High-Risk Offenders Participating in Court-Supervised Substance Abuse Treatment: Characteristics, Treatment Received, and Factors Associated with Recidivism

Elizabeth Evans, MA,
UCLA Integrated Substance Abuse Programs, Semel Institute for Neuroscience and Human Behavior, Department of Psychiatry and Biobehavioral Sciences, David Geffen School of Medicine, 1640 S. Sepulveda Blvd., 200, Los Angeles, CA 90025, USA. Phone: +1-310-2675315

David Huang, DrPH, and
UCLA Integrated Substance Abuse Programs, Semel Institute for Neuroscience and Human Behavior, Department of Psychiatry and Biobehavioral Sciences, David Geffen School of Medicine, Los Angeles, CA, USA. Phone: +1-310-2675288

Yih-Ing Hser, PhD
UCLA Integrated Substance Abuse Programs, Semel Institute for Neuroscience and Human Behavior, Department of Psychiatry and Biobehavioral Sciences, David Geffen School of Medicine, Los Angeles, CA, USA. Phone: +1-310-2675388

Elizabeth Evans: laevans@ucla.edu; David Huang: yhuang@ucla.edu; Yih-Ing Hser: yhser@ucla.edu

Abstract

High-risk offenders treated by California's Proposition 36 court-supervised drug treatment initiative account for a disproportionate number of re-arrests (Hawken 2008) undermining the many successes of the program, yet little is known about their characteristics, treatment experiences, or factors that influence re-arrest. To better understand this group, self-reported and administrative data were analyzed on 78 high-risk (five or more convictions in the previous 5 years) and 1,009 low-risk offenders enrolled during 2004. At intake, high-risk offenders were younger, more were male, and more had prior contact with psychiatric and criminal justice systems. Treatment received and the proportion recidivated during the 30-months after treatment assessment were similar across groups, but high-risk offenders had a greater number of re-arrests. The number of re-arrests was increased by high-risk classification, but decreased by receipt of more treatment services and longer treatment length. Moreover, the number of re-arrests was highest among high-risk offenders with shorter treatment lengths, whereas it was similar to that among low-risk offenders if treatment length was longer. To reduce recidivism among high-risk offenders in court-supervised drug treatment, consideration of psychiatric problems and criminal history is needed, as is receipt of sufficient treatment.

Introduction

Since 2001, California's voter-initiated Substance Abuse and Crime Prevention Act, more commonly known as Proposition 36 (Prop 36), has been providing community-based treatment to eligible drug offenders. Under Prop 36, adults convicted of nonviolent drug possession offenses can choose to receive drug treatment in the community in lieu of

incarceration. Offenders on probation or parole who commit nonviolent drug possession offenses or who violate drug-related conditions of probation or parole can also opt to receive treatment. The intent of the Prop 36 program is to preserve jail and prison beds for serious and violent offenders, enhance public safety by reducing drug-related crime, and improve public health by reducing drug abuse through proven and effective treatment strategies.[1] From a broader perspective, Prop 36 is one example of the trend in the USA and several other countries toward use of alternative sentencing policies to rehabilitate drug offenders in lieu of imprisonment, and lessons learned from California's experiences with treating high- and low-risk drug offenders have implications for other similar types of programs.

The Prop 36 program has resulted in taxpayer savings, primarily due to reduced use of incarceration, and savings are highest among offenders who complete drug treatment.[2] Despite these gains, however, California's state budget crisis worsened in recent years, and Prop 36 stakeholders have struggled to maintain the integrity of the program in the context of increasing fiscal constraints.[3] At the same time, legislators charged with deciding funding amounts for the continuation of Prop 36 have called for strategies for making the program more cost-effective.[4]

It was in this context that evaluation reports identified a subgroup of Prop 36 offenders that comprised only 25% of all offenders in the program but that accounted for 80% of the re-arrests and costs that occurred over the 30 months following program entry.[2] The new crimes committed by these "high-risk, high-cost" offenders are eroding the savings and other benefits reaped by the Prop 36 program thus far and risk undermining the public safety that the Prop 36 law intends to protect. High-risk, high-cost offenders have been primarily characterized as having five or more prior convictions at program entry, and compared to other Prop 36 offenders, more are male and younger, their arrest and conviction costs after Prop 36 program entry are 26 times higher, and their treatment completion rates are significantly lower.[2] Prop 36's high-risk offenders have been identified only recently as one area for targeting program improvement efforts, and it follows that relatively little is known about this subgroup. For example, no study has examined the impact of drug treatment "dose" or other program and offender-level factors, such as offender motivation level and urine testing during treatment, that prior research on Prop 36 has identified as being associated with outcomes.[5,6] Outside of the Prop 36 arena, the topic of high-risk drug offenders and how best to address their addiction and criminal behavior in community-based treatment settings has been the focus of research for some time.

Much of the research on drug treatment for offenders proposes that outcomes are enhanced when risk of criminal recidivism is factored into choosing the appropriate level of care and that it is most effective to intensify treatment based on criminogenic factors in addition to need for services.[7,8] Furthermore, although challenging at times,[9] an integrated approach that combines close judicial supervision with high-intensity treatment has been found to be particularly effective for high-risk offenders.[10–13] Among non-criminal justice samples, better outcomes for individuals with more severe substance abuse or psychiatric problems have also been associated with providing more intensive treatment.[14–17] However, in two major studies of alcoholics (i.e., Project MATCH and the US Department of Veterans Affair Effectiveness Study), matching treatment to patient attributes was shown to only minimally enhance outcomes (see[18] for a summary of study findings) More recent analyses found that while treatment matching was beneficial but not essential to achieving good outcomes, mismatches had serious consequences, and this effect was magnified with multiple mismatches.[19] The potentially iatrogenic effects of treatment mismatching were also reported by a study of offenders which found that residential treatment decreased recidivism rates among higher risk offenders but increased recidivism rates among lower risk offenders.[20]

Aside from documenting the additive value of receipt of appropriate drug treatment intensity by risk level, the literature on treatment for offenders also highlights how there is no general consensus on how best to define "high risk." Risk classification has included the use of individual items such as history of involvement with the criminal justice system, diagnostic criteria for antisocial personality disorder, and history of prior drug abuse treatment,[12,13] as well as the use of risk screening tools that combine information on a variety of behaviors such as prior criminal and substance abuse history, psychological health, education level, and employment status.[7,8,20] Among Prop 36 offenders, five or more prior convictions was identified as a strong predictor of later recidivism, and research showed that average crime costs increased as the number of convictions prior to program entry increased.[2]

It has been recommended that high-risk offenders be made ineligible for Prop 36 program participation or, to better manage these offenders, more intense treatment and supervision is needed.[2] While it is clear that high-risk offenders are a costly component of the Prop 36 program and that strategies are needed to improve their outcomes, very little else is known about this group. Furthermore, analysis of an early cohort of Prop 36 offenders revealed that compared to clients referred to treatment through other means, Prop 36 offenders with severe drug problems were significantly less likely to be treated in a residential treatment setting, that is, high drug severity Prop 36 offenders tended to be "undertreated".[21] Although there is variation in the operation and performance of Prop 36 by county,[22] reports have confirmed that across California, Prop 36 resulted in an expansion of mostly outpatient treatment capacity,[23] that most Prop 36 offenders are treated in outpatient settings, and that very few Prop 36 offenders receive residential treatment,[24] a treatment setting that some research indicates more commonly provides wraparound services for offenders.[25] Public policy discussions on what to do with high-risk Prop 36 offenders—provide more intense supervision or make them ineligible for Prop 36 program participation—require information on whether some high-risk offenders can demonstrate successful outcomes after program participation and whether the provision of more intensive treatment can be effective with this population.

To better understand the characteristics of high-risk offenders in Prop 36, their treatment experiences, recidivism rates, and impact of providing more treatment on recidivism, the following research questions were examined: (1) How are high-risk offenders different from low-risk offenders in characteristics at assessment for treatment and in experiences during drug treatment? (2) What offender characteristics and treatment factors predict more re-arrests over 12 months and over 30 months after assessment for treatment? (3) Does offender risk level interact with the amount of treatment received to impact the number of re-arrests?

It was hypothesized that high-risk offenders would exhibit more severe problems at intake assessment than their low-risk counterparts and that few would receive intensive treatment. Also, it was expected that the re-arrest rate would be higher among high-risk offenders but that more treatment would decrease recidivism.

Methods

Data source

Data analyzed in this study were derived from "Treatment System Impact and Outcomes of Proposition 36 (TSI)," a NIDA-funded multisite prospective treatment outcome study designed to assess the impact of Prop 36 on California's drug treatment delivery system and evaluate the effectiveness of the 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[26] for additional information). County

assessment center or treatment program staff collected data from all Prop 36 participants assessed for treatment in the selected counties. Of participants who had completed the intake assessment in 2004 (*n*=2,636), a sample of 1,588 was randomly selected for telephone follow-up by UCLA-trained interviewers at 3 and 12 months post-intake. Participants were paid US $10 and $15, respectively. Additionally, administrative data were acquired on all participants on arrest histories from the California Department of Justice (DOJ) and on mental health services utilization from the California Department of Mental Health (DMH). Data linking procedures and quality of data linkage are described elsewhere.[27] The Institutional Review Boards at UCLA and at the California Health and Human Services Agency approved all study procedures.

Subjects and recruitment

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 follow-up interview completion rates were 95% and 86%, respectively. Comparisons between those who did and 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.

Of the total sample, mean age was 36.8 years, 29.1% were women, 50.6% were White, 24.8% were Hispanic, 18.1% were African American, 6.3% were other race/ethnic group, mean years of education was 11.7, 51.4% reported methamphetamine as their primary drug, and more than one third was employed full- or part-time (38.6%).

This analysis focuses on 1,087 Prop 36 offenders in TSI who completed the 3-month follow-up interview and also had a criminal history record on file with the California DOJ. Examination of the 378 who were omitted from analysis [because of missing 3-month follow-up variables (*n*=6) or a missing DOJ record (*n*=372)] showed that this group was different from the 1,087 who were included in analysis on gender only; slightly more males were in the study sample than in the non-study sample (72% vs. 66%). Missing DOJ records may have resulted from several factors such as data entry error, record expungement, commission of probation or parole violations that made an offender eligible for the Prop 36 program but did not result in a new arrest, deliberate falsification of personal information, and inaccuracies in the personal identifiers needed to link data. Of note is that this study applied a deterministic method to link records, and a combination of personal identifiers (including offender name, Social Security number, and date of birth) served as the primary linking variables. Only those cases that completely fulfilled the matching criteria were treated as a match. For this reason, underlinkage of data was expected, but this concern was outweighed by the high certainty of linkage associated with the deterministic method and the corresponding level of confidence in resulting findings.

Eligibility for the Prop 36 program is determined based on the offender's current offense and past criminal history, with special attention paid to convictions that occurred during the 5-year period prior to the offender's current offense.[28] For example, not eligible are drug offenders with a prior serious or violent felony conviction, unless the associated prison time has been served and the individual has been living in the community for 5 years with no felony or violent misdemeanor conviction. If eligible, offenders are offered treatment in lieu of routine criminal justice processing, and offenders who choose to participate complete a

treatment assessment. Assessment entails a systematic review of offender drug problem severity and other service needs followed by a decision regarding appropriate treatment placement. Offenders are required to report to their assigned treatment program promptly, typically within 3–7 days after assessment.

To replicate prior analyses,[2] DOJ conviction data were analyzed; offenders with five or more convictions in the 5 years prior to their Prop 36 treatment assessment date were coded as "high-risk" (n=78) and offenders with fewer than five convictions coded as "low-risk" (*n*=1,009). Convictions over the 5-year pre-period were examined by offense type. For both groups, most convictions were for drug-related offenses, but compared to low-risk offenders, high-risk offenders had significantly greater numbers of convictions (*p*<0.001) for all offense types, including drug offenses (e.g., drug possession or use; 2.6 vs. 0.9 convictions); property offenses (e.g., theft, burglary; 1.4 vs. 0.2 convictions); violent offenses (e.g., homicide, rape, robbery; 0.3 vs. <0.1 convictions); and other offenses (e.g., prostitution, vandalism; 1.6 vs. 0.4 convictions, data not shown). Analysis of lifetime adult conviction data revealed similar patterns, with significantly more high-risk offenders having been convicted of offenses related to drugs (97.4% vs. 86.6%), property (74.4% vs. 44.7%), violence (29.5% vs. 14.5%), and other crimes (88.5% vs. 56.8%, data not shown).

Instruments and measures

At assessment for treatment

The baseline assessment included the Addiction Severity Index (ASI), a semi-structured interview instrument that captures *demographic information* and also assesses *problem severity* in seven areas: alcohol and drug use, employment, family and social relationships, legal, psychological, and medical status.[29,30] 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. Distinguished by excellent inter-rater and test–retest reliability as well as high discriminant and concurrent validity,[31,32] the ASI is widely used in the addictions field.[33]

Motivation for treatment was also measured at baseline using 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. Responses are captured using a 1–5 Likert scale. A variable was constructed by summing all responses to measure offenders' overall motivation for treatment. Scores ranged from 19 to 95, with higher scores indicating greater motivation for treatment. Data from a multisite clinical sample and a test–retest study provided support for the reliability of SOCRATES scales.[34]

County of residence was recorded at treatment assessment. In order to maintain the confidentiality and anonymity of participating counties, each was arbitrarily assigned a letter from A to E. Detailed information on county characteristics is provided elsewhere.26

During treatment

Treatment retention was defined by the number of days from admission to the last day of treatment. Statewide administrative data indicate that a majority of Prop 36 offenders receive more than 90 days of treatment.[22] Thus, a median split was conducted on all calendar days of treatment received to distinguish *longer treatment retention* (≥113 days) from shorter treatment retention (<113 days).

The number of treatment services received was calculated from data collected by the Treatment Services Review (TSR). Administered at the 3-month follow-up interview, the TSR captured services received in the previous 3 months (either during or after treatment) in

each of the seven domains of the ASI (e.g., alcohol and drug use, employment, family, etc.), including the number of professional services and discussion sessions received. The number of times an individual self-reported receipt of services in any domain (either in the program or through other sources) was summed (range=0–1,407 services) and the mean number of treatment services received during the 3 months following assessment for treatment were calculated. Test–retest studies on the TSR indicated satisfactory reliability, and tests of concurrent validity showed the ability to discriminate different levels of treatment services and good correspondence with independent measures of treatment provided.[35]

Administrative records contained in the California Alcohol and Drug Data System (CADDS) were analyzed to determine *modality of care* (outpatient, residential, methadone maintenance) at treatment entry and *completion status* at treatment discharge.

Before and after treatment assessment

Mental health services utilization was calculated using administrative records acquired on all individuals from the California DMH Client and Service Information system. This database tracks services and psychiatric diagnoses for clients treated in community-based mental health facilities that receive DMH funds. Services received prior to the baseline assessment for Prop 36 treatment were analyzed.

Recidivism was calculated using DOJ administrative records on arrests. The recidivism rate and the number of re-arrests included all arrests that occurred in the 12 months and in the 30 months following the date each individual was assessed for treatment. The 12-month time period was chosen to examine patterns for an outcome time period that is typically used in related research, while the 30-month time period was utilized to replicate prior research on high-risk Prop 36 offenders.[2]

Statistical analyses

Statistical analyses were conducted to examine differences in characteristics between high-risk and low-risk Prop 36 offenders and to identify factors associated with the number of re-arrests (as recorded in DOJ records) 12 and 30 months after intake assessment.

To test differences among the high-risk and low-risk offenders, ANOVA on continuous measures and chi-square tests on categorical measures were conducted. Controlling for county variation (as a set of dummy variables) and adjusting for several demographic covariates (age, gender, race/ethnicity), multiple regression analyses were conducted to examine predictors of more re-arrests as recorded in DOJ records in the 12 and 30 months following the baseline interview date. Four separate models were run to examine predictors of re-arrest during the two time periods of interest and before and after inclusion of an interaction term indicating high/low-risk level × longer/shorter treatment retention (described below).

Selection of variables for inclusion in the multiple regression models was informed by the relevant literature as well as by the descriptive analysis of characteristics. When indicators of similar behaviors were correlated, only one indicator was chosen for inclusion. To check that no potential multicollinearity biases existed among the selected predictors, diagnostic analysis with variance infiation factor (VIF) was also conducted. The VIF values of the selected predictors were below 5, indicating no multicollinearity biases among the predictors. Predictors examined in the model included age, gender, race/ethnicity, county of residence, employment status at intake, primary drug type, motivation for treatment, treatment modality, urine testing, services received during treatment, and mental health services utilization prior to Prop 36 entry. In addition, high/low-risk level and longer/shorter

treatment retention as well as their interaction [i.e., four strata were created ("high risk with longer treatment retention," "high risk with shorter treatment retention," "low risk with longer treatment retention," "low risk with shorter treatment retention") and included as an interaction term using "low risk with shorter treatment retention" as the reference group] were included as primary predictors in the multiple regression models. Unless otherwise stated, the significance level for all statistical tests was set at $p<0.05$.

Results

Characteristics of high-risk offenders

At assessment for treatment, high-risk offenders were distinguishable from low-risk offenders on several characteristics. As shown in Table 1, compared to low-risk offenders, high-risk offenders were younger (33.4 vs. 37.3 years old), fewer were female (14.1% vs. 28.9%), more were taking psychiatric medication (17.8% vs. 10.2%), more had been incarcerated in the prior 30 days (65.3% vs. 49.7%), first arrest occurred at a younger age (18.5 vs. 20.9 years old), the number of arrests (13.0 vs. 8.9 arrests) and convictions (8.4 vs. 4.7 convictions) accumulated over the lifetime was greater, and more had received mental health services (47.4% vs. 26.2%) according to services utilization data from the Department of Mental Health. There were no significant differences at intake between high-risk and low-risk offenders on the other variables that were examined, including race/ethnicity, education, marital status, employment status, homelessness, parole status, motivation level, severity of problems in all of the domains measured by the ASI composite scores, primary drug type, recent drug use and arrests and psychiatric problems, age at first primary drug use, years of primary drug use, receipt of prior treatment, number of prior treatments, and months incarcerated in lifetime. Of note is that about half of offenders in both groups reported no use of any drugs (excluding alcohol) in the 30 days prior to treatment assessment.

Treatment received and recidivism

As shown in Table 2, several measures of treatment received were examined, but only one measure indicated differences between high-risk and low-risk offenders. Fewer high-risk offenders were urine tested during treatment than low-risk offenders (70.1% vs. 82.6%). Except for this difference, the treatment experiences of offenders were similar regardless of risk classification. For both groups, most offenders were treated in an outpatient setting, average time in treatment was approximately 4.5 months—during this time between 129.2 and 137.9 services were received on average—less than half of offenders received a longer period of treatment, about one third completed treatment, and slightly more than half stayed in treatment for 90 or more days or completed treatment. To better understand the type of treatment received by offenders in the sample, services and retention data were analyzed by modality (data not shown). This analysis revealed that compared to offenders in outpatient treatment settings, offenders in residential treatment settings received almost twice as many services over a fewer number of days (an average of 212 services over 86 days for residential vs. an average of 121 services over 148 days for outpatient), and this was the case for both high-risk and low-risk offenders.

Also shown in Table 2, a similar proportion of high-risk and low-risk offenders were re-arrested in the 12 months (64.1% and 53.8%) and in the 30 months (78.2% and 69.6%) following intake assessment; however, the mean number of re-arrests that occurred was greater among high-risk offenders compared to low-risk offenders for both time periods (1.6 vs. 1.1 re-arrests over 12 months and 3.4 vs. 2.3 arrests over 30 months). Very few (<1%) re-arrests over 12 and 30 months were due to a probation or parole violation, but instead mostly reflected a new offense (drug-related offenses were most common, data not shown).

Offender and program factors associated with number of re-arrests

Shown in Table 3 are four models which were run to examine factors associated with the number of re-arrests over 12 months (models 1 and 2) and over 30 months (models 3 and 4) before (models 1 and 3) and after (models 2 and 4) inclusion of an interaction term indicating high/low-risk level × longer/shorter treatment retention as a predictor.

As shown in model 3, high-risk offender classification was associated with more re-arrests over the 30 months following intake assessment (0.061). A similar association was evident over the 12-month time period (model 1), but this result was not statistically significant. White race/ethnicity (−0.069) and employment at intake (−0.072) were associated with a fewer number of re-arrests over the 12-month time period. These associations were evident for the 30-month time period, but were not statistically significant. Report of methamphetamine as the primary drug problem (vs. other drug types such as heroin and cocaine) was associated with a fewer number of arrests over 30 months, as was also evident (but did not reach statistical significance) over the 12-month time frame.

For both the 12- and 30-month time periods, the number of re-arrests was increased by residing in County E (vs. County A, 0.136 and 0.174) and decreased by older age (−0.126 and −0.163), being female (−0.076 and −0.092), residing in County D (vs. County A, −109 and −0.092), receipt of more services during treatment (−0.102 and −0.063), and longer treatment retention (−0.248 and −0.179).

A significant interaction effect between risk classification and treatment retention on the mean number of re-arrests was found for both the 12- and 30-month time periods (Figs. 1 and 2). When this interaction effect was included in multiple regression analyses (Table 3, models 2 and 4), additional significant predictors emerged. For both time periods, a shorter treatment length for high-risk offenders increased the number of re-arrests (0.067 and 0.099), whereas a longer treatment length decreased the number of re-arrests for both high-risk offenders (−0.109 and −0.074) and low-risk offenders (−0.223 and −0.158).

Discussion

Summary of findings

In summary, high-risk offenders were distinguishable from low-risk offenders (defined as having five or more and less than five convictions in the 5 years prior to the current offense, respectively)

Limitations

The present study has several limitations. Offender risk classification relied on a single indicator (number of prior convictions)—and it is not intended to serve as definitive criteria for classifying offenders in the future—but use of this indicator permitted constructive comparisons with existing Prop 36 evaluation reports. The treatment received measure primarily relied on one indicator (treatment retention), and potential effects associated with the quantity and quality of treatment services were omitted; however, other indicators of treatment received (treatment modality, urine testing, number of services received) were also examined and described. Also, for ethical and feasibility reasons, offenders were not randomly assigned to receive different lengths of treatment, as would have been the case with an experimental study design, and thus self-selection biases may have contributed to group differences that emerged; however, key factors that have been associated with outcomes were examined and included in the analyses. Another limitation is that group comparisons yielded a medium effect size, suggesting that some differences may not have reached statistical significance because of low power. Findings were congruent with general

trends, but replication of analyses with larger sample sizes is warranted. Also, information on periods of incarceration was not available, and thus, re-arrest data were not adjusted to account for possible group differences in time-at-risk periods. Similarly, re-arrest may be infiuenced by contextual differences in criminal justice policing, supervision practices, or other environmental factors. Except for inclusion of "county" in the models, data were not adjusted to account for potential contextual biases. Also, this study captured a relatively small proportion of the larger statewide population of Prop 36 offenders and focused on only one outcome measure (re-arrest). Findings may vary with analysis of a larger sample and inclusion of additional outcome indicators. The study utilized administrative data, a data source vulnerable to over- or underreporting of behaviors.[36,37] For example, measures of arrest and drug treatment/mental health services utilization that relied on administrative data did not capture events that may have occurred outside of California. Also omitted from the analysis were any events they may have occurred but did not come to the attention of the institution from which the data were acquired (e.g., utilization of health services in non-publicly funded settings; crimes for which there was no arrest). Finally, future research that aims to isolate causal factors related to outcomes would likely be strengthened by the application of propensity scoring or other approaches to adjust for differences in offender characteristics. Despite these and other limitations of administrative data, it is generally believed to be a valuable resource for the evaluation of substance abuse treatment outcomes.[27,36–38] The findings support and extend existing knowledge on drug treatment for offenders and new aspects of a unique and costly offender subgroup were documented.

Implications for Behavioral Health

The study findings pose several important implications for future program planning and research on court-supervised drug treatment for offenders. Examining conviction history to assign offenders to a risk level is a clear-cut and pragmatic tool, yet the classification of offenders based on the number of convictions alone is problematic. The results showed that recidivism was associated with risk classification at intake, but it was also associated with individual demographic variables (i.e., age, sex, race/ethnicity, employment status), history of interactions with the mental health services system and criminal justice system, and county of residence. Using the number of convictions as the sole criteria for program exclusion/inclusion would not only overlook the range of personal characteristics, system interactions, and environmental factors that infiuence behavior but would also represent a significant change in current eligibility criteria which looks beyond conviction frequency to consider offense type and the timing of conviction occurrence in the life course.

Another study implication is that using recidivism as the only measure of program outcomes is problematic. Variation in Prop 36 program operations has been documented,[39] and community-level differences in program practices and approach likely impact criminal justice outcomes differentially. Also, differences between groups may appear in one behavioral domain but not in another. For example, for this study, separate analysis of self-reported use of any drug (excluding alcohol) in the 30 days prior to the 12-month follow-up interview indicated no significant differences in the proportion of high- and low-risk offenders who had used (about one quarter of both groups had used drugs). As has been done in other similar work,[40] future treatment outcomes research would be strengthened by the examination of a range of behaviors impacted by drug use, including not only recidivism but also employment, family and social relationships, and general health and well-being.

The intent to spend Prop 36 public resources efficiently is a valid reason for omitting high-risk offenders from the program, but it is also the case that by excluding those with more prior convictions, there is the risk of omitting individuals who are most in need of treatment. Prior research indicates that few offenders in prisons and jails have access to substance

abuse services,[41] drug treatment programs have been shown to reduce criminal behavior,[42] and judicial mandates can provide an opportunity for substance-using offenders to access and benefit from needed treatment.[43] A significant added economic benefit is the cost savings that are consistently associated with substance use treatment.[44]

Risk classification based on conviction history might be best suited for use as a clinical tool for identifying offenders who are most in need of longer lengths of drug treatment. The findings indicated that the number of re-arrests was decreased by receipt of more services and longer lengths of treatment, and most notably, the results showed that the number of re-arrests was less when high-risk offenders received longer lengths of treatment. Also, although not a significant predictor of re-arrest, fewer high-risk offenders were urine tested during treatment. Undoubtedly, the provision of more treatment, especially high-intensity treatment, is expensive[14] and offenders may drop out of treatment prematurely, effectively choosing to receive less treatment. Yet it is also evident that a standardized risk assessment is not used by the Prop 36 program, as is the case in many community-based substance abuse treatment programs that treat drug-involved offenders,[45] and about one third of counties report that special strategies to manage Prop 36 high-risk offenders are not used.[2] So it may not be surprising to find that in the sample that was studied, Prop 36 treatment retention lengths were not significantly different by risk level and that similar proportions of high-risk and low-risk offenders received longer treatment stays. The provision of longer treatment to low-risk offenders was not shown to harm outcomes. But the overtreatment of some low-risk offenders, when there is an undertreatment of others who are in greater need, is wasteful of scarce resources and is an indication that there is room to improve efforts to retain high-risk offenders in treatment. Tools to engage and retain offenders in court-supervised community-based treatment have been identified and include a range of strategies such as the use of incentives and sanctions, adequate monitoring, participation in mutual self-help groups, and development of relapse prevention skills.[46]

In recent years, fiscal constraints have obliged many counties to shorten the expected length of treatment stay for Prop 36 offenders and, in some areas, to eliminate certain costlier modalities, such as residential treatment, from Prop 36 programming altogether. The data indicated that residential treatment often appears to be a setting where Prop 36 offenders receive more services in a shorter amount of time, a practice that can "intensify" the treatment experience but may not be as important for enhancing outcomes as the provision of a sufficient length of time in treatment. Some research indicates that a highly controlled environment may precipitate treatment dropout for some high-risk offenders.[47] Also, for many drug offenders, recovery from drug dependence is a lengthy process and the effects of treatment require adequate time to develop and sustain in order to have long-term impacts on overall health, quality of life, and social functioning.[48–50] In the absence of adequate residential treatment (for example due to limited residential treatment capacity or offender ineligibility), lengthened engagement with the type of treatment that is available (e.g., outpatient, self-help groups) may be warranted. More research is needed to understand how risk level may interact with treatment setting, as well as services received and level of supervision, to impact outcomes. Criminal justice mandated treatment clients face numerous obstacles to treatment compliance[51] and barriers to implementing client treatment matching exist,[52] but taken together, the information presented here indicates that more can be done to evaluate the risk level of Prop 36 offenders at program entry and that this information could be used to ensure that treatment, especially length of treatment, is better matched to need.

Finally, receipt of mental health services was one of the few client characteristics that differentiated high-risk offenders from low-risk offenders at assessment for treatment. Offenders diagnosed with both mental illness and drug dependence are particularly challenging to treat, and Prop 36 stakeholders have expressed concerns regarding their

ability to effectively address the needs of these offenders.[53] Evidence-based treatment practices for individuals with co-occurring disorders can be difficult to implement within criminal justice settings.[54] Yet finding ways to integrate treatments for drug and mental health disorders (e.g., assessment of mental health needs, co-location of services, on-site service delivery, adequately trained mental health professionals) will likely improve outcomes. Also, no studies have been published on offenders with mental illness who participate in drug treatment through Prop 36. More research is needed to identify special needs and strategies for improving outcomes among this population.

In conclusion, alternative sentencing policies that focus on the rehabilitation of drug offenders in lieu of imprisonment appear to be gaining in popularity among the general public. In the past decade, more than 20 states have considered legislation that is similar to Prop 36.[55] In California, voters were recently given the opportunity to consider a new drug diversion option, the Nonviolent Offender Rehabilitation Act,[56] and the debate continues over whether to solve the state's overcrowded prison problem through early prisoner release programs that would presumably route significant numbers of drug offenders to community-based treatment programs. Stakeholders desire sentencing options that save taxpayer money and also perform better than incarceration in reducing recidivism and improving longer term outcomes. However, the effectiveness and financial benefits of such programs are in jeopardy when treatment lengths are inadequate. To improve outcomes among high-risk offenders who receive court-supervised treatment, efforts are needed to address psychiatric problems and criminal history and to ensure receipt of appropriate lengths of treatment. The findings may be useful for optimizing the effectiveness of criminal justice diversion programs for treating drug-addicted offenders.

Acknowledgments

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Figure 1.
Interaction effect between risk level and treatment retention on re-arrests over 12 months after assessment for treatment on several characteristics at assessment for treatment including younger age, male gender, prior contact with the mental health services system, and more frequent contact with the criminal justice system. Treatment received and the proportion of offenders who recidivated were mostly similar across groups, but fewer high-risk offenders were urine tested during treatment and high-risk
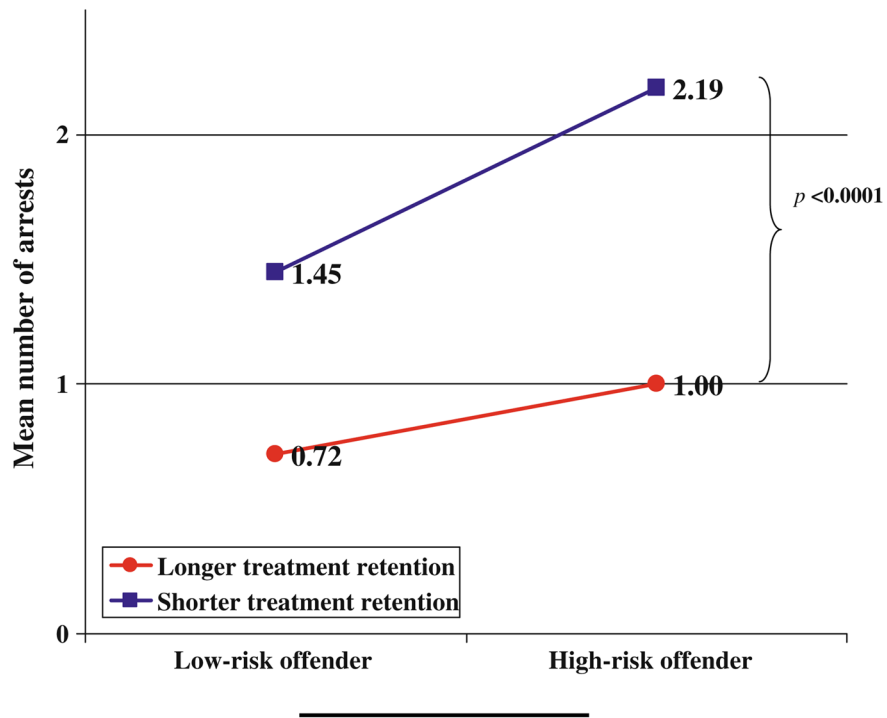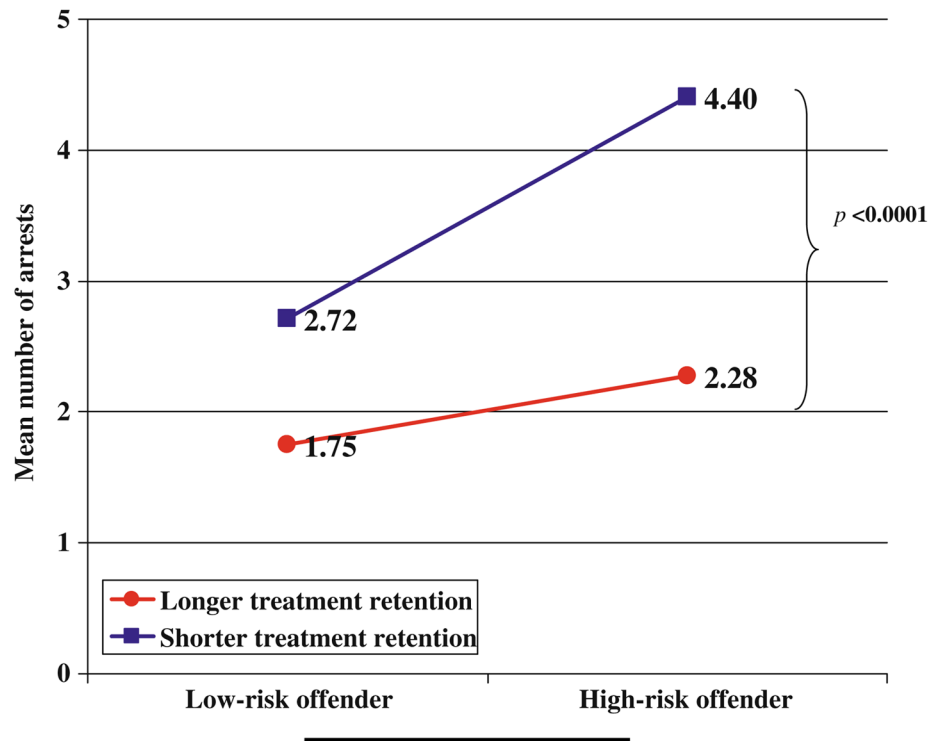
Figure 2.
Interaction effect between risk level and treatment retention on re-arrests over 30 months after assessment for treatment offenders had more re-arrests over 12 and 30 months following intake assessment. Consistent with prior research, multiple regression analysis showed that high-risk classification was a significant predictor of more re-arrests over 30 months after intake (results for the association between high-risk classification and re-arrests over 12 months pointed in the same direction, but did not reach statistical significance). Significant predictors associated with fewer re-arrests over 12 months after intake included White race/ethnicity and employment at intake. Regardless of the length of the outcome observation time period, the number of re-arrests was smaller with older age, being female, residing in a particular county, receipt of more services during treatment, and receipt of a longer length of treatment. Moreover, congruent with expectations, the interaction between risk classification and treatment length had a significant effect on the mean number of re-arrests. The number of re-arrests was greater with shorter treatment retention lengths for high-risk offenders and was smaller with longer treatment retention lengths for both low-risk and high-risk offenders.

Table 1

Offender characteristics at assessment for treatment

Variables	High-risk (≥5 prior convictions, n=78)	Low-risk (<5 prior convictions, n=1,009)	Test statistic, p value
Age, mean (SD)	33.4 (8.9)	37.3 (9.7)	$F(1,1085)=11.43, p<0.01$
Female (%)	14.1	28.9	$\chi^2_1=7.93, p<0.01$
Ethnicity (%)			$\chi^2_3=0.49, p=0.92$
White	53.9	50.9	
African American	18.0	19.1	
Hispanic	23.0	23.1	
Other	5.1	6.8	
Education, mean (SD)	11.8 (2.0)	11.8 (1.9)	$F(1,1055)=0.01, p=0.92$
Married (%)	12.2	16.3	$\chi^2_1=0.88, p=0.35$
Employed (full- or part-time, %)	36.5	39.0	$\chi^2_1=0.18, p=0.67$
Homeless (%)	12.3	7.7	$\chi^2_1=1.70, p=0.19$
Taking psychiatric medication	17.8	10.2	$\chi^2_1=4.10, p=0.04$
On parole (%)	15.6	11.0	$\chi^2_1=0.14, p=0.70$
Motivation level, mean (SD)	77.5 (11.2)	77.3 (12.5)	$F(1,1071)=0.03, p=0.86$
ASI Composite Scores, mean (SD)			
Alcohol	0.09 (0.16)	0.10 (0.18)	$F(1,1040)=0.02, p=0.88$
Drug	0.14 (0.11)	0.13 (0.11)	$F(1,1017)=0.40, p=0.53$
Employment	0.77 (0.26)	0.71 (0.29)	$F(1,1059)=2.94, p=0.09$
Family	0.16 (0.22)	0.16 (0.20)	$F(1,1033)=0.00, p=0.98$
Legal	0.28 (0.22)	0.26 (0.18)	$F(1,1058)=1.17, p=0.28$
Medical	0.20 (0.29)	0.26 (0.34)	$F(1,1062)=1.79, p=0.18$
Psychiatric	0.19 (0.22)	0.18 (0.22)	$F(1,1040)=0.20, p=0.65$
Primary drug (%)			$\chi^2_4=7.60, p<0.11$
Methamphetamine	43.2	50.6	
Cocaine	17.6	12.5	
Marijuana	10.8	13.4	
Heroin	10.8	8.5	
Alcohol	14.9	7.2	
Past 30 days (%)			
Used any drug (excludes alcohol)	54.1	48.5	$\chi^2_1=0.84, p=0.36$

Variables	High-risk (≥5 prior convictions, n=78)	Low-risk (<5 prior convictions, n=1,009)	Test statistic, p value
Arrested	50.7	43.7	χ_1^2=1.31, p=0.25
Incarcerated	65.3	49.7	χ_1^2=6.82, p=0.01
Had psychiatric problems	41.0	39.4	χ_1^2=0.07, p=0.78
Lifetime			
Age at first primary drug use, mean (SD)	18.9 (7.5)	20.5 (8.0)	$F(1,1057)$=2.86, p=0.09
Years of primary drug use, mean (SD)	17.4 (25.5)	22.2 (33.5)	$F(1,1036)$=1.42, p=0.23
Received prior drug treatment,%	73.0	65.0	χ_1^2=1.95, p=0.16
No. of prior drug treatments, mean (SD)	0.40 (1.1)	0.50 (1.5)	$F(1,1060)$=1.40, p=0.24
Age at first arrest, mean (SD)	18.5 (5.3)	20.9 (7.9)	$F(1,1074)$=6.80, pG0.01
No. of arrests, mean (SD) (data source: DOJ)	13.0 (11.3)	8.9 (12.0)	$F(1,1060)$=7.81, pG0.01
No. of convictions, mean (SD) (data source: DOJ)	8.4 (3.7)	4.7 (3.7)	$F(1,1085)$=72.44, pG0.01
Months incarcerated, mean (SD)	29.9 (30.4)	26.4 (34.4)	$F(1,1057)$=0.76, p=0.38
Received mental health services (%)(Data source: DMH)	47.4	26.2	χ_1^2=16.36, p=0.01

Data source: All variables were extracted from the baseline assessment interview unless stated otherwise

Table 2

Treatment received and recidivism

Variables	High-risk (≥5 prior convictions, n=78)	Low-risk (<5 prior convictions, n=1,009)	F test or chi-square
Treatment received			
Modality (%) (data source: CADDS)			χ^2_2=2.75$_{, p=0.25}$
Outpatient	73.1	78.8	
Residential	24.4	17.2	
Methadone maintenance	2.6	4.0	
Longer treatment retention	46.2	42.4	χ^2_1=0.41$_{, p=0.52}$
(≥113 days, %) (data source: CADDS and follow-up interview)			
No. of services received, mean (SD) (data source: follow-up interview)	129.2 (169.1)	137.9 (138.7)	$F(1,1079)=0.28, p=0.60$
Urine tested during treatment (%)(data source: follow-up interview)	70.1	82.6	χ^2_1=7.40$_{, p<0.01}$
No. of urine tests, mean (SD) (data source: follow-up interview)	5.8 (7.7)	7.0 (7.1)	$F(1,1079)=1.77, p=0.18$
Completed treatment (%)(data source: CADDS)	31.3	39.3	χ^2_1=1.59$_{, p=0.21}$
Recidivism over 12 months after assessment for treatment (data source: DOJ)			
Re-arrested (%)	64.1	53.8	χ^2_1=3.08$_{, p=0.07}$
No. of re-arrests, Mean (SD)	1.6 (1.8)	1.1 (1.6)	$F(1,1085)=7.14, p<0.01$
Recidivism over 30 months after assessment for treatment (data source: DOJ)			
Re-arrested (%)	78.2	69.6	χ^2_1=2.58$_{, p=0.11}$
No. of re-arrests, mean (SD)	3.4 (3.6)	2.3 (2.6)	$F(1,1085)=12.45, pG0.01$

Table 3

Multiple regression models predicting number of re-arrests over 12 and 30 months after assessment for treatment

Variables	Over 12 months		Over 30 months	
	Estimates			
	Model 1	Model 2	Model 3	Model 4
Age at intake	−0.126**	−0.130**	−0.163**	−0.168**
Female (vs. male)	.076*	−0.076*	−0.092**	−0.092**
White (vs. non-White)	−0.069*	−0.066*	−0.038	−0.035
Employed (vs. not employed) at intake	−0.072*	−0.069*	−0.061	−0.058
County B (vs. County A)	−0.005	−0.001	0.013	0.018
County C (vs. County A)	−0.016	−0.021	0.001	−0.004
County D (vs. County A)	−0.109**	−0.108**	−0.092*	−0.090*
County E (vs. County A)	0.136**	0.139**	0.174**	0.177**
Primary drug is methamphetamine (vs. all other drug types)	−0.019	−0.021	−0.068*	−0.070*
Motivation level	0.004	0.004	0.014	0.013
Treatment setting is residential (vs. methadone maintenance)	0.004	0.002	0.053	0.050
Treatment setting is outpatient (vs. methadone maintenance)	0.038	0.033	0.033	0.027
Received mental health services prior to intake	0.017	0.014	0.036	0.033
No. of urine tests received during treatment	−0.001	Less than −0.001	−0.018	−0.016
No. of services received during treatment	−0.102**	−0.105**	−0.063*	−0.066*
High-risk offender (vs. low-risk offender)	0.029	–	0.061*	–
Longer treatment retention [≥113 days vs. shorter treatment retention (G113 days)]	−0.248**	–	−0.179**	–
High-risk offender and longer treatment retention (vs. low-risk offender and shorter treatment retention)	–	−0.109**	–	−0.074*
Low-risk offender and longer treatment retention (vs. low-risk offender and shorter treatment retention)	–	−0.223**	–	−0.158**
High-risk offender and shorter treatment retention (vs. low-risk offender and shorter treatment retention)	–	0.067*	–	0.099**

Standardized betas are shown. R^2 was 0.16 for models 1, 3, and 4 and 0.17 for model 2

*
$p<0.05$

**
$p<0.01$