

*Promoting Awareness of Motivational  
Incentives*

# **Successful Treatment Outcomes Using Motivational Incentives**

# Today's PAMI Panelists

- Maxine Stitzer, Ph.D./Lead PI MIEDAR CTN Study, John Hopkins University
- John Hamilton, LMFT/Blending Team Member, Berke Associates
- Lonnetta Albright, Chair – PAMI Blending Team/Director Great Lakes ATTC

# Today's Objectives

- Preview PAMI product
- Review the research
- Discuss clinical implications
- Demonstrate the technology
- Announce dissemination strategies

**MIEDAR**  
NIDA Research



# Motivational Incentives for Enhanced Drug Abuse Recovery

**Hand-Off  
Meeting**

A Blending Team - researchers, providers, and  
Addiction Technology Transfer members is  
formed to address critical needs in the  
treatment field



**Blending  
Team**

Develops products  
for use in the field



**PAMI**  
Promoting Awareness  
Of  
Motivational Incentives

# PAMI Awareness Campaign Package

- Incorporates a multi-media approach
- Supported by research
- Highlights MIEDAR NIDA-CTN study results including Fishbowl Technology
- CD-ROM interface

# CD-ROM Elements

- Video
- Presentations (Policy Makers and Clinicians)
- Tool Kit
- Resources

# **Course Content**

**Why Motivational Incentives**

**Definitions**

**History**

**Founding Principles**

**Low Cost Incentives**

**Clinical Applications**

# Tool Kit

- Sample tools
  - Fundraising ideas
  - Activities
  - Reward Receipt Record
  - Tickets
  - Policy and Procedures
- Letter to Single State Authorities

# Resources

- 7 Principles of Motivational Incentives
- Frequently Asked Questions
- Graphs
- Articles
- Annotated Bibliography
- Research Order Form

# Considerations for Agency Directors

- Requires minimum investment for increased retention
- Adoption of an evidence-based practice
- Requires limited training for staff
- Motivates staff (possible retention)
- Provides a fun environment
- Promotes teamwork

# Considerations for Policy Makers

- Requires minimum investment to reduce client drug use
- Encourages people to stay in treatment longer
- Helps to reduce societal costs
- Requires minimal training to implement technique

# Considerations for Clinical Staff

- Allows staff and clients the opportunity to recognize successful treatment outcomes
- Provides a tool to help clients achieve goals
- Encourages participation with ancillary services
- Leads to increased retention
- Leads to reduced drug use

# Core Principles

- Identify The Target Behavior
- Choice of Target Population
- Choice of Reinforcer
- Incentive Magnitude
- Frequency of Incentive Distribution
- Timing of Incentive
- Duration of the Intervention

# Low Cost Incentives

- **MIEDAR** studies focused on managing the cost and efficacy of incentives
- **Fishbowl Drawing Method**—clients select a slip of paper from a fish bowl
- Behavior is rewarded immediately
- Client draws from the fish bowl immediately after a negative urine screen
- Client exchanges prize slip for a selected prize from the cabinet

# Low Cost Incentives

To help manage the cost, half of the slips offer a “good job” reward and the other half are winners of prizes as follows:

- $\frac{1}{2}$  – Small prize (\$1)
- $\frac{1}{16}$  – Medium prize (\$20)
- $\frac{1}{250}$  – Jumbo prize (\$100)

# Bibliography

- **Bigelow, G.E., Stitzer, M.L., Liebson, I.A. (1984).** The role of behavioral contingency management in drug abuse treatment. *NIDA Research Monograph*; 46:36-52.
- **Higgins, S.T., Petry, N.M. (1999).** Contingency management. Incentives for sobriety. *Alcohol Research and Health*.
- **Higgins, S.T., Delaney D.D., Budney, A.J., Bickel, W.K., Hughes J. R., Foerg, F., Fenwick, J.W. (1991).** A behavioral approach to achieving initial cocaine abstinence. *American Journal of Psychiatry* v148 n9.
- **Higgins, S. T., & Silverman, K. (1999).** Motivating behavior change among illicit-drug abusers: Research on contingency-management interventions. *American Psychological Association*: Washington, D.C.
- **Petry, N. M., & Bohn, M. J. (2003).** Fishbowls and candy bars: Using low-cost incentives to increase treatment retention. *Science and Practice Perspectives*, 2(1), 55 – 61.
- **Petry, N.M., Peirce, J., Stitzer, M.L., et al. (2005).** Prize-Based Incentives Improve Outcomes of Stimulant Abusers in Outpatient Psychosocial Treatment Programs: A National Drug Abuse Treatment Clinical Trials Network Study. *Archives of General Psychiatry*,62:1148-1156.

# PAMI Blending Team

**Lonnetta Albright**, Chair - Great Lakes ATTC

**John Hamilton**, MFT –Berke Associates, Inc.

**Scott Kellogg**, Ph.D. – Rockefeller University

**Therese Killeen**, RN, Ph.D. – Medical University of South Carolina

**Amy Shanahan**, M.S. Northeast ATTC

**Anne-Helene Skinstad**, Ph.D. – Prairielands ATTC

## ADDITIONAL CONTRIBUTORS

**Maxine Stitzer** Ph.D., CTN PI – Johns Hopkins University

**Nancy Petry** Ph.D. – University of Connecticut Health Center

**Candace Peters**, MA, CADC- Prairielands ATTC

**Z-3 Concepts** – Video Production Company

# Products Availability

- Products Completed
  1. Buprenorphine Treatment: Training for Multidisciplinary Addiction Professionals
  2. Short-Term Opioid Withdrawal Using Buprenorphine
  3. S.M.A.R.T. Treatment Planning: Utilizing the Addiction Severity Index (ASI)
- In Development
  4. Motivational Interviewing Assessment: Supervisory Tools for Enhancing Proficiency (MIA:STEP)
  5. Promoting Awareness of Motivational Incentives (PAMI)

# Motivational Incentives: From Research to Practice

Maxine L. Stitzer, Ph.D.  
PI, Mid Atlantic Node  
NIDA CTN

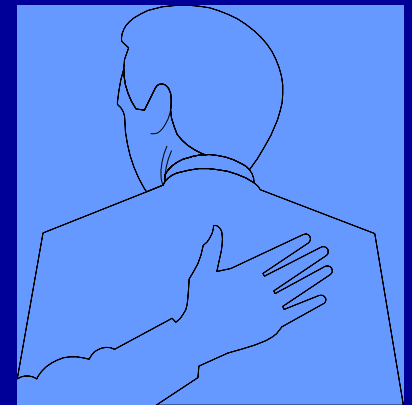
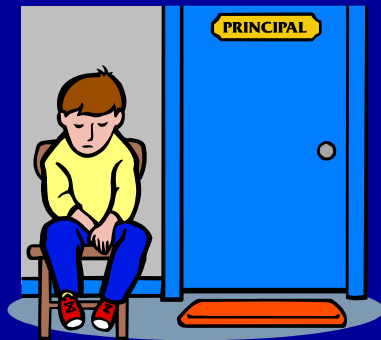
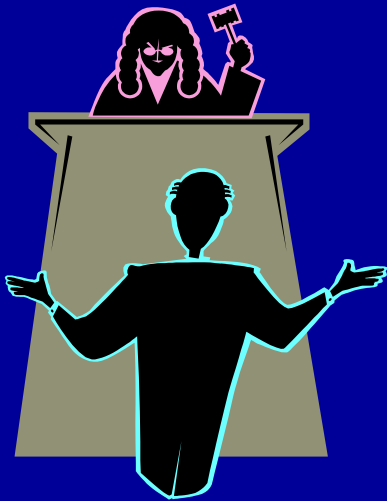
NIDA Blending Conference  
Seattle, WA  
October 17, 2006

# Outline

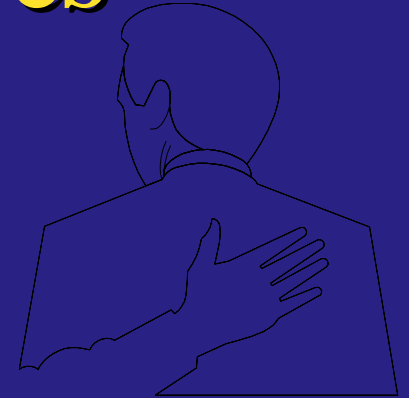
- History of Motivational Incentives in drug abuse treatment
- Results of CTN MIEDAR study
  - main findings, subgroup analyses
- Dissemination implications

# Behavior is changed by consequences

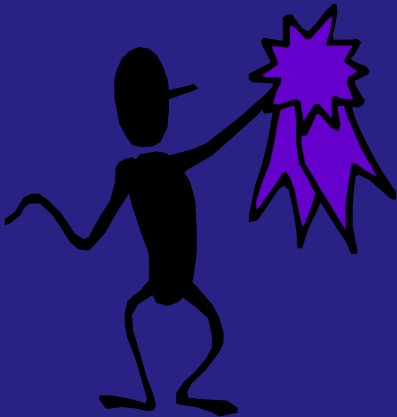
- Rewards increase desired behavior
- Punishment and sanctions decrease undesired behavior



# Motivational Incentives



**Making treatment a more attractive option through positive reinforcement of behavior change**

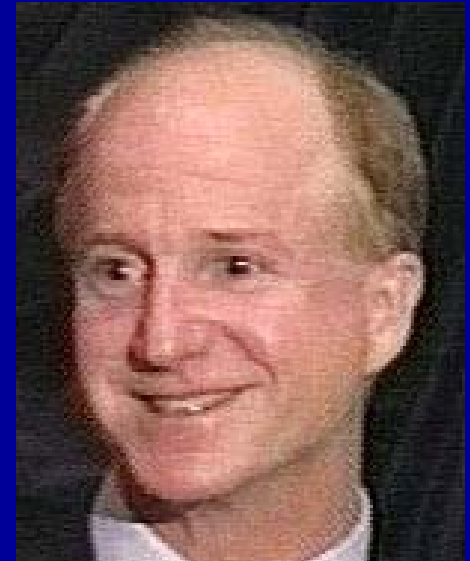


# Origin of Incentives Research

- Stitzer and colleagues in 1980's demonstrate that methadone take-home incentives and monetary rewards, when delivered contingent on desired behavior change, could improve outcome of methadone maintenance patients.
  - Counseling attendance
  - On-going drug use
  - On-time fee payments

# Voucher Reinforcement: Making sustained abstinence an attractive option

- Points earned for cocaine negative urine test results
  - Trade in points for goods
  - Escalating schedule with reset penalty
  - \$1000 + available over 3 months



Steve Higgins

# Voucher Reinforcement

- Elegantly incorporates behavioral principles designed to initiate & sustain abstinence
- Substantial efficacy demonstrated in controlled trials

BUT

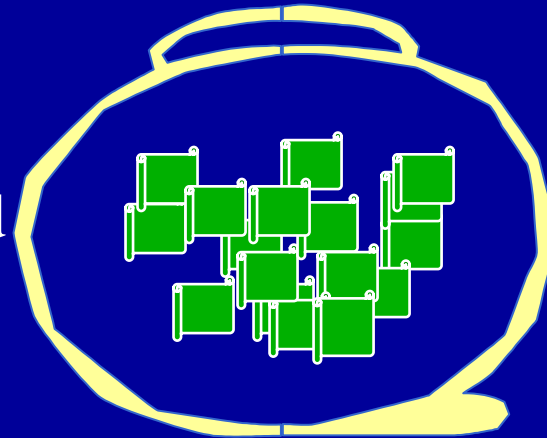
- Sample sizes were small
- Intervention costs are high

# Nancy Petry's Fishbowl Method Reduces Cost

Incentive = draws from a bowl

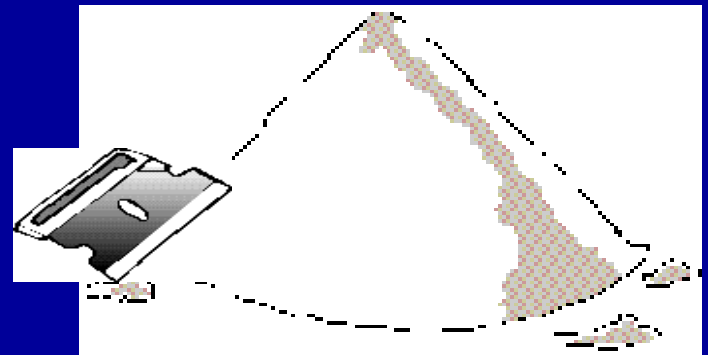
QuickTime™ and a  
Photo - JPEG decompressor  
are needed to see this picture.

- Draws earned for each negative urine or BAC
- Not all draws earn prizes
- Prize values are inversely related to draw probability



# CTN MIEDAR Study in Outpatient Psychosocial Counseling Treatment

- Randomized controlled trial completed at 8 clinics nationwide
- Sample = 415 stimulant abusers (cocaine; methamphetamine)
- 3-month evaluation of usual care with and without added incentive program



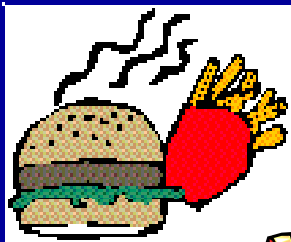
# Draws Escalate with Stimulant and Alcohol-Free Test Results Bonus draws for opiate and marijuana-negative



# Fishbowl Method: Half the chips are winners

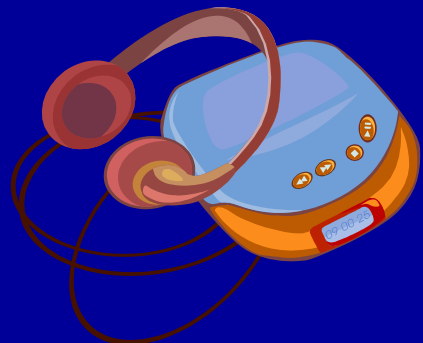
42%

**SMALL**  
(\$1 items)



8%

**LARGE**  
(\$20 items)



# Total Earnings

- \$400 in prizes could be earned on average
  - If participant tested negative for all targeted drugs over 12 consecutive weeks



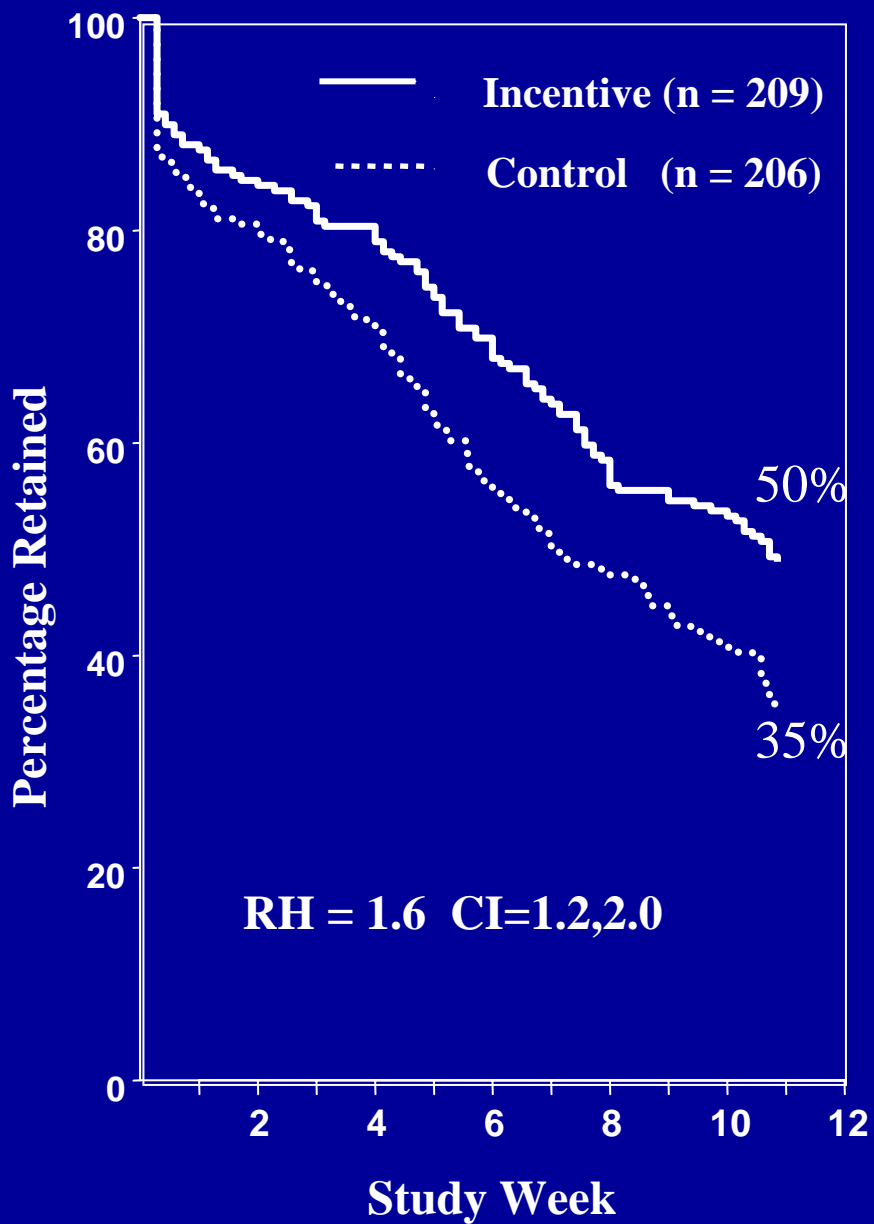
## PATICIPANT DEMOGRAPHICS (N = 415)

FEMALE	55%
MINORITY	58%
AGE (mean yrs)	36
EDUC (mean yrs)	12
EMPLOYED	35%
PROB/PAROLE	36%
CONTROLLED ENV	29%

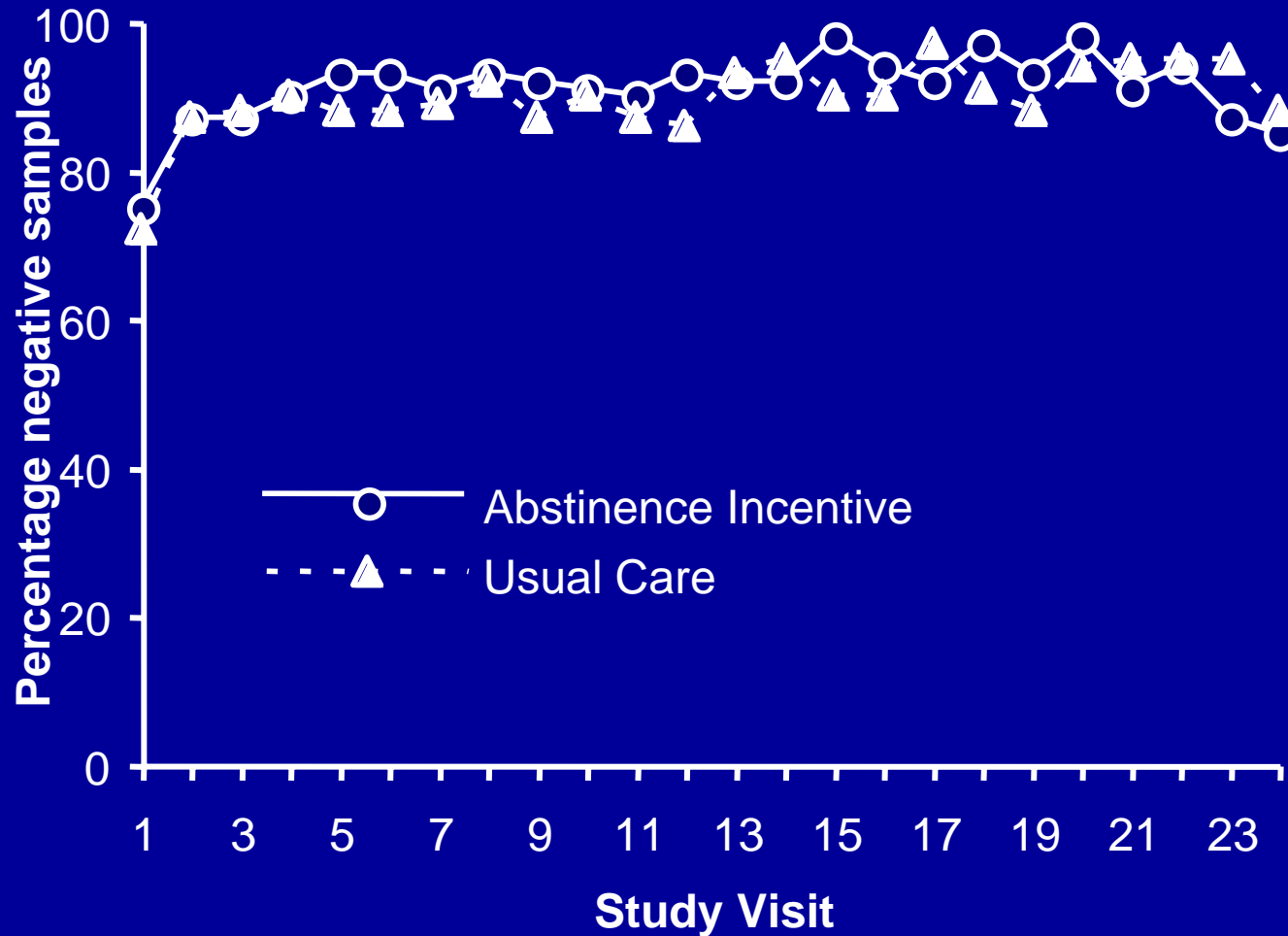
# Outpatient Psychosocial Treatment: MIEDAR Study Results

Petry et al., Archives of General Psychiatry 62, 1148-56, 2005

# Incentives Improve Retention in Counseling Treatment



# Percent of Submitted Samples Stimulant and Alcohol Negative



# Effects on Abstinence Duration

	<u>Incentive</u>	<u>Control</u>	<u>Stats</u>
LDA (mean wks)	4.4	2.6	p<.001
Consecutive Weeks of Abstinence (%)			
≥ 4	40	21	2.48 (1.6-3.8)
≥ 8	26	12	2.69 (1.6-4.6)
≥ 12	19	5	4.48 (2.2-9.2)

# Psychosocial Counseling Study

- Abstinence incentives were effective in treatment of stimulant abusers
  - Better retention
  - Prolonged durations of in-treatment abstinence

# New Analyses

- 1) Did incentives work with the methamphetamine abusers?
- 2) What characteristics predicted outcome?
- 3) Was there any adverse impact on gambling behavior?

# Methamphetamine Subsample (n = 113)

*Roll et al. Am. J. Psychiat, in press*

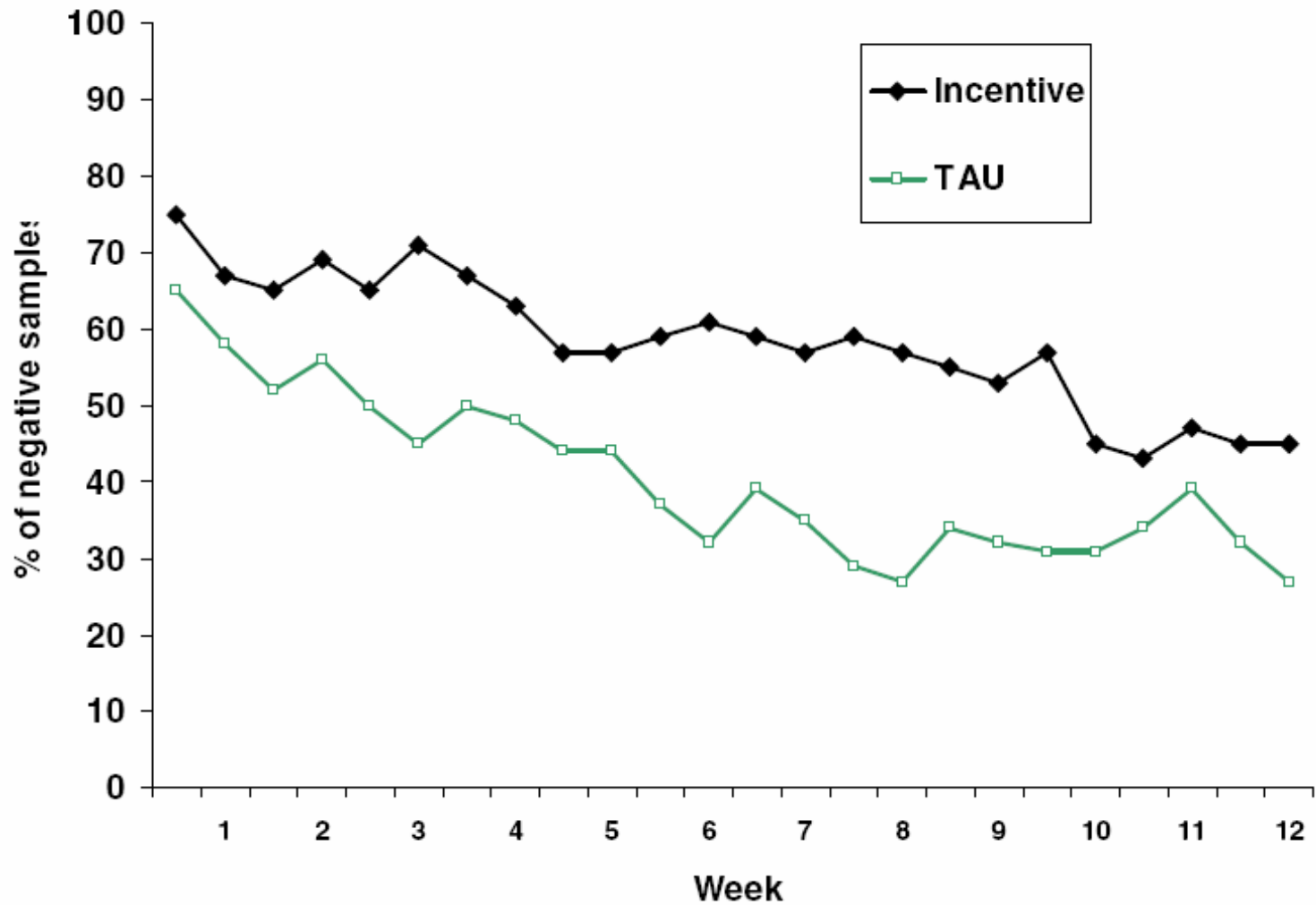
## Effects on retention

<u>Outcome measure</u>	<u>Incentive</u> (N = 51)	<u>Control</u> (N = 62)
Retained 12 weeks (%)	55	39
Cox survival ns	HR = 1.51 (CI = .90-2.54)	

# Methamphetamine Users: Effects on Drug Use

<u>Outcome measure</u>	<u>Incentive</u> (N = 51)	<u>Control</u> (N = 62)
Negative samples (%)	58	42*
LDA (mean wks)	4.6	2.8*
Abstinent throughout (%)	18	6*

# Methamphetamine Users: Percent stimulant negative samples



# Which patients did well on incentives?

- Variables that made no difference:
  - gender, race, age
  - employment, CJ referral, psych history
- Variables that did make a difference:
  - Urine positive versus negative at intake (stimulants, cannabis)

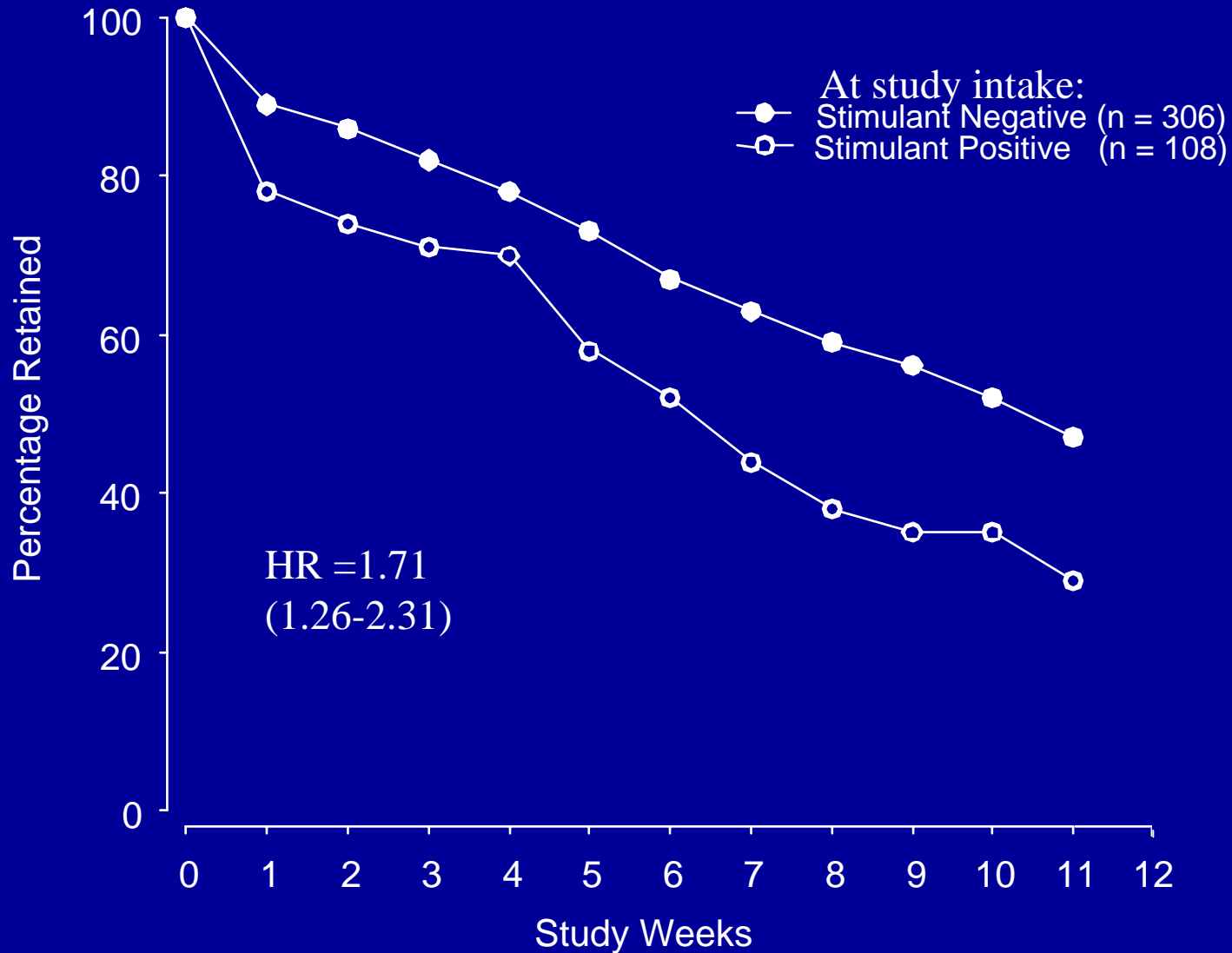
# Analysis Objective

- Examine overall impact of intake stimulant urine test result on treatment outcome
- Determine whether incentive effects differ for those who enter the study with stimulant positive vs negative urines

# Methods

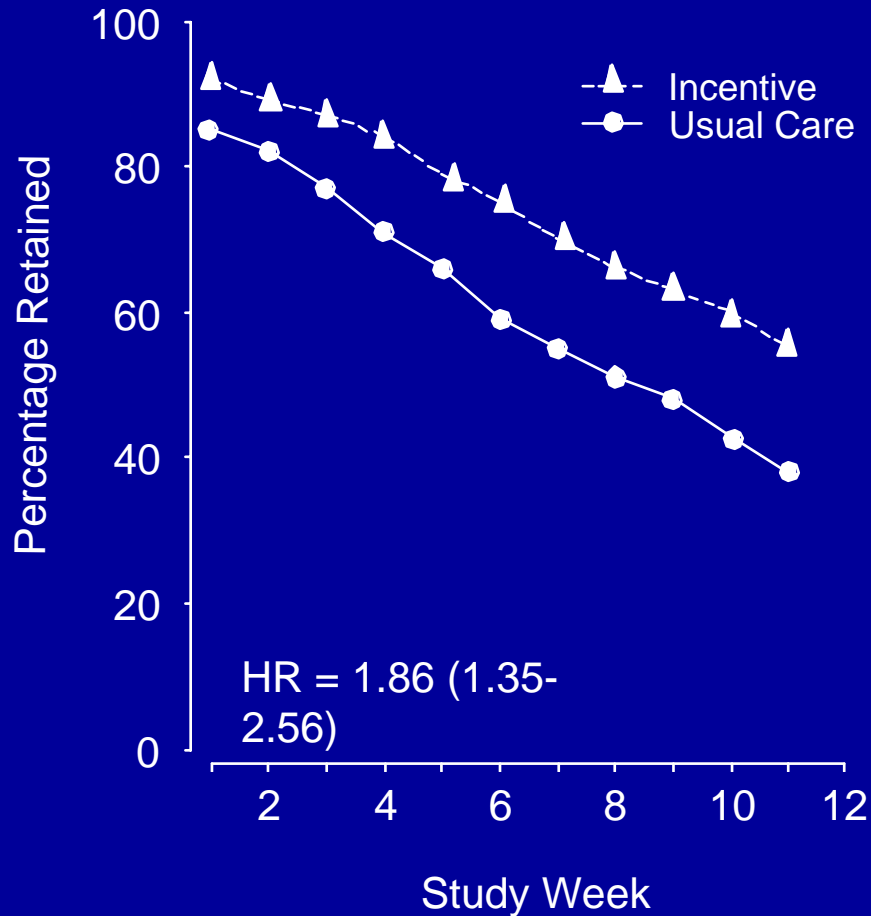
- Group participants according to first study urine result
  - stimulant (meth or coc) positive  $N = 108$
  - stimulant negative  $N = 306$

# Overall Effect on Retention

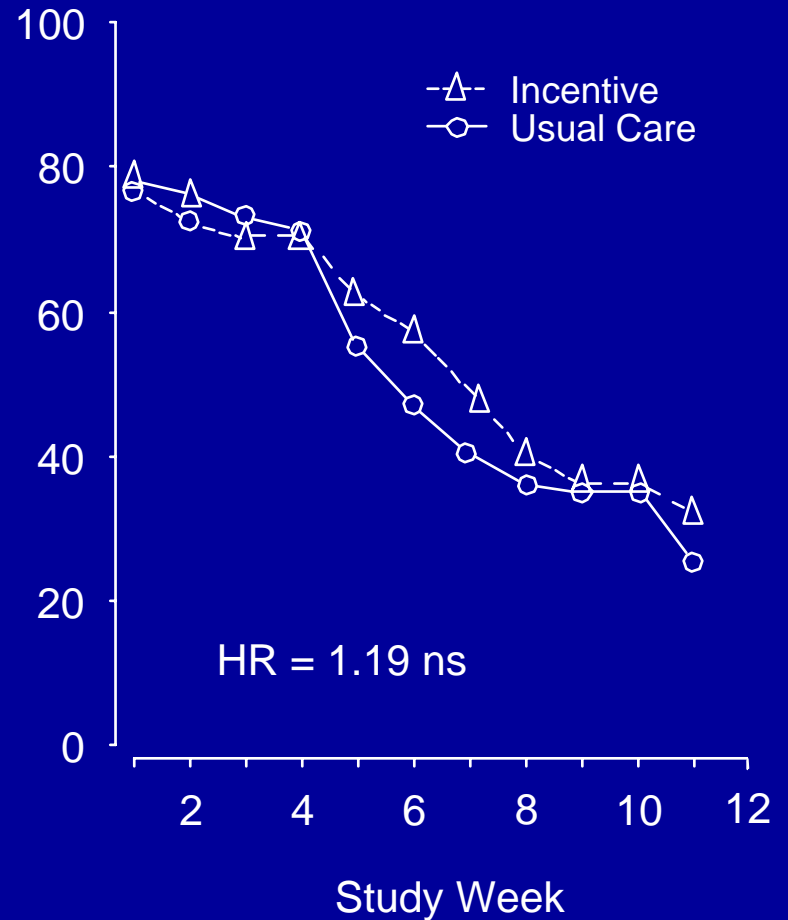


# Effect of Incentives

Stimulant Negative (n = 306)



Stimulant Positive (n = 108)



# Treatment Implications

- Importance of initial urinalysis results in psychosocial counseling programs
  - Positive urine confers poor prognosis
- Why no effect in urine positive clients?
  - No exposure to reinforcers
  - Removed from treatment
  - Zero tolerance clinic culture
- Implications for treatment selection
  - Interventions other than abstinence incentives may be needed for those entering tx stimulant positive

# Concerns About Incentive Programs

- Internal vs external motivation
- Long-term benefits?
- Are there adverse side-effects?

# Influence on Gambling Behavior

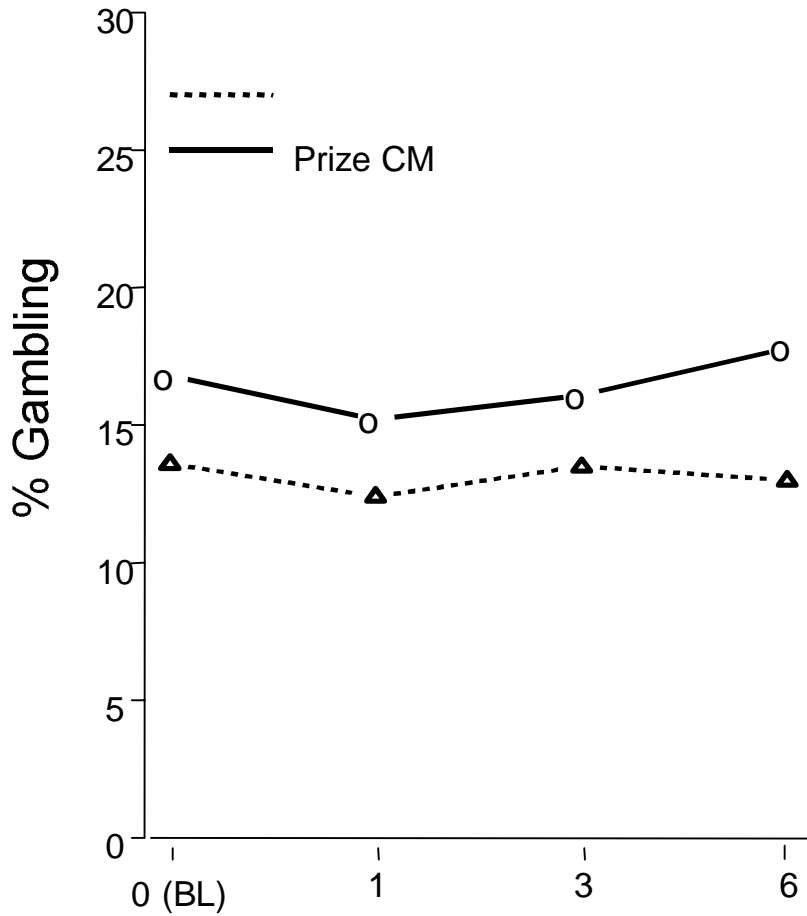
*from Petry et al. Drug & Alcohol Dependence, 2006*

- Concern: Does exposure to prize draw procedure stimulate gambling behavior of substance abusers?
- Data collection (intake, 1, 3, 6 months)
  - number of days gambling (past 30 days)
  - amount spent (among those gambling)
- Analysis
  - methadone vs psychosocial counseling
  - incentive vs control

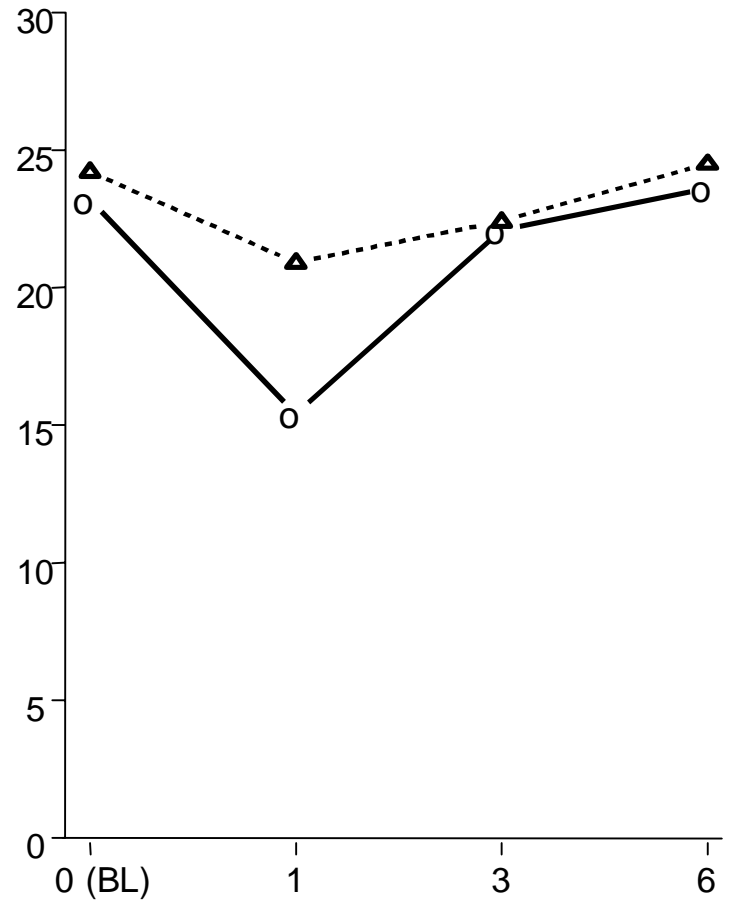
# Gambling Behavior

	<u>Methadone</u>	<u>Psychosocial</u>
% with any gambling	37	26
Mean days per month	5	2
\$ spent per month	\$20	\$10

Non methadone patients (N=415)



Methadone patients (N=388)



Study Month

# Gambling Conclusions

- Amount of gambling modest in both methadone and psychosocial counseling samples
- No adverse impact of exposure to prize draw incentive procedures

# Conclusions from the Research

- Abstinence incentives are safe and effective for cocaine and methamphetamine abusers being treated in community programs

# Incentives Recognized as an Evidence-Based Practice



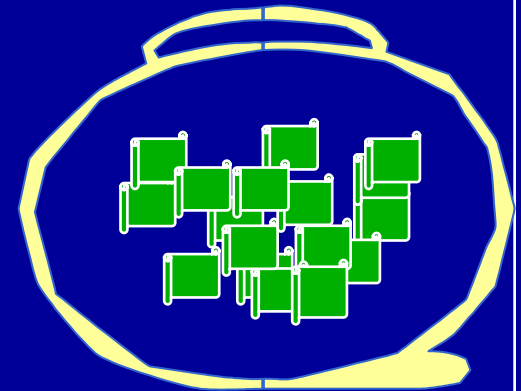
- Have been “endorsed” by NIDA (1999)
- Appear on most every list of evidence-based practices for treating substance use disorders (e.g., ADAI, 2005)
- Has been singled out, along with CBT and MI as being an an effective behavioral therapy (Carroll & Onken, 2005)

# Moving Incentives Into Practice

NIDA/ATTC Blending Team

Awareness Enhancement Campaign

Goal is to fertilize ground for adoption of this evidence-based practice and stimulate innovation



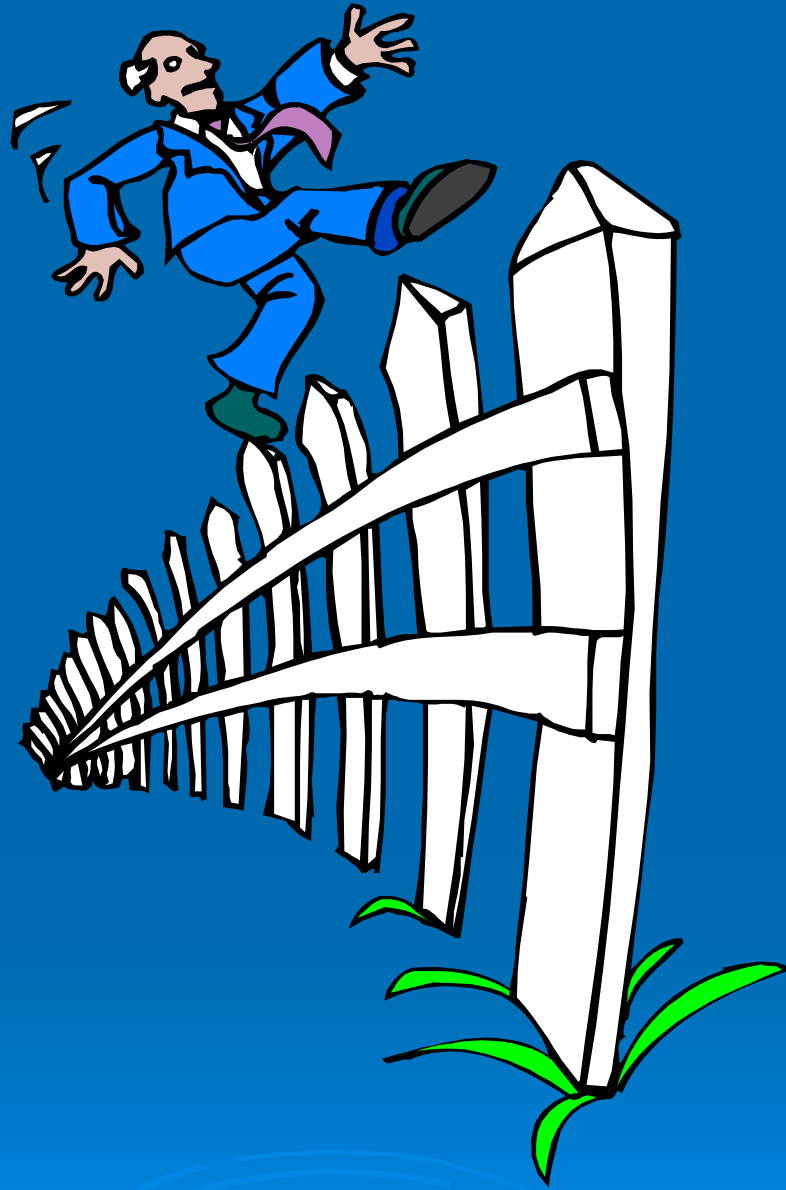
# Acknowledgements

- NIDA CTN for funding
- Nancy Petry, Jessica Peirce for project leadership; John Roll for methamphetamine analysis; Nancy Petry for gambling analysis
- CTP directors and clinicians
- Local research support teams

**In 2003, An Estimated  
21.6 Million Americans  
Were Dependent On or Abused  
Any Illicit Drugs or Alcohol**

**But...Only 3.3 Million (15%)  
of These Individuals  
Had Received Some Type of  
Treatment In the Past Year**

**CONFESSION**



**ABSTINENCE**

**Clinical Result: Ambivalence**

# The Problem: Allure of Immediate Drug Reinforcement



# Solution: Methods to Enhance Motivation for Abstinence

- Natural aversive consequences
  - (“hitting bottom”) ■
- Feedback re problems/consequences
  - Confrontation
  - Motivational Enhancement Therapy
- Positive reinforcement for behavior change

# History

**1960's**

Operant  
Conditioning  
principles  
applied in  
addiction studies

**1970's**

Researchers  
at  
Johns Hopkins  
study  
Operant  
conditioning  
principles with  
alcohol and  
methadone  
patients

STITZER

**1980's**

Researchers at  
University of  
Vermont study  
Contingency  
management  
principles with  
Cocaine &  
Crack Patients

HIGGINS

**1990's**

Magnitude &  
duration of the  
incentive  
program is  
researched

SILVERMAN

**2000's**

Lower-cost  
incentives are  
researched

PETRY

# Contingency management reduces drug use

## ➤ Opioids

(Bickel et al., 1997; Preston et al., 1998)



## ➤ Cocaine

(Higgins et al., 1991, 1993, 1994; Silverman et al., 1996)

## ➤ Benzodiazepines

(Stitzer et al., 1992)

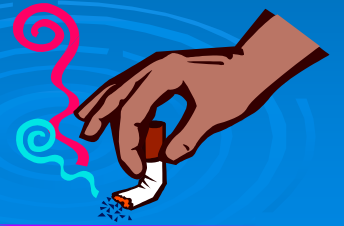
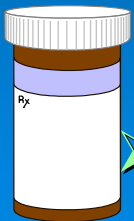


## ➤ Marijuana

(Budney et al., 1991, Budney et al., 2000)

## ➤ Nicotine

(Stitzer & Bigelow, 1984; Roll et al., 1996)



# Positive incentives 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

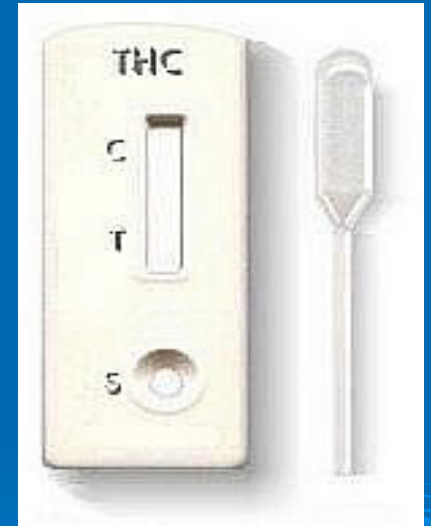
# Choice of Reinforcers

- Food
- Money
- Redeemable Vouchers
- Privileges ■
- Social Reinforcers – verbal praise, attention, physical contact, facial expressions

# Challenges to MIEDAR



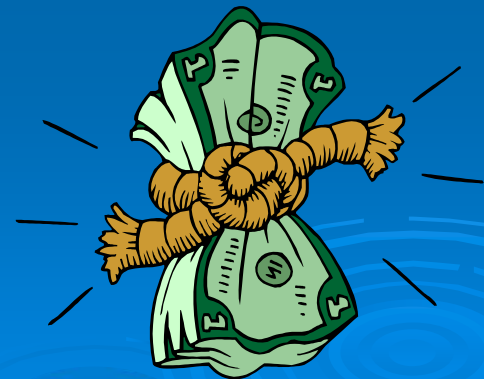
- Cost of incentives
- On-site testing
- Gambling concerns
- Managing prize cabinet
- Counselor resistance



# Abstinence Incentive Costs

Mean cost per patient      \$119

Mean cost/pt/day      ■ \$1.42



# IMPACT OF MIEDAR ON LMG

## ➤ PHILOSOPHY OF CHANGE SHIFT

-TC

-methadone

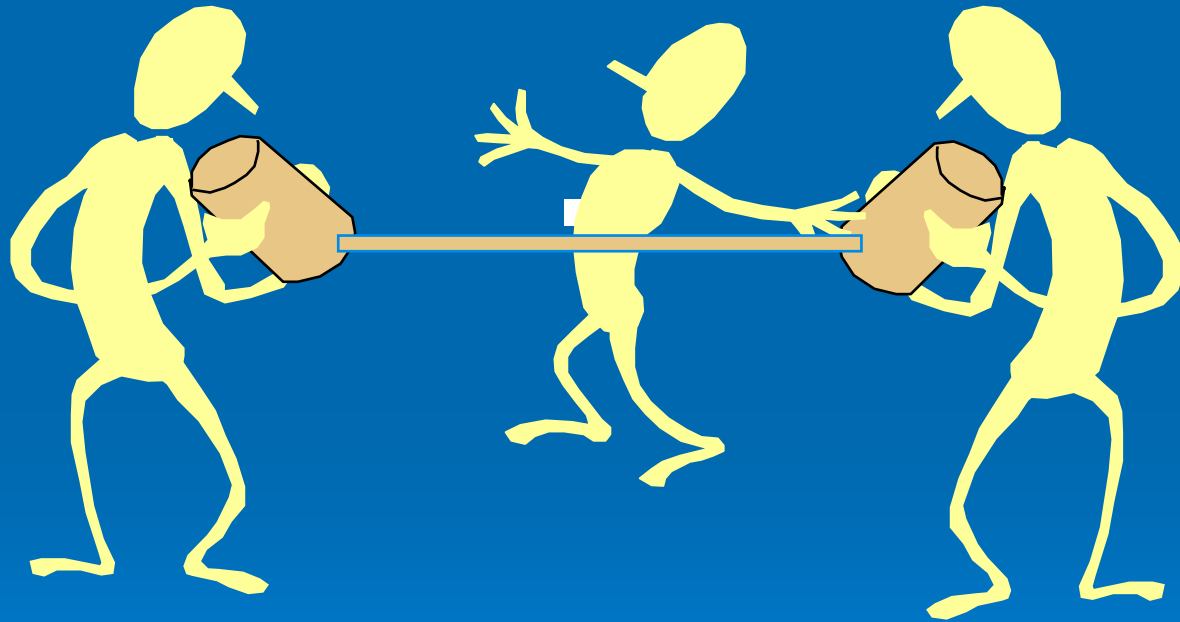
-parole

-drug court

-family program

Staff retention (Ct Renaissance)

# How low can we go?



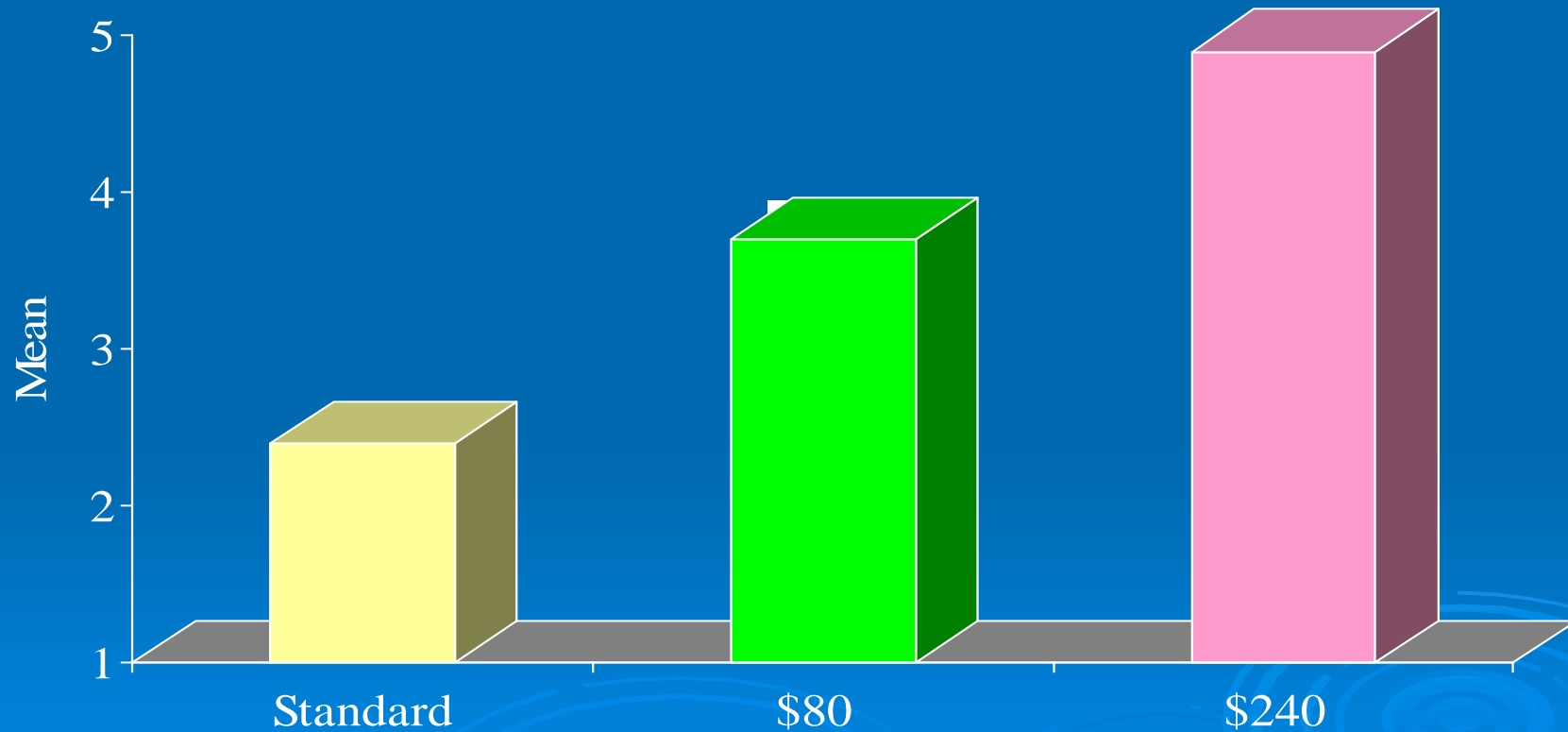
# Treatment groups

Cocaine-dependent patients entering intensive day program randomly assigned to:

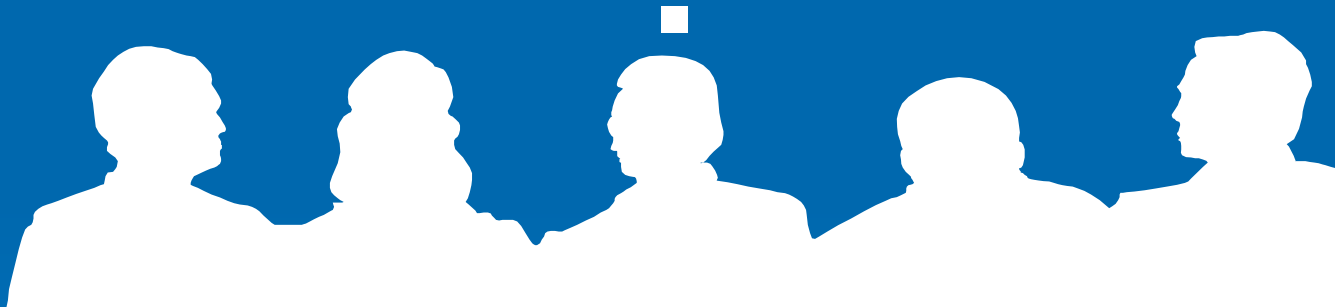
- 
- 1.) Standard treatment
- 2.) Standard treatment plus \$80 CM  
(\$0.33, \$5, and \$100 prizes)
- 3.) Standard treatment plus \$240 CM  
(\$1, \$20, and \$100 prizes)



# Mean weeks of continuous cocaine abstinence

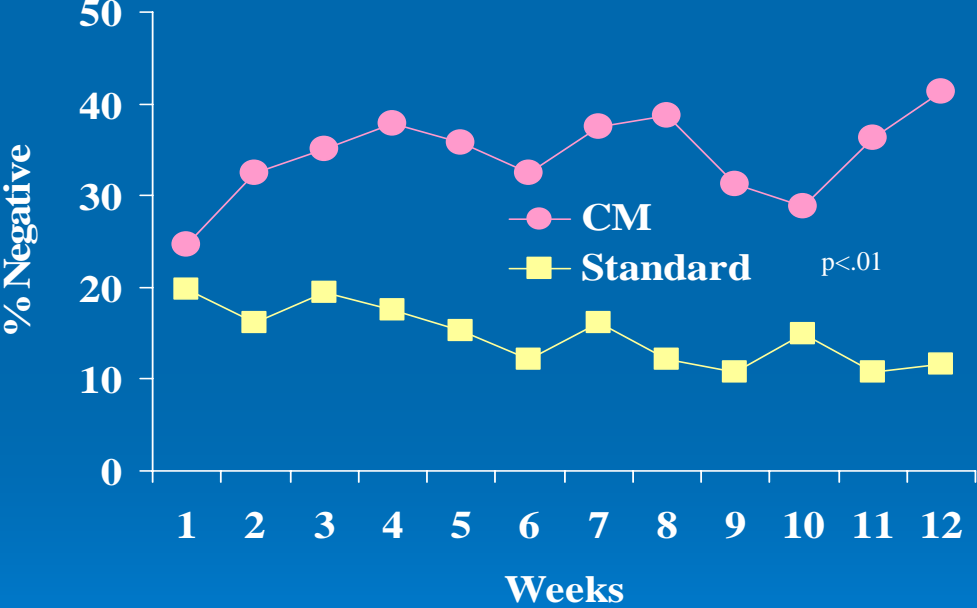


# Can it work in group settings?

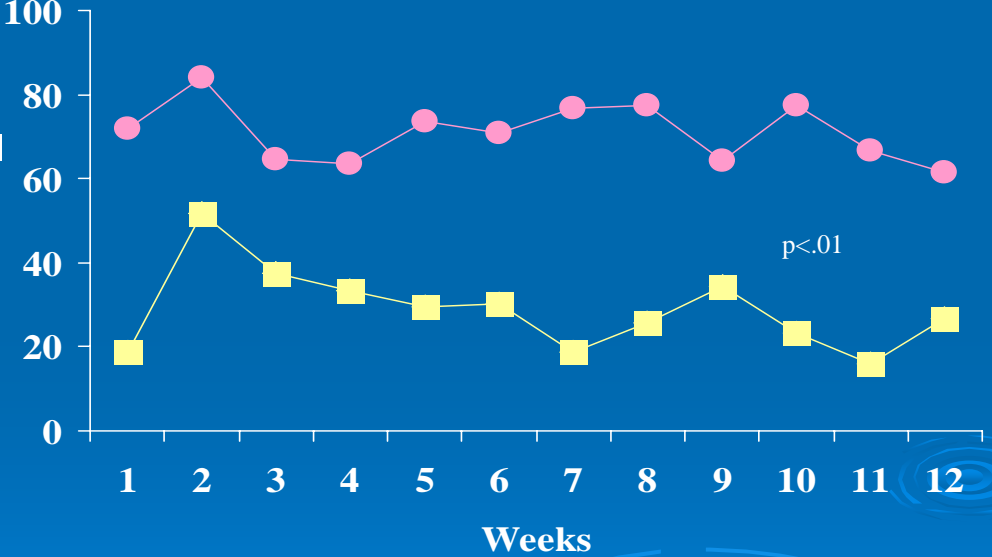


# Methadone maintenance clinic

### Cocaine abstinence



### Group attendance



# Other ongoing studies:

- CM in group-based therapy.
- Vouchers vs prizes in methadone patients.
- CM for chronic recidivist alcoholics (with >4 inpatient detoxes per year).
- CM for abstinence and activity completion (with a focus on medically-related activities) in HIV patients.
- Training therapists to administer CM (for utox results and for group-based attendance).

# Future directions

- Continue examining ways to further reduce costs while retaining efficacy (targets of reinforcement, probabilities and magnitudes of reinforcers, use of group format).
- Optimal durations of interventions (differences across populations).
- Maintenance of effects post-treatment.
- Community dissemination.



# National Drug Abuse Treatment Clinical Trials Network

# *CTN's Mission*

*To Improve Drug Abuse Treatment  
Throughout the Nation...*

*Using SCIENCE as the Vehicle*

# National Drug Abuse Treatment Clinical Trials Network And The Addiction Technology Transfer Centers



# Dissemination

- What works best ?
- Under what conditions?
- With what populations?
- In which programs? ■
- What is treatment as usual?
- How do we best transfer science into the treatment field?
- How much will it cost/save?

# SUPERVISION

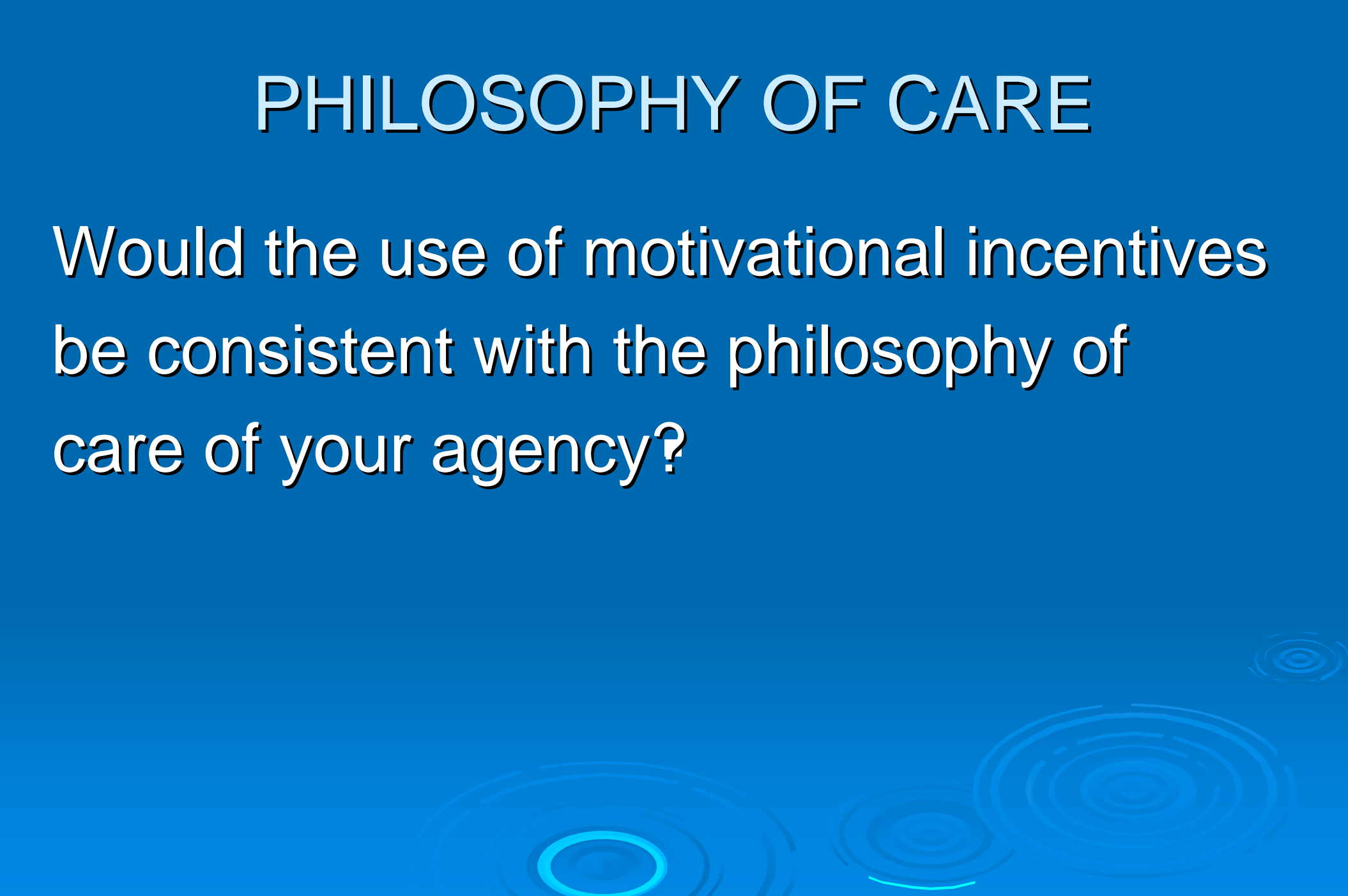
- Good clinical supervision contributes to better client retention and outcomes
- Good supervision may also contribute to better staff retention (presently studied)
- If possible, it is best to separate an administrative supervisor from a clinical supervisor

# Supervision

- Whenever you are stuck or upset with a client, it is always your issue
- There is no such thing as a resistive client, there are only resistive counselors unwilling to pay attention to what their clients need

# PHILOSOPHY OF CARE

Would the use of motivational incentives be consistent with the philosophy of care of your agency?



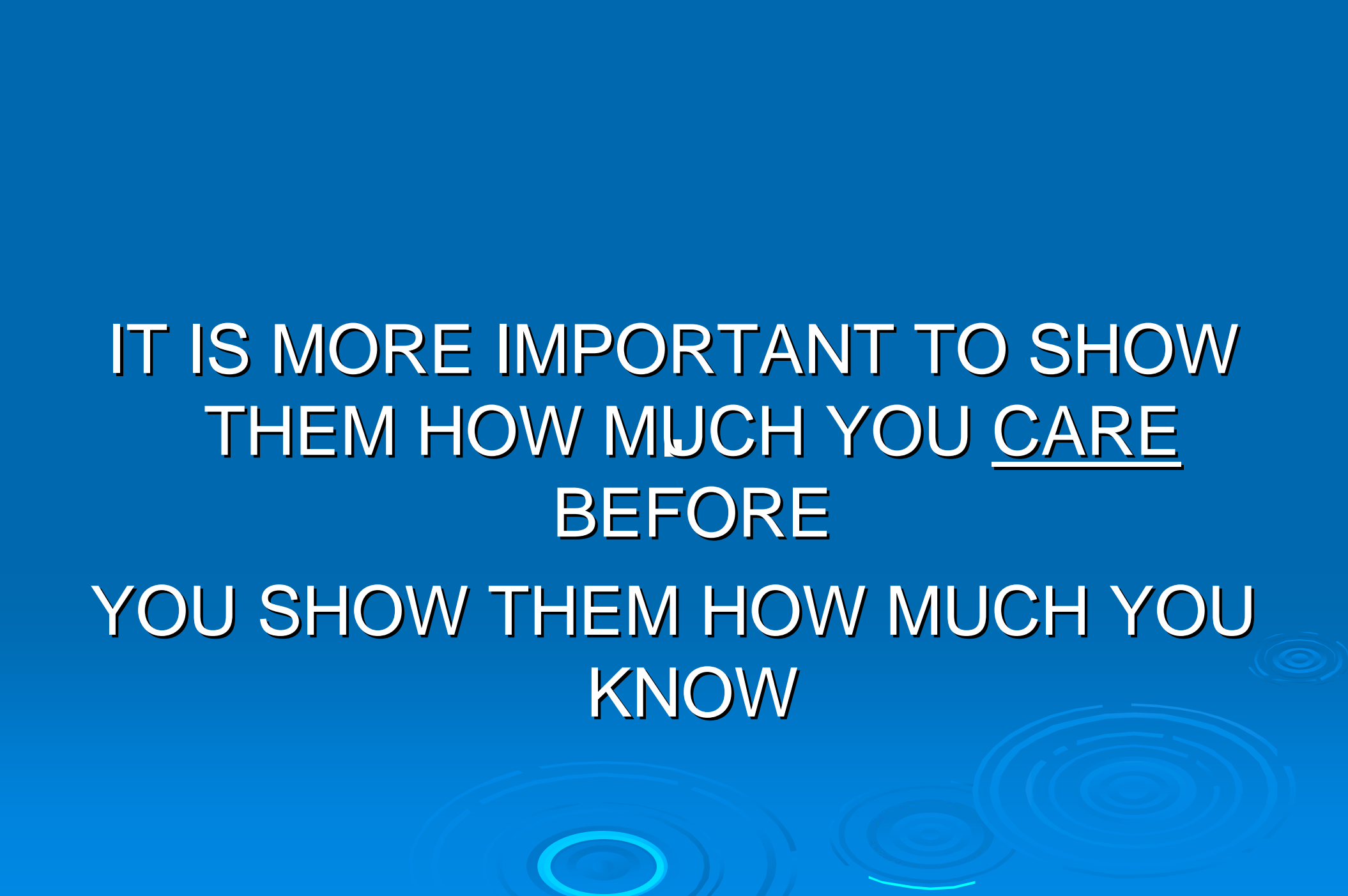
MEET CLIENTS WHERE

THEY ARE AT



➤ ALWAYS OFFER  
HOPE AND FAITH

IT IS MORE IMPORTANT TO SHOW  
THEM HOW MUCH YOU CARE  
BEFORE  
YOU SHOW THEM HOW MUCH YOU  
KNOW



WHATEVER IT TAKES



DIGNITY

and

RESPECT



# New, lower cost procedure for group settings.....

Names go in a hat.....

Those whose names are drawn from the hat get to draw from a fishbowl.



In this fishbowl, every slip is a winner!