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Collaborative behavioral management: integration and intensification of parole and outpatient addiction treatment services in the Step'n Out study

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Abstract

Integration of community parole and addiction treatment holds promise for optimizing the participation of drug-involved parolees in re-entry services, but intensification of services might yield greater rates of technical violations. Collaborative behavioral management (CBM) integrates the roles of parole officers and treatment counselors to provide role induction counseling, contract for pro-social behavior, and to deliver contingent reinforcement of behaviors consistent with contracted objectives. Attendance at both parole and addiction treatment are specifically reinforced. The Step'n Out study of the Criminal Justice–Drug Abuse Treatment Studies (CJ-DATS) randomly allocated 486 drug-involved parolees to either collaborative behavioral management or traditional parole with 3-month and 9-month follow-up. Bivariate and multivariate regression models found that, in the first 3 months, the CBM group had more parole sessions, face-to-face parole sessions, days on which parole and treatment occurred on the same day, treatment utilization and individual counseling, without an increase in parole violations. We conclude that CBM integrated parole and treatment as planned, and intensified parolees' utilization of these services, without increasing violations.

Keywords

Addiction treatment; Behavioral management; Community reinforcement approach; Community supervision; Graduated sanctions; Parole; Probation; Role induction; Substance abuse

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1 Introduction

Most drug-involved offenders return to the community without having received treatment in prison (Taxman et al. 2007). Many will relapse during community reentry (Hanlon et al. 1998)—approximately 24% of inmates return to prison within 3 years of release, typically as a result of violations of supervision requirements such as detected substance use (Langan and Levin 2002; Taxman et al. 2007). Recent reentry efforts emphasize the importance of addiction treatment during the transition back to the community, but newly released offenders often place limited priority on treatment (Sung et al. 2001), and transition structures are generally not in place to facilitate a continuum of treatment care. Systemic barriers commonly impede efforts to deliver high-quality transitional services, including integrated parole and treatment services that engage the offender in rehabilitative processes designed to facilitate long-term behavioral change.

1.1 Need for models to improve supervision

The criminology literature suggests that both community supervision and rehabilitation are necessary to reduce recidivism (Petersilia 1999), but the community supervision and addiction treatment systems perform their tasks with minimal formal communication or collaboration (Camp and Camp 2002; Thanner and Taxman 2003; Taxman and Sherman 1998). Legal pressure improves treatment retention (Young 2002), thus, collaboration between these systems would combine the leverage of the criminal justice system with substance abuse treatment to optimize rehabilitative outcomes for drug-involved offenders (Marlowe 2003; Center for Substance Abuse Treatment 1994). Hiller and colleagues examined the association between legal pressure and treatment participation in a national sample of 2,605 clients admitted to 18 long-term residential facilities (Hiller et al. 1998). The results suggest that legal pressure might increase treatment participation. Several models, including diversion to treatment, seamless system models and drug courts, involve legal pressure and improved communication to increase treatment retention (Young 2002), but few controlled studies in the supervision literature have explored such integration in the community outpatient setting (Taxman 2002).

Supervision officers are traditionally socialized into a role that emphasizes law enforcement, as opposed to treatment and rehabilitation. The law enforcement model monitors and enforces compliance with the conditions of supervision, primarily through the use of negative sanctions (Taxman 2002; Seiter 2002). One consequence of the emphasis on surveillance is that prior studies have found that intensive or specialized community supervision commonly yield greater levels of revocation, especially for technical violations, compared to traditional parole (Inciardi 1971; Taxman 2002). In a criminal justice system with a surveillance culture, greater scrutiny increases the opportunity for non-compliant behavior to be identified. Thus, greater surveillance leads to greater detection of technical violations and more revocation (Taxman 2002; Petersilia and Turner 1993). In this regard, any approach that intensifies supervision, even in the context of integration with addiction treatment, must address the concern that the initiative could adversely affect the treatment process in which relapse is common, and place the offender at a greater likelihood of technical violations and revocation. This concern has both a clinical and ethical dimension: one could argue that it would be unethical to enroll drug-involved offenders into an integrated care program if greater surveillance in that program was likely to lead to a greater probability of rearrest or return to prison.

Finding a balance between the public safety and public health needs places additional demands on efforts to improve collaboration and communication between parole and treatment. Recent efforts in this area have recognized that the orientation of the parole officer is critical. In a recent study where parole officers adopted evidence-based motivational interviewing and intensive case planning to engage drug-involved offenders, the increased contact *reduced*

technical violations and rearrest (Taxman 2008). This model recognized that the role of the parole officer can be re-engineered to make him/her a change agent, rather than merely an enforcer of supervision conditions.

1.2 Evidence-based components of collaborative behavioral management

Extrapolating from prior efforts (Taxman et al. 2004), Step'n Out developed a collaborative approach that adapted evidence-based role induction and community reinforcement models to community corrections (Friedmann et al. 2008) Collaborative behavioral management (CBM) re-engineered community corrections based on the concept that orienting parolees to parole and treatment and providing supervision officers with tools to manage behavior in addition to sanctions would mitigate the surveillance effect on revocations.

In the substance abuse literature, several processes have been demonstrated to be clinically valuable to engage a substance user in treatment. Approaches that orient clients to treatment have been shown to augment engagement (Warren and Rice 1972). Role induction, a cognitive approach that orients clients to treatment processes and objectives, clarifies client and provider role demands and addresses misperceptions about treatment. Stark and Kane (1985) found significantly greater first session attendance for clients entering outpatients drug-free who were assigned to receive a brief didactic role induction session (Stark and Kane 1985). Lash (1998) found that clients on an inpatient unit who received a 20-minute aftercare orientation session were more likely to enroll in aftercare and to attend a greater number of aftercare counseling sessions than clients who received a videotaped intervention (Lash 1998). Katz et al. found that a 30–45 minute role induction session with the client's assigned primary counselor improved retention in the critical first 3 months (Katz et al. 2005). Early retention creates the potential for the client's greater engagement in treatment—that is, the client's greater alliance with program goals and investment in treatment strategies. Indeed, an association between retention and positive treatment outcomes is well established (Zhang et al. 2003; Hubbard et al. 1989; Simpson 1981; Simpson and Sells 1990), with some investigations suggesting the particular significance of 3 months' retention in outpatient drug-free treatment for obtaining behavior change (Simpson et al. 1997). This work has been primarily done in substance abuse treatment programs, but the concepts can be extended to parole officers with a realization that they engage in similar tasks as treatment providers—assessment, case planning, defining of rules and responsibilities, and monitoring progress.

Work by Iguchi and colleagues suggests the importance of behavioral contracting and reinforcement (Iguchi et al. 1997). Treatment planning appears likely to have implications for retention and program compliance as well as achieving more successful outcomes where that planning combines client involvement, short-term (stepwise) objectives derived from long-term goals, and the joint monitoring of treatment progress. Much research supports the notion that social and community reinforcement effectively improves retention and outcomes for addiction treatment clients (Lash et al. 2001; Meyers et al. 2003). The use of social and community reinforcers is based on the theory that environmental contingencies play a powerful role in supporting or discouraging substance use and antisocial behaviors. In its comprehensive form, community and social reinforcement attempts to align the social, recreational, occupational and family reinforcers in the person's life, so that abstinence is more rewarding than substance use. The community reinforcement approach is among the most efficacious treatments available for substance use disorders (Finney et al. 2007).

Studies of external reinforcement among drug-involved clients have exclusively involved voluntary, non-correctional, populations, although many clients in outpatient settings have criminal justice involvement. Research from the 1970s supports the success of reinforcers among adult drug offenders on supervision (Polakow and Doctor 1974). Correctional staff can successfully apply behavioral management techniques to correctional populations, and

offenders report that officers using such techniques are of higher caliber, less punitive, and more concerned with the offenders' welfare. Reinforcement approaches are attractive for the correctional population, because the theory underlying behavioral conditioning is similar to that of graduated sanctions, a major difference being the availability of a range of reinforcers as well as sanctions as tools to shape behavior. Work by Taxman et al. (2003) in a supervision-based program of behavioral management suggests that positive reinforcers can serve as motivational tools to reflect back to clients their achievement of behavioral milestones. Providing parole officer (POs) with positive tools and enhanced behavioral management skills might systematize offender accountability, increase adherence to community addiction treatment, and reduce revocation (Smith et al. 1976).

The Step'n Out experiment from 2005–2008 adapted these evidence-based techniques for enhancing treatment engagement into a new model of parole involving the offender, treatment counselor, and parole officer. Collaborative behavioral management (CBM) combined role induction, behavioral contracting, and contingent reinforcement to provide parole officers and treatment counselors with tools to engage the offender in substance abuse treatment. This article examines whether the CBM intervention in the Step'n Out study facilitated the integration of parole and treatment and intensified utilization of community supervision and treatment over the 3-month intervention period.

2 Methods

2.1 Collaborative behavioral management

CBM is described in detail elsewhere (Friedmann et al. 2008). Briefly, the 12-week CBM intervention involves an initial session between the parole officer, counselor, and offender, followed by weekly contact between the parole officer and offender; the treatment counselor joins these sessions at least once every other week. CBM has four major elements. First, it explicitly articulates both staffs' and offenders' roles, their expectations of one another, and the consequences if offenders meet or fail to meet those expectations. Second, it negotiates a behavioral contract that specifies concrete target behaviors in which the offender is expected to engage on a weekly basis; these target behaviors include requirements of supervision and formal addiction treatment, and involvement in behaviors that compete with drug use (e.g., getting a job; enhancing non-drug social network). Third, it regularly monitors adherence to the behavioral contract, using a computer program, and administers both reinforcers and sanctions to shape behavior. Fourth, CBM establishes a systematic, standardized, and progressive approach to reinforcement and sanctioning to ensure consistency and fairness. Parole officers and treatment counselors volunteered to participate in the study. In most sites, the parole officer had a mixed caseload, with some offenders assigned to CBM procedures and others to traditional supervision. These officers' parolees on traditional parole were excluded from the study.

2.2 Study design

The Step'n Out experiment and its sites are described in detail elsewhere (Friedmann et al. 2008). Step'n Out was a six-site randomized clinical trial to evaluate whether the implementation of CBM among parole officer and treatment counselor teams would improve the 3-month and 9-month outcomes of parolees, compared to standard parole. The study focused on attendance at parole and treatment sessions at the 3-month follow-up. Sites included Providence, Rhode Island, the lead center; Bridgeport, Connecticut; Hartford, Connecticut; Wilmington, Delaware; Richmond, Virginia and Portland, Oregon. The protocol was approved by institutional review boards at each institution and complied with the special protections pertaining to behavioral research involving prisoners (OHRP 2005).

Following completion of screening and a baseline interview, and after informed consent had been obtained, subjects were randomly allocated to either the collaborative behavioral management intervention or a comparison condition. Urn randomization (Stout et al. 1994) ensured balance by gender; receipt of in-prison or transitional residential addiction treatment; length of incarceration more or less than 18 months; and moderate versus high risk for recidivism on the lifetime criminality screening form (LCSF) (Walters and McDonough 1998). Participants in the comparison group received standard parole supervision, with traditional sanctions from a different officer at the usual office. Standard parole included, at minimum, face-to-face contact and drug testing (random, observed, etc.).

2.3 Study population

The target population was parolees with pre-incarceration substance use disorders who were at moderate-to-high-risk of recidivism. Inclusion criteria were: (a) at least 18 years of age; (b) English speaking; (c) probable drug dependence immediately prior to incarceration, as determined by a score of 3 or higher on the Texas Christian University (TCU) drug screen II (Knight et al. 2002) or mandated drug treatment; (d) substance use treatment as a mandated or recommended condition of parole; (e) moderate-to-high-risk of drug relapse and/or recidivism as determined by an LCSF score of 7 or greater (Walters and McDonough 1998) or a history of two or more prior episodes of drug abuse treatment or drug-related convictions. Exclusion criteria were: (a) psychotic symptoms on a Structured Clinical Interview for Diagnostic & Statistical Manual (DSM) Disorders (SCID) screen (First 2002); and (b) correctional or supervision conditions that prohibited them from participating in the study, including failure to leave prison on parole or probation; mandate to a special parole caseload; or transfer to a non-participating supervision office.

2.4 Study sites

The six parole offices where the Step'n Out study occurred illustrate the variation in parole services nationally. The ratio of parole officers to offenders in the control group varied from 1 to 32 in Delaware to 1 to 132 in Oregon. Average contacts between parolees and the parole officer ranged from 1 to 4 per month, as did the number of required urine tests. While all parole offices had an affiliation with an outpatient substance abuse treatment program, the type of treatment offered was cognitive behavioral in four sites, and limited to alcohol and drug education in two sites. The study sites were somewhat atypical, in that four of the six parole offices provided addiction treatment on-site at the parole office; in Oregon and Rhode Island parolees were referred to an outside treatment center. The ratio of treatment counselors to clients in the treatment programs ranged from 1 to 25 in Delaware to 1 to 50 in both Hartford and Virginia. Each parole office had one parole officer who volunteered to team with an addiction treatment counselor to deliver the study intervention. The study parole officer's case load had a mix of clients in all sites except Delaware, but study parole officers' traditional clients were excluded from the study. The control group came from the remaining parole cases in the office.

2.5 Adherence to protocol

Procedures to ensure fidelity to the intervention (Yeaton and Sechrest 1981) included the preparation of a standard manual for the CBM approach, an initial uniform training of the CBM intervention teams, booster training after a year of implementation, and study-wide procedures for monitoring delivery of the CBM intervention. A central trainer supervised protocol fidelity through review of a sample of audiotaped induction sessions and follow-up sessions after 1 month for protocol adherence. Each audiotape was rated by a fidelity rating sheet that listed concrete staff behaviors that fell within three categories: (1) essential and unique; (2) allowed but not unique; and (3) not allowed. Staff behaviors in CBM that were "essential and unique"

referred to the explanation that compliance with the behavioral contract would earn points and rewards. Staff behaviors that were "allowed but not unique" were those that some officers may have done as part of their style, such as asking about the client's previous experience on parole. Staff behaviors that were "not allowed" were delivering rewards that were not earned. To be rated as adherent, staff had to demonstrate 80% of the "essential and unique" items, 50% of the "allowed but not unique" items, and fewer than 20% of "not allowed" items. Fidelity reviewers independently rated sessions to ensure inter-rater reliability. Agreement by the two coders was in excess of 90%. Coding of recorded sessions indicated that 84% of the induction sessions and 77% of sessions at 1-month met adherence criteria. Fidelity reports were provided to the parole officer and counselor team as well as to the research project director.

2.6 Data collection

Personal interviews performed at baseline (before randomization), 3 months, and 9 months after the initial parole session used the Criminal Justice–Drug Abuse Treatment Studies (CJ-DATS) intake and follow-up instruments (CJ-DATS 2004). They provided detailed information on sociodemographic background, family and peer relations, health and psychological status, criminal involvement, drug use history, and human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) risk behaviors. The intake gathered baseline characteristics on the subject prior to the arrest that had led to the most recent incarceration, while the follow-up forms captured information for the appropriate follow-up window. A timeline followback (TLFB) calendar interview (Sobell and Sobell 1992; Ehrman and Robbins 1994; Miller 1996) assessed substance use, criminal behavior and arrests on a daily basis. Participants received $20, $40, and $60 in grocery store certificates for the three interviews, respectively. Standardized procedures tracked subjects for follow-up interviews (Hall et al. 2003). Follow-up rates were 92%, at 3 months, and 88% at 9 months.

2.6.1 Primary outcomes—Parole utilization was assessed through file reviews at the parole offices. Utilization of substance abuse treatment came from abstraction of charts to determine attendance at the addiction treatment program that provided treatment under contract with the department of corrections. The assessment of days on which the parolees had parole and treatment on the same day was a composite variable, using parole attendance data from the parole office file reviews and treatment attendance from the chart abstractions. Parole violations were taken from clients' self-report calendar interviews, because they were inconsistently noted in parole files.

2.7 Statistical analysis

Descriptive analyses included frequency tables for categorical variables, and measures of center and spread for continuous variables. Descriptive statistics were generated for the entire sample of patients and stratified by intervention condition. The effectiveness of the randomization procedure was assessed through comparison of the two conditions at baseline. Comparisons of baseline characteristics and process measures at the 3-month follow-up used Student's *t*-test and analysis of variance for parametric data, and contingency tables for proportions. All significance tests were two-tailed.

Depending on the distribution of the process measures, either logistic regression (binary outcomes), Poisson regression (count outcomes), or zero-inflated Poisson (ZIP) regression (count outcomes with a high frequency of zero values) was employed to evaluate differences in utilization of parole and addiction treatment between the CBM and control groups. ZIP regression analysis assumes that counts are generated by two processes (Lambert 1992). The first process is a binary process that estimates whether or not an event will occur (i.e., the probability of a zero count vs. a non-zero count). The second process is a Poisson process that estimates the number of events. Where applicable, coefficients estimated for each of these

processes are presented (Table 3). All models were estimated with robust standard errors to account for clustering at the research site level, and number of days in the community was included as a covariate to control for rate of exposure.

3 Results

Across sites, 568 participants were randomly allocated to their study conditions, and 475 had their initial meeting with their parole officer between 10 March 2005 and 30 June 2008. Subjects were approximately 84% male, mean age was 34±9 years, and traditional racial minorities were the majority. The mean number of lifetime arrests exceeded 13, and two-thirds screened positive for high criminality on the LCSF. The randomization balanced the study conditions for baseline characteristics, and the loss of subjects who did not initiate parole did not affect that balance (Table 1).

3.1 Utilization of parole and treatment

In bivariate analyses the CBM group showed higher utilization of parole and treatment during the 3 month intervention period (Table 2). Parolees randomly allocated to the parole officer participating in CBM had significantly more parole sessions, overall, and more face-to-face parole sessions. The CBM group had a mean of 0.85 parole violations per 100 community days, which did not differ significantly from the mean of 1.5 parole violations per 100 community days among the control group. The CBM group did experience significantly more days on which parole and treatment occurred on the same day. Despite having a mandate for treatment, 22% of CBM parolees and 29% of the control group received no substance abuse treatment. The CBM group was more likely to have had two or more treatment sessions and to have participated in individual counseling.

Multivariate mixed regression models that adjusted for clustering within site and days in the community generally supported the bivariate findings (Table 3). Parolees in CBM had significantly more parole sessions, and there was a trend towards an increase in the number of face-to-face parole sessions (P=0.09), without an increase in parole violations. The CBM group had significantly more days on which parole and treatment occurred on the same day. The bivariate effect of CBM on treatment utilization (two or more treatment sessions) diminished to a trend (P=0.08), but the CBM group remained significantly more likely to have participated in individual counseling.

4 Discussion

These findings suggest that CBM, like other models that facilitate the integration of parole and addiction treatment (Thanner and Taxman 2003), increased parole contacts and treatment utilization. CBM increased the extent to which parole and treatment were delivered on the same day, making both treatment and parole more convenient for the parolee/client and facilitating integration of services. Perhaps most importantly, CBM intensified and temporally integrated these processes, without increasing parole violations. The CBM intervention thus appeared to integrate community parole and addiction treatment successfully, increasing adherence to both community supervision and treatment without adverse consequences.

Greater integration of supervision and addiction treatment hold great potential to improve the outcomes of parolees involved in both systems (Byrne et al. 2002; Thanner and Taxman 2003; Fletcher and Chandler 2006). Thanner and Taxman (2003), in their evaluation of a seamless system model, similarly found that high-risk offenders receiving integrated treatment and parole services were more likely to attend and complete drug treatment and less likely to be arrested. A recent evaluation of Maryland's proactive community supervision project found that an integrated model where the officers were trained in motivational interviewing reduced

both technical violations and rearrests (Taxman 2008). Ongoing analyses of the Step'n Out project will examine whether CBM yields similar improvements in distal outcomes.

Directly or indirectly, integration has the potential to increase supervisory contacts and intensify parole; indeed, CBM increased the number of parole contacts and face-to-face contacts between parole officers and parolees. Research on and practice of intensive parole have been haunted by findings that suggested that closer surveillance might lead to more detection of technical violations and more revocations, thus increasing re-incarceration costs without improving public safety (Petersilia 1990; Petersilia and Turner 1993). Like recent findings from the Maryland proactive community supervision project (Taxman 2008), CBM intensified parole supervision without increasing parole violations. Taken together, this accumulating evidence suggests that nihilism surrounding intensive parole supervision might be contravened if parole practice was grounded in theory-based models of behavioral management.

Taxman (2002) noted the atheoretical nature of parole practice in her qualitative review of the effectiveness of probation and parole supervision. Face-to-face contacts have been based on a surveillance 'check in' model, where the offender meets for a brief period of time with the officer to provide information about his/her compliance with parole conditions. Observations of contacts found that parole officers were rushed, tended to ask pointed and direct questions, made little eye contact with the offender, and tended to focus on the offender's failure to meet conditions (which can range from three to more than 12). Such sessions do little more than provide opportunities for offenders to be perceived as failing, damaging self-efficacy and reinforcing their view of supervision as setting them up to fail (Maruna 2001).

Recent advances in the supervision field have viewed contact as an opportunity to deliver brief interventions that build clients' motivation, self-efficacy and recovery-related skills. CBM conceptualizes the contact as a brief intervention in which treatment counselors and parole officers assist offenders in setting feasible goals that facilitate recovery, making targeted progress on those goals and problem solving, and reinforcing progress. Of course, behaviors that are not allowed (e.g., possession of a gun) require traditional parole responses, but the CBM process provides an opportunity for more graduated responses to manage less egregious behavior. The Step'n Out study demonstrates that parole can be integrated with treatment and that parole contacts based on sound behavioral management principles can reinforce participation in rehabilitative processes.

The Step'n Out study has several limitations. First, parole officers and treatment counselors volunteered to participate in the CBM intervention, so differences in their motivation might have contributed to the observed effect. That said, in real world settings, assignment to specialized caseloads is often voluntary. Second, in many of our study sites, parole and treatment were already co-located at the parole office. While this situation might have laid the geographic groundwork for collaboration between the CBM parole officer and treatment counselor, it also might have increased the extent of collaboration within the control groups, making difference more difficult to detect. Third, heterogeneity in the effectiveness of CBM is likely among the sites, but it is difficult to assess site-level effects with only six sites. Fourth, we cannot comment on the reliability with which parole officers and treatment counselors recorded their contacts in charts, but we have no reason to believe that such recording differed between the study conditions. Fifth, technical violations came from client self-reports over a short period, the first 12 weeks of the parole. Although these self-reports are of uncertain validity, it is unlikely that they would vary differentially by study group. Sixth, study participants were research volunteers, who likely differed from those who did not volunteer. Thus, CBM might work better or less well if it were mandated among all transitioning drug-involved offenders.

Seventh, centralized fidelity assessment of audiotaped sessions, while highly standardized, reduced the timeliness of feedback to parole officers and counselors. Delays occurred in submitting the audiotapes to centralized assessors and in obtaining feedback from the assessors. Commonly delayed for months, the feedback given to the CBM officers and counselors from the tape reviews did not serve as a useful quality improvement tool. Real world implementation of CBM will require greater attention to fidelity issues and training of local supervisors to provide ongoing monitoring and feedback to parole officers and counselors.

Eighth, a computerized program, called SNOCONE (the Step'n Out computerized input environment), was developed as a tool to assist officers in implementing CBM. This program allowed the officers to enter information on the goals set for each client and the progress made towards these goals each week. While this program was used for the majority of clients, some officers had problems using SNOCONE, sometimes due to technical issues with the program and sometimes due to technical issues with the system as it ran on their agency's network. The system calculated points automatically, but if all client contacts were not entered into SNOCONE, the points were not correctly tracked, and officers had to track progress manually. With greater development, computerized decision support holds promise to provide community supervision officers with needed tools for behavioral management.

Finally, in most of the parole offices, only one or two officers were implementing CBM, while all of the other officers continued to deliver traditional parole. Since we did not have information about individual POs in the control group, and the number of parolees assigned to each PO would be small, analyses did not nest clients within PO. CBM parole officers, in informal discussions, reported feeling 'isolated', having no on-site resources for intervention, and being considered 'soft' by their peers for using this technique. With more extensive implementation, the partnership between parole and treatment might create a culture in which parole and treatment share a mutual appreciation of their respective roles in the recovery process. POs gain greater understanding of the importance of treatment and a positive rehabilitative approach in producing long-term behavioral change, while addiction treatment providers better understand the POs' role in managing offender behavior and ensuring public safety. Discussions with our parole officers and treatment counselors revealed that they had not previously considered their roles to be complementary. Instead of competing for the attention of the offender, the CBM model helped them align their work to complement each other, as well as to work together towards engaging the offender in a mutually supportive parole and treatment process. Future analyses will examine whether collaborative behavioral management improves parole officer–parolee relationships, criminal justice and drug use outcomes.

The proposed integration of the community supervision and addiction treatment systems might be conceived of as a joint venture or contractual alliance, in which both parties contribute resources and expertise to create a system better designed for the task of reintegrating drug-involved offenders back into the community. The Step'n Out study suggests that this re-engineered system, grounded in sound behavioral principles, might safely integrate and intensify transitioning offenders' participation in essential community supervision and substance abuse treatment services.

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Biographies

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Faye S. Taxman Ph.D. is a University Professor in the Justice, Law, and Crime Policy Department, co-Director of the Network for Justice Health, and Director of the research program in Evidence-based Corrections and Treatment at George Mason University, USA. Dr. Taxman is recognized for her work in the development of the seamless systems of care models that link the criminal justice with other service delivery systems as well as re-engineering probation and parole supervision services, and organizational change models. Her work covers

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Table 1

Characteristics of subjects. No relationships among groups differed at $P<0.05$. *SD* standard deviation

Characteristic	Study Condition		Initiated Parole	
	Collaborative Behavioral Management	Traditional Parole and Treatment	Collaborative Behavioral Management	Traditional Parole and Treatment
Total	287	281	242	233
Female, *n* (%)	44 (15.3)	47 (16.7)	39 (16.1)	41 (17.6)
Age, years, mean ± SD	34.1±8.9	33.7±9.1	34.4±8.7	33.8±8.9
Race, *n* (%)				
Hispanic/Latino	40 (14.1)	31 (11.2)	38 (15.9)	26 (11.3)
African American/Black	143 (50.4)	149 (53.6)	118 (49.4)	126 (54.8)
White	102 (35.9)	99 (35.6)	84 (35.1)	77 (33.5)
Asian	1 (.4)	4 (1.4)	1 (.4)	4 (1.7)
Native American/Pacific Islander	9 (3.2)	9 (.7)	9 (3.8)	9 (3.9)
Other	33 (11.6)	23 (8.3)	31 (13.0)	21 (9.1)
Site, USA, *n* (%)				
Richmond, Virginia	39 (13.5)	46 (16.4)	39 (16.0)	46 (19.7)
Bridgeport, Connecticut–Bridgeport	37 (12.8)	37 (13.2)	36 (14.8)	36 (15.5)
Connecticut–Hartford	27 (9.4)	24 (8.5)	26 (10.7)	23 (9.9)
Wilmington, Delaware	133 (46.2)	125 (44.5)	91 (37.4)	82 (35.2)
Portland, Oregon	34 (11.8)	35 (12.5)	34 (14.0)	32 (13.7)
Providence, Rhode Island	18 (6.3)	14 (5.0)	17 (7.0)	14 (6.0)
Primary drug of abuse, *n* (%)				
Heroin	74 (25.7)	53 (18.9)	59 (24.3)	49 (21.0)
Other opioids	3 (1.0)	4 (1.4)	3 (1.2)	4 (1.7)
Cocaine	69 (24.0)	68 (24.2)	55 (22.6)	54 (23.2)
Methamphetamine	20 (6.9)	19 (6.8)	20 (8.2)	17 (7.3)
Cannabis	47 (16.3)	47 (16.7)	42 (17.3)	40 (17.2)
Other	75 (26.0)	90 (32.0)	64±26.3	69 (29.6)
Number of arrests lifetime, mean ± SD	13.5±22.6	13.8±23.2	14.1±24.5	12.1±14.4
Number of arrests, past 6 months, mean ± SD	1.1±1.43	1.4±1.6	1.2±1.5	1.4±1.5
Number of times in jail, lifetime, mean ± SD	10.8±22.1	12.4±60.5	11.7±23.9	8.5±12.9
Number of times in jail, past 6 months, mean ± SD	.62±.96	.75±1.2	.59±1.0	.67±1.1
Number of months in jail, lifetime, mean ± SD	67.9±58.3	65.2±64.5	72.3±60.9	67.6±66.9
Number of days in jail, past 6 months, mean ± SD	15.3±37.7	14.8±35.9	17.3±39.8	13.9±34.5
Lifetime criminality screening form score, *n(%)* (%)				
Moderate (<10)	96 (33.7)	95 (33.9)	91 (37.9)	88 (37.9)
High (≥10)	189 (66.3)	185 (66.1)	149 (62.1)	144 (62.1)
Number of drug-related crimes, lifetime, mean ± SD	3429±1632	3242±1778	3242±1616	3038±1797
Number of drug-related crimes, past 6 months, mean ± SD	834±906	842±980	844±978	872±1064

Table 2

Parole and treatment service utilization in the 3-month period after the first parole session

Parameter	Collaborative Behavioral Management	Traditional Parole and Treatment
Number initiating parole	243	233
Parole services		
Number of parole sessions, mean ± SD	13.41±8.35[b]	10.35±.5.62
Face to face parole sessions, mean ± SD	9.43±4.85[b]	7.88±4.57
Had parole and treatment on same day, *n* (%)	90 (40.9)	63 (29.6)
Number of days had parole and treatment on same day, mean ± SD	2.15±3.47[b]	1.16±2.42
Substance abuse treatment services		
Treatment sessions (group or individual) on administrative review*n* (%)		
0	53 (21.8)	67 (28.8)
1	5 (2.1)	11 (4.7)
2 or more	185 (76.1)[a]	155 (66.5)
Number of treatment sessions (group or individual), mean ± SD	14.28±11.33	12.80 ±13.79
Number of group treatment sessions, mean ± SD	9.81±8.80	9.79±11.94
Number of individual treatment sessions, mean ± SD	4.79±4.79[b]	3.23±6.41
Number of self-help groups attended, mean ± SD	1.50±6.16	1.48±6.99
Days in community in 3-month follow-up period, mean ± SD	85.65 ±16.50	85.18 ±17.47
Parole violations per 100 community days, mean ± SD	.85 ±7.7	1.5 ±8.7

[a] Differed from the control group, $P<0.05$

[b] Differed from the control group, $P<0.01$

Table 3

Multivariate analyses of parole and treatment service utilization in the 3-month period after the first parole session. All models were estimated with robust standard errors to account for clustering at the site level. B_B parameter estimate for binary process (probability of a zero count in zero-inflated Poisson regression model, *SE* standard error, B_C parameter estimate for count process, *SA* substance abuse

Service	Parameter		Estimated Mean Probability of Zero Response (SE)		Estimated Mean Count/Percent (SE)	
	B_B (SE)	B_C (SE)	Collaborative Behavioral Management	Traditional Parole and Treatment	Collaborative Behavioral Management	Traditional Parole and Treatment
Parole						
Number of parole sessions[a]	–	0.27 (0.11)[e]	–	–	14.3 (0.18)	10.9 (0.14)
Number of face-to-face parole sessions[a]	–	0.19 (0.18)[d]	–	–	10.1 (0.13)	8.3 (0.11)
Number of days that parole and treatment were on same day[b]	−0.43 (0.30)	0.37 (0.10)[f]	0.56 (0.02)	0.66 (0.02)	2.4 (0.03)	1.3 (0.02)
Substance abuse treatment						
Received SA treatment (group or individual)[c]	0.21 (0.29)	–	–	–	72.8% (1.0)	68.1% (1.0)
Had 2 or more sessions of treatment[c]	0.44 (0.25)[d]	–	–	–	80.4% (1.0)	72.4% (1.0)
Days of treatment (group and individual)[b]	−0.41 (0.29)	−0.05 (0.08)	0.19 (0.00)	0.26 (0.00)	13.8 (0.18)	13.2 (0.18)
Days of group treatment[b]	−0.18 (0.23)	−0.12 (0.12)	0.26 (0.01)	0.29 (0.01)	9.5 (0.13)	10.1 (0.13)
Days of individual treatment[b]	−0.75 (0.38)[e]	0.10 (0.16)	0.28 (0.01)	0.45 (0.01)	4.7 (0.06)	3.2 (0.04)
Days of self-help attendance[b]	−0.14 (0.35)	−0.09 (0.38)	0.90 (0.01)	0.91 (0.01)	1.5 (0.02)	1.5 (0.02)
Number of parole violations[b]	0.34 (0.32)	−0.23 (0.47)	0.92 (0.00)	0.88 (0.00)	1.1 (0.01)	1.9 (0.02)

[a] Poisson regression model

[b] Zero-inflated Poisson regression model

[c] Logistic regression model

[d] Trend toward a difference from the control group, $P<0.10$

[e] Differed from the control group, $P<0.05$

[f] Differed from the control group, $P<0.01$