

One Year Return to Custody Rates Among Co-Disordered Offenders

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The extent to which therapeutic community (TC) methods meet the treatment needs of offenders with substance abuse disorders and co-occurring psychiatric disorders in prison is largely unknown. Very little research has been conducted with this population. The purposes of this study were to generate profiles of co-disordered drug offenders entering TC treatment in prison and to assess their post-release reincarceration rates, compared with drug offenders without psychiatric disorders. Extensive intake interview data for over 8,500 men and women who received treatment in one of 16 prison-based TCs in California were analyzed to produce profiles of co-disordered participants. Intake data come from a 5 year process and outcome evaluation of the California Department of Corrections' (CDC's) treatment initiative. Post-release reincarceration rates come from the CDC's Offender Based Information System. Compared with non-psychiatric disordered drug offenders, co-disordered offenders had substantially more severe substance abuse and criminal histories, in addition to their psychiatric impairment, at treatment entry. Logistic regression results indicated that, compared with drug offenders without psychiatric illness, co-disordered offenders were significantly more likely to be reincarcerated during the first year of their parole. These results suggest that prison treatment programs may need to use more comprehensive diagnostic assessments at

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This study is supported by an Interagency Agreement (Contracts No. C97.355 and No. C98.346) between the California Department of Corrections (CDC), the Office of Substance Abuse Programs (OSAP), and UCLA Integrated Substance Abuse Programs (ISAP). The findings and conclusions of this paper are those of the authors and do not necessarily represent the official policies of the Department. We would like to give a special thanks to the contracted substance abuse programs for providing prison intake data, to Bubpha Chen for providing us with reincarceration data for our sample, and to Dr's Christine Grella and Lynn Brecht for their expertise and valuable feedback.

intake to assess the diverse mental health needs of drug offenders with co-occurring psychiatric disorders and to develop treatment approaches suitable for this population.
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INTRODUCTION

Prevalence rates of co-occurring disorders (i.e. a substance abuse disorder and at least one non-drug-related psychiatric disorder) among offender populations are consistently higher than those detected in the community (Abram, Teplin, & McClelland, 2003; Chiles, Von Cleve, Jemelka, & Trupin, 1990; Cote & Hodgins, 1990; Edens, Peters, & Hills, 1997; GAINS, 2002; Teplin, 1994). For example, a national sample of both household and institutional populations found that among inmates with schizophrenia, major affective disorder, or antisocial personality disorder, the rate of co-occurring substance abuse disorders was as high as 90%, two to three times higher than rates found in the general population (Regier *et al.*, 1990). Yet the percentage of co-disordered inmates receiving treatment for their complex psychiatric–substance abuse disorders is very small (Swartz, 2001; Teplin, 1994; Teplin, Abram, & McClelland, 1997). Many of these inmates, however, do receive treatment in primary programs for substance abuse and dependence (Messina, Burdon, & Prendergast, 2003).

Over the past two decades, the therapeutic community (TC) treatment model has been incorporated into many American prisons (DeLeon, 2000). Rehabilitation in the TC environment focuses on a global change in lifestyle involving abstinence from drugs, elimination of antisocial activities, and the development of employable skills and prosocial attitudes and values (DeLeon, 2000). The acceptance of the TC by the correctional community has been facilitated by positive outcomes of studies showing a statistically significant lowering of recidivism rates for the TC as contrasted with several types of comparison groups, and a significant relationship between time in program and treatment outcome (Wexler, 1997; Wexler, Falkin, Lipton, & Rosenblum, 1990). Increasingly, prison TC programs are followed by community-based aftercare treatment in order to reinforce the gains made in the prison program. Despite the increase in prison-based TC treatment, little is known about the specific characteristics and treatment needs of drug offenders participating in treatment within state prisons (Burdon, Farabee, Prendergast, Messina, & Cartier, 2002; Messina *et al.*, 2003), and research on the effectiveness of prison-based TCs for co-disordered offenders is largely non-existent. In fact, no research studies have *directly* examined this issue.

The costs of neglecting the existence of non-drug-related psychiatric disorders among offenders are likely to be high, since co-disordered inmates typically have high rates of physical illness, unemployment, and homelessness upon release (Drake & Brunette, 1998; Hartwell, 2004; Laudet, Magura, Vogel, & Knight, 2000; Swartz, 2001). Moreover, studies have shown that the primary risk factors associated with incarceration of the mentally ill are substance abuse disorders, community-based treatment non-compliance (Hartwell, 2004; Messina, Wish, & Nemes, 2001), and homelessness (GAINS, 2001).

Some experts suggest that co-disordered individuals should be targeted as a specific group for integrative treatments that provide intensive interventions for both psychiatric and substance abuse disorders (Drake et al., 2001; Hills, 2000; Minkoff, 2001; Moggi, Ouimette, Finney, & Moos, 1999; Sacks, 2000; Torrey et al., 2002). Previous studies have shown that integrated programs for substance abusers with co-occurring psychiatric disorders are more effective than parallel mental health and substance abuse treatments delivered in separate settings or by separate programs (Drake, Mercer-McFadden, Mueser, McHugo, & Bond, 1998; Peters & Hills, 1997; Sacks, 2000).

Currently, there are several in-prison treatment programs across the United States that focus on treating co-disordered offenders using a *modified* TC approach. A modified TC approach for this population includes (i) greater reliance on individual counseling and support, (ii) a less confrontational approach, (iii) shortened meeting times, (iv) smaller staff caseloads, and (v) cross-training of substance abuse and psychiatric treatment staff (Edens et al., 1997).¹

Although extensive controlled studies have not been completed at any of these programs, preliminary results are available from two programs (Edens et al., 1997). Preliminary findings from a study of the Turning Point program in Oregon indicated that program graduates were less likely to be reincarcerated following release compared with inmates from the general population. Preliminary findings from a study of the Department of Criminal Justice Estelle Unit in Texas indicated that program graduates had lower rates of criminal activity and drug use following treatment compared with a general inmate population comparison group (von Sternberg, 1997).

A larger question, however, concerns the extent to which the *traditional* TC approach is appropriate for co-disordered offenders—or at least whether the TC model should be significantly modified to address the specific needs (both psychiatric and substance abuse related) of co-disordered offenders. The strong association between psychiatric impairment, substance abuse, and crime indicates that co-disordered offenders will continue to enter prison-based substance abuse programs. Yet, co-disordered offenders pose a variety of treatment issues for substance abuse treatment providers, since many factors exist that could hinder successful treatment results. For example, non-drug-related psychiatric disorders and/or medication may interfere with an individual's ability to comply with or participate in standard substance abuse treatment, and treatment staff may not be adequately trained to address the challenges of a co-disordered client or to treat certain co-occurring disorders (Edens et al., 1997; Sacks, 2000).

As more and more co-disordered offenders participate in this type of treatment, it becomes critically important that we assure ourselves that TCs work well for them. As part of its expansion of treatment opportunities for inmates, the California Department of Corrections (CDC) has established TC treatment programs in many of its prisons (32 programs, totaling 7,650 beds). Data collected as part of this initiative provided a unique opportunity to compare the characteristics and

¹Prison-based programs for co-disordered offenders include the Dual Diagnosis Unit in Alabama, the Arrowhead and the Crossroads to Freedom programs in Colorado, the Crisis Care Unit in Delaware, the Turning Point Alcohol and Drug Programs in Oregon, the Dual Diagnosis Track in Texas, the Texas Department of Criminal Justice Estelle Unit and Hackberry Unit in Texas, and the Dual Diagnosis Unit in Kentucky.

treatment outcomes of co-disordered drug offenders and drug offenders without co-occurring psychiatric disorders who participated in prison-based TC treatment throughout California. Therefore, the present study had two main goals: (i) to generate profiles of drug offenders with co-occurring psychiatric disorders entering prison-based TC treatment, and (ii) to assess the post-release reincarceration rates of co-disordered offenders compared with TC program participants without co-occurring psychiatric disorders.

METHODS

CDC Prison Treatment Expansion Initiative

Data for this study were collected as part of the CDC Prison Treatment Expansion Initiative. This initiative includes two 5 year evaluation studies of new drug treatment programs within the California state prison system. The University of California, Los Angeles (UCLA), Integrated Substance Abuse Programs (ISAP)² was contracted by CDC to evaluate these programs, with contract management provided by CDC's Office of Substance Abuse Programs. The two CDC evaluation studies cover 16 substance abuse programs in 10 prisons, totaling approximately 3,300 beds (eight programs for men, totaling 1,600 beds, and seven programs for women, totaling 1,700 beds).³ These programs became operational between July 1998 and December 1999 and include participants at all levels of security (Level I—Minimum through Level IV—Maximum).

Prison-Based TCs in California

CDC contracts with community-based organizations experienced in the TC model to provide services in the prisons (i.e. Amity Foundation of California, Center Point, Inc., Civigenics, Mental Health Systems, Phoenix House, and Walden House). Characteristics of the prison-based TCs include (i) activities that embody positive values that start a process of socialization; (ii) treatment staff that provide positive role models (and many are recovering addicts themselves); (iii) an alternative concept of inmates that is usually much more positive than prevailing beliefs and attitudes held by correctional staff; and (iv) an aftercare component for graduates from the prison-based TC programs that provides funding for up to 6 months of continued treatment (residential or outpatient services) in the community following release to parole (Burdon *et al.*, 2002; Pan, Scarpitti, Inciardi, & Lockwood, 1993).

Data Collection

Client-level data were collected by the treatment providers upon admission into the treatment programs using the Intake Assessment instrument. The Intake

²Formerly known as the UCLA Drug Abuse Research Center (DARC).

³An additional 500 beds have recently been funded, but ISAP is not evaluating these programs.

Assessment is designed to assess a client's pre-treatment/pre-incarceration socio-demographic background, criminality, employment, and substance use, abuse, or dependence. The Intake Assessment was adopted from the Initial Assessment developed at the Institute of Behavioral Research at Texas Christian University (Broome, Knight, Hiller, & Simpson, 1996), which has been used extensively with criminal justice populations and provides information that is useful for both clinical and evaluation purposes. The Intake Assessment includes a set of questions based on the most recent *Diagnostic and Statistical Manual (DSM-IV)* criteria for the assessment of abuse or dependence of alcohol or drugs (American Psychiatric Association, 1994). The treatment programs provided the intake data and treatment admission and discharge data to UCLA ISAP through disclosure agreements under CFR 42 Part 2, Section 2.52. The UCLA General Campus Institutional Review Board approved the study protocol. Post-release return-to-custody (RTC) rates came from the CDC's Offender Based Information System and include incarceration for both parole violations and new charges. Inmates' psychiatric status came from the CDC's Distributed Data Processing System. These systems are updated on a weekly basis, reducing the incidence of undetected crime or mental illness due to data entry lag times.

Eligibility

Participation in these programs is open to inmates who have a documented history of substance use or abuse (based on a review of their criminal backgrounds as documented in their inmate central files), and who have between 6 and 24 months left to serve on their sentence. Those who meet these eligibility requirements are mandated into the treatment programs. There are, however, exclusionary criteria that preclude otherwise eligible inmates from entering the programs (e.g. gang-related enemy situations, documented membership in a prison gang, time spent in administrative segregation for violence or weapons charges within the last 12 months, and felony and Immigration and Naturalization Service holds).

Participants

The current study focuses on 8,550 men and women who entered the participating prison-based programs between July 1998 and March 2001, who paroled prior to February 1, 2002 (i.e., in order to be at risk for one year prior to our obtaining RTC data), and for whom intake data were available. Treatment program participants were White (40%), Black (31%), Hispanic (21%), or other (8%). Approximately half were women (51%). Participants were 35.2 years old on average and had completed approximately 11.2 years of education prior to their current incarceration. About half (44%) had never been married and 62% were parents. Forty-two percent were employed during the 30 days prior to their current incarceration. Participants reported an average of 15.5 arrests in their lifetime. Approximately 93% met DSM-IV criteria for substance abuse or dependence, and 57% were serving time for a drug-related offense at the time of their treatment admission.

Co-Disordered Offenders

Although the programs are primarily designed to serve drug offenders, the treatment populations also include participants with non-drug-related psychiatric disorders (e.g. including DSM-IV Axis I mood disorders *and* Axis II personality disorders). Within the CDC, inmates with non-drug-related psychiatric disorders are classified as being in need of Correctional Clinical Case Management Services (or CCCMSs). While these inmates are mentally disordered, their conditions are relatively stable and their symptoms are largely controllable through medication or psychotherapy sessions. Approximately 26% of the program participants had a history of a CCCMS classification (i.e. the inmate met screening criteria for at least one Axis I or Axis II psychiatric disorder beyond a substance abuse disorder). (Inmates are assessed for psychiatric disorders at multiple time points during their incarceration, thus we opted to include inmates who “ever” had a CCCMS classification during their incarceration history and those who were still classified as CCCMS upon release from prison within our CCCMS group of offenders.)

Screening for disorders varies across prisons, but most prisons use diagnostic interview and self-report instruments that address both substance abuse and psychiatric symptoms. Commonly used screening instruments include Global Assessment of Functioning Score (above 50), Minnesota Multiphasic Personal Inventory—2, Millon Clinical Multiaxial Inventory—II, Level of Supervision Inventory, and Wide Range Achievement Test.

Data Analyses

The analyses conducted for this study were based on variables included within the Intake Assessment. Analyses were used to explore pre-existing differences between co-disordered offenders (CCCMS) and drug offenders without co-occurring psychiatric disorders (non-CCCMS) entering prison-based treatment, and to examine the relevance of any pre-existing differences on treatment outcomes. The distributions of demographic characteristics, substance abuse, criminal, and psychiatric histories by CCCMS status were evaluated using chi-square tests (for categorical variables) and *t* tests (for continuous variables). The large sample size substantially increased the likelihood of finding statistically significant differences at the $p < 0.05$ level. Therefore, we opted to consider differences at the $p < 0.01$ level as statistically significant as a more conservative approach.

Bivariate tests were also run to explore the relationship of a CCCMS classification to time in treatment, participation in aftercare, and 1 year RTC. A logistic regression analysis was conducted to determine whether CCCMS status was significantly related to a RTC within 12 months since parole, while controlling for other possible confounding factors. The independent variable was CCCMS status. The regression model also contained nine control variables including demographic differences between those with and without a CCCMS classification and factors that were also associated with an RTC (i.e. gender, age, race/ethnicity, prior education, employment, primary drug disorder, total years in prison in lifetime, time in prison-based treatment, and participation in community-based aftercare). Gender, race/ethnicity, employment, drug disorder, and aftercare

participation were included in the model as categorical variables. Age, education, total years in prison, and months in prison treatment were included in the model as continuous variables. Although interpretation of logistic regression analyses is often simplified with the use of categorical variables (Moore & McCabe, 1993), months in prison treatment was included as a continuous variable because our entire sample had participated in prison-based treatment. Aftercare participation, however, was available on a voluntary basis, thus some of the parolees participated and some did not. The dependent variable was an RTC within 12 months since parole, and was dummy coded; 0 = *no* and 1 = *yes*.

RESULTS

Validity of the CCCMS Classification

To assess the construct validity of the CCCMS classification, we compared CCCMS ($n = 2,246$) and non-CCCMS ($n = 6,304$) offenders on measures of lifetime psychiatric functioning from the Intake Assessment. Table 1 displays self-reported psychiatric functioning by CCCMS status prior to incarceration. CCCMS offenders reported much more serious levels of psychiatric impairment prior to incarceration. This is consistent with what we would expect given that they were classified by prison psychiatric staff as having psychiatric problems. Compared with non-CCCMS offenders, CCCMS offenders were significantly more likely to report that they were in "extreme" need of treatment for psychological and emotional

Table 1. Psychiatric impairment over lifetime, by CCCMS status ($N = 8,550$)^a

	CCCMS ($N = 2,246$)	Non-CCCMS ($N = 6,304$)	<i>p</i> -value
Need treatment for psychological and emotional problems:			0.000
Not at all	28%	58%	
Slightly	10%	11%	
Moderately	13%	10%	
Considerably	14%	8%	
Extremely	35%	13%	
Ever experienced:			
1. Depression	71%	30%	0.000
2. Anxiety or tension	70%	33%	0.000
3. Hallucinations	31%	7%	0.000
4. Trouble concentrating or remembering	64%	35%	0.000
5. Inability to control violence	38%	21%	0.000
6. Serious thoughts of suicide	35%	8%	0.000
7. Ever attempted suicide	34%	7%	0.000
8. Prescribed medication for psychiatric problem within the last 6 months	52%	4%	0.000
Total psychiatric symptoms (1–8):			0.000
No symptoms	14%	44%	
One symptom	8%	19%	
Two symptoms	10%	13%	
Three or more symptoms	68%	24%	

^a N values vary slightly due to missing data.

Subsequent analyses in Tables 2–5 do not include any non-CCCMS offenders who reported previous psychiatric problems in the table above.

problems (35% versus 13%, $p < 0.001$). Problems that were reported most often were depression (71% versus 30%, $p < 0.001$), anxiety and tension (70% versus 33%, $p < 0.001$), hallucinations (31% versus 7%, $p < 0.001$), trouble concentrating and remembering (64% versus 35%, $p < 0.001$), and trouble controlling violent behavior (38% versus 21%, $p < 0.001$). CCCMS offenders were also more likely to have serious thoughts of suicide (35% versus 8%, $p < 0.001$) and to have attempted suicide (34% versus 7%, $p < 0.001$) in their lifetime compared with the non-CCCMS offenders. In addition, over 50% of the CCCMS offenders had been prescribed medication for psychiatric problems within the previous 6 months, compared with 4% of the non-CCCMS offenders. Sixty-eight percent of the CCCMS offenders reported experiencing three or more of the above psychiatric problems, compared with 24% of the non-CCCMS offenders.

To create the most valid comparisons possible, we excluded any offender in the non-CCCMS group who self-reported any previous psychiatric problems, including a need for psychiatric treatment. Thus, all subsequent analyses are based on a reduced sample of 3,010 offenders (i.e. the 44% who reported "no psychiatric symptoms") in the non-CCCMS group (see Tables 2–5 below).

Bivariate Comparisons at Intake

Table 2 displays the demographic characteristics for the reduced sample, those with and without a CCCMS classification participating in the prison-based programs during the selected study period. Using the conservative significance standard $p < 0.01$, differences were found with regard to gender, race/ethnicity, age, education, employment, income, and histories of sexual and physical abuse. CCCMS

Table 2. Sample characteristics at admission, by CCCMS status ($N = 5,256$)^a

Characteristics	CCCMS ($N = 2,246$)	Non-CCCMS ($N = 3,010$) ^b	<i>p</i> -value
Gender			0.000
Male	32%	60%	
Female	68%	40%	
Race/ethnicity			0.000
White	39%	41%	
Black	36%	30%	
Hispanic	15%	23%	
Other	10%	6%	
Marital status			0.015
Never married	44%	44%	
Married	23%	26%	
Previously married	33%	30%	
Mean age (S.D.)	36.0 (7.9)	35.3 (8.3)	0.002
Mean years of education (S.D.)	11.0 (2.4)	11.5 (1.9)	0.000
Employed 30 days prior to incarceration	32%	51%	0.000
Average annual income 1 year prior to incarceration (S.D.)	\$9,859 (34,214)	\$13,082 (33,511)	0.001
Physically and/or sexually abused			
Abused as a child	29%	13%	0.000
Abused as an adult	27%	11%	0.000

^a*N* values vary slightly due to missing data.

^bAnalyses exclude all non-CCCMS offenders who reported previous psychiatric problems.

offenders were more likely to be women (68% versus 40%, $p < 0.001$) and more likely to be Black (36% versus 30%, $p < 0.001$) compared with non-CCCMS offenders, although Whites comprised the largest ethnic category overall (39% versus 41%, $p < 0.001$). CCCMS offenders were older (36.0 years versus 35.3 years, $p < 0.002$) and had less education (11.0 years versus 11.5 years, $p < 0.001$) compared with non-CCCMS offenders. (Although the differences for age and education are statistically significant at the conservative significance standard, these differences are not substantial enough to be considered “practically” significant by most researchers.) CCCMS offenders were less likely to be employed prior to incarceration (32% versus 51%, $p < 0.001$), and reported significantly lower annual income compared with non-CCCMS offenders (\$9,859 versus \$13,082, $p < 0.001$). CCCMS offenders were also more likely than the non-CCCMS offenders to report having been physically and/or sexually abused as a child (29% versus 13%, $p < 0.001$) and as an adult (27% versus 11%, $p < 0.001$). Using the conservative significance standard, no differences were found with regard to marital status prior to incarceration.

Table 3, which displays data on drug use and criminal history, indicates that CCCMS offenders were more likely to meet DSM-IV criteria for alcohol and/or drug abuse or dependence compared with the non-CCCMS offenders (94% versus 89%, $p < 0.001$). This was mainly a stimulant-abusing sample; however, CCCMS offenders were more likely to report cocaine as their primary drug disorder (33% versus 24%, $p < 0.001$), while the non-CCCMS offenders more often reported

Table 3. Drug use and criminal history, by CCCMS status ($N = 5,256$)^a

	CCCMS ($N = 2,188$)	Non-CCCMS ($N = 3,010$) ^b	<i>p</i> -value
DSM-IV criteria for alcohol and/or drug abuse/dependence:			0.000
None	6%	11%	
Alcohol and/or drug problem	94%	89%	
Primary drug problem:			0.000
Cocaine/crack	33%	24%	
Meth./amphetamine	26%	39%	
Opiates	24%	15%	
Alcohol/other	17%	21%	
Mean age first used drug (S.D.)			
Alcohol	14.6 (5.1)	15.5 (4.6)	0.000
Marijuana	14.3 (4.5)	14.8 (4.0)	0.000
Amphetamine	19.9 (7.4)	21.1 (7.3)	0.000
Cocaine/crack	22.2 (7.6)	22.3 (7.3)	0.652
Opiates	21.0 (7.1)	21.4 (7.3)	0.282
Mean age of first arrest (S.D.)	19.0 (7.0)	20.2 (7.5)	0.000
Mean number of lifetime arrests (S.D.)	18.9 (23.7)	13.1 (17.7)	0.000
Mean number of felony convictions (S.D.)	4.4 (5.9)	3.4 (3.5)	0.000
Mean number of years incarcerated in lifetime (S.D.)	4.7 (5.2)	3.9 (4.6)	0.000
Most recent offense:			0.001
Property crimes	21%	19%	
Crimes against persons	13%	10%	
Drug	55%	59%	
Other	11%	12%	
Under the influence at time of arrest	65%	57%	0.000

^a N values vary slightly due to missing data.

^bAnalyses exclude all non-CCCMS offenders who reported previous psychiatric problems.

methamphetamine/amphetamine as their primary drug problem (26% versus 39%, $p < 0.001$). CCCMS offenders were younger than non-CCCMS offenders when they first used alcohol (14.6 years versus 15.5 years, $p < 0.001$), marijuana (14.3 years versus 14.8 years, $p < 0.001$), and amphetamine (19.9 years versus 21.1 years, $p < 0.001$), but groups were similar in age when they first used cocaine/crack and heroin (i.e. early 20s).

The distributions of self-reported criminal activity by CCCMS status indicate that CCCMS offenders had more severe criminal histories prior to their current incarceration. Compared with the non-CCCMS group of drug offenders, CCCMS offenders were younger at the age of first arrest (19.0 years versus 20.2 years, $p < 0.001$), had been arrested more often in their lifetime (18.9 arrests versus 13.1 arrests, $p < 0.001$), had a higher number of felony convictions (4.4 felonies versus 3.4 felonies, $p < 0.001$), and had been incarcerated longer in their lifetimes (4.7 years versus 3.9 years, $p < 0.001$). CCCMS offenders were also more likely to have been incarcerated for property crimes (21% versus 19%, $p < 0.01$) and crimes against persons (13% versus 10%, $p < 0.01$) and to have been under the influence of alcohol/drugs at the time of their arrest (65% versus 57%, $p < 0.001$) than the non-CCCMS offenders.

Treatment Participation and Return-to-Custody Rates

Table 4 shows the average time spent in prison-based treatment, community-based treatment, and RTC rates by CCCMS status. Bivariate comparisons revealed significant differences between CCCMS offenders and the non-CCCMS offenders' treatment participation. Compared with the non-CCCMS offenders, CCCMS offenders spent less time in prison-based treatment (7.1 months versus 7.7 months, $p < 0.001$), but were as likely as non-CCCMS offenders to volunteer for community-based aftercare treatment. However, CCCMS offenders spent less time in aftercare than non-CCCMS offenders (4.3 months versus 5.1 months, $p < 0.001$).

Table 4. Treatment participation and return to custody rates, by CCCMS status^a

Variable	Data	<i>p</i> -value
Months in prison-based treatment		0.000
CCCMS (<i>N</i> = 2,116)	7.1 (4.5)	
Non-CCCMS (<i>N</i> = 2,864)	7.7 (4.4)	
Participated in community-based treatment		0.714
CCCMS (<i>N</i> = 2,246)	43%	
Non-CCCMS (<i>N</i> = 3,010)	42%	
Months in community-based treatment		0.000
CCCMS (<i>N</i> = 957)	4.3 (4.6)	
Non-CCCMS (<i>N</i> = 1,267)	5.1 (4.9)	
Returned to custody		0.000
CCCMS (<i>N</i> = 2,246)	48%	
Non-CCCMS (<i>N</i> = 3,010)	31%	
Months to return to custody		0.000
CCCMS (<i>N</i> = 1,324)	7.7 (6.2)	
Non-CCCMS (<i>N</i> = 1,292)	9.2 (6.6)	

^aAnalyses exclude all non-CCCMS offenders who reported previous psychiatric problems.

Most importantly, 48% of the CCCMS offenders and 31% of the non-CCCMS offenders were returned to custody within the first year after release ($p < 0.001$). In addition, CCCMS offenders were returned significantly sooner than non-CCCMS offenders (7.7 months versus 9.2 months, $p < 0.001$). Yet, bivariate comparisons do not take into consideration the effect of other factors related to specific outcomes. Our next step was to look at RTC rates between the two groups while controlling for other factors that were also related to reincarceration.

Logistic Regression Model

Table 5 summarizes the results of the logistic regression analysis assessing an RTC within 12 months since parole. Results for CCCMS status are shown (with *non-CCCMS* as the referent). The logistic regression analysis controls for the effects of primary drug problem, prior years in prison, months in prison-based treatment, participation in community-based aftercare, gender, prior employment, age, prior education, and race/ethnicity on an RTC within 12 months since parole. Adjusted odds ratios were used to interpret the statistically significant effect size at the $p < 0.01$ level: $[\exp(\text{Beta}) - 1] \times 100 =$ adjusted odds ratio (the percent increase or reduction in the odds of being returned to custody).

After controlling for a variety of factors, the logistic regression analysis shows that the bivariate results remained (see Table 5). Compared with the non-CCCMS

Table 5. Logistic regression analysis assessing return to custody ($N = 4,466$)

Variable	<i>B</i>	S.E.	df	<i>p</i> -value	Exp(<i>B</i>)
Status					
[Non-CCCMS]					
CCCMS	0.758	0.071	1	0.000	2.134
Primary drug Disorder			3	0.014	
[Amphetamine/meth.]					
Opiates	0.124	0.104	1	0.235	1.131
Cocaine/crack	0.330	0.102	1	0.001	1.391
Alcohol/other	0.149	0.102	1	0.146	1.160
Total years in prison in lifetime	0.064	0.007	1	0.000	1.066
Time in prison-based treatment (months)	-0.001	0.000	1	0.000	0.999
Participation in aftercare					
[No]					
Yes	-0.610	0.071	1	0.000	0.543
Gender					
[Men]					
Women	-0.462	0.077	1	0.000	0.630
Employed 30 days prior to incarceration					
[No]					
Yes	-0.222	0.070	1	0.001	0.801
Age	-0.042	0.004	1	0.000	0.958
Education (years)	-0.047	0.016	1	0.004	0.954
Ethnicity			3	0.354	
[Black]					
Hispanic	-0.136	0.104	1	0.191	0.873
White	-0.058	0.092	1	0.526	0.943
Other	0.098	0.135	1	0.471	1.102
Constant	1.651	0.254	1	0.000	5.210

[Brackets] indicate reference category.

group of drug offenders, CCCMS offenders were significantly more likely to be reincarcerated in the first year after release (with a 113% increase in the odds of an RTC, $p < 0.001$). A primary drug disorder of cocaine/crack, compared with amphetamine/methamphetamine, was significantly associated with an increased likelihood of reincarceration (with a 39% increase in the odds of an RTC, $p < 0.001$). Total number of years in prison in lifetime was significantly associated with an increased likelihood of reincarceration (a 7% increase in the odds of an RTC for each year in prison in one's lifetime, $p < 0.001$). Time in prison treatment was also significantly related to an RTC in the expected direction; although the effect size was very small. Those who spent more time in the prison treatment program were less likely to be reincarcerated (0.1% reduction in the odds of an RTC for each month spent in treatment, $p < 0.001$). However, those who participated in community-based aftercare showed a 48% reduction in the odds of reincarceration ($p < 0.001$). An RTC within 12 months after parole was less likely for women, compared with men (a 37% reduction in the odds of an RTC, $p < 0.001$), was less likely for older clients (a 4% reduction in the odds per each year in age, $p < 0.001$), for those with more education (a 5% reduction in the odds for each year of education, $p < 0.004$), and for those who were employed prior to incarceration (a 20% reduction in the odds of an RTC, $p < 0.001$). Race/ethnicity was not significantly related to reincarceration.

DISCUSSION

Although many co-disordered inmates receive treatment in primary programs for substance abuse and dependence, their treatment needs and post-release outcomes are relatively unknown. This study sought to explore the characteristics, substance abuse, and criminal histories of co-disordered and non-psychiatric disordered drug offenders entering prison-based TC treatment and to assess the association of those factors to a post-release RTC.

First, bivariate comparisons were conducted to assess the construct validity of the CCCMS classification since specific individual non-drug-related DSM-IV psychiatric diagnoses were not available. Offenders' "self-reported" psychiatric functioning throughout their lifetime was extremely consistent with their CCCMS status and in the expected direction, as reports of serious psychiatric impairment were significantly and positively associated with a CCCMS classification. In addition, 98% of the CCCMS group had a DSM-IV substance abuse and/or dependence diagnosis *in addition* to a psychiatric disorder. Thus, we concluded that the group of offenders who were classified as CCCMS were a valid group of offenders with co-occurring disorders. In order to further increase the validity of our comparisons, we excluded any non-CCCMS offender who had "self-reported" *any* history of psychiatric impairment from all further analyses.

Second, we examined the background characteristics and self-reported substance abuse and criminal histories of the program participants. Comparisons between the CCCMS and non-CCCMS offenders indicated that the two groups of offenders did have pre-existing demographic differences prior to incarceration with regard to gender, race/ethnicity, age, education, employment, and histories of sexual and physical abuse. Moreover, CCCMS offenders reported more severe and earlier

substance abuse and criminal histories in their lifetime. These findings indicated that CCCMS offenders were at a substantial disadvantage upon entering prison-based treatment, compared with non-CCCMS offenders.

We then examined the total time in prison-based TC treatment, participation in aftercare, and RTC rates between the two groups. CCCMS offenders spent less time in prison-based and community-based treatment, but were as likely as non-CCCMS offenders to participate in aftercare. Selection bias was not likely to be an important factor in producing the “time in prison-based treatment” finding since length of time in prison treatment was not within the control of the inmate (which would create selection bias), but rather was determined by when CDC placed the inmate in the treatment program and the length of their sentence. The fact that CCCMS offenders were as likely to participate in aftercare treatment is a significant finding, since many community-based substance abuse programs exclude individuals with additional psychiatric disorders, who are frequently on medication, from participation (Grella & Gilmore, 2002; Messina et al., 2002).

CCCMS offenders were more likely to be reincarcerated within the first year after their parole. Significant differences were also found with regard to the number of months between parole and RTC, with CCCMS offenders who recidivated being returned to custody sooner than non-CCCMS offenders who recidivated. Knowing that these offenders come into the prison-based programs with pre-existing differences, and that they were more likely to be returned to custody, the question then became whether these differences were associated with post-release outcome. After controlling for various background characteristics and other factors that are related to being returned to custody (e.g. total years in prison in lifetime, time in treatment, participation in aftercare, etc.), CCCMS offenders were still more likely to be reincarcerated within 12 months after parole. In fact, the increase in the odds (113%) of an RTC for CCCMS offenders was over twice the increase in the odds of an RTC for those who refused aftercare treatment (48%) and over three times the increase in the odds of a man being reincarcerated compared to a woman (37%).

The logistic regression analyses also showed time in treatment to be significantly associated with an RTC; however, the small effect size (0.1% decrease in the odds of an RTC for every month spent in treatment) indicates that it may not have been statistically significant with a smaller sample size (since we would have had less power to detect significant differences). It should be noted that we did not have the benefit of a “no treatment” comparison group (see *Limitations* below). In other words, everyone included in the regression model participated in the prison-based treatment program for a substantial period of time, limiting the amount of variance that could be explained by the model.

Limitations

The current study’s participant profiles relied on general intake self-report data for a large sample of men and women entering prison-based TC treatment in California. Although our reincarceration data came from official records, the accuracy of participants’ substance abuse, criminal, and psychiatric histories were subject to the limitations of self-report data. The questions available on the Intake Assessment instrument were further limited in both range and depth. The Intake Assessment

instrument was not originally designed to capture detailed information on co-occurring disorders. Thus, we were not able to control for specific DSM-IV diagnoses (e.g. depression, antisocial personality disorder) beyond a substance abuse/dependence disorder. As researchers have previously found the TC design to be suitable for antisocial personalities (Messina, Wish, Hoffman, & Nemes, 2002; Wexler, 1995), it might have been informative to assess the prison-based TC's effectiveness with drug offenders with co-occurring antisocial personality disorder relative to other psychiatric comorbidities.

In addition, the findings generated by this study are limited to offenders who were selected for treatment participation and, thus, cannot be generalized to the general CDC inmate population or to the inmate populations in other state prisons. Data on the RTC rates for a "no-treatment" group of parolees would have allowed us to compare their reincarceration rates to our treatment group, while controlling for CCCMS status. It is possible that the CCCMS offenders who received prison-based treatment and aftercare may have had lower RTC rates than CCCMS offenders in the general prison population.⁴

Implications

Co-disordered offenders' severe criminal histories, combined with their psychiatric impairment and increased likelihood of use of prescription drugs for psychiatric problems, indicates the need for a more comprehensive diagnostic assessment of participants at intake as a means of informing treatment staff of their diverse psychiatric needs. The diversity of this population is further reflected in the etiology and histories of their disorders (Peters & Hills, 1997). Co-disordered offenders may further benefit from an ongoing screening and assessment process during treatment, since substance abuse may induce, heighten, or diminish psychiatric symptoms, complicating the diagnostic process for screening and assessment of individual client needs at intake (CSAT, 1994).

The higher RTC rates reported above also indicate a need for developing more comprehensive and effective treatment plans for co-disordered offenders in prison. Since substance abuse and psychiatric disorders may reinforce each other, treatment of one condition (addiction or psychiatric disorder) is often hampered by the symptoms of the other if the latter remains untreated (Laudet *et al.*, 2000). Because treatment staff may not be adequately trained to handle or treat certain psychiatric disorders that offenders present upon entry into prison-based programs, there should be separate treatment tracks for co-disordered offenders to provide effective treatment to this high-risk population. A modified TC for co-disordered offenders in prison should include greater individual counseling and support, less confrontation, smaller staff caseloads, repetition and skills building, and cross-training of substance abuse and psychiatric treatment staff to de-stigmatize mental illness and to focus on "symptom management" rather than cure (Edens *et al.*, 1997). In addition, programs should educate inmates about the importance of medication compliance

⁴UCLA ISAP is currently collecting in-depth interview and outcome data on prison-based treatment participants and a matched comparison "no-treatment" group of offenders from the general population in California prisons.

and address the difference between useful and harmful drugs. Providing a highly structured and supportive therapeutic environment is essential to restructuring inmates' criminal thinking errors and developing basic life management and problem solving skills.

At the very least, referrals to appropriate community-based aftercare treatment should be in place upon release from prison-based programs, which would require increased communication, coordination, and collaboration between substance abuse and psychiatric treatment systems to address housing, employment, health care, gender, ethnic diversity, and access to and use of social services (Grella & Gilmore, 2002). Integrated treatment programs for substance abusers with co-occurring psychiatric disorders have been implemented in a variety of mental health center sites across the United States and several studies have outlined successful implementation strategies (Drake et al., 2001; Grella & Gilmore, 2002; Minkoff, 2001; Torrey et al., 2002). Knowledge gained by these community programs could be useful for the implementation of prison-based programs for co-disordered offenders.

The high prevalence rates of psychiatric disorders among incarcerated drug offenders across the nation suggest that these issues are probably not unique to California. Future research should continue to explore the many issues surrounding co-disordered men and women in prison and in the community, as well as the relationship of specific psychiatric disorders, combinations of psychiatric disorders, and the effectiveness of various treatment modalities on treatment outcomes.

REFERENCES

- Abram, K., Teplin, L., & McClelland, G. (2003). Comorbidity of severe psychiatric disorders and substance use disorder among women in jail. *American Journal of Psychiatry*, 106(5), 1007–1010.
- American Psychiatric Association (APA). (1994). *Diagnostic and statistical manual of mental disorders, (DSM-IV)* (4th ed.). Washington, D.C: Author.
- Broome, K., Knight, K., Hiller, M., & Simpson, D. (1996). Drug treatment process indicators for probationers and prediction of recidivism. *Journal of Substance Abuse and Treatment*, 13(6), 487–491.
- Burdon, W., Farabee, D., Prendergast, M., Messina, N., Cartier, J. (2002). Evaluating prison-based therapeutic community substance abuse programs: The California Initiative. *Federal Probation*, 66(3), 3–8.
- Center for Substance Abuse Treatment (CSAT). (1994). *Assessment and treatment of patients with coexisting mental illness and alcohol and other drug abuse*. Treatment Improvement Protocol (TIP) Series, Number 9. DHHS Pub. No. (SMA) 00-3400. Rockville, MD: Author.
- Chiles, J. A., Von Cleve, E., Jemelka, R. P., Trupin, E. W. (1990). Substance abuse and psychiatric disorders in prison inmates. *Hospital and Community Psychiatry*, 41, 1132–1134.
- Cote, G., & Hodgins, S. (1990). Co-occurring mental disorders among criminal offenders. *Bulletin of the American Academy of Psychiatry and Law*, 18, 271–281.
- DeLeon, G. (2000). *The Therapeutic Community: Theory, Model, and Method*. New York: Springer.
- Drake, R., & Brunette, M. (1998). Complications of severe mental illness related to alcohol and other drug use disorders. In M. Galanter (Ed.), *Recent developments in alcoholism. Volume XIV, Consequences of Alcoholism* (pp. 285–299). New York: Plenum.
- Drake, R., Essock, S., Shaner, A., Carey, K., Minkoff, K., Kola, L., Lynde, D., Osher, F., Clark, R., & Rickards, L. (2001). Implementing dual diagnosis services for clients with severe mental illness. *Psychiatric Services*, 52(4), 469–476.
- Drake, R., Mercer-McFadden, C., Mueser, K., McHugo, G., & Bond, G. (1998). Review of integrated mental health and substance abuse treatment for patients with dual disorders. *Schizophrenia Bulletin*, 24(4), 589–608.
- Edens, J. F., Peters, R. H., & Hills, H. A. (1997). Treating prison inmates with co-occurring disorders: An integrative review of existing programs. *Behavioral Sciences and the Law*, 15, 439–457.
- GAINS. (2001). *Integrated services reduce recidivism among homeless adults with serious mental illness in California*. SAMHSA. Retrieved from <http://www.gainsctr.com/publications/>

- GAINS. (2002). *The prevalence of co-occurring mental illness and substance use disorders in jails*. SAMHSA. Retrieved 1 February 2004, from <http://www.gainsctr.com/publications/>
- Grella, C., & Gilmore, J. (2002). Improving service delivery to the dually diagnosed in Los Angeles County. *Journal of Substance Abuse Treatment*, 23, 115–122.
- Hartwell, S. W. (2004). Comparison of offenders with mental illness only and offenders with dual diagnoses. *Psychiatric Services*, 55(2), 145–150.
- Hills, H. (2000). *Creating effective treatment programs for persons with co-occurring disorders in the justice system*. Delmar, NY: National GAINS Center.
- Laudet, A., Magura, S., Vogel, H., & Knight, E. (2000). Recovery challenges among dually diagnosed individuals. *Journal of Substance Abuse Treatment*, 18, 321–329.
- Messina, N., Burdon, W., & Prendergast, M. (2003). Assessing the needs of women in institutional therapeutic communities. *Journal of Offender Rehabilitation*, 37(2), 89–106.
- Messina, N., Wish, E., Hoffman, J., & Nemes, S. (2002). Antisocial personality disorder and therapeutic community treatment outcomes. *The American Journal of Drug and Alcohol Abuse*, 28(2), 197–212.
- Messina, N., Wish, E., & Nemes, S. (2001). Therapeutic community treatment may reduce future incarceration. *Federal Probation*, 65(3), 40–45.
- Minkoff, K. (2001). Developing standards of care for individuals with co-occurring psychiatric and substance use disorders. *Psychiatric Services*, 52(5), 597–599.
- Moggi, F., Ouimette, P. C., Finney, J. W., & Moos, R. H. (1999). Effectiveness of treatment for substance abuse and dependence for dual diagnosis patients: A model of treatment factors associated with one-year outcomes. *Journal of Studies on Alcohol*, 60, 856–866.
- Moore, D., & McCabe, G. (1993). *Introduction to the practice of statistics* (2nd ed.). New York: Freeman.
- Pan, H., Scarpitti, F. R., Inciardi, J. A., & Lockwood, D. (1993). Some considerations on therapeutic communities in corrections. In J. A. Inciardi (Ed.), *Drug treatment and criminal justice* (pp. 30–43). Newbury Park, CA: Sage.
- Peters, R., & Hills, H. (1997). *Intervention strategies for offenders with co-occurring disorders: What works?* Delmar, NY: National GAINS Center.
- Regier, D. A., Farmer, M. E., Rae, D. S., Locke, B. Z., Keith, S. J., Judd, L. L., & Goodwin, F. K. (1990). Comorbidity of mental disorders with alcohol and other drug abuse: Results from the Epidemiologic Catchment Area (ECA) study. *JAMA*, 264(19), 2511–2518.
- Sacks, S. (2000). Co-occurring mental and substance use disorders: Promising approaches and research issues. *Substance Use and Misuse*, 35(12–14), 2061–2093.
- Swartz, J. (2001). Considering psychiatric comorbidities among addicted offenders: A new strategy for client–treatment matching. *Offender Substance Abuse Report*, 1(5), 65–66, 70–73.
- Teplin, L. (1994). Psychiatric and substance abuse disorders among mail urban jail detainees. *American Journal of Public Health*, 84(2), 290–293. Retrieved 25 July 2003, from ProQuest database.
- Teplin, L., Abram, K., & McClelland, G. (1997). Mentally disordered women in jail: Who receives services? *American Journal of Public Health*, 87(4), 604–609. Retrieved 25 July 2003, from ProQuest database.
- Torrey, W., Drake, R., Cohen, M., Fox, L., Lynde, D., Gorman, P., & Wyzik, P. (2002). The challenge of implementing and sustaining integrated dual disorders treatment programs. *Community Mental Health Journal*, 38(6), 507–521.
- von Sternberg, K. (1997). *Project check-in summary report*. Houston, TX: Change Assessment Research Project, University of Houston.
- Wexler, H. (1995). The success of therapeutic communities for substance abusers in American prisons. *Journal of Psychoactive Drugs*, 2(1), 57–63.
- Wexler, H. (1997). Therapeutic communities in American prisons. In E. Cullen, L. Jones, & R. Woodward (Eds.), *Therapeutic communities for offenders* (Chapter 7, pp. 162–179). New York: Wiley.
- Wexler, H., Falkin, G., Lipton, D., & Rosenblum, A. (1990). Outcome evaluation of a prison therapeutic community for substance abuse treatment. In *Drug Abuse Treatment and Jails* (pp. 156–175). National Institute on Drug Abuse Research Monograph Series 118. U.S. Department of Health and Human Services. Alcohol, Drug Abuse, and Mental Health Administration. Rockville, MD: U.S. Government Printing Office.
- Wexler, H., & Graham, W. (1993). *Evaluation of a prison therapeutic community for substance abusers: Relationship between crime and drug histories, psychological profiles, and six month outcomes*. Paper presented at the American Society of Criminology meeting, Phoenix, October.