

A Treatment Manual for Implementing Contingency Management

*Using Incentives to Improve Parolee Enrollment and Attendance in
Community Treatment*



UCLA

Integrated Substance Abuse Programs

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This manual (i.e., protocol development, wording and structure) is adapted from two published manuals: the “HAART Adherence Strategies for Methadone Clients Who Are HIV-Positive” treatment manual by Nancy Haug, et al., and the “A Community Treatment plus Vouchers Approach: Treating Cocaine Addiction” treatment manual by Alan Budney, et al. Additionally, materials from the PAMI Training Program have been reproduced verbatim in this manual. The work of many others was also quite valuable as is acknowledged in the relevant portions of this manual.

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OVERVIEW & RATIONALE FOR CM INTERVENTION

INTRODUCTION TO CONTINGENCY MANAGEMENT (CM)

Contingency management, also known as Motivational Incentives, “is a scientifically based treatment approach commonly used to enhance motivation among people who abuse substances,” (Haug, et. al., 2006). Contingency management emphasizes that “behavior is learned, reinforced, and influenced by consequences,” (Haug, et. al., 2006). In order to be effective, CM treatments require three main conditions: (1) frequent monitoring of the target behavior, (2) timely presentation of positive reinforcers when the target behavior occurs, and (3) no reinforcement (and sometimes sanctions) when the target behavior does not occur (Petry, Martin, & Finocche, 2001). In the residential treatment environment, all three conditions can be met with relative ease.

RATIONALE FOR CM INTERVENTION

“In drug treatment, contingency management is used to strengthen reinforcement of healthy alternatives to drug use (e.g., rewarding clean urines with gift certificates or housing),” (Haug, et. al., 2006). CM, however, has not yet been tested or adapted for use in community-based programs for offender populations, as it will be used in this project to encourage treatment admission and attendance.

CONTRAST WITH OTHER APPROACHES

Researchers have used a number of different methods for applying positive reinforcement techniques in clinical settings, including cash payments, vouchers redeemable for goods or services, direct provision of goods, take-home privileges for methadone and similar medications, access to other services, and chances to win prizes as reinforcers (see Petry 2000 for a comprehensive list). The use of reinforcement methods for increasing desired behaviors has a long and rich tradition of application in the behavioral field and, more specifically, in alcohol and drug treatment (Higgins & Silverman, 1999; Higgins, Alessi, & Datona, 2002; Petry et al., 2005; Roll et al., 2006). Research has documented the ability of CM procedures to increase the frequency of negative urine samples for illicit drugs, including opiates, cocaine, and methamphetamine (for reviews, see Kidorf & Stitzer, 1999; Roll, 2007; Silverman, Preston, Stitzer, & Schuster, 1999; Stitzer & Petry, 2006; for meta-analyses, see Lussier et al., 2006; Prendergast et al., 2006).

CONCEPTION OF THE PROBLEM ADRESSED

The past 20 years have seen an expansion in the availability of treatment for drug-abusing prisoners and parolees. Many correctional systems offer prison-based treatment, usually using the therapeutic community model, followed by continued treatment in the community. Evaluations of these programs have found that prison treatment by itself seldom produces significant reductions in drug use and crime; positive effects are usually seen only when participants in prison-based treatment continue treatment while on parole. Yet the benefit of providing community treatment is less than optimal because parolees often do not follow through on treatment referrals or they leave treatment early. Thus, for correctional systems that provide a continuum care model of prison treatment followed by community treatment, low rates of admission and retention in community treatment often result in poor outcomes and suboptimal resource utilization.

One way to attempt to address this problem is to provide incentives to parolees for community treatment participation. An extensive body of research has accumulated supporting the effectiveness of behavioral reinforcement, mainly in the form of contingency management (CM), for substance abuse treatment in controlled clinical settings and in typical community treatment programs. CM is effective both in establishing abstinence and in promoting other

desired behaviors such as retention. CM, however, has not yet been tested or adapted for use in community-based programs for offender populations, particularly to encourage treatment admission and attendance.

The study will provide incentives to study participants for enrollment at the Walden House program and for attendance during the residential and the outpatient phases at Walden House. For a continuum of care model (such as that provided by CDCR), enrolling in community treatment is essential and increases the likelihood that clients will receive the benefits of treatment. In addition, increasing the amount of time that clients participate in residential and outpatient treatment is an important goal for improving outcomes. Only about 56% of clients referred from the SATF prison treatment programs to Walden House show up for admission, and the average length of attendance is 38 days. Increased enrollment would mean that a larger percentage of participants from prison-based treatment would be exposed to continuing treatment in the community, thereby improving the overall efficiency of CDCR's treatment system. Increased attendance would mean that clients have greater exposure to the treatment environment and treatment activities of the Walden House program, with the likelihood that this would improve post-treatment outcomes.

INTRODUCTION TO THE STUDY

The UCLA Integrated Substance Abuse Programs (ISAP), in collaboration with Walden House and the California Department of Corrections and Rehabilitation, is conducting a five-year health services research study that will involve a randomized test of the use of incentives to improve treatment utilization among parolees in community-based treatment. The incentives are in the form of vouchers that are redeemable for cash deposited into their Walden House bank account. The goals of the study are to increase the likelihood that prison treatment participants with a referral to community treatment will actually enroll in community treatment following release to parole and, once enrolled, will increase the amount of time that they participate in treatment. Increased exposure to community treatment as a result of incentives is expected to result in improved long-term outcomes of parolees who have participated in prison-based and community-based treatment.

The study has six specific aims:

- (1) Determine whether offering an incentive (voucher) increases admission to community treatment by parolees who have participated in prison treatment.
- (2) For parolees who enter community treatment, determine whether providing incentives for attendance results in greater retention in treatment.
- (3) For parolees who enter community treatment, determine whether providing an incentive increases the likelihood that clients will participate in HIV testing and counseling.
- (4) Assess the long-term impact of the use of incentives on drug use, crime, and psychosocial outcomes at 12 months following the end of the five-month intervention.
- (5) Assess the long-term impact of the use of incentives to promote treatment participation on HIV risk behaviors at 12 months following the end of the five-month intervention.
- (6) Assess issues of acceptability, satisfaction, and sustainability of the use of incentives to increase admission and retention among staff and clients.

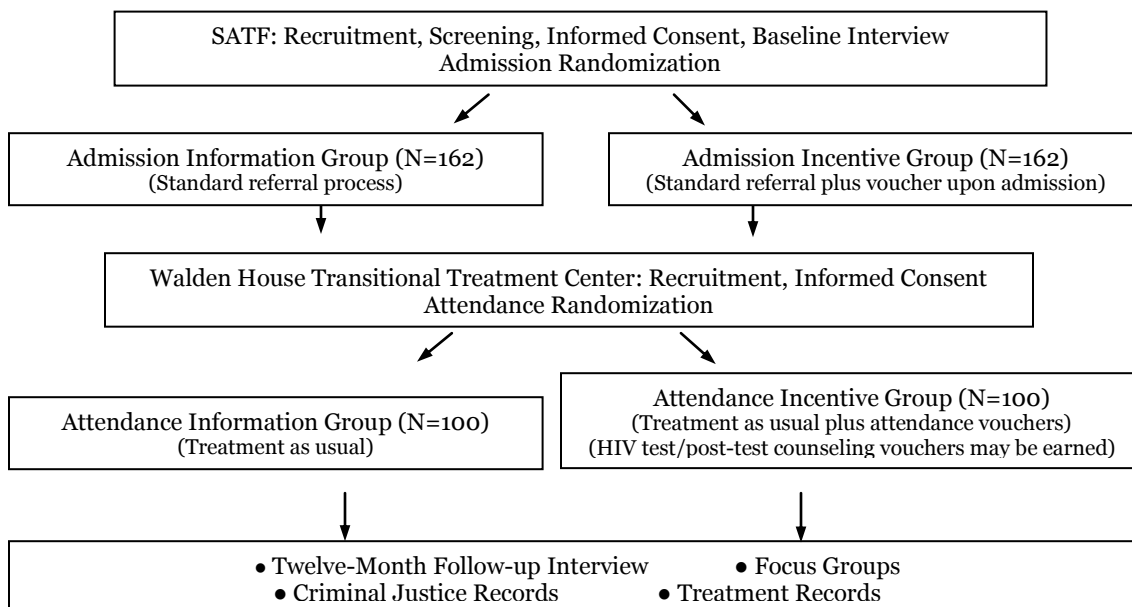
To accomplish these aims, the study design includes two phases: the Admission Phase and the Attendance Phase. In the Admission Phase, consenting clients at the Substance Abuse Programs at the California Substance Abuse Treatment Facility will be randomly assigned to the Admission Incentive group or to the Admission Information group. Upon release to parole, those in the Admission Incentive group who enroll in the Walden House treatment program will receive the voucher. In the Attendance Phase, which will last for five months, subjects from the

Admission Phase and other (SAP graduate parolees, non-SAP graduate parolees, In-Custody Drug Treatment Program [ICDTP] participants, and Post-Release Community Supervision participants [PRCS]) who enroll in treatment will be asked if they wish to participate in the Attendance Phase; if so, they will be consented and re-randomized to the Attendance Incentive group or to the Attendance Information group. Those in the Attendance Incentive group will be provided vouchers for attendance using an escalation/reset schedule.

In addition to providing vouchers for attendance, the study will provide Incentive Group participant bonus vouchers to encourage participants to receive HIV testing and then to participate in post-test counseling. The value of the voucher will be \$10. Since the mobile testing unit visits Walden House every month, all residents will have the opportunity to be tested in either their first or second month in treatment. Depending on how long a resident remains at Walden House, he may have two or three opportunities to be tested. Those who already know that they are HIV+ may receive a voucher for hepatitis or other STD testing. Testing elsewhere is allowed. Clients must show proof that testing took place and the results were received.

Twelve months after the end of the intervention (i.e., 17 months following release to parole), all study participants will be tracked for a follow-up interview. Administrative records will be obtained from Walden House and from criminal justice agencies. Qualitative data will be collected from records of meetings with Walden House staff and from focus groups with staff and clients.

Figure 1. Research Design



SEVEN PRINCIPLES OF MOTIVATIONAL INCENTIVES

These are the seven core issues that all behavior modification or CM systems need to address. The following is adapted and condensed from the article “Motivational Incentives: Foundations & Principles” by Scott H. Kellogg PhD, Maxine Stitzer PhD, Nancy Petry PhD and Mary Jeanne Kreek MD. (Unpublished Chapter)(from the PAMI Training Materials CD-ROM)

1. **Target behavior:** In selecting a target behavior typically choose something that is problematic and in need of change. It is vital that the behavior be observable and measurable. The target behavior is the centerpiece of the behavioral contract, which, in turn, provides the framework within which incentives can be successfully used (Petry,

2000). *In our study, the target behaviors include, showing up at Walden House for entry into the treatment program, attending group treatment days, participating in HIV testing, and obtaining HIV post-test counseling.*

2. **Choice of target population:** While it might be ideal to provide reinforcements for all patients in a program, this may not be feasible or even necessary. This means that choices will need to be made regarding which group or subpopulation to target with reinforcement-based interventions. *In our study we will target criminal justice system males within two weeks of prison or jail release, who speak English, are not mentally impaired, are not sexually violent and who were referred to Walden House following incarceration.*
3. **Choice of reinforcer:** The choice of reinforcer or reinforcers is a crucial element in the design of a motivational incentives program. Incentives that are perceived as desirable are likely to have a much greater impact on behavior than those that are perceived as being of less value or use. *In our study design, Vouchers (with escalation/reset) will serve as the reinforcer.*
4. **Incentive magnitude:** Interwoven within the discussion as to which reinforcer to use is the question of how much reinforcement to provide. This is because the magnitude of reinforcement needed to sustain change may differ for different behavior targets. *In our study design, the incentive magnitude will be \$50 for Admission Phase, \$12.50 - \$65 per week (on a weekly escalation schedule) for Attendance Phase.*
5. **Frequency of incentive distribution:** Another factor that is intertwined with the choice and magnitude of the incentive is the frequency of its distribution. *In our study design, a voucher will be awarded daily. Money will be dispersed weekly to the client's Walden House Accounts. Clients can redeem their money twice weekly as per the Walden House banking schedule.*
6. **Timing of the incentive:** The core principle here is that the reinforcement needs to follow the exhibition of the target behavior as closely as possible. *In our study, the voucher is delivered the same day that the client (in the Admission Incentive group) completes intake at Walden House (a 2-day process). For the Attendance Incentive group, vouchers start each Monday and are delivered the same day as treatment attendance (Monday through Friday).*
7. **Duration of the intervention:** The last factor that must be considered is how long to continue to provide incentives for desirable behavior. *While most voucher studies are limited to 12 weeks, in our study, the vouchers will continue to be awarded for up to 22 weeks of treatment.*

EXPECTED OUTCOMES

The goals of the study are, by using incentives in accordance with current CM principles and practices, to increase the likelihood that prison treatment participants with a referral to community treatment will actually enroll in community treatment following release to parole and, once enrolled, will increase the amount of time that they participate in treatment. Increased exposure to community treatment as a result of incentives is expected to result in improved long-term outcomes of parolees who have participated in prison-based and community-based treatment. Based on previous research, we expect that our moderate-cost intervention (estimated at \$2.75/day average cost) will have a positive impact on retention.

We expect to find that participants in the Attendance Incentive group will be more likely to agree to receive HIV testing and to participate in post-test counseling than will participants in the Attendance Information group. At the Month 12 assessment, participants in the Attendance Incentive group will report lower levels of injection drug use and engagement in risk sexual behaviors than will participants in the Attendance Information group. We further expect to find that at the Month 12 assessment, participants in the Attendance Incentive group will report

greater participation in HIV-related services (of any type) over the period since discharge from Walden House than will participants in the Attendance Information group.

If the results are positive, the CM intervention would provide correctional treatment systems and treatment programs with an effective technique to promote attendance and participation in community treatment and thereby hopefully improve drug use, crime, and other outcomes.

POLICIES AND GUIDELINES

ROLES AND RESPONSIBILITIES OF UCLA RESEARCH STAFF

1. Obtain Institutional Review Board approvals and follow human subjects protection policies to safeguard the confidentiality of offender- and program-level data.
2. Keep all confidential information furnished by WHLA in strictest confidence. Only research staff members assigned to perform activities directly related to the conduct of the specific research provided under this MOU will have access to program data. ISAP will use the information only for purposes specifically authorized under this MOU.
3. Provide WHLA staff with training on contingency management and include them in the intervention development workgroups.
 - a. Provide a three-hour Information Session on contingency management theory and practice for treatment staff.
 - b. Organize and carry out two Intervention Development Workgroups to be held over two months with the same individuals who participated in the Information Session. Members of the workgroups will decide (1) the policies for receipt of vouchers for admission and attendance, (2) the items for which vouchers can be redeemed and policies for redeeming the vouchers, and (3) other policies and guidelines that meet research and clinical requirements.
 - c. Help workgroup members to formulate policies following the guidelines for contingency management consistent with those set forth by Petry (2000) (e.g., explicit behaviors targeted for reinforcement, ability to objectively verify completion of behaviors, consistent reinforcement of behaviors, frequent reinforcement of behavior, immediacy of reinforcement).
4. Draft the intervention manual with assistance from WHLA staff.
 - a. Research staff members will audio record Workgroup meetings and prepare detailed summaries. Based on summaries of the meetings, research staff will incorporate the decisions from the Intervention Development Workgroups into the Contingency Management Manual.
5. Work with program staff to ensure the efficient recruitment and interviewing of study participants and to limit disruption of treatment activities.
6. Provide WHLA staff with a 30-day booster session, and on-going monitoring and feedback on intervention procedures.
7. Provide assistance to program staff as needed so that the intervention protocol is correctly carried out for each participant.
8. Maintain regular communication with program staff through weekly meetings, and phone and e-mail.
9. Share analyses and aggregate findings in draft form and allow at least 30 days for review and comment.

10. Cooperate with WHLA to resolve research or treatment issues that might affect the implementation of the study.
11. In communicating research results in written or oral form, ISAP researchers will not use the name of the Walden House Transitional Treatment Center without the prior written approval of the director.
12. As part of the HIV testing process, the research assistant is responsible for obtaining the date that the mobile unit will be at WH. Once the actual date is obtained, the research assistant will print out reminder cards for all the participants that have not tested. These reminder cards will be issued at least three weeks in advance. For those participants that are interested, the research assistant will inform the WH staff member responsible for coordinating the event. Those that are included in the list are usually in treatment for more than 3 weeks.
 - a. After the participants have tested and gone to post-test counseling the research assistant will issue the participants in the incentive group a \$10 voucher. The Director of Administrative Services from WH will be notified via e-mail in order for the \$10 voucher to be added to the participants PIP account.
 - b. For those that are in the education group, no incentives will be provided. The participants will notify the research assistant if they tested for the purpose of record keeping.

ROLES AND RESPONSIBILITIES OF WALDEN HOUSE TREATMENT STAFF

1. Facilitate contact with SATF Substance Abuse Program (SAP) participants referred to our organization during the period of subject recruitment.
 - a. On a schedule to be determined, provide a list of SAP participants to ISAP research staff.
 - b. Post UCLA Institutional Review Board-approved study information flyers.
 - c. Permit SAP participants to meet with ISAP research staff during programming time in order to be informed about the study and to participate in research interviews.
 - d. Provide space at our facility that will enable ISAP research staff to meet with study participants privately.
2. Facilitate contact with Walden House Transitional Treatment Center (WHLA) participants entering post-release treatment in Los Angeles during the period of subject recruitment.
 - a. Based on data involving past admissions to WHLA, 6–10 parolees meeting project inclusion criteria are expected to enter treatment each month.
 - b. On a schedule to be determined, provide a list of WHLA participants to ISAP research staff.
 - c. Post UCLA Institutional Review Board-approved study information flyers.
 - d. Permit WHLA participants to meet with ISAP research staff during programming time in order to be informed about the study and to participate in research interviews.
 - e. Provide space at our facility that will enable ISAP research staff to meet with study participants privately.
 - f. Provide office space for ISAP's on-site research assistant.
3. Agree to the random assignment and placement of study volunteers into Incentive and NO-Incentive groups based on the random assignment process conducted by ISAP.
4. Participate in intervention development.
 - a. Ensure that appropriate clinical staff members participate in intervention development (e.g., Walden House managers and counselors who will directly participate in the intervention).
 - b. Participate in a three-hour Information Session on contingency management theory and practice for treatment staff.
 - c. Participate in two Intervention Development Workgroups to be held over two months with the same individuals who participated in the Information Session. Members of the

- workgroups will decide (1) the policies for receipt of vouchers for admission and attendance, (2) the items for which vouchers can be redeemed and policies for redeeming the vouchers, and (3) other policies and guidelines that meet research and clinical requirements.
- d. The workgroup members will be asked to formulate policies following the guidelines for contingency management consistent with those set forth by Petry (2000) (e.g., explicit behaviors targeted for reinforcement, ability to objectively verify completion of behaviors, consistent reinforcement of behaviors, frequent reinforcement of behavior, immediacy of reinforcement).
5. Participate in a 30-day booster session, and on-going monitoring and feedback on intervention procedures.
 6. Provide reinforcement vouchers to participants.
 - a. WHLA will provide sufficient staffing so that reinforcement can be provided in a timely manner.
 - b. WHLA staff will provide reinforcement according to procedures specified in the Contingency Management Manual and guidance provided by UCLA research staff.
 - c. Reinforcement will be provided daily (Monday through Friday) with assistance from research staff.
 7. Bank reinforcement money for study participants.
 - a. Reinforcement banking procedures will be mutually (ISAP and WHLA) agreed upon and specified in the Contingency Management Manual.
 - b. Accounting procedures for reinforcement money must be approved by UCLA fund management.
 8. Participate in program surveys, focus groups, and other data collection.
 - a. Complete a Dimensions of Sustainability Questionnaire that will provide information on program staff's skills and willingness to sustain the intervention.
 - b. Arrange for focus groups with treatment staff.
 - c. In accordance with informed consent forms signed by study participants and any confidentiality agreements negotiated between our organization and ISAP, provide ISAP research staff with treatment data on study participants, specifically, results of drug tests, program violations, attendance, services received, admission and discharge dates, and reason for discharge.
 9. Participate in project meetings during the period of subject recruitment (i.e., about 24 months) and in other regular communication with ISAP.
 10. Review and comment on preliminary and final study findings.
 11. Designate a staff person who will act as the primary liaison between our organization and ISAP.
 12. Notify ISAP research staff as soon as practical of any significant change in the operation or programming of our organization that would likely affect the implementation of the study.

BANKING PROCEDURES

Vouchers will be awarded daily but money will be made available through the Walden House 'PIP' banking account at the end of each week. Money dispersal will occur via established Walden House banking rules. Clients will be allowed to request a withdrawal from their bank account twice a week. Requests totaling more than \$40 will require an explanation and senior staff approval. When making a withdrawal, clients must be urged to specify whether they want the money to come from their PIP account, or their personal account with Walden House, since they will be kept separate. Walden House restrictions on the total amount of money that can be withdrawn will apply (e.g. – no more than \$20 at a time within the first 30 days).

With the money earned through participation in the study, clients may buy numerous things for themselves such as toiletries, clothes, watches, and desk items, to job preparation materials, work clothes, or transportation. Clients may also wish to save the accumulated

voucher amounts for use following the completion of treatment. Furthermore, participants will be allowed to donate all or a portion of their earnings to a charity of their choice (from an approved list), or to the group via the Walden House fund. Clients must not be pressured to do this. After six months, unclaimed funds revert to the charity of their choosing.

REINFORCEMENT SCHEDULE

(the following is an adapted excerpt from the HAART Manual, pp.757-760)

“For optimum effectiveness, reinforcement should be applied as soon as possible following the target behavior. The schedule of reinforcement makes a difference in the effectiveness of the reinforcement program. In a continuous reinforcement schedule, a response is reinforced each time it occurs, such as receiving a voucher for each day of attendance. The advantage of continuous reinforcement is that performance occurs at a high level while behavior is being reinforced,” (Haug, et. al., 2006).

“The *schedule of reinforcement* refers to the temporal relationship between the target behavior and the delivery of consequences,” (Haug, et. al., 2006). An escalating schedule involves increasing the monetary value of the vouchers as the number of consecutive target behaviors (e.g., attendance at Walden House treatment sessions) increases. This system also includes a “reset” function when clients do not achieve the target behavior: The voucher value is reset to the initial low value (\$2.50) following noncompliance, but clients have the opportunity to build back their earnings. Participants who accomplish 10 days of scheduled treatment attendance in a row (6 contacts for outpatients), following a skipped treatment day, resume earning at the next highest level greater than the level previously achieved. The reset function must always begin on the Monday following a client’s return to treatment. For example, if a client returns on a Thursday, then he will begin his 2 weeks of reset earnings on the following Monday and will earn nothing for Thursday and Friday.

Admission Phase - Study participants in the Admission Incentive group will receive a voucher of \$50 if they show up at the Walden House program, complete the intake process, and remain at Walden House for at least 48 hours. In order to encourage prompt enrollment, participants will receive the incentive only if they show up at the Walden House program within two weeks following the date of their release from incarceration (but they will still have the opportunity to participate in the Attendance Phase). Participants in the Admission Information group will not receive a voucher for enrolling in community treatment.

Attendance Phase - Participants in the Attendance Incentive group will receive vouchers for attendance. Participants in the Attendance Information group will not receive vouchers for attendance, however, they will receive a \$20 gift card for attending a half-hour information session. (Participants will be made fully aware that they have only a 50/50 chance of receiving monetary rewards for either Admission phase or Attendance phase.)

- Clients in the Attendance Incentive group will start earning incentives starting on the first Monday following their full induction into the study (informed consent, interview, etc.).
- Incentive group members will receive \$2.50 per day for the first week (\$12.50 total for the week),
- \$3.00 per day for the second week (\$15.00 total),
- \$3.50 per day for the third week (\$17.50 total), and so on. (SEE TABLE 1),
- Voucher amounts increase by \$2.50 per week, each week, if perfect attendance is maintained.
- Upon successful completion of weeks 5, 10 and 15, clients will receive a bonus voucher worth \$10. Bonus vouchers will only be awarded if the client maintains perfect attendance for that entire week.
- During the 22 weeks, if a client has an unexcused absence, the value of the voucher is reset to the beginning amount (meaning \$2.50/day for 2 weeks (10 days if

residential, 6 contacts for outpatient). If attendance is perfect for the entire reset, the client may begin earning at the next highest earning level, above the one he had previously achieved.

- Attendance will be recorded daily (reinforcement vouchers will be granted for a maximum of 90 times).
- Symbolic colorful vouchers will be awarded 5 days/week for the first 12 weeks and 3 days/week for weeks 13-22, regardless of when the client actually switches to outpatient status.
- Clients will receive access to their earnings on the following Tuesday via their PIP account.
- Voucher earnings may be accrued over time for a large pay-off at the end, and can be tracked via the 'Weekly Voucher Earnings Ledger.'

TABLE 1
22 Week - ATTENDANCE INCENTIVE SCHEDULE

Intervention Week	Amount per day when vouchers are awarded 5 days/week	Amount per day when vouchers are awarded 3 days/week	Amount per Week Possible	Cumulative Earnings (if perfect attendance)
1	\$2.50		\$12.50	\$12.50
2	\$3.00		\$15.00	\$27.50
3	\$3.50		\$17.50	\$45.00
4	\$4.00		\$20.00	\$65.00
5	\$4.50		\$32.50	\$97.50
6	\$5.00		\$25.00	\$122.50
7	\$5.50		\$27.50	\$150.00
8	\$6.00		\$30.00	\$180.00
9	\$6.50		\$32.50	\$212.50
10	\$7.00		\$45.00	\$257.50
11	\$7.50		\$37.50	\$295.00
12	\$8.00		\$40.00	\$335.00
13		\$14.17	\$42.50	\$377.50
14		\$15.00	\$45.00	\$422.50
15		\$15.83	\$57.50	\$480.00
16		\$16.67	\$50.00	\$530.00
17		\$17.50	\$52.50	\$582.50
18		\$18.33	\$55.00	\$637.50
19		\$19.17	\$57.50	\$695.00
20		\$20.00	\$60.00	\$755.00
21		\$20.83	\$62.50	\$817.50
22		\$21.67	\$65.00	\$882.50

- **Yellow highlighting** indicates the weeks that clients will receive bonus vouchers of \$10 upon successful completion of the week without any skipped days that week.

**FIGURE 2
DAILY REINFORCEMENT VOUCHER – SAMPLE**



**FIGURE 3
RESET VOUCHER (RESET ONE) - SAMPLE**



HOW ARE VOUCHERS OBTAINED/MONEY DISPERSED

Attendance Achievement vouchers (Figure 2) will be distributed daily by Walden House’s payment staff. Money will be dispersed weekly in to the clients’ Walden House banking accounts. Money will only be physically dispersed to the client in accordance with pre-existing

Walden House rules regarding money (e.g., no more than \$20 at one time within the first 30 days of treatment, etc.). Excused absences are those approved in advance by Walden House staff (for residential clients).

WHAT CONSTITUTES ATTENDANCE

You must sign in for all groups/activities. Attendance will be documented between 8:30am-8:30pm Mon-Fri and between 8:30am-8:30pm on Saturdays (for outpatients).

Residential Attendance – You must attend 5 clinical days Mon-Fri, for the full length of the clinical day. If you go AWOL (away without leave) at 2pm, then you are considered not in attendance for that day and will not receive the incentive and will be reset when you return. If you go AWOL over the weekend, you are also considered not in attendance and will be reset when you return.

Excused Absences – Excused absences should be approved in advance. Some examples of excused absences include: medical, family emergencies, funerals, outside approved business appointments, PO visits, in house job functions, job search, fire watch, kitchen duties, POC, Walden House functions, illness-related lay-ins, and outside clinical activities or functions. Excused absences are recorded as successfully attended days. For hospital stays lasting longer than 3 days, vouchers will be paused and you will resume your earning level on the Monday after you return.

Reset – Unexcused absences result in incentives being reset to the Week 1 amount (Figure 3), beginning on the first Monday after the client returns to WH. Upon return from an unexcused absence, no incentives may be earned until reset begins the following Monday. Then, after you achieve 2 weeks of continuous attendance (10 days if residential; 6 days if outpatient), you go up to the next earning level, above the amount you were earning before your unexcused absence.

Outpatient attendance– 3 clinical contacts must be made per week. Any excused absence must be made up the following week by the client attending an extra clinical activity. No voucher will be received on an excused day. You will receive the voucher the following week at the amount you were scheduled to earn on the excused day. Missed days, even if excused, and make-up days will be reflected on the detailed weekly summary voucher. If a missed day is not made up the next week, then incentives will be reset.

Relapse - If you relapse but do not miss a scheduled treatment day (or session if you are an outpatient), then your earnings remain the same.

Late – In outpatient treatment, if you are no more than 15 minutes late and have a good explanation, you can be excused. If you are more than 15 minutes late, then you are in nonattendance and no voucher will be given for the day. Walden House staff may determine any exceptions.

Discharge – You are in the study for 22 weeks from the day you start earning money. You can only start earning money on a Monday. If you are discharged and then re-admitted 2 months later, you can continue earning as long as you remain within the 22 week window. After the 22 weeks are over, you cannot earn incentive vouchers.

HOW DOES A MISSED TREATMENT DAY AFFECT VOUCHER DELIVERY

If a client misses a treatment day, or even many weeks, no vouchers may be awarded on incomplete days or days that the client is physically absent from treatment (unless it is an excused absence). When the client returns he must begin the two week reset function of earning at the initial earning amount (\$2.50 per day) via reset vouchers. A client may only receive vouchers until the end of 22 weeks after he first began the study.

Reset in Residential Treatment

If the client was in residential treatment when he left, he must attend treatment for 10 treatment days (2 weeks) without missing a scheduled day, in order to regain his previous

earning level. The reset function must begin on the first Monday following a client's return to treatment. Reset vouchers are to be awarded daily (Monday-Friday), just like regular vouchers. If a client misses a treatment day in the middle of the week (e.g. Day 3 of Week 4), but returns to treatment on Day 5 of Week 4, then he begins the reset voucher series on the following Monday, continues for ten days and then resumes earning at the next level above what he was earning at on the day that he missed the session (Day 3 of Week 4).

Reset in Outpatient Treatment

If the client was in outpatient treatment when he missed a contact or two, he must make-up the missed day(s) by making extra contacts the following week. This means that the reset function does not get activated until a full week has elapsed following a missed contact, without that contact being made-up. If he does not make-up the absence(s) then he must begin the reset function on the next Monday. For the reset function to be complete, the client must attend 6 scheduled contacts (2 weeks) without missing one. When the client resets in outpatient treatment however, the reset vouchers are worth \$4.17, instead of \$2.50, because they are delivered three times per week instead of five. Voucher delivery in outpatient must take place at the beginning of each outpatient group, for the previously attended day.

ADDRESSING H.I.V. RISK BEHAVIORS

For clients in the Incentive group, an additional \$10 voucher is provided for HIV testing. To receive this voucher, clients must sign up for testing and provide evidence that they received their test results.

INTERVENTION PROCEDURES

INTRODUCING THE VOUCHER PROGRAM TO A CLIENT

(the following is an adapted excerpt from the CR+Vouchers Manual, pp.39-42)

“Proper explanation of how the voucher system works is imperative to participant success in the intervention,” (Haug,et. al., 2006). The voucher system should be explained thoroughly. It is imperative that the counselor take adequate time to discuss the rationale and procedures related to the voucher system and answer any questions a client may have about the study protocol.

The following issues should be covered.

- *Purpose.*

“The purpose of this incentive system is to give you a positive reward for staying in treatment and achieving your goal of not using drugs. It is also a way to increase your motivation to work hard on this goal and to support you as you work toward making some of the lifestyle changes important for increasing your life satisfaction and staying out of prison.”

- *Examples of how to use earnings.*

“The vouchers you earn turn in to money which is deposited into your account at the end of the week. Money can be withdrawn for a variety of reasons, such as groceries, clothing or movie tickets, but is still subject to Walden House withdrawal rules.”

- *How the Vouchers accumulate.*

“The voucher system is designed to help you maintain periods of continuous treatment program attendance. The vouchers increase each week you consecutively attend treatment. For example, each day of the first week you attend treatment is worth \$2.50, the second week, each day you attend is worth \$3, and for the third week, each day you attend is worth \$3.50 and so on. Thus, if you attend treatment for 12 consecutive weeks, you will have earned \$335. You also can achieve bonus vouchers on weeks 5, 10 and 15. If you attend any of the bonus weeks with perfect attendance, an additional \$10 will be added to your account, in addition to the amount you would normally earn for that particular week. All in all, if you attend every scheduled treatment day for your entire 22 weeks of treatment (5 months of reinforcement), you will have earned \$882.50 worth of vouchers in the attendance phase alone.”

- *What happens if you miss a treatment day.*

“In this system, however, one missed day of attendance during the middle of treatment can cost you quite a few dollars. For example, if you attend for 3 weeks and then, during Week 4, you miss your fourth and fifth days, instead of getting \$20 for attending that week, you will get only \$12. And instead of the next week’s attendance being worth \$22.50, it is only worth \$12.50. You can see the system is designed to help you attend Treatment for long continuous periods. However, because we recognize that missing a day during treatment may occur, there is also a procedure to encourage you to get back on track if you do miss a day. If, following a skipped treatment day, you attend treatment two weeks in a row (at the initial week 1 amount), the value of your vouchers returns to the next highest level of earnings you would have achieved after the incomplete week.”

AWARDING THE VOUCHER TO A CLIENT

In general, accomplishments are to be highlighted and reinforced; set backs or lack of progress should be treated neutrally. When delivering the reinforcement, counselors should remember to keep things positive (even if the client had bad behavior throughout the day), by highlighting the fact that clients are still in attendance and working towards their goals, we hope to improve treatment outcomes. “Good job!” or “Keep up the good work!” or “You’re on your way to success, stick with it!” are examples of the type of brief encouragement we expect to accompany voucher delivery. Each person must receive a voucher every day, usually in a brief morning check-in meetings. However, if a client does not receive his earned voucher on the day that he earned it, then the counselor must deliver it to him as soon as possible.

DOCUMENTATION REQUIREMENTS

Walden House staff members are responsible for documenting attendance for both residential and outpatient clients. Record keeping should be maintained within the established online attendance documentation program for each client. Walden House should also document significant behavioral events, and make clinical progress notes available to UCLA research staff. Walden House documents describing why a particular client left treatment should be shared with UCLA research staff, and a treatment termination form should be filled out and delivered to UCLA research staff as soon as possible.

Attendance Documentation

Attendance will be kept daily via paper sign in sheets for all activities and groups. At the end of the day, the counselor responsible for record keeping will enter attendance data into the computer attendance documentation program. The counselor need only document whether the client was in attendance for the day, or not (based on the bed check documentation sheet). Every morning (during inpatient treatment) a voucher must be delivered to reward the following day’s attendance. Clients receive their current balance from the Walden House counselor who maintains the ledger. Both the counselor and the on-site research assistant will need to enter and track attendance documentation independently of one another, in order to ensure accuracy. If a client leaves treatment, a treatment termination form must be filled out and delivered to UCLA research staff as soon as possible.

Banking Documentation

A PIP account ledger should be kept for each client who is receiving incentives through the study. Each Friday, a deposit should be noted for the client detailing how much he earned for the week and adding that to the total. Withdrawals must also be noted and dated whenever they occur. Notations for when a client is discharged, or leaves treatment (non-attendance resulting in either absence or reset) must be documented immediately, but the client still must earn money for the days that he was in attendance that week. If a client is re-admitted to Walden House before his 22 weeks are up, he will resume earning incentives and should be documented in the ledger as having returned on the date that he returns. However, he will only be able to begin earning reset incentives on the Monday following his return to Walden House. The reset amount of \$2.50 per day must be maintained for two weeks, and then the client begins earning at the next highest level from what he was earning before he left Walden House. For example, if a client leaves on a Wednesday during the week which he was earning at \$3 per day, and returns to Walden House the following Tuesday, then he may begin earning reset vouchers the next Monday (\$2.50 per day), and must earn them consistently for two weeks, without an unexcused absence. After the two reset weeks, the client will begin earning at a rate of \$3.50 per day, the level higher from what he was earning when he left (please see below for example).

In addition to tracking a client’s earnings on paper, both the counselor and the research assistant will track attendance and earnings on the computer tracking program. The research assistant will enter data into the blue tab and the Walden House staff will enter data under the green tab. Data will need to be updated at least once per week, if not daily. First, you will check

Center. The research protocol and procedures for this study were submitted for approval to the UCLA General Campus Institutional Review Board (IRB) (which reviews socio-behavioral research) the Walden House IRB, and the state of California's Committee for the Protection of Human Subjects to ensure compliance with established guidelines on protection of human subjects and confidentiality. In addition, because this study involves prisoner research as defined by the Office for Human Research Protections (OHRP), a Prisoner Certification Letter and required study and IRB materials were forwarded to OHRP and OHRP assurance was obtained. The study also received a Certificate of Confidentiality from NIH protecting the study data from subpoena.

CLINIC STAFF

Treatment providers, particularly counseling staff, may be resistant to adopting CM for a variety of reasons, including cost and workload issues (Kirby et al., 2006; Ritter & Cameron, 2007). However, with good leadership and the observation of positive changes among their clients, counseling staff can come to endorse CM (Kellogg, et al. 2005). Even among treatment providers with no experience with CM, Kirby et al. (2006) found that treatment providers had surprisingly positive impressions of it. Henggeler et al. (2008), in a study of statewide adoption of CM, found that when given training and resources (including client incentives), a majority of counselors attempted to implement CM.

“From a systems perspective, it is important that all staff involved are in agreement or “on board” with the protocol,” (Haug,et. al., 2006). “Regular meetings with clinical staff and informal presentations about various aspects of the intervention may be particularly useful for keeping staff interested and engaged. Having an “inside” administrative contact at the clinic can also be useful for dealing with staff who are not working with the team,” (Haug,et. al., 2006).

INTERVENTION COST

Over the five-month (22 week) intervention (12 weeks of residential treatment and 10 weeks of outpatient treatment), participants in the Attendance Incentive group could earn a maximum of \$882.50. (The amount of time in each treatment setting could vary for a given client depending on the actual timing of the transition from residential to outpatient.) Since some clients will not attend sessions and others will leave treatment early, the average amount received will be less than the maximum amount. Although we will not know the actual amount received until the end of the intervention, we can provide an estimate based on previous research. In our voucher study with Proposition 36 clients (see Preliminary Studies above), the retention rate of clients receiving vouchers declined from 97% in Week 1 to 35% in Week 26. Based on the weekly retention rate in this earlier study, we estimate that the average total amount received by participants in the Attendance Incentive group will be about \$500 (59% of the maximum possible amount), or \$2.75 per day per person (assuming an intervention period of 182 days). As noted above in the Background and Significance section, the average daily amount is comparable to that reported in other recent contingency management studies.

“The integration of contingency management procedures into clinical and community settings has been slow. One salient problem is the front-end cost of supporting voucher program rewards. The current study was able to provide monetary vouchers with grant funds; however, many substance abuse treatment programs typically do not have grants or a budget that allows for voucher incentives. Amass and Kamien (2004) delineated excellent strategies for reducing costs associated with voucher rewards, including the solicitation of donated goods and services from local merchants. Another group purchased voucher incentives with funds donated from health care organizations, businesses, and foundations (Donatelle, Prows, Champeau, & Hudson, 2000). Fund-raising procedures may consist of direct-mail campaigns that target goods and services to stock in the voucher store, identifying potential donors and the correct person within an organization, constructing an effective donations request package, follow-up to

donor solicitations, and thank-you notes (see Amass & Kamien, 2004, for more details),” (Haug, et. al., 2006).

IS IT WORTH THE COST?

The costs of CM affect its generalizability to the field because treatment providers are concerned about the affordability of such an intervention. Even with these concerns over cost, 37-51% of providers surveyed agreed that tangible incentive programs were “worth it considering how effective they are” (Kirby, et al., 2006, p. 23). Currently, it costs an average of \$97.50 per day (\$35,587 per year¹) to keep an inmate in prison in California. Costs for nearby states are similar. In Washington, the cost per year is \$31,071 and in Oregon, it is \$28,390. We estimate the average cost per client per day of this intervention to be \$2.75, a modest cost by comparison, even within the context of residential treatment costs of \$65 - \$75 per day. Should this intervention prove effective in retaining newly released parolees in community treatment, savings to the criminal justice system would be considerable and would justify an investment by that system. Because of prison overcrowding, both departments of correction and treatment providers have become interested in novel approaches to community treatment such as this.

CONCLUSION

This study, which builds on previous and current research at ISAP on CM and criminal justice treatment, provides an excellent opportunity to examine the impact of CM within an established therapeutic community operated by a provider (Walden House) with extensive experience treating offenders. Given the high rate of recidivism and the high cost of incarceration, a relatively low cost intervention that increases the likelihood that parolees enter treatment, remain in treatment longer, and improve post-treatment behavior would help to promote public health and public safety and control prison costs.

¹ From California Department of Corrections webpage
http://www.cdcr.ca.gov/Divisions_Boards/Adult_Operations/Facts_and_Figures.html accessed September 8, 2008.

FREQUENTLY ASKED QUESTIONS

(the following is an adapted excerpt from the PAMI Training Materials)

Q: Isn't this just rewarding clients for what they should be doing anyway?

A: No. An incentive for our field is a clinical practice not to be confused with a business practice used in other industries. Once staff members actually see the impact of incentive programs on their patients, objections and misgivings about rewards are diminished. "We came to see that we need to reward people where rewards are few and far between. We use rewards as a clinical tool – not as bribery – but for recognition. The really profound rewards will come later", (Kellogg et al., 2005; Petry & Bohn, 2003).

Q: What about the cost?

A: Using a program of incentives can help reduce costs dramatically. The important thing is not the value or frequency but the principle of reinforcement. Motivational Incentives increases the number of patients showing up for appointments, and leads to better treatment outcomes.

Q: Will this make my job harder/easier?

A: While all kinds of models have been tried in addiction treatment and recovery settings, positive reinforcement is increasingly becoming the norm. These types of programs are effective because they are enjoyable for both patients and staff and they reduce patient dropout.

Q: How does the use of Motivational Incentives help clinically?

A: The use of incentives is more than just the distribution of vouchers. It is also a clinical intervention that helps to develop a therapeutic culture centered on affirmation (Kellogg et al., 2005; Pickens & Thompson, 1984).

Q: What do patients say?

A: The patients' stories not only influenced the studies of MI, but also highlight the benefits of positive reinforcements. "I felt that I was going down the drain with drug use; that I was going to die soon. This got me connected, got me involved in groups and back into things. Now I'm clean and sober" (Kellogg, Burns, et al., 2005).

Q: Is it for everyone?

A: Programs that seem to benefit from this intervention are those with low retention rates. However, the MIEDAR (Motivational Incentives to Enhance Drug Abuse Recovery) study showed benefits across all sites which suggests that contingency management should be considered even when retention rates are relatively high (Stitzer, 2005).

Q: What do Administrators say?

A: "The staff has heard patients say that they had come to realize that there are rewards just in being with each other in group. There are so many traumatized and sexually abused patients who are only told negative things. So, when they heard something good – that helps to build their self-esteem and ego." (Kellogg, Burns, et. al; 2005)

FOR RESEARCH STAFF:

BACKGROUND AND SIGNIFICANCE

DRUG USE AND CRIME

The need to provide effective treatment for drug-abusing offenders is supported by the close relationship between drug use and crime (Anglin & Perrochet, 1998; Fagan, 1990; McBride & McCoy, 1993; Newcomb, Galaif, & Carmona, 2001; Parker & Auerhahn, 1998; Tonry & Wilson, 1990; White & Gorman, 2000). Drug abuse often intensifies rates of income-generating criminal activity relative to preaddiction levels and reductions in drug use result in decreases in drug-related criminal activity (Anglin & Speckart, 1988; Deitch, Koutsenok, & Ruiz, 2000; Farabee, Joshi, & Anglin, 2001; Nurco et al., 1988). A large-scale study in Canada confirms the close association between illicit drugs, alcohol, and crime (Pernanen et al., 2002); between 40% and 50% of crimes examined in the study could be attributed to the use of at least one psychoactive drug.

Not only is drug use closely associated with crime, but the prevalence of drug use is high among offenders. Data from the Arrestee Drug Abuse Monitoring (ADAM) program in 2000 indicated that 51%-79% of adult male arrestees and 39%-85% of adult female arrestees tested positive for at least one illicit drug (National Institute of Justice, 2000, 2001). Prisoners also report high levels of drug use. In 2004, 83% of state prisoners reported having used illicit drugs at least once, 56% reported having used in the month prior to the offense for which they were incarcerated, and 53% met the criteria for drug abuse or dependence (Mumola & Karberg, 2006). This same survey reported that, using DSM-IV criteria, 53% of state prisoners had a drug dependence or abuse problem and 35% had a drug dependence and abuse problem. Moreover, several follow-up studies of treated prisoners found that 50% or more of offenders who have a history of heavy use return to drug use and crime within a year of their release from prison (Anglin et al., 2002; Martin et al., 1999; Prendergast, Hall, & Wexler, 2003). Despite the high levels of drug use among offenders, few receive treatment while under criminal justice supervision. According to a Bureau of Justice Statistics report (1999, Table 8), only 18% of state prisoners with a history of alcohol or drug abuse reported having participated in treatment while on probation or parole. Low participation is a function of both the limited availability of treatment resources for drug-abusing offenders and the low motivation for treatment among many offenders.

COMMUNITY TREATMENT FOR OFFENDERS

Studies have shown that community-based treatment following release from prison-based treatment can be key to long-term success because community treatment builds on the prison treatment experience and facilitates clients' reintegration into the community (Butzin, Martin, & Inciardi, 2005; Knight, Simpson, & Hiller, 1999; Prendergast et al., 2004; Prendergast, Wellisch, & Wong, 1996; Wexler, Melnick, Lowe, & Peters, 1999). For offenders who complete at least three months of community treatment, these programs have been found to substantially reduce recidivism. Martin et al. (1999) tested the effects of a multi-stage treatment model, including prison treatment, followed by community-based work release (CREST) and therapeutic community (TC) treatment. For the three-year outcome analysis, the researchers examined three groups from the CREST participants: CREST dropouts, CREST completers (without TC treatment), and CREST/TC (completers with TC community treatment). Less than one-third of CREST/TC group had a new arrest by three years post-release, whereas more than two-thirds of the other two groups had new arrests. Texas researchers (Knight et al., 1999) found that those who completed both in-prison TC treatment and community-based treatment on parole were the least likely to be reincarcerated (25%), in comparison with community treatment dropouts (64%) and untreated offenders (42%). The results from the evaluation of the

Amity prison TC program in California (Wexler et al., 1999) are similar: at three years post release, only 27% of the prison-TC-plus-community-TC-treatment group recidivated, compared with 75% for other groups exposed to lesser amounts of treatment. In an evaluation of the Forever Free program at the California Institution for Women, Prendergast et al. (2002) found that Forever Free graduates who entered community residential treatment (typically TC) were nearly 15 times more likely to be employed at follow-up, compared with those who did not enter residential treatment. Although not all of these evaluations used a randomized design and are not without other methodological weaknesses, these studies all point to the effectiveness of community TC treatment for parolees who have participated in prison treatment, with community treatment completers doing better than dropouts.

Many of the community residential programs for offenders follow the therapeutic community (TC) model. TCs exhibit several characteristics: (1) TCs function as a learning community in which everyday experiences provide the opportunity to learn “right living”; (2) TC programs often view themselves as surrogate families for their participants, providing structure, order, and nurturance; and (3) the TC operates as a micro-society with a hierarchical job structure in which participants receive promotions based on behavior or attitude change (De Leon, 2000). TCs typically have a system of sanctions and rewards, with sanctions often meted out after a group confrontation meeting and rewards (generally increased privileges) provided for performance of expected behavior. However, such rewards are not necessarily immediate; it often takes a month or more to earn increased privileges (De Leon, 2000; Holland, 1986). As noted above, in many correctional systems, participants in residential treatment (whether a TC or not) often step down to outpatient treatment for several additional months.

From both a clinical and policy perspective, a major concern is that a substantial portion of clients in prison-based treatment who are referred to community treatment either do not show up for admission or drop out before completion. In its evaluation of CDCR’s treatment programs for prisoners and parolees, ISAP reported that of prison treatment participants who had a referral to community treatment, typically less than 50% actually attended any treatment following release to parole, although the percentage varies by program (Anglin, Prendergast, & Farabee, 1999; Prendergast, Anglin, Burdon, & Messina, 2003). As noted above, recidivism rates of prison treatment clients who do not participate in aftercare are similar to those of prisoners who do not receive prison treatment; in effect, the cost of providing prison treatment to these clients is lost. Hence, both to improve outcomes and to make optimal use of resources, it is essential that the percentage of those with a referral to community treatment who show up for treatment is maximized. Treatment admission, however, is only the first step; to benefit from treatment, parolees need to remain in treatment for a reasonable amount of time, generally considered to be at least 90 days (Hubbard et al., 1988; Simpson, Joe, & Brown, 1997; Simpson & Sells, 1982). But drop out rates are high. For instance, 42% of Texas participants dropped out of community treatment (Knight et al., 1999), as did 23% of Amity graduates (Wexler et al., 1999). High dropout rates were also found in the Forever Free program, where over one-third of women dropped out of community residential treatment within the first 30 days (Prendergast, Hall, & Wellisch, 2002), and prison-treatment graduates throughout California show a 43% drop out rate (UCLA ISAP, unpublished data). Thus, increasing the likelihood that parolees follow through on their referrals to community treatment and increasing the amount of time that they remain in treatment are key clinical and policy issues. Programs that treat drug-abusing offenders would benefit from research-based techniques that improve clients’ participation and retention in community treatment, which, in turn, should improve drug use, crime, and other outcomes. One such approach is contingency management.

PRELIMINARY STUDIES

This section summarizes ISAP studies concerned with both criminal justice treatment and contingency management, which provide the groundwork for the proposed study. (For representative publications, see Literature Cited and Appendix E.)

ISAP Criminal Justice Research on the Transition from Prison-Based Treatment to Parole

Forever Free Follow-up Study. Under funding from NIJ (M. Prendergast, PI), ISAP conducted a follow-up study (at one year after release to parole) of participants in the Forever Free Treatment Program at the California Institution for Women (CIW). This quasi-experimental study compared the post-release outcomes of 119 women who received prison treatment with those of 96 women from the general prison population who did not. For follow-up, 84% of the women in both groups were located and interviewed. At follow-up, 46.5% of the prison treatment group women attended community residential treatment during parole (mean days = 46), in contrast to 34% of the information group (mean days = 23). Those in either group who attended treatment after release were less likely to use drugs in the thirty days prior to their follow-up interview. Logistic regression analysis found that those women who attended residential treatment during parole were significantly more likely to be employed at follow-up (Hall, Prendergast, Wellisch, Patten, & Cao, 2004) and that prison treatment participants who attended aftercare were nearly 15 times more likely to be employed at follow-up than prison treatment participants who did not (Prendergast, Hall, & Wellisch, 2002). In addition, program graduates viewed assistance with employment as a highly important feature of parole aftercare (Hall, Baldwin, & Prendergast, 2001).

Amity Follow-up Study. Under funding from NIDA (M. Prendergast, PI; H. Wexler, Co-PI), ISAP, in collaboration with NDRI, conducted a five-year follow-up study of 715 subjects who had been randomly assigned to treatment (Amity Treatment Program) or control conditions at the R. J. Donovan Correctional Facility near San Diego. This study was designed to examine long-term treatment outcomes from a prison-based therapeutic community (TC), conduct secondary analyses of data collected during the earlier evaluation, and carry out a cost analysis of Amity's prison-based TC and its community-based residential program (McCollister et al., 2003; McCollister et al., 2004; Prendergast, Hall, & Wexler, 2003; Prendergast, Hall, Wexler, Melnick, & Cao, 2004; Prendergast & Wexler, 2004; Wexler, Prendergast, & Melnick, 2004). At 5 years post release, 80% of the sample was located and interviewed. A key finding was that the number of months of treatment attendance since release predicted delayed reincarceration (Cox regression analysis, β -0.05, $p < 0.001$; OR 0.96, 95% CI 0.94-0.97). For each additional month spent in treatment, the likelihood of reincarceration over 5 years decreased by 4%. The Amity treatment group received a mean of 4.6 months of treatment during five years post-release (SD 8.7), while the control group averaged 1.7 months (SD 4.8). Among the prison treatment subjects, 31% attended post-release treatment at Vista (a community residential treatment center for Amity aftercare) (Prendergast, Hall, Wexler, Melnick, & Cao, 2004).

CDCR Prison Treatment Evaluations. Under contracts with the California Department of Corrections and Rehabilitation, ISAP (M. Prendergast, PI) evaluated the large-scale expansion of prison-based treatment programs in California. The evaluations include 18 programs at 13 institutions and data on nearly 28,000 treatment participants. Using administrative data, these evaluations show very clearly that participation in community aftercare is associated with better long-term outcomes. Key outcomes include the finding that participation in community aftercare reduced the 12-month return-to-custody rate from 29% to 24%, and that for those who participated in 90 days or more of aftercare, the return-to-custody rate was decreased to 15% (Prendergast, Anglin, Messina, Burdon, & Hagopian, 2004). Similar results were found for other treatment samples and the Substance Abuse Treatment Facility (Prendergast, Anglin, Burdon, & Messina, 2003; Prendergast, Farabee, & Cartier, 2006). Because low rates of attendance (below

50% except for offenders mandated to aftercare; Prendergast, Anglin, Burdon, & Messina, 2003) and low rates of retention (less than half participated in treatment for more than 90 days; Burdon, Dang, Prendergast, Messina, & Farabee, 2007), we recommended that strategies be developed to promote entrance to and retention in community treatment (e.g., incentives for treatment participation, mandatory aftercare) (Anglin, Prendergast, Farabee, & Cartier, 2002; Prendergast, Anglin, Messina, Burdon, & Hagopian, 2004). These evaluations have resulted in numerous reports and 22 publications in peer-reviewed journals. Our current qualitative study at SATF tracks parolees week-by-week after release, contrasting those who selected aftercare with those who did not. Preliminary results show that by 90 days after release, drug and alcohol use was higher (53%) among those who did not go to aftercare than among those who did (14%). Those who went to aftercare also had more positive interactions with parole officers and attributed that to their aftercare attendance.

Criminal Justice Drug Abuse Treatment Studies (CJ-DATS). ISAP is one of the research centers (M. Prendergast, PI) involved in the NIDA-funded Criminal Justice Drug Abuse Treatment Studies (CJ-DATS) initiative. The goal of this initiative is to establish a research infrastructure that promotes collaborative partnerships among researchers, clinicians, and correctional staff and administrators. Multi-site studies conducted within this infrastructure test the effectiveness of integrated treatment models within criminal justice settings that promote combined public health and public safety approaches to treating drug-involved offenders. ISAP has partnered with the corrections departments in California, Oregon, and Washington to perform research as part of CJ-DATS. ISAP is the Lead Research Center on the Transitional Case Management (TCM) study, which is testing the effectiveness of a case management model designed to increase participation by drug-involved offenders in community-based treatment following release from prison. ISAP is also a Participating Research Center on two other intervention studies: (1) A study testing whether improved integration between community supervision (i.e., parole) and outpatient addiction treatment can increase treatment adherence, decrease drug use, and improve public safety outcomes among drug-involved inmates reentering the community. (2) A study that seeks to establish guidelines and resources for an evidence-based library of targeted treatment intervention components for in-prison and community-based re-entry correctional programs. For the TCM study, despite the fact that all subjects (recruited in four states) had received a referral to community treatment and that participation in treatment was a condition of parole, only 60% of study participants reported receiving substance abuse treatment services. Participation in treatment was relatively limited. Of study subjects who reported entering residential treatment, TCM clients attended for 80 days and the control clients for 64 days—less than the 90 days usually regarded as the minimum duration of treatment.

ISAP Research on Contingency Management

Drug Court Voucher Study. Under funding from NIDA (M. Prendergast, PI; R. Rawson, Co-PI, J. Roll and E. Hall, Project Directors), ISAP, in collaboration with the Matrix Institute on Addictions and the Rancho Cucamonga Drug Court, conducted a randomized study to determine if drug court treatment effectiveness could be improved using contingency management, in the form of twice-weekly vouchers, to reinforce abstinence and positive behaviors for 163 clients over 26 weeks. We found no significant differences in outcomes among the study groups, although the Treatment Plan Group that received reinforcement for positive behaviors showed a trend toward poorer performance. We suspect that the influence of the judge within the courtroom (including his ability to incarcerate participants in response to positive drug results and other program violations) and a relatively low-value, flat reinforcement schedule reduced the effect size of the voucher intervention. A parallel study was conducted among substance-abusing offenders court referred to outpatient treatment under drug diversion legislation (Proposition 36) with similar results (Hall, Prendergast, Roll, & Warda, in

submission). Our experience using vouchers in this setting has led us to believe that CM techniques are generally well-accepted by clinical and court staff, but that the magnitude of rewards must be set high enough to produce treatment effects in a criminal justice population (Burdon, Roll, Prendergast, & Rawson, 2001; Prendergast, Hall, Roll, & Warda, 2008).

Project BRITE. Under this NIDA-funded study (W. Burdon, PI; M. Prendergast, Co-PI), ISAP, in collaboration with the Washington State Department of Corrections and the CiviGenics treatment program, is conducting a randomized study within a men's prison and a women's prison to (1) test the impact of a behavioral reinforcement intervention on inmate participation in cognitive-based substance abuse treatment and (2) assess the process by which this evidence-based innovation is implemented and sustained within prison-based treatment programs. The study is in its implementation phase, with follow-up assessment just beginning. Although the focus of reinforcement differs from that of the proposed study and the setting is different, the experiences of the senior staff in working with treatment and custody staff in Washington to finalize BRITE protocol will be very helpful in informing early planning for the study at Walden House.

Meta Analysis of Contingency Management Interventions in the Treatment of Drug Use Disorders (M. Prendergast, PI). This study (funded by the VA Northern California Healthcare System) applied meta-analytic techniques to examine the effect size and potential moderators of effectiveness of 47 published CM studies that targeted abstinence from drug use. Of relevance here, we found (Prendergast et al., 2006) that CM appears to be least effective in changing tobacco use (effect size $d = 0.31$), and much more effective with opiates ($d = 0.65$) and cocaine ($d = 0.66$). CM is moderately effective when abstinence from several drugs is the target of reinforcement ($d = 0.42$). The study concluded that CM can be useful for establishing and maintaining abstinence for clients during treatment, thereby permitting them to engage more productively in treatment services that promote the broader psychosocial aspects of recovery. From this perspective, CM may be viewed as an adjunct to standard treatment, enhancing its effectiveness.

Other Contingency Management Studies. Investigators and clinicians within ISAP have considerable experience with the use of CM procedures. Contingency management is an integral part of many of the clinical protocols being used to treat substance abusers in a variety of ISAP studies. Dr. Richard Rawson completed a five-year evaluation of contingency and relapse prevention procedures for primary cocaine users and cocaine-using methadone maintenance patients (R01DA09419, R. Rawson, PI; see Rawson et al., 1999). The results of the study confirm the significant benefits that result while CM procedures are in effect with both study populations. In both primary cocaine users and cocaine-using methadone patients, CM procedures produced significantly greater reductions in cocaine use than relapse prevention procedures or usual treatment. However, there was a suggestion in the study findings that upon discontinuation of the CM procedure, there was a greater return to cocaine use than for subjects following discontinuation of relapse prevention techniques (Rawson et al., 2002). Other CM projects by ISAP investigators include an evaluation of CM as applied to the treatment of methamphetamine-using gay males (R01DA11031; S. Shoptaw, PI; R. Rawson, Co-PI), and an examination of how different schedules of voucher delivery affect the initiation of abstinence among methamphetamine abusers (P50 DA 12755; J. Roll, PI). Additionally, Dr. Roll was the Node Expert of the CTN's Pacific Node for two CM Trials conducted in community treatment clinics to assess the utility of these procedures in "real world" settings (U10 DA13045-03). The data collection and management procedures that have been used in the various ISAP CM studies will be adopted in the proposed project when appropriate.

The ISAP studies of criminal justice treatment summarized above demonstrate our experience with criminal justice populations and the potential of post-release treatment to improve parolees' long-term outcomes. Complementing this is our experience with and knowledge of contingency management techniques in treating substance abuse clients. The

juncture of both areas of expertise and their application to a large but understudied offender population provides a strong foundation for the proposed study and is a worthwhile extension of significant policy and practice research.

STUDY DETAILS

SPECIFIC AIMS

The UCLA Integrated Substance Abuse Programs (ISAP), in collaboration with Walden House and the California Department of Corrections and Rehabilitation, is proposing a five-year health services research study that will involve a randomized test of the use of incentives to improve treatment utilization among parolees in community-based treatment. The incentives are in the form of vouchers that are redeemable for goods or services. The goals of the study are, by using incentives in accordance with current CM principles and practices, to increase the likelihood that prison treatment participants with a referral to community treatment will actually enroll in community treatment following release to parole and, once enrolled, will increase the amount of time that they participate in treatment. Increased exposure to community treatment as a result of incentives is expected to result in improved long-term outcomes of parolees who have participated in prison-based and community-based treatment. Because treatment staff “buy in” will be important for the success of the intervention, staff will be included in the final development of the protocol, as well as in implementation of the main study. If the results are positive, the CM intervention would provide correctional treatment systems and treatment programs with an effective technique to promote attendance and participation in community treatment and thereby improve drug use, crime, and other outcomes.

The study has six specific aims:

- (1) Determine whether offering an incentive (voucher) increases admission to community treatment by parolees who have participated in prison treatment.
- (2) For parolees who enter community treatment, determine whether providing incentives for attendance results in greater retention in treatment.
- (3) For parolees who enter community treatment, determine whether providing an incentive increases the likelihood that clients will participate in HIV testing and counseling.
- (4) Assess the long-term impact of the use of incentives on drug use, crime, and psychosocial outcomes at 12 months following the end of the five-month intervention.
- (5) Assess the long-term impact of the use of incentives to promote treatment participation on HIV-risk behaviors at 12 months following the end of the five-month intervention.
- (6) Assess issues of acceptability, satisfaction, and sustainability of the use of incentives to increase admission and retention among staff and clients.

To accomplish these aims, the study design includes two phases: the Admission Phase and the Attendance Phase. In the Admission Phase, consenting clients at the Substance Abuse Programs at the California Substance Abuse Treatment Facility will be randomly assigned to the Admission Incentive group or to the Admission Information group. Upon release to parole, those in the Admission Incentive group who enroll in the Walden House treatment program will receive the voucher. In the Attendance Phase, which will last for five months, parolee subjects who enroll in treatment will be asked if they wish to participate in the Attendance Phase; if so, they will be consented and randomized to the Attendance Incentive group or to the Attendance Information group. Those in the Attendance Incentive group will be provided vouchers for

attendance using an escalation/reset schedule. Twelve months after the end of the intervention (i.e., 17 months following release to parole), all study participants will be tracked for a follow-up interview. Administrative records will be obtained from Walden House and from criminal justice agencies. Qualitative data will be collected from records of meetings with Walden House staff and from focus groups with staff and clients.

HUMAN SUBJECTS

Proposed Involvement of Human Subjects

As required by Federal regulations (45 CFR86 46), any study involving human subjects must take care to protect the interests of the participants. We are proposing a randomized test of the use of a CM protocol with parolees to increase community treatment admission and retention, and thereby increase the likelihood of improved outcomes. A primary concern of ISAP will be to maintain the confidentiality of the data and identifying information of all persons who participate. Subjects for the study will be recruited by research staff from treatment participants at the Substance Abuse Treatment Facility prison who have volunteered for post-release aftercare at the Walden House Los Angeles Transitional Treatment Center. The research protocol and procedures for this study were approved by the UCLA General Campus Institutional Review Board (IRB) (which reviews socio-behavioral research), the Walden House IRB, and the state of California's Committee for the Protection of Human Subjects to ensure compliance with established guidelines on protection of human subjects and confidentiality. In addition, because this study involves prisoner research as defined by the Office for Human Research Protections (OHRP), a Prisoner Certification Letter and required study and IRB materials were forwarded to OHRP and OHRP assurance was obtained. The study also received a Certificate of Confidentiality from NIH protecting the study data from subpoena.

CHARACTERISTICS OF THE SUBJECT POPULATION

The sample for the study will be drawn from the population of treatment participants at the Substance Abuse Treatment Facility prison who volunteer for post-release aftercare at the Walden House Los Angeles Transitional Treatment Center and those who arrive at Walden House Los Angeles from other correctional facilities. All of the treatment participants at the Substance Abuse Treatment Facility prison and at the Walden House Los Angeles Transitional Treatment Center are adult males (18 years of age or older). According to program staff, all program participants are English-speaking.² At the program, stimulant dependence is the primary problem, with cocaine and methamphetamine being the most widely used drugs. All of the study participants will be parolees under the supervision of CDCR.

CRITERIA FOR INCLUSION OR EXCLUSION

Study recruitment will take place in two phases. The first phase is the Admission phase that takes place at the Substance Abuse Treatment Facility prison. The second phase is the Attendance phase that takes place at the Walden House Los Angeles Transitional Treatment Center.

² A 1996 Federal law requires the deportation of non-citizen felons after their prison terms are completed. Therefore, WHLA draws from U.S. citizens only and program participants are fluent English speakers.

Admission Phase inclusion criteria:

The sample for the study will be drawn from the population of treatment participants at the Substance Abuse Treatment Facility prison who volunteer for post-release aftercare at the Walden House Los Angeles Transitional Treatment Center. In addition, subjects must be:

- At least 18 years of age
- English speaking
- Within 60 days of parole
- Able to provide informed consent to participate in the study
- Received a referral to the Walden House Los Angeles Transitional Treatment Center

Admission phase exclusion criteria:

- Potential subjects will be excluded from participating if they have serious cognitive problems that preclude their ability to provide informed consent or understanding of the questionnaire items, if they are a sexually violent predator or a child molester or if they have severe mental health problems.

Attendance phase inclusion criteria:

- Admission phase participant who arrived at the Walden House Los Angeles Transitional Treatment Center for treatment, or,
- Prison Substance Abuse Program (SAP) or non-SAP participant who arrived at the Walden House Los Angeles Transitional Treatment Center for treatment, or,
- In-Custody Drug Treatment Program (ICDTP) program participant who arrived at the Walden House Los Angeles Transitional Treatment Center for treatment
- Within 2 weeks after release
- At least 18 years of age
- English speaking
- Able to provide informed consent to participate in the study

Attendance phase exclusion criteria:

- Potential subjects will be excluded from participating if they have serious cognitive problems that preclude their ability to provide informed consent or understanding of the questionnaire items. Sexually violent predators, child molesters, and those with severe mental health problems are excluded from treatment at the Walden House Los Angeles Transitional Treatment Center as stipulated by the California Department of Corrections and Rehabilitation.

STUDY PROCEDURES

PROJECT TIMELINE

The planned work schedule for the five-year project will be conducted in four main phases: (1) Start-up and Intervention Development, (2) Staffing and Training, (3) CM Implementation, and (4) Follow-up, Data Analyses, and Report Writing (see Table 3). The main activity for Phase 1 will be intervention development and piloting. This will include the development of a CM procedures Manual appropriate for residential treatment in the first half of Year 1, with input from the Intervention Development Workgroups consisting of treatment staff, clients, and research staff, aided by a technical writer. Instruments will be reviewed and revisions, additions, or deletions will be made. We will also secure IRB, OHRP, and CDCR approvals, obtain the Confidentiality Certificate, and create the data management system. Phase 2 involves selecting and training clinical and research staff, and setting up the research office at Walden House (the SATF research office already exists). Phase 3 involves CM study implementation. Recruitment will begin in the second half of Year 1. It will take about 25 months to enroll 250 participants into the study. Phase 4 will include the 18-month post-release assessment of clients, preliminary

and final data analysis, and report writing. Preparation of conference presentations and articles will commence in Year 3.

Table 3: Project Timeline

Phase/Activity	Months
Start-up & Intervention Development	
Information Session, Intervention Workgroup, manual development	1-3
Intervention piloting and manual revision, recruitment “pipeline” study	4-6
Finalize instruments, create data management system	1-5
Obtain IRB, OHRP, & CDCR approvals and Certificate of Confidentiality	1-6
Staffing & Training	
Select & train clinical and research staff	5-6
Set up offices at research sites	5-6
CM Implementation	
SATF subject recruitment, baseline interviews, enrollment randomization	7-32
Community subject recruitment, attendance randomization	8-33
22-week CM intervention	8-39
Follow-up, Data Analysis, & Report Writing	
18-month post-release follow-up interviews	26-51
18-month post-release records data	28-53
Post-implementation focus groups with clients/staff, manual revision	40-42
Submit reports to NIDA (annual progress & final report)	12, 24, 36, 48, 60
Data analysis, publication writing, writing of final report	8-60

TRAINING PROCEDURES

Training and Supervision of Research Staff. The UCLA Research Center will provide all study research staff training in specific duties for the PIP study, standard data collection procedures, adverse events reporting, and human subjects and confidentiality issues. The training will be based on a series of training modules provided by ISAP to all of its research staff on standard research topics; additional topics related to the PIP study will also be covered. Interviewers will have worked on other ISAP projects or will have had previous interview experience, but in either case, they will be specially trained for this study. ISAP’s Training Unit and the Project Director will provide a three-day training for interviewers that will consist of (1) an overview of the purpose and design of the study; (2) instruction on the collection of interview and records data, including issues of confidentiality and informed consent; (3) training on administering the ASPD portion of the SCID; (4) observation of sample interviews by the Project Director; and (5) mock interviews with the Project Director using videotape. In addition, interviewers will complete the regular ISAP training required of all interviewers, which includes the following topics: Good Research Practices, Safety Concerns in Dealing with Patients, and Data Collection Procedures. Staff also receive Red Flags training that covers suicide, danger to others, child abuse, elder/dependent adult abuse, and domestic violence (see Appendix B). Project staff are trained to refer those in treatment to the primary counselor or supervising counselor of the treatment agency. For those out of treatment, project staff are trained to use a variety of resources, including a 24-hour on-call clinician. At the completion of training, staff are well-prepared to work with criminally and psychiatrically high-risk populations. Interviewers also complete an annual refresher training on these issues. Interviewers receive a certificate for each training after successfully demonstrating competency (above 80%) on an examination. After initial training, interviewers and the Project Director will confer weekly to exchange information on recruitment or follow-up problems, clarify interview and other data collection procedures, and discuss specific questions.

Training and Supervision of Counseling Staff. The necessary training will be conducted by UCLA research staff. The training curriculum will include instruction in the design of the study,

the rationale and procedures of the main components of the intervention, the responsibilities of treatment staff, record keeping and paperwork, and collaboration with research staff.

RECRUITMENT - INTAKE PROCEDURES

Study participants will initially be recruited from the Substance Abuse Program (SAP) operated by Walden House at the Substance Abuse Treatment Facility and State Prison (SATF) at Corcoran (where ISAP has maintained a research office since 1997). The SAP provides treatment to 450 inmates. The SAP is located in a specially designed facility that is completely separated from the general population yards. As a client nears his parole date, he works with his transitional counselor to develop a parole plan, which usually includes a referral to a community treatment program. Clients do not have to accept a referral, nor are they required to follow-up on the referral once released (i.e., community treatment is voluntary) (for a more detailed description, see Anglin, Prendergast, Farabee, & Cartier, 2002).

Potential study participants are selected from a list compiled of individuals that will parole within 60 days, are currently enrolled or have completed the substance abuse program, and have chosen to attend Walden House in Los Angeles, CA upon their release. Once these conditions are met, the research associate contacts the transitional counselor with the facility to confirm the information. Upon confirmation, the researcher visits the selected participant's residential facility. The participant is then summoned by the patrolling Correctional officer in the facility. When the participant arrives, he is asked to show his identification card to verify that he is the selected individual. The research associate and the participant proceed to a private interview room located near the SAP offices. At this time, the research associate introduces herself/himself using a recruitment script. After all questions have been answered, the research associate reads the informed consent form to the participant. If the participant elects to volunteer his participation, he will sign, date and initial all areas on the informed consent form. Once the participant and the research associate have signed and dated the informed consent form, the participant is given a copy to keep for his records. Lastly, the baseline interview commences with the consent of the participant.

SAMPLE - RECRUITMENT SCRIPT

“Hello, my name is _____. I am a research associate with the UCLA Research Center and I have asked to see you today to invite you to participate in a research study entitled “Parolee Incentives Project.” I will review this informed consent form with you; it will provide you with all the details of the study and the procedures involved. I will answer any questions you have before asking for your decision. Any questions before we begin?”

Admission Phase. Because one of the study aims is to increase the likelihood that parolees who have been referred to community treatment actually show up and enroll in treatment, study participants for the Admission Phase will be recruited from inmates at the two SAPs at the Substance Abuse Treatment Facility (see above).

At the beginning of each month, treatment staff at the SATF SAPs will provide the interviewer with a list of clients who are expected to parole that month and who have received a referral to the Walden House community program. The interviewer will meet with potential participants in a private office to screen for eligibility, review study procedures, obtain informed consent, and complete study-related forms.

As part of the recruitment process, the interviewer will complete the following forms with the participant (before the baseline interview and randomization):

- *Informed Consent Form.* The Informed Consent Form, which was approved by the UCLA Institutional Review Board (IRB), includes a statement that the study involves research, an explanation of the purposes and procedures of the study, and an estimate of the expected duration of participation. It states the voluntary nature of the study, describes possible risks of participation, anticipated benefits to the participant, confidentiality procedures to be followed, and an explanation of whom to contact with questions. After reviewing the consent form, the interviewer will ask potential participants a set of questions to determine whether they are able to provide informed consent. If so, the interviewer asks the client to sign the Informed Consent Form, countersigns the form, and gives a copy to the participant. Those who do not understand the consent process will not be eligible to participate in the study. (From experience in other ISAP studies, few, if any, such exclusions will occur.) Since the prospect of receiving additional incentives in the Attendance Phase may itself increase show-up rates, the consent form for the Admission Phase will not describe the Attendance Phase, only that they may be asked to participate in future studies. (See section on Protection of Human Subjects below for more detail.)
- *Locator Form.* This form is used during the Attendance Phase to collect information that assists research staff in tracking clients for follow-up interviews. The form asks for such information as date of birth, Social Security number, driver's license, vehicle license number, locations of hangouts, and addresses and phone numbers of family and friends (see further details below under *Tracking and Locating*). During the Admission Phase only a brief locator form is used. The brief locator form is used to collect an address to send the Admission Phase gift card. This form is also used to record the client's expected parole date so that research staff will know when to start tracking the client's admission (or not) to Walden House.

During both the Admission and Attendance phases, a brief description of that phase's incentive program and its philosophy is provided after completion of the informed consent form and locator form, but before the structured baseline interviews. The goals are to -

- Orient applicants to what will happen in treatment.
- Create an atmosphere of optimism about treatment outcome.
- Make applicants feel hopeful about improving their life situation.
- The intake worker should also explain that –
 - The program is confidential; everything discussed or written remains private.
 - Each person who signs up to be in the study has a 50/50 chance of gaining entry into the incentives group for admission, and another 50/50 chance of gaining entry into the attendance incentives group following entry into the Walden House program. Only half of the people in the study will receive vouchers.
 - The Attendance intervention lasts for up to 22 weeks.
 - The client will begin earning incentives (only if he is in the incentive group) beginning on the Monday following his entry into the Attendance phase of the study
- The intake worker also provides a very brief description of the voucher incentive program.

If you are randomly selected to participate in the information group, you will attend a half-hour session on why it is helpful to stay in treatment, receive a brochure with that same information and receive a Target gift card for \$20.

If you are randomly selected to participate in the incentives program:

“When you attend treatment, you will earn vouchers. These vouchers indicate the amount of money you earn for treatment participation. You can accumulate

vouchers to pay for more expensive activities at the end, or vouchers will be deposited into your Walden House account in order to purchase items of your choice at the end of each week. When you get HIV tested, you can earn a bonus voucher. You will start receiving incentives on the Monday following this interview (you will earn nothing until that day)."

After this brief description of the program, the intake worker should give applicants an opportunity to ask questions. Keep this interaction brief; the research staff can provide more detailed information after the structured baseline interview is completed. If clients so wish, they should then be enrolled in the study and a baseline interview should be conducted or scheduled.

Attendance Phase. As clients from the Admission Phase and all others eligible for the Attendance Phase complete the Walden House intake process, the interviewer will meet with them in a private office to determine whether they wish to participate in the Attendance Phase of the study. Within a week of intake, the interviewer will complete the screening form to determine eligibility for the Attendance Phase, explain the consent form, obtain informed consent, and randomize the clients to the Attendance Incentive group or to the Attendance Information group. The interviewer will also update the locator form. There will be no baseline interview for the Attendance Phase.

BASELINE INTERVIEW PROCEDURES

The baseline interview will be conducted within seven days of enrollment in the study. Baseline interviews will be conducted at the prison substance abuse programs in private offices at SATF or in private rooms at Walden House. Several procedures will be followed to maximize the accuracy and honesty of the responses and to standardize data collection:

- 1) interviews are conducted face-to-face by trained interviewers;
- 2) all subjects in the study will receive \$10 Target gift card payment for participating in research interviews;
- 3) the interview setting is private to minimize distractions and ensure confidentiality;
- 4) participants are reminded of the confidentiality of the information they provide;
- 5) interviewers provide breaks during the interview and are attentive to signs of fatigue;
- 6) interviewers introduce the voucher program and re-cap study procedures (including randomization process and give each client a Client FU Contact Card and, if assigned to the incentive group, a Client Pocket Guide for them to keep);
- 7) interviewers administer the appropriate research documentation forms (see Assessment – Research Documentation Forms section)
- 8) interviewers look for reporting inconsistencies and socially desirable responses; and
- 9) consistency checks on reporting are built in as part of the interview process.

The Project Director will periodically sit in on interviews to ensure compliance with interview protocols and to identify problems that need correction. As a quality check, the Project Director will randomly call 10% of participants for whom interview forms are on file to verify that the interview took place and to ask about suggestions on interview procedures (see ISAP's data integrity policy in Appendix C).

RANDOMIZATION

In the Admission Phase, clients will be randomized to the Admission Incentive group or to the Admission Information group. Thus, each client has a 50/50 chance of gaining entry to the Incentive group or the Information group. Those clients in the Admission Phase who show up at Walden House and complete intake process will be consented and re-randomized to the Attendance Incentive group or to the Attendance Information group. In both cases, clients will

be randomly assigned to one of the study conditions using the Urn Randomization Program (version 1.10, developed at Yale University for Clinical Trials Network studies). Urn randomization is a procedure to maintain balance and minimization of bias across study groups for selected characteristics expected to be related to outcome (Stout, Wirtz, Carbonari, & Del Boca, 1994). The following baseline variables that are strongly associated with drug use and/or crime outcomes will be used in urn randomization:

- Race/ethnicity (African American vs. White/Hispanic/Other)
- Risk for recidivism (using the score on the Lifestyle Criminality Screening Form: 0-7 vs. 8-20)
- Parole status (In-Custody Drug Treatment Program vs. voluntary SAP graduate) – because custody arrangements differ between the two groups. In-Custody Drug Treatment Program (ICDTP) clients are considered to be in-custody and cannot leave the program premises without a staff member, while voluntary SAP graduates are not required to stay in the program.

For the Admission Phase, the interviewer at SATF will randomize using only the first two items because all subjects leaving from SATF to Walden House Los Angeles will be voluntary SAP graduates. The baseline variables will be entered into the project computers at the project sites using the Urn Randomization Program, and the resulting group assignment will be determined immediately by the interviewer, who will inform the client and Walden House treatment staff of the group to which the client has been assigned. Although there may be disappointment among clients assigned to the Information groups, making it clear to each client that they only have a 50/50 chance of ending up in either group will lessen the possibility of resentment and demoralization during treatment.

A concern in randomized studies is that violations of assignment could occur at the recruitment site and/or after entry into the assigned group. This should not be a problem in the Admission Phase since only one behavior is involved (showing up for treatment). But it might be a problem in the Attendance Phase. The Project Director will monitor the randomization protocol for the Attendance Phase monthly to ensure that the integrity of random assignment is preserved (i.e., there are no crossovers from one group to another). Even though crossovers may still occur, hypothesis tests will be use the analyze-as-assigned principle.

FOLLOW-UP INTERVIEW PROCEDURES

For the 12-month assessment, interviewers will meet with participants at locations that are safe, ensure privacy, and minimize travel costs. If participants are incarcerated, they will be interviewed in jail or prison. If a face-to-face follow-up interview is not feasible (e.g., client located out of state), the interview will be conducted by telephone.

INTERVENTION MONITORING, QUALITY ASSURANCE AND FEEDBACK

Meetings and Communication. Regular communication between treatment staff and research staff will be critical to ensure uniformity of implementation of the PIP protocol. The primary contact for case managers is the project director, Michael Prendergast. If, based on shared experiences, the protocol requires modification; all participating staff will receive formal written notification from UCLA-ISAP.

Monitoring of Intervention and Quality Assurance. Since implementation of a manualized intervention is almost certain to vary (“drift”) unless its delivery is monitored (Yeaton & Sechrest, 1981), we will develop forms and procedures to measure adherence to the elements the Contingency Management Manual to maintain protocol fidelity. The general approach will combine elements of the systems for evaluating fidelity in psychotherapy research developed by Carroll and colleagues (Carroll et al., 2000) and in health behavior research developed by Borrelli and colleagues (Borrelli et al., 2005). Contingency management procedures are not

complicated and focus on behaviors of clients and staff, which make monitoring relatively straight forward. For instance, the client either shows up for treatment or not, is in attendance or not; the counselor either awards the voucher or not; the amount awarded is either consistent with the manual or not. While not complicated, the procedures need to be clearly documented and monitored. Thus, fidelity to the protocol will be checked using a CM Record Form that documents admission and attendance, the date of the receipt of the voucher, the amount of the voucher, the items redeemed, etc. Research staff will complete this form weekly, compile results, and, in monthly meetings with treatment staff, discuss any departures from the protocol and other problems with study implementation. Notes of these monthly meetings will be recorded by research staff.

REPORTING OF ADVERSE EFFECTS

With regard adverse events, any serious adverse event that comes to the attention of the Principal Investigator or the Project Director will be reported immediately to UCLA General Campus IRB and the National Institutes of Health (NIH). For an SAE, the PI will report the event within three working days to the UCLA General Campus Institutional Review Board (IRB) on its Adverse Event and/or Incident Reporting form. The PI will indicate whether a change in the protocol and/or consent form is warranted and whether the SAE was related to the research activity. Depending on the nature and seriousness of the SAE, either the study protocol or the informed consent form may be changed, with the advice and approval of the UCLA General Campus IRB. The Project Officer at NIDA will be informed of SAEs related to the study, and the annual progress report to NIDA will include a section on serious adverse events. Adverse events will be reported in aggregate to the IRB as part of the continuing review report and to NIDA as part of the progress report.

Definitions of serious adverse events and adverse events are as follows:

Serious Adverse Event (SAE): an experience occurring during study recruitment or participation that may involve danger to the participant or others. SAEs typically include one or more of the following:

- death, serious injury, a life-threatening experience, drug overdose, or suicide attempt
- hospitalization or prolongation of hospitalization (including medical or psychiatric hospitalization)
- persistent or significant disability or incapacity
- an unanticipated event that, in the PI's judgment, represents a significant hazard or potentially serious harm to research participants or others

Adverse Event (AE): an untoward experience occurring during study participation that does not rise to the level of an SAE. Specific AEs include the following events that occur after entrance into the study:

- medical problems
- significant physical or emotional pain, victimization, homicidal thoughts, or suicidal thoughts
- breach of confidentiality
- an unanticipated event that, in the PI's judgment, represents a non-serious adverse event that nonetheless resulted in increased risk to research participants or others

DATA SOURCES AND DATA COLLECTION PROCEDURES

This section provides details on the measures and instruments used in the study and the procedures for collecting data at multiple assessment points.

ASSESSMENT POINTS

Data will be collected from subjects at two main time points. The baseline interview will occur at or shortly after recruitment, that is, approximately seven days prior to release from the institution. The follow-up assessment will occur 12 months following release to parole. This assessment point will include interviews with all subjects who can be contacted and collection of treatment participation data from programs. In addition to measures of individual-level performance, the study will also collect data to enable an assessment of the system impact and cost implications of the intervention.

BASELINE INTERVIEW

Baseline interviews will be conducted at the prison substance abuse programs in private offices at SATF or in a private room at Walden House. The baseline assessment, administered within two week of recruitment into the study, will include information on demographic characteristics, criminal history, risk level, drug use history, treatment history, participation in prison treatment, psychological status, motivation, perceived coercion, and HIV/AIDS risk. Measures of other variables will be collected from standard instruments. Locator data to assist in later follow-up tracking will also be collected. See Table 4 for the list of instruments or measures and their assessment points.

FOLLOW-UP DATA COLLECTION: 12 MONTHS

For the 12-month assessment, interviewers will meet with participants at locations that are safe, ensure privacy, and minimize travel costs. If participants are incarcerated, they will be interviewed in jail or prison. If a face-to-face follow-up interview is not feasible (e.g., client located out of state), the interview will be conducted by telephone. At the interview, research staff will obtain information on recidivism and criminal activity, drug use, and psychosocial functioning (see Table 3). Records data on treatment participation and criminal justice involvement will also be obtained.

DATA SOURCES - RESEARCH DOCUMENTATION FORMS

The measures to describe the characteristics of study participants, to test hypotheses, and to conduct other analyses will be collected from standardized instruments, instruments used in previous ISAP studies, instruments developed specifically for this study, criminal justice records, and focus groups. Items on the instruments are close-ended with predetermined response categories. Research staff will review the instruments during project startup and modify them if necessary. Table 4 lists the instruments or measures, the main variables of interest for analysis, approximate administration time, the source of the data, and the assessment points. The time to administer the baseline interview will be between 1.5 and 2.0 hours; the 12-month follow-up interview, between 1.0 and 1.5 hours. Instruments appear in Appendix A.

1. Demographics, Psychosocial

CJ-DATS Form. This form, adapted from the one used in the NIDA Criminal Justice Drug Abuse Treatment Studies cooperative, is administered at baseline in a face-to-face interview. It provides detailed information on sociodemographic background, family and peer relations, health and psychological status, criminal involvement, substance use history, and HIV/AIDS risk behaviors. A modified version of this form is used to collect the 12-month follow-up data.

2. Drug Use

Drug Use. The timing and frequency of a subject's substance use are captured on the CJ-DATS form.

Texas Christian University Drug Screen. Developed by the Institute of Behavioral Research (IBR) at Texas Christian University, the TCU Drug Screen is widely used in criminal justice settings. It provides an assessment of a client's abuse or dependence (based on the DSM criteria). It has high levels of positive predictive value, sensitivity, and overall accuracy compared with other dependence screening instruments for offenders (Peters et al., 2000).

Drug Testing. Since subjects will be recruited in prison, we will not conduct urine tests at baseline since the institution would require that any positive test results be reported to institutional staff, which would violate subject confidentiality. At the 12-month interview, participants will be asked to provide a urine specimen to test for illicit drugs. For clients interviewed in jail or prison at the 12-month assessment, testing for illicit drugs will not be conducted. Urine samples will be collected using an on-site testing kit, which provides immediate results. Specimens will be tested for marijuana, methamphetamine, cocaine, benzodiazepines, and opiates, which are the drugs typically found among offenders in southern California.

3. *Criminality / Criminal Justice System Involvement*

Lifestyle Criminality Screening Form (LCSF). A risk of recidivism score will be constructed from the Lifestyle Criminality Screening Form (LCSF: Walters, 1990; 1991; 1998). The LCSF consists of 14 items that factor into four scales related to criminal lifestyle: Irresponsibility (non-support of child, school dropout, longest job held, fired/quit job), Self-Indulgence (drug abuse history, marital background, tattoos), Interpersonal Intrusiveness (any prior intrusive offense, including burglary, robbery, violence against others, arson, and sex offenses, number of intrusive offenses, ever used weapons in an offense, physical abuse of significant others), and Social Rule Breaking (arrest history, age at first arrest, school disciplinary problems). The LCSF scale has good internal consistency (Cronbach alpha = .70) and test-retest reliability ($r = .93$). Walters and McDonough (1998) found that the full-scale score to be more predictive of revocations for federal probationers than scores on the individual scales; thus, the full-scale score will be used in analysis.

Criminal Justice Records. Criminal justice information will be obtained from official records maintained by California criminal justice agencies. Arrest charges and case dispositions are available from the California Department of Justice (the Automated Criminal History System - ACHS). Parole status, parole violations, and reincarcerations are available from the California Department of Corrections and Rehabilitation (the Offender Based Information System - OBIS). ISAP has obtained individual record data from these agencies in electronic format for many previous studies.

Criminal History. Criminal justice records include only crimes that come to the attention of law enforcement. In order to capture a more complete record of a subject's criminal behavior, the CJ-DATS baseline form includes questions on the type, frequency, and amount of criminal activity for the past six-months and the past thirty-day and on lifetime and recent arrests and incarcerations. The follow-up form asks about criminal activity and CJS involvement during the previous six months or during the six months prior to incarceration, if the subject is interviewed in jail or prison.

Table 4. Instruments and Assessment Schedule

Instruments /Measures	Variables of Interest	Administration Time (approx.)	Data Source	Assessment Points
1. Demographics, Psychosocial				
CJ-DATS form	Demographics, employment, education, family and peer relationships, HIV risk	45 min	Clients	Baseline, FU
2. Drug and Alcohol Use				
Drug Use History	Substance use	In CJ-DATS form	Clients	Baseline, FU
TCU Drug Screen	Substance use severity	10 min	Clients	Baseline
Drug testing	Substance use	5 min	Biochemical	FU
3. Criminality / CJS Involvement				
Lifestyle Criminality Screening Form	Risk for recidivism	10 min	Clients	Baseline
Criminal Justice Records	CJ involvement	N/A	CJ agencies	FU
Criminal History	Criminal activity	In CJ-DATS form	Clients	Baseline, FU
4. Psychological Status				
SCID IV	Anti-social personality disorder	15 min	Clients	Baseline
Brief Symptom Inventory	Psychological symptoms	15 min	Clients	Baseline, FU
<i>Barratt Impulsiveness Scale</i>	<i>Impulsiveness</i>	<i>10 min</i>	<i>Clients</i>	<i>Baseline</i>
5. Treatment				
Client Evaluation of Self at Intake	Motivation and readiness for treatment	10 min	Clients	Baseline
Counseling Utilization Form	Session attendance	N/A	Program records	During intervention
CM Record Form	Adherence to CM protocol	N/A	Client, Staff	During intervention
Treatment Termination Form	Treatment completion status	N/A	Program records	During intervention
Client Satisfaction Questionnaire	Client satisfaction with treatment	10 min	Clients	FU
Dimensions of Sustainability Questionnaire	Assessment of sustainability	10 min	Staff	After intervention
6. Qualitative Assessment				
<i>Information Meeting, Intervention Development Workgroup, Monthly Project Meetings, Focus Groups</i>	<i>Feedback on intervention, acceptability, sustainability</i>	<i>N/A</i>	<i>Staff, Clients</i>	<i>Prior to, during, and after intervention</i>

4. Psychological Status

Structured Clinical Interview for DSM-IV-TR: Anti-Social Personality Disorder. The SCID (First, Spitzer, Gibbon, & Williams, 1998) provides diagnoses of Axis I mental disorders and Axis II personality disorders consistent with the Diagnostic and Statistical Manual of Mental Disorders, text revision (DSM-IV-TR) (American Psychiatric Association, 2000). Reliability

(ranging from .72 to .97) and validity (ranging from .75 to .95) have been reported in several studies (Babor, Del Boca, & McRee, 1997; Kranzler et al., 1996). For this study, only the Axis II section on Anti-Social Personality Disorder will be administered at baseline. Interviewers will receive training in the use of the SCID (see below under *Interviewer Training*).

Brief Symptom Inventory (BSI). The BSI (Derogatis & Melisaratos, 1983) is a 53-item questionnaire derived from the Symptom Checklist-90 that assesses nine medical and psychological symptom dimensions: somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism, which can be combined to form a Global Severity Index. Cronbach alpha is .71 to .85 and test-retest reliability is .68 to .91 across the dimensions.

Barratt Impulsiveness Scale Version 11 (BIS-11). Because impulsivity has been found to be a significant moderator of relapse, particularly within contingency management studies (Dawe, Gullo, & Loxton, 2004; Reily, Roll, & Downey, 2000), we will administer the Barratt Impulsiveness Scale at baseline. This scale is a 30-item self-report measure of three aspects of impulsiveness: attention impulsiveness, motor impulsiveness, and non-planning impulsiveness. It has excellent internal reliability and clinical utility for measuring impulsiveness in inmate populations (Patton, Stanford, & Barratt, 1995).

5. Treatment

Client Evaluation of Self at Intake (CESI): Motivation Scales. This TCU form (Simpson & Joe, 1993) includes short scales for treatment motivation, psychological functioning, social functioning, and criminal thinking completed by the client. This study will use the motivation scales, but will modify the readiness for treatment subscale to refer specifically to aftercare. The motivation scales correspond to the Stages of Change model as delineated by Prochaska and DiClemente (1986). The self-assessment of drug use ($\alpha=.91$) scale consists of nine items that are intended to differentiate between those who have begun the contemplation stage and those who remain in the precontemplation stage. The desire for help ($\alpha=.83$) scale consists of seven items assessing the transition from general acknowledgment of a drug problem to recognition of the need for help. Finally, the readiness for treatment ($\alpha=.63$) scale has eight items intended to assess willingness to enter and comply with treatment, and represents the completion of the above transition and the beginning of the action stage.

Counseling Utilization Form. Once a week, the research assistant will check each participant's clinical records and note how many treatment sessions (individual or group) were scheduled for the participant and how many the participant attended.

CM Record Form. In order to check on protocol adherence and to collect data for analysis, this form provides a record of information about attendance, date of the receipt of the voucher, amount of the voucher, and items redeemed.

Treatment Termination Form. This short form records whether a participant completed the intervention and, if relevant, the reason for early termination (e.g., incarceration, transfer to another program, voluntary withdrawal from study and reasons for doing so). (Note that except for participants who request to be removed from the study, all randomized subjects will be tracked for follow-up.)

Client Satisfaction Questionnaire (CSQ). At the 12-month assessment, participants will complete the CSQ to rate their satisfaction with the services that they have received using a four-point Likert-type scale (with the response categories based on the specific question). The CSQ has high levels of internal consistency and consumer acceptability. Cronbach's alpha is .86. High correlations have been found with other health consumer satisfaction instruments (from .60 to .80) (Attkisson & Greenfield, 1994). An item will be added asking whether participants were satisfied with their initial assignment to assess for the possibility of resentful demoralization over the group assignment that they received (Shadish, Cook, & Campbell, 2002).

Sustainability. A key issue in implementation is whether interventions found to be effective are—or at least can be—sustained by treatment providers using their own resources (Mancini &

Marek, 2004; Miller et al., 2003; O'Loughlin et al., 1998). After the CM intervention is completed, treatment staff will be asked whether the intervention can be continued once research support is withdrawn. Their views will be obtained from a focus group (see below) and from the Dimensions of Sustainability Questionnaire (O'Loughlin et al., 1998). This brief questionnaire, based on an instrument developed for community programs, contains 15 questions on staff perceptions of the sustainability of an intervention.

6. *Qualitative Assessment*

Qualitative data will consist of notes from monthly project meetings and transcriptions of audio recordings from the CM Information Session, the Intervention Development Workgroups, and from focus groups conducted after the end of the CM intervention. The focus groups will be conducted with clients and with Walden House program directors and staff (separately) to assess satisfaction with the CM intervention, to determine their views of the utility of CM in the residential treatment environment, to elicit views on research-to-practice issues, and, for staff, to ask about plans to continue use of CM techniques after research implementation is completed, including issues of cost. In addition, staff and clients will be asked whether it appeared that clients were dissatisfied with their assigned treatment and whether this affected their participation in the study.

DATA COLLECTION PROCEDURES

Interview Procedures. The baseline interview will be conducted within seven days of enrollment in the study. Baseline interviews will be conducted at the prison substance abuse programs in private offices at SATF. For the 12-month assessment, interviewers will meet with participants at locations that are safe, ensure privacy, and minimize travel costs. If participants are incarcerated, they will be interviewed in jail or prison. If a face-to-face follow-up interview is not feasible (e.g., client located out of state), the interview will be conducted by telephone. Several procedures will be followed to maximize the accuracy and honesty of the responses and to standardize data collection: (1) interviews are conducted face-to-face by trained interviewers; (2) the interview setting is private to minimize distractions and ensure confidentiality; (3) participants are reminded of the confidentiality of the information they provide; (4) interviewers provide breaks during the interview and are attentive to signs of fatigue; (5) interviewers look for reporting inconsistencies and socially desirable responses; and (6) consistency checks on reporting are built in as part of the interview process. The Project Director will periodically sit in on interviews to ensure compliance with interview protocols and to identify problems that need correction. As a quality check, the Project Director will randomly call 10% of participants for whom interview forms are on file to verify that the interview took place and to ask about suggestions on interview procedures (see ISAP's data integrity policy in Appendix C).

Focus Group Procedures. The focus groups will consist of approximately seven participants and will be conducted by the Co-I (Hall), who has extensive experience in focus group techniques, and by a UCLA-ISAP research assistant (Nelson) who is experienced in conducting, recording, transcribing, and coding focus group interviews. To help ensure open and honest responses, client and staff focus groups will be held separately. Focus groups will be conducted in a private meeting room of the Walden House Transitional Treatment Center. All participants will be identified only by an assigned letter. Focus groups are expected to last 90 minutes. Questions will be open-ended and designed to address the research questions in Aim 4 regarding the acceptability, satisfaction, and sustainability of the use of incentives to increase enrollment and retention among staff and clients. Focus groups will be audio-recorded and the responses transcribed.

Tracking and Locating. To manage the many steps of tracking subjects (recording locator data, agency contacts, letters, telephone calls, appointments, etc.), we will use a tracking program developed in FileMaker Pro for previous studies at ISAP. The most useful information

to locate subjects for follow-up is that supplied by subjects at the baseline interview, which includes the individual's driver's license, vehicle license, and Social Security numbers; names, addresses, and phone numbers of immediate relatives and of two unrelated friends; date and place of birth; areas of town the subject frequents (particularly if he has a history of homelessness); and locations where social services are received (if relevant). Other useful tracking sources are agency records (Department of Corrections, Department of Motor Vehicles, Social Security Administration, local jails). When participants are recruited into the Attendance Phase, the interviewer will update the locator information. These procedures are described in a manual developed at ISAP (Hall et al., 2003; see Appendix D). All randomized subjects, except those who have requested that they be dropped from the study, will be tracked for the 12-month follow-up interview. Since detailed locator information will be available, and since nearly all of the subjects at the time of the follow-up assessment will still be under correctional supervision, we expect to locate and interview at least 85% of the baseline sample. ISAP has demonstrated its ability to track and locate subjects for as long as 10 years between interview points, with location rates of 90% or greater in most studies (Hser, Anglin, & Powers, 1993). In its longest follow-up study to date, a 33-year follow-up of a cohort (n=581) that entered treatment in 1962-1963, 40% were interviewed, 6% were located but not interviewed (includes refusals, severely impaired, contacted but not interviewed), 49% were confirmed to have died, and 6% were not located (Hser, Hoffman, Grella, & Anglin, 2001). In a recent multi-site study of case management with parolees, the follow-up rates for the ISAP study site were 93 % at three months and 89% at nine months.

Participant Reimbursement. Participants recruited into the study in the Admission Phase will be reimbursed \$10 for the (in-prison) baseline interview. Those who are recruited into the Attendance Phase (at Walden House) will have the study explained to them, will provide updated locator information, and will sign the consent form and then be randomized. They will be reimbursed \$10. *The volunteers in the Attendance Information group will receive a \$20 gift card after they attend the Information Session.* All subjects who complete the 12-month follow-up interview will receive \$50. In addition, subjects will receive \$5 at follow-up if they voluntarily provide a urine specimen for drug testing. For community interviews, study participants will be paid in grocery script or other non-cash form. For baseline and follow-up interviews conducted in jail or prison, payment will be mailed to the institution in the form of a postal money order for deposit to the person's trustee account. Treatment staff and clients will be paid \$50 for their focus group participation.

Records Data. Research staff will abstract relevant data from clinic records at the Walden House program. Clinic data will include drug testing results, program violations, individual and group session attendance, services received, admit and discharge dates, and discharge status. Because of the confidentiality of this information, the informed consent form and a release of information form will request the subject's permission for Walden House to provide the specified information to research staff. Information on criminal justice involvement will be obtained in electronic form from the California Department of Justice (arrests, case disposition) and from the California Department of Corrections and Rehabilitation (incarceration, parole status). As in previous studies, we will develop agreements with these state agencies to receive the requested data on study participants under guidelines specified by the respective agencies. Because of the time lag in updating these state databases, we will request criminal justice records six months after the end of the last follow-up interview. Records data will be merged with the interview data for analysis.

Data Entry, Quality Control, and Data Security. Items on the instruments are close-ended with predetermined response categories. The interviewer edits responses for completeness, consistency, and legibility. Several options are available to data capture. ISAP's Data Management Center (DMC) has extensive experience in creating forms that are faxed to ISAP and scanned into a computerized format. Use of faxed forms allows for virtually instantaneous

data entry with a minimum of error. As an alternative to faxable TeleForms, the DMC has the capability to use PDF+ Forms, which create standard PDF files that can be used within Adobe Acrobat Reader and other PDF applications. These forms can then be distributed, filled out, and collected via email, paper hard copy, or posted on the Web. In addition to being identical to the TeleForms paper forms, the PDF+ forms have field-level checks and drop-down boxes for easier data entry. However we decide to capture the interview data, the interview responses are automatically checked against pre-set standards. Errors are flagged and resolved by the data entry clerk, the interview editor, or the original interviewer. Completed instruments are stored in locked files in a room with an off-master key. Access is limited to individuals who have a research need for the data and who have signed confidentiality statements. The master list linking subject names to code numbers is stored on a password-protected computer. The DMC maintains the security of data by storing data on a secure server, conducting regular backups onto separate media, and storing backup media off-site (see ISAP's data security policies in Appendix C).

DATA ANALYSIS PLAN

PRIMARY AIMS

Primary analyses for the study will be directed toward testing hypotheses (H) and answering research questions (RQ) associated with the study's specific aims.

Aim 1 Determine whether offering an incentive (voucher) increases admission to community treatment by parolees who have participated in prison treatment.

H1. Participants in the Admission Incentive group will be more likely to show up for admission to the Walden House program than will participants in the Admission Information group.

H2. Of participants who are admitted to the Walden House program, those in the Admission Incentive voucher group will have a shorter time to admission than those in the Admission Information group.

Aim 2 For parolees who enter community treatment, determine whether providing incentives for attendance results in greater retention in treatment.

H3. Participants in the Attendance Incentive group will have a longer length of time in treatment than will participants in the Attendance Information group.

Aim 3 For parolees who enter community treatment, determine whether providing an incentive increases the likelihood that clients will participate in HIV testing and counseling.

H4. Participants in the Attendance Incentive group will be more likely to agree to receive HIV testing and to participate in post-test counseling than will participants in the Attendance Comparison group.

Aim 4 Assess the long-term impact of the use of incentives on drug use, crime, and psychosocial outcomes at 12 months following the end of the six-month intervention.

H5. Participants in the Attendance Incentive group will be more likely to be abstinent than will participants in the Attendance Information group at the Month 12 assessment.

H6. Participants in the Attendance Incentive group will have a lower percentage of arrests and reincarcerations than will participants in the Attendance Information group at the Month 12 assessment.

H7. Participants in the Attendance Incentive group will have better psychosocial outcomes (employment, education, family relationships, psychological functioning, and HIV risk) than will participants in the Attendance Information group at the Month 12 assessment.

Aim 5 Assess the long-term impact of the use of incentives to promote treatment participation on HIV-risk behaviors at 12 months following the end of the six-month intervention.

H8. At the Month 12 assessment, participants in the Attendance Incentive group will report lower levels of injection drug use and engagement in HIV-risk sexual behaviors than will participants in the Attendance Comparison group.

H9. At the Month 12 assessment, participants in the Attendance Incentive group will report greater participation in HIV-related services (of any type) over the period since discharge from Walden House than will participants in the Attendance Comparison group.

Aim 6 Assess issues of acceptability, satisfaction, and sustainability of the use of incentives to increase enrollment and retention among staff and clients.

RQ1. Were clients and treatment staff who participated in the CM intervention accepting of and satisfied with the use of incentives to promote enrollment and attendance?

RQ2. Were treatment staff members able to adhere to the procedures of the Contingency Management Manual?

RQ3. Were there programmatic, logistic, or other issues that facilitated or compromised the implementation of the intervention?

RQ4. What factors are likely to promote or impede the sustainability of the CM intervention beyond the end of the study?

QUANTITATIVE ANALYSES

Overview. Consideration of specific aims, hypotheses, data structures, and available resources will determine the choice of analytic approaches. Analyses will examine both significant differences (if any) between the groups on the outcomes of interest and the magnitude of the difference (i.e., effect size). The main analyses will follow the “intent-to-treat” approach in which we will include all clients in the analysis for whom data are available, whether they have completed treatment or not (Nich & Carroll, 2002). Methods that provide unbiased effects in the face of non-compliance (e.g., Complier Average Causal Effect analysis) may also be used. The following discussion covers power analysis, preliminary and descriptive analyses, design analyses, hypothesis testing, and other analyses.

POWER ANALYSIS

The study is powered for the two primary aims: whether incentives increase admission and whether they increase attendance. Two meta-analyses of contingency management have found that the average effect size for outcomes measured during or at the end of treatment is in the medium range (using Cohen’s guidelines; Cohen, 1988). Lussier et al. (2006) reported an average effect size (using a random effects model) for abstinence outcomes of $d = 0.67$ (transformed from $r = 0.32$). Prendergast et al. (2006), using a partially overlapping but larger set of studies, found an effect size (random effects) for drug use outcomes (not necessarily abstinence) of $d = 0.49$. A recent study (Alessi, Hanson, Wieners, & Petry, 2007) examined the effects of CM (using prize-based incentives) on group therapy attendance over 12 weeks, reporting an effect size of $r = .17$ ($d = 0.34$). CM studies have not examined the effect of incentives on enrollment in treatment or on attendance over longer periods of time (e.g., 26

weeks), but it is reasonable to assume that effect sizes for these outcomes would also be in the low medium range.

For the primary outcomes of admission and attendance, there will be no attrition since these outcomes will be based on program records. For the Admission Phase, the target sample size of 250 will allow detection of medium effects in comparisons between groups on the percentage of clients who enroll in treatment at Walden House, with $\alpha = .05$ (two-tailed) and power .80. For the Attendance Phase, with retention as the outcome, the sample size of 200 will allow detection of similar effects between groups. For the 12-month outcomes, the effect size will be smaller, possibly around $d = 0.30$, based on a previous meta-analysis of drug abuse treatment generally (Prendergast, Podus, Chang, & Urada, 2002). Here, where the analysis will be based on the follow-up interview sample in the Attendance Phase (~170), power is likely to be about .75. For arrest and reincarceration, where there will be no attrition, power will be at least .80. Inclusion of covariates may increase power somewhat (Tabachnick & Fidell, 1996).

PRELIMINARY AND DESCRIPTIVE ANALYSES

As noted above, faxable forms will allow many of the instruments to be quickly entered and checked, making it possible to periodically examine the data. Descriptive statistics on variables of interest will include percentages, means, correlations, measures of variance, and distribution characteristics, as appropriate to the measurement level of selected variables. Frequency tables will be used to examine cell sizes for categorical variables and non-normality for continuous variables. Where categorical variables have small cell sizes, we will collapse the categories where possible to create cells of sufficient size. Where variables are non-normally distributed, we will transform the variable if possible or use a non-parametric approach. If outliers are present, they may be recoded or omitted. Descriptive analyses will provide statistics on treatment-related variables, including percentage of sessions attended, number of weeks attended, value of vouchers earned, and items for which vouchers were redeemed.

DESIGN ANALYSES

In examining study design issues, we will investigate possible bias arising from the recruitment process by examining, for the Admission Phase and the Attendance Phase, reasons for ineligibility, reasons for refusal, and characteristics of clients who are ineligible or who refuse to participate. In addition, we will determine treatment status at the end of the intervention and reasons for early withdrawal from treatment. Focus group information and responses on the Client Satisfaction Questionnaire will be used to assess whether the findings might be biased because of resentful demoralization.

A baseline equivalency analysis for the Admission Phase and for the Attendance Phase will determine whether randomization has resulted in balance between study groups on baseline variables that may affect outcomes (e.g., age, race/ethnicity, primary drug problem, motivation). First, bivariate tests of group differences will be conducted on selected baseline variables, including those measures that have been shown in previous studies to covary with study outcomes. Second, variables (if any) that significantly differ between groups will be entered into a logistic regression model in which the dichotomous outcome variable is group membership. Measures that are significant predictors of group membership in this model will be used as covariates in subsequent outcome analyses. Although failure to find differences at baseline will not guarantee that the groups are equivalent, since they could still differ on unmeasured characteristics, it does rule out differences on those characteristics that are assessed.

Because of possible analysis problems caused by missing data, the main strategy to reduce missing data will be to train and monitor interviewers to ensure that data are collected at the designated assessment points from all participants and that that interviews are reviewed for skipped questions. ISAP's Data Management Center will regularly provide reports to research staff of the amount and pattern of missing or incorrect data so that data problems can be

resolved early. In analyses, missing data will be explored through frequency distributions. Missing data will be addressed using maximum likelihood (ML) or multiple imputation (MI) estimates from incomplete data (Little & Rubin, 1987; Shafer & Graham, 2002). Alternatively, statistical techniques that allow for missing data may be used (e.g., generalized linear models).

On a related issue, sample attrition due to participants dropping out of the study or inability to locate participants for follow-up interviews may result in biased estimation of intervention effects. Every effort will be made to retain all participants through the intervention and to interview all participants at follow-up. The tracking and locating procedures described above should minimize attrition. Note that since treatment and criminal justice records data will be available for virtually all study participants, attrition should not be a problem for enrollment, attendance, rearrest, or reincarceration. To check on attrition, we will examine the following questions regarding study dropouts (Hansen et al., 1985): (1) Do dropouts differ from non-dropouts on baseline measures of key demographic variables and dependent variables? (2) Do the rates of attrition differ across the study groups? (3) Do the baseline scores for dropouts differ across the study groups? Although some attrition is expected, the main issue is whether those with data for hypothesis testing differ between study groups on variables that may bias treatment effect estimates or that may limit generalizability of those estimates. If correlates of loss to follow-up are non-systematic across groups, we can be reasonably certain that the outcomes are not biased due to differential attrition. Although aggressive follow-up of clients can limit this problem, during analysis we will check on possible bias by examining arrests and incarcerations from criminal justice records, which will be available for virtually all study participants. Additionally, using baseline characteristics, selection bias models (e.g., Heckman two-step models) may be used to assess the sensitivity of key results to the possibility of such bias (Heckman, 1979).

Although the validity of self-report by clients of their behavior is often in question, prior research indicates that self-report interviews, when properly conducted, are generally reliable and valid in measuring drug and alcohol use (Buchan, Dennis, Tims, & Diamond, 2002; Chou, Hser, & Anglin, 1996; Darke, 1998) and criminal involvement (Elliot, Huizinga, & Ageton, 1982; Junger-Tas & Marshall, 1999; Thornberry & Krohn, 2000). Biological-based data increases the credibility of findings from self-report, but such data cannot reveal distant use or long-term patterns of use, nor can criminal justice records verify criminal behavior that does not come to official attention. Still, policy makers prefer objective measures of criminal justice involvement to self-reported measures. For the proposed study, we will use several procedures to increase the reliability and validity of self-report data. First, interviewers will assure participants that information that they provide as part of research will not be revealed to parole or other agencies, will not become part of their parole or treatment records, and is protected by a certificate of confidentiality. Second, interviewers will inform participants at the start of the follow-up interview that they will be asked to provide a urine specimen after the interview that will be tested for illicit drugs. Third, with respect to criminal justice system involvement, we will obtain official arrest and incarceration records from the California Department of Justice and the California Department of Corrections and Rehabilitation, which can be used to verify self-reported arrest and incarceration.

HYPOTHESIS TESTING

For the Admission Phase, the independent variables are Admission Incentive vs. Admission Comparison. For the Attendance Phase, the independent variables are Attendance Incentive vs. Attendance Comparison.

Primary dependent variables will be the proximal outcomes of treatment admission and retention. Secondary dependent variables will be the distal outcomes of substance use, crime, and psychosocial functioning, including employment, education, family relationships, psychological functioning, and HIV risk.

Treatment admission. Whether study participants completed intake for admission to the Walden House residential program and the outpatient program will be based data from program records. Time to admission, calculated from date of parole release to date of enrollment, will also be examined.

Treatment retention. Retention will be measured as both a categorical and a continuous variable. Treatment completion will be coded as yes or no and will be defined as attending the Walden House program for 26 weeks or leaving under favorable circumstances (e.g., clinically approved early discharge, transfer to another program, moving to another county). Treatment retention will be measured as the number of days of attendance at Walden House (up to a maximum of 26 weeks or 180 days).

Substance use. For the follow-up period, recent substance use will be defined as either self-report of use or a positive drug test result. Recency and frequency measures of substance use from the CJ-DATS form will also be used.

Criminal justice involvement and criminal activity. State criminal justice records will be used to determine the number and type of rearrest or reincarceration and the number and type of case dispositions (probation, jail, prison, technical violation, or new conviction) over the 18-month period following release to parole (covering the six-month intervention period and the 12-month follow-up period). These measures will also be considered as binary variables (i.e., any arrest during the specified period vs. none, reincarceration vs. none). Since criminal justice history variables are event based with specific dates, we will also be able to calculate time to rearrest or reincarceration. On the basis of self-report responses on the CJ-DATS form, crime outcomes will also include the total number of crimes committed and the number of crimes committed within specified crime categories (i.e., crimes against persons, property crimes, drug crimes, and other crimes).

Psychosocial functioning. Data on employment, education, and family relationships over the follow-up period are collected by self-report from the CJ-DATS form. Employment variables include employment status, type of job (if employed), hours worked per month, and average monthly income over the previous six-month period. Education variables include type of education (e.g., years of education, GED, vocational training) and any diplomas or certificates obtained. Family relationship variables include living arrangements and number of days that participant had problems getting along with family and others. Psychological functioning will be measured by the composite score from the BSI. HIV-related behaviors (risky sex and drug use) will include items from the CJ-DATS form.

Hypothesis tests are based on the assumption of group equivalence due to random assignment. However, if preliminary analysis indicates significant baseline differences, then additional control variables will be included in the analyses. Hypotheses will be tested using a two-sided .05 level of significance.

Hypotheses will initially be tested using t-tests and chi-square tests. T-tests will be used to conduct pairwise comparisons of participants in the study groups on outcomes measured as a single continuous variable. For categorical and binary outcome variables, we will use chi-square analysis. If covariates are required, analyses will be extended to ordinary least squares (OLS) or logistic regression as appropriate to the scale properties of the dependent variable. Because of missing data, inclusion of covariates, and/or repeated measures for binary outcomes, analyses may be extended to generalized linear models (McCullagh & Nelder, 1989). Structural equation modeling will be used to determine whether the effect of incentives on distal outcomes is mediated by program admission, treatment activities, admission, or retention (Kaplan, 2000).

For each hypothesis, an effect size will be calculated. The index of effect size will be the standardized mean difference (calculated as the difference between two groups divided by the pooled standard deviation); for proportions, the equivalent effect size is calculated using the arc sine transformation (Lipsey & Wilson, 2001). An effect size for study outcomes will provide a

quantitative indication of the magnitude of the difference between groups; it will also be useful in calculating power for any future study of this intervention.

The main approach to estimating treatment effects will be an intent-to-treat (ITT) analysis. This approach provides an unbiased estimate of the causal effect of random assignment (or the offer of treatment). But since there may be noncompliance and crossover from one group to another (despite the best efforts of the researchers to prevent it), the ITT approach does not provide an estimate of the causal effect of receipt of treatment, which is what treatment providers and policy makers are mainly interested in. If compliance is a problem, we will supplement ITT with an analysis that provides an estimate of the more clinically relevant Complier Average Causal Effect (CACE) (Dunn, Maracy, & Tomenson, 2005; Little & Yau, 1998). According to CACE methodology, owing to randomization, the proportion of compliers in the control group (an unobserved latent class) is, on average, the same as the proportion of compliers in the treatment group. The CACE represents a difference of outcomes between these two groups that is an unbiased estimate of the treatment effect among compliers.

OTHER ANALYSES

Additional analyses, while not testing specific hypotheses, will address related topics of interest, including, for example, responsiveness to the CM intervention by risk level and Anti-Social Personality Disorder, influence of motivation on outcomes, impulsiveness, time to dropout or rearrest, and predictors of levels of participation. OLS will be used to assess the association of participant characteristics with continuous dependent variables, and logistic regression will be used to assess the association of characteristics with binary variables. For date-based outcomes, Cox proportional hazards regression (Hosmer & Lemeshow, 1999) will be used to analyze elapsed time to a particular event (e.g., time to treatment enrollment or dropout, time to rearrest). This technique allows for the inclusion of covariates to control for any measured baseline differences between the groups. Although cell sizes may be too small to support strong conclusions about differential outcomes by subgroups (e.g., race/ethnicity, primary drug), subgroup findings may suggest either refinements in the protocol or hypotheses to be considered in future studies.

QUALITATIVE ANALYSES

Data relevant to answering the research questions (Aim 4) regarding the acceptability, satisfaction, and sustainability of the use of incentives to increase enrollment and retention among staff and clients will include summaries of the monthly meetings between research and treatment staff; transcripts of the Information Session, Intervention Development Workgroups and focus groups with staff and clients; and on the Client Satisfaction Questionnaire (clients) and Dimensions of Sustainability Questionnaire (staff). The richest source of information is expected to be the focus groups. The audio tapes of the focus groups will be transcribed by a word processor experienced in focus group transcription. The transcript will be checked for accuracy by the focus group facilitator (Hall, Co-I) and note taker, and basic demographic information on each focus group member will be added. Analyses will be conducted in an iterative process according to established procedures for qualitative research (Creswell, 1994; Huberman & Miles, 1994; Marshall & Rossman, 1995). This involves the repeated reading of the focus group transcripts and Workgroup and meeting summaries and coding of the text to identify emerging issues and themes relevant to questions of interest. Using ATLAS.ti, a software program designed specifically for qualitative data analysis, a content analysis of the transcript will be undertaken separately by two analysts (Hall, Co-I; Nelson, research assistant) trained in qualitative methods (Krueger, 1994; Morgan, 1997). During content analysis, the codes are developed. Each analyst does a rough coding of the transcript, pulling out themes related to the research questions, but also creating codes for other themes or topics that emerge. After codes are developed, the analysts work together to create a master code list. Analysts then

code a new transcript or section. Analysts would have to agree on 80% or more of the codes assigned. If this level of agreement is not attained, discrepant codes are discussed and more carefully defined. Then, the coders work on a new section with the refined codes.

ATLAS.ti uses the concept of the hermeneutic unit to organize sets of data (each set is considered a unit). Coding “families” can be created, allowing several codes in one analytical query that permits deeply layered investigations of code relationships. Using code families and hyperlinks between multiple hermeneutic units, themes identified in focus group transcripts can be connected. Links can be arranged hierarchically (e.g., with a primary group concept linked to several subsidiary concepts), permitting the researchers to visualize relationships, and thereby create richer possibilities for interpretation. Analysts code each statement according to a list of topics related to the research questions (e.g., positive and negative experiences with the intervention, suggestions for improvement, satisfaction, acceptability, sustainability), supplementing these with additional topics of interest that emerge during analysis of the transcripts. Using all sources of data, answers to the research question will be presented in a narrative format that conceptually summarizes data from the Information Seminar, the Intervention Development Workgroups, the focus groups, and the satisfaction and sustainability questionnaires.

DISSEMINATION

Study findings will be disseminated through reports, articles, and presentations directed to substance abuse and criminal justice researchers, policy makers, and providers. Presentations will be made at regional and national professional conferences (e.g., Addiction Health Services Research, American Psychological Association, American Society of Criminology, American Public Health Association, College on Problems of Drug Dependence). Other suitable forums will be meetings sponsored by federal agencies (e.g., NIDA, NIJ, CSAT) and by professional organizations (e.g., American Correctional Association, American Probation and Parole Association, International Community Corrections Association, Therapeutic Communities of America). Beginning in Year 2, we plan to prepare at least two papers per year on study findings or on the use of CM with drug-abusing offender treatment populations. Academic journals for publication include Behavioral Sciences and the Law, Criminal Justice and Behavior, Drug and Alcohol Dependence, Journal of Offender Rehabilitation, Journal of Substance Abuse Treatment, and Prison Journal. Depending journal requirements, articles will include the items specified in the CONSORT statement for reporting on randomized trials (Moher, Schulz, & Altman, 2001). Where appropriate, reports, presentations, and articles will be posted on the ISAP web site.

APPENDIX

APPENDIX A - EVALUATION TO SIGN A CONSENT FORM FOR RESEARCH

Participant Data:

Name: _____

Date of Birth: _____

Directions:

Make a subjective judgment regarding item 1 below. Ask the participant questions 2 through 5. The evaluator may select the appropriate language to use in formulating the questions in order to assist the participant's understanding.

Items:

- 1) Is the participant alert and able to communicate with the examiner? ____ Yes ____ No
- 2) Ask the participant to name a potential risk incurred as a result of participating in the study.

- 3) Ask the participant to name at least two (2) things that will be expected of him/her in terms of participant cooperation during the study.

- 4) Ask the participant to explain what he/she would do if he/she decides that they no longer wish to participate in the study.

- 5) Ask the participant to explain what he/she would do if he/she is experiencing distress or other negative reaction to participation.

I hereby certify that the above participant is alert, able to communicate and give acceptable answers to items 2-5 above.

Evaluator

Date

APPENDIX B - Voucher Incentive Quiz

(the following is adapted from the HAART Training Manual, pp.775-776)

1. I will earn vouchers for _____
 - a) attending research interviews.
 - b) providing drug-free urine samples each week.
 - c) attending treatment each day.

2. How do I earn the maximum number of vouchers?
 - a) Attending my treatment as scheduled.
 - b) Staying in treatment.
 - c) Being in treatment continuously for 22 weeks.
 - d) All of the above.

3. At the first week, I will receive _____ in vouchers per day, if I attend treatment “on schedule.”
 - a) \$0.50
 - b) \$2.50
 - c) \$3.60
 - d) \$12.50

4. If I go AWOL from the treatment program and return to treatment what happens?
 - a) The amount I already earned will still be there.
 - b) I will lose all my money and have to start over again.

5. On each day of Week 2, my vouchers will be worth _____ more than they were worth during Week 1, if I continue to attend treatment sessions “on schedule” each day.
 - a) \$0.33
 - b) \$0.50
 - c) \$1.00
 - d) \$6.00

6. If I miss a single treatment day at the scheduled time, the voucher value will be reset to _____ per day.
 - a) \$0
 - b) The value I earned the day before I missed a treatment day.
 - c) The value I earned two weeks ago.
 - d) The initial low value of \$2.50 per day

7. What happens if I am sick or can't attend treatment session for personal reasons?
 - a) I will have to reschedule the treatment session.
 - b) It doesn't matter if I miss one session, as long as I don't miss a whole week.
 - c) If I don't have a legitimate excuse, including WH staff approval or a verifiable doctor's note, I will receive no voucher credits until the Monday after I return to treatment. Also, my voucher value will be reset to \$2.50 per day for two weeks of continuous attendance, and then on the third week my voucher value will go back to what it was before I missed a treatment day.

- d) If there is a legitimate excuse, with prior WH staff approval or a verifiable doctor's note, the rate of voucher earnings will continue for hospital stays of 1-3 days, or for longer absences will simply be paused and I will resume my earning levels when I return.
- e) Both c and d.

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