Motivational Incentives:
Principles and Particulars

Maxine Stitzer, Ph.D.
mstitzer@jhmi.edu

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Premise: Focus is on drug users in enhanced supervision

- How drug use behavior is learned and changed
- Positive incentive systems to promote drug abstinence
- Principles of application in enhanced supervision
How People Learn to Behave

• Modeling what others do

• Following rules and instructions

• Reacting to positive and negative consequences of own behavior
Learning To Use Drugs Is No Different

- Modeling what other do
  - Friends who use drugs are a strong predictor
- Reacting to consequences of behavior
  - Drugs provide immediate powerful reinforcement
- Exception: following rules and instructions
  - Drug use may involve early rule and law breaking (e.g. underage drinking) that sets stage for further rule breaking behavior
Trap of Escalating Drug Use

• Use of alcohol and tobacco may spread to other drugs including illegal drugs
• Physiological and psychological dependence make stopping difficult
• Interference with productivity and relationships
• Other negative behaviors may escalate along with escalating drug use
  – Ultimately, the drug user may become embroiled in a life of crime to support self and habit
Breaking the Drug-Crime Link

• To the extent that drug use and criminal behaviors are linked.....
  – stopping drugs will result in reduction of crime and allow for instatement or re-instatement of other positive behaviors
Rewards and sanctions can be used for all types of behaviors. We begin with a discussion and focus on drug-involved offenders because drug use is directly linked to criminal behavior and poor psychosocial outcomes.

Drug abstinence should be viewed as the central target of a behavior management system for drug-involved offenders.

You can then apply later to other behaviors.
How Does Drug Use Behavior Change?

• Stopping (on own or with treatment) often motivated by natural consequences
  – Lost productivity, declining health, disrupted relationships, criminal justice hassles

• “Treatment seeking” is increasingly motivated by criminal justice mandate
  – About 1/3 of OP clients are mandated to treatment

• CJ mandated clients do as well or better in treatment than voluntary clients
Drugs exert a powerful draw and stopping for good is never easy

Treatment tools are limited including persuasion, support and skills training
Contingency Management Comes to the Rescue

• Originally discovered and systematized by B.F. Skinner

• Relies on power of positive and negative consequences to engender behavior change
Incentives change behavior via tangible and consistent consequences.
Negative Consequences

• Fines
• Tickets
• Restrictions
• Sanctions
• Displeasure
Punishment of Unwanted Behaviors

- Can suppress targeted behavior if applied immediately and reliably
- Defines behaviors to avoid and punishes appearance of those behaviors ("sets limits")
- Role in positive behavior change?
  - Only tell people what NOT to do
- Can have unwanted side-effects
  - anger, retaliation
  - helplessness; low self-esteem
  - habituation; refractory to punishment
Positive Consequences
Rewards

Attention, Pat on the Back

Vouchers and Gift Certificates

Privileges

Prizes and Gifts

Services
Positive Consequences

• Shifts focus from failure to success

• Can improve outcomes if applied immediately and reliably

• Can have positive side-effects
  – Improved client and staff morale
  – Improved client self-efficacy
Positive Consequences to Promote Desired Behaviors

• Used in residential settings, schools, businesses

• Points earned for desirable behavior

• Traded for canteen items, institutional privileges, catalog goods, trips to the “treasure chest”
Bringing the Power of Positive Reinforcement To Treatment of Drug Abuse
Conceptual Basis of Incentives in Drug Abuse

Sustained drug abstinence is critical if goal is to build a drug-free lifestyle

- But most benefits of abstinence are long-term
  - Health, relationships, productivity

- Incentives can counteract draw of drug use by making benefits of abstinence tangible and bringing them forward in time

- Approach is consistent with reward delay problems of drug users
Drug Abstinence as a Target Behavior

• Urinalysis testing provides immediate evidence of recent drug use vs abstinence and negative UA’s can be rewarded!!

• Positive urine tells little about amount or frequency of use but negative urine provides objective evidence of recent abstinence

• More negative urines in a row, longer is period of sustained abstinence, which is key target
Research with drug abstinence as the target
Voucher Reinforcement
abstinence initiation and maintenance in cocaine abusers

• Alternative reinforcement:
  – Making abstinence a more attractive option

• Points earned for cocaine negative urine results potentially worth $1000 over 12 weeks

• Designed to promote continuous (not sporadic) abstinence

Steve Higgins
1) Points Escalate with Consecutive Drug-Free Test Results

Weeks Drug Free

# Draws
2) **Bonus Points Further Emphasize Positive Value of Long Drug-free Time**

- Bonus Points
  - 1
  - 10
  - 10

- Weeks Drug Free
  - 2
  - 4
  - 5

# Draws
3) Positive UA Resets Earning Potential Penalty To Further Discourage Relapse
Voucher Incentives in Outpatient Drug-free Treatment

Cocaine negative urines

- Behavioral
- Standard

Weeks of Treatment

Percent of Subjects
<table>
<thead>
<tr>
<th>Outcome Measure</th>
<th>YES</th>
<th>NO</th>
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<tbody>
<tr>
<td>Weeks of continuous abstinence (mean)</td>
<td>4.8</td>
<td>2.3</td>
</tr>
<tr>
<td>Abstinent at EOT (%)</td>
<td>35</td>
<td>10</td>
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</table>

$570$ could be earned over $12$ weeks
Voucher Reinforcement

- Elegantly incorporates behavioral principles designed to initiate & sustain abstinence
- Demonstrated efficacy in many controlled trials
- Costs can be high as originally designed by Higgins ($80-$96 per week budgeted)
Fishbowl Method

Incentive = draws from a bowl

- Draws earned for each negative urine or BAC
- Number of draws can escalate and reset
- Bonus draws can be given for consecutive weeks of abstinence
Half the slips are winners

- Most wins are small $1 prizes
- Some wins are large $20 prizes
- One win is a jumbo $100 prize
- First study designed to award one $20 prize per week
Retention: Alcoholics in Outpatient Psychosocial Treatment

Petry et al., 2000
Time to first heavy drinking episode

- STD
- CM

p<.05

Petry et al., 2000
Percent positive for any illicit drug

Petry et al., 2000
National Drug Abuse Treatment Clinical Trials Network

Research and dissemination in community treatment programs

Conducted first multi-site study of abstinence incentives using fishbowl method
CTN MIEDAR Study

• Stimulant abusers in counseling treatment randomly assigned to usual care with or without abstinence incentives (N = 415)

• Drug-free urines earn draws from an abstinence bowl during a 12-week study

• Negative for cocaine, meth 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

Study Week

Percentage Retained

Incentive

Control

RH = 1.6  CI=1.2,2.0

50%

35%

Study Week
Individual Subject Performance

- Usual Care (n=206)
- Abstinence Incentive (n=209)

Percentage

Number of Stimulant Negative Samples Submitted

* indicates a significant difference.
Abstinence Incentives in Psychosocial Counseling Tx

- Incentives lengthen duration of drug-free treatment participation
- Shifted modal outcome from poor to excellent
- Cost was more modest ($33 per client per week budgeted)
Abstinence Incentives: Impact on Long-term Outcomes
Post- and During-Treatment Abstinence are Related

<table>
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<tr>
<th>During Tx abstinence</th>
<th>% abstinent at 1 year</th>
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<tr>
<td>≥ 12 weeks</td>
<td>64%</td>
</tr>
<tr>
<td>&lt; 12 weeks</td>
<td>36%</td>
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From Higgins et al., 2000
Abstinence Target Benefits

- Keystone of recovery
- Allows for work on positive life style changes
- Predicts long-term outcomes
Research has supported the importance of engendering long periods of abstinence.

Enhanced supervision can monitor abstinence over 12-18 months or longer and apply effective methods of behavior management to control drug use.
Application Principles

We are proposing a program that blends voucher point and prize-based systems

i.e. client earns points for positive behavior; points are traded for prizes kept and displayed on-site
Prize Cabinets
Features of An Effective Abstinence Incentive Program: Have Good Prizes

- Ask clients what they want to work for
- Stock lots of good prizes
- Let clients see prizes they are working for
- Let clients choose what they want and when
  - immediate small versus delayed larger items
What Prizes Are Typically Used?

- **SMALL** ($1-$5 items)
- **LARGE** ($20-$30 items)
- **JUMBO** ($80-$100 items)
Features of An Effective Abstinence Incentive Program

- Provide immediate positive consequence for each negative urine
  - on-site testing is best

- Escalate points with sustained abstinence
  - can put a cost cap on escalating points

- Provide bonuses for sustained abstinence

- Reset points as a penalty for drug use slips
Implementation Issues In An Abstinence Incentive Program

- Who to include?
- Which drugs to target?
- How often to test?
- How long to implement?
- How to integrate with program “phases”?
- How much should points be worth?
- How to integrate with extraneous sanctions?
Who should be included in an abstinence incentive program?

Higher risk clients with a drug use history

Incentives are meant to provide extra help for those who have trouble remaining engaged and staying away from drugs.
In Our Example

• Which drugs to target?
  – Opiates (heroin) & stimulants (cocaine, meth)

• How often to test?
  – Once weekly

• How long to implement?
  – 12 months
## Escalating Point System

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<tr>
<th>Neg UA No.</th>
<th>Points</th>
<th>Bonus Points</th>
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<tr>
<td>1</td>
<td>1</td>
<td>10 (primer)</td>
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<td>2</td>
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Adding The Reset Contingency

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Decisions To Be Discussed Later

• How long to implement per client?
  – Fixed time vs time to abstinence duration criteria

• How to integrate with program “phases”
  – Urine testing frequency may reduce over time
  – Client may graduate after X-months of negative tests

• How much are points worth?

• How much to budget per client?
  – Research studies: $20-$96 per client per week