Published in final edited form as:

Eval Program Plann. 2009 August ; 32(3): 204–212. doi:10.1016/j.evalprogplan.2008.12.003.

Client and program factors associated with dropout from court mandated drug treatment

Elizabeth Evans, M.A., Libo Li, Ph.D., and Yih-Ing Hser, Ph.D.

UCLA Integrated Substance Abuse Programs, Semel Institute for Neuroscience and Human Behavior, Department of Psychiatry and Biobehavioral Sciences, David Geffen School of Medicine, University of California, Los Angeles, CA 90025, USA

Abstract

To examine why court mandated offenders dropout of drug treatment and to compare their characteristics, treatment experiences, perceptions, and outcomes with treatment completers, we analyzed self-reported and administrative data on 542 dropouts (59%) and 384 completers (41%) assessed for Proposition 36 treatment by thirty sites in five California counties during 2004. At intake, dropouts had lengthier criminal histories, lower treatment motivation, more severe employment and psychiatric problems, and more were using drugs, especially heroin. Relatively fewer dropouts received residential treatment and their retention was much shorter. A similar proportion of dropouts received services as completers and the mean number of services received per day by dropouts was generally more, especially to address psychiatric problems, during the first three months of treatment. The most commonly offender-reported reasons for dropout included low treatment motivation (46.2%) and the difficulty of the Proposition 36 program (20.0%). Consequences for dropout included incarceration (25.3%) and permission to try treatment again (24.0%). Several factors predicting drug treatment dropout were identified. Both groups demonstrated improved functioning at one-year follow-up, but fewer dropouts had a successful outcome (34.5% vs. 59.1%) and their recidivism rate was significantly higher (62.9% vs. 28.9%) even after controlling for baseline differences. Understanding factors associated with drug treatment dropout can aid efforts to improve completion rates, outcomes, and overall effectiveness of California's Proposition 36 program. Findings may also aid a broader audience of researchers and policy analysts who are charged with designing and evaluating criminal-justice diversion programs for treating drug-addicted offenders.

Keywords

Drug treatment dropouts; Outcomes; Drug diversion program evaluation; Proposition 36 offenders

1. Introduction

California's voter-initiated Proposition 36 (Prop 36) has been referring approximately 50,000 drug offenders to community-based drug treatment each year since its inception in 2001. The Prop 36 program was intended to preserve jail and prison cells for serious and violent offenders;

Corresponding author: Elizabeth Evans, Integrated Substance Abuse Programs, Semel Institute for Neuroscience and Human Behavior, David Geffen School of Medicine at UCLA, 1640 S. Sepulveda Blvd., Suite 200, Los Angeles, CA 90025, Tel: 310-267-5315, Email: E-mail: laevans@ucla.edu.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

enhance public safety by reducing drug-related crime; and improve public health by reducing drug abuse through proven and effective treatment strategies (California Department of Alcohol and Drug Programs, 2008). One notable success of Prop 36 implementation is that about 70% of offenders who agree to enter treatment go on to do so. However, Prop 36 program participation rates drop off dramatically thereafter, with only about 32% of offenders who enter treatment actually completing it (UCLA ISAP, 2006).

Completion of treatment is a significant milestone with legal implications under Prop 36. Participants who successfully complete the Prop 36 program can have expunged the criminal arrest and conviction that made them eligible for the Prop 36 program. Also, the program legally entitles offenders up to three chances to succeed in treatment. Depending on the number of chances an offender has utilized, not completing treatment can be counted as a violation of the conditions of the Prop 36 program, making an offender either eligible for additional treatment opportunities or subject to immediate criminal justice sanctions.

In addition to the legal aspects of completing treatment, statewide Prop 36 evaluation reports have provided evidence demonstrating that treatment completion is related to improved offender functioning in multiple domains over time. Compared to non-completers, treatment completers had significantly lower re-arrest and conviction rates and savings per offender were more than twice as high over a 30-month follow-up period (UCLA ISAP, 2006). Completion rates by county have also been documented, with rates remaining between 20% and 50% in most counties (UCLA ISAP, 2006). Other research has examined differences in treatment status by Prop 36 offender characteristics and these analyses showed completion rates to be lower for African-Americans and Hispanics (vs. other race/ethnicities), parolees (vs. probationers), and heroin users (vs. users of other drug types) (UCLA ISAP, 2006).

In contrast to the large amount of research conducted on drug treatment completion and retention generally, very little research has been conducted on Prop 36 treatment completion. The work that has been done has been useful for stimulating dialogue on whether to continue funding for the Prop 36 program (Little Hoover Commission, 2008). However a noticeable omission is that very little information has been made available on the much larger proportion (approximately 68%) of Prop 36 offenders who enter treatment but do not complete it, that is, the Prop 36 drug treatment dropouts.

The existing literature has identified a number of client-level characteristics associated with drug treatment dropout. Although studies indicate that some individuals may leave treatment early due to greater resources and higher levels of functioning (Meier et al., 2006), typically problems among treatment dropouts are more severe when compared with those of completers, and those problems have been shown to cut across multiple areas of functioning such as socio-economic status, mental health, drug use patterns, criminal history, motivation level, and personal and social relationships. For example, drug treatment dropout has been associated with less education (Butzin et al., 2002; Knight et al., 2001), unemployment (Butzin et al., 2002; Choi and Ryan, 2006), younger age (Choi and Ryan, 2006; Sinha et al., 2003; Siqueland et al., 1998), African-American race (King & Canada, 2004; Scott-Lennox et al., 2000), co-occurring psychiatric diagnoses (Amodeo et al., 2008; Siqueland et al., 1998), more frequent or recent drug use (Amodeo et al., 2008; Butzin et al., 2002), primary use of drugs other than alcohol (Callaghan, 2003) (particularly heroin [Choi and Ryan, 2006] or cocaine [King & Canada, 2004; Siqueland et al., 1998]), low motivation for treatment (Callaghan et al., 2005), a greater number of recent arrests (Knight et al., 2001), cognitive deficits (McKellar et al., 2006), a history of childhood abuse or neglect (Kang et al., 2002), caring for dependent children (Scott-Lennox et al., 2000), poorer family and social functioning (Sayre et al., 2002), peer deviance (Knight et al., 2001), and living situation (Amodeo et al., 2008). Other literature has highlighted the influence of criminal justice status on drug treatment continuation and dropout

(Beynon et al., 2006; Daughters et al., 2008; Harrison et al., 2007; Perron & Bright, 2008). A few studies have focused attention on other aspects of drug treatment dropout such as client perspectives on dropout (Ball et al., 2006), treatment program factors associated with dropout (Meier & Best, 2006; Beardsley et al., 2003; Meier et al., 2006; Marrero et al., 2005; Harrison et al., 2007; Helmus et al., 2001; McKellar et al., 2006), and characteristics of individuals who dropout within the first 30 days after admission (De Weert-Van Oene et al., 2001).

Across studies, the definition of treatment dropout and completion may vary. Some studies have utilized official records on status at exit from care as documented by treatment staff (Beardsley et al., 2003; Bell et al., 2006; Beynon et al., 2006; Callaghan, 2003; Choi & Ryan, 2006; Knight et al., 2001; McKellar et al., 2006; Perron & Bright, 2008; Scott-Lennon et al., 2000). However, given that information on discharge status may be missing, many clients enter care repeatedly within a short timeframe, and determination of status may vary by treatment staff or site, others have analyzed retention or service utilization measures to construct indicators of treatment engagement, non-compliance, completion or dropout (King & Canada, 2004; Meier et al., 2006; Sayre et al., 2002; Siqueland et al., 1998), or relied on self-reported measures of treatment discharge status (Marrero et al., 2005).

As for Prop 36, the only information that is available on treatment dropouts is provided within a cost-benefit framework and is primarily focused on recidivism (UCLA ISAP, 2006). No other information has been provided to answer basic questions regarding this significant sub-group. Who are the Prop 36 treatment dropouts, what are their reasons for not completing treatment, and what happens to these individuals over time?

This article focuses on individuals who enter but dropout of Proposition 36 drug treatment before completing it. Utilizing self-reported and official indicators of treatment dropout and completion, we address the following research questions: (1) how do Proposition 36 treatment dropouts differ from completers in characteristics, problem severity, criminal history, and motivation level at assessment for treatment? (2) are there differences in the type and amount of treatment services that are received by dropouts compared to completers? (3) what reasons do Proposition 36 offenders give for dropping out of treatment? (4) what are the criminal justice consequences associated with not completing treatment as reported by Proposition 36 treatment dropouts? (5) what are the predictors of treatment dropout? (6) do outcomes (drug use, recidivism, incarceration, employment) differ between the two groups? We hypothesized that compared to treatment completers, Prop 36 treatment dropouts would be more criminally severe, have a more severe substance abuse problem, and demonstrate a lower treatment motivation level at intake. We also expected that dropouts would have a much shorter stay in treatment and that they would receive very few services. We expected predictors of dropout to be congruent with the literature on drug treatment dropout. Also, we expected offender reasons for dropout to vary, but because the Prop 36 program provides offenders with several opportunities to successfully complete treatment, we expected that the primary consequence for dropout would be a return to treatment. Finally, we expected dropouts to have poorer outcomes (higher rates of re-arrest, drug use, incarceration, and unemployment at follow-up) than treatment completers one year after entry into the Prop 36 program.

Prop 36 has introduced many new drug offenders to treatment for the very first time (Hser et al., 2007; Longshore et al., 2004, 2005) but approximately 68% of offenders who are eligible for treatment actually enter care and only 32% complete it. The broader implication of these two statistics is that less than one-quarter of eligible drug offenders actually take full advantage of the opportunity for treatment that is offered by the Prop 36 program. This issue of treatment as a missed opportunity could seriously jeopardize the effectiveness of Prop 36 as a criminal justice diversion option in California, and it highlights the need to identify strategies for improving both policies and programming that guide the Prop 36 program (Little Hoover

Commission, 2008). Issues related to the problem of treatment no-shows have been examined elsewhere (Evans et al., in press). Increased understanding of barriers to treatment completion as well as offender attitudes and experiences of treatment dropout are needed to help stakeholders make appropriate modifications to improve the effectiveness of the Prop 36 program.

2. Methods

Data analyzed in this study were derived from “Treatment System Impact and Outcomes of Proposition 36 (TSI),” a NIDA-funded multi-site prospective treatment outcome study designed to assess the impact of Prop 36 on California’s drug treatment delivery system and evaluate the effectiveness of services delivered. Thirty treatment assessment sites in five counties were selected for participation based on geographic location, population size, and diversity of Prop 36 implementation strategy (see Hser, Teruya, Evans et al., 2003 for additional information). County assessment center or treatment program staff collected data from all Prop 36 participants assessed for treatment in the selected counties during 2004. Of participants who had completed the intake assessment (n=7,418) a sample of 1,588 was randomly selected for follow-up by telephone with UCLA-trained interviewers at 3-month and 12-month post-intake assessment. Participants were paid \$10 and \$15 respectively. Additionally, arrest histories were acquired on all participants from the California Department of Justice. The Institutional Review Boards at UCLA and at the California Health and Human Services Agency approved all study procedures.

Of the 1,588 targeted, 1,465 completed the 3-month follow-up interview (48 were incarcerated, 3 were deceased, 6 refused, and the remainder was not found or was unable to complete the interview) and 1,290 completed the 12-month follow-up interview (73 were incarcerated, 12 were deceased, 9 refused, and the remainder was not found or was unable to complete the interview). Excluding the deceased and incarcerated from the interview pool, the interview completion rates were 95% and 86%, respectively. Comparisons between those who completed the interview and those who did not complete the interview revealed no statistically significant differences in all variables examined (county, treatment modality, age, race/ethnicity, marital status, education, employment, lifetime arrest, and primary drug problem) except for gender. More females (30% vs. 20%) were in the follow-up completion group than in the non-completion group. Follow-up rates among treatment dropouts were very similar to rates among treatment completers at both the 3-month (91% and 95%, respectively) and 12-month (80% and 84%, respectively) time-points.

This analysis focuses on 926 Prop 36 offenders in TSI who completed the 12-month follow-up interview and also had a known treatment discharge status. A comparison of the 926 individuals included in analysis with the 364 individuals omitted from it revealed no statistically significant differences on baseline race/ethnicity, gender, employment, marital status or education, however differences were revealed on primary drug type, modality, and county of residence. Individuals omitted from analysis were less likely to use methamphetamine or be treated in residential settings, and more were living in County 4. Under Prop 36, the definition of treatment completion can vary by county but typical criteria require completion of the treatment plan which often consists of remaining in treatment for the recommended length of time and meeting other goals of treatment. To determine treatment discharge status for this analysis, we utilized self-reported responses to items collected at the TSI 3-month follow-up interview asking whether the offender completed treatment under Proposition 36. Of those without a self-reported indicator of discharge status, official records indicating treatment discharge status from the California Alcohol and Drug Data System (CADDs) were searched for the 18 months following entry into treatment under Prop 36. Self-

reported discharge status was different from CADDIS discharge status in 34 of the 926 cases (3.7%) examined and in these instances we deferred to the self-reported discharge status.

Our “dropout” category includes 542 (59%) individuals who self-reported treatment dropout (n=236) or had a CADDIS discharge status of “left before completion” (n=306). Of these, 15.7% were making satisfactory progress in treatment and 84.3% were not, just prior to dropout. Our “completer” category includes 384 (41%) individuals who self-reported treatment completion (n=60) or had a CADDIS discharge status of “completed” (n=324).

2.1. Instruments and measures

Baseline assessment included the *Addiction Severity Index (ASI)*, a structured interview that captures demographic information and also assesses problem severity in seven areas: alcohol and drug use, employment, family and social relationships, legal, psychiatric, and medical status (McLellan et al., 1980; 1992). A composite score can be computed for each scale to indicate severity in that area; scores range from 0 to 1 with higher scores indicating greater severity. The ASI was repeated at the 12-month follow-up interview.

Treatment motivation was measured at baseline with the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) 8D, a 19-item questionnaire which assesses readiness for change among drug and alcohol abusers (Miller & Tonigan, 1996). Variables were constructed to measure aspects of clients’ motivation for treatment. Treatment motivation was measured by an overall total score and by three sub-scales: problem recognition (alpha=.91) measures patients’ self-assessment of drug use problem, desire for help (alpha=.83) assesses transition from a general acknowledgment of a drug problem to the individual’s recognition of his or her need for help, and readiness for treatment (alpha=.63) assesses willingness to enter and comply with treatment, and represents the completion of the above transition and the beginning of the action stage. Alpha levels were comparable to other similar populations (Burrow-Sanchez & Lundberg, 2007).

Treatment process assessment included the *Treatment Services Review (TSR)* (McLellan et al., 1992), an instrument used to document services provided during treatment as reported by the participants at the 3-month follow-up interview, including the number of professional services and discussion sessions received in the previous 3 months in each of the seven problem areas of the ASI (e.g., alcohol and drug use, employment, family etc.). To account for the association between retention and number of services received, we calculated *service intensity by day* by summing up the number of times an individual self-reported receipt of services (either in the program or through other sources) across the respective ASI domains in the first 3 months of treatment and divided the number of services received by retention. Few offenders received services other than for drug, alcohol, and psychiatric problems and so we aggregated services received into four categories: total, drug and alcohol, psychiatric, and other. The other category includes services to address needs related to medical problems, employment, family issues, legal services, survival skills, parenting and childcare needs, a history of abuse, and HIV education and support services.

Days of stay in treatment, or retention was defined by the number of days from admission to the last day of treatment or interview date, whichever occurred earlier.

Proposition 36 offender attitudes and experiences

Barriers to treatment completion: At the 3-month follow-up interview, offenders were asked, “What do you think is the major barrier (or problem) to completing Prop 36 treatment?” Responses were coded into ten categories and then sorted into client-level and system-level barriers.

Consequences of treatment dropout: At the 3-month follow-up interview, treatment dropouts were asked “What did the courts/judge do in response to your non-completion of treatment?” Responses were coded into seven categories.

Outcomes—*Successful outcome* was constructed as a composite index by using four individual items from the Addiction Severity Index indicating no use of any drug, no arrest, no incarceration, and being employed in the 30 days prior to the 12-month follow-up interview.

Recidivism was calculated using arrest history records acquired from the California Department of Justice on all individuals. Arrests that occurred 12 months before and after the baseline assessment for Proposition 36 treatment were analyzed.

2.2. Statistical Analyses

Differences between treatment dropouts and completers in characteristics and history of substance abuse, treatment, and criminal involvement at intake as well as the 12 month outcomes after the assessment were compared by using Pearson chi-square test (or the Fisher’s exact test for small cell sizes) for categorical measures and the two-sample Student’s t test (or Satterthwaite’s t test when the homogeneity of variance was rejected) for continuous measures. Then a logistic regression was conducted to identify the baseline and during treatment predictors of dropouts after controlling for some demographic variables such as age, gender, and ethnicity. Selection of variables for inclusion in the logistic regression was informed by a review of the relevant literature and also incorporated baseline variables that were significantly different between groups at $p < 0.05$, utilizing only one item when there were significant items that measured similar behavior. As an example, several measures of criminal involvement were significantly different at baseline but only “No. of arrests in past 12 months” was included in the logistic regression.

3. Results

3.1. Characteristics of Proposition 36 drug treatment dropouts

As shown in Table 1, Proposition 36 treatment dropouts resembled treatment completers on many characteristics at intake assessment. For both groups, mean age was approximately 37 years, most were men, and about half were White, one-quarter was Hispanic, one-sixth was African-American, and very few were Asian/Pacific Islander or other race/ethnicity. Means years of education (about 12), employment status (less than half were working, either full- or part-time), and proportion who were homeless (6-9%) were also similar across groups. The ASI composite score indicated that the severity of problems was comparable in areas related to alcohol and drug use, family relationships, legal matters, and medical illness. Another similarity, about 40% of both groups had experienced past physical or sexual abuse.

Despite these similarities, there were also several significant differences in characteristics between Prop 36 treatment dropouts and completers. Fewer dropouts had dependent children living with them (38.3% vs. 52.8%) at intake assessment and, as indicated by the ASI composite scores, dropouts had more severe problems related to employment (0.73 vs. 0.68) and psychiatric issues (0.18 vs. 0.15). Furthermore, dropouts had lower overall motivation for treatment (4.07 vs. 4.18), including in measures of desire for help (4.07 vs. 4.22) and readiness for treatment (4.38 vs. 4.54), despite a similar level of problem recognition at assessment for treatment. Finally, there was variation in the distribution of treatment dropouts and completers by county.

Differences between dropouts and completers were also apparent in drug use history (Table 1). Compared to completers, more dropouts had used drugs within the prior 30 days (74.9%

vs. 59.4%). Fewer dropouts reported methamphetamine (50.0% vs. 61.9%) as the most common primary drug problem and more reported use of other drug types, especially heroin (11.1% vs. 5.8%), but also marijuana (15.8% vs. 11.1%) and cocaine (12.8% vs. 10.3%). Both groups had first initiated primary drug use at age 20 and had been using their primary drug for about 20 years, very few (about 17%) reported being injection drug users, and about two-thirds had entered treatment previously.

More dissimilarity between dropouts and completers was revealed when examining offenders' criminal history and recent experiences with the criminal justice system (Table 1). In the twelve months before entering Prop 36, a similar percentage had been arrested (79.7% and 82.6%) but dropouts had a greater number of arrests (2.1 vs. 1.8). Dropouts experienced their first arrest at a younger age (20.3 vs. 22.1) and had more lifetime arrests (11.6 vs. 10.3) (with significantly more arrests for violent and "other" offenses, data not shown) and convictions (13.5 vs. 11.8). Dropouts had also spent more months over their lifetime in jail or prison (26.1 vs. 22.5) however this difference was not statistically significant ($p=0.06$, data not shown). In the 30 days prior to Prop 36 treatment assessment, significantly more dropouts had been arrested (36.2% vs. 26.3%) or incarcerated (49.1% vs. 40.5%). Very few offenders (7%) in both groups reported being on parole at Prop 36 treatment assessment (data not shown).

Finally, to explore differences in psychiatric severity further, individual ASI items on mental health status were examined but due to space constraints, however, data are not shown in the tables but are instead only summarized here. A significant proportion of both dropouts (40.8%) and completers (37.3%) reported having had psychiatric problems in the 30 days prior to assessment, but the only difference found to be statistically significant was that slightly more dropouts than completers reported depression (28.2% vs. 21.8%) and more of them also reported having attempted suicide (1.2% vs. 0.0%). Lifetime measures of depression (50.7% vs. 50.7%) and attempted suicide (17.2% vs. 14.9%) were similar for dropouts and completers however. All other measures of mental health functioning indicated no statistically significant group differences in the 30 days prior to assessment (and also over the lifetime), even though in many measures, slightly more dropouts reported problems than completers. There was also no statistically significant difference in the proportion of dropouts and completers who received medication for psychiatric problems (9.9%, 10.6%) or a pension for a psychiatric disability (3.2%, 5.9%).

3.2. Type and amount of treatment services received

More dropouts than completers were treated in outpatient (79.7% vs. 70.0%) or methadone maintenance (4.9% vs. 1.3%) than in residential (15.5% vs. 28.7%) settings (Table 2). Surprisingly, while a significant percentage of dropouts left treatment within the first 30 days (19.6%), almost half (46.2%) had a retention of ≥ 90 days and their mean length of stay was approximately 112 days (117 for outpatient, 70 for residential, and 166 for methadone maintenance). In comparison, two-thirds of completers had a retention of ≥ 90 days and the mean length of stay among this group was approximately 198 days (229 for outpatient, 121 for residential, and 273 for methadone maintenance).

Virtually all dropouts (97.6%) and completers (99.0%) received some kind of treatment services. Regardless of discharge status, a similar proportion of both groups received services related to drug and alcohol use (95.7%, 97.9%) and psychiatric health (18.5%, 14.7%), but fewer dropouts received other types of services (69.0% vs. 80.6%). Also, service intensity, i.e., the number of services received per day in treatment, was greater among dropouts compared to completers for both the total amount of services received (3.7 vs. 2.2) and in the psychiatric domain (0.3 vs. 0.0).

3.3. Attitudes and experiences

As shown in Table 3, most offender-reported barriers to treatment completion were attributable to client-level factors, primarily lack of motivation for treatment (46.2%), however system-level factors were also cited, especially the concept that the Proposition 36 program was too hard or strict (20.0%). Other reasons for treatment dropout included denial of drug problems (11.7%), conflicts with work (6.3%), lack of needed services (6.1%), Proposition 36 fees cost too much money (3.9%), and dissatisfaction with treatment (2.2%). Very few offenders said that desire to use or relapse (1.6%), a bad environment (1.0%), or other factors (1.0%) were reasons for not completing Proposition 36 drug treatment.

The primary offender-reported consequences for Prop 36 treatment dropout (Table 3) were incarceration in jail or prison (25.3%), permission to try treatment again (24.0%), and nothing or unknown (20.2%), usually because the offender was waiting to be seen by a judge or the court system. Other consequences for treatment dropout included issuance of a probation or parole violation (18.0%), being kicked out of the Prop 36 program (9.0%), referral to drug court or another more intense criminal justice-supervised treatment option (2.2%), and other (1.3%).

3.4. Predictors of Prop 36 drug treatment dropout

The likelihood of Prop 36 drug treatment dropout was decreased by residing with dependent children, methamphetamine instead of other drugs (e.g., heroin, cocaine, marijuana) as the primary drug problem, greater readiness for treatment, and assignment to residential versus outpatient or methadone maintenance treatment (Table 4). Conversely, the likelihood of treatment dropout was increased by greater severity of psychiatric problems at intake and more arrests in the 12 months prior to intake. County of residence was also associated with the odds of dropping out of Prop 36 drug treatment. Although not statistically significant, the remaining predictors that were included in the regression were in the expected direction. No significant interaction terms were found between intensity of treatment services and prior criminal history (arrests or convictions over the lifetime or over the 12 months prior to assessment) or psychiatric severity at intake.

3.5. Outcomes

Both groups demonstrated improvements from intake assessment (Table 1) to the 12-month follow-up in all areas measured by the ASI (i.e., alcohol and drug use, employment, family etc.), however Prop 36 treatment dropouts had consistently worse outcomes compared to treatment completers (Table 5). As indicated by the ASI composite scores, at follow-up dropouts had more severe problems related to drugs (0.04 vs. 0.02), employment (0.64 vs. 0.48), legal matters (0.12 vs. 0.07), medical health (0.14 vs. 0.10), and psychiatric functioning (0.13 vs. 0.09). Severity of problems related to alcohol use and family were equivalent across groups. Furthermore, in the 30 days prior to follow-up, significantly fewer dropouts experienced a “successful outcome” (34.5% vs. 59.1%), i.e., more dropouts had used drugs (27.4% vs. 12.8%), been arrested (12.7% vs. 5.2%), or were incarcerated (31.8% vs. 9.7%), and fewer were employed (52.0% vs. 66.3%). From a broader perspective, a similar percentage of dropouts and completers had been arrested in the 12 months prior to their initial assessment for Prop 36 treatment (79.7% and 82.6%) and over this same time period dropouts had a higher mean number of arrests (2.1 vs. 1.8) (Table 1), but over the 12 months following initial assessment significantly more dropouts than completers recidivated (62.9% vs. 28.9%) and dropouts were arrested for more than twice as many offenses than completers (1.4 vs. 0.5) (Table 5). When controlling for significantly different variables ($p < 0.05$) at baseline all differences in outcomes remained however differences in the medical and psychiatric composite scores were no longer statistically significant.

4. Discussion

4.1. Key findings

Congruent with our hypotheses, at assessment for treatment, Prop 36 treatment dropouts were more criminally involved, they had more severe substance abuse problems, and dropouts demonstrated a lower motivation level for treatment than completers. Added to these differences, dropouts also had more severe problems related to employment and psychiatric health at assessment for treatment. Dropout rates were higher for outpatient and methadone maintenance treatment modalities and lower for residential care. As expected, dropouts had a much shorter stay in treatment, however, unexpectedly, almost half stayed in treatment for 90 days or more and 15.7% were making satisfactory progress in treatment just prior to dropout. Contrary to expectations, a similar proportion of dropouts received treatment services and the amount of services received per treatment day was generally more than the amount received by completers. Predictors of dropout were consistent with the literature and included greater severity of psychiatric problems at intake and more arrests 12 months prior to intake. Dropout likelihood was decreased by residing with dependent children, a drug other than methamphetamine (e.g. heroin, cocaine, marijuana) being the primary drug problem, higher readiness for treatment, and placement in residential care. There was not much variation in the reasons for drug treatment dropout but, unexpectedly, the primary consequence for dropout was criminal justice sanctions, followed by a return to treatment. Although functioning improved over time for both groups, fewer dropouts had a successful outcome 12 months following their entry into Prop 36 treatment (higher rates of re-arrest, drug use, incarceration, and unemployment) and more recidivated.

4.2. Limitations

Our study has several limitations. First, except for the official records obtained on arrests and criminal justice history, participant data are based on self-report, and as such is subject to concerns over reliability and validity. However, the instruments and procedures used in this study are among the most widely used in the substance abuse treatment field and have been validated in similar studies with this population (Hser et al., 2003; McLellan et al., 1992). Second, only five counties are included in the analysis, although the demographics of our sample are similar to that of the Proposition 36 statewide evaluation (Longshore, Urada, Evans et al., 2004). Third, Prop 36 offenders whose treatment discharge status remained unknown were omitted from analysis, but treatment discharge records were sought more than 18 months after admission and the decision to exclude cases with missing discharge information resulted from the intention to focus on the legal milestones signified by treatment dropout and completion under Prop 36 and also to be consistent with existing Prop 36 evaluation reports (Longshore, Urada, Evans et al., 2004). For these same reasons, offenders were coded as dropouts or completers even though research increasingly suggests that treatment retention may be a more appropriate measure than completion for capturing complex relationships between duration and outcomes (Zhang et al., 2003). Retention information was provided in Table 2. Fourth, analyses included limited treatment process factors and observed differences may be partially attributable to county-level variation in contextual or implementation factors, for example, variation in the definition of treatment completion, differences in the number and type of individuals served as well as in the type and quality of services that are available, and also variation in the degree of coordination and communication between drug treatment agencies and their criminal justice partners. When controlling for significantly different variables ($p < 0.05$) at baseline all differences in outcomes remained although differences in the medical and psychiatric composite scores were no longer statistically significant. Fifth, outcomes are limited to a 12-month period of observation, although measures of successful outcome and recidivism are consistent with statewide reports that applied a 30-month observation period (UCLA ISAP, 2006). Sixth, by definition, dropouts who do not stay long

enough to complete the program, especially those who dropout within the first 30 days, also do not have the same opportunity for services that others who stay longer experience and thus it would be expected that service utilization levels would be different. To address this issue, we focused on service intensity per day in treatment. Future analyses might also compare receipt of services within a set period of time (e.g., first 30 days) for dropouts who stayed a minimum of 30 days versus completers. Finally, dropout rates were higher in outpatient and methadone maintenance than in residential treatment, modality was a significant predictor of dropout, and under Prop 36 there are differences by modality in treatment length, accessibility (housing, transportation), service intensity, and completion requirements, but due to space considerations, analyses were not disaggregated by modality. Future research should examine whether the correlates of treatment dropout differ by modality.

4.3. Implications

Prop 36 or not, statistics indicate that most individuals who enter drug treatment in California do not complete it. Of all discharges from drug treatment in California during 2004, approximately 60% indicated dropout (SAMHSA, 2004) and this figure is not incongruent with the proportion of treatment dropouts and completers among Prop 36 offenders reported by this article, as well as by statewide Prop 36 evaluation reports. However, treatment dropout rates among Prop 36 offenders have remained higher than among offenders referred to treatment via other criminal justice mechanisms (e.g., drug court) but similar to or slightly lower than dropout rates among individuals who self-refer to treatment (UCLA ISAP, 2006). Is Prop 36 treatment associated with better short-term outcomes when compared to voluntary treatment but worse outcomes when compared to treatment provided through other criminal justice diversion options? More research is needed to answer this question. In any case, Prop 36 offenders continue to take up an increasing proportion of available drug treatment slots in California (Hser et al., 2007), approximately \$120 million in taxpayer funds are allocated to operate the Prop 36 program each year, and Prop 36 combines external motivators to change (i.e., legal pressures) with access to care and resources, thereby providing offenders with opportunities to make real changes to their drug use and associated criminal behavior. For these reasons, strategies are needed to improve the Prop 36 program and one area that is clearly worthy of focused attention is how to reduce dropout from drug treatment.

Our findings indicate that Prop 36 appears to be least effective with offenders who, perhaps arguably, need help the most. Many “tough to treat” clients (that is, individuals with more severe psychiatric problems, longer criminal justice histories, problems with more serious or harmful drugs, and those with employment problems, and low motivation for treatment) *did* enter treatment, but why did so few stay and complete it? While re-offending and relapse are common reasons in the literature for treatment dropout among offenders, offenders in our study said that low motivation for treatment was the primary reason for dropout, followed by the Prop 36 program itself being too hard or strict to complete. Furthermore, significant percentages of Prop 36 dropouts were making satisfactory progress in treatment just prior to dropout (15.7%) and others left treatment within the first 30 days following entry (19.6%). Finally, of particular importance, severity of psychiatric problems at intake was greater among dropouts, and psychiatric severity was a significant predictor of drug treatment dropout. Meeting mental health needs among Prop 36 offenders has been widely discussed by stakeholders, but this topic has been explored only recently (Conner & Grella, 2008) and many unknowns still exist regarding the needs, services utilization, and outcomes associated with this group.

To address these issues, first it should be repeated that treatment completion holds legal weight under Prop 36 and more investigation is needed to determine factors that would facilitate formal completion of treatment, especially among those making satisfactory progress at dropout.

Second, some literature indicates that early non-compliers are distinguishable from other types of treatment dropouts (De Weert-Van Oene et al., 2001; Stevens et al., 2008). Analysis of “early” Prop 36 treatment dropouts is needed so that treatment engagement strategies might be better targeted toward retaining these offenders in treatment. Third, our findings, in combination with the fact that the need for residential treatment exceeds capacity under Prop 36 in most counties, highlight the need to identify innovative treatment process and program factors, especially therapies to enhance motivation, increase treatment engagement and retention, and address “special” needs (especially among the dually-diagnosed and those with lengthy criminal histories), for reducing the odds of drug treatment dropout among offenders in the Prop 36 program.

Existing research has identified a variety of program factors related to treatment completion (Meier & Best, 2006). For example, treatment completion has been associated with being treated by more experienced counselors (Meier et al., 2006), positive relationships with program staff (Ball et al., 2006), receipt of psychiatric services (Marrero et al., 2005), and living less than 4 miles from treatment (Beardsley et al., 2003). Similarly, longer drug treatment retention has been associated with early therapeutic alliance (De Weert-Van Oene, et al., 2001; Meier et al., 2006), a brief induction at treatment entry (Harrison et al., 2007), novel treatment protocols (Helmus et al., 2001), and legal coercion (Perron & Bright, 2008). Motivational enhancement therapies are empirically supported and familiar to substance abuse treatment providers (Herbeck et al., 2008; Madson & Campbell, 2006; Martino et al., 2008) and, although they might be less effective with some settings or populations (Winhusen et al., 2007), they have been shown to improve treatment utilization and outcomes (McKee et al., 2007; Ondersma et al., 2005; Rohsenow et al., 2004) and are generally thought to be an “active ingredient” of effective drug treatment (Moos, 2007). Perhaps of particular relevance to the Prop 36 program is research on outcomes related to treatment setting. Matching of treatment setting to drug use severity has been associated with improved outcomes (Tiet et al., 2007) and individuals at high risk of dropout have been found to be especially likely to dropout when treated in a highly controlling treatment setting (McKellar et al., 2006). Research is needed to identify treatment characteristics, practices, and policies specific to Prop 36 that promote higher treatment completion rates.

Finally, our findings confirm that common consequences for offenders who dropout of Prop 36 drug treatment are criminal justice sanctions and more treatment. One wonders how treatment capacity expansion after Prop 36 (Hser et al., 2007), in combination with Prop 36 treatment “recycling,” may have affected the overall quality of care in California. A study of England’s efforts to increase drug treatment access noted that increasing the number of people in treatment was associated with an increase in the proportion of dropouts, a decrease in the proportion who exited treatment drug-free, and an increase in the proportion who returned to treatment (Beynon, Bellis, & McVeigh, 2006). Similarly, a study of methadone treatment expansion in Australia over a 15-year period found that as access to treatment increased, treatment recycling also increased (Bell et al., 2006). Treatment re-entry has been predicted by arrest in the year prior to treatment entry (Luchansky et al., 2000), shorter duration of the first treatment episode (Bell et al., 2006), and a history of prior treatment admissions (Callaghan, 2003), all of which are elements that characterize many Prop 36 treatment dropouts. Little is known about treatment recycling in Prop 36 and its impact on savings attributed to the Prop 36 program as well as on the quality of substance abuse treatment currently available in California.

5. Lessons learned

There is no universally accepted definition of treatment completion under Prop 36 and inadequate qualitative data on the degree to which some counties may place greater emphasis

on continuing care models of substance abuse treatment (McLellan 2002; McLellan et al., 2000) than others was collected. Future Prop 36 evaluation efforts need to better address issues that arise when program evaluation is conducted in an environment where variations in operative definitions, program implementation, and performance exist.

Also, as the drug treatment field moves toward a chronic care model, the concept of treatment “completion” itself becomes increasingly problematic. For example, in a continuing care context, does a Prop 36 offender who re-enters treatment (whether earlier treatment episodes were completed or not) to address chronic problems represent positive or negative outcomes? Should the first or last treatment episode be used to determine ultimate Prop 36 treatment status, or should all treatment interactions that occur in between, and simultaneously, also be considered? How should the “outcome” observation period be defined for program evaluation purposes? What role do treatment retention, individual-level functioning, and longer-term outcomes play in determining Prop 36 program success? Keeping in mind that one-third of dropouts in our study experienced successful outcomes 12 months after Prop 36 assessment, continued dialogue is needed on whether to alter the Prop 36 law, and measures of its performance, to look beyond treatment discharge, in favor of other measures that may be more compatible with a continuing care framework.

6. Conclusion

Conducted in the most populous state in the nation, California’s Proposition 36 treatment initiative represented a significant change to criminal justice policy. The research presented in this paper aimed to identify ways for improving the effectiveness of the program, thereby improving the lives of the thousands of offenders that are enrolled in it and other similar court mandated programs each year. In the past decade, more than 20 states have considered legislation that is similar to Prop 36 (The Avisa Group, 2005). While more information is needed, our findings may be useful for the development and implementation of strategies that are designed to improve treatment completion rates, and thus the overall effectiveness of the Prop 36 program. Our work may also aid a broader nationwide audience of researchers and policy analysts who can learn from California’s experiment to design and evaluate criminal-justice diversion programs for treating drug-addicted offenders.

References

- Amodeo M, Chassler D, Oettinger C, Labiosa W, Lundgren LM. Client retention in residential drug treatment for Latinos. *Evaluation and Program Planning* 2008;31(1):102–112. [PubMed: 18222144]
- The Avisa Group. Comparing California’s Proposition 36 (SACPA) with similar legislation in other states and jurisdictions. 2005. Retrieved September 4, 2008, from <http://www.prop36.org/pdf/ComparisonProp36OtherStates.pdf>
- Ball SA, Carroll KM, Canning-Ball M, Rounsaville BJ. Reasons for dropout from drug abuse treatment: Symptoms, personality, and motivation. *Addictive Behaviors* 2006;2:320–330. [PubMed: 15964152]
- Beardsley K, Wish ED, Fitzelle DB, O’Grady K, Arria AM. Distance traveled to outpatient drug treatment and client retention. *Journal of Substance Abuse Treatment* 2003;4:279–285. [PubMed: 14693257]
- Bell J, Burrell T, Indig D, Gilmour S. Cycling in and out of treatment; participation in methadone treatment in NSW, 1990-2002. *Drug and Alcohol Dependence* 2006;1:55–61. [PubMed: 15993552]
- Beynon CM, Bellis MA, McVeigh J. Trends in drop out, drug free discharge and rates of re-presentation: A retrospective cohort study of drug treatment clients in the North West of England. *BMC Public Health* 2006;6:205. [PubMed: 16904004]
- Burrow-Sanchez JJ, Lundberg KL. Readiness to change in adults waiting for publicly funded substance abuse treatment. *Addictive Behaviors* 2007;32(1):199–204. [PubMed: 16678975]
- Butzin CA, Saum CA, Scarpitti FR. Factors associated with completion of a drug treatment court diversion program. *Substance Use & Misuse* 2002;37:1615–1633. [PubMed: 12487236]

- California Department of Alcohol and Drug Programs. Substance Abuse and Crime Prevention Act of 2000 (Prop 36). 2008. Retrieved May 13, 2008, from <http://www.adp.ca.gov/sacpa/prop36.shtml>
- Callaghan RC. Risk factors associated with dropout and readmission among First Nations individuals admitted to an inpatient alcohol and drug detoxification program. *Canadian Medical Association Journal* 2003;1:23–27. [PubMed: 12847035]
- Callaghan RC, Hathaway A, Cunningham JA, Vettese LC, Wyatt S, Taylor L. Does stage-of-change predict dropout in a culturally diverse sample of adolescents admitted to inpatient substance-abuse treatment? A test of the Transtheoretical Model. *Addictive Behaviors* 2005;9:1834–1847. [PubMed: 16111832]
- Choi S, Ryan JP. Completing substance abuse treatment in child welfare: The role of co-occurring problems and primary drug of choice. *Child Maltreatment* 2006;4:313–325. [PubMed: 17043316]
- Conner, B.; Grella, C. Evaluation of the Substance Abuse and Crime Prevention Act: 2008 Report. Los Angeles, CA: UCLA Integrated Substance Abuse Programs; 2008. The homeless mentally ill in Proposition 36. Prepared for the California Department of Alcohol and Drug Programs
- Daughters SB, Stipelman BA, Sargeant MN, Schuster R, Bornovalova MA, Lejuez CW. The interactive effects of antisocial personality disorder and court-mandated status on substance abuse treatment dropout. *Journal of Substance Abuse Treatment* 2008;34(2):157–164. [PubMed: 17869050]
- De Weert-Van Oene GH, Schippers GM, De Jong CA, Schrijvers GJ. Retention in substance dependence treatment: The relevance of in-treatment factors. *Journal of Substance Abuse Treatment* 2001;20:253–261. [PubMed: 11672639]
- Evans EA, Li L, Hser YI. Treatment entry barriers among California's Proposition 36 offenders. *Journal of Substance Abuse Treatment*. in press
- Harrison SR, Toriello P, Pavluck A, Ellis R, Pedersen E, Gaiennie R, et al. The impact of a brief induction on short-term continuation in a therapeutic community. *The American Journal of Drug and Alcohol Abuse* 2007;33:147–153. [PubMed: 17366255]
- Helmus TC, Downey KK, Arfken CL, Henderson MJ, Schuster CR. Novelty seeking as a predictor of treatment retention for heroin dependent cocaine users. *Drug and Alcohol Dependence* 2001;61(3):287–295. [PubMed: 11164693]
- Herbeck DM, Hser YI, Teruya C. Empirically supported substance abuse treatment approaches: A survey of treatment providers' perspectives and practices. *Addictive Behaviors* 2008;33:699–712. [PubMed: 18207334]
- Hser YI, Teruya C, Brown AH, Huang D, Evans E, Anglin MD. Impact of California's Proposition 36 on the drug treatment system: Treatment capacity and displacement. *American Journal of Public Health* 2007;97:104–109. [PubMed: 17138930]
- Hser YI, Teruya C, Evans EA, Longshore D, Grella C, Farabee D. Treating drug-abusing offenders: Initial findings from a five-county study on the impact of California's Proposition 36 on the treatment system and patient outcomes. *Evaluation Review* 2003;27:479–505. [PubMed: 14531316]
- Kang SY, Deren S, Goldstein MF. Relationships between childhood abuse and neglect experience and HIV risk behaviors among methadone treatment drop-outs. *Child Abuse & Neglect* 2002;26:1275–1289. [PubMed: 12464301]
- King AC, Canada SA. Client-related predictors of early treatment drop-out in a substance abuse clinic exclusively employing individual therapy. *Journal of Substance Abuse Treatment* 2004;26:189–195. [PubMed: 15063912]
- Knight DK, Logan SM, Simpson DD. Predictors of program completion for women in residential substance abuse treatment. *American Journal of Drug and Alcohol Abuse* 2001;27:1–18. [PubMed: 11373028]
- Little Hoover Commission. Addressing addiction: Improving and integrating California's substance abuse treatment system. A report to the California Legislature. 2008. Retrieved May 13, 2008, from <http://www.lhc.ca.gov/lhcdir/report190.html>
- Longshore, D.; Urada, D.; Evans, EA.; Hser, YI.; Prendergast, ML.; Hawken, A., et al. Evaluation of the Substance Abuse and Crime Prevention Act: 2003 report. Los Angeles, CA: UCLA Integrated Substance Abuse Programs; 2004. Prepared for the California Department of Alcohol and Drug Programs

- Longshore, D.; Urada, D.; Evans, EA.; Hser, YI.; Prendergast, M.; Hawken, A. Evaluation of the Substance Abuse and Crime Prevention Act: 2004 report. Los Angeles, CA: UCLA Integrated Substance Abuse Programs; 2005. Prepared for the California Department of Alcohol and Drug Programs
- Luchansky B, He L, Krupski A, Stark KD. Predicting readmission to substance abuse treatment using state information systems. The impact of client and treatment characteristics. *Journal of Substance Abuse* 2000;12:255–270. [PubMed: 11367603]
- Madson MB, Campbell TC. Measures of fidelity in motivational enhancement: A systematic review. *Journal of Substance Abuse Treatment* 2006;31:67–73. [PubMed: 16814012]
- Marrero CA, Robles RR, Colón HM, Reyes JC, Matos TD, Sahai H, et al. Factors associated with drug treatment dropout among injection drug users in Puerto Rico. *Addictive Behaviors* 2005;30:397–402. [PubMed: 15621413]
- Martino S, Ball SA, Charla N, Frankorter TL, Carroll KM. Community program therapist adherence and competence in motivational enhancement therapy. *Drug and Alcohol Dependence*. 2008Epub ahead of print
- McKee SA, Carroll KM, Sinha R, Robinson JE, Nich C, Cavallo D, et al. Enhancing brief cognitive-behavioral therapy with motivational enhancement techniques in cocaine users. *Drug and Alcohol Dependence* 2007;91:97–101. [PubMed: 17573205]
- McKellar J, Kelly J, Harris A, Moos R. Pretreatment and during treatment risk factors for dropout among patients with substance use disorders. *Addictive Behaviors* 2006;31:450–460. [PubMed: 15979244]
- McLellan AT. Have we evaluated addiction treatment correctly? Implications from a chronic care perspective. *Addiction* 2002;97(3):249–252. [PubMed: 11964098]
- McLellan AT, Kushner H, Metzger D, Peters R, Smith I, Grissom G, et al. The fifth edition of the Addiction Severity Index. *Journal of Substance Abuse Treatment* 1992;9:199–213. [PubMed: 1334156]
- McLellan AT, Lewis DC, O'Brien CP, Kleber HD. Drug dependence, a chronic medical illness: Implications for treatment, insurance, and outcomes evaluation. *JAMA* 2000;284(13):1689–1695. [PubMed: 11015800]
- McLellan AT, Luborsky L, Woody GE, O'Brien CP. An improved diagnostic evaluation instrument for substance abuse patients: The Addiction Severity Index. *Journal of Nervous & Mental Disease* 1980;168:26–33. [PubMed: 7351540]
- Meier PS, Best D. Programme factors that influence completion of residential treatment. *Drug and Alcohol Review* 2006;25:349–355. [PubMed: 16854661]
- Meier PS, Donmall MC, McElduff P, Barrowclough C, Heller RF. The role of the early therapeutic alliance in predicting drug treatment dropout. *Drug and Alcohol Dependence* 2006;83:57–64. [PubMed: 16298088]
- Miller WR, Tonigan JS. Assessing drinkers' motivation for change: The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES). *Psychology of Addictive Behaviors* 1996;10:81–89.
- Moos RH. Theory-based active ingredients of effective treatments for substance use disorders. *Drug and Alcohol Dependence* 2007;88:109–121. [PubMed: 17129682]
- Ondersma SJ, Chase SK, Svikis DS, Schuster CR. Computer-based brief motivational intervention for prenatal drug use. *Journal of Substance Abuse Treatment* 2005;28:305–312. [PubMed: 15925264]
- Perron B, Bright C. The influence of legal coercion on treatment retention in substance abuse treatment. *Drug and Alcohol Dependence* 2008;92(13):123–131. [PubMed: 17869030]
- Rohsenow DJ, Monti PM, Martin RA, Colby SM, Myers MG, Gulliver SB, et al. Motivational enhancement and coping skills training for cocaine abusers: Effect on substance use outcomes. *Society for the Study of Addiction* 2004;99:862–874.
- SAMHSA. Treatment Episode Data Set (TEDS) – 2004 discharges from Substance Abuse Treatment services. 2004. Retrieved May 13, 2008, from <http://www.oas.samhsa.gov/TEDSdischarges/2k4/tedsd2k4toc.cfm>
- Sayre SL, Schmitz JM, Stotts AL, Averill PM, Rhoades HM, Grabowski JJ. Determining predictors of attrition in an outpatient substance abuse program. *The American Journal of Drug and Alcohol Abuse* 2002;28:55–72. [PubMed: 11853135]

- Scott-Lennox J, Rose R, Bohlrig A, Lennox R. Impact of women's family status on completion of substance abuse treatment. *The Journal of Behavioral Health Services & Research* 2000;27:366–379.
- Sinha R, Easton C, Kemp K. Substance abuse treatment characteristics of probation-referred young adults in a community-based outpatient program. *The American Journal of Drug and Alcohol Abuse* 2003;29:585–597. [PubMed: 14510042]
- Siqueland L, Crits-Christoph P, Frank A, Daley D, Weiss R, Chittams J, et al. Predictors of dropout from psychosocial treatment of cocaine dependence. *Drug and Alcohol Dependence* 1998;52:1–13. [PubMed: 9788001]
- Stevens A, Radcliffe P, Sanders M, Hunt N. Early exit: Estimating and explaining early exit from drug treatment. *Harm Reduction Journal* 2008;5(13)Epub ahead of print
- Tiet QQ, Ilgen MA, Byrnes HF, Harris AH, Finney JW. Treatment setting and baseline substance use severity interact to predict patients' outcomes. *Addiction* 2007;102:432–440. [PubMed: 17298651]
- UCLA Integrated Substance Abuse Programs (ISAP). Evaluation of the Substance Abuse and Crime Prevention Act: 2005 Report. Los Angeles, CA: Author; 2006. Prepared for the California Department of Alcohol and Drug Programs
- Winhusen T, Kropp F, Babcock D, Hague D, Erickson SJ, Renz C, et al. Motivational enhancement therapy to improve treatment utilization and outcome in pregnant substance users. *Journal of Substance Abuse Treatment*. 2007Epub ahead of print
- Zhang Z, Friedmann PD, Gerstein DR. Does retention matter? Treatment duration and improvement in drug use. *Addiction* 2003;5:673–684. [PubMed: 12751985]

Biographies

Elizabeth Evans, M.A., has directed several treatment outcome studies since joining the UCLA Integrated Substance Abuse Programs in 1999. Her interests also include best practices for navigating research-related regulatory issues, uses of administrative data for longitudinal substance abuse research, and strategies for conducting long-term follow-ups of research participants. She currently works on UCLA's statewide evaluation of Proposition 36, in addition to several other projects.

Libo Li, Ph.D., is currently serving as a senior statistician at the UCLA Integrated Substance Abuse Programs. Dr. Li received his doctoral and master degrees in measurement and psychometrics from the University of California, Los Angeles. Over the past several years, Dr. Li has provided statistical support on several of UCLA's drug abuse research projects. He is responsible for data management and statistical analysis, especially for choosing appropriate multivariate analysis methods. Dr. Li is also interested in psychometric and statistical methods development, especially for social and behavioral research.

Yih-Ing Hser, Ph.D., is Professor-in-Residence in the Department of Psychiatry and Behavioral Sciences at the UCLA Integrated Substance Abuse Programs and the Director of the Center for Advancing Longitudinal Drug Abuse Research. She is also the Principal Investigator of several other projects, including Treatment System Impact & Outcomes of Proposition 36 and Drug Treatment and Mental Health Services: Access and Outcomes. She has been conducting research in the field of substance abuse and its treatment since 1980 and has extensive experience in research design and advanced statistical techniques applied to substance abuse data. Dr. Hser has published extensively in the areas of treatment evaluation, epidemiology, natural history of drug addiction, health services, and innovative statistical modeling development and application.

Table 1

Characteristics of Prop 36 Offenders at Assessment for Treatment by Discharge Status (N=926)

	Dropouts (N=542)	Completers (N=384)
Age, Mean (SD)	36.5 (9.7)	37.5 (9.5)
Women, %	27.3	31.8
Race, %		
White	49.8	54.4
Hispanic	25.7	22.7
African American	17.9	15.1
Asian/Pacific Islander	2.8	1.6
Other	3.9	6.3
Education, Mean (SD)	11.7(1.9)	11.9 (1.8)
Employed (full-time or part-time), %	35.3	41.3
Homeless, %	6.3	8.6
ASI Composite Score, Mean (SD)		
Alcohol	0.10 (0.18)	0.11 (0.20)
Drug	0.14 (0.11)	0.12 (0.11)
Employment *	0.73 (0.28)	0.68 (0.30)
Family	0.16 (0.20)	0.16 (0.21)
Legal	0.26 (0.18)	0.28 (0.18)
Medical	0.24 (0.33)	0.22 (0.32)
Psychiatric *	0.18 (0.22)	0.15 (0.20)
Ever physically or sexually abused, %	39.3	42.2
Lives with dependent children, % **	38.3	52.8
Treatment motivation, Mean (SD) **	4.07 (0.64)	4.18 (0.62)
Problem recognition	3.36 (1.08)	3.32 (1.13)
Desire for help *	4.07 (1.00)	4.22 (0.96)
Readiness for treatment **	4.38 (0.57)	4.54 (0.54)
County, % **		
1	28.8	16.9
2	19.7	37.0
3	28.0	30.2
4	10.0	5.5
5	13.5	10.4
Substance Abuse and Treatment History		
Used any drug in past 30 days, % **	74.9	59.4
Primary drug, % **		
Methamphetamine	50.0	61.9
Marijuana	15.8	11.1
Cocaine	12.8	10.3
Heroin	11.1	5.8
Alcohol	7.8	9.0
Other	2.5	1.9

	Dropouts (N=542)	Completers (N=384)
Age at first primary drug use, Mean (SD)	20.0 (7.7)	20.3 (7.9)
Years of primary drug use, Mean (SD)	20.1 (33.4)	18.1 (29.3)
Injection drug user, %	17.0	16.4
Prior drug treatment, %	64.6	69.2
Criminal Involvement		
Arrested in past 12 months, %	79.7	82.6
No. of arrests in past 12 months, Mean (SD) *	2.1 (2.1)	1.8 (1.5)
Age at first arrest, Mean (SD) **	20.3 (7.5)	22.1 (8.8)
No. of arrests in lifetime, Mean (SD) *	11.6 (10.6)	10.3 (9.9)
No. of convictions in lifetime, Mean (SD) *	13.5 (12.6)	11.8 (11.7)
Arrested in past 30 days, % **	36.2	26.3
Incarcerated in past 30 days, % **	49.1	40.5

*
p <0.05,

**
p<0.01

Table 2
Treatment Modality, Retention, and Services Received (N=926)

	Dropouts (N=542)	Completers (N=384)
Modality, % ^{**}		
Outpatient	79.7	70.0
Residential	15.5	28.7
MM	4.9	1.3
Retention, % ^{**}		
≤ 30 days	19.6	2.6
31- 60 days	21.4	9.9
61-89 days	12.8	11.5
≥90 days	46.2	76.0
Retention in Days, Mean (SD) ^{**}	111.7 (100.9)	198.2 (149.8)
Outpatient, Mean (SD) ^{**}	117.2 (101.1)	228.8 (109.3)
Residential, Mean (SD) [*]	70.2 (68.2)	120.8 (196.2)
Methadone Maintenance, Mean (SD)	166.2 (142.5)	273.0 (262.2)
Service Intensity	%	%
Total services received	97.6	99.0
Drug and alcohol	95.7	97.9
Psychiatric	18.5	14.7
Other	69.0 ^{**}	80.6 ^{**}
	Mean by Treatment Day (SD)	Mean by Treatment Day (SD)
	3.7 (12.9) [*]	2.2 (7.0) [*]
	3.0 (11.7)	1.9(6.3)
	0.3 (2.0) [*]	0.0 (0.3) [*]
	0.4 (2.0)	0.3 (1.2)

* p <0.05,

** p<0.01

Table 3**Prop 36 Offender-Reported Treatment Completion Barriers and Consequences of Treatment Drop-Out**

Treatment completion barriers (N=1,171)	%
<i>Client level</i>	60.5
Low motivation for treatment	46.2
Denial of drug problem	11.7
Desire to use drugs, relapse	1.6
Bad environment, friends are users	1.0
<i>System level</i>	39.5
Prop 36 program is too hard or strict	20.0
Treatment conflicts with work	6.3
Lack of services (e.g., transportation, housing, healthcare)	6.1
Prop 36 fees cost too much	3.9
Dissatisfaction with treatment ¹	2.2
<i>Other</i>	1.0
Consequences of treatment drop-out (N=233)	
Incarcerated in jail or prison	25.3
Allowed to try treatment again	24.0
Nothing or unknown	20.2
Issued probation/parole violation	18.0
Kicked out of Prop 36 program	9.0
Referred to drug court or other CJ-supervised treatment	2.2
Other	1.3

Note: Sample sizes reflect the number of offenders that responded to the relevant questions, as explained in 2.1 *Instruments and Measures*.

¹ For example, the offender perceived the treatment program or counselors to be incompetent or disorganized, there were conflicts between treatment and probation/parole, the offender thought that treatment was too easy or disliked the treatment experience altogether.

Table 4

Predictors of Prop 36 drug treatment drop-out (vs. completion) (N=859)

Variable	Odds Ratio
Age, Mean	-0.01
White (vs. non-White)	-0.04
Male (vs. Female)	0.25
Employment severity at intake (ASI), Mean	0.30
Psychiatric severity at intake (ASI), Mean	0.89 [*]
Lives with dependent children (vs. no)	-0.51 ^{**}
County (vs. County 3)	
County 1	0.65 ^{**}
County 2	-0.23
County 4	0.55
County 5	-0.09
Primary drug is methamphetamine (vs. other drugs)	-0.38 [*]
Readiness for treatment, Mean	-0.40 ^{**}
Treatment modality is residential (vs. outpatient/MM)	-0.73 ^{**}
Total treatment services received per day, Mean	0.02
No. of arrests in 12 months before intake, Mean	0.04 [*]

*
p < 0.05,**
p < 0.01

Note: 67 missing values reduced the size of the sample included in this analysis from 926 to 859.

Table 5
Outcomes 12 Months after Assessment for Prop 36 Treatment (N=926)

	Drop-outs (N=542)	Completers (N=384)
<i>Overall functioning</i>		
ASI Composite Score, Mean (SD)		
Alcohol	0.03 (0.08)	0.03 (0.08)
Drug **	0.04 (0.07)	0.02 (0.05)
Employment **	0.64 (0.32)	0.48 (0.32)
Family	0.07 (0.11)	0.06 (0.12)
Legal **	0.12 (0.18)	0.07 (0.14)
Medical *	0.14 (0.27)	0.10 (0.22)
Psychiatric **	0.13 (0.19)	0.09 (0.16)
Successful outcome, % **	34.5	59.1
Used any drug **	27.3	12.8
Arrested **	12.7	5.2
Incarcerated **	31.8	9.7
Employed (full-time or part-time) **	52.0	66.3
<i>Recidivism</i>		
Arrested in 12 months after intake, % **	62.9	28.9
No. of arrests in 12 months after intake, Mean (SD) **	1.4 (1.6)	0.5 (1.0)

*
p < 0.05,

**
p < 0.01

Note: When controlling for significantly different variables ($p < 0.05$) at baseline all differences in outcomes remained however differences in the medical and psychiatric composite scores were no longer statistically significant.