Research Summary

Focus on Contingency Management

Why Contingency Management?

Grace A. Rowan-Szal, D. Dwayne Simpson, & Norma G. Bartholomew

There is both clinical and research interest in interventions that encourage substance abuse treatment clients to stay in treatment and increase their participation levels. Contingency Management (**CM**) has proven to be a useful behavioral intervention that promotes client engagement in treatment through a system of recognition and positive rewards, such as inexpensive prizes, vouchers for goods or services, or extra privileges (e.g., take-home doses).[1,2,3] Clients earn rewards for behaviors that promote recovery, including drug-free urine screens, counseling attendance, and working toward treatment goals. Reinforcement schedules such as **CM** are based on Skinnerian principles of rewarding specific behaviors in order to increase the likelihood that the behaviors will be reinforced and therefore repeated. **CM** protocols have been used successfully in a variety of treatment settings including residential, drug-free, and methadone treatment.

Contingency Management Studies in DATAR

Positive recovery behaviors were rewarded with stars and prizes.

The prototype **CM** approach developed for the Drug Abuse Treatment Assessment and Research (**DATAR**) project rewarded clients in three community-based outpatient methadone programs in Texas for attending counseling or having a clean drug screen. As a form of social recognition and encouragement, "stars" were placed beside clients' identifier numbers on charts displayed on the walls of their counselors' offices.

In the first DATAR study, a 3-month **CM** protocol allowed clients to earn one star for each positive recovery behavior. Stars were awarded immediately for clean drug screens and for attending counseling sessions. Clients were assigned randomly to a reward condition for redeeming their collection of stars for prizes. A *high reward* group could redeem prizes after earning 4 stars, while the *low reward* group was required to

CM Studies in DATAR, continued from page 1.

earn 8 stars before redeeming them for prizes. Clients in both reward conditions increased their group session attendance during the 3-month intervention. Compared to baseline, however, clients in the high reward group showed significantly fewer positive drug screens than the low reward group both during and post **CM** (**see Figure 1**).[5]

A second CM study focused on clients during the first 90 days of treatment. New clients were randomly assigned to either receive or not receive rewards based on program compliance. In the **CM** condition, clients were awarded stars for counseling attendance and clean drug screens. They were allowed to redeem stars in increments of 4 for smaller prizes or to save up stars for a larger prize at the end

of the 90-day intervention. Stars could be redeemed for inexpensive prizes such as gas coupons, bus tokens, tee-shirts, restaurant vouchers, and sundry items (some donated by local merchants). Results showed that the **CM** group attended more individual counseling sessions during the first 90 days of treatment and had fewer cocaine-positive drug screens in the follow-up period.

In the 3 months after the intervention, **CM** clients also were rated by counselors as having better engagement (more rapport, self confidence, and motivation) than clients in the control group.[6]

Our latest **CM** study focused more specifically on reducing cocaine use in DATAR methadone clients. In it, new clients were randomly assigned to one of
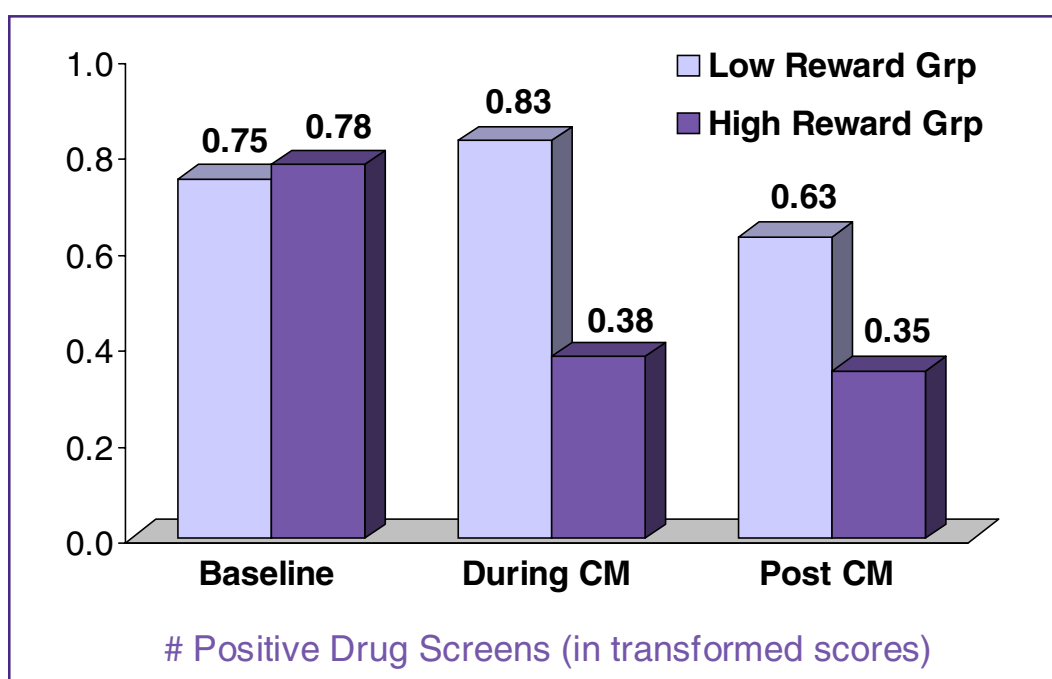

Figure 1. Urinalysis Results Across CM Groups

Why CM?, continued from page 1.

We recently conducted a meta-analysis to review the literature on the effectiveness of **CM** interventions in outpatient methadone treatment. The results indicated that **CM** is an effective behavioral intervention for reducing illicit drug use during treatment. However, effectiveness was related to type of rein-

forcement provided, time to reinforcement delivery, and how often urine specimens were collected for drug testing. For example, interventions that used immediate reinforcement were more effective than those that used delayed or mixed reinforcement intervals. Also, interventions that collected several urine

specimens per week were more effective than those that collected them less frequently. Overall, clients participating in **CM** were 25% more likely to have a clean urine than non-participants. Results confirmed that **CM** was effective in reducing supplemental drug use in methadone clients.[4] ■

four treatment conditions, based on their cocaine-use status at admission. Clients with cocaine problems (i.e., those who met DSM-IV criteria for cocaine dependence based on initial assessment, were positive for cocaine on the initial drug screen, or reported weekly or more frequent cocaine use) were assigned to receive either a special 8-week *cocaine intervention (COCA)* or *standard treatment*. Furthermore, clients within each of these special groups were then randomly assigned to a **CM** (reward) protocol (**see Figure 2**). In contrast to the no-reward (control) condition, clients in **CM** could earn stars for (1) cocaine-free drug screens, (2) attending counseling sessions, and (3) working on treatment-related goals that they negotiated with their counselors. As in other studies, stars could be redeemed for inexpensive rewards. Results indicated the *COCA* intervention was positively related to clients staying in treatment for 6 months or longer. **CM** was significantly related to reductions in cocaine use, both during the 8-week intervention and during the 8-week post-intervention period (**see Figure 3**).[7] ■
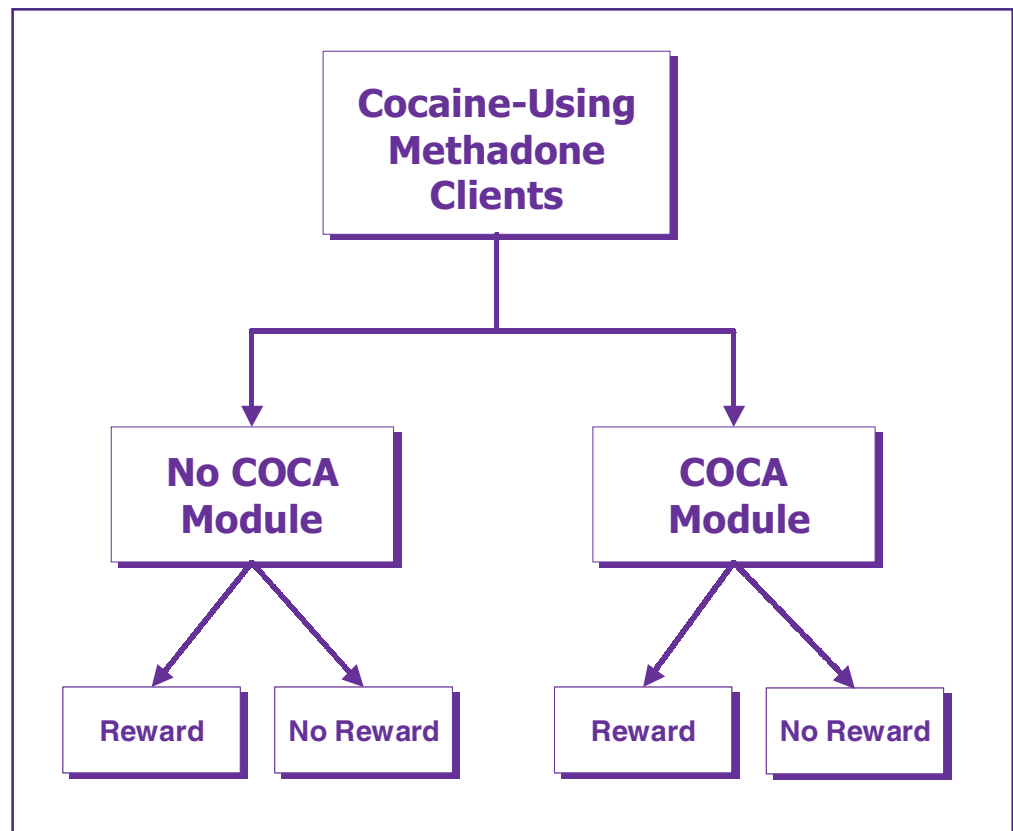

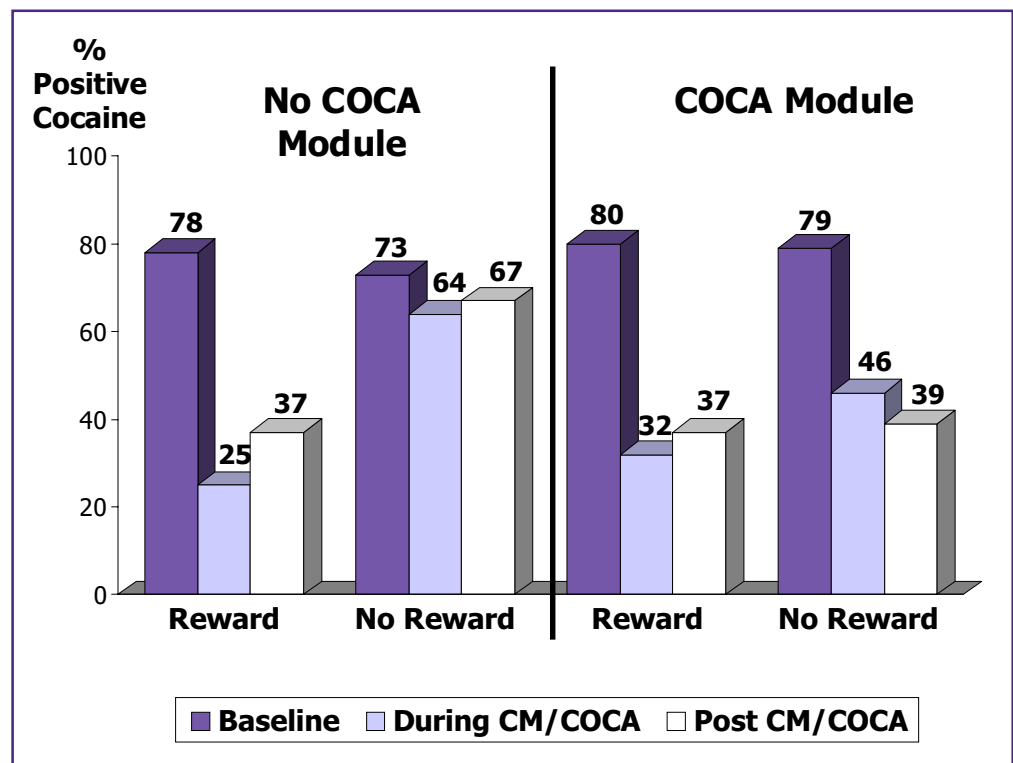**Figure 2.** 8-Week Cocaine Research Design

Figure 3. Cocaine Use Before, During, and After CM and COCA (n=49)

Simplifying Protocols: TCU StarChart

Although **CM** has proven to be useful for helping clients engage in treatment, the record-keeping required to manage this intervention can be burdensome for staff. To meet this challenge, we have developed a computer-based record-keeping system (called "TCU StarChart") that simplifies implementation of the **CM** protocol and saves time for clinic staff and researchers alike. Each client's **CM** data are entered by counselors in the TCU StarChart program (written in Microsoft® Access®), developed specifically to manage the **CM** records.[8] TCU StarChart keeps track of stars earned for target behaviors (clean urines, session attendance, working on treatment goals) and tracks stars that have been redeemed for prizes. It also monitors the tasks that clients have completed in their work on

treatment goals and issues vouchers that clients present when claiming their prizes. Using this database, clinic staff can readily review a complete **CM** profile and history for any client whenever needed (**see example in Figure 4**). For more information about the TCU StarChart program, contact Dr. Grace Rowan-Szal at IBR at (817) 257-6480 or e-mail at **g.szal@tcu.edu**. ■
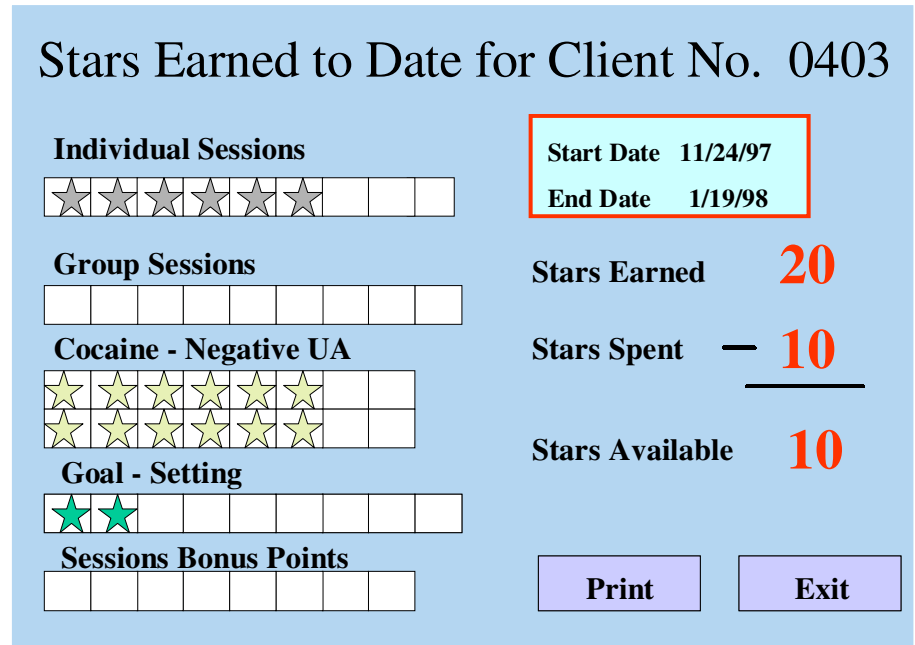

Figure 4. Sample Client Profile in TCU StarChart program.

References

[1] Higgins, S., Delaney, D., Budney, A., Bickel, W., Hughes, J., Foerg, F., & Fenwick, J. (1991). A behavioral approach to achieving initial cocaine abstinence. *American Journal of Psychiatry*, *148*, 1217-1224.

[2] Iguchi, M. Y., Belding, M. A., Morral, A. R., Lamb, R. J., & Husband, S. D. (1997). Reinforcing operants other than abstinence in drug abuse treatment: An effective alternative for reducing drug use. *Journal of Consulting and Clinical Psychology, 65*(3), 421-428.

[3] Stitzer, M., & Kirby, K. (1991). Reducing illicit drug use among methadone patients. In R. Pickens, C. Leukefeld, & C. Schuster (Eds.), *Improving Drug Abuse Treatment* (DHHS Publication No. ADM 91-1754, pp. 178-203). Washington, DC: US Government Printing Office.

[4] Griffith, J., Rowan-Szal, G. A., Roark, R., & Simpson, D. D. (2000). Contingency management in outpatient methadone treatment: A meta-analysis. *Drug and Alcohol Dependence, 58*, 55-66.

[5] Rowan-Szal, G. A., Joe, G. W., Chatham, L. R., & Simpson, D. D. (1994). A simple reinforcement system for methadone clients

in a community-based treatment program. *Journal of Substance Abuse Treatment*, *11*(3), 217-223.

[6] Rowan-Szal, G. A., Joe, G. W., Hiller, M. L., & Simpson, D. D. (1997). Increasing early engagement in methadone treatment. *Journal of Maintenance in the Addictions, 1*(1), 49-60.

[7] Rowan-Szal, G. A., & Simpson, D. D. (1999). *Contingency Management and Relapse Prevention Training in a Sample of Cocaine-Using Methadone Clients*. Presented at the meeting of the College of Problems of Drug Dependence (CPDD), Acapulco, Mexico.

[8] Rowan-Szal, G. A., Greener, J. M., Roark, R., and Simpson, D. D. (2000, April). *Demonstration of a Computerized Contingency Management System (TCU StarChart)*. Presented at the AMTA Methadone Conference, San Francisco, CA.

printed on recycled paper