Published in final edited form as:
J Offender Rehabil. 2011 ; 50(5): 235–251. doi:10.1080/10509674.2011.585924.

Implementation of a Contingency Management-Based Intervention in a Community Supervision Setting: Clinical Issues and Recommendations

ADRIA J. TROTMAN and **FAYE S. TAXMAN**
Department of Criminology, Law, and Society, George Mason University, Fairfax, Virginia, USA

Abstract

A cognitive-behaviorally based substance abuse treatment program was implemented within a Community Supervision setting. This program included a goals group that included a contingency management component and included the probation agent as a part of treatment. This paper describes the contingency management component of the treatment and discusses, in detail, issues that arose throughout the course of the study. Possible causes and solutions to the issues are discussed from a contingency management perspective that can result in improved reinforcements to achieve better probationer outcomes.

Keywords

cognitive behavioral treatment; community supervision; contingency management; probation; substance abuse

Contingency Management Overview

Contingency Management (CM) is an evidence-based therapeutic intervention wherein specific behaviors are targeted for rewards or punishments to exact behavioral change (Higgins & Petry, 1999). CM is based on operant conditioning principles wherein behaviors that are reinforced, or rewarded, are more likely to increase, and behaviors that are punished are more likely to decrease over time (Higgins & Petry, 1999). There are two main components CM: reinforcement and punishment.

The purpose of reinforcement is to *increase* a specific target behavior and can be either positive or negative in nature. Used here, these terms do not mean good or bad as used in general connotation. Positive simply means *adding* or administering a contingency after a target behavior is performed. Negative means *removing* a contingency after a behavior is performed (Higgins, Silverman, & Heil, 2008). As such, positive reinforcement means *administering* a contingency in order to *increase* a target behavior. A real-world example would be giving a bonus for doing well at work. Negative reinforcement is the *removal* of a contingency but with the same goal of *increasing* a target behavior such as removing a boot from a car after a fine is paid.

The purpose of punishment is to *decrease* a target behavior. Positive punishment, is the administration of an aversive contingency in order to decrease a target behavior. An

Address correspondence to Faye S. Taxman, George Mason University, 4400 University Drive, MS: 6D3, Fairfax, VA 22030, USA. ftaxman@gmu.edu.

All opinions are those of the author and do not represent the position of the federal agency.

example of this would be receiving a ticket for speeding. The final component of CM is negative punishment which is the removal of a contingency in order to decrease a target behavior. An everyday example of this would be a parent revoking telephone privileges for their child breaking curfew. When administering reinforcements or punishments, three important factors impact the effectiveness of the contingency: salience, immediacy, and consistency (Lussier, et. al., 2006).

The operational definition of salience is the relevance of a given contingency to an individual. A contingency will not be effective if it is not important or relevant to the individual. For example, if an individual receives a bouquet of flowers as a positive reinforcement for doing well in school but is allergic to flowers, then the flowers will not be an effective reinforcement. Likewise, if an individuals is unconcerned about his/her credit rating, then having an unpaid bill turned over to a collection agency and reported to his/her creditors will not be an effective punishment to decrease non-payment of bills.

For a contingency to be more effective, it should be administered as soon as possible after the target behavior is performed. This increases the association, or link, between the target behavior and the contingency.

Consistently administering reinforcements and punishments also increases the effectiveness of CM. For instance, if you received a ticket every time you drove above the speed limit you would be much less likely to speed. These same parameters are true when CM is used in various settings as an intervention to target specific behaviors as well.

In probation environments, CM can be applied as a tool to increase the behavioral compliance of offenders. Finding methods to help offenders maintain compliance is essential considering compliance is the key to successful completion of supervision. Also many offenders have a number of conditions, many of which require probationers to engage in behaviors that they may not ordinarily engage. The tools of CM are relevant because they can provide a theoretically based approach to increase compliance by providing a rubric to which staff may refer. If effectively implemented, CM would provide swift and certain steps that can be taken by agents to shape offenders' behaviors in order to increase compliance, as opposed to waiting until the person fails to meet expectations repeatedly putting them at risk for jail time. The following paper elucidates upon the principles of CM and applies it to substance abusers in a probation setting.

CM Intervention Settings

CM has been used as a mechanism of change for a range of targeted behaviors including but not limited to attendance and compliance to medical treatment, decreased HIV risk behaviors, adherence to rules and regulations within a controlled environment, as well as personal hygiene and grooming in mentally challenged individuals (Burkhart et. al., 2007; Daniel, Jackson, & Watkins, 2003; Petry, et. al., 2010). CM has been shown to be an effective treatment strategy in a wide variety of settings. For example Dunn, et al (2010) used CM to address tobacco smoking among opiod maintainted individuals. The CM began with vouchers worth $9.00 and increased by $1.50 for each subsequent negative sample (maximum value of $362.50). Those subjected to CM were more likely to not be using tobacco and had longer perios of time of abstinence (7.7 vs. 2.4 days). In another study of CM, the goal was to examine how CM reinforced health behaviors in a group setting. HIV-positive patients with cocaine or opioid use disorders (n = 170) were randomized to weekly CM or 12-step group facilitation for 24 months. Those assigned to the CM group received opportunities to draw from a fish bowl when completing health activities and submitting substance-free specimens. Those in the CM group had a greater number of consectuvie drug

free urines, although the results did not sustain over time. More is needed on research to understand long-term benefits (Petry, et al., 2010). CM has been tried in various settings.

CM Intervention in Substance Use Treatment

CM has also been largely applied as an intervention or a component for substance use disorders. These interventions are implemented in both inpatient and outpatient settings. CM methods include but are not limited to token economies, shaping, behavior contracting, and voucher-based programs. Generally speaking, CM techniques are used in conjunction with other intervention methods including medication and cognitive behavioral therapy. In a recent review of psychosocial interventions for substance use disorders, CM in addition to CBT was found to yield high effect sizes in the two studies included in the meta-analyses (d = 1.02; 95% CI = −0.05 to 2.09) and CM alone yielded moderate-high effect sizes (N=14; d = 0.58; 95% CI = 0.25 to 0.90). CM had the highest retention rates and second highest rates of post-treatment abstinence following relapse prevention (Dutra et. al., 2008).

Theoretically, CM-based interventions can be reinforcement-based, punishment-based, or a combination of both. However, CM treatment tends to be incentive-based (Marlowe, et. al., 2008). For example, a study examining voucher-based CM for veterans in continuing care showed that higher magnitude vouchers can increase attendance and retention (Businelle, 2009). Prize-based incentives were employed as a low-cost incentive based CM intervention in a study by Alessi, Hanson, Wieners, & Petry (2007). Subjects receiving CM treatment versus standard treatment were abstinent for twice as long following treatment than the control group and significantly lower rates of substance use at 9-month follow-up.

The likely reasons CM focuses mainly on reinforcement- or incentive-based strategies are two-fold. First, in order for punishment to be effective, it needs to be delivered immediately and consistently. In regards to substance use, it is almost impossible to implement the contingencies in a swift and consistent manner. It may be days or weeks between drug use (the target behavior) and drug test results. Additionally, if a client fails to attend treatment, the punishment would be further delayed until the client returns to treatment. The other reason is that community treatment programs have limited punishment contingencies that they can implement. Most simply terminate clients for drug use or persistent noncompliance.

CM in Criminal Justice Settings

In criminal justice settings, CM principles are likely to be applied in a less clinical format in the form of drug courts and general probation supervision. Specifically, the CM concept of reinforcement and punishers is important but the system does not attend as much to other important aspects of CM such as swiftness, certainty, or even target behaviors. The emphasis in these settings is more on negative reinforcement and positive punishment than on positive reinforcement CM strategies (Marlowe & Wong, 2008). The most commonly administered reinforcement involves reduced number of supervision requirements (National Association of Drug Court Professionals, 1997). Specifically, offenders who are compliant with court and treatment obligations may be able to attend treatment less frequently. They can also reduce the required number of urine samples they have to give by submitting consistently drug-negative samples. They may have a decreased number of required court appearances as well. Studies examining the effectiveness of drug courts show mixed results (Marlowe, et. al., 2008; Prendergast, Hall, Roll, & Warda, 2008) suggesting that while drug courts may be a promising alternative to incarceration for drug addicts who are criminally involved, more needs to be done to further decrease negative outcomes in these populations. One viable option would be to add a positive reinforcement component, as this has been shown to be effective in treatment settings.

Two recent studies (Marlowe et. al., 2008; Prendergast, Hall, Roll, & Warda, 2008) were conducted to see if adding incentives to the drug court model would improve outcomes. Marlowe and colleagues (2008) examined the differences between drug court, drug court plus escalating incentives (gift certificates), and drug court plus high-magnitude gift certificates on attendance, advancement through drug court, and on drug negative urine samples and found no differences between groups on any of the outcome measures. Additionally, a study examining the addition of low-value vouchers to drug court showed no differences across study groups in treatment outcomes (Prendergast, Hall, Roll, & Warda, 2008). While the results of both of these studies suggest that there is little added benefit of incentives to drug courts, it should be noted that drug court is unique in its ability to administer more salient punishments more immediately and consistently than most treatment settings and standard community supervision in addition to less variability in target behaviors. This may explain the minimal benefit of incentives for drug court. A limitation of these studies includes the failure to document the degree to which the delivered CM followed the core principles. This is promising in terms of possible ways to decrease recidivism in criminally involved drug addicts.

Approximately 30,000 of the 4.3 million offenders on supervision are involved in drug treatment court. The majority of drug-involved offenders are not sentenced to drug court, but rather are mandated to standard community supervision. When an offender is sentenced to probation, he or she is required to complete several probation conditions. These conditions may include community service, obtaining/maintaining employment or schooling, paying court fees and/or retribution, obeying all laws, reporting to their agent as required, and drug testing and treatment if necessary. These conditions are not weighted based on importance in any standardized manner. If probationers fail to complete the required conditions including drug treatment, they can face jail time. Unfortunately, their addiction usually interferes with the completion of these conditions. Standard community supervision lacks the more immediate and consistent contingencies that lead to higher compliance as seen in drug court. To date, CM has not been explicitly implemented in general supervision populations.

In spite of research suggesting that monetary and material incentives may increase compliance and negative drug testing results in treatment settings, these methods are not likely to be adopted by community drug treatment centers or by the criminal justice system as a whole. This is likely a combination of the perceived added financial burden as well as the potential public outcry that may result from rewarding individuals for behaviors that the general public may feel these individuals should already be engaging.

A Test of CM in Community Supervision

Supporting Offenders to Avoid Recidivism and Initiate New Goals (SOARING) is an innovative integration of manualized treatment into community supervision setting. The treatment protocol consisted of an induction session, at least seven sessions of CM-based goal-setting groups, 18 sessions of cognitive-behavioral group treatment (CBT), and six sessions of a group aimed at building social networks. The focus of this paper is on reviewing the goals group and how CM was integrated into this group as part of a standard practice in supervision.

Goals Group Overview

The rationale behind goals group is that if probationers are able to achieve abstinence from drug use and attain life goals they will be more likely to successfully complete supervision and maintain their abstinence from both drugs and criminal activity. The purpose of the goals group is to target specific areas in probationers' lives that need improvement, to set

goals in order to facilitate these life changes, and to teach clients how to problem solve the inevitable obstacles they face when trying to achieve the set goals.

The induction session is the first session for all SOARING clients. During this individual session, the intervention is explained to the client in detail, including exactly how the goals group works. Additionally, his/her probation conditions are explained by the probation agent. The role of both the agent and the clinician in treatment is discussed in detail. Finally, an initial goal is set during this session for the client to achieve before their first goals group.

The goals group meets weekly, enabling the Probation Agent or Officer to have increased contact with the probationers. Led by the clinician and the probation officer, the goals group was designed to replace the standard probation officer report day. Probationers are usually required to meet with their probation officer anywhere from once every other week to once every few months, depending on the probation conditions. In SOARING, the probationers reported to the probation officer weekly, allowing for more contact time and more opportunity for the probation officer to identify potential problems and to take steps to help prevent the probationer from re-offending, which was one of basic tenets of SOARING. SOARING has the added tool of mentors, individuals who have previously been involved with drugs and the criminal justice system but who are now contributing members of society. Their role consists of providing probation positive feedback and constructive criticism to clients based on their own personal experiences, in addition to helping clients outside of group hours (e.g., taking phone calls from clients, going to NA meetings with clients, participating in drug-free activities with clients, etc.).

Goals group consists of three parts: reviewing old goals, group attendance and urinalysis results; setting new goals; and discussing relevant issues. During the review portion of group, clients provide predetermined verification for the goals they have achieved and discuss what went wrong for the goals they did not achieve. Overall group attendance for the previous week as well as results of the urinalysis is reviewed for each client. Drug-negative urine samples and 100% attendance are praised; drug-positive urine samples and failure to attend groups are addressed and problem-solving skills are applied. After reviewing goals, attendance, and urinalysis results, new goals are set for the week. Every week, clients set between 1–3 goals based on their specific needs in addition to leaving a urine sample. The probation officer and the clinician work together to help clients assess their needs in order to determine relevant goals. This is extremely important because probationers have several conditions they have to complete in order to remain compliant with their probation orders. This is often overwhelming to the probationers who are not always aware of all of their probation conditions. If times allows, issues that are related to goals are discussed after new goals are set for all clients. Each client is required to attend goals group each week until they graduate.

Graduation from Goals Group

In goals group, clients have to earn stars in order to advance or graduate out of the group. During a group session if a client achieves all of their set goals he/she receives one star. If he/she attends all required groups for the week (goals group CBT group, and after week eight, social network group), they can also receive a star for 100% attendance, resulting in a possible total of two stars per week. These stars are posted on a tracking sheet that is presented to the entire group on an overhead projector. In order to graduate from goals group clients must attend for at least seven weeks and must earn 10 stars in a consecutive seven-week period.

Reinforcement Provided by Goals Group

There are several ways in which the clients receive reinforcement during goals group. They receive immediate positive reinforcement for achieving goals by being able to see their progress being charted on the tracking sheet. In addition they also receive verbal praise from fellow group members, the probation officer, clinician, and mentors. Upon completion of the goals group clients receive a framed, signed certificate of achievement from the clinician. This serves as a delayed positive reinforcement for the client. They no longer have to attend the goals group at this point, which serves as a delayed negative reinforcement for the clients. The probation officer can reduce their urinalysis schedule following sustained abstinence; this is a delayed negative reinforcer as well. Clients are still required to set and achieve weekly goals, but the review process for this occurs briefly following the CBT group with no standardized punishers or sanctions for failing to achieve the goals at this point.. It was assumed that by the time clients graduated from goals group that the natural environmental reinforcements for these goals would have begun to “kick-in” and therefore the contingencies provided in group would no longer be necessary.

If a client fails to accomplish his or her goals or to attend all required groups for a given week, the clinician, agent, and mentors try to help the client problem-solve the issues that the client faced. This strategy was designed to help the clients be able to resolve the issues so that they can become compliant; however, the process was often perceived as aversive to clients thus transforming the problem-solving process into a form of positive punishment. For example, if a client failed to submit an application for his social security card, the mentors, clinician, or agent would ask what prevented him from achieving this goal. They would then use that information to help find a way for the client to be successful next time. The clients would often find the attempts to obtain more information intrusive and become defensive. They also often felt that they were being “lectured” when facilitators underscored the importance of completing the set goals.

If a client consistently fails to accomplish goals or attend group, the agent can administer a sanction. This is another example of positive punishment; however the sanction process is a community supervision paradigm, not an aspect of SOARING. Most treatment programs dismiss clients for continued drug use; SOARING conceptualizes recovery as a process wherein lapses and relapse are inherent and therefore does not terminate clients due to continued or recurring drug use. Continued non-compliance to treatment is considered a violation of the client’s probation orders and therefore could lead to graduated sanctions including a written reprimand, verbal reprimand by the agent and her immediate supervisor, a sign-in log (requiring probationers to come to the office daily to sign-in) and administrative review, and finally request for a summons to court or a request for an arrest warrant. All of these contingencies are administered by the agent on their own schedule; SOARING clinicians have no power over criminal justice issues; they only make recommendations to the SOARING agent.

Goals Group Outcomes

Descriptive characteristics of the individuals who participated in SOARING are displayed in Table 2 and goals group performance is summarized in Table 3. The graduation rate from the overall SOARING program was 23.5%, and Goals group was 36.5%. It should be noted that of the 31 clients who completed the goals group, 20 (64.5%) went on to complete the entire program. The mean number of stars earned from full weekly attendance was 5.77 (SD=4.19). The mean number of stars earned from achieving weekly goals by participants over the course of treatment was only 3.28 (SD=2.74) and mean number of times they failed to get a star was 7.47 (SD=7.48). This suggests that even for the participants who are able to advance out of Goals Group, they are doing so mostly by showing up. They can earn 7

weekly attendance stars and only 3 weekly stars and still graduate from the goals group. When divided by total number of sessions attended, clients achieved weekly goals stars an average of 41.87% (SD=29.90%) of the time.

Discussion

Target Behaviors (Goals) Issues

Based on CM principles, targeting a behavior for reinforcement or punishment is aimed at increasing or decreasing that specific behavior, respectively. This contingency should be relevant to the client, occur consistently, and as immediately as possible following engagement in or refraining from the target behavior (Lussier, et. al., 2006). After many trials (or occurrences), the behavior is either acquired (or becomes a habit) or is extinguished (or stops occurring). Once a new behavior is habituated, then continued reinforcement is generalized to similar behaviors based on similar cues in the environment.

SOARING applies these CM principles in a novel manner. Specifically the target behavior is self-initiated goal-oriented action. The focus is on *how* to go about doing things rather than *doing* one thing in particular. The idea is that individualizing goals will lead to more relevant or salient natural reinforcers and a generalization across these goal-oriented behaviors. However, based on conditioning principles, the variety of target behaviors across weeks can slow acquisition and generalization of the overarching goal. This is because in order for a behavior to become habit it needs to be repeated. Generalization occurs after a specific target behavior is habitualized. If the behavior changes from week to week, then habituation and subsequently, generalization are delayed.

One issue that arose is related to salience; at the beginning of the program, clients are not expected to be able to effectively choose their own goals. They are usually not skilled at prioritizing and addressing needs and after years of drug use, in some cases, have no idea where or how to begin. Therefore, the clinician and probation officer take the lead on initial goal setting. The approach is based on the idea of shared decision making. Ideally, the clinician and probation officer ask the probationers questions and give the probationers information; they encourage probationers to set their goals based on this feedback and tailor and refine the suggestions until a reasonable goal is pinpointed. However, in practice there were occasions where probationers still were unwilling or unable to choose a goal. In those situations they would ask the probation officer and clinician to choose the goal for them. When it was time to review the goals, the probationers in this situation would oftentimes fail to accomplish goals set by the probation officer and clinician stating that it was something that they really did not want to do or that they did not see the benefit of the goal so they did not attempt to accomplish it.

Another issue was determining goals that are both challenging and attainable. During the early stages of recovery, there are few immediate reinforcers for non-drug use behavior for addicts in their natural environments. In SOARING, this concern was taken into consideration. Therefore the goals set in goals group are intended to provide scenarios where clients experience a sense of accomplishment which then serves as positive reinforcement. If the goal is too easy, there is no sense of accomplishment; if it is too hard, the sense of failure will inadvertently serve as a punishment and decrease the likelihood that he/she will engage in the target behavior again. Unfortunately there were a number of clients for whom finding appropriately reinforcing goals seemed impossible. Specifically, certain clients were repeatedly failing to accomplish goals; this resulted in progressively easier goals being set each week until the only available option was setting the most basic of goals (e.g., attend all scheduled SOARING groups); often this subset of clients would still fail to accomplish the set goals. In these special cases, either the clients' lack of effort, or competing

environmental reinforcements to continue their current behavior was more rewarding (reinforcing) than even the most basic level of treatment compliance.

Contingency Issues

Based on CM principles, the reinforcement or punishment needs to be salient and administered consistently and as quickly as possible following the target behavior. This increases the effectiveness of the contingency; the longer the delay in the contingency the less effective it becomes; additionally, if a contingency is not administered consistently is also becomes less effective (Lussier, et. al., 2006). In spite of this knowledge, it is not always possible to be swift in the administration of contingencies. In fact, it is rarely possible. In our treatment setting, this control was even less plausible. The goals group meets weekly; therefore if a goal is achieved during the week, the reinforcer is delayed. Additionally, the intuitive reinforcement that is supposed to occur when the clients achieve these individualized goals is neither immediate nor guaranteed to occur. For example, a client can achieve all of his weekly goals related to obtaining a job (e.g., get an ID, go to re-entry center for job-readiness training, complete job applications, etc.) and still not get a job for an extended amount of time. This situation has occurred with multiple clients and a sense of discouragement was expressed by all of them eventually. Trying to provide off-setting positive reinforcement for their effort became progressively more difficult.

Another major issue that arose stemmed from administration of the contingencies. Specifically, the vast majority of the reinforcers and punishers were regulated and meted out by the probation agent. That individual determined when and if clients received sanctions and whether they received reduced urinalysis schedules, two of the arguably most potentially salient consequences. The probation officers that worked with SOARING were trained in the use of the standardized treatment manual and the importance of following a standardized process for administering sanctions. Several issues related to this setup arose.

The probation officers did not follow a consistent schedule for sanctioning across probation officers or clients. Numerous issues may have contributed to the eventual inconsistency. First, the SOARING treatment was implemented at three different offices in Baltimore City and County. At different offices, there were different standards for when a sanction was warranted. Second, there seems to be a sub-culture within the Parole and Probation offices where probation officers do not check in with the clients or inform them if they are non-compliant to let them know they are placing themselves in a position to be violated. This may be because the probation officers believe that the client is or should already be aware of their own probation conditions and the consequences for non-compliance to these conditions; it may also be due to untenable caseload sizes. Or, the combination of both factors. This mentality is strongly discouraged during the SOARING training. Initially, the probation officers seemed to be more inclined to administer sanctions when they first started working with SOARING but as time drew on they seemed to become less consistent. The probation officers would revert to administering sanctions on a schedule more consistent with the traditional supervision approach (i.e., skip from sanction 1 or 2 to requesting a summons or warrant, sanction 5).

Another factor may be the varying interpretations of intent regarding noncompliance. For instance, if a probation officer thought one client was trying or had a good reason for why he/she was non-compliant the probation officer was less likely to sanction the client. Adding to this issue was their inflated case loads. When SOARING began, the probation officers were promised lower case loads in order to have more time to spend on SOARING clients. However; budget cuts and employee attrition led to the agency not being able to fulfill its commitment to the staff. Thus, agents were overloaded and managed caseloads in excess of 85 offenders. Furthermore, when a probationer was sanctioned, the probation officer would

have to write a report, resulting in increased paperwork. When the probation officer felt compelled to request court action, the judge did not always issue the requested court action and if they did, it did not occur in a timely manner. The probation officers believed that the outcome of the court action would likely lead to continued probation with no real consequences for non-compliance. They did not consider it to be an effective punishment making the probation officers overall less likely to sanction consistently.

One final note regarding is how the criminal justice system and community supervision views progress in general. probation officers are trained to monitor overall progress and are mainly concerned with whether probationers complete treatment, pay all their fees or obtain gainful employment or enroll in school. Their training does not focus on how to track, monitor, and assess short term progress. As such, they are not exposed to the process by which these conditions are met. When SOARING agents were exposed to the bumps in the road that are inherent to addiction, they lacked the training to deal with these situations or the ability to focus on progress instead of failures. Most of the probationers were still in active addiction when they began SOARING; therefore the vast majority were initially at least somewhat non-compliant. This resulted in the probation officer having to administer punishment more often than reinforcement. Over time this became a punishing experience for probation officers themselves as they felt that they were “being painted as the bad guy.” This may have also led to the agents having a more negative impression of the probationers and to an underestimation of the help the agents were able to provide.

Urinalysis Issues

Urinalysis occurred twice weekly at the beginning of treatment. After eight weeks of providing drug-negative urine samples, they were required to leave a urine sample once a week. After eight additional weeks of drug-negative urine samples, the requirement was decreased to once a month for the remainder of the probation. Probationers were allowed to leave urine samples on group session days so that they could avoid additional trips to the probation office. Clients’ toxicology screen results were reviewed during goals group. SOARING only required the clients to leave a specimen in order to be considered compliant; drug-negative results were verbally praised and drug-positive results were discussed in group in detail in terms of problem-solving. If a client yielded consistently drug-positive results, they were eligible for sanctioning; however, these clients were strongly encouraged to enter a detoxification program or inpatient program before sanctioning occurred. Drug-negative urine samples were not required to graduate from the goals group but a month of negative urine samples were required in order to graduate from the SOARING program.

Urinalysis is a bit more difficult to manage than it would appear. If a probationer tests positive for drugs after giving consistently clean urine samples and having a relaxed urinalysis schedule, the agency requires the offender to go back to twice weekly samples. Skipped urine samples count as being drug-positive unless it is excused by the probation officer. Clients generally left urine samples on the same day as groups either immediately preceding or following the session. During group, clients were asked if they had left their urinalysis sample and drug-test results for samples previously given are reviewed. There was at least a one week delay from when the urine samples were given and when the results were returned. This meant that at a given goals group, drug use or abstinence behavior is in the past, around two weeks prior. This is an issue for several reasons. First, any reinforcement or punishment administered related to these results is delayed 1–2 weeks making the association between the action and the consequence less direct. This diminishes the effect of the consequence. Additionally, if a client used drugs when a urine sample is provided but has not used since then, addressing the old urinalysis results in punishing old behavior while failing to reinforce the current target behavior. The reverse is also true, if a client has a clean

urine result from two weeks ago but has used more recently, rewarding him for his previous clean urine sample when he is currently using will likely prove to be counterproductive.

Another issue is graduation from the goals group. The ultimate purpose of the group was to build habit-forming tendencies to set and achieve self-rewarding goals. Therefore, it was decided that a drug-negative urinalysis result was not a requirement for graduation from the goals group. This means than a client could have fewer than eight weeks of clean urine samples or still be currently testing positive for drugs and still graduate if the stars pre-requisite is met. This produces two potential problems. Upon graduation from goals group an expected negative reinforcement is less time in group and at the probation office. If they have provided fewer than eight consecutive clean urines they will still be traveling to the probation office twice a week to provide a urine sample. Additionally, after week eight, they begin the social network group with SOARING and have to come to the probation office for a third group. This may result in having to come to the probation office three times a week in spite of graduating from goals group. This significantly dilutes the power of that particular negative reinforcement. Of even greater concern is the fact that clients who are still using are given less structure and contingencies for continued use once they graduate from goals group. It sends an extremely mixed message about their continued use.

A final issue related to the urinalysis is the detection of marijuana. Cocaine, benzodiazepines, and opiates are detectable in the urine for up to a week after use. Therefore, a client who uses on one day can provide a clean urine sample in as soon as a week; this provides an opportunity to receive reinforcement for abstinence after a relatively short delay. Conversely, it allows for a smaller window of time for an individual to say they last used. For instance, if a probationer gives a positive urine sample for any of these drugs on a given day and they come up positive for the same drug a week later, we know that there were at least two instances of use during that time period. Individuals who use marijuana can test positive for the drug up to 45 days after use. This delays both the reinforcement we can administer for abstinence during that time frame and accurate tracking of continued use during that same period of time.

Implications

Simply stated, SOARING attempts to bridge the gap between community supervision and substance use treatment for drug-involved probationers, with an emphasis on changing the role of the probation agent. The goals group, a key component of the SOARING program, is geared toward implementing CM principles in order to reduce drug use and increase goal-directed behavior. In an innovative approach, the goals group includes the participation of the probation officer to decrease latency period between target behaviors and criminal justice rewards and consequences in order to decrease recidivism and increase abstinence. In spite of the promising nature of the SOARING program, there are issues that were brought to light during implementation of the program that could, if addressed, enhance the treatment further.

In order to address some of the issues related to goal setting, one possible alternative would be to define ONE goal at a time. Typically offenders have a number of target goals such as being drug-free, having a job, having a substance free housing area, attending supverision, court and treatment sessions, and a myriad of other goals—but focusing on one at a time might make the message clearer. It would also make the initial goals in the group more standardized and redundant. In other treatment settings, CM is used to manipulate a very narrow range of behaviors; in SOARING it was used to target a much wider range of behaviors in an attempt to individualize treatment. This may have been an error resulting in a delay in acquisition of the overarching target behavior and generalization across various

settings. Furthermore, in criminal justice settings probation conditions are given equal importance; in an effort to integrate our treatment into a criminal justice setting SOARING adhered to a similar heuristic. As drug dependence is linked to dysfunction in multiple areas of one's life, this may also have been a mistake. A common element that all SOARING clients exhibited was drug use and drug-related behaviors; these behaviors interfere with the client's ability to live normal lives. Therefore, the initial goal should focus on abstinence. Considering that sustained abstinence is a main goal, repetitive goals centered solely on achieving and maintaining abstinence would be a relevant way to promote habituation. Other goals such as maintenance goals (i.e., goals focused on addressing client basic needs) and growth goals (i.e., goals focusing in improving quality of life) can be added to individualize treatment needs later in the course of treatment. In order to increase likelihood of habituation and generalization, goals group can also be extended to continue throughout the course of treatment. In order to increase compliance, small prizes (e.g., bus tokens, food vouchers, etc.) could be incorporated to increase target behaviors as well.

In order to address some of the issues related to working with probation officers, one possible option is to include more behavioral theory-based training for probation officer to increase standardization and consistency in administration of contingencies (see Taxman, Shepherson, & Byrne, 2004). Booster sessions can also be provided on an ongoing basis. Another possibility is to include the agent's supervisor more directly as a SOARING participant, allowing them to provide greater checks and balances to the SOARING agent or a clinician may also be used to provide SOARING-specific supervision. Having an extremely standardized sanction schedule that the probation officer supervisor will enforce will ultimately make the probation officer's job easier as it will take having to make the decision about when sanctions are appropriate out of their hands, perhaps leading to less negative feelings about administering them. Additionally, allowing the probation officer to provide more positive reinforcement will be in turn rewarding for the probation officer. Treatment programs integrated into community supervision are not likely to be in a position to be able to ensure that probation officer case loads remain at a set level. Therefore limiting group size may be one way to help aid in probation officers feeling less overwhelmed.

In order to address the issues related to urinalysis, the most direct approach may be to administer "unofficial" instant result drug tests. This will allow for more immediate administration of contingencies such as awarding small prizes to individuals with drug-negative test results. This may also address the issue with marijuana; since by nature, the punishment is delayed and inconsistent, adding an incentive may be more effective in reducing drug-positive. This is supported by two recent studies that showed that incentive-based CM interventions were effective in increasing number of marijuana-free urine specimens (Budney, Moore, Rocha, & Higgins, 2006; Carroll, et. al., 2006).

The adaptation of a clinical intervention focused on specific target goals in the justice environment met with some unintended challenges. These challenges are important to explore as probation is interested in adopting evidence based practices, and more specifically, substance abuse treatment. Small changes in the implementation strategy, based on the lessons from this study, may result in stronger reinforcement, which the clinical literature repeatedly demonstrates improves outcomes. Given the high failure rates on supervision, it is worth continuing to adapt promising strategies in justice environments.

CM aligns to the justice environment by providing a tool to deliver swift and certain mechanisms to address compliance with conditions of release. Prior work has demonstrated the promise in other settings, and this study illustrates the potential in probation settings. Further research is needed to better examine using CM as a tool in probation settings, either in a group setting or in individual setting. More importantly, work is needed to understand

the best process to train probation officers to use CM. Research is also needed in the area of using vouchers versus prizes to determine whether either mechanism of rewarding offenders is equally effective. More effort should be devoted to learning to use CM concepts.

Acknowledgments

This project was funded by the National Institute on Drug Abuse under R01 073010.

References

Alessi S, Hanson T, Wieners M, Petry N. Low-cost contingency management in community clinics: Delivering incentives partially in group therapy. Experimental and Clinical Psychopharmacology. 2007; 15(3):293–300. [PubMed: 17563216]

Budney AJ, Moore BA, Rocha HL, Higgins ST. Clinical trial of abstinence-based vouchers and cognitive-behavioral therapy for cannabis dependence. Journal of Consulting and Clinical Psychology. 2006; 74:307–316. [PubMed: 16649875]

Burkhart PV, Rayens MK, Oakley MG, Abshire DA, Zhang M. Testing an intervention to promote children's adherence to asthma self-management. Journal of Nursing Scholarship. 2007; 39:133–140. [PubMed: 17535313]

Businelle M, Rash C, Burke R, Parker J. Using Vouchers to Increase Continuing Care Participation in Veterans: Does Magnitude Matter? American Journal on Addictions. 2009; 18:122–129. [PubMed: 19283563]

Carroll KM, Easton CJ, Nich C, Hunkele KA, Neavins TM, Sinha R, Ford HL, Vitolo SA, Doebrick CA, Rounsaville BJ. The use of contingency management and motivational/skills-building therapy to treat young adults with marijuana dependence. Journal of Consulting and Clinical Psychology. 2006; 74:955–966. [PubMed: 17032099]

Daniel C, Jackson J, Watkins J. Utility of an intensive behavior therapy unit in a maximum security female prison. the Behavior Therapist. 2003; 26:211–212.

Dunn KE, Sigmon SC, Reimann EF, Badger GJ, Heil SH, Higgins ST. A contingency-management intervention to promote initial smoking cessation among opioid-maintained patients. Experimental and Clinical Psychopharmacology. 2010; 18:37–50. [PubMed: 20158293]

Dutra L, Stathopoulou G, Basden SL, Leyro TM, Powers MB. A Meta-Analytic Review of Psychosocial Interventions for Substance Use Disorders. The American Journal of Psychiatry. 2008; 165:179–187. [PubMed: 18198270]

Higgins ST, Petry NM. Contingency management incentives for sobriety. Alcohol Research and Health. 1999; 23:122–129. [PubMed: 10890806]

Higgins, S.; Silverman, K.; Heil, S. Contingency management in substance abuse treatment. New York, NY US: Guilford Press; 2008.

LePage J, Bluitt M, McAdams H, Merrell C, House-Hatfield T, Garcia-Rea E. Effects of increased social support and lifestyle behaviors in a domiciliary for homeless veterans. Psychological Services. 2006; 3:16–24.

Lussier J, Heil S, Mongeon J, Badger G, Higgins S. A meta-analysis of voucher-based reinforcement therapy for substance use disorders. Addiction. 2006; 101:192–203. [PubMed: 16445548]

Marlowe D, Festinger D, Dugosh K, Arabia P, Kirby K. An effectiveness trial of contingency management in a felony preadjudication drug court. Journal of Applied Behavior Analysis. 2008; 41:565–577. [PubMed: 19192860]

Marlowe, D.; Wong, C. Contingency management in substance abuse treatment. New York, NY US: Guilford Press; 2008. Contingency management in adult criminal drug courts; p. 334-354.

National Association of Drug Court Professionals. Defining drug courts: The key components. Washington, DC: Office of Justice Programs, U.S. Department of Justice; 1997.

Petry N, Weinstock J, Alessi S, Lewis M, Dieckhaus K. Group-based randomized trial of contingencies for health and abstinence in HIV patients. Journal of Consulting and Clinical Psychology. 2010; 78:89–97. [PubMed: 20099954]

Prendergast M, Hall E, Roll J, Warda U. Use of vouchers to reinforce abstinence and positive behaviors among clients in a drug court treatment program. Journal of Substance Abuse Treatment. 2008; 35:125–136. [PubMed: 17997267]

Taxman, F.; Shepherson, E.; Byrne, J. Tools of the Trade: A Guide to Implementing Science Into Practice. Washington DC: National Institute of Corrections; 2004. http://www.nicic.org/Library/020095

Table 1

Sample Characteristics

	Range	**Mean (SD)**
Age	19–58	37.14 (11.53)
Education (years)	7–16	11.68 (1.39)
	Percent	
Gender	74.1% Male	25.9% Female
Race	69.4% Black	30.6% Non-Black
Employment	51.8% Employed	48.2% Un-Employed
#1 Problem Drug	**Frequency**	**Percent**
Alcohol	9	10.6%
Marijuana	23	27.1%
Cocaine	22	25.9%
Opiates	30	35.3%
Methamphetamine	1	1.2%

N=85

Table 2

Summary of SOARING Goals Group Performance.

SOARING Variable	Percent	
Graduated from SOARING (N=85)	23.5%	
Graduated from Goals Group (N=85)	36.5%	
Goals graduates to finish SOARING (N=31)	64.5%	
	Range	**M(SD)**
Total number of stars for Goals (N=81)	0–12	3.28(2.74)
Total number of stars for Attendance (N=81)	0–24	5.77(4.19)
% of Weekly goals achieved/number of sessions attended (N=81)	0–100	41.87(29.90)
Total number of weeks client failed to get Goals star (N=81)	0–35	7.47(7.48)