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Differential Outcomes of Court-Supervised Substance Abuse Treatment Among California Parolees and Probationers

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Abstract

To explore the effectiveness of court-supervised drug treatment for California parolees, offender characteristics, treatment experiences, and outcomes were examined and contrasted to those of probationers. Analysis utilized statewide administrative data on 4,507 parolees and 22,701 probationers referred to treatment by Proposition 36 during fiscal year 2006-07. Compared to probationers, parolee problems were more severe at treatment entry, more were treated in residential settings, treatment retention was shorter, and fewer completed treatment. Regarding outcomes, fewer parolees were successful at treatment discharge and more recidivated over 12-months post admission. Both groups improved in many areas by treatment discharge but improvements were generally smaller among parolees. Significant interaction effects indicated parolees benefitted from residential care and more treatment days, even after controlling for covariates. Court-supervised drug treatment for parolees can “work,” parolees however have more frequent and diverse needs and their outcomes are enhanced by more intensive treatment. Findings suggest methods for optimizing the effectiveness of criminal-justice supervised programs for treating drug-dependent offenders.

Keywords

parolees; substance abuse treatment; recidivism; drug courts; Proposition 36

Introduction

Since 2001, California's voter-initiated Proposition 36 (Prop 36) has provided community-based treatment to offenders who would have otherwise not received it. Under Prop 36 (also known as the Substance Abuse and Crime Prevention Act, or SACPA), adults convicted of nonviolent drug possession offenses and eligible probationers and parolees can elect to receive community-based drug treatment in lieu of likely incarceration. Prop 36 aims 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 (California Department of Alcohol and Drug Programs, 2008).

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Prop 36 successfully routed many drug-abusing offenders to treatment in a very short time period (Hser et al., 2007), resulting in reduced incarceration costs (Longshore et al., 2006) and favorable outcomes (Longshore et al., 2006). However, Prop 36 also strained service delivery systems (Hardy et al., 2005) and under-treated high-severity cases (Farabee et al., 2004). Key stakeholders expressed doubts over the ability of the program to adequately address the needs of special populations (Hser et al., 2007). Parolees were identified as one sub-group of concern (The Avisa Group, 2005; Little Hoover Commission, 2008).

Parolees account for about 17% of Prop 36 drug treatment admissions (approximately 7,122), representing a significant and growing minority of the Prop 36 population (Urada et al., 2009). Parolees exhibit shorter treatment duration and completion rates than probationers and over half of parolees, whether they received treatment or not, are recommitted to prison in the year after program referral (Longshore et al., 2005; Urada et al., 2007). Prior research on Prop 36 parolees is informative but restricted by several limitations. Notably, few outcomes beyond those assessed at treatment discharge have been examined, return to prison has been the only longer term outcome that has been investigated, and measurement of outcomes has focused on criminal justice indicators (arrest, incarceration), omitting indicators of functioning in other key life domains (e.g., drug use, employment, housing situation, social support). Also, analyses and results were presented in evaluation reports and not subjected to scientific peer review, a process that is critical for establishing and disseminating evidence-based knowledge about the effectiveness of behavioral interventions. Finally, elements of the Prop 36 program may make it harder for parolees to succeed,¹ yet no research efforts have incorporated the many contextual factors or have identified practices that contribute to enhanced treatment effectiveness among Prop 36 parolees. In effect, parolees have been identified as a challenging Prop 36 population to treat but little is known about what systems might do to improve outcomes of the many parolees who enter community-based drug treatment each year.

Exemplary of the epidemiologic transition from infectious to chronic disease (Brandt & Gardner, 2000), substance use and its treatment as a public health issue is hampered by its perception as an “evil habit” or “personal choice” (Leichter, 2003). Prop 36 is innovative in that it has applied a public health approach on a large scale to reduce drug use among offenders, but disproportionate attention has been paid to associations between outcomes and individual-level factors. In contrast, this paper seeks to examine short- and longer-term outcomes and identify system-level factors, in addition to individual-level factors, that affect those outcomes. Substance abuse has been a major contributor to rising incarceration rates and the rehabilitation of offenders in lieu of incarceration is a priority in California and nationwide (California Department of Corrections and Rehabilitation, 2009). Identifying strategies for enhancing parolee outcomes has significant implications for improving the effectiveness of Prop 36 and other similar court-supervised drug rehabilitation programs.

¹For example, programmatic differences include: (1) parolees who have ever been convicted of a serious or violent felony are ineligible for program participation whereas probationers with this type of offense history can participate in the program if the conviction is more than 5 years old (and other criteria are met); (2) parolee cases are adjudicated and supervised by state- and region-level authorities (i.e., California Department of Corrections and Rehabilitation, Board of Prison Terms), whereas for probationers these roles are fulfilled by county-level authorities (i.e., Superior Courts, County Probation Departments); (3) placement in the program is treated as the final disposition of charges for parolees, but for probationers original charges remain open for dismissal (upon successful treatment completion); (4) parolees are allowed up to two program violations and probationers are allowed three; (5) failure to complete treatment must be charged as a new violation for parolees but it can make probationers eligible for re-sentencing; and (6) parole supervision terminates independently of progress in treatment but probation supervision term does not terminate prior to treatment completion. In effect, parolees are provided with fewer chances to fail and re-enter treatment, they receive smaller rewards for program compliance, and they are subject to greater punishments for noncompliance.

Research questions and hypotheses

Informed by an open systems conceptual framework (Katz & Kahn, 1966; Scott, 1992; von Bertalanffy, 1956; von Bertalanffy, 1968)² and drawing on extant knowledge regarding offender- and program-level factors associated with treatment outcomes among parolees,³ we examined the following questions: (1) How are Prop 36 parolees different from probationers in characteristics at treatment intake, experiences during treatment, short- and long-term outcomes, and degree of behavioral change over time? (2) After controlling for differences in offender characteristics and treatment experiences, are there treatment factors (setting, retention) that impact short- and long-term outcomes? (3) Are outcomes impacted by any interaction effects between parolee status (vs. probationer) and treatment setting or retention?

We hypothesized that, compared to probationers, parolees would exhibit more severe problems at treatment intake, receive a more intense level of care, and demonstrate less positive short- and long-term outcomes, but that parolee outcomes would be better by treatment in a residential setting and more days of treatment.

Methods

Data sources

Data were collected as part of the Evaluation of the Substance Abuse and Crime Prevention Act of 2000 (Urada et al., 2009), conducted since 2001 by the UCLA Integrated Substance Abuse Programs (ISAP), which obtained existing administrative data compiled by several state agencies. The analysis utilized individually matched data from two administrative databases: the California Outcomes Measurement System (CalOMS), maintained by the California Department of Alcohol and Drug Programs (ADP) and the Automated Criminal History System (ACHS), maintained by the California Department of Justice (DOJ). CalOMS contains self-reported and official information on all individuals admitted to publicly funded drug treatment. Data are recorded at treatment entry and discharge, regardless of whether treatment is successfully completed or not, and submitted by treatment provider staff. For this analysis, arrest histories were acquired from ACHS on all Prop 36

²An “open systems” approach builds on the principle that organizations are open to and interact with environmental influences (Katz & Kahn, 1966; von Bertalanffy, 1956, 1968). Each component of an open system draws on the external environment for inputs, transforms those inputs, and then creates outputs that, in turn, impact the external environment. An open systems perspective allows continual interactions between internal elements and the environment. Changes and stresses in the environment may create demands and constraints that affect the internal processes of the involved systems. Similarly, outputs from the system’s transformative actions may have significant effects on the external environment, which cause it to react in ways that again affect the system (feedback loops). Over time, information feedback loops may produce adaptive change. Open systems are characterized by several important characteristics. First, in an open system there are multiple ways of reaching the same goals or end states, termed “equifinality” (Katz & Kahn, 1966). Second, open systems exhibit homeostasis, that is, organizational ability to self-regulate based on inputs, the external environmental, and assessment feedback (Morgan, 1986). Finally, open systems may be comprised of various interrelated subsystems (Scott, 1992), enabling the system to function as a whole. Within the Prop 36 environment, relationships between stakeholders (e.g., parole, probation, treatment) may be different in terms of their inputs, internal processes, and outputs, however each contributes toward the goal of providing intervention services for substance-abusing offenders. An open systems conceptual framework underscores the value of understanding variations in program operation and outcomes and across different settings and sub-groups.

³Generally, offender-level factors that have been associated with positive parolee outcomes include older age (Zanis et al., 2003), being female (Hohman et al., 2000), use of less serious drug types (Cartier et al., 2006; Farabee & Shen, 2004; Zanis et al., 2009; 2003), fewer prior convictions (Zanis et al., 2003), fewer prior treatment experiences (Hohman et al., 2000), employment (Bahr et al., 2009; Hanlon et al., 2000; Hohman et al., 2000; Roll et al., 2005), psychiatric health (Baillargeon et al., 2009; Evans et al., 2009; Messina et al., 2004), and greater motivation for change (Evans et al., 2009; Prendergast et al., 2009). Among the many program-level factors that have been examined, more days of treatment continues to be one of the most common significant predictors of better treatment outcomes among offenders (Burdon et al., 2004; Hohman et al., 2000; Prendergast et al., 2000). Some research has focused on treatment matching, emphasizing the need to intensify treatment based on criminogenic factors, need for services, or both (Lowenkamp & Latessa, 2005; Taxman et al., 2006; Thanner & Taxman, 2003). As for treatment setting, there is evidence indicating that parolees can benefit from outpatient and residential treatment regardless of substance abuse problem severity (Burdon et al., 2007).

offenders in CalOMS. The Institutional Review Boards at UCLA and at the California Health and Human Services Agency approved and monitored study protocols.

In fiscal year 2006-07, 43,872 unique offenders entered drug treatment statewide via Prop 36 (16% by parole and 84% by probation). Our analysis identified all offenders who: (1) exited treatment as of December 31, 2008, and (2) had a criminal history record on file in DOJ's ACHS as of December 31, 2008. This cut-off date was chosen to accommodate the three months that is generally needed for an arrest to appear in the DOJ database (Hser & Evans, 2008). Also, given that some Prop 36 offenders receive 90 days of treatment but very few receive >12 months (Urada et al., 2009), the cut-off date was also chosen to allow each offender an adequate amount of time for treatment to occur and for a treatment discharge record to appear in CalOMS. Of all offenders with a CalOMS admission record, about 88% had discharge data on file by the cut-off date and 75% were matched to DOJ data.⁴ Next, the approximately 2% of offenders who received narcotic replacement treatment were dropped from analyses. This decision omitted a small but distinct group primarily characterized by unique drug use histories and a need for narcotic replacement treatment (a level of care that is not available to Prop 36 offenders in some counties), permitting examination of the much larger, more "typical" group of Prop 36 offenders.

Criteria resulted in an analytic sample of 27,208 Prop 36 offenders (4,507 parolees and 22,701 probationers⁵) treated in outpatient or residential settings with a complete set of drug treatment and criminal history data. Of the total sample (n=27,208), at treatment entry mean age was 35.5 years (SD = 10.5); 25.6% were women; race/ethnicity was 44.5% White, 34.0% Hispanic, 13.5% African-American, 8.0% other race/ethnic group; mean years of education was 11.5 (SD = 2.1); 58.8% reported methamphetamine as their primary drug problem; and 22.3% were employed full- or part-time. In the 30 days prior to treatment entry, 24.4% had been arrested, 32.4% incarcerated, and 54.3% had used their primary drug. About half had never entered drug treatment previously (49.3%). Offenders were distributed across all counties in California and their distribution was proportional to county-level adult drug treatment populations.

Measures

Offender characteristics at treatment intake were extracted from CalOMS records and included self-reported demographic information, employment status, receipt of social support, homelessness, mental health disorders, history of drug use and treatment, and criminal history in the prior 30 days.

Treatment setting was defined by the indicator in CalOMS noting type of service received during fiscal year 2006-07 and included treatment provided in outpatient and residential settings.

Treatment retention, or number of days in drug treatment, was defined by the number of days from date of CalOMS intake during fiscal year 2006-07 to date of CalOMS discharge or December 31, 2008, whichever date occurred earlier. If an individual had multiple treatment events during the time period of interest, the event that first occurred was used to

⁴Following prior cross-system data linkage research conducted with multiple administrative data systems maintained by the state of California (Hser & Evans, 2008), a combination of personal identifiers, including offender name, Social Security Number, and date of birth served as the primary variables for applying a deterministic method to link CalOMS records to records maintained by DOJ. Because a deterministic method accepts as a match only those cases that completely fulfill the matching criteria, under-linkage of data was expected, however this concern was felt to be outweighed by the high certainty of linkage associated with the deterministic method and the corresponding level of confidence in resulting findings.

⁵A single referral source must be selected in the CalOMS system and offenders simultaneously supervised by both parole and probation ("dual supervision") are typically recorded as a parole referral.

determine treatment setting and events that occurred within 30 days of one another (meaning the date of first treatment discharge and the date of second treatment intake were 30 days apart) were “tied together” into one episode of care, consistent with the CalOMS definition of a treatment episode (California Department of Alcohol and Drug Programs, 2007), and all days of treatment within this episode were analyzed.

Treatment completion is indicated on the CalOMS discharge record by treatment staff when an individual has successfully completed all treatment program requirements and recovery goals. For this analysis, completion was indicated if it was marked at discharge from the episode of care that was analyzed.

Treatment success included drug use, arrest, and incarceration status as assessed at treatment discharge and recorded in CalOMS by treatment provider staff. Although each measure is analyzed separately, a composite index of *success on three indicators* was also constructed and defined as no use of any illicit drugs, no arrest, and no incarceration (in jail or prison) in the 30 days prior to treatment discharge. Self-reported employment status and receipt of social support were also analyzed.

Recidivism was based on Department of Justice records on post-treatment intake arrests. The arrest percentage and number included any arrests occurring in the 12 months following the date each individual was admitted to substance abuse treatment through December 31, 2008, uncorrected for time-at-risk (i.e., months of incarceration during this period).

Statistical analyses

Statistical analyses were performed using SAS 9.2. Demographic comparisons were analyzed using chi-square (Proc Freq) or MANOVA (Proc GLM) as appropriate. Analysis of pre- and post-treatment differences for probationers and parolees was conducted using Generalized Estimating Equations (GEE) with proc Genmod. To reduce bias due to non-normal data distribution, a non-parametric repeated measures analysis was used and both main effect and interaction effects were generated, permitting the assessment of group- and time-based differences.

Logistic and multiple regression analyses were conducted to examine predictors of success at treatment discharge (short-term outcome) and number of re-arrests 12-months post-treatment intake (long-term outcome). Predictors included offender characteristics at treatment intake and, as a control for environmental context, size of the county of residence (as a set of dummy variables).⁶ Additionally, referral type, treatment setting, and treatment retention as well as their interaction were included as primary predictors. Success at treatment discharge was included as a predictor of recidivism 12-months post-treatment intake. Selection of variables was informed by the relevant literature as well as by the descriptive analysis of characteristics. When indicators of similar behaviors were highly correlated, only one indicator was chosen for inclusion. Diagnostic analysis with variance inflation factor (VIF) was conducted and the VIF values of selected predictors were below 5, indicating no multicollinearity biases.

⁶County size categories were developed by the County Alcohol and Drug Program Administrators' Association of California (CADPAAC). Of the 58 counties, there are 13 large-sized, 12 medium, 14 small, and 19 very small.

Results⁷

Characteristics of offenders at treatment intake

Compared to probationers, parolee problems were generally more severe at treatment entry (Table 1). Many differences were found and so individual comparisons, while presented in Table 1, are not explicated here. Overall, parolees were older, male, of a racial/ethnic minority group, resided in large counties, reported use of more “serious” drugs, had used drugs recently, and had received drug treatment previously. Fewer parolees had interactions (arrests, incarcerations) with the criminal justice system in the 30 days and 12 months prior to treatment entry but parolees had many more lifetime arrests.

Treatment experiences and outcomes

Compared to probationers, fewer parolees received treatment in an outpatient setting (81.2% vs. 86.8%) and more received residential care (18.8% vs. 13.2%); parolees had fewer days of outpatient (90.2 vs. 126.8) and residential (88.9 vs. 115.4) treatment; and fewer parolees received 90 or more days of treatment (38.4% vs. 53.5%); completed treatment (24.2% vs. 38.0%); or did either (44.3% vs. 58.5%).

For the composite outcome measure, fewer parolees than probationers were successful at treatment discharge (25.8% vs. 37.9%). Analysis of the individual indicators that comprise this composite measure showed that more parolees had used their primary drug (33.2% vs. 23.5%) but there was no significant difference in the percentage that had been incarcerated (6.3% vs. 6.4%) or arrested (5.3% vs. 5.5%). Other indicators of status at discharge showed that fewer parolees were employed (40.5% vs. 47.1%) and fewer reported receipt of social support (36.9% vs. 44.8%). Over 12-months post-treatment intake, more parolees were arrested (53.9% vs. 39.6%) and had more arrests (1.0 vs. 0.8).

As shown in Table 3, both parolees and probationers made improvements from treatment intake to discharge, but the amount of improvement was smaller among parolees in all but one area examined. The decrease in the percentage of offenders who used the primary drug was similar for parolees and probationers (-30.0% and -29.0%) but changes were smaller among parolees in arrests (-14.9% vs. -19.7%), incarceration (-29.8% vs. -32.5%), employment (+7.7% vs. +13.0%), and social support (+27.1% vs. +23.9%). Moreover, there was an increase in the percentage arrested among parolees (+2.5%) and in the number of arrests that occurred (+0.1) in the 12 months pre-post treatment entry whereas among probationers there were decreases in these two indicators (-36.0%; -0.9).

Factors associated with success at treatment discharge

Offender-level factors associated with decreased likelihood of success (Table 4, Model 1) at treatment discharge included parolee (vs. probationer) status (-0.466, O.R. 0.628), use of the primary drug in the 30 days before treatment intake (-0.712, O.R. 0.491), a greater number of arrests in the 12 months before intake (-0.040, O.R. 0.960) and over the lifetime (-0.003, O.R. 0.997), and residing in a very small-sized (vs. large) county (-0.257, O.R. 0.668). Factors associated with an increased likelihood of success included older age (0.011, O.R. 1.011), White race/ethnicity (0.129, O.R. 1.138), higher educational attainment (0.039, O.R. 1.039), employment (0.165, O.R. 1.179), social support (0.323, O.R. 1.386), methamphetamine as the primary drug type (vs. other drug types) (0.184, O.R. 1.203), prior treatment experience (0.008, O.R. 1.008), and residing in a small-sized (vs. large) county (0.103, O.R. 0.958).

⁷Some raw percentages were very similar but nevertheless were found to be statistically different, illustrating how large sample sizes increase statistical power, making it possible to detect even minor differences between groups.

Treatment-level factors associated with an increased likelihood of success included treatment in a residential (vs. outpatient) setting (1.059, O.R. 2.882) and more days of treatment (0.008, O.R. 1.008). A significant interaction effect between residential treatment setting and parolee status indicated that placement of parolees in residential (vs. outpatient) treatment increased the likelihood of success at treatment discharge (0.215, O.R. 1.239). No significant interaction effects were found between number of treatment days and parolee status.

Factors associated with 12 month recidivism

Offender-level factors associated with fewer arrests in the 12-months post-treatment intake (Table 4, Model 2⁸) included older age (-0.012 per year over mean age) and employment at intake (-0.045). Factors associated with more arrests included being on parole (vs. probation) (0.233), male gender (0.120), White race/ethnicity (0.025), mental illness (0.032), county size, greater use of the primary drug prior to treatment intake (0.077), and more arrests in the 12 months prior to treatment intake (0.171) and over the lifetime (0.008).

Treatment-level factors that impacted recidivism were residential (vs. outpatient) treatment (-0.085) and more days of treatment (-0.001 per day); both reduced the number of arrests, as did the interaction between parolee status and retention (-0.0006 per day). Included as a predictor of recidivism, success at treatment discharge was also associated with a significantly lower number of arrests 12 months post-treatment intake (-0.319). In other words, number of re-arrests over 12-months post-intake was reduced by 15% with treatment in a residential (vs. an outpatient) setting, by 10% to nearly 20% with longer treatment retention, and by 60% with a status of success at treatment discharge.

Discussion

Summary of findings

Compared to probationers, parolee problems were more severe at treatment entry, more parolees were treated in residential settings, parolee treatment retention was shorter, and fewer parolees completed treatment. Regarding outcomes, fewer parolees were successful at treatment discharge and more recidivated over 12-months post admission. Both groups improved by treatment discharge but improvements were generally smaller among parolees. Significant interaction effects indicated parolees benefitted from residential care and more treatment days, even after controlling for covariates.

Limitations

Omitted from analyses were offenders treated in narcotic replacement settings and offenders who had missing drug treatment discharge data by the cut-off date (approximately 18 months after treatment intake) or who had missing criminal history data. Thus, findings may not be generalizable to certain populations such as chronic opiate users or offenders with longer episodes of treatment. Also, data on incarceration periods beyond the 30 days prior to treatment intake and discharge were not available, thus limiting our ability to account for possible group differences in time-at-risk periods (i.e., “time in the community”) and perhaps confounding 12-month pre-post treatment recidivism rates. Finally, contextual factors (e.g., variation in supervision of offenders or program operation) and offender perceptions and attitudes (e.g., perceived coercion, treatment motivation) that may have influenced outcomes were not examined. These limitations and any potentially biasing effects pose important areas for future research. A prevailing strength of the study is its use

⁸The multiple regression intercept (i.e., the mean number of post treatment-intake arrests for a non-White female of average age and education who was unsuccessful at treatment and was not homeless and did not suffer from mental health problems) was 0.55.

of statewide administrative data, which records objective events and is thus not subject to self-report biases. Although administrative data is vulnerable to data error (Duran et al., 2005; Saunders & Heflinger, 2004), it is also a valuable resource for substance abuse treatment evaluation and outcomes (Evans et al., 2010; McCarty et al., 1998) and it permitted examination of a large proportion of offenders.

Implications and conclusions

Our study confirms and extends existing research on court-supervised drug treatment for offenders, particularly parolees. Despite a greater severity of need at treatment intake, poorer treatment retention and completion rates, and treatment within a system that, arguably, may make it harder for parolees to succeed, a significant minority of parolees benefitted from the Prop 36 program. About 25% of parolees were successful at treatment discharge and behavioral improvements occurred in several domains (i.e., increased employment and social support and reduced primary drug use, arrests, and incarceration). Continued drug use, not re-arrest or incarceration, was the primary reason for the poorer success rate among parolees, indicating a need to focus attention on better addressing substance use and dependence disorders and improving services and their delivery for this population.

The parolee recidivism rate of 54% is congruent with published literature reporting recidivism rates among similar samples ranging from 22% to 75% (Lamb & Weinberger, 2002; Zanis et al., 2003). More parolees were arrested after treatment and for a greater number of arrests. However, fewer parolees were arrested just prior to treatment intake and parolees likely face greater criminal justice scrutiny (and thus are more likely to be detected when a new crime is committed or parole violations occur). Further research is needed to examine potential variation in time-at-risk periods and supervision intensity and their impact on pre-post arrest rates.

Placement in residential treatment and ensuring receipt of more treatment are two strategies that are likely to enhance parolee outcomes. Residential treatment, case management, job readiness training, and other ancillary services are rarely available under Prop 36 (Urada et al., 2009). Anecdotal evidence from county stakeholders indicates that parolees must first fail Prop 36 treatment to access more specialized and comprehensive services that are routinely provided by several established diversionary mechanisms in California (e.g., the Parolee Services Network; the Substance Abuse Service Coordinating Agency) (Campos et al., 2009). Such practices constitute a significant system-level barrier to treatment success among parolees and the prevalence of such barriers and associated outcomes require further examination.

Other system-level factors may impact parolee treatment outcomes. For example, limited integration between county and state criminal justice systems has been a consistent stakeholder concern regarding parolee performance in Prop 36 (Hardy et al., 2005; Little Hoover Commission, 2008). Reported consequences suggest that parolees receive inaccurate information, increasing risks for inadvertently violating court-mandated requirements, and parolees receive limited judicial oversight, creating an inadequate or inappropriate criminal justice response to program noncompliance (Evans, 2009). Contextual factors like these, in conjunction with the present findings, underscore the need to explore strategies for enhancing collaboration and communication between the criminal justice and treatment systems.

Prop 36 parolees present to court-supervised drug treatment with multiple needs and provision of more intensive treatment is likely to enhance outcomes. Findings constitute a useful information “feedback loop” on how systems that provide care may be improved to

optimize the effectiveness of programs for treating drug-dependent offenders, particularly parolees, in court-supervised community settings.

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Table 1
Offender Characteristics at Treatment Intake

	Parolees (N=4,507) 16.6%	Probationers (N=22,701) 83.4%
Age, Mean (SD) ***	36.8 (9.5)	35.3 (10.6)
Male, % ***	81.1	73.1
Race/ethnicity, % ***		
White	43.7	44.7
Hispanic	30.7	34.6
African American	18.4	12.5
Other	7.2	8.2
Size of county of residence †, % ***		
Large	37.6	28.2
Medium	17.9	25.8
Small	27.8	28.7
Very small	16.8	17.3
Education, Mean (SD) ***	11.4 (2.0)	11.5 (2.1)
Employed (full or part-time), %	32.8	34.1
Social support, % ***	36.9	44.8
Homeless, % ***	12.2	10.2
Mental health disorder, % ***	16.4	14.4
Drug use and treatment history		
Primary drug type, % ***		
Methamphetamine	59.3	58.7
Cocaine/Crack	14.4	12.0
Heroin & Other Opiates	7.9	6.0
Marijuana	9.5	14.3
Alcohol	7.9	7.9
Other	1.1	1.2
Age at first use of primary drug, Mean (SD) ***	20.6 (7.6)	21.1 (8.2)
Used drugs in past 30 days, % ***	63.2	52.5
Injected drugs in past 30 days, % ***	9.0	5.2
Prior treatment for alcohol or drugs, % **	51.5	48.9
No. of prior treatments, Mean (SD) ***	1.2 (2.5)	1.0 (2.5)
Criminal history		
In past 30 days, %		
Arrested ***	20.2	25.2
Incarcerated **	36.1	38.9
In past 12 months		
Arrested, % ***	51.4	75.6

	Parolees (N=4,507) 16.6%	Probationers (N=22,701) 83.4%
No. of arrests, Mean (SD) ***	0.9 (1.1)	1.7 (1.5)
No. of arrests in lifetime, Mean (SD) ***	26.1 (17.8)	18.0 (16.5)

*p<0.05;

**
p<0.01;

p<0.001

⁺ Categories were developed by the County Alcohol and Drug Program Administrators' Association of California (CADPAAC). Of the 58 counties, 13 are large, 12 medium, 14 small, and 19 very small.

Treatment Experiences

Table 2

	Parolees (N=4,507)	Probationers (N=22,701)
Treatment setting, % ^{***}		
Outpatient	81.2	86.8
Residential	18.8	13.2
Treatment retention and completion		
Outpatient retention, Mean days (SD) ^{***}	90.2 (92)	126.8 (110)
Residential retention, Mean days (SD) ^{***}	88.9 (86)	115.4 (106)
Retention 90 days, % ^{***}	38.4	53.5
Completed treatment, % ^{***}	24.2	38.0
Completed treatment or retention 90 days, % ^{***}	44.3	58.5

* p<0.05;

**p<0.01;

p<0.001

Table 3

Treatment Outcomes

	Parolees (N=4,507)			Probationers (N=22,701)		
	Intake	Discharge	Change	Intake	Discharge	Change
In 30 days prior to treatment...						
Used primary drug, %	63.2 <i>a***</i>	33.2 <i>b***</i>	-30.0 <i>c</i>	52.5 <i>a***</i>	23.5 <i>b***</i>	-29.0 <i>c</i>
Arrested, %	20.2 <i>a***</i>	5.3	-14.9 <i>c,d*</i>	25.2 <i>a***</i>	5.5	-19.7 <i>c,d*</i>
Incarcerated, %	36.1 <i>a**</i>	6.3	-29.8 <i>c</i>	38.9 <i>a**</i>	6.4	-32.5 <i>c</i>
Successful, % †	--	25.8 <i>b***</i>	--	--	37.9 <i>b***</i>	--
Employed full or part-time, %	32.8	40.5 <i>b***</i>	+7.7 <i>c,d**</i>	34.1	47.1 <i>b***</i>	+13.0 <i>c,d***</i>
Social support, %	36.9 <i>a***</i>	63.9 <i>b***</i>	+27.0 <i>c,d*</i>	44.8 <i>a***</i>	68.7 <i>b***</i>	+23.9 <i>c,d*</i>
In 12 months...						
Arrested, %	51.4 <i>a***</i>	53.9 <i>b***</i>	+2.5 <i>c,d**</i>	75.6 <i>a***</i>	39.6 <i>b***</i>	-36.0 <i>c,d**</i>
No. of arrests, Mean (SD)	0.9 (1.1) <i>a***</i>	1.0 (1.2) <i>b***</i>	+0.1 (1.4) <i>c,d**</i>	1.7 (1.5) <i>a***</i>	0.8 (1.2) <i>b***</i>	-0.9 (1.7) <i>c,d**</i>

† Defined as, no use of the primary drug and no arrests or incarcerations in 30 days prior to discharge.

*a** Differences between groups at intake are significant at *a***p*<0.05;

*a*** Differences between groups at intake are significant at *p*<0.01;

*a**** Differences between groups at intake are significant at *p*<0.001

*b** Differences between groups at discharge are significant at *p*<0.05;

*b*** Differences between groups at discharge are significant at *p*<0.01;

*b**** Differences between groups at discharge are significant at *p*<0.001

c Differences across time (pre, post) are significant at *p*<0.001, GEE.

*d** Interaction effect between time (pre, post) and groups (parolee, probationer) is significant (*p*<0.05); GEE.

*d*** Interaction effect between time (pre, post) and groups (parolee, probationer) is significant (*p*<0.001), GEE.

Table 4
Regression Models Predicting Short- and Long-Term Treatment Outcomes

	Model 1		Model 2
	Success at treatment discharge (N=24,988)		No. of arrests 12 months post-intake (N=25,297)
	Point Estimate	Odds Ratio	Point Estimate
Offender-level factors			
On parole at intake (vs. probation)	-0.466 ^{***}	0.628	0.233 ^{***}
Age at intake (per year above mean age of sample)	0.011 ^{***}	1.011	-0.012 ^{***}
Male (vs. female)	0.002	1.002	0.120 ^{***}
White race/ethnicity (vs. all other race/ethnicity)	0.129 ^{***}	1.138	0.025 ^{**}
Education level at intake (per year of education above mean education level of sample)	0.039 ^{***}	1.039	0.0006
Employed at intake (vs. not employed)	0.165 ^{***}	1.179	-0.045 ^{***}
Social support at intake (vs. no social support)	0.323 ^{***}	1.386	-0.022
Homeless at intake (vs. not homeless)	-0.034	0.967	-0.009
Mentally ill at intake (vs. not mentally ill)	-0.035	0.932	0.032 [*]
County size very small (vs. large)	-0.257 ^{**}	0.668	-0.060
County size small (vs. large)	0.103 [*]	0.958	0.072 ^{**}
County size medium (vs. large)	0.007	0.870	0.084 ^{***}
Primary drug is methamphetamine (vs. all other drug types)	0.184 ^{***}	1.203	-0.024(p=.06)
Used primary drug-30 days before intake (vs. did not use)	-0.712 ^{***}	0.491	0.077 ^{***}
Number prior drug treatments (per prior treatment)	0.008 [*]	1.008	0.005
Number arrests - 12 months before intake (per arrest)	-0.040 ^{***}	0.960	0.171 ^{***}
Number of arrests – lifetime (per arrest)	-0.003 ^{**}	0.997	0.008 ^{***}
Treatment-level factors			
Treatment setting is residential (vs. outpatient)	1.059 ^{***}	2.882	-0.085 ^{**}
Number days in treatment (per day)	0.008 ^{***}	1.008	-0.001 ^{***}
Interaction effects			
Treatment setting is residential × parolee	0.215 ^{**}	1.239	-0.107
Number days in treatment × parolee (per day)	0.0002	1.000	-0.0006 [*]
Successful at treatment discharge	na	na	-0.319 ^{***}

* p<0.05

** p<0.01

*** p<0.001