

# **The Matrix Model of Intensive Outpatient Treatment**

*A guideline developed for the Behavioral Health Recovery Management project*

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## **The Matrix Model of Intensive Outpatient Treatment.**

The Matrix Model is a multi-element package of therapeutic strategies that complement each other and combine to produce an integrated outpatient treatment experience. It is a set of evidence-based practices delivered in a clinically coordinated manner as a “program.” The research reports which have described the compilation of clinical experience with the model, plus the results of a multi-site trial have all provided information on the application of the entire package of techniques. However, many of the treatment strategies within the Model are derived from clinical research literature, including cognitive behavioral therapy, research on relapse prevention, motivational interviewing strategies, psycho-educational information and 12-Step program involvement.

### **Background**

The Matrix Model of outpatient treatment was developed at the height of the cocaine epidemic in Southern California in the 1980’s. In the urban areas of Los Angeles, cocaine and crack were the major drugs to effect communities, and 50 miles to the East of downtown Los Angeles, in San Bernardino County, large numbers of methamphetamine users began to present at the Matrix clinic for assistance. At the time, there was no established approach for structuring outpatient services to attempt to meet the needs of these two groups of psychostimulant users.

The development of the Matrix model was influenced by an ongoing interaction between clinicians working with clients and researchers collecting related information. As clinical

experience with stimulant dependent individuals was amassed, clinical impressions frequently generated questions that were answered by using relevant research findings.

Treatment materials had to be developed that were sophisticated enough to capture the essence of the proven efficacious therapies, yet simple enough to be readily used and easily monitored in widely diverse clinical situations by patients and the clinical staff. Materials were written to guide clinical staff in how to work collaboratively with patients and effectively teach cognitive/behavioral strategies and basic brain research to patients and their families. With funding from NIDA, the authors of the Matrix approach attempted to integrate existing knowledge and empirically supported techniques into a single, multi-element manual that could serve as an outpatient “protocol” for the treatment of cocaine and methamphetamine users (Rawson, Obert, McCann, Smith & Scheffey, 1989; Rawson, Obert & McCann, 1995). These manuals were written for patients that contained handouts for each session. Each topic was introduced by a simple exercise in which scientific information was explained in patient-friendly terms and questions directed participants to apply the information specifically to their immediate situation. The groups were focused on discussing patients’ written and oral responses to the questions.

Treatment is delivered in a 16-week intensive outpatient program primarily in structured group sessions targeting the skills needed in early recovery and for relapse prevention. A primary therapist conducts both the individual and group sessions for a particular patient and is responsible for coordinating the whole treatment experience. There is also a 12-week family and patient education group series and induction into an ongoing weekly social support group for continuing care. Weekly urine testing is another program component and participants are

encouraged to attend 12-step meetings as an important supplement to intensive treatment and a continuing source of positive emotional and social support.

The Matrix Model has been delivered to a broad spectrum of people. In the Matrix clinics in Southern California the race/ethnicity representation is approximately 17% African-American, 18% Hispanic, 62% Caucasian, and 3% other. Females comprise about 1/3 of the patient population. In the CSAT multi-site comparison of the Matrix Model and Treatment-as-Usual (described below) the sample consisted of 55% females and 45% males; 60% Caucasian, 18% Hispanic, and 17% Asian/Pacific Islander.

The Matrix Model treatment manuals have been published by Hazelden Publishing Company (Rawson et al., 2005). Hazelden has also published a Spanish translation of the treatment materials. A version of the Matrix Manual for Native Americans has been published (Matrix Institute, 2006). There are also translations in Thai and Slovakian. The Matrix Model for stimulant use disorders has been published by the Center of Substance Abuse Treatment (SAMHSA, 2006) and is in the public domain. The Model was adapted for gay and bisexual methamphetamine using men (see Shoptaw, S., C. J. Reback, et al., 2005).

## Evaluations

Several evaluations of the Matrix Model have been conducted over the past 20 years. These range from open trials with few controls to controlled clinical trials. The earliest of these was a pilot study conducted in 1985 which documented the clinical progress of 83 cocaine abusers at 8 months following treatment admission (Rawson et al., 1986). During an evaluation session, patients self-selected either: no formal treatment (voluntary involvement in AA, CA, or NA); 28-day inpatient treatment; or the Matrix Model outpatient treatment. An independent research assistant was hired to conduct telephone follow-up interviews inquiring into drug and alcohol use and participation in aftercare and self-help.

There were no demographic or drug use differences among the patients prior to beginning treatment. The hospital patients received 26.5 of 28 days of treatment and the Matrix patients received 21.6 of 26 weeks. By contrast, only 20% of the no formal treatment patients ever attended more than one self-help meeting. The most noteworthy finding of this pilot study were reports of significantly less cocaine use by the Matrix patients at 8 months after treatment admission. The number of patients reporting a return to monthly or more cocaine use in the Matrix group was 4 of 30, compared to 10 of 23 in the inpatient group, and 14 of 30 in the no formal treatment group. Although the quasi-experimental nature of this evaluation, and the small numbers of subjects per cell limit the degree to which strong conclusions may be drawn, the findings did provide some support for the Matrix Model and also were a basis for altering treatment materials to prescribe total abstinence as a necessary tactic for preventing relapse to cocaine.

Through the Small Business Innovative Research Program the protocol for the Matrix Model was formalized into a 300 page treatment manual. After completion of the manual, a controlled trial of the model was conducted over a two-year period (Rawson et al., 1995). In this study 100 cocaine dependent subjects were randomly assigned to six-month Matrix treatment condition or they were referred to “other available community resources.” Subjects assigned to the community resource group were given detailed information on treatment alternatives in the area and were given a referral and an appointment time to receive an evaluation at a community treatment location. Subjects in both conditions were scheduled for 3, 6, and 12-month follow-up evaluations.

Racial/ethnic representation was: African –American (27%), Hispanic (23%), and the remainder were Caucasian. At 3 and 6-month follow-ups, 40% of the community resource subjects reported involvement in some formal treatment ranging from outpatient to hospital treatment. There was a strong positive relationship between the amount of treatment received and the percent of cocaine negative urine results for the Matrix subjects but not for the community resources subjects. Similarly, greater amounts of treatment participation for the Matrix subjects were associated with improvement on the ASI employment and family scales, and on a depression scale. These analyses supported the clinical impression of the counseling staff of an orderly dose-response association between amount of treatment and outcome status. This study supported the Model’s clinical utility but the results did not provide definitive empirical confirmation of its efficacy. The variability of community resource subjects’ treatments made differential treatment outcomes undetectable. In addition, failure to employ a pre-randomization “lead-in” period to screen out applicants resulted in high rates of attrition in both

treatment groups. This reduced the number of subjects receiving a meaningful dose of treatment and further impaired the identification of differential treatment outcomes.

A convenience sample of 114 patients out of the 500 referred to in the Rawson et al. (2002) report was followed at 2-5 years after treatment. In this study funded by CSAT, 437 potential study candidates were telephoned by research assistants and asked to come to the clinic for a follow-up interview. When necessary the interview was performed at a neutral offsite location and as a last resort it was done by phone. Of the total pool of 437, 183 (42%) were located, contacted and asked to participate. Of the 183, 114 agreed to participate in the follow-up interview. The participants were similar to the non-participants on demographics, however they remained in treatment almost twice as long and gave more methamphetamine-free urine samples during the course of treatment.

There was a significant change in self-reported methamphetamine use in the 30 days prior to treatment (86% reporting use), and 30 days prior to follow-up (17.5% reporting use). The only predictor of non-use at follow-up was marital status with married patients more likely to be methamphetamine non-users at follow-up. Urine samples were collected on 46 individuals and only 3 (6.5%) were positive for methamphetamine. Of the 54 who had reported daily use at baseline, 39 (72.2%) were abstinent at follow-up.

At treatment admission 26% of the follow-up sample were employed compared to 62% employed at follow-up. There was significant reduction in the percentages of participants

reporting paranoia, however there was not a reduction in complaints of depression (more than 60%) and headaches (38.9% at baseline and 44.1% at follow-up).

The limitations of the study methodology preclude conclusions about the specific impact of the Matrix treatment, and the 114 patients who were followed were not representative of the entire initial sample of 437. However, despite these limitations, it was demonstrated that many methamphetamine users are able to discontinue methamphetamine use following treatment with the Matrix Model.

In 1998, the Center for Substance Abuse Treatment selected the Matrix Model approach for a randomized, controlled evaluation with other methamphetamine treatment methods available in the community, called Treatment-As-Usual (TAU). The study was conducted as an 8-site, outpatient trial, coordinated by UCLA. The sites were located in Northern and Southern California, Hawaii, and Montana. Over an 18-month period, between 1999 and 2001, 978 treatment-seeking MA-dependent individuals were recruited by the eight sites. At each site half of the participants were randomly assigned to receive the Matrix Model of treatment, whereas the other half received TAU as delivered at that site. Several important points should be noted in the design and results of this study.

The design involved a comparison of the Matrix approach with 8 different forms of treatment as usual (TAU). This was not an optimal efficacy design, but was necessitated by CSAT's desire to provide as much treatment as possible within an evaluation study. In this study, many of the TAU protocols were very similar to the materials in Matrix model and in some cases, the "dose"

of treatment delivered in the TAU conditions was designed to be more intensive than the Matrix condition. The variability of the comparison conditions was tremendous (not an optimal circumstance for finding statistically significant differences between study groups). In addition, in no sense were these TAU conditions designed to be “minimal treatment control conditions.” In fact, since the TAU protocols were designed by the clinical staff of the 8 programs, they were viewed at the beginning of the study as being quite effective treatment interventions.

The sample consisted of 55% females and 45% males; 60% Caucasian, 18% Hispanic, and 17% Asian/Pacific Islander. Other characteristics of those seeking treatment included: age: 32.8 years on average; education: 12.2 years on average; employment: 69%; and married and not separated: 16%. Participants were recruited through media advertisements, referrals from community agencies, and word-of-mouth. During the study their primary drug used was MA. The participants had on average 7.54 years of lifetime MA use and 11.53 days of MA use in the past 30 days. The preferred route of administration of MA was smoking (65%), followed by injecting (24%), and snorting (11%).

Retention was higher for the Matrix participants at all sites except the drug court site, and at five of the sites, retention rates for Matrix participants were significantly higher than for TAU participants. Comparisons at two of the other sites were marginally significant, with the Matrix condition having increased retention relative to the TAU condition. At the drug court site, both the Matrix and the TAU programs were more stringent, and as a result, there was no difference in retention between the two conditions at this site.

Completion of the program was defined as a participant having attended at least one treatment session in his/her last scheduled week of treatment. Comparison across all sites indicates that the completion rate for Matrix participants was significantly higher (40.9%) than for TAU participants (34.2%).

All participants were required to provide one urine sample each week, which was sent to an outside laboratory and tested for drug metabolites. At all sites, except the drug court site, Matrix participants provided more methamphetamine-free urine samples than did TAU participants.

For all sites, urine samples that were submitted at the discharge interview, were methamphetamine-free for 66% of the Matrix participants, and 69% of the TAU participants.(this difference is not significant). For urine samples at the six-month follow-up time-point, the rates were the same for both conditions (69%). At the 12-month follow-up, the differences between Matrix and TAU were again not significant, and they were 70% and 73% respectively.

Overall self-reported MA use dropped dramatically during treatment. At enrollment participants reported approximately 11 days of use in the last 30 days, whereas at discharge the number was reduced to approximately four days of use in the last 30 days. At the six-month follow-up time-point the number was still approximately four days and it decreased even more at the 12-month follow-up time-point (approximately three days). This reduction from enrollment to the different time-points was consistent across sites and conditions.

This study was conducted in “real-world” treatment programs, using the diverse collection of treatment methods normally used in these communities, therefore the study was not a conventional multi-site study comparing identical approaches at all sites. Despite these study limitations, during the application of the Matrix model, the participant performance in 7 of the 8 sites was clearly superior in the Matrix condition to the TAU condition (the lone exception was within a drug court, mandated program, where there was no difference). The retention was superior, the urinalysis data were superior and the ability to produce a sustained period of abstinence was superior.

### Clinical Guidelines

The elements of the treatment approach are a collection of group sessions (early recovery skills, relapse prevention, family education and social support) and 3 to 10 individual sessions delivered over a 16-week intensive treatment period. Patients are scheduled three times per week to attend two Relapse Preventions groups (Monday and Friday) and one Family/education group (Wednesdays). During the first four weeks patients also attend two Early Recovery Skills groups per week (these groups occur on the same days as the Relapse Prevention groups just prior to them). After 12 weeks they attend a Social Support group on Wednesdays instead of the Family/education group.

### **Sample Schedule**

<b>Monday</b>	<b>Wednesday</b>	<b>Friday</b>
Early Recovery Skills Weeks 1-4	Family/education Weeks 1-12	Early Recovery Skills Weeks 1-4
Relapse Prevention Weeks 1-16	Social Support Weeks 13-16 Continues past week 16	Relapse Prevention Weeks 1-16

**Urine tests once per week**

### Program Components

**Individual counseling.** These sessions are critical to the development of the crucial relationship between the patient and the therapist. The content of the individual sessions is primarily concerned with setting and checking on the progress of the patient's individual goals. These

sessions can be combined with conjoint sessions, including significant others in the treatment planning. Extra sessions are sometimes necessary during times of crisis to change the treatment plan. These individual sessions are the glue that ensures the continuity of the primary treatment dyad and, thereby, retention of the patient in the treatment process.

**Early Recovery Skills Groups.** The eight Early Recovery Skills Groups are designed for patients in the first month of treatment or those who need extra tutoring in how to stop using drugs and alcohol. The purpose of the group is to teach patients: 1) how to use cognitive tools to reduce craving, 2) the nature of classically-conditioned cravings, 3) how to schedule their time, 4) about the need to discontinue use of secondary substances and 5) to connect patients with community support services necessary for a successful recovery. The reduced size of the groups allows the therapist to spend more individual time with each patient of these critical early skills and tasks. Patients who destabilize during treatment are often encouraged to return to the Early Recovery group until they re-stabilize.

**Relapse Prevention Groups.** The Relapse Prevention groups occur at the beginning and end of each week from the beginning of treatment through Week 16. They are the central component of the Matrix Model treatment package. They are open groups run with a very specific format for a very specific purpose. Most patients who have attempted recovery will agree that stopping using is not that difficult; it is *staying stopped* that makes the difference. These groups are the means by which patients are taught how to stay in sobriety.

The purpose of the Relapse Prevention groups is to provide a setting where information about relapse can be learned and shared. The 32 relapse prevention topics are focused on behavior change, changing the patient's cognitive/affective orientation, and connecting patients with 12-

step support systems. Each group is structured with a consistent format during which: 1) Patients are introduced if there are new members, 2) Patients give an up to the moment report on their progress in recovery, 3) Patients read the topic of the day and relate it to their own experience, 4) Patients share their schedules, plans, and commitment to recovery from the end of group until the group meets again. Input and encouragement from other group members is solicited but the group leader does not relinquish control of the group or promote directionless cross talk about how each member feels about what the others have said. The therapist maintains control and keeps the groups topic centered and positive with a strong educational element. Care is taken not to allow group members to share graphic stories of their drug and alcohol use. Therapists specifically avoid allowing the groups to become confrontational or extremely emotional.

Whenever possible the use of a co-leader who has at least 6 months of recovery is employed. The co-leader serves as a peer support person who can share his or her own recovery experiences.

**Family Education Groups.** The 12-week series is presented to patients and their families in a group setting using slide presentations, videotapes, panels, and group discussions. The educational component includes such program topics as: (a) the biology of addiction, describing concepts such as neurotransmitters, brain structure and function and drug tolerance; (b) conditioning and addiction, including concepts such as conditioned cues, extinction, and conditioned abstinence; (c) medical effects of drugs and alcohol on the heart, lungs, reproductive system, and brain; and (d) addiction and the family, describing how relationships are affected during addiction and recovery. Successfully engaging families in this component of treatment can significantly improve the probability of retaining the primary patient in treatment for the entire 16 weeks.

**12-Step Meetings.** The optimal arrangement is to have a 12-Step meeting on site at the treatment center one night each week. This meeting does not have to be an official meeting. Rather, the patients presently in treatment and graduated members can conduct an "Introduction to 12-Step Meeting" using the same format as an outside meeting with the purpose of orienting patients unfamiliar to the meetings in a safe setting with people they already know. Attending these meetings often makes going to an outside meeting for the first time much easier and less anxiety provoking. These meetings, along with outside 12-step meetings chosen by patients and the Social Support Group provide strong continuing support for graduated group members.

**Urine/Breath Tests.** Urine testing is done randomly on a weekly basis. Positive urine tests revealing previously undisclosed drug use serve as points of discussion rather than incrimination. Patients struggling with secondary drug or alcohol use should also be tested for those substances.

**Relapse Analysis** A specific exercise is used when a patient relapses unexpectedly or repeatedly and does not seem to understand the causes of the relapses. The optional exercise and forms are designed to help the therapist and the patient understand the issues and events that occurred preceding the relapse(s) in order to help prevent future relapses. This exercise is typically conducted during an individual session with the patient and, possibly, a significant other.

**Social Support.** Designed to help patients establish new nondrug-related friends and activities, these groups are less structured and topic-focused than the Relapse Prevention Groups. Patients begin the groups during the last month in treatment at the end of the family education series, in order to ensure that they feel connected before they graduate from the Relapse Prevention Groups. The content of the groups is determined by the needs of those members attending. If patients have relapsed, relapse prevention work may be in order, unstable patients are given

direction to help stabilize them and patients moving successfully through the stages of recovery are aided and encouraged to continue with the lifestyle changes that they are making.

### **Guiding Principles**

The Matrix has a number of central therapeutic constructs. These include:

- 1) Establishing a positive and collaborative relationship with the client
- 2) Creating explicit structure and expectations
- 3) Teaching psycho-educational information (including information on brain chemistry and other research derived clinically relevant knowledge).
- 4) Introducing and applying of cognitive-behavioral concepts
- 5) Positively reinforcing desired behavioral change
- 6) Educating family members regarding the expected course of recovery
- 7) Introducing and encouraging self-help participation
- 8) Monitoring drug use through the use of urinalyses

#### **1) Positive and collaborative relationship**

The context of the Matrix Model is characterized by a positive and collaborative relationship between the patient and therapist. Within this model, the therapist is required to be directive but to maintain a client-centered therapeutic stance. As cited in much psychotherapy research, it is essential to deliver accurate empathy, positive regard, warmth, and genuineness. It means treating patients with dignity, respect, and listening attentively and reflectively to their unique experience without imposing judgment.

A collaborative relationship will develop when you actively listen to patient's concerns and opinions and attempt to see the world from his/her perspective. This allows the creation of a spirit of cooperation and mutual effort. Conversely, use of a confrontational and therapist imposition of treatment goals and demands will create an adversarial relationship which can frequently contribute to premature treatment termination. Setting mutually agreed upon goals engages your client as an active participant. In addition, it validates and acknowledges his expertise and experiences, thereby reinforcing the therapeutic alliance. This collaborative climate increases the client's readiness to learn new skills and practice more adaptive coping strategies and establishes an environment where the successes and failures of using these new strategies can be shared.

The Motivational Interviewing techniques developed by Miller and Rollnick (1991; 2002) are all extremely valuable in building a successful therapeutic relationship with patients in outpatient treatment. The clinical skills incorporated within this approach are of tremendous value throughout treatment and especially during the early weeks of treatment.

## **2) Structure and Expectations**

Structure is a critical element in any effective outpatient program. In outpatient settings structure is created by defining for patients the activities that are required parts of their treatment involvement. These activities include attendance at the individual and group sessions of the program, participation in community self-help groups, and the scheduled daily activities that minimize contact with drugs and other high risk situations. The structure provided by treatment helps to define for the patient exactly what is expected of him/her in treatment and provides a "roadmap" for recovery. This information can be useful in reducing the anxiety that is

commonly experienced by substance dependent individuals upon treatment initiation.

Functioning within a structure can decrease stress and provide consistency and predictability which are all incompatible with an addict's spontaneous, unplanned, chaotic lifestyle.

The primary component of structure during outpatient treatment is the daily, hour by hour schedule of his/her activities. The purpose of this exercise is not to create a list of one activity after another. Rather, the intent is to impart the concept of proactive planning of work activities, treatment and recovery activities, family and recreational activities, and relaxation activities.

Within the context of this scheduling exercise it is possible to teach the identification and avoidance of high risk settings and people, and to promote engagement in new, non-drug related alternative behaviors. Creating a 24-hour schedule with the patient can help operationalize how to stay abstinent "one day at a time". This exercise can reduce feelings of being overwhelmed in early recovery and/or of neglecting oneself in an attempt to immediately resolve problems created by the addiction.

The patient should keep the schedule and refer to it during day to day activities. It is important that the counselor keep a copy of the schedule and review it at the beginning of the next session. During early stages of treatment many patients forget to follow the schedule or decide to ignore the schedule. Frequently lapses will occur and these lapses can reinforce the use of the schedule procedure. Patients should realize that they can change their plan when essential but they should take the time to actually change the written schedule and write in the new activity. This process allows the patient time to think through the feasibility and advisability of the schedule change.

Some challenges and solutions:

- 1) Patients (and therapists) may forget to schedule in leisure activities, time to rest, or time to relax. The schedule can become a marathon of productive activities. This type of unrealistic scheduling will lead to noncompliance with the schedule and quickly will make the scheduling activity pointless. One helpful way to make sure that the schedule is realistic is to review the events of typical drug-free days and see what a normal routine is for that person. If the schedule created is too different from normal habits, it will be difficult for the client to incorporate it into his/her routine.
- 2) Many patients have difficulty making an hour-by-hour schedule. If this is the case, it is necessary to simplify the process. One way to do that is to simply use a small, pocket-sized card with the day divided into four sections; morning, midday, afternoon and evening. Beginning scheduling is easier if the patient can just plan activities for those four times of day. At first, some have trouble learning this skill. If this is the case, it can be helpful to have them describe what they did for the past 24 hours and then guess at what they are likely to do in the next 24 hours. You can write their schedule as they talk about it.
- 3) Some families want to help “plan” (dictate) a patient’s schedule. Spouses and parents, especially, have lots of ideas for things that have been neglected or things that the patient should do. Since many patients are trying to win back the support of their families, they can be easily convinced that they should do whatever family members want rather than what they need to do sustain a plan for their recovery. If someone else’s wishes and desires are the basis for the schedule regularly, sooner or later the recovering person will get resentful and will not find the scheduling useful or helpful. It will be viewed as a

“sentence” imposed by the family member and the therapist will be viewed as a colluding compatriot.

It is important for the patient to be the person who is responsible for constructing the schedule with input from the therapist.

### **3) Psychoeducation**

A key component of the Matrix Model is information regarding conditioning and neurobiology to. Accurate, understandable information helps patients understand what has been happening in the past and also what predictable changes that will occur in their thinking, mood, and relationships over the course of several months. This education process identifies and normalizes symptoms, thereby empowering them to draw upon resources and techniques to help manage the symptoms.

The use of patient education as a treatment component is a not a new treatment concept, unique to the Matrix Model. However, teaching patients and their families about how the chronic use of drugs or alcohol produces changes in brain functioning in a manner that has direct application to patients’ behavior is a relatively new strategy. Much of the information about drug-induced changes in the brain is highly technical and requires extensive scientific knowledge to comprehend the concepts fully. Without scientific training, it is not intuitive to substance abusing individuals or to their families to understand that the behavior associated with drug use may, in part, be explained by modifications in brain chemistry.

Two very basic “brain chemistry made simple” lectures were developed to be delivered in the treatment setting by a senior clinical staff person to patients and their families. (These lectures are also available in commercially produced video and DVDs through Hazelden Publishing.) New therapists are coached in explaining the essence of this brain chemistry change process along with the concept of classical conditioning as it relates to craving. Classically conditioned craving occurs independently of rational choice or renewed resolve to stop drug use. This fact provides a reassuring explanation of past behavior and an uncompromising context for recovery. From this premise follows many of the treatment handouts and exercises such as time scheduling (to avoid depending on in-the-moment, addiction-compromised thought processes) thought-stopping (to prevent initiation of the craving sequence), and avoidance of triggers (which also trigger release of neurotransmitters and simulate a desire to use). Without any more sophisticated knowledge than seeing the red areas of the brain light up with repeated cocaine dosing, clinical staff could refer to the “addicted brain” with science on their side and work collaboratively with patients to overcome the effects of this now very obvious physical alteration in the working brain.

The second basic lecture involves continuing changes in brain chemistry as the healing brain attempts to regain normal functioning. New scientific information continues to provide supportive evidence for the stages of recovery that patients have reported over the last 16 years. Studies are consistently showing that the recovery process often results in some brain functions getting worse before they get better, the brain needing a drug free environment for the healing to occur, and the entire recovery taking a much longer time to return to normal than we ever imagined. Even without a technical understanding of how and why these issues are occurring,

counselors can now say that they are occurring with certainty and can provide pictures to support their claims. This knowledge sets the stage for the continued teaching of the relapse prevention activities and supports vigilant treatment participation far beyond the initial withdrawal phase. Patients are comforted by the existence of a roadmap delineating the process of recovery and are more secure in the knowledge that activities they are asked to do relate directly to their recovery from a very physical disease state.

In the Matrix model the science-made-simple lectures are delivered midweek during the family education group for patients and their families. They are part of a series of 16 educational groups that the senior clinical person in each clinic conducts. New counselors are required to sit in on the education groups and to complete a formal training process that includes reading scientific articles and publications, becoming familiar with professional guidelines, viewing educational videotapes and observing a required number of groups, individual sessions and hotline phone calls.

#### Some challenges and solutions:

1. The presentation of psycho-educational information based on science can be dull and tedious for patients and families if presented improperly. The material from the research literature has to be “translated” into non-technical language and presented at an 8-10<sup>th</sup> grade level. Visual aids, including clear and understandable pictures and videos can be very useful to convey this information. It is important that the material be presented in a context of clinical issues so that patients and their family members understand the relevance of the information and how it applies to their addiction recovery.

2. The individual who presents this material as part of the Matrix program has to be well versed in the neurobiological concepts and other research information. For the material to be understood and used by patients, the presenter must have credibility, be able to expand on the material, and make the material relevant to patients' clinical challenges.

#### **4) Cognitive Behavioral Skills**

Knowledge and skills that have been developed within the field of cognitive behavioral therapy (CBT) play a large role in the Matrix Model. The work of Marlatt and Gordon (1985), Carroll and colleagues (Carroll et al., 1994; Carroll and Onken, 2005), and others have contributed greatly to the content of the group treatment activities at Matrix. This approach teaches patients that drug use and relapse are not random events, and that they can learn skills that can be applied in daily life to promote abstinence and prevent relapse. One of these skills is self-monitoring to bring into awareness any dysphoric or uncomfortable symptoms, thoughts, warning signs, high-risk situations, and subtle precipitating events. Patients learn skills to identify triggers, develop coping skills, and manage immediate problems. They are encouraged to practice and experiment with new behaviors outside the clinic setting. In the group, patients report back on what worked and what didn't work, what obstacles were encountered, and what changes need to be made to make the interventions successful in the future. In this process patients become the experts on their own individual recovery processes.

Each of the Matrix groups is anchored with a specific CBT topic for each session. The topic is introduced by the therapist and a brief explanation is given about how this topic is related to the achievement of a successful recovery. There is a review of a handout/worksheet that explains

the concept and includes questions that are used to personalize the concept and make it relevant to each person. Each patient in the group discusses how the topic is a factor in his/her life and how the skills being introduced could help with specific challenges each faces in recovery. The discussion is never confrontational and while the primary exchange is typically between the patient and the therapist/group leader, frequently other patients can make observations about similarities and differences between their experiences and those of other patients. Frequently the therapist will suggest to one or more of the group members to apply the skill in the following days as a homework assignment.

Some challenges and solutions:

1. A cognitive-behavioral orientation can be very engaging, and a nonjudgmental stance communicates positive regard for the patient. However, if the topic is not accompanied with useful real world examples of how the topic can actually relate to patient challenges and benefits, the sessions can feel excessively didactic and academic, in short, boring. An important part of therapist training in the Matrix Model is the art of CBT delivery to keep the topic interesting and relevant and find ways to apply it to patients in the group.

2. Another challenge is maintaining a stimulating pace, staying on topic and managing the time of the group. At times, group members may be disruptive and interrupt the group with cross talk or impulsive behaviors. Speaking calmly and redirecting clients is an effective way to keep the group focused and on task. (With methamphetamine use there maybe some cognitive impairment, which should not be confused with “resistance” or “noncompliance.”)

3. Some patients (particularly those who are mandated) may be at a stage of readiness where they are not receptive to total abstinence, lifestyle change, or even any modification in

their current drug or alcohol use. Often the cohesiveness and positive momentum of the group can also move them towards change. A skilled therapist will need to limit negative, counterproductive input from such a patient and at the same time be accepting, positive, and not be judgmental.

4. On occasion an intoxicated patient may show up for group. If another counselor is available on site, he or she can work with the patient to ensure safe transportation home. Any discussion on the matter regarding the drug or alcohol use should be avoided until the next appointment. If possible, an individual session should be scheduled to address the particular issues surrounding the relapse. The effect of such an event on other group members should not be ignored. They may need to discuss their reactions, and possible triggering, resulting from being in such close proximity to a relapsing colleague.

#### **5) Positive reinforcement**

There is a large amount of research supporting the efficacy of the systematic use of reinforcement for meeting specific behavioral criteria in the treatment of addictions (Higgins et al., 1994, 2000; Iguchi et al. 1997; Petry et al., 2000; Rawson et.al., 2002, 2006). Contingency management research with substance abuse problems usually has targeted drug-free urine results, attendance at treatment sessions, or achieving treatment goals as the basis for receiving incentives. Participants in research studies usually receive certificates that are redeemable for items with monetary values ranging from as little as one dollar to as much as one hundred dollars. Coupled with social recognition, relatively inexpensive items can have a strong effect on behavior. This approach has long been a part of both the educational system and of parenting skills training.

Although supported by a large amount of research, contingency management has not made significant inroads into treatment mainly because of cost and complexity. The Matrix Model includes many different uses of contingency management that are simple and inexpensive. The specific behavior targets and reinforcers may vary from program to program depending on the clinical needs and the program resources, but some general features should be common to all.

These include:

- a) Specific, clear criteria. The requirement for earning an incentive should be described in writing and in detail. For example, if attendance at group meetings earns a voucher, attendance would need to be clearly defined (e.g., attending at least 60 minutes of a 90-minute group; arriving within 5 minutes of the scheduled start time).
- b) Verifiable behavior. If urine results are incentivized, it is critical that they are valid and testing procedures should be in place. If achieving treatment planned goals are rewarded, there should be some way of verifying these (e.g., ticket stubs from a museum, job application, or 12-step meeting attendance cards.)
- c) Consistency in application of contingencies. If the rules are bent they quickly become ineffective.
- d) Use of social reinforcement along with other rewards as much as possible.  
Acknowledging accomplishments in groups magnifies the effects tremendously.

Some examples of contingency management used in the Matrix programs include:

- Abstinence: At the beginning of each group session patients are asked to place colored stickers “dots” on a calendar for each drug free day. The session opens with

each patient reviewing number of days of abstinence. This public recording of data provides an excellent opportunity to explicitly reinforce the achievement of gaining drug free days.

- Urine results: Everyone who provides a drug-free urine each week participates in a pizza party at the end of the week
- Attendance: Participants who attend all treatment sessions over the course of a month earn a gift card which is presented in group. Those who attend 80% of treatment session earn a gift card of lesser value.
- Promptness: Cookies and chocolates are put out 5 minutes prior to the start of group and are left out until 5 minutes after. Only those who are present within this 10-minute period have access to the treats.
- Behavior in group: Counselors give stickers during group to clients who say something reflective of a positive change in attitude or recovery behavior, something supportive of other group members, or for abiding by group rules for the entire group. The stickers are typically put on the outside of treatment binders and the quickly achieve value in groups.

The cost of these incentives is very small and can be offset by better attendance where fee-for-service billings are the basis for program income. Local merchants may also donate gift cars or merchandise to reduce costs of contingency management.

## **6) Family Education**

The Matrix model involves family members in the treatment program. “Family” includes all those people who are part of their everyday existence and are close to them. This includes biological family as well as partners, close friends, associates and people who are part of their extended family. Providing the family with education such as information on classically conditioned craving helps make the patient’s behavior prior entering treatment understandable and it helps to demystify treatment and recovery. It is also important for significant others to be better prepared for the range of events such as lapses that may happen during the recovery process.

In the initial stages of treatment, family members will need to decide whether they are willing to be part of the recovery process. It is often necessary for therapists using the Matrix Model to schedule a session with family member to explain the manners in which they can be helpful in participating in the treatment process and strongly encouraging them to attend scheduled sessions. Addiction is presented to the family as a chronic condition which they can be helpful in remediating by providing support for the patient. By presenting their role as providing supportive and positive assistance, as opposed to entering “therapy” for their family systems pathology, family members are often more willing to help support the recovery process and attend treatment.

Not all family members will want to be a part of the recovery process, despite the urging by the therapist or patient. There are many reasons for this. One may be that the family members feel they have been through tremendous stress and disappointment and that they cannot put

themselves through any more of the emotional turmoil. These people usually still care very deeply for their affected family member but cannot stand to keep watching them destroy their life. Usually they have been involved in previous treatment attempts and are exhausted, emotionally and financially, from multiple unsuccessful attempts at recovery. Another reason for family members being unwilling to participate may be that they are very angry. They may be tired of all the family resources being expended fruitlessly on battling the addiction. Other family members say they are just tired of all the deception and turmoil that is part of the addiction and they are not willing to invest more energy into helping the patient recover. These family members might say something like “This is your problem not mine. Go get fixed and when you are all better we can continue leading our lives together.” In these circumstances, if the patient initiates treatment and demonstrates some positive progress, family members can then be approached again and invited to participate.

## **7) Self-Help Groups**

AA/NA meetings are widely available, are free of charge, and provide a place where recovering people can meet others who are dealing with many of the same issues. Recently there have been some well designed studies that have demonstrated empirically the usefulness of participation in 12-Step programs. It makes sense for patients to use the meetings as an ongoing resource if they find them beneficial, and the Matrix Model includes topics designed to familiarize patients with this resource.

Not everyone responds favorably to the concepts of the 12-Steps or to the groups themselves. Many patients are not willing to attend 12-Step meetings, or they sample one or two meetings

and find them unhelpful/aversive. Much of the resistance to the 12-Step program concerns the “spiritual” dimension of AA/NA. This resistance can be reduced by urging patients to focus on other benefits of the program which they can find useful. For example, one basic principle of the Matrix approach is the creation of structure and development of non-drug related activities. The 12-Step groups can be presented as a means to construct a schedule with drug-free activities during high-risk time periods. Often motivational interviewing strategies can be helpful in addressing resistance to participation in 12-Step program involvement.

### **8) Urine and Breath Alcohol Testing**

The Matrix approach requires accurate information on the drug use status of patients as they progress through treatment. The most accurate means of monitoring clients for drug and alcohol use during treatment is through the use of urine and breath alcohol testing. The variety of testing options available today makes it much easier for programs to regularly administer the tests than in the past. Tests can be analyzed on site or sent out to laboratories. Specimens can be monitored with temperature strips, they can be observed or unobserved. Regardless of the specific procedure used, the objective is the same: to monitor drug use and to provide feedback to the patient. Some patients may resist the necessity of urine testing. They may view the procedure as coercive or indicative of mistrust by the treatment program staff. It is possible to mitigate this resistance by describing the purpose of the testing as offering objective evidence of the patient’s abstinence, if situations occur when family members or others make accusations of drug use. Patients will often say things like, “You don’t need to test me. Why would I come in here and lie about using? I will tell you if I use.” It’s important to let new patients know that the testing

procedure is a standard part of the program, and that urine testing is not a way of “catching” misbehavior.

One important point to take into consideration is that urine testing should not be presented primarily as a monitoring measure. Instead of being used as a policing device, testing should be seen as a way to help a person not use drugs. Urine and breath alcohol testing done in a clinical setting for clinical purposes is quite different from urine testing that is done for legal monitoring.

### **Summary**

The Matrix Model provides an integrated treatment experience for drug and alcohol users through a cognitive/behavioral approach, imbued with a motivational interviewing style, and supplemented with contingency management. The program as outlined here is typical and ideal. It has also been delivered within the context of medication-assisted treatment, with criminal justice patients (including a drug court), and as a track of residential treatment. In addition, as a result of the vagaries of funding (particularly managed care), or other requirements (our drug court is an 18-month program) treatment durations have not always been the 16-weeks described here. Our experience is that some variation on the ideal does not sacrifice effectiveness as long as there is adherence to the cognitive/behavioral elements of the Model.

In the future, we plan to augment this treatment approach with additional evidence-based interventions in order to sustain and increase effectiveness, and to expand the focus of treatment. For example, we hope to more successfully extend patient care beyond the initial intensive phase

through applications of contingencies targeting attendance in continuing care groups, or through scheduled telephone follow-up calls.

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## Resources

### Treatment Materials:

Matrix Institute (2006). *Matrix Model; Culturally Designed Client Handouts for American Indians/Alaskan Natives*. Los Angeles: Matrix Institute.

Rawson, R.A., McCann, M.J., Obert, J.L. (2005). *The Matrix Model Handouts and Worksheets. The Family Unit Spanish CD-Rom*. Center City, Minnesota: Hazelden.

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Rawson, R.A., Obert, J.L., McCann, M.J., Ling, W. (2005). *The Matrix Model Intensive Outpatient Alcohol and Drug Treatment Program: a 16-week Individualized Program*. Center City, Minnesota: Hazelden.

SAMHSA (2006). *Matrix Intensive Outpatient Treatment for People with Stimulant Use Disorders*. Rockville, MD: U.S. Department of Health and Human Services.

## **Training**

The Matrix Model has been extensively disseminated over the past several years. There is a standard training curriculum. Training procedures include an initial 2-day training in the Matrix Model with follow-up intensive training in order to better achieve a reliable and faithful translation of training into a Matrix Model treatment program. All agencies who receive Matrix Model training identify a "Key Supervisor" who receives additional training at the Matrix Institute clinics and ongoing guidance in clinical supervision and maintenance of fidelity. This person will be a contact person for Matrix and will be the individual who assumes responsibility for assisting the program in getting the Model in place and maintaining a standard of practice with regard to fidelity. During their visits to Matrix in Los Angeles and following, the Key Supervisors are trained to supervise clinicians in the Matrix Model of treatment, to work with administrators to adapt the Model to their settings, and to administer the fidelity instruments. They have access to consultations with experienced Matrix clinicians, they are listed on the Matrix website as Key Supervisors, and they participate in a national listserv designed to connect all the Key Supervisors in the country and engage them in devising and developing ways to best disseminate the Matrix Model. Matrix uses this network of Key Supervisors to communicate changes and updates to the program.

Information regarding training is available at [www.matrixinstitute.org](http://www.matrixinstitute.org)