ADDICTION TREATMENT

Forum

THE QUARTERLY NEWSLETTER FOR CLINICAL HEALTH CARE PROFESSIONALS ON ADDICTION TREATMENT

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Rewards can help shape positive behaviors leading to much greater success in MMT.

IN THIS ISSUE

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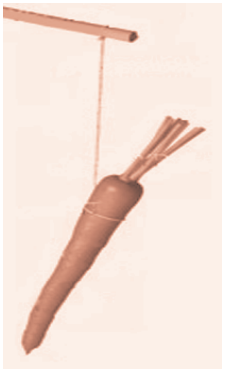
Clinical Concepts

Contingency Management What is it? Does it work?



Contingency management (CM) approaches applying concepts of behavioral psychology have been used in the addiction treatment field since the mid-1960s. These are designed to provide a formal system of rewards (or positive reinforcements) and, sometimes, punishments that make continued drug use and other misbehaviors less attractive than more desirable alternatives.[1]

At its most basic level this is a "carrot-or-stick" approach, in which rewards (carrots) are expected to insure that certain behaviors or actions will be repeated. On the other hand, if a behavior receives an unpleasant or aversive response (e.g., a poke) the likelihood of it being repeated is greatly reduced.

This theory is put into practice in the world every day, often without people realizing it. For example, parents praise their children for desired behavior and discipline them for misbehaving; companies reward employees with bonuses for good work or reprimand them for nonperformance.

In the addiction field, reinforcements have been used in various ways. For example, rewards are a big part of 12-step programs, as groups recognize members' time in sobriety with tokens, anniversary cakes, and much applause. Similarly, most methadone maintenance treatment (MMT) programs employ

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Practice Pointers

Assessing Adequate Methadone Dose

Through the years, *AT Forum* has emphasized that the most adequate dose of methadone for the treatment of opioid addiction provides an effective response in the patient, with a margin of safety, for an appropriate duration of time. However, there is wide variation in patient responses and adequate dosing must be determined on an individual basis.

This has been the subject of a special "White Paper" report from *AT Forum*. And, recently, Francisco Gonzáles-Saiz, MD, of Spain, published in the journal, *Heroin Addiction and Related Clinical Disorders*, a very practical and useful patient-assessment questionnaire for guiding methadone dosing decisions. *(To acquire these 2 papers, see the box in the* ***Table*** *at the end of this article.)*

Gonzáles-Saiz notes that distinctions between so-called high and low methadone doses during methadone maintenance treatment (MMT) are purely arbitrary, since response to any particular dose can vary enormously. An "adequate" dose:

a) suppresses signs and symptoms of opioid withdrawal;

b) reduces opioid-drug craving;

c) significantly reduces or eliminates continued illicit-opioid abuse;

d) reduces the reinforcing effects of illicit opioids if any are taken;

e) produces no significant symptoms of overmedication.

Assessing and adjusting methadone dose for individual patients should fundamentally be guided by clinical signs and symptoms, Gonzáles-Saiz states. In the past, several different scales have been developed and used to examine

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Events to Note

For additional postings & information, see: ***www.atforum.com***

July 2005

ASAM MRO Course
July 19-21, 2005
Cincinnati, Ohio
Contact: 301-656-3920; www.asam.org

AMHCA Annual Conference
July 21-23, 2005
Philadelphia, Pennsylvania
Contact: 800-326-2642; www.amhca.org

5th Annual New England School of Prevention Studies
July 25-28, 2005
Bristol, Rhode Island
Contact: 207-621-2549; www.neias.org

August 2005

American Psychological Association 113th Annual Convention
August 18-21, 2005
Washington, DC
Contact: 202-336-5500; www.apa.org

13th Annual New England School, Best Practices in Addiction Treatment
August 22-25, 2005
Waterville Valley, New Hampshire
Contact: 207-621-2549; www.neias.org

October 2005

American Psychiatric Association 57th Institute
October 5-9, 2005
San Diego, California
Contact: 703-907-7300; www.psych.org

ASAM State of the Art in Addiction Medicine
October 27-29, 2005
Washington, DC
Contact: 301-656-3920; www.asam.org

UPCOMING 2005-2006...

American Public Health Association 133rd Annual Meeting
November 5-9, 2005
New Orleans, Louisiana
Contact: 202-777-APHA;
www.apha.org/meetings/

AATOD (American Association for the Treatment of Opioid Dependence) National Conference
April 22-26, 2006
Atlanta, Georgia
Contact: 856-423-3091; www.aatod.org

[To post your announcement in AT Forum *and/or our web site, fax the information to: 847-392-3937 or submit it via e-mail from www.atforum.com]*

Straight Talk... from the Editor

CM Works, But Research Is Misleading

As our article in this edition of *AT Forum* suggests, contingency management (CM) approaches may have a valid place in MMT programs if done appropriately. Caution is needed, however, since much of the past research supporting this strategy is misleading. There are at least four areas of concern.

Questionable Strategies

1. Many CM trials have used rewards with monetary values (vouchers) that are far larger than almost any clinic can afford. In most cases, patients can earn incentives valued at more than $1,000. Multiply that by a significant number of participants and the cost is prohibitive without some sort of major public funding.
2. Quite a number of CM studies have used methadone dose manipulations, up or down, as rewards or punishments, respectively. On top of that, according to a summary of 30 CM trials from 1978 to 1997 more than half of the patients were receiving less than 50 mg/day of methadone, which was probably inadequate for most of them to begin with.*

   *See, Griffith JD et al. *Drug Alcohol Depend*. 2000;58:55-66.

   Such medication manipulations would be forbidden in other areas of medicine. Imagine *reducing* insulin to punish a diabetic patient who continues to consume pastries. Or, awarding a patient adequate blood-pressure medication only after he gives up salty snacks.
3. More alarming, some CM trials have called for withdrawing patients from methadone for noncompliance with desired behavioral changes. Everyone loses in this scenario, as patients return to prior substance abuse with its risks of disease, crime, and homelessness.
4. Finally, a common incentive is the awarding of take-home methadone doses. However, the amount and timing of take-homes is regulated by federal guidelines and, at that, patients must be able to achieve absolute drug abstinence, among other requirements. This sets the bar quite high in terms of achievable goals; many patients might simply give up, thus defeating the CM strategy.

The rewards and punishments outlined above have been demonstrated as effective – but at what cost? Besides monetary expense and staff time, patient drop out rates in some cases from both the CM incentive program and MMT itself were unreasonably high.

Common Sense Needed

As with other therapeutic strategies for helping patients achieve recovery goals via MMT, some common sense and creative thinking applied to CM would seem appropriate. As Nancy Petry, PhD points out in this edition of *AT Forum*, there *are* some practical approaches available for application by MMT programs; albeit, these might be more suitable for taking small steps toward achieving worthwhile recovery goals, rather than the giant leaps well-funded research studies have attempted to promote in the past.

Send us your comments regarding this topic and/or descriptions of CM programs implemented in your clinic. Meanwhile, be certain to respond to the *AT Forum* reader survey (below).

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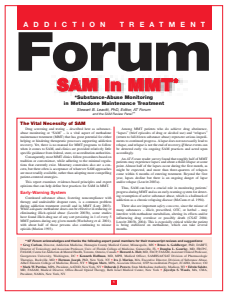
NEW SURVEY: Contingency Management

Please respond to the following survey questions:

1. Do you believe that contingency management (CM) reward programs can help MMT patients? ❑ yes; ❑ no; ❑ don't know
2. Which activities are worthy of reward incentives? ❑ achieving small steps toward goals; ❑ only achieving larger goals; ❑ both; ❑ neither
3. What sort of rewards should be offered? ❑ vouchers (redeemable for gifts, services, etc.); ❑ small tangible items; ❑ non-tangible recognition; ❑ other _____
4. Does your clinic have a CM reward program? ❑ yes; ❑ no
5. Are you responding as a ❑ patient, or ❑ clinic staff member?

***There are several ways to respond to* AT Forum *surveys:* A.** provide your answers on the postage-free feedback card in this issue; **B.** write, fax, or e-mail [info above]; or, **C.** visit our web site to respond online. As always, your written comments are important.

New Report: "SAM in MMT"


ADDICTION TREATMENT
Forum
SAM in MMT*
*Substance-Abuse Monitoring in Methadone Maintenance Treatment

Methadone maintenance treatment (MMT) has used substance-abuse monitoring (SAM) as a benchmark of patient performance since its beginning in the mid-1960s. Properly applied as a therapeutic tool, SAM is one of several essential ingredients for a successful MMT program promoting rehabilitation and recovery from addiction.

An effective SAM strategy includes a sufficient frequency of random assays – primarily urinalyses – coupled with immediate feedback afforded by on-site drug screening. Another critical objective is patient safety facilitated by SAM, since the undetected misuse of many substances can lead to drug overdose and/or interfere with methadone effects.

This new report discusses from an evidence-based perspective important aspects of SAM and provides recommendations for MMT programs.

"SAM in MMT" is available at: http://www.atforum.com/SiteRoot/pages/addiction_resources/SAMinMMT-FINALApril2005.pdf

ATForum.com HONcode Certified

The *Addiction Treatment Forum* web-site (www.atforum.com) has received certification as being in compliance with the Health on the Net Foundation Code of Conduct (HONcode).

The HONcode was developed to help standardize the reliability of medical and health information available via the Internet and holds website developers to the highest ethical standards and principles in the presentation of information.

Websites qualifying to display the HONcode seal assure visitors of the reliability and authority of provided information, proper attribution of sources, and transparency of financial sponsorship. During several months, the *AT Forum* website was upgraded to comply with all principles of the HONcode, followed by a site inspection by the HON accreditation team, in order to qualify.

Research Reviews & Updates

MMT Patients in Pain Need Higher Methadone Doses

Researchers at an Israeli methadone maintenance treatment (MMT) clinic known for providing adequate methadone doses studied the special needs of patients experiencing chronic pain.

During a 4-month period, 170 patients participated in a questionnaire survey on pain duration and severity. Patients' maintenance methadone dosages and urine test results for drug abuse during the month before and at the time of the survey were recorded. Chronic pain was defined as lasting for 6 or more months.

More than half (55%) of the 170 patients experienced chronic pain and, as expected, they had a significantly higher proportion of chronic illness (75%) compared with non-pain patients (45%). Among the chronic pain patients, 53% experienced mild to moderate pain and 47% had severe or very severe pain.

The duration of pain was significantly associated with pain severity and it also significantly influenced methadone dose requirements (see ***Table***). Beyond the first year, patients with chronic pain needed increasingly higher daily methadone doses to remain stable in MMT.

Pain Duration	Average Methadone Dose (mg/d)	Approximate Dose Range (mg/d)
≥10 years	180	120-240
1-10 years	160	105-215
<1 year	135	60-205
No pain	150	95-200

All numbers rounded; range = mean ± 1 standard deviation.

The authors concluded that, although methadone was not prescribed for pain treatment in these patients but rather for opioid addiction, MMT patients with prolonged pain required significantly higher methadone doses compared with patients having shorter pain duration or no chronic pain.

Source: Peles E, Schreiber S, Gordon J, Adelson M. Significantly higher methadone dose for methadone maintenance treatment (MMT) patients with chronic pain. *Pain*. 2005;113(3):340-346.

See also, a previous article on this subject in *AT Forum*, Winter 2004, at: http://www.atforum.com/SiteRoot/pages/current_pastissues/winter2004.shtml#anchor1.

Costs/Benefits of Drug Treatment Reported

Investigators at the Treatment Research Institute of the University of Pennsylvania surveyed nearly 2 decades of research, representing hundreds of studies, examining the economic benefits of substance abuse treatment. Overall, they reported that treatments incorporating evidence-based practices result in significant reductions in drug and alcohol use, crime, and improvements in health and social functioning for many patients.

Variations in study designs made it difficult to calculate single average costs and economic benefits. According to the report, weekly average MMT program costs typically range from $80 to $100 per patient, although costs ranging from $44 to $175 per week were noted. One study, from SAMHSA, reported estimated total costs of about $7,800 per MMT patient, which was very economical in terms of life-years gained.

Smaller programs generally cost more per patient than larger ones, and geographic differences can affect facilities and other expenses. Methadone distribution, physician evaluations, urinalyses, and psychosocial services account for a giant share – more than half (55%) of MMT costs are for labor. Costs of methadone medication itself are extremely low: estimated at only $1.00 per individual dose on average.

In comparison, standard outpatient addiction treatment programs (non-methadone) cost an average of about $130/week per patient. Intensive outpatient programs average roughly $270 to $500/week. Patient costs for residential addiction treatment programs average anywhere from $200 to nearly $2,000 per week.

It was noted that MMT is unique in that it is a continuing-care form of treatment. Therefore, costs are likely to continue during a long period, although in declining intensity as counseling and other services may be reduced over time. Also, MMT outcomes are measured while patients are in treatment, rather than the post-treatment assessments used for evaluating other forms of care.

The complete report – Belenko S, Patapis N, French MT. Economic Benefits of Drug Treatment: A Critical Review of the Evidence for Policy Makers. University of Pennsylvania: Treatment Research Institute; February 2005 – ***is available at:*** http://www.tresearch.org/resources/specials/2005Feb_EconomicBenefits.pdf.

Contingency Management from page 1

some aspects of CM, at least informally.[1,2] Free coffee and donuts may reward group therapy attendance, and verbal encouragement may be used to reinforce progress toward goals. Conversely, treatment non-compliance may result in threats and punishments, such as a loss of privileges.

From Simple To Sublime

CM interventions have been employed in a variety of ways, from simple designs using tangible rewards to more complex protocols using both rewards and punishments to alter behaviors.[1] Reward reinforcements have varied from increased privileges, to vouchers for gifts or services, to inexpensive tokens or commodity items usually affordable by any MMT program.[1-4]

However, CM is used most successfully as an adjunct to broader, patient-centered therapies. Like other addiction treatment interventions, reinforcements and punishments in isolation are unlikely to be effective without a well-structured therapeutic strategy and implementation plan. And, it is important to note that negative consequences, punishments, result in treatment drop-outs, while positive reinforcements can improve retention.[4]

Tangible rewards reliably increase the chances that patients will remain in MMT and eventually achieve long-term abstinence. However, MMT programs rarely can afford to provide the level of incentives used in funded research studies.

Consider, for example, two recently published CM studies promoting cocaine abstinence in MMT patients. A group at Johns Hopkins University offered participants up to $5,800 in vouchers.[5] In contrast, a team headed by Nancy Petry at the University of Connecticut offered incentive prizes ranging from $1 to $100: average, $117 of prizes earned per patient.[6, ***also see interview with Petry in this edition of* AT Forum**]

Both CM approaches produced favorable changes in drug-taking behavior. Yet, one intervention cost up to 50 times more than the other.

Monitor Often; Reward Quickly

While it might be questioned whether tangible reinforcements for behaviors that should be self-rewarding are a form of bribery, the evidence suggests that they do serve as effective clinical tools for shaping desired behaviors.[3,7] Along with that, basic principles of behavior modification dictate that desired reductions in substance abuse or continuing abstinence need to be frequently monitored and quickly reinforced for greatest impact.[7]

CM techniques have widely employed urinalyses to monitor illicit-drug use. Petry and Bohn have specifically noted that *on-site drug screening* is most appropriate when rewards are used to reinforce reductions in substance abuse.[3]

The lag time in receiving results back from laboratories, they contend, defeats establishing a direct connection between monitoring and the reward. Additionally, they advocate that on-site screening should be performed at least twice per week for adequately monitoring and reinforcing desired changes in substance-using behaviors.

Methadone Makes A Difference

An interesting, newly reported, study compared effects of buprenorphine versus methadone, combined with CM, for patients with co-occurring cocaine and opioid dependence.[8]

Subjects were randomly assigned buprenorphine (12-16 mg/day) or methadone (65-85 mg/day), and to either a CM group – providing vouchers worth up to about $1,000 in total value for negative urine-screen results – or a performance feedback group, which provided only feedback on results of urinalyses conducted 3 times a week.

Methadone-treated subjects remained in treatment significantly longer, achieved significantly longer periods of sustained abstinence, and had a greater proportion of drug-free screens, compared with subjects who received buprenorphine. Patients also receiving CM vouchers achieved longer periods of abstinence and a greater proportion of drug-free screens; however, CM-influenced benefits were not sustained throughout the entire 24-week study.

The researchers concluded that methadone appears superior to buprenorphine for treating patients with co-occurring cocaine and opioid dependence. And, at least on a short-term basis, combining methadone or buprenorphine with CM may improve treatment outcomes.

Small Steps Toward Large Goals

For many patients in MMT, true rewards in their lives have been few and far between. Even small incentives for such patients can take on extraordinary meaning; whereas, the really profound rewards accompanying addiction recovery may come much later.[7]

Besides abstinence or reductions in illicit-drug or alcohol use, reinforcements can encourage other worthwhile behaviors. For example, attendance at therapy sessions, improved behaviors within the clinic, and performance of goal-related activities specified in treatment plans. Research has demonstrated that achieving secondary goals often contributes to the eventual attainment of more major and difficult objectives.[4]

With a properly designed CM approach, patients come to realize that they indeed can set goals, change their ways, and achieve success. The accompanying ***Table*** lists some recommendations.

Designing CM Approaches

- Reward reinforcements must be based on specific and measurable behaviors.
- Reinforcements must be of some use and/or value to patients.
- Distribution of reinforcements should be directly linked to performance of the targeted behaviors.
- There should be frequent opportunities to give reward reinforcements.
- Reinforcements must be given soon after the desired behavior is observed or measured.
- Steps in a desired direction, rather than reaching a larger goal, can be good reasons for reinforcement.

Adapted from Petry [6] and Kellogg et al. [7]

Anecdotally, there are reports of MMT clinics implementing a CM process coming to view themselves as "recovery programs," rather than as methadone distribution centers.[7] Staff morale greatly improves as they see patients set and achieve worthwhile recovery goals as part of the therapeutic regimen.

1. Griffith JD, Rowan-Szal GA, Roark RR, Simpson DD. Contingency management in outpatient methadone treatment: a meta-analysis. Drug Alcohol Depend. 2000;58:55-66.
2. Petry NM. A comprehensive guide to the application of contingency management procedures in clinical settings. Drug Alcohol Depend. 2000;58:9-25.
3. Petry NM, Bohn MJ. Fishbowls and candy bars: using low-cost incentives to increase treatment retention. Science & Practice Perspectives. 2003;2(1):55-61.
4. Ward J, Mattick RP, Hall W. The use of urinalysis during opioid replacement therapy. In: Ward J, Mattick RP, Hall W (eds). Methadone Maintenance Treatment and Other Opioid Replacement Therapies. Amsterdam: Harwood Academic Publishers; 1998:238-264.
5. Silverman K, Robles E, Mudric T, Bigelow GE, Stitzer ML. A randomized trial of long-term reinforcement of cocaine abstinence in methadone-maintained patients who inject drugs. J Consult Clin Psychol. 2004;72(5): 839-854.
6. Petry NM, Martin B, Simcic F Jr. Prize reinforcement contingency management for cocaine dependence: integration with group therapy in a methadone clinic. J Consult Clin Psychol. 2005;73(2):354-359.
7. Kellogg SH, Burns M, Coleman P, Stitzer M, Wale JB, Kreek MJ. Something of value: the introduction of contingency management interventions into the New York City Health and Hospital Addiction Treatment Service. J Subst Abuse Treat. 2005;28:57-65.
8. Schottenfeld RS, Chawarski MC, Pakes JR, et al. Methadone versus buprenorphine with contingency management or performance feedback for cocaine and opioid dependence. Am J Psychiatry. 2005;162:340-349

Interview: Nancy Petry, PhD – Cost-Effective CM

Nancy M. Petry, PhD, Professor, Department of Psychiatry, University of Connecticut Health Center, Farmington, CT, has been a prolific researcher, author, and trainer in the field of contingency management (CM). Her work with MMT programs is especially distinguished by practical, cost-effective approaches for helping patients achieve worthwhile recovery goals, as reflected in this interview with AT Forum.

AT Forum: How do you address a major concern of MMT clinics that much of the CM research to date has been generously funded, allowing individual patients to earn rewards worth more than $1,000?

Nancy Petry, PhD: In my research during the past 7 years we've been addressing the issue of costs. For example, we have patients draw papers from a fishbowl, which offer many chances of winning small tangible prizes and a less frequent chance to win a much larger prize. We usually arrange for a maximum of $240 per patient; however, on average they end up being awarded about $80 to $100 worth of incentives.

ATF: Are inexpensive items – you've even suggested using candy bars in some cases – of sufficient value to motivate important changes in behavior?

PETRY: If you're *only* offering rewards of minimal value to patients then behavior won't be changed. However, a mix of items with monetary and non-monetary value can be used if clinics are more creative.

Special privileges could be used as reward incentives that have an assigned value but essentially cost the clinic nothing. For example, a reward might be a "pass" for moving to the front of the dosing line, sort of like first-class check-in at the airport. Or, there might be a special parking space reserved as a prize. However, going to a completely cost-free system may not always work since the reinforcers do need to be of value to patients for motivating significant changes.

ATF: What about using recognition incentives – such as tokens, or stars on a chart, or the like – without tangible value but high currency for building self-esteem?

PETRY: Those approaches can be important, but the difficult issue is assigning a value to such social reinforcers. It doesn't hurt to do that and it doesn't cost anything. While that may help a proportion of patients, it also could be important to add some items of high perceived value in a more concrete sense. There needs to be something available that the patient really wants.

ATF: On another subject, when reductions in substance abuse or abstinence are the goals, you've recommended the importance of 3 times per week urine monitoring using on-site drug-screening devices. Is that a practical approach for most clinics?

PETRY: The research demonstrates that it is critically important to do such monitoring. Once per month is grossly insufficient and, unfortunately, that seems to be typical in most clinics.

Three times per week as part of a CM program is ideal. You need to do sufficiently frequent monitoring so non-use, even if for a few days, can be detected and then reinforced with a reward of some sort.

ATF: Methadone dose manipulations, up or down, have been used in the past as rewards or punishments, respectively – is that appropriate?

PETRY: Some of that may be acceptable for research settings. However, if CM is going to make MMT more effective, patients must be receiving adequate methadone doses.

I view CM as an ***add-on***; it's not a free-standing approach but is added to current therapies as an enhancement. If the rest of the therapeutic approach, such as methadone dosing, is deficient in some way, then CM isn't going to overcome that.

ATF: Take-home methadone doses also have been used as reinforcement rewards. However, since those are governed by federal regulations, how can they be used in a CM program?

PETRY: Earlier research in CM demonstrated that take-home doses can be powerful reinforcers that patients will work toward. But, with today's federal regulations, take-homes may not be the best reinforcer to manipulate using appropriate CM principles.

ATF: Some of the requirements for gaining take-home doses are good attendance and participation in therapy groups, absence of behavioral problems at the clinic or outside criminal activity, and improved social stability. Could those present opportunities for smaller steps that patients can take on their way toward achieving abstinence?

PETRY: Yes… abstinence definitely is not the only goal that can be targeted with CM techniques. We've done studies in which we reinforce compliance with various goal-related activities. CM can be used to shape any behavior as long as it can be objectively quantified and verified.

For example, if a patient is homeless, a first step might be contacting a housing agency or shelter. The question is, what are the patient-centered issues that could be amenable to these techniques.

ATF: What about effects wearing off once the CM program is over and reward reinforcements are no longer being provided?

PETRY: Some benefits can persist even after reinforcers are removed; however, realistically, patients may revert back to old behaviors over time. For most patients, even a brief period of significant behavior change can be a major step forward in their recovery, since they learn that change is possible in their lives.

One of the problems with CM for promoting drug abstinence has been that urine screening is diminished once the program is over. Yet, if any return to drug use were quickly detected, counseling methods could be used to get patients back on track.

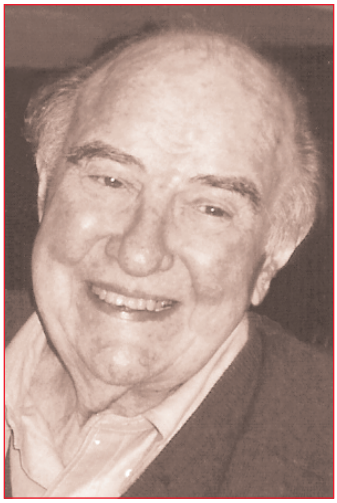
ATF: Can the average clinic organize a CM program?

PETRY: I think, yes. A lot of thought needs to go into it, and there needs to be a commitment and desire to do CM. Clinics have been very creative in devising monetary and non-monetary incentives. And, there are increasing resources to aid clinics in developing reasonable plans.

The reality is, if prizes worth a total of $5,000 to $10,000 can be generated – from community donations, or a grant from local, state, or federal agencies – a significant CM program can be organized that will indeed impact behaviors. And, whether an MMT clinic is private or public should not affect their ability to garner community support and donations for a worthwhile program of this sort.

MMT Pioneers: Vincent Dole, MD – "Father" of MMT

Vincent Dole, MD, has been acknowledged worldwide as the "founding father" of methadone maintenance treatment (MMT) for opioid addiction. Yet, he is always quick to acknowledge the contributions of the research team he put together at The Rockefeller University in the mid-1960s to develop MMT.



From Math to Medicine

Dole was born in 1913 and raised on the north side of Chicago, Illinois. He attended Culver Academy, a private college preparatory school in Indiana, and then went on to major in mathematics at Stanford University – graduating in 1934.

He decided to pursue a medical career but had not taken some of the required premedical courses. By the end of his second year at the University of Wisconsin, where he went to pursue the necessary science courses, he was accepted into Harvard Medical School, from which he graduated in 1939.

During his medical internship and residency at Massachusetts General Hospital, Dole developed a special interest in metabolic diseases. In 1941, he joined the faculty of The Rockefeller University in New York City to conduct research on hypertension, lipid metabolism, and obesity.

A Fortunate Discovery

In the early 1960s, Dole had an opportunity to assess the health care needs of New York City and concluded that a major problem there, and elsewhere around the country, was heroin addiction. However, at the time, treatments for heroin addiction – largely based on forced detoxification and drug-free behavioral therapies – were remarkably unsuccessful.

He decided to redirect the efforts of his research to address opioid addiction. Shortly thereafter, Dole recruited Marie Nyswander, MD, and then Mary Jeanne Kreek, MD, as key members of his research team. To this day, he especially recognizes the contribution of Nyswander in teaching the team about drug addiction and the importance of listening to the patients. *(She was featured in the Winter 2005 edition of* AT Forum*.)*

After first unsuccessfully testing short-acting opioid medications, the team discovered that longer-acting methadone provided the qualities they were seeking. It was orally administered, stemmed withdrawal and drug craving, did not induce opioid tolerance, and blocked effects of illicit opioids if any were taken. They published their first research findings in 1965, reporting on 22 patients, in the Journal of the American Medical Association.

As an explanation for methadone's usefulness, Dole proposed that there is a physiologic basis for heroin addiction involving altered metabolic processes and irreversible changes in brain chemistry. Methadone helps "normalize" those functions; however, for most patients daily methadone could be required for a lifetime, much like insulin is for controlling, but not curing, severe diabetes.

In essence, they focused on opioid addiction as a ***medical condition***, rather than as a character defect, moral failing, or behavioral disorder as had been so commonly believed in the past. Perhaps, Dole's greatest contribution to the field has been the concept that, despite whatever other troubles an opioid-addicted patient may have – of which there might be many, including mental, social, and economic problems – addiction is first and foremost a ***brain disease*** that can benefit from pharmacologic intervention.

Dole once commented, "The interesting thing about methadone treatment is that it permits people to become whatever they potentially are." MMT has demonstrated that so-called "addict traits" are a consequence, not a cause, of addiction and that substantial numbers of opioid-addicted individuals can be rehabilitated to become productive members of society.

Enduring Passion for Science

One of Dole's enduring qualities is his open-minded interest in new treatment approaches, albeit tempered by an insistence on sound research evidence. He has acknowledged that methadone is but one medication and other medical treatments for opioid addiction may be worthy of consideration. However, none of them to date has demonstrated superiority over methadone in well-documented clinical trials.

He candidly criticizes the ignorance of fellow physicians who close their minds to the disease concept of addiction. And, he has had little tolerance for those claiming that methadone merely substitutes one addictive drug with another, or touting alternative addiction treatment therapies that do not have a firm footing in science.

In the tradition of "listening to patients," Dole has been a strong supporter of methadone-patient advocacy groups. He has emphasized that involved patients with legitimate concerns for how they are being treated can bring about real changes that are otherwise difficult to achieve within the present system.

More Rational Attitudes

Through the years, Dole has been a prolific writer and frequent speaker on addiction and MMT. He has received many honors and awards for his work, including the prestigious Lasker Award in 1988.

He told *AT Forum* nearly a decade ago, "My job always has been to promote the question: What can be done about addiction?" He believed that experience and the truth would bring us to more rational ways of dealing with addiction treatment, and that rather medieval attitudes toward addiction would be overcome in favor of viewing it as a medical disease.*

As this present article was being developed, Dole was recovering from a series of debilitating strokes. Asked if he had some thoughts about the status of MMT today, he said, "I would love to believe that the medical profession has come to accept addiction as a medical problem. That would be my dream. However, there is still so much ignorance and prejudice that it saddens me."

"MMT has exceeded my expectations in terms of its success and its demonstrated positive results; it is surprisingly useful if one believes in addiction as a disease," he continued. "On the other hand, if one is trying to disprove that methadone works, and inadequate methadone doses are used, failure is almost certainly guaranteed."

For more on Vincent Dole, see an earlier interview, "Methadone: The Next 30 Years," unabridged from* **AT Forum *Winter 1996 at: http://www.atforum.com/SiteRoot/pages/current_pastissues/PastDole.shtml.*

Methadone Dose from page 1

factors such as opioid withdrawal signs or symptoms, opioid craving, and illicit-drug use. However, each measures only one factor of concern when adjusting methadone dose to optimum level.

This can be insufficient; for example, if doses are considered adequate if they prevent withdrawal symptoms only, that will result in an underestimation of adequate dose. Similarly, a reduction in continued opioid abuse alone is not necessarily indicative of optimal methadone dosing.

Gonzáles-Saiz and colleagues devised a more comprehensive and easy-to-use clinical tool, called the Opiate Dosage Adequacy Scale (ODAS). It is a 10-item semi-structured questionnaire used for interviewing patients. Six critical areas for defining dose adequacy are covered:

1. continued consumption of illicit opioids or heroin;
2. extent of narcotic blockade or cross tolerance;
3. frequency and intensity of an *objective* opioid withdrawal syndrome;
4. frequency and intensity of a *subjective* opioid withdrawal syndrome;
5. frequency and intensity of opioid craving;
6. frequency and intensity of any methadone overmedication.

Additional questions assess each patient's tenure in MMT, current methadone dose, subjective impressions of dose adequacy, desire for a dose adjustment, and information on concurrent drugs or medications that might alter methadone effects.

The various questions are summarized in the ***Table*** below.

All questions assess the patient's reactions during the prior week, which allows sufficient time for the dose to have reached steady-state serum levels. Therefore, patients need to continue on the same dose between ODAS assessments.

Point values are assigned, with individual question response scores ranging from 1 to 5. Higher scores indicate a greater degree of adequate dosing. Score totals can be useful for assessing changes in dose adequacy over time and for determining when adequate methadone maintenance dose has been achieved.

Research-minded MMT clinics can use the scores to evaluate their patient populations overall. Methadone-dose adequacy can then be compared with such variables as opioid and other drug abstinence or retention in treatment. It might be predicted that MMT programs with greater proportions of higher ODAS scores would have superior treatment outcomes.

Since the ODAS uses one-on-one questioning of patients, there is some latitude in how questions may be worded to match the comprehension level of the individual patient. Over time, the questionnaire might be modified to suit individual clinic needs.

In sum, the ODAS is intended as a tool for gauging the effectiveness of methadone dose adjustments. Gonzáles-Saiz emphasizes that determining the need for dose modifications is still a clinical decision that will depend on many factors, most of which are assessed via the ODAS questions.

Editor's note: AT Forum *would like to hear from, and will report on, clinics that put the ODAS or a similar questionnaire into practice.*

Items on ODAS Questionnaire Assessing Methadone Adequacy

All questions apply to prior 7 days, which allows time for the methadone dose to have achieved a steady state level.

- How frequently have you used heroin or other illicit opioids during the last 7 days?
- How intense was the effect you felt from the heroin or opioids that you used? *(Was the effect different than before being treated with methadone?)*
- How frequently have you felt any *objective* withdrawal symptoms? *(E.g., muscle cramps/pains, runny nose, yawning, diarrhea, heart palpitations, generally feeling bad physically, etc.)*
- How intense were those *objective* withdrawal symptoms?
- How often have you felt *subjective* withdrawal symptoms? *(E.g., anxiety, restlessness, irritability, tiredness, difficulty sleeping, lack of appetite, etc.)*
- How intense, on average, were those *subjective* symptoms of withdrawal?
- How frequently have you felt an urgent need (craving) to use heroin or other illicit opioids?
- On average, how intense were those cravings?
- Were there any days when you felt overmedicated with methadone? *(E.g., feeling sleepy or sedated, difficulty in speaking, being unusually active or, alternatively, feeling "drugged.")*
- How intense, on average, were those symptoms of methadone overmedication?

Additional areas questioned and taken into account during patient interview:

- What was the methadone dose during prior 7 days?
- Length of time to date in MMT (weeks)?
- To what extend do you feel your methadone dose is adequate? *(E.g., "holding" or leaving you feeling "covered.")*
- What dose of methadone would you like to take?
- Have you had any secondary effects of methadone? *(E.g., constipation, sweating, insomnia, altered sexual function, etc.)*
- Use of illicit substances during prior 7 days?
- What prescribed medications, or herbal or OTC products have you been taking?

For more specific questions and scoring system, a copy of Francisco Gonzáles-Saiz's paper, "Opiate Dosage Adequacy Scale (O.D.A.S.): A Clinical Diagnostic Tool as a Guide to Dosing Decisions," from *Heroin Addiction and Related Clinical Problems,* 2004 (December);6(3), is available at: http://www.atforum.com/SiteRoot/pages/addiction_resources/ODAS-DefiningAdequateMethadone.pdf
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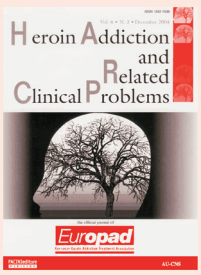
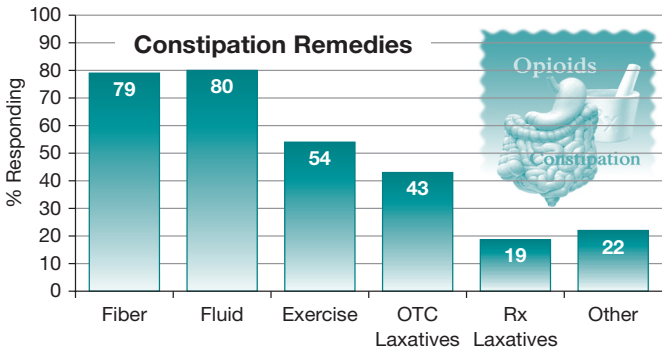
The *AT Forum* White Paper report, "Methadone Dosing & Safety in the Treatment of Opioid Addiction," is available at: http://www.atforum.com/SiteRoot/pages/addiction_resources/DosingandSafetyWP.pdf



AT Forum Survey Results: Constipation

The Fall 2004 edition of *AT Forum* (Vol. 13, #4) featured an article on constipation during methadone maintenance treatment (MMT). In response to a survey on this topic, 123 readers (half were clinic staff) replied online at the *AT Forum* website or via response card.



Constipation Commonplace

Prior research had observed that more than half of MMT patients experience symptoms of constipation. This is an effect of all opioid medications, including methadone.

Survey participants estimated that, on average, 63% of patients at their clinics have complained of constipation. Although there was a wide range of responses – from 5% to 100% – the majority of readers estimated the number was greater than 75% of patients.

Thus, this is a problem of considerable importance to patients and worthy of clinic staff attention.

Few Medications Prescribed

Respondents also were asked what remedies were recommended or prescribed by clinic staff to deal with constipation. As the ***Graph*** illustrates, added dietary fiber and fluids were the most commonly recommended measures for dealing with constipation. Relatively few clinics (19%) offered laxatives requiring a written prescription (Rx).

A surprising number of respondents noted that bulk-producing agents, such as those containing methylcellulose or psyllium, were recommended to patients. However, experts have advised against using such products for opioid-induced constipation.

Magnesium hydroxide (milk of magnesia) received a number of mentions by respondents, as did bowel stimulating senna-containing agents and those containing polyethylene glycol (to increase water in the stool). By far, the most commonly prescribed remedy was a docusate product to soften the stool.

The "other" category was rather poorly defined and might have been confusing. Most write-in responses following selection of this option described remedies from one of the other 5 choices.

Readers Share Experiences

A number of patients wrote that constipation was never discussed at their clinics, or the topic was glossed over. One patient noted that he found on his own that mineral oil was the most gentle laxative; yet, a staff member remarked that mineral oil is discouraged (reasons not stated).

Another patient said, "I think it's a major problem that people are embarrassed to talk about. Wouldn't you be?"

A staff member observed a noteworthy high percentage of irritable bowel syndrome (IBS) among MMT patients, potentially affecting constipation. However, he did not know if this illness might have been present prior to opioid abuse and subsequent methadone maintenance.

Overall, it appears that there is no single bowel regimen protocol that would be "right" or "best" for all MMT patients. It is important, however, that clinics become aware of the problem and possible remedies so they can work with patients to find better solutions that are appropriate for each individual.

Note: AT Forum *reader surveys are not intended as scientifically rigorous studies or as medical advice for individual problems. Appropriate MMT clinic staff should be consulted regarding personal health and recovery questions.*

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