

A Clinician's Guide for Implementing Contingency Management Programs

A guideline developed for the
Behavioral Health Recovery Management project

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Contingency management (CM) interventions, also sometimes called motivational incentives, are based upon principles of behavioral modification. These procedures stem from token economy approaches that were developed over 40 years ago and are still in place today. The behavioral principles are centered around three basic tenets. First, you arrange the environment such that target behaviors (e.g., drug abstinence) are readily detected; this aspect includes frequent monitoring, such as conducting thrice weekly urinalysis testing. Second, you provide tangible reinforcers whenever the target behavior is demonstrated. In other words, you can give a client a token, a clinic privilege, or a gift certificate whenever she or he tests negative for drugs. Third, when the target behavior does not occur, you systematically withhold these rewards. Sometimes slight punishers may also be delivered (reset time needed to attain take-home methadone privileges) when inappropriate behaviors occur.

A variety of studies conducted over the last 25 years demonstrate the efficacy of CM procedures. For further descriptions of studies, you can consult a book (Higgins et al., 2000) or a review article (Petry, 2000) that more carefully describes experimental studies. This paper focuses instead on practical applications of CM approaches. Given differences in clinical settings and client populations, a broad overview of CM techniques is described so that you can develop individually tailored interventions. The paper will describe different behaviors of substance abusing clients that you can modify using CM techniques. Practical advice for implementing CM procedures is provided. A variety of different rewards that you can use are described, and finally, issues associated with behavioral monitoring and reinforcement are discussed.

Step 1: Behaviors to modify

The first step in designing a CM procedure is to decide upon the specific behavior you want to change. While many different behaviors can be altered using these techniques, you need to decide upon a behavior that can be quantified objectively. In other words, if you want to reinforce drug abstinence, you need to use drug screening procedures and not clients' self reports of abstinence. If you are a case manager and want to reinforce your client for obtaining job skills or attending AA meetings, you would provide the reinforcement based upon weekly completed homework assignments or signed and dated slips from the AA leader or the teacher in a GED program. These signed slips should also be followed up with a phone call. Simply reinforcing verbal reports of progress by a client would not be appropriate, as clients may have reason to fabricate their progress when they are receiving tangible reinforcers.

CM procedures can be designed for an individual client, they can be developed for use with specific populations, or they can be implemented clinic wide. For example, an individualized CM approach can be designed for a client who is having specific problems with drug use, or a client who is failing to take the necessary steps to resolve his or her employment issues. CM procedures can also be applied with specific subpopulations within in a clinic. So, for example, cocaine-dependent methadone patients may be designated to receive the CM procedures. If a problem is clinic wide, such as lack of on-time attendance at group therapy, a procedure can be designed to address this issue among all clients.

Keeping in mind the widespread applicability of these approaches, this section provides a brief review of four different types of behaviors that can be modified using CM techniques. First, brief descriptions of the beneficial effects of the procedures are reviewed. Then, practical issues in designing CM interventions are described.

A. Engagement and retention

CM procedures that provide positive rewards retain clients in treatment for longer periods than does counseling alone. For example, some studies have shown that provision of a small restaurant gift certificate can enhance therapy attendance in dual diagnosis clients. Other studies in methadone clinics find that take-home doses can be used to reinforce attendance at therapy sessions. Still other studies have found that providing a “dollar a day” encouraged attendance in group therapy for teenage mothers.

CM procedures can also be used to enhance initial engagement in treatment. In a demonstration project at an HIV drop-in center in which group therapy sessions were poorly attended, we provided the opportunity to win prizes (ranging from \$1 items such as bus token and toiletries to \$100 items such as televisions and VCRs) contingent upon coming to groups. Average attendance at group sessions rose from less than one client prior to the introduction of the prizes to over 7 clients per session during the prize phases.

If you provide tangible positive incentives for attendance, you are likely to enhance retention in your programs. Many community-based programs that work with voluntary clients have significant problems with treatment retention, and attrition rates, especially in the early phases of treatment, are very high. Some programs already have procedures in place for management of early attrition, and you are probably already familiar with use of some incentives for therapy engagement. For example, in 12-Step meetings and at many community-based programs, clients are provided with free coffee and donuts when they come. Social support and praise from therapists and other group members may also reinforce attendance at sessions. By systematically applying CM principles, you may be able to better garner beneficial effects of these rewards to positively impact your clients.

Instead of simply leaving out a coffee pot and donuts, for example, clients who attend therapy sessions can earn tokens. They may receive one token the first time they attend, two if they attend two times in a row, three tokens for three times in a row, and so on. You could then arrange for clients to exchange their token for food items or other clinic privileges. Coffee or a donut may cost one token, while lunch, or a special lunch, may be earned for 5 tokens. Clients who have been attending groups for long periods of time may earn special status tokens, such as selecting the types of food available for the next week, the use of a special parking spot at the clinic, or as done in AA, the leader status. By systematically arranging the contingencies of attendance, clients may become more engaged in treatment.

B. Drug use

In designing CM interventions that reinforce drug abstinence, the goal is to detect all instances of use of the target drug. Thus, CM studies typically monitor drug use 2-3 times per week, because most urine testing systems can detect drug use over this period. When clients submit specimens negative for the targeted drug, they receive the reinforcer (a voucher or take-home dose of methadone). Submission of positive samples results in no reinforcer and sometimes a punisher (reset of voucher to a low value or loss of take-homes).

CM procedures are effective in reducing use of a variety of different drugs. For example, in one study with cocaine dependent outpatients (Higgins et al., 1994), 55% of clients who received behavior therapy plus vouchers for submitting urine samples negative for cocaine achieved at least 2 months of continuous cocaine abstinence. Only 15% of clients who received the same behavior therapy, but who did not get the vouchers, maintained this period of abstinence. Other studies have

demonstrated beneficial effects of vouchers and other reinforcers in reducing use of opioids, marijuana, benzodiazepines, nicotine, and alcohol (see Petry, 2000 for review).

Reinforcing drug abstinence is a seemingly straightforward procedure that can be introduced into clinics. Most clinics screen urine specimens as part of standard treatment, so you are probably already somewhat familiar with this process. However, urine samples often are sent to outside laboratories or hospitals for screening. This practice can hinder application of CM procedures because the results are often not obtained until several days later. To best reinforce submission of negative samples, you want to provide the reward immediately upon demonstration of the behavior. Just like in the previous example of reinforcing therapy attendance, you don't want to wait 2-3 days before you give the client the token.

On-site test kits are available (EZScreens from Medtox, Burlington, NC and Ontrack from Roache, Branchburg, NJ) that provide immediate results at relatively low cost. These test kits are almost as sensitive and specific as the outside laboratory testing, but they have the advantage of providing immediate results, within 2-5 minutes.

Reinforcing urine specimen results presents some practical difficulties. Onsite testing systems cost about \$2 per testing reagent, and using multiple screens (opioids, cocaine and marijuana) increases cost. Submission of urine specimens must be observed by a staff member to ensure validity, but even when submission is observed directly, clients may still try to leave bogus samples. Checking temperature, dilution, and pH can assist in ensuring validity of samples. Some validity test sticks are also available, at a cost of about \$1 each.

Other problems with urine screening are technical in nature. For example, many different types of benzodiazepines exist, complicating the detection of all forms of sedative use. Some drugs, such as methadone and benzodiazepines, are frequently prescribed as well as taken illicitly, and

differentiating licit from illicit use is difficult. Liver disease may result in increased lag time between abstinence and negative readings. For clients with chronic marijuana use, up to four weeks of abstinence must be achieved prior to urine specimens reading negative. Thus, marijuana abusing clients cannot be reinforced for their efforts at abstinence until a substantial drug-free period has been attained.

Detection of alcohol and nicotine use suffers from the opposite problem. Breath alcohol readings can assess alcohol use only over short intervals (e.g., 1-12 hours). Thus, breathalyzer readings should be taken several times a day to detect any use of alcohol, and clearly such a testing schedule is impractical in outpatient settings. Although urine and blood alcohol tests are available, they do not measure back much further than breath tests. Carbon monoxide readings must also be taken several times daily to detect smoking. When designing CM interventions, the manufacturers' specifications regarding the test's sensitivity should be reviewed with the goal that you want to be able to detect all instances of drug use and to reinforce days of drug abstinence.

Another potential problem is philosophical in nature. Most clinical programs strongly endorse abstinence from all drugs of abuse, and clinicians' initial instincts are to reward patients only when they demonstrate complete abstinence. A review of CM studies (Griffiths et al., 2000), however, finds that beneficial effects of the interventions are less likely to be achieved when clients are required to be abstinent from multiple substances to earn rewards. Clients may not be motivated or able to achieve complete abstinence early in treatment. Targeting just a single drug at a time is a better strategy because clients may achieve initial success, which in turn may promote further motivation to abstain from the primary as well as secondary drug(s). Most CM studies that target abstinence from just a single drug find reductions in other drug use as well.

In summary, if you are designing a CM procedure to reward drug abstinence, first you should pick a single drug on which the rewards will be contingent. Drug use or abstinence should be monitored in such a manner to detect all instances of use, and all days of abstinence. For most illicit drugs, this will require a minimum of twice weekly urine monitoring, and in the initial stages of treatment thrice weekly testing is recommended. For each negative sample submitted, the client should be provided immediately with the designated reward. When a missed sample or a positive sample is provided, the reward should be withdrawn. If escalating systems are in place (see section 3F), the next sample that is submitted would result in a reset to the original amount of reward (\$2 voucher, 1 token etc.). A full description of escalating reinforcement systems can be found in a publication by Budney and Higgins (1998). If you follow these guidelines, it is likely that you may be able to enhance abstinence rates among your clients.

C. Goal-related behaviors

In addition to their substance use, substance abusing clients have other troubles, including psychiatric disorders, interpersonal difficulties, and legal and employment problems. Growing evidence suggests CM procedures may be adapted to address these other problems as well. In some studies, therapists reinforced compliance with steps toward treatment goals. For example, clients decide upon three discrete activities each week that are related to their treatment goals. These can include attending a medical appointment if the goal is to improve health, going to the library with their child if the goal is to improve parenting, or filling out a job application if the goal is to obtain employment. If clients successfully accomplish these activities and provide objective verification of their completion via receipts, they receive the identified reinforcers. Activities are individually

tailored to clients' level of psychosocial functioning. Thus, relatively simple activities can be assigned, thereby increasing the likelihood of successful completion and reinforcement.

Reinforcing activity completion may be a procedure well-suited to standard clinical practice. Most therapy sessions focus on long-term treatment goals and steps toward those goals. Reinforcing activity completion may improve the therapeutic alliance, as therapists work collaboratively with clients to decide upon tasks that can be accomplished. Activity assignments also are relatively inexpensive. The only cost is therapist time, which runs about 15 minutes per week for activity verification and setting once the client learns the procedure. Activity reinforcement may improve psychosocial functioning as well.

To set up a procedure reinforcing goal-related activities, you initially conduct a needs assessment with the client. You may review the client's current status with respect to housing, transportation, employment, family and social relationships, legal problems, medical and psychiatric issues, and recreational activities. Clients should select two to three of these major goal areas on which to focus their efforts. Each week, the client is encouraged to decide upon one activity related to each of their selected long-term goals. The activities should be very specific and have a reasonable chance of successful completion. In other words, "going back to school," is probably not a good initial activity, as it is vague (what school?), and it may be impossible to initiate a school program within a one-week period. Instead, a specific goal may be to telephone 2 programs about GED courses and bring back the information regarding fees, dates and times of their programs. The following week, subsequent activities may be set such as signing up for a program, attending the first class, completing the first homework assignment, etc. See Petry et al. (2001) for a complete list of goal-related activities that can be reinforced and details of activity selection and verification procedures.

D. Within clinic behaviors

Behaviors within the clinical setting can also be modified using CM technique. Substance abusers frequently complain, swear, and discuss illicit activities in the common areas of clinics. Clinics generally have methods for handling such behaviors, but the procedures often are punitive in nature, consisting of disciplinary meetings or discharge. Another approach is to positively reinforce appropriate clinic behaviors. Providing clients with a sticker and a chance of winning \$25 for engaging in appropriate behaviors (saying hello, waiting patiently) improved verbal behaviors in one study. In an inpatient setting for dual diagnosis patients, another program found that increased freedoms (phone calls, smoking breaks, outside passes) could be used to reinforce therapy attendance, homework compliance, and clinic behavior. Such techniques may improve staff ability to positively manage clients and create a more pleasant atmosphere for recovery.

If you wish to develop such techniques, first you need to decide upon the exact clinic behaviors you want to alter. These may include arriving at group on time, saying hello, thank you etc., conversations that do not involve swearing and discussion of drugs, or not loitering in the parking lots. Monitoring schedules then need to be developed to “catch” clients doing what you want them to be doing. So, you should check parking lots or the waiting rooms frequently (every 15 minutes), and provide reinforcement whenever the appropriate behaviors are occurring. When inappropriate behaviors are noted, simply no rewards are provided.

Thus, CM procedures can be applied to reinforce many behaviors, ranging from attendance to drug abstinence, compliance with goal related activities and within clinic behaviors. Once you have decided upon the behavior you wish to alter, you need to select a reinforcer to use.

Step 2: Reinforcers to Use

A variety of reinforcers can be used in CM approaches, some of which are commonly used in, or readily adaptable to, standard clinic settings. You can select reinforcers based on availability and practicality at your own site.

A. Vouchers or cash. Many of the controlled clinical trials of CM approaches have used vouchers as the rewards. Clients earn vouchers that accumulate in a type of clinic-managed bank account. They can request their vouchers be redeemed for a variety of retail goods and services. Each negative urine specimen, for example, earns a voucher, and the vouchers escalate in amount as number of consecutive negative urine samples increases, such that the first negative sample earns \$2.50, the second \$3.75, the third \$5, and so on.

One advantage of vouchers is that it allows for individual preferences, and clients can spend their vouchers on virtually any item. They typically request restaurant gift certificates, clothing, haircuts, sports equipment, movie theatre tickets, radios, and VCRs. Because cash is not provided, the likelihood of clients using vouchers to purchase drugs is reduced. You can veto requests of certain items like gift certificates to stores that sell liquor or cigarettes.

Voucher programs, however, are expensive to employ and manage. For example, in many voucher studies, each client can earn up to \$1,000 worth of goods during treatment, and average earnings are about \$600. In addition to the cost of the vouchers themselves, the cost of staff time to purchase items, and transportation costs to obtain specific requested items, must be considered.

Providing cash may be less expensive than vouchers because staff time is not needed to purchase items. Because most people prefer \$10 cash to \$10 in vouchers, changes in the target behavior may be obtained with lower overall costs. Some people have expressed concern that cash

may be used to buy drugs, but repeated monitoring of drug use, and removal of incentives when drug use is detected, may address this concern. Cash reinforcers, nevertheless, suffer from similar concerns as vouchers, such as how clinics can raise necessary funds.

While some studies have shown that lower amounts of vouchers or cash can be useful in changing some behaviors (e.g., a dollar a day for therapy attendance), other studies have demonstrated that the CM procedures lose their effectiveness when the magnitude of the reinforcement gets to low. Decreasing the magnitude of the vouchers available seems to be particularly problematic when drug abstinence is being reinforced. For example, clients may be willing to attend a therapy session for a small voucher because therapy attendance may be a relatively easy behavior to modify. However, that same small voucher may be ineffective at altering drug use behavior, because it is such an ingrained pattern. If you decide to use cash or vouchers and they are not producing their desired effects, it may be because the amounts being used are too low.

B. Intermittent schedule of reinforcement. Another way to reduce the costs of these procedures is to provide only a proportion of the target behaviors with a reinforcer. We first utilized this approach in a study of alcohol-dependent clients (Petry et al., 2000). Clients earned the chance to draw from a bowl and win prizes of varying magnitudes for submitting negative breath-alcohol samples and completing steps toward their treatment goals. The prizes available ranged from \$1 prizes (choice of a bus token or McDonald's coupon) to \$20 prizes (choice of a walkman, gift certificate, watch, or phone card), and \$100 prizes (choice of TV or stereo). Chances of winning were inversely related to prize costs, such that chances of winning a \$1 prize were approximately 1 in 2, while chances of winning a \$100 prize were 1 in 250. This intermittent schedule of reinforcement system may be a relatively inexpensive expansion of vouchers, as only a proportion of behaviors are reinforced with

a prize, and average cost per client was under \$200. This system may be well-suited to treatment settings because at least some of the prizes can be obtained through donations. Purchasing the prizes can be done less frequently than fulfilling individualized voucher requests, thereby reducing staff time. The time or money associated with obtaining prizes, however, may still exceed the resources available to many treatment providers. To further reduce costs, clinics may consider having both monetary and non-monetary prizes available (e.g., special parking spots for a week, or rapid dosing line in methadone clinics). Nevertheless, if the magnitude of the rewards available become too low, or if the prizes available are not desired by the clients, the procedure is unlikely to work.

C. Clinic privileges. Methadone and other agonist pharmacotherapies are strong reinforcers, and some CM procedures have used properties of the medication to induce behavioral change. For example, changes in methadone dose, take-home privileges, early morning dosing hours, and continued treatment as opposed to administrative discharge have been used as reinforcers in methadone programs. Although these reinforcers are not costly, they are only applicable within the context of opioid agonist treatment. Additionally, reductions in doses may lead to opioid use, and revocation of take-home dosing privileges may result in attrition. While many methadone programs use these clinic privileges to encourage abstinence, they are often not as successful as they would desire, primarily because appropriate behavior principles are not applied. For example, in many clinics, clients can earn take-home doses once they are able to maintain 3 months of continuous abstinence from illicit drugs. But, only a minority of clients gains these take-home privileges. The relatively disappointing results of standard take-home procedures occur because drug use is not monitored frequently (often only one time per month, thereby allowing a lot of undetected use, and a lot of abstinence that is never reinforced). Moreover, the time between the desired behavior

(abstinence) and the reward (receipt of the take-home) is long delayed (e.g., three months). In controlled studies when behavioral principles are applied, take-home doses can be a very powerful reinforcer for methadone maintained clients.

D. Informing. Another CM approach is to specify an aversive consequence, such as informing an employer, legal authority or licensing board, if drug use is detected. This technique can be used for maintaining abstinence of substance-abusing health care professionals. However, it may be applicable only among clients who are employed or under legal supervision, and some clients may be unwilling to commit to such a system voluntarily. For clients under such supervision, the procedure can be made more positive. Instead of informing an outside board when drug use is detected, a system could be implemented in which every *negative* sample (or positive behavior) is reported to the outside agency. Thus, you could establish weekly telephone calls to a parole officer in which results from all samples are discussed, and negative samples are congratulated, rather than just positive samples being punished.

E. Refunds and rebates. Another procedure is to have clients pay a fee upon treatment entry, which is refunded if they complete treatment and remain abstinent. This technique, however, may be unlikely to entice substance abusers into treatment and may be impractical in underprivileged populations. Another strategy that has been proposed is to reduce fees for service or provide a rebate of the full treatment cost to the client when abstinence is achieved and maintained. The criminal justice system, which sometimes mandates upfront pay-for-service treatment programs, may be able to offset the costs of reinforcement procedures by providing a proportion of these fees back to clients who successfully demonstrate the desired behavior change (attending sessions or abstinence).

F. Public assistance and financial management. Other strategies that have been proposed are to provide public assistance or establish a representative payee and allow greater latitude in management of one's own finances when abstinence is maintained. These techniques may alleviate problems associated with increased drug use and emergency room visits following public assistance payments. They also may help to ensure stable housing and teach substance abusers to manage their own finances. However, they require substantial involvement with each state's individual public welfare system, and they may be applicable for only a subset of substance abusing clients-- dual diagnosis clients on public assistance. Some individualized approaches have been established. For example, we have a case report of a schizophrenic substance abusing veteran, who received portions of his disability check contingent upon not presenting to emergency rooms, attending individual counseling sessions, and providing drug-free urine specimens (Petry, Petrakis, et al., 2001).

In summary, a variety of reinforcers can be used in CM interventions. What may be more important than the specific reinforcer is the application of behavioral principles in the contingent delivery of the reinforcers. These issues are described below.

Step 3: Designing monitoring and reward schedules

After you have decided upon the behaviors to change and the rewards you want to use, you should consider adapting behavioral principles in the application of the reward contingencies. Important variables are the frequency of occurrence of the target behavior, the monitoring schedule, and the delivery of the reinforcement.

A. Frequency. The target behavior should occur frequently for CM procedures to be effective. For example, if a client uses cocaine only once or twice a year, reinforcing cocaine abstinence may be unlikely to change behavior substantially.

The target behavior should be monitored on a regular basis, such that appropriate behaviors can be reinforced frequently. Thus, urine sample testing systems should be designed to screen frequently for drug use, and compliance with activities should be assessed regularly. In most CM trials, compliance is evaluated at least twice weekly. Waiting several weeks to assess drug abstinence may increase the probability that the client fails to understand the expectations or fails to recognize the association between the behavior and reinforcer.

Frequent monitoring is useful so behaviors can be reinforced often. Clients should receive reinforcers early in treatment (see priming section) to learn the association between behavior and reinforcement. If clients must achieve several weeks or even months of abstinence prior to obtaining a reinforcer, they may never see the value of it, and hence behavior is unlikely to change.

B. Successive approximations. Another principle central to establishing new behavioral patterns is to reinforce successive approximations. For example, in teaching a young child to speak, small utterances are initially rewarded with smiles and praise by parents. Once words are spoken, more verbal praise is provided. After the child has learned a variety of words, sentence phrases and finally full sentences are praised. In other words, each small step along the way is reinforced. If you did not praise a child until he or she spoke a complete sentence, speech would occur much less rapidly, if at all.

Similarly, in establishing a pattern of drug abstinence, you can reinforce approximations toward abstinence. As described earlier, rather than necessitating abstinence from all substances,

start with one drug at a time. Some studies have used qualitative urinalysis testing to reinforce reductions in benzoylecgonine metabolites to encourage initial attempts at cocaine abstinence. In programs that reinforce compliance with activities, very simple activities are assigned early on (e.g., calling for a vocational rehabilitation appointment rather than attending the appointment). Assigning relatively easy activities ensures completion and brings clients in contact with the reinforcers.

C. Priming. Another method of providing early access to reinforcers is to “prime” clients. For example, if you are using a voucher procedure, you can provide clients with their choice of a movie theatre or restaurant gift certificate during the first therapy session. In this manner, clients learn that they can receive desired items by participating in treatment. In our intermittent schedule of reinforcement studies, all clients received a drawing on the first day of treatment. If a client is legally mandated to treatment, a meeting or phone call between the therapist and parole officer may be used to demonstrate an understanding of the contract among all parties.

D. Immediacy. Another important variable to consider is the immediacy of the reinforcer. Learning occurs best when each time the target behavior is exhibited it is followed by its consequence without delay. If the reinforcer is presented far in time from the incident of drug abstinence (or whatever behavior is being reinforced), the reinforcer is less likely to alter behavior. Voucher programs use this behavioral principal by providing vouchers immediately upon submission of a negative specimen. Moreover, samples are screened within minutes of collection, and exchange of vouchers for retail items occurs with minimal delay, 2-3 days from request. If activity completion or clinic behaviors are reinforced, the reinforcement should occur as soon as possible after the behavior is exhibited. Thus, when reinforcing activity completion, you can encourage clients to bring in the

verification as soon as they complete the activity. Some clients make extra trips to the clinic to describe what happened when they completed the activity and to receive their reinforcer.

E. Magnitude. As mentioned earlier, the magnitude of the reinforcer must be sufficiently large to change behavior. A few studies have examined whether the magnitude of the reinforcer affects outcomes, and most all of these studies concur that large magnitude reinforcers are more likely to change behaviors and improve outcomes than small reinforcers. Nevertheless, some studies employing relatively low magnitude, or no cost, reinforcers have demonstrated positive effects in some circumstances. When principles associated with learning are applied, positive outcomes may be achieved with lower magnitudes. The key to designing these programs is to find desired reinforcers that are not associated with high programmatic costs. Contrived reinforcers may be reduced once a new behavior pattern has been established. In other words, after a client has achieved 2-3 months of continuous abstinence, you may be able to reduce the frequency or magnitude of reinforcement. Abstinence may persist because a new behavior (drug abstinence) has been learned.

Clearly, higher magnitude reinforcers may be needed to change behaviors that themselves induce strong positive effects (drug use) compared with behaviors that induce smaller effects (complaining in the clinic). In other words, stickers with a low probability of winning \$25 may alter verbal behaviors but may be unlikely to change drug use. A general rule is to choose a reinforcer that can compete with reinforcement derived from the behavior targeted for change. You must also be able to accommodate individual preferences with the reinforcers you provide. In other words, not every client will want restaurant gift certificates or clothing items. Having a wide selection of prizes or voucher request items available will increase the chances that the reinforcers will be desired, and therefore will be able to influence clients' behaviors.

F. Escalating reinforcers and bonuses. As clients achieve longer periods of abstinence in most CM studies, the amount of the voucher or the number of prize drawings increase. By the end of the 12-week treatment period in many voucher studies, for example, clients can earn over \$30 for each drug-free urine specimen, plus a \$10 bonus for every third consecutive negative specimen.

Eliminating the escalation and bonus elements and delivering a constant rate of reinforcement may make the voucher system less expensive and less complex. However, other studies have shown that an escalating system may be necessary for inducing significant periods of abstinence, at least initially. Once the change has occurred, the value of the reinforcer may be reduced in magnitude, yet the behavior may be maintained.

G. Consistency. Implementing CM programs can be problematic because many therapists tend to decrease the frequency with which they apply contingencies over time. For example, while urines may be monitored frequently during initial stages of treatment, testing schedules may become progressively less rigorous as time goes on. Not only may monitoring decrease over time, but consequences, too, may be applied less rigorously. By providing clean specimens during the first weeks of treatment, for instance, clients may ward off suspicions and frequent testing; if they submit a positive sample two months later, therapists may dismiss it as an aberration and fail to inform parole officers.

To promote continuous application of CM procedures, staff can be reinforced for appropriate implementation. Weekly progress reports describing the staff's monitoring and reinforcement can be incorporated into clinical meetings. Checklists can be made to remind therapists of which clients are

to be monitored and reinforced each day. Social encouragement and a chart in the staff room, with examples and reminders, can be used to implement the CM procedures appropriately.

Conclusions

This paper has described the behaviors that can be modified, the types of rewards that can be used, and some behavioral principles that should be considered in designing CM interventions. If something doesn't work initially, try to re-examine your schedule of monitoring or reinforcement and see if other options may work. See if the procedure is really being implemented consistently, or if there are pit-falls in the approach. You can often learn from mistakes in the development or implementation of the techniques. Keep records of what works and what doesn't, and share ideas among staff and clients. As you design these CM procedures, also keep an open mind regarding the possibilities. You may come up with new ideas for low-cost reinforcers or find other problematic behaviors of your clients that can readily be modified using these techniques. Novel applications of these approaches may enhance their effectiveness in treating substance-abusing clients.

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Resources

A full description of escalating reinforcement systems can be found in:

Budney, A.J., Higgins, S.T., 1998. A Community Reinforcement Plus Vouchers Approach: Treating Cocaine Addiction. NIDA Publication No. 98-4309. Rockville, MD.

A list of goal related activities can be found in:

Petry, N.M., Tedford, J., & Martin, B. (2001). Reinforcing compliance with non-drug related activities. Journal of Substance Abuse Treatment, 20, 33-44.

Trainers for implementing contingency management programs for substance abuse:

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BHRM staff note:

Some counselors may not have had a formal course in behavioral theory and application. An entertaining book that provides background on behavioral principles is:

“Don’t Shoot the Dog, The New Art of Teaching and Training” Karen Pryor, Bantam Books.

BHRM staff note:

Dr. Petry has used a technique of allowing clients to draw from a “fishbowl” for prizes to reward behaviors such as clean urine samples. Prizes are available that clients may select rather than cash. She reports this is particularly effective when used with group settings as they see others “win” in addition to their own experiences. This approach may also be appealing to community agencies with limited resources as it reduces expenses.

Dr. Petry was requested to provide an example of the mix of prizes in the fishbowl and she replied as follows:

The fishbowl percentages vary slightly in almost every study. I vary them to get to the amount of money I want to spent per patient, so it has to take into consideration length of treatment and frequency of monitoring. Typically, I use something to the effect of:

1 in 500 is jumbo/up to \$100 prize

30 in 500 are large/\$20 prizes

219 in 500 are small/\$1 prizes

250 are "good job"