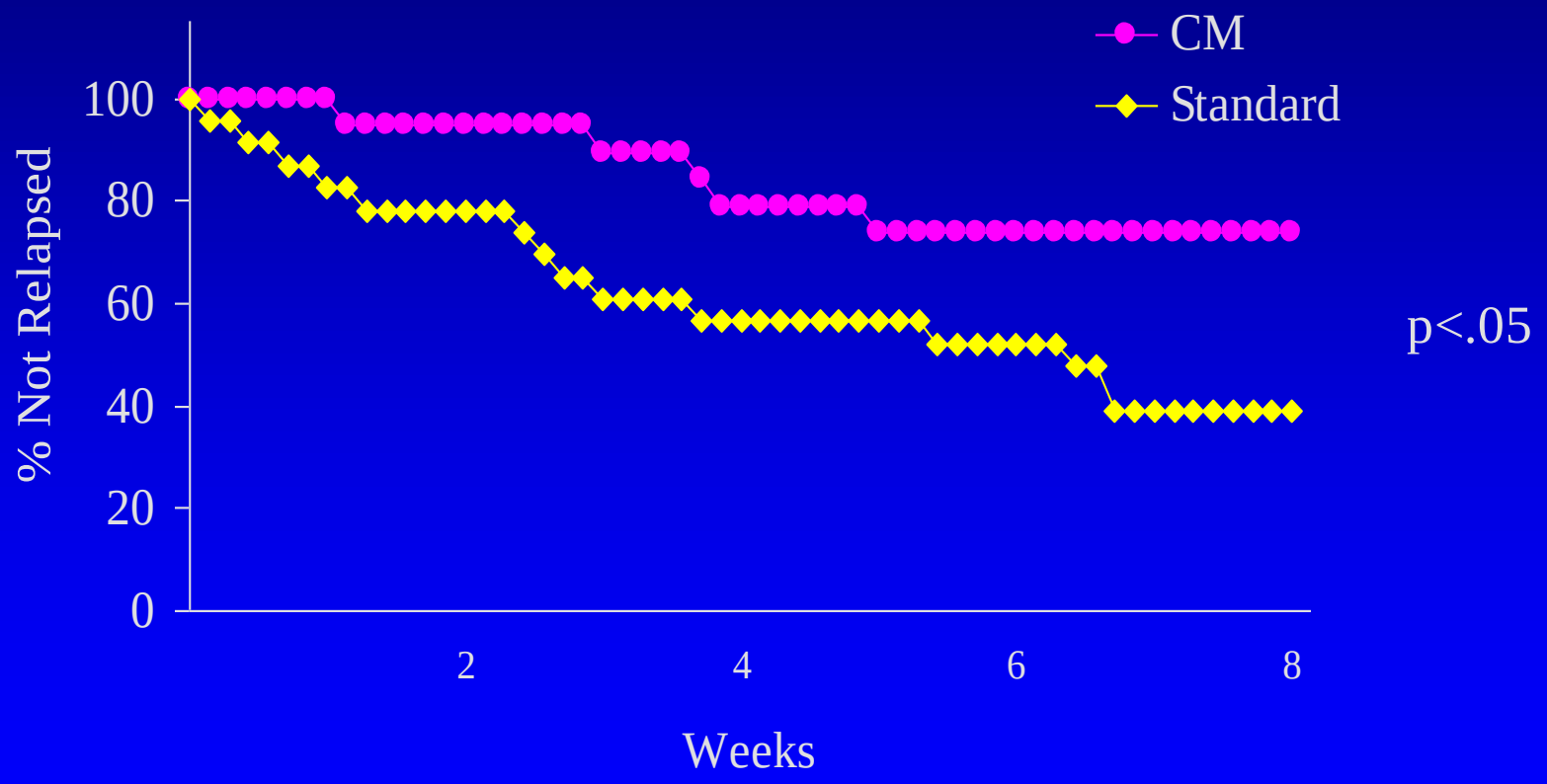
Sample cabinets

Initial study with alcohol dependent patients



Petry, Martin, Cooney, & Kranzler (2000). Journal of Consulting and Clinical Psychology

Time until first heavy drinking episode



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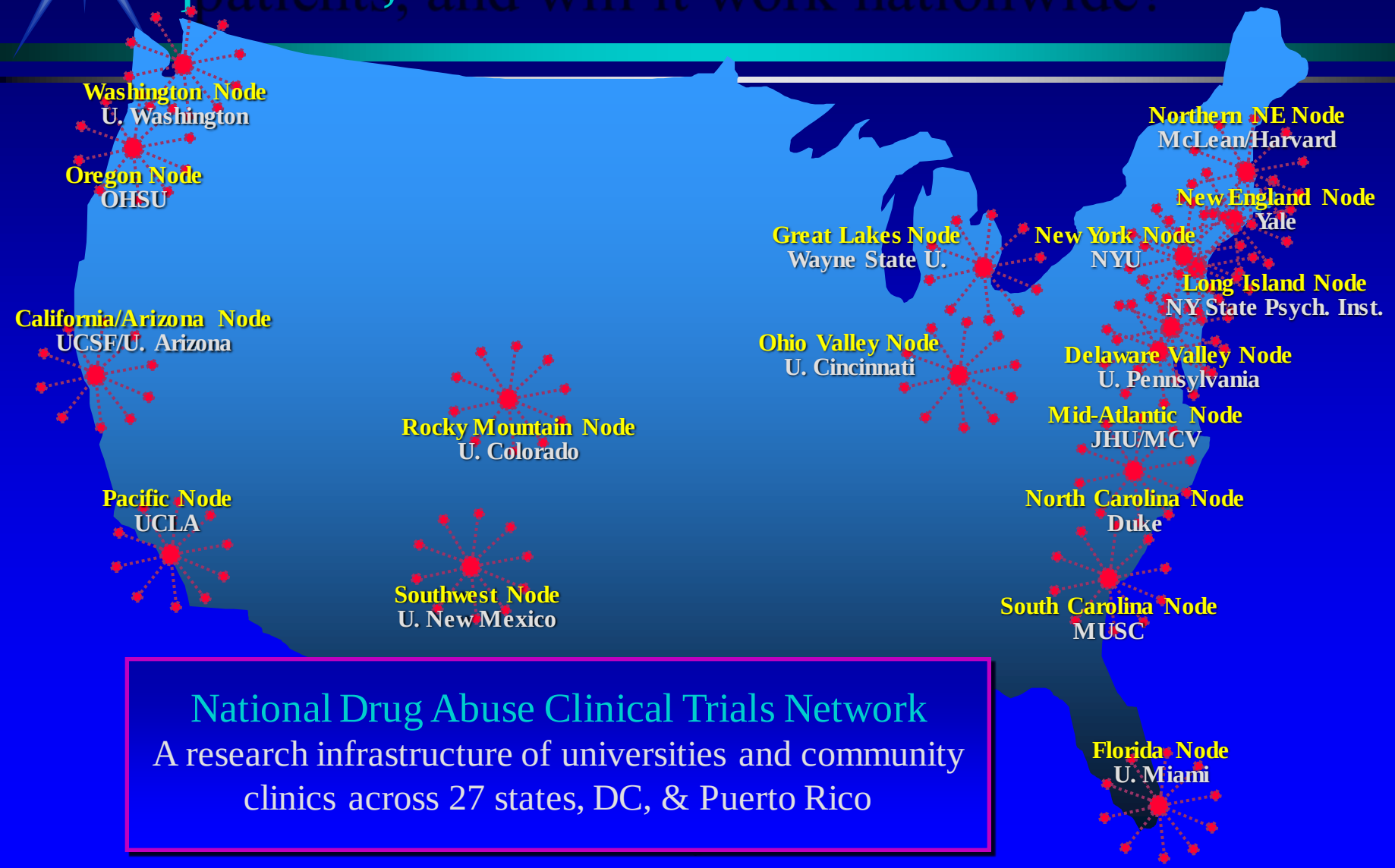
Petry, Martin, Cooney, & Kranzler (2000). Journal of Consulting and Clinical Psychology

Does prize CM work with cocaine-dependent patients, and will it work nationwide?

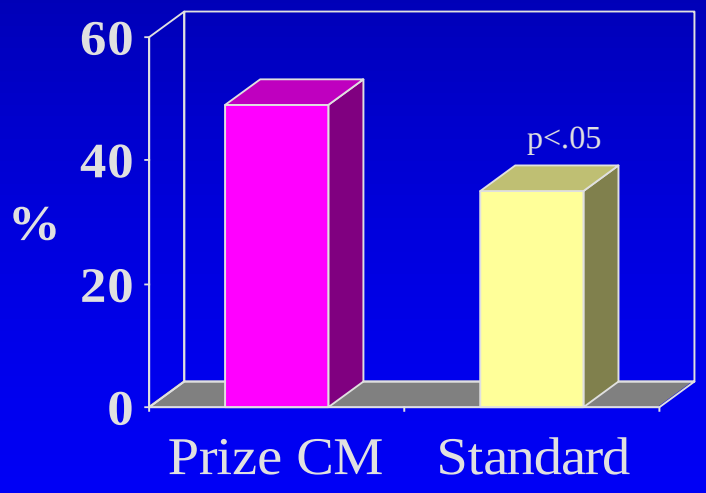


National Drug Abuse Clinical Trials Network

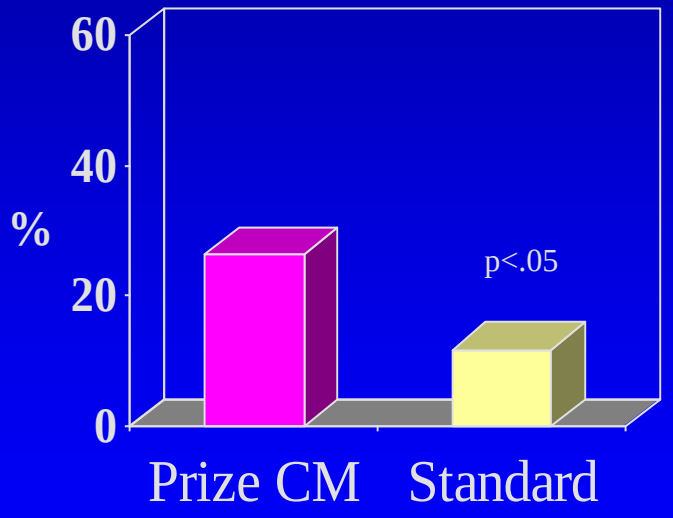
A research infrastructure of universities and community clinics across 27 states, DC, & Puerto Rico

Results from CTN outpatient sample

Remained 12 weeks in treatment

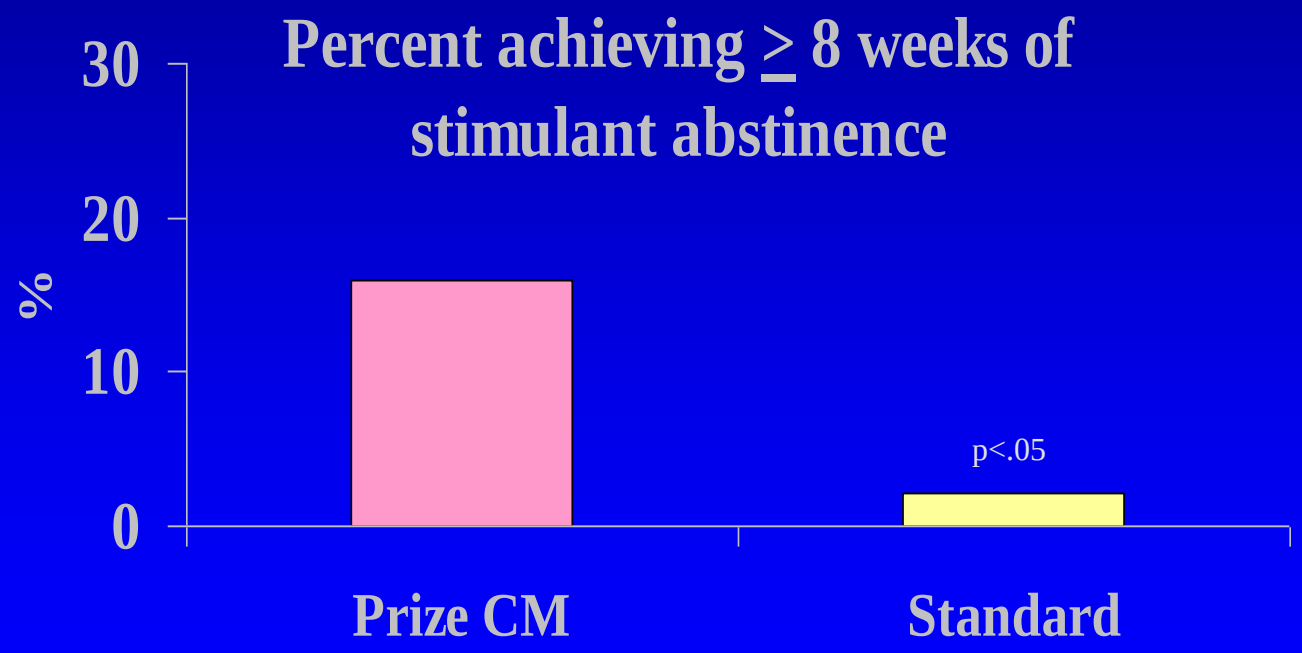


≥8 Weeks of stimulant abstinence



Petry et al. (2005). Archives of General Psychiatry

CTN methadone sample



Peirce et al. (2006). Archives of General Psychiatry.

Section summary

- Prize CM enhances abstinence from:
  - Alcohol (Petry et al., 2000)
  - Smoking (Alessi et al., 2008; Ledgerwood et al., in press)
  - Marijuana (Kadden et al., 2007; Litt et al., 2013)
  - Stimulants, including methamphetamine (Petry et al., 2003,2005ab,2006,2011,2012abc; Roll et al., 2006)
  - Polydrug use, including in opioid-dependent samples (Ghitza et al., 2008; Peirce et al., 2006; Petry et al., 2002,2005c,2007,2012c).
- Costs are reasonable (about $50-$200/patient), and prize CM is cost-effective (Lott & Jencius, 2009; Olmstead et al., 2007ab,2009; Sindelar et al., 2007ab).
- Further dissemination of prize CM interventions into usual care treatment is ongoing.
  - The VA is implementing CM nationwide (Petry et al., in press).

CM in criminal justice system populations

CM in CJ patients (Sinha et al., 2003)

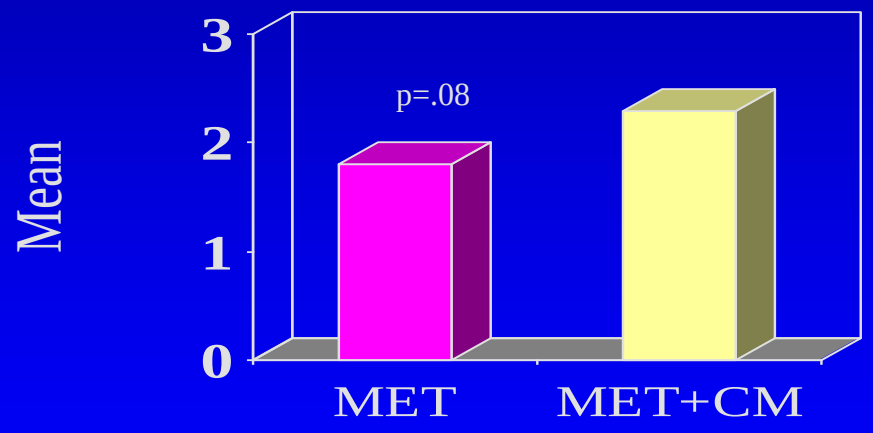
Young marijuana users are difficult to engage in treatment, even when referred by CJ systems.

65 probation referred marijuana users

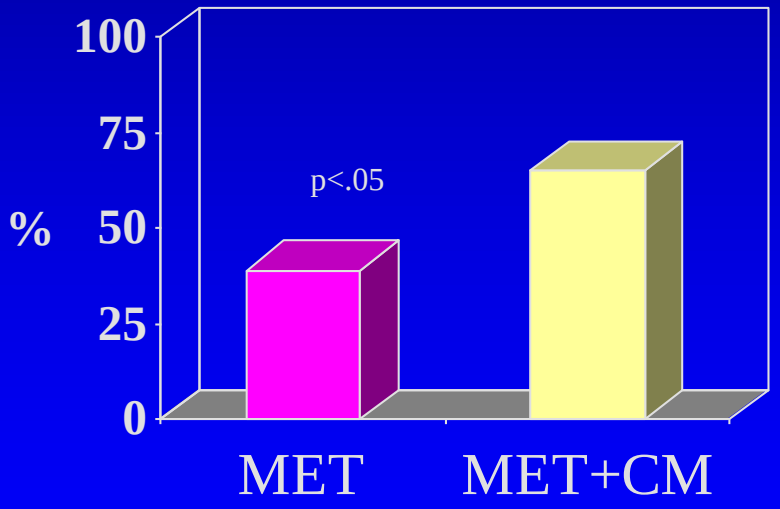
- Mean age 20±2 years
- 93% male
- 77% minority
- 74% unemployed
- 59% did not complete high school

Results

Sessions attended



Attended all sessions



Sinha et al. (2003).

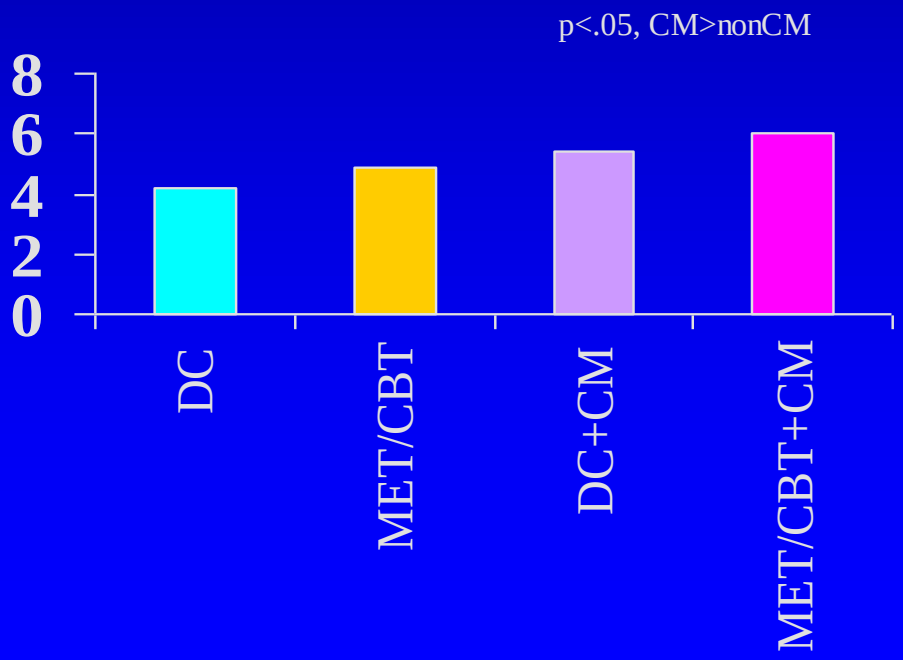
CM in CJ patients (Carroll et al., 2006)

136 probation referred marijuana users

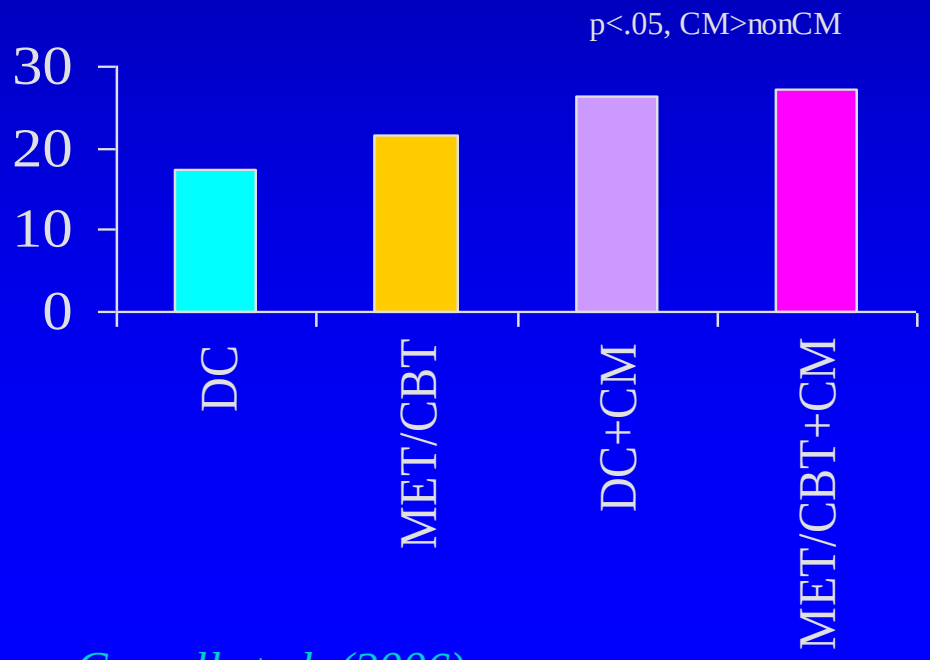
- Mean age 21±2 years
- 89% male
- 75% minority
- 47% did not complete high school
- 23% with alcohol use diagnosis
- 44% with antisocial personality disorder

Results

Sessions attended



Longest duration THC abstinence (days)



Carroll et al. (2006).

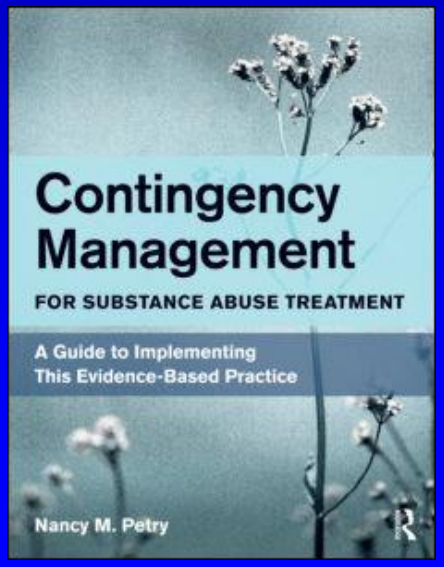
Summary

- CM is effective for treating substance use, even in difficult criminal justice system populations.
- Adoption of positive reinforcement procedures may hold promise for improving outcomes in the criminal justice system itself.

For more information, visit:

http://contingencymanagement.uchc.edu/

Manuals are available for how to deliver CM.



For a step-by-step guide to designing CM programs for clinical settings:

Petry, N.M. (2011). *Contingency Management for Substance Abuse Treatment: A Guide to Implementing this Evidence-based Treatment.* Routledge: New York.

Q & A

National Criminal Justice Association

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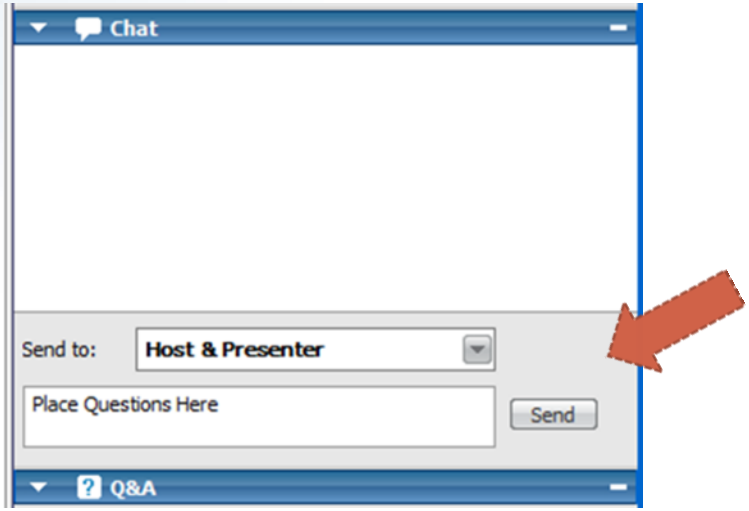

Q & A

Moderator

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Policy Analyst
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Presenters

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