

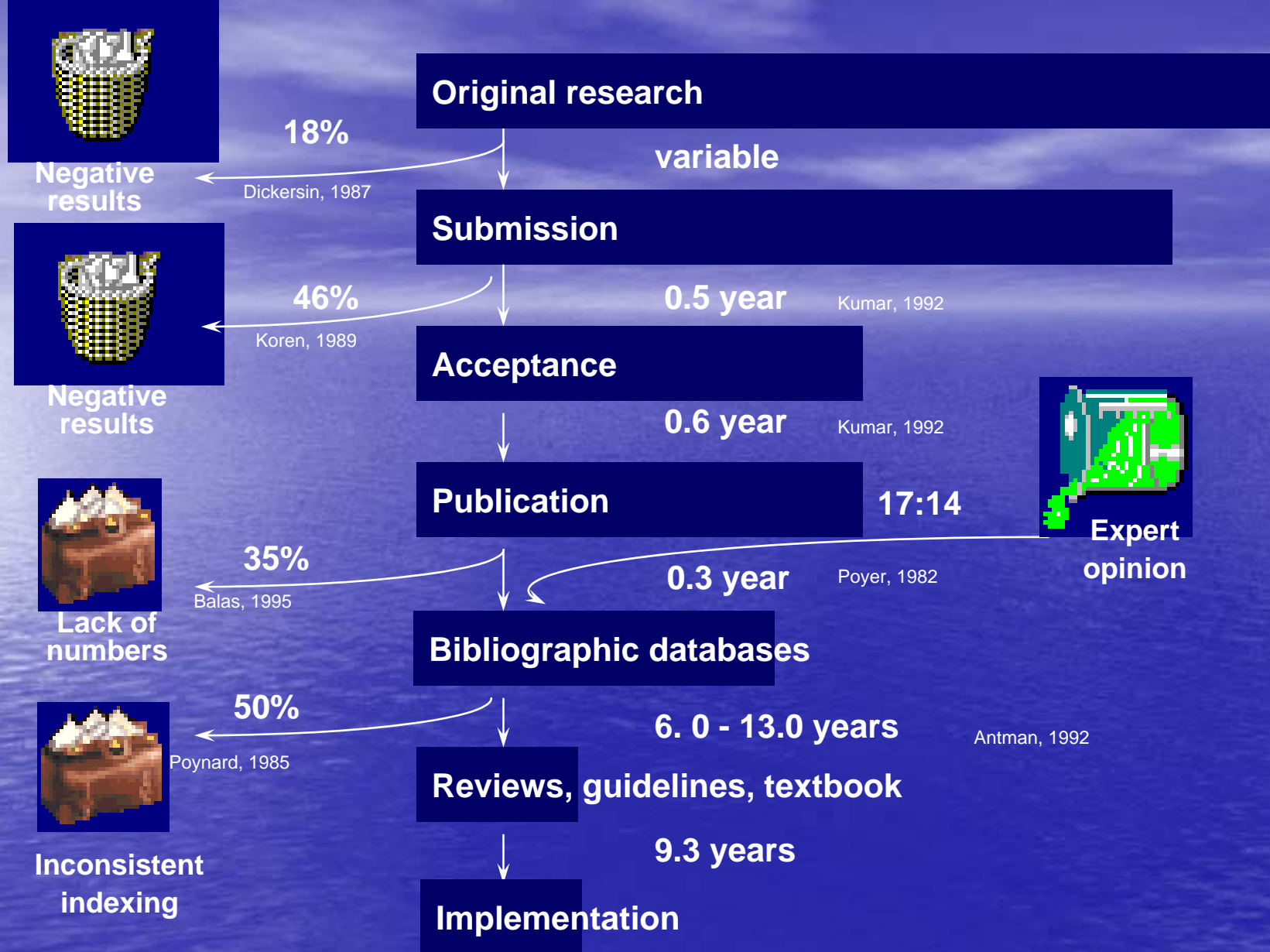
*P*romoting *A*wareness for  
*M*otivational *I*ncentives in  
Addiction Treatment

*PAMI*





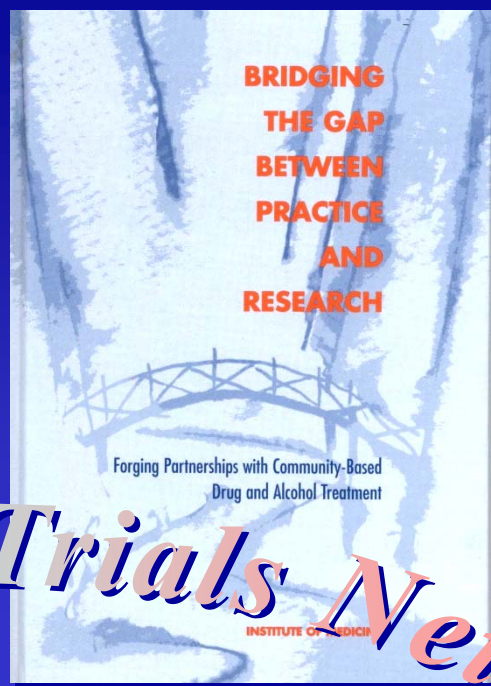
# **National Drug Abuse Treatment Clinical Trials Network**



**17 yrs to turn 14% of original research to the benefit of patient care (Andrew Balas)**



Institute of Medicine,  
1998



*NIDA Clinical Trials Network*

Research

CTN  
Bridging  
the  
Gap

Practice

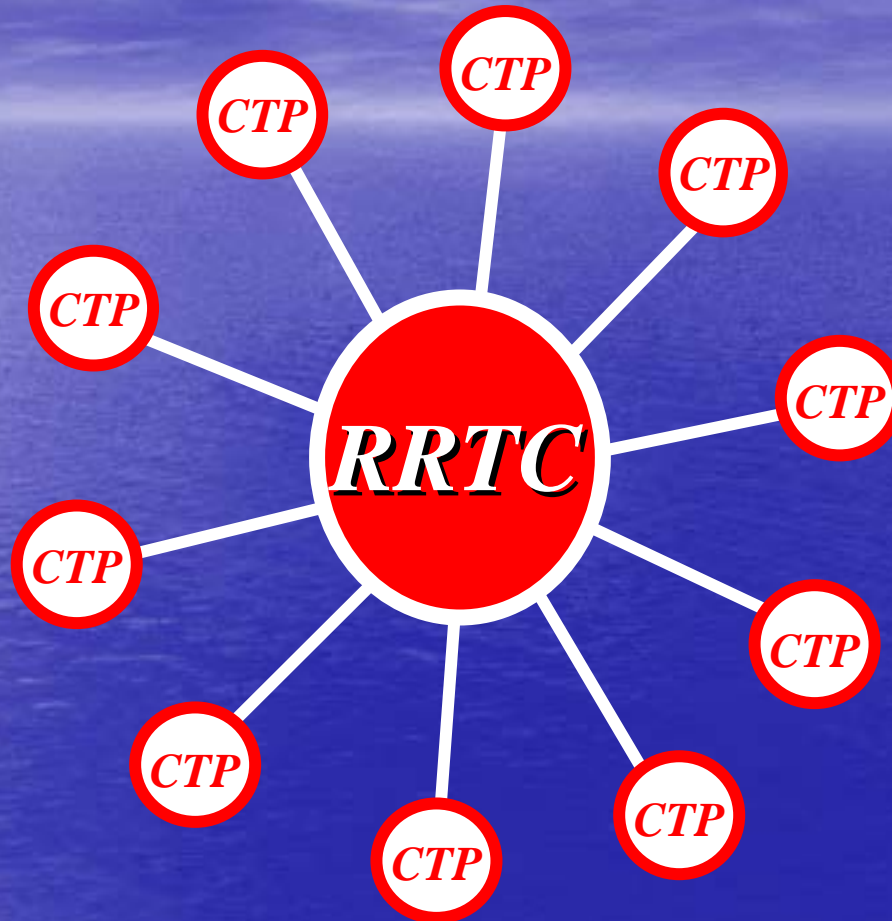
# **Mission of CTN**



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

*Using **SCIENCE** as the Vehicle*

# *National Drug Abuse Treatment Clinical Trials Network Node*



*RRTC – Regional Research and Training Center  
CTP – Community-Based Treatment Program*

# *Uniqueness of CTN*

- **Blending Research and Practice**
- **Bi-directional Collaboration**
- **Multi-node, Multi-site RCTs**
- **Rigorous Scientific Standards**
- **Real World Approach**
- **Dissemination End-products Targeted**

# Key CTN Tasks

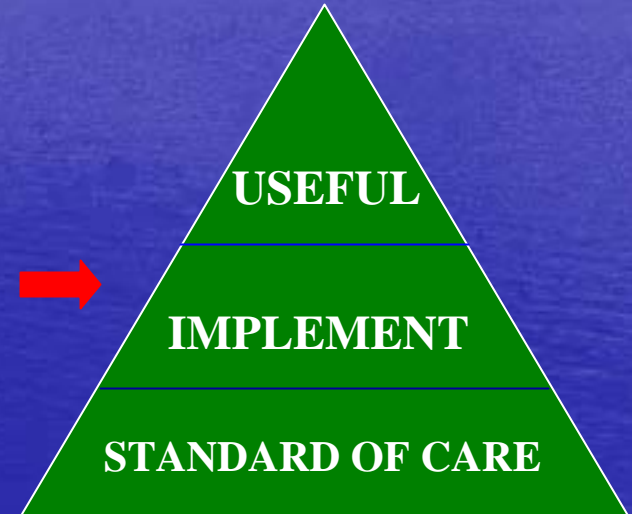
RESEARCH  
QUESTION



CLINICAL  
TRIAL



RESEARCH  
UTILIZATION



## RESEARCH QUESTION

-- PRAGMATIC  
-- RELEVANT  
-- HIGH VALUE

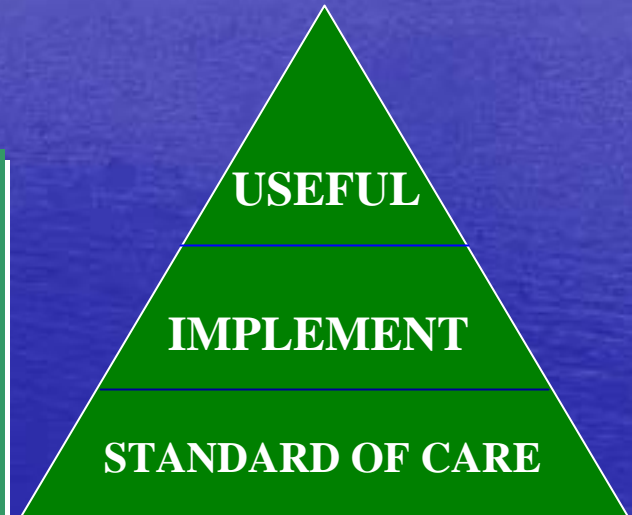
- Reach large numbers of people
- Be broadly adopted by different settings
- Be consistently implemented by staff with moderate training/expertise
- Produce replicable and long-lasting effects
- Implemented at a reasonable cost

# *Clinical Trials in Real World Settings Design Challenges*

**CLINICAL  
TRIAL**



## RESEARCH UTILIZATION



## Beyond Publications and Manuals

### Early planning for dissemination

- Collaboration and coordination
- Targeted dissemination efforts

# NIDA/SAMHSA Blending Process

**Research Findings**



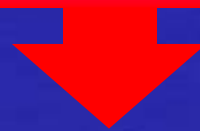
**Hand-Off Meeting**

Create the charge for the Blending Team, based on research results and how it can address critical needs in the treatment field



**Blending Team**

Goal is to develop dissemination strategies & products. Each Blending Team is composed of 3 ATTC members & 3 NIDA members

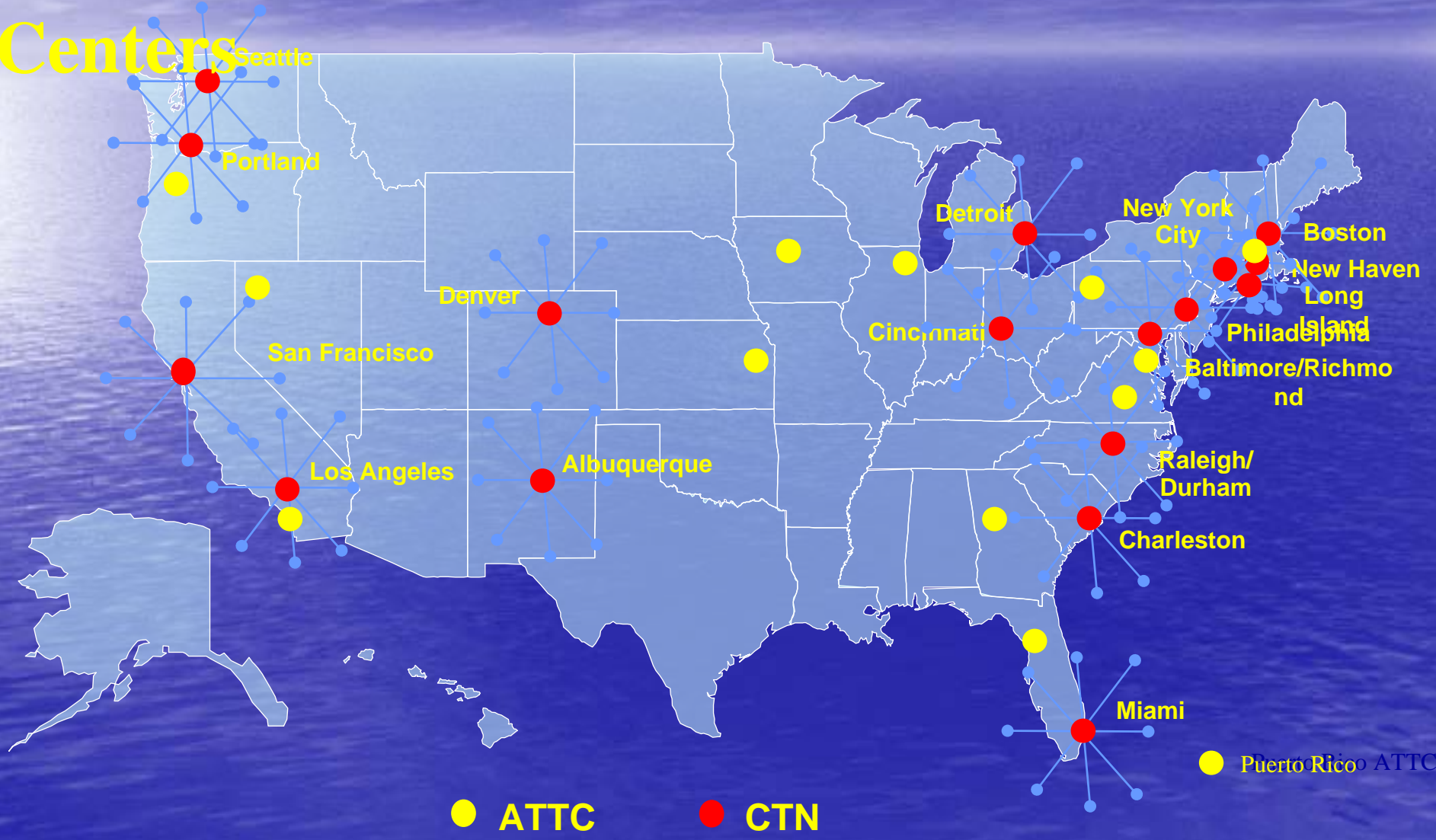


**Dissemination Products are Released at the Same Time Research is Published**



# National Drug Abuse Treatment Clinical Trials Network

## And The Addiction Technology Transfer Centers



# **NIDA-SAMHSA Blending Initiative**

**What do we do with  
what we know?**



# Five Blending Teams

- 1) Buprenorphine Awareness**
- 2) Buprenorphine Detoxification**
- 3) Addiction Severity Index (ASI)**
- 4) Motivational Interviewing (MI)**
- 5) Promoting Awareness of Motivational Incentives (PAMI)**

# Charge and Products for Each NIDA-SAMHSA Blending Team

## 1) Buprenorphine Treatment: A Training for Multidisciplinary Addiction Professionals

Charge: Create training materials to increase awareness about Buprenorphine treatment among non-physician providers

Products: Brochure, Training Modules,  
Bibliography and Training Manual

# Charge and Products for Each NIDA-SAMHSA Blending Team

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## 2) Short-Term Opioid Withdrawal Using Buprenorphine

**Charge:** Create training materials to disseminate an intervention for using Buprenorphine to taper opioid addicted individuals over a 13-day period

**Products:** Instructions include: the 13-day detox intervention taper schedule, safety issues, managing withdrawal symptoms and using withdrawal scales

# Charge and Product for Each NIDA-SAMHSA Blending Team

---

## 3) Utilizing the Addiction Severity Index (ASI)

**Charge:** Develop an online course and training package for Treatment Planning for implementing an assessment-based system using the ASI as the primary example

**Products:** Briefing Package, Training Curriculum, Online Course, Electronic Media Resource Kit

# Charge and Product for Each NIDA-SAMHSA Blending Team

## 4) Motivational Interviewing Assessment: Supervisory Tools for Enhancing Proficiency (MIA-STEP)

**Charge:** Create training materials to increase awareness and adoption of Motivational Interviewing utilizing a supervision model.

**Products:** Introductory briefing packages, video demonstrations, talking points and PowerPoint slides of MI protocol results, supervision training manual, audio instruction guide for tape rating, Train the Trainers to teach one-day training curriculum

# Charge and Product for Each NIDA-SAMHSA Blending Team

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## 5) Promoting Awareness of Motivational Incentives (PAMI)

Charge: Create training materials to increase awareness about Motivational Incentives that incorporates examples from the Motivational Incentives for Enhanced Drug Abuse Recovery (MIEDAR) CTN protocol

Products: Brochure, PowerPoint Presentation, Video, Research Fact Sheets and Bibliography

---

# Motivational Incentives reduces drug use

- **Opioids**

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

- **Cocaine**

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

- **Benzodiazepines**

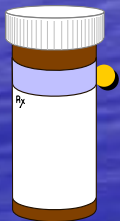
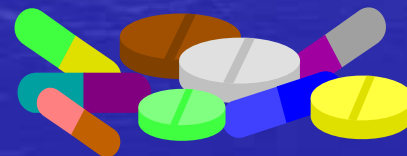
(Stitzer et al., 1992)

- **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

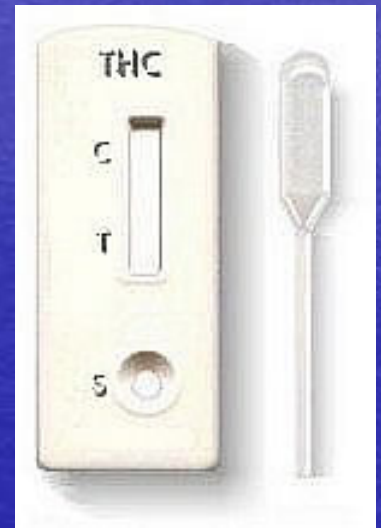
- certificates, praise

## Methadone maintenance

- take-home doses
- early dosing windows

# Challenges to MIEDAR

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



# Total Earnings

- \$400 in prizes could be earned on average

If participant tested negative for all targeted drugs over 12 consecutive weeks



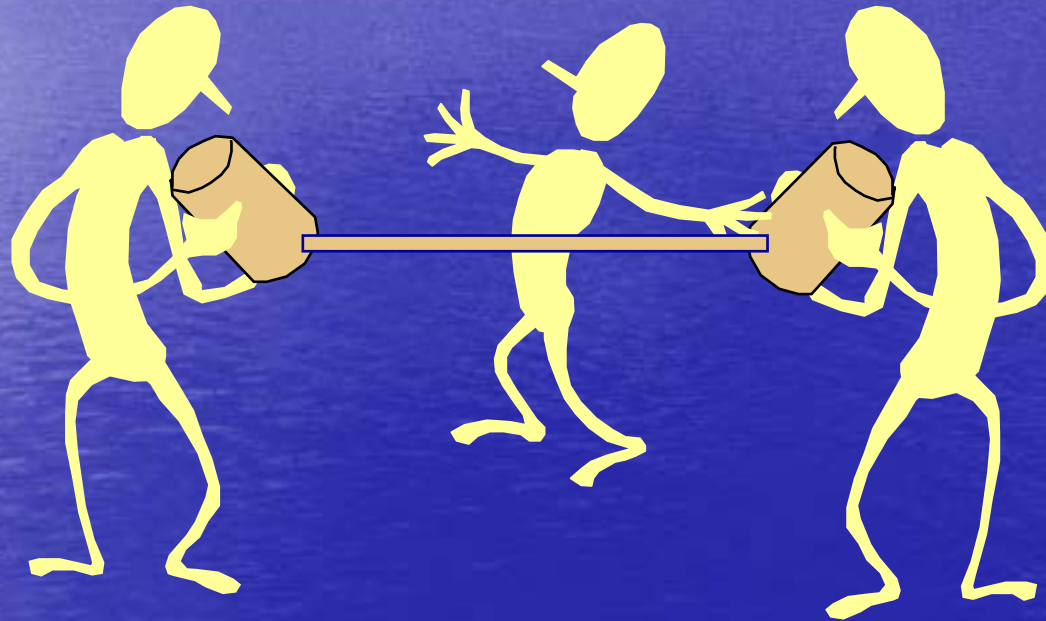
# Abstinence Incentive Costs

Mean cost per patient      \$119

Mean cost/pt/day      \$1.42



How low can we go?



# Treatment groups

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

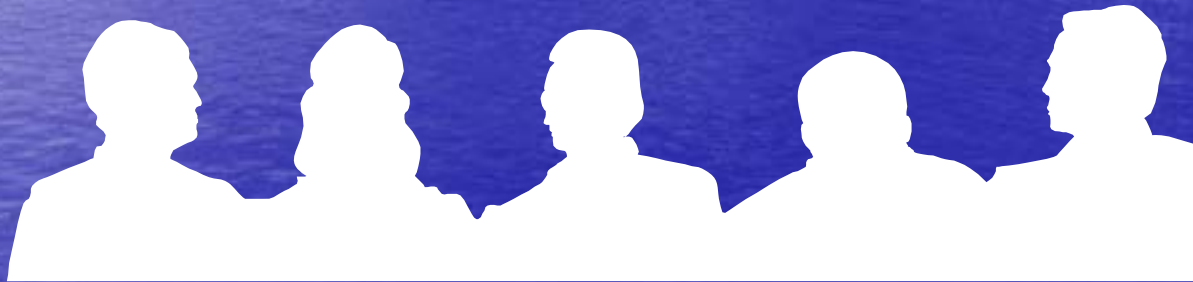
- 1.) Standard treatment
- 2.) Standard treatment plus \$80 MI  
(\$0.33, \$5, and \$100 prizes)
- 3.) Standard treatment plus \$240 MI  
(\$1, \$20, and \$100 prizes)



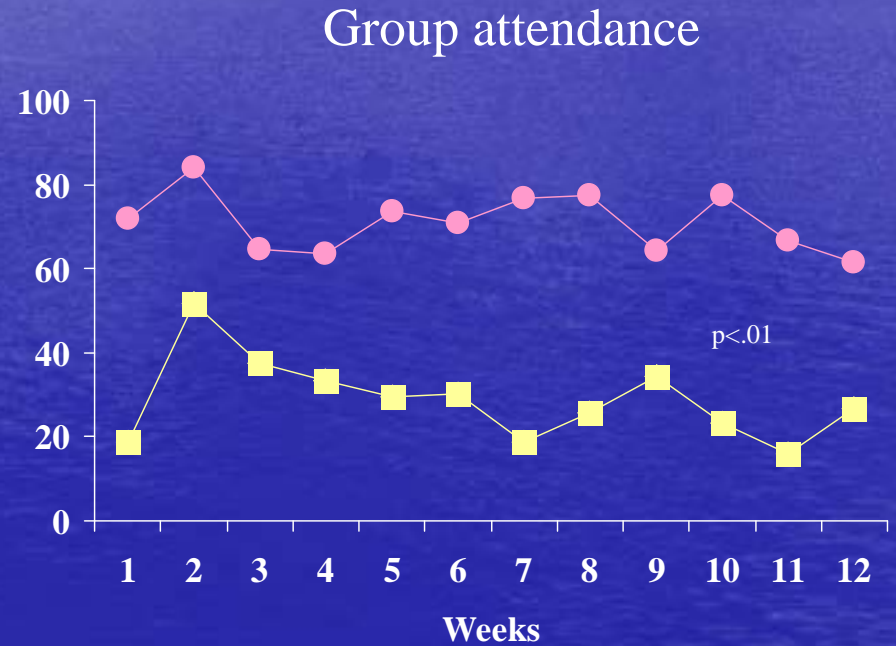
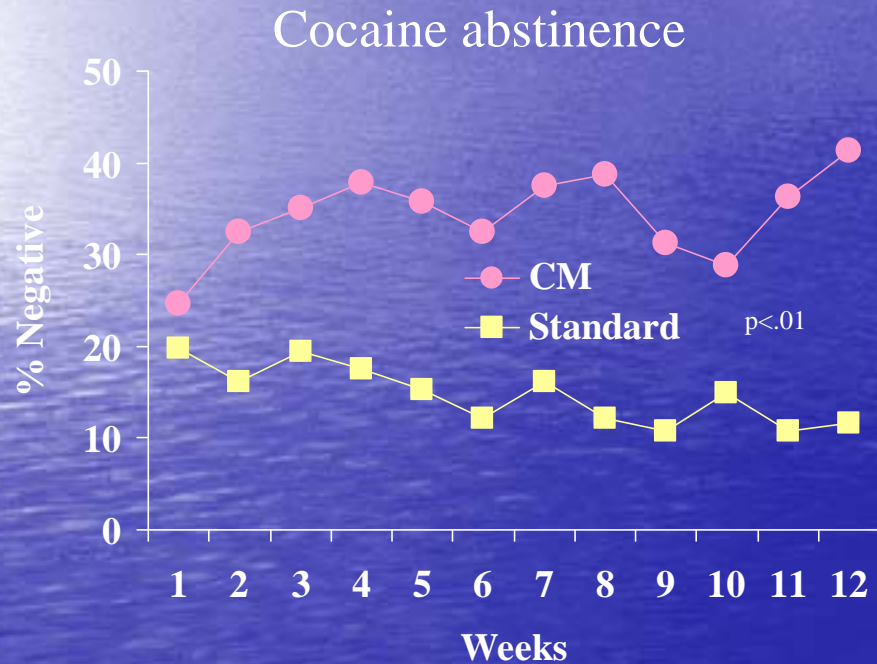
# Mean weeks of continuous cocaine abstinence



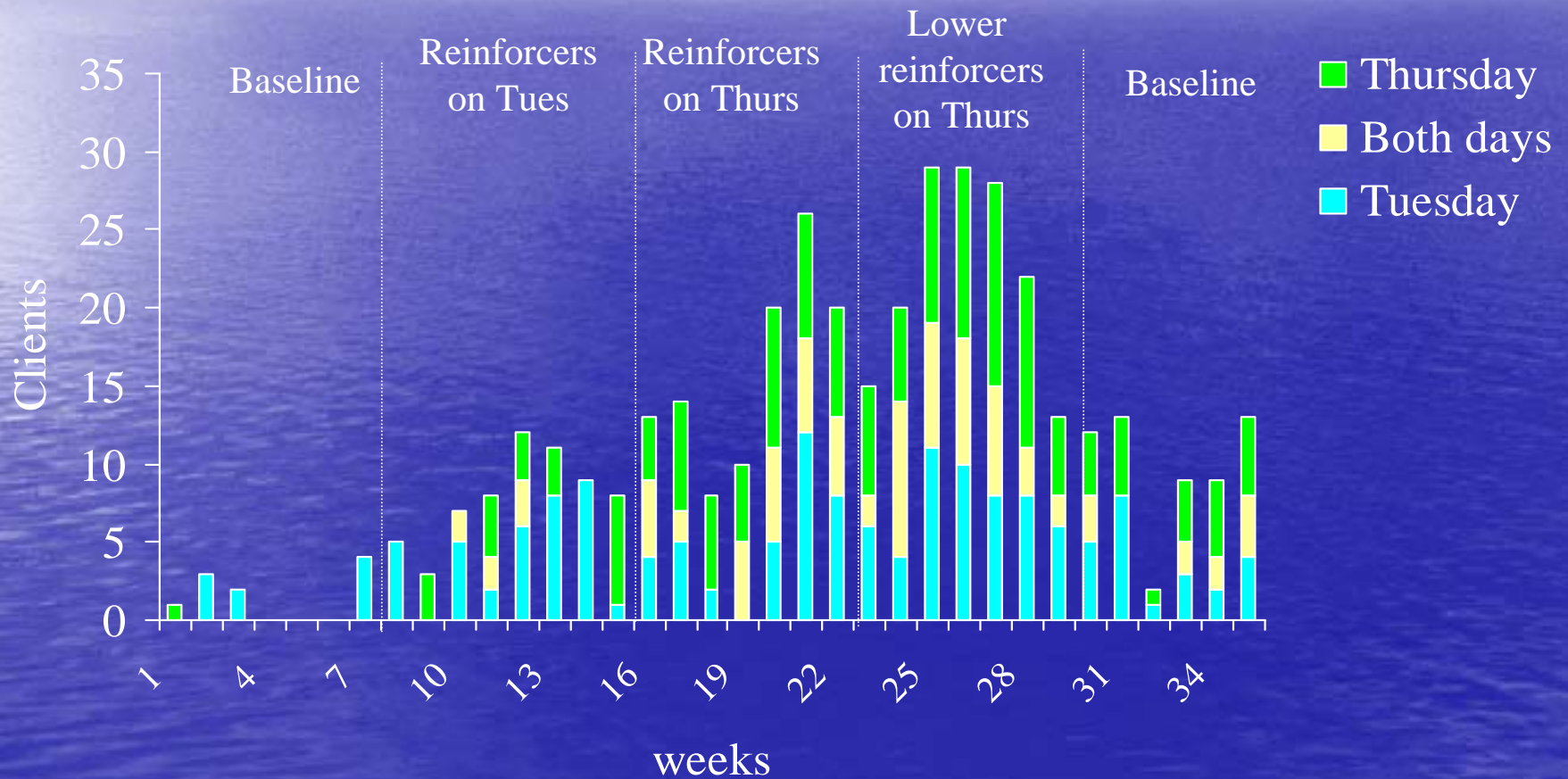
Can it work in group settings?



# Methadone maintenance clinic



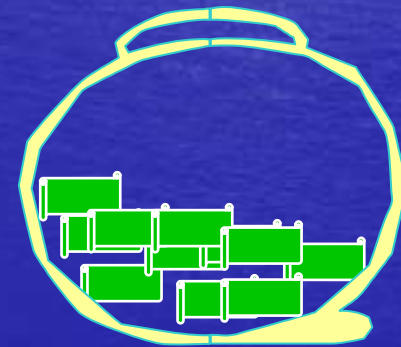
# Attendance at groups at HIV center



# 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!

# Other ongoing studies:

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

# Future directions for studies

- 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.

# Implementation Challenges

- Which behaviors to reinforce?
  - attendance
  - abstinence
  - treatment goal compliance
- Which reinforcers to use?

# STEPS TO DESIGN AN MI INTERVENTION

1. Pick a behavior you want changed
2. Pick a reinforcer
3. Design a monitoring and reinforcing schedule and decide on a timeframe for re-assessment
4. Include escalating reinforcers, bonuses, immediacy and primers
5. Ensure consistent application of procedure

Petry, 2008

# 10 GOALS AND ACTIVITIES

1. EDUCATION-homework
2. EMPLOYMENT-turn in application
3. FAMILY-write letter, outing with kids
4. HEALTH-attend appointments
5. HOUSING-application
6. LEGAL-go to court, probation
7. PERSONAL-journal, be on time
8. SOBRIETY-abstinence, attend meetings
9. SOCIAL/RECREATIONAL
10. TRANSPORTATION

Petry, 2008

# Core Principles\*

- Emphasize the positive
- Reinforcements should be given frequently
- Reinforcement is directly connected to specific observable behaviors
- Utilize material and services that are of value to the patients
- Patients should be encouraged after having a setback

\* (Kellogg, Burns, et. al. 2005)

# Implementation Considerations

- Will the culture of your agency support the adoption of motivational incentives?
- What are the key components necessary for effective adoption?
- What is treatment as usual at your setting?
- How do we best implement science into the treatment field?
- How much will it cost/save?

# Promoting Awareness of Motivational Incentives

Maxine Stitzer, Ph.D.

NIDA Blending Conference

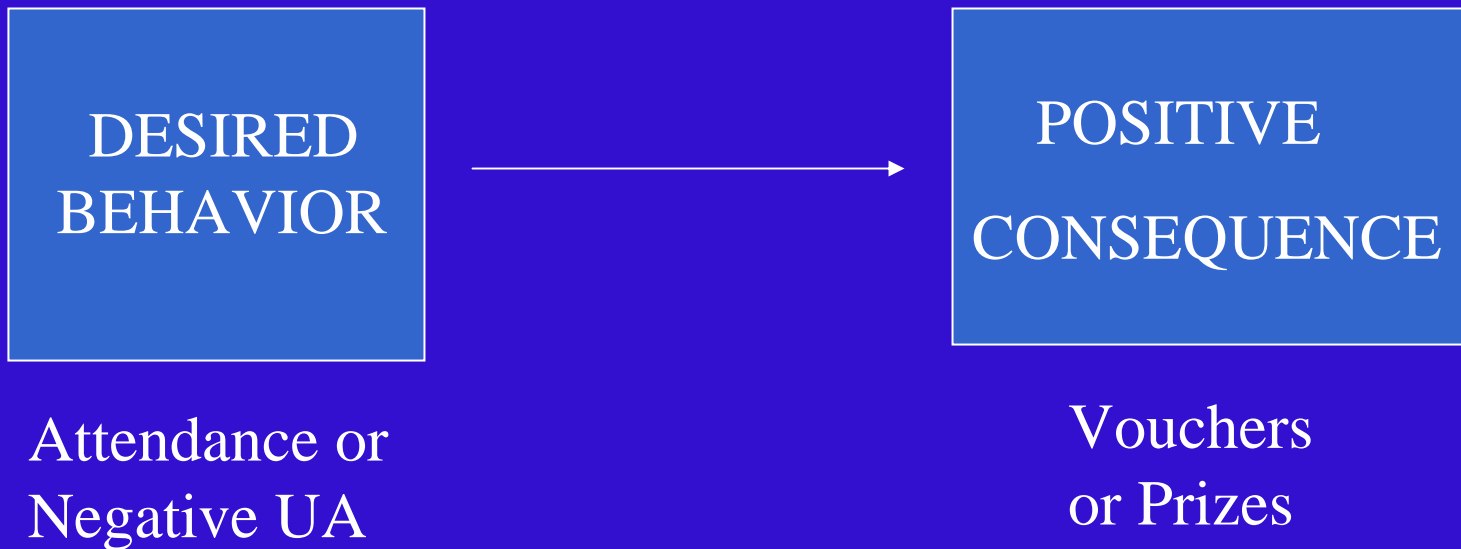
Cincinnati, Ohio

June 2, 2008

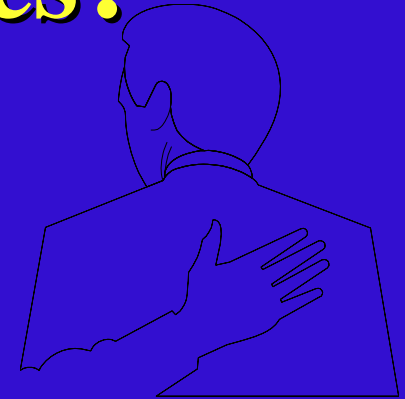
# Motivational Incentives

- What is it? Why adopt this intervention?
- Research evidence for implementation choices
  - Abstinence vs attendance as target behaviors
  - Vouchers vs prize draws as reinforcement system
- Overcoming implementation barriers

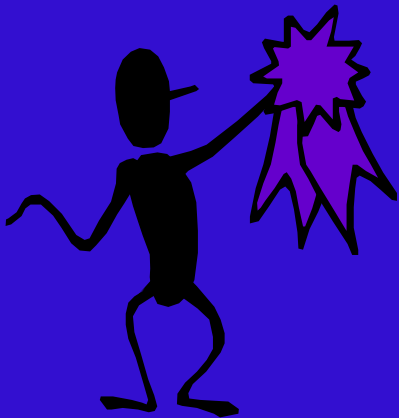
# Changing Behavior via Consequences



# Why Adopt Motivational Incentives?



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



# Why Adopt Motivational Incentives?

- Clients like it
  - Acknowledgement of success is highly valued
  - Counters ambivalence; improves engagement
- Counselors like it
  - Focus on improvement; celebrate success
  - Happier and more engaged clients
- Funders like it
  - Evidence-based practice that improves treatment outcomes

# Behavioral Targets

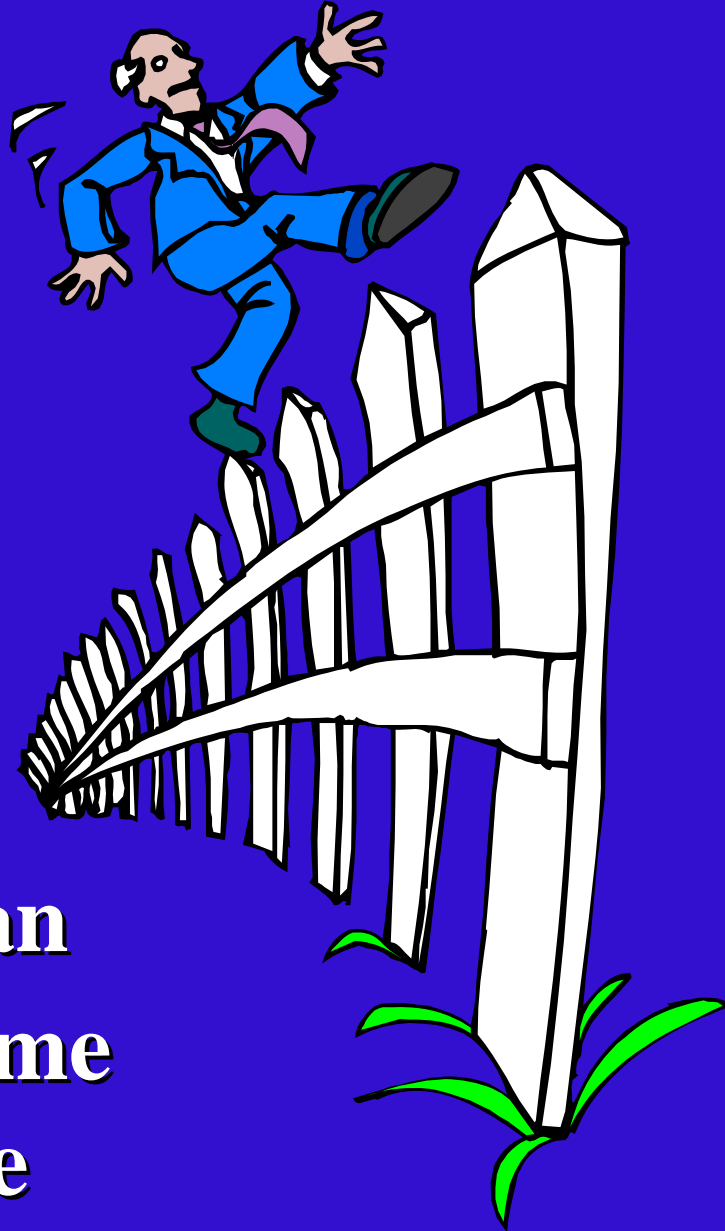
- Abstinence from drugs and alcohol
  - focus of most research
- Attendance at scheduled therapy sessions
  - focus of most adoption efforts
- Goal attainment
  - Reinforcement of individualized concrete goals
  - Use for those whose attendance & abstinence are stable

# Problem is the Allure of Immediate Drug Reinforcement



**C  
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**Incentives can  
help overcome  
ambivalence**



**A  
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# Abstinence Benefits

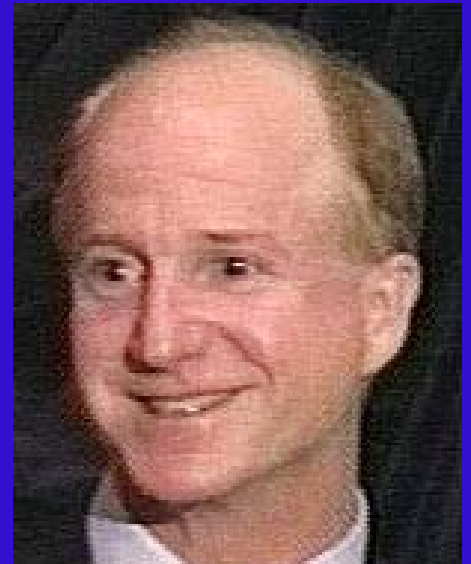
- Keystone of recovery
- Primary outcome measure
- Allows for work on positive life style changes
- During-treatment abstinence predicts long-term outcomes

# Abstinence Incentive Methods

- Use negative urine as objective evidence
- Collect urines frequently
- Test on-site (immediate feedback)
- Provide immediate rewards for negative UA
  - Vouchers or drawing for prizes

# Voucher Reinforcement abstinence initiation and maintenance in cocaine abusers

- Principle of alternative reinforcement:
  - Making abstinence today a more attractive option
- Points earned for cocaine negative urine results
  - Escalating schedule of point earnings
  - Trade in points for goods
  - \$1000 available over 3 months



Steve Higgins

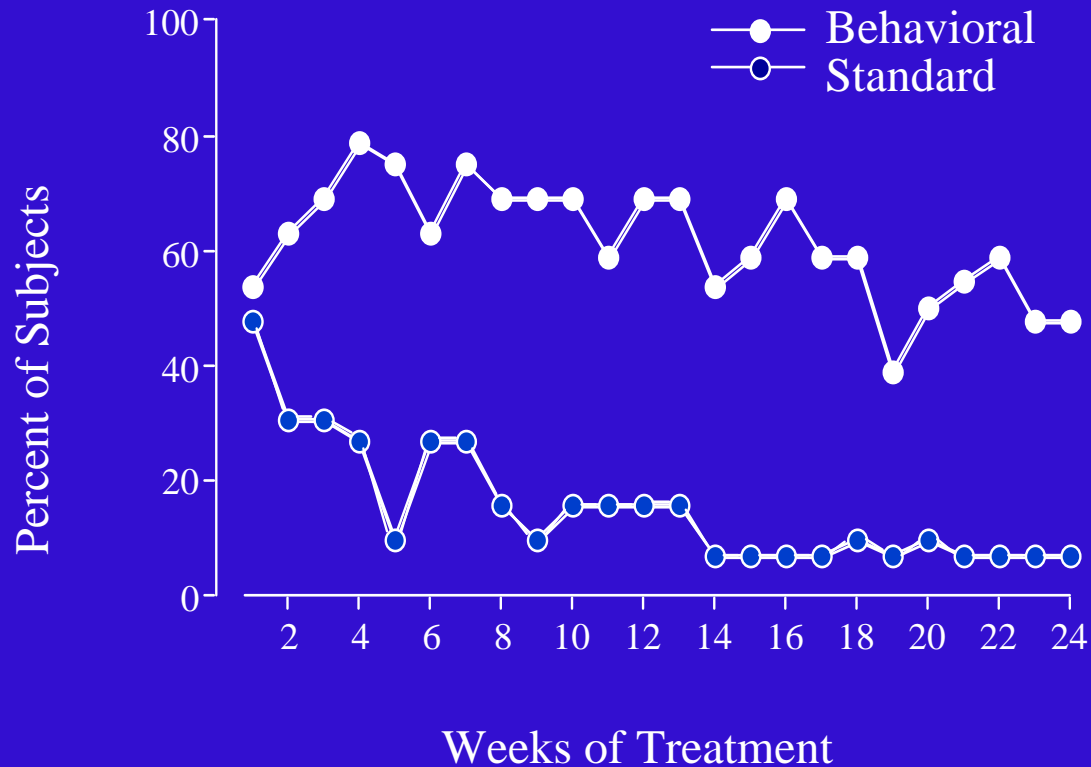
# Points Escalate with Drug-Free Test Results & Reset with Positives



# Voucher Incentives in Outpatient Drug-free Treatment

Higgins et al. Am. J. Psychiatry, 1993

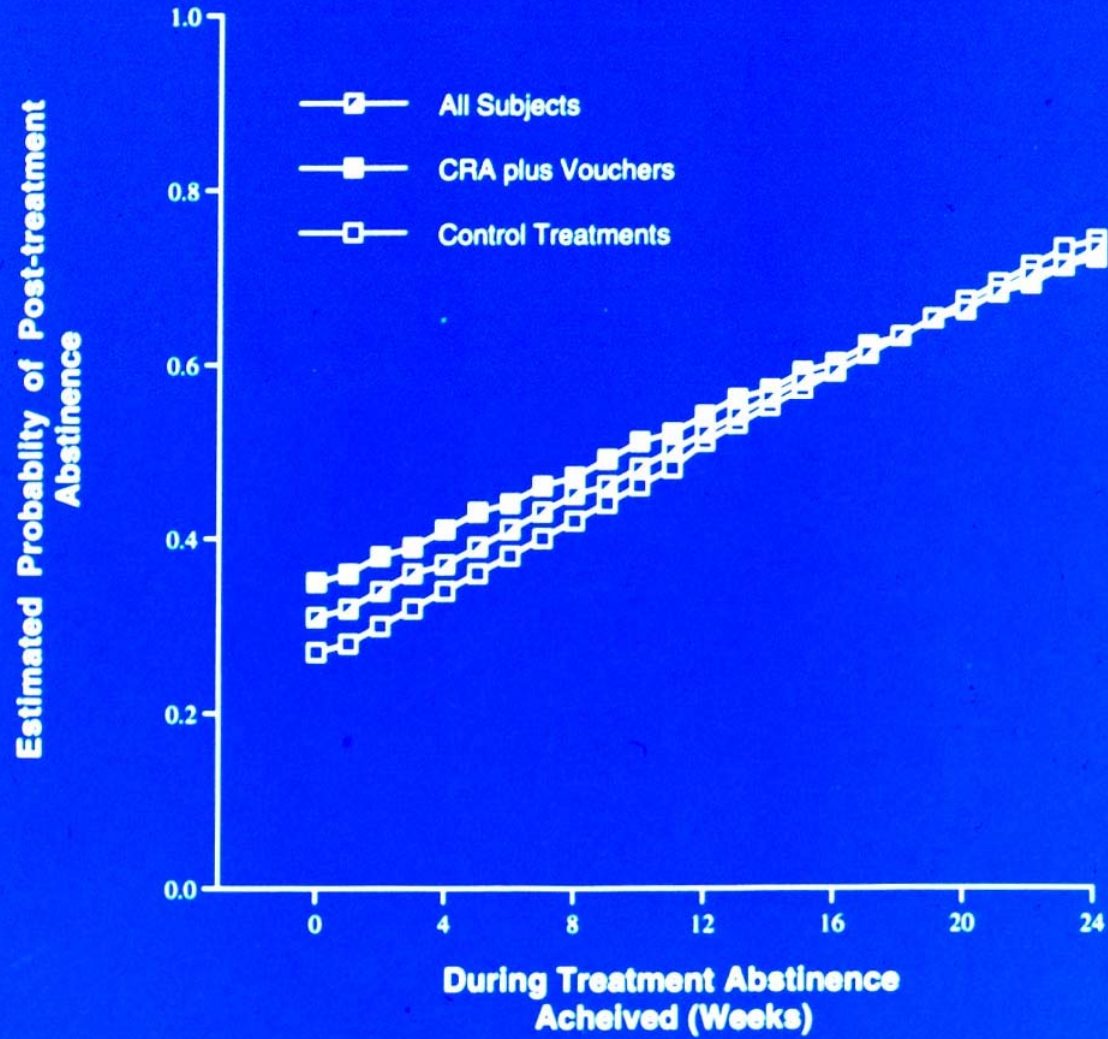
## Cocaine negative urines



# Why is Prolonged Abstinence Important?

- Duration of abstinence during treatment (no matter how achieved) predicts long-term outcomes

## Abstinence At 12-month Assessment



# Post- and During-Treatment Abstinence are Related

	Subjects abstinent at 1 year
During Tx abstinence	
$\geq 12$ weeks	64%
$< 12$ weeks	36%

*From Higgins et al., 2000*

# Voucher Reinforcement

- Voucher reinforcement increases number of patients with long durations of during-treatment abstinence
- Elegantly incorporates behavioral principles designed to initiate & sustain abstinence
- Demonstrated efficacy in controlled trials
- Costs are high as originally designed

# Nancy Petry's Fishbowl: Intermittent schedule of reinforcement

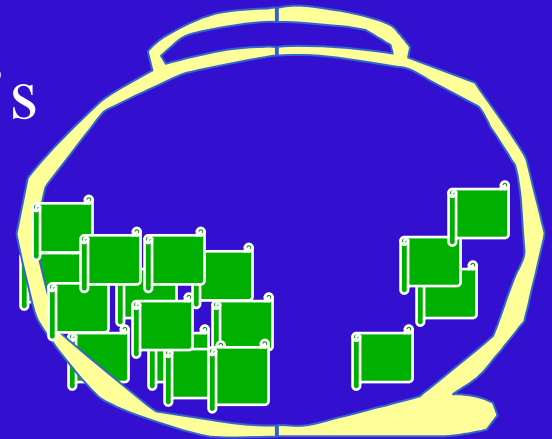
QuickTime™ and a  
Photo - JPEG decompressor  
are needed to see this picture.

For cost reduction in community clinic settings

# Fishbowl Method Reduces Cost

Incentive = draws from a bowl

- Draws earned for each negative urine or BAC
- Number of draws can escalate
- Resets can be given for positive UA's

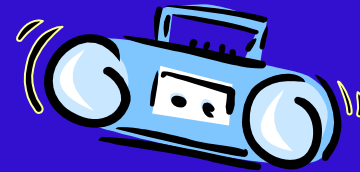


# Half the slips are winners

## Win frequency inversely related to cost



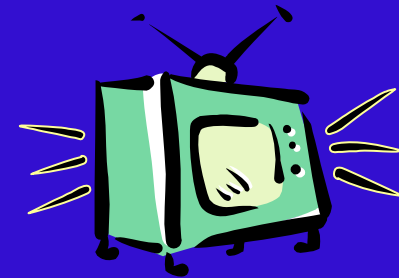
➤ largest chance of winning a small \$1 prize



➤ moderate chance of winning a large \$20 prize



➤ small chance of winning a jumbo \$100 prize



# CTN MIEDAR Study

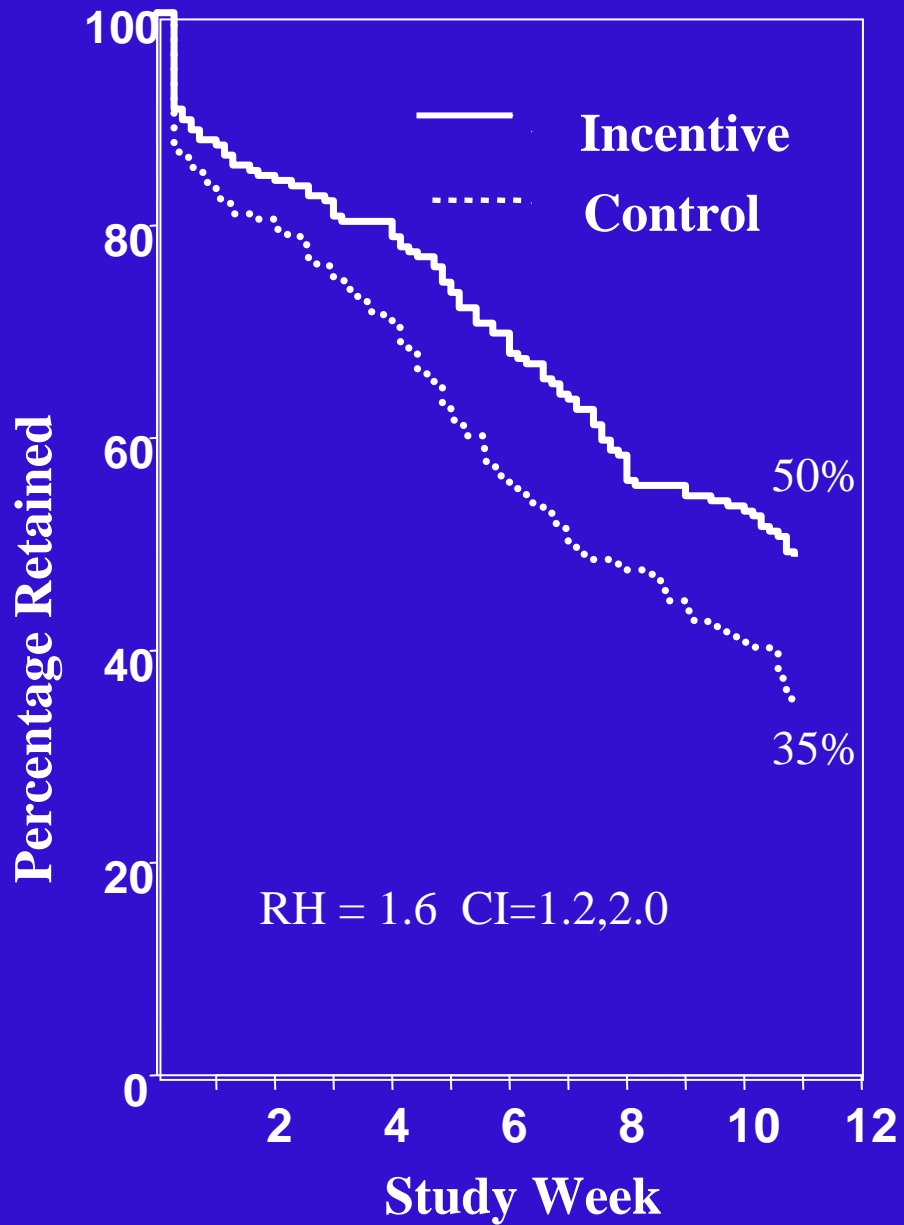
- Stimulant abusers randomly assigned to usual care with or without abstinence incentives
  - 415 psychosocial counseling
  - 388 methadone maintained
- Drug-free urines earn draws from an abstinence bowl during a 3-month study
- Negative for cocaine, methamphet and alcohol ---> escalating draws
  - Also negative for opiates, THC ---> bonus draws

# Total Earnings

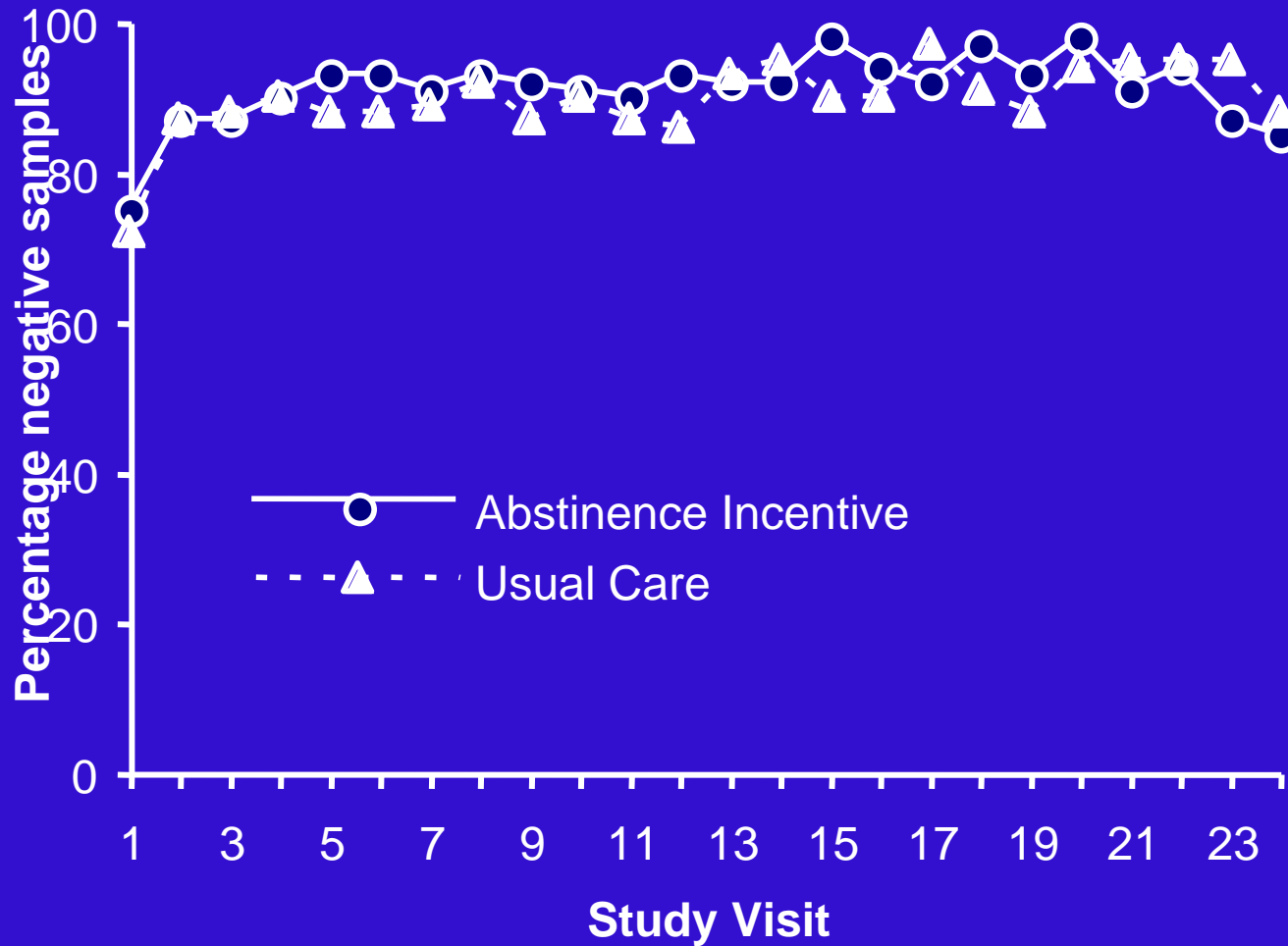
- \$400 in prizes could be earned on average
  - If participant tested negative for all targeted drugs over 12 consecutive weeks



# Incentives Improve Retention in Counseling Treatment



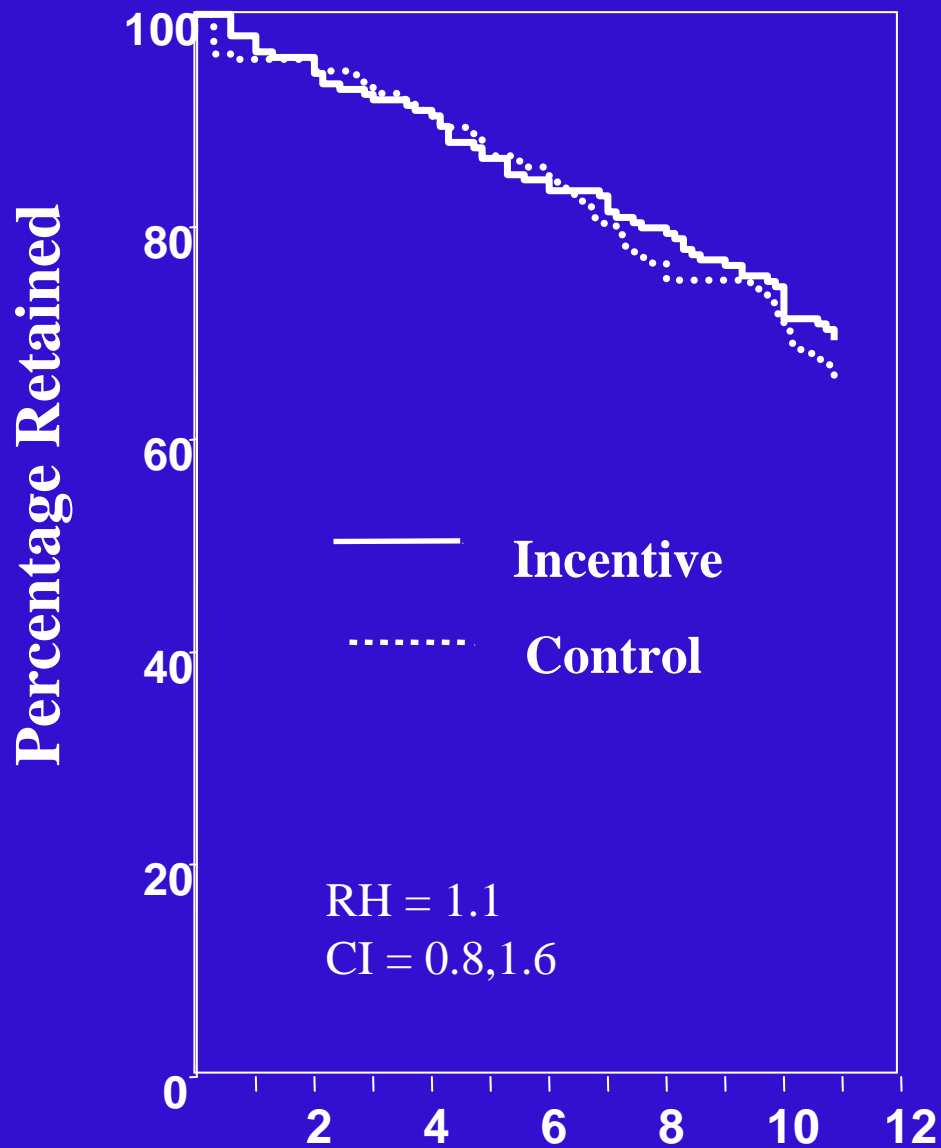
# Percent of Submitted Samples Testing Stimulant and Alcohol Negative



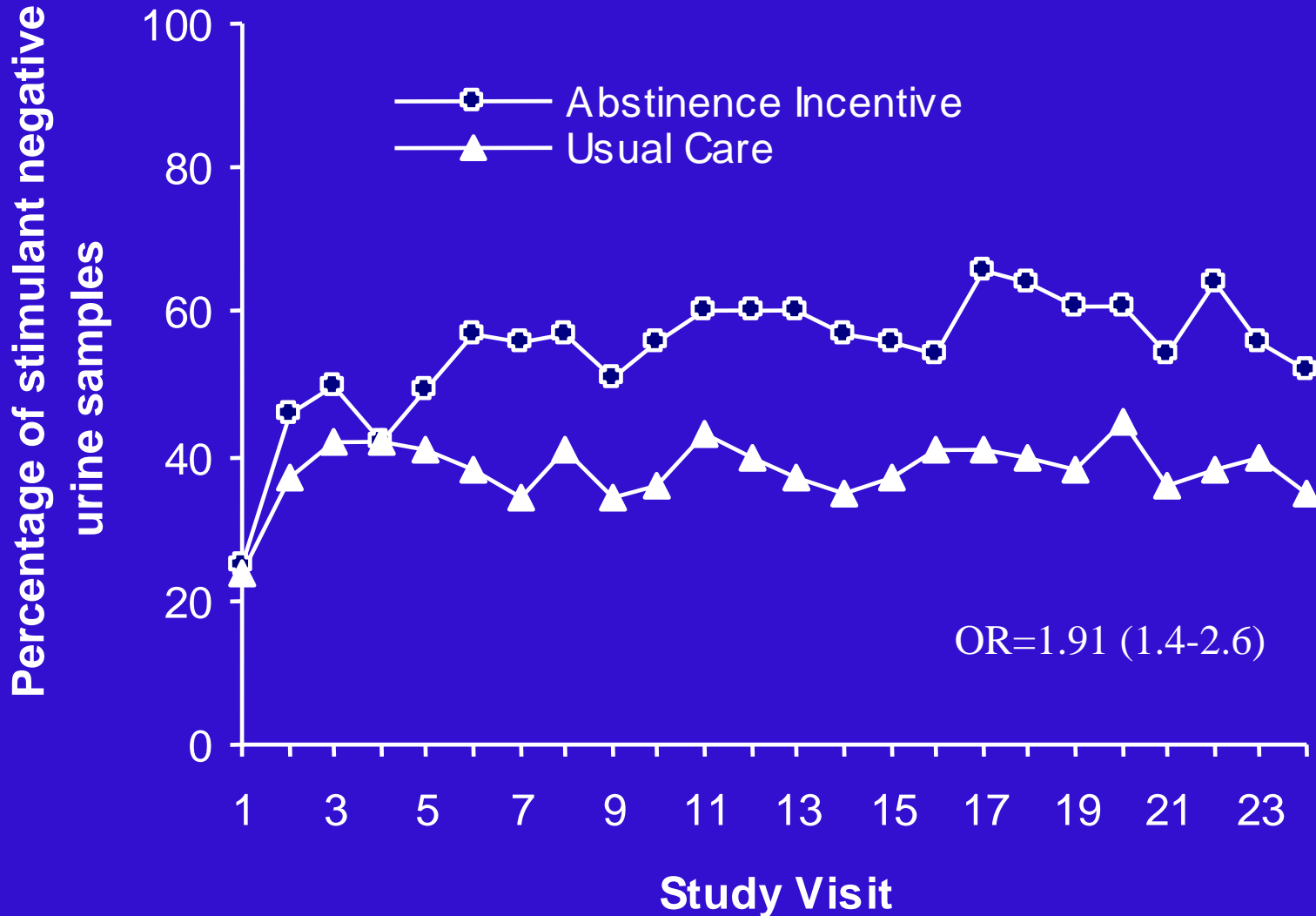
# Abstinence Incentives in Psychosocial Counseling Tx

- Incentives lengthened duration of drug-free treatment participation
  - Presumably improving long-term outcomes
  -
- May be useful for all clients as relapse prevention
  - Suggests clinic-wide implementation

# Study Retention in Methadone Treatment



# Incentives reduce on-going drug use in methadone maintained patients



# Abstinence Incentives in Methadone Maintenance

- Reduces on-going drug & alcohol use
- Intervention only with those who are using may be most clinically and cost-effective

# Generality of Abstinence Incentive Effects Across Abused Substances

Cocaine

Opioids

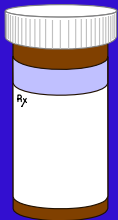
Methamphetamine



Alcohol

Marijuana

Nicotine (Tobacco smoking)



# Abstinence Incentives: Advantages & Drawbacks

- Advantages
  - Reinforces message about importance of abstinence
  - Patients must come to Tx to earn
  - Counselors can work with drug-free patients
- Drawbacks
  - Cost and effort of frequent urine testing
  - Not everyone needs intervention

# Session Attendance Target

- Petry reinforced homeless DA's for attending sessions at a drop-in center
  - 10-fold increase in attendance
- Sigmon & Stitzer used prize draws to impact group attendance of methadone maintenance patients
  - 24 group meetings; twice weekly over 12 weeks
  - Escalating prize draws w/ total possible earning of \$170

# Group Attendance in Methadone Maintenance

## Sessions attended

Incentive condition	76%
---------------------	-----

No incentives	52%
---------------	-----

*from Sigmon & Stitzer, JSAT, 2005*

# Attendance Incentive

- Escalating draws or vouchers for consecutive session attendance
- Advantages
  - Easily implemented and tracked
  - Increases contact with treatment providers
- Drawbacks
  - May not improve drug use outcomes in those who are actively using or who relapse

# Abstinence vs Attendance Target

- Abstinence
  - Keystone of recovery; underpins life-style change
  - More costly and labor-intensive
- Attendance
  - Easier to implement
  - Improves engagement & morale
  - Don't know about long-term impact on drug use

# Choosing Behavioral Targets: Phased Use of Incentives

- Start with attendance incentive
  - to improve early engagement
- Shift to abstinence
  - after attendance well established
- Shift to life-style change goals
  - after abstinence well established

# Choosing a Reinforcement System: Vouchers vs Prize Draws?

- Both are effective
  - Petry et al., JCCP, 2005; 2007
  -
- Both require some staff work & oversight
  - Designing voucher or drawing system
  - Tracking progress and outcomes
  - Purchasing requested goods or stocking prizes
- Vouchers provide more certainty for patients
- Prize draws may cost less for equal benefit
- Clinics can design their own system

Motivational Incentives is an  
effective intervention

Method is gaining popularity  
but still infrequently used

# Adoption Issues/Barriers

- Making the decision
  - Overcoming negative attitudes
- Learning what it is and how to do it
  - PAMI materials
- Finding resources
  - Staff time, money for prizes or vouchers

# Overcoming Implementation Barriers Is Worthwhile

- Clients like it
  - Acknowledgement of success is highly valued
- Counselors like it
  - Happier and more engaged clients
- Funders like it
  - Evidence-based practice; better outcomes