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Guydish, Joseph R, PhD

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Author Affiliations:

Monica Chan, MBA, Joseph Guydish, PhD, Rosemary Prem, Martha A. Jessup, RN, PhD:
Institute for Health Policy Studies, University of California, San Francisco

Armando Cervantes: San Francisco Adult Probation Department, San Francisco

Alan Bostrom, PhD: Department of Epidemiology and Biostatistics, University of California,
San Francisco

Corresponding Author: Joseph Guydish, Institute for Health Policy Studies, 3333 California St., Suite 265, San Francisco, CA 94118.

Phone: 415-476-0954

FAX: 415-476-0705

email: Joseph.Guydish@ucsf.edu

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Evaluation of Probation Case Management (PCM) for Drug-Involved Women Offenders

Abstract

Based on availability of case management services, drug-involved women offenders entered either a probation case management (PCM) intervention (n=65) or standard probation (n=44). Participants were placed in the case management condition until all slots were filled, then placed in standard probation until case management slots opened. Participants were interviewed at program entry and at 6 and 12 month follow-up using measures of substance abuse, psychiatric symptoms, and social support. Results showed modest change over time in both conditions, but PCM did not result in more services or treatment, or in better outcomes, than standard probation. These findings are discussed in the context of study limitations, and in the context of state initiatives like those in Arizona and California designed to apply treatment as an alternative to incarceration.

Evaluation of a Probation Case Management Model for Substance Abusing Women Offenders

Between 1990 and 2000, the number of adults involved with the corrections system (federal, state, and local; jails, prisons, probation and parole) increased by 49%, reaching a high of 6.5 million (Bureau of Justice Statistics, 1999). By the end of 2002, more than 4.7 million adults were under Federal, state or local probation or parole jurisdiction, with women comprising 23% of the nation's probationers (United States Department of Justice, 2003). A 1995 survey of 4,703 adults on probation noted that 68% of women probationers reported past drug use, 25% of women reported alcohol use at the time of offense, and 12% reported drug use at the time of offense (United States Department of Justice, 1998). In one analysis, compared to women who had not used illicit drugs, women who used *any* illicit drug in the past year were six times as likely to have been arrested and four times as likely to have committed *any* criminal activity in the past year (Substance Abuse and Mental Health Services Administration, 1997).

In addition to substance abuse, many women offenders have psychiatric disorders (Jordan et al., 2002; Teplin, Abram, & McClelland, 1996). Mental health problems among women offenders include anxiety, depression and PTSD (Henderson, Schaeffer, & Brown, 1998). Victimization has occurred in the majority of female inmates (Lake, 1993), who also report high prevalence of sexual and physical abuse (Henderson, 1998; Snell & Morton, 1994). Women drug offenders report intimate partner violence as a common part of their lives (Staton, Leukefeld, & Logan, 2001).

Social and health problems common among women offenders include lack of employment experience, needs for childcare, and gender-specific health concerns (Center for Substance Abuse Treatment, 1998). Three-fourths of incarcerated women are mothers and two-thirds have children under the age of 18 (Snell, 1992). Once incarcerated, these mothers become

separated from their children and report distance from the prison as a main reason for infrequent or absent child visitation (Bloom & Steinhart, 1993). Other health problems include HIV/AIDS, Hepatitis B and C, sexually transmitted diseases, tuberculosis, hypertension and dental problems (Hammett, Gaiter, & Crawford, 1998; Marquart, Brewer, & Mullings, 1999; Young, 1998).

Addressing the health and social needs of drug-involved women offenders has generally been a low priority for criminal justice systems. Despite a recent trend toward treatment, programs often focus on males and provide male models of treatment and recovery (Wellisch, Anglin, & Prendergast, 1993). Examples include: 1) in-house substance abuse treatment during incarceration; 2) treatment along service continuums based on confinement status and level of supervision (i.e. in-jail to post-release through probation/parole) and 3) post-release participation in community programs while under probation and parole supervision (Knight, Hiller, & Simpson, 1997; Lockwood, Inciardi, & Surratt, 1997; Windell & Barron, 2002).

Traditional post-release supervision regarding substance abuse has largely consisted of limited attention to and monitoring of offender recidivism to drug use. Infrequent drug testing, brief infrequent phone or in-person contact and lack of coordination and provision of substance abuse treatment have characterized the norm in supervision strategies for persons with substance abuse disorders (Center on Addiction and Substance Abuse, 1998; Kleiman et al., 2003; Prendergast, Wellisch, & Falkin, 1995). Intensive supervision probation/parole (ISP) models have also been applied to drug-involved offenders (Pearson, 1988). While ISP approaches vary by jurisdiction, characteristics of such programs include smaller caseloads for the supervising officer and more frequent face to face contact with the probationer, as well as requirements for urinalysis testing, counseling, and work participation (Turner, Petersilia, & Deschenes, 1992). In a randomized field experiment evaluating ISP interventions, ISP participants received more drug counseling and had higher employment compared to routine supervision control participants.

While ISP and control participants did not differ on new criminal arrests over one year follow-up, the ISP group had more technical violations and associated incarceration and costs. The investigators recommended that, to improve effectiveness, ISP programs include substance abuse treatment as an integral component (Turner et al., 1992).

Case management offers one strategy for integrating substance abuse treatment and ISP. Models of case management range from a lower intensity “broker model” to “intensive case management” (Arfken, Klein, Agius, & di Menza, 2003; Rapp, 1998), but all models include elements of assessment, care planning, connecting the client with needed services and monitoring of needs and services over time (Austin & McLelland, 1994). Intensive case management models include a lower ratio of clients per case manager and the opportunity for more frequent client contact, which are consistent with criminal justice supervision, and assessment and coordinated care which are consistent with substance abuse treatment.

Case management has been used widely in substance abuse treatment (Sorensen et al., 2003) including programs designed to serve women (Brindis & Theidon, 1997; Laken & Ager, 1996; Sorensen et al., 2003). Case management has also been applied in criminal justice settings, where such programs have shown initial effectiveness with women drug offenders (Jessup, Edwards, Mason, Miller, & Katz, 2001; Siefert & Pimlott, 2001). In an analysis of the Bay Area Services Network (BASN), a parolee services model providing case management, facilitation of enrollment into drug abuse treatment and linkages to health and social services, no differences were found between BASN parolees and non-service recipient parolees in terms of time in treatment, days of drug use, criminal recidivism, or use of health and social services. However, among BASN parolees, more contacts with the case manager significantly predicted fewer days of drug use and fewer property related crimes. There was also a positive correlation between dose of case management and time in treatment (Longshore, Turner, & Fain, in press).

Case management of drug offenders has also been cited as a strategy for service coordination during the transfer of offenders from correctional institutions to communities (Center for Substance Abuse Treatment, 1998) and for addressing health needs of inmates returned to their communities (Vigilante et al., 1999). Models of transition services not specifically designed as post-release case management have also been adopted, such as treatment preparation, coordination of jail release and physical accompaniment to treatment to engage women offenders in treatment (Windell & Barron, 2002). Continued community linkages between criminal justice systems and health and human services providers have also been recommended (Singer, Bussey, Song, & Lunghofer, 1995; Wellisch et al., 1993).

In a meta- analysis of studies of effectiveness of correctional treatment interventions for women, Dowden and Andrews (1999) found that human service interventions were associated with greater reduction in recidivism, and suggested that such programs played a role in determining the therapeutic potential of an intervention. Programs that implemented principles of risk, need and responsivity (Andrews et al., 1990) were associated with reductions in re-offending. Although the combination of ISP and case management does not necessarily meet each of these principles, it does bring an emphasis on human services into the ISP context.

The San Francisco Adult Probation Department implemented a case management intervention for drug-involved women offenders. Probation officers responsible for intensive supervision of eligible women were trained and supervised in therapeutic case management activities. Because it includes elements of substance abuse treatment and ISP, this intervention follows the recommendation of Turner et al. (1992) and offers an opportunity to assess whether such a combined intervention may result in improved outcomes. In this study we compared outcomes for drug-involved women offenders who were assigned, based on availability of case management services, either to probation case management (PCM) or to standard probation.

Methods

Study Setting

The Network Demonstration Program In 1995, the Center for Substance Abuse Treatment (CSAT) initiated the Network Demonstration Program to better serve targeted populations by linking criminal justice, substance abuse treatment, and other services. The goals of the initiative were to facilitate planning and coordination among institutions and systems serving drug-involved offenders (Department of Health and Human Services, 1995). Eight projects were supported under this initiative. Three projects served juvenile offenders (Lane County, Oregon; Travis County, Texas; Denver, Colorado), one served adult males (Kansas City, Missouri), and four served women (Brooklyn, Philadelphia, Phoenix, San Francisco). The San Francisco Network Project was designed to address health and social needs of drug-involved women offenders, through case management, and to build bridges between the Probation Department and community services. The Network project operated from 1995 through 2001.

The City and County of San Francisco Adult Probation Department The Adult Probation Department operates as a partner to law enforcement and the Courts, with a mission to reduce the incidence and impact of crime. Department philosophy is that probation services are an integral part of the criminal justice system, focused on the offense, the offender, and the consequences of crime on victims and on the community. It is a moderately sized urban department. In fiscal year 1995-96, at the start of the Network project, the department fielded 87 officers to supervise an active caseload of 8,990 probationers at year's end, and was supported by a total budget of 7.3 million dollars (San Francisco Adult Probation Department, 1996).

As lead agency for the Network project, the Adult Probation Department also had the mission of catalyzing change by bringing a collaborative treatment model into use within the criminal justice system. The case management intervention was designed to better serve women

by providing treatment and related services as a means to reduce substance abuse, criminal recidivism and incarceration, and to improve the social functioning of probationers.

Study Conditions

Standard Probation In standard probation, officers typically supervised caseloads of 100-150 clients, although this could vary based on the specific program or type of caseload. Officers in the Intensive Supervision Unit, for example, had the smallest caseloads numbering 65-67 cases per officer (Chan, Jessup, Prem, Revels, & Guydish, 2002). The general tasks of probation include the preparation of pre-sentence investigations and reports for the Courts; supervision of offenders placed on probation, enforcing court-ordered conditions; and assisting offenders in finding treatment and other services (San Francisco Adult Probation Department, 1996).

Probation Case Management (PCM) The Network intervention, like many community and criminal justice programs, was not a previously tested or manualized intervention. Rather, it was developed by probation staff in response to the CSAT request for applications (Department of Health and Human Services, 1995). The description of the intervention, below, is based on process evaluation interviews conducted with eight staff members and other stakeholders, and review of project documents (Chan et al., 2002).

The Network intervention was designed using a probation case management (PCM) model. Case managers were selected from among current probation officers and, in relation to study participants, retained the role of probation officer as well as case manager. Case managers were clinically supervised by an outside consultant weekly in the first two years of the project, bi-weekly in the third year, and monthly in the fourth year. In addition to clinical supervision of case managers, PCM was differentiated from standard probation by: 1) lower caseloads and increased contact with clients; 2) uniform client screening and assessment procedures, 3) a

therapeutic and advocacy orientation and, 3) referrals to health and human services.

Case managers had approximately 50 clients at any time. For these probation officers, the lighter caseloads were intended to allow more frequent client contact and increased time spent per client contact. Contact was maintained between the case manager and the client at least two times a month through field visits, office appointments, or by phone.

Therapeutic and advocacy activities included gender-specific client education about addiction, more counseling with clients, and being more accessible to clients by phone and in person. Case management activities included attending treatment planning meetings at the client's treatment program, on many occasions going to court or to the housing authority with the client, and making home visits or attending medical appointments with a client. In addition to substance abuse treatment, referral resources available to case managers included health and mental health services, childcare and child reunification services, educational and employment counseling, and assistance with housing needs. The extent to which each case manager used these resources was dependent in part on their individual approach (Chan et al., 2002).

Recruitment and Assignment to Condition

Screening and eligibility Eligible women were residents of the City and County of San Francisco, 18 years of age or older, who had a substance abuse problem and were involved in the criminal justice system (e.g., incarcerated, pre-sentence, or on probation or parole). In addition, women must have been willing to enter PCM if a slot were available, and must have been willing to enter substance abuse treatment. Women entered the study from four sources: Daily Arrest Report, District Attorney motion to revoke probation, Pre-Trial Release, and by direct referrals from Probation Officers, Public Defenders, or District Attorneys. The Daily Arrest Report is a daily listing of all San Francisco arrests and citations. For each arrest or citation, the report shows the arrestee name, San Francisco Police Department criminal history record number, court

number, and charges associated with the arrest or citation. Women appearing on the Daily Arrest Report with drug-related charges were further assessed as potential study participants.

Women were excluded from study if they were 1) currently involved in Drug Court, or 2) court ordered to receive Network (PCM) services. The aim of the study design was that, after PCM slots were filled, eligible women would have equal probability of being assigned to either condition, based only on availability of a PCM slot. Women court ordered to receive PCM were excluded because they had no probability of assignment to the comparison condition.

Women with current or past charges of violence were considered for inclusion in the study on a case-by-case basis. Assessors would consider, for example, whether a woman was under the influence at the time of the violent incident, whether violence was one time only or occurred a number of years ago, or whether it occurred in the context of mutual combat. In these cases a woman may have been accepted into the study. Women were excluded if a pattern of violence was evident. This may be indicated by multiple past violent incidents reflected either in arrest records or in actual charges.

Study recruitment and assignment to condition Recruitment took place from June 1997 to February 1998. When a potential participant was identified, usually while in jail, a case manager met with her to explain the program and conduct a screening interview. Information from this interview was presented to a review committee including District Attorney and Public Defender representatives. This committee considered eligibility criteria, nature of violence charges, if any, and whether the current charges were likely to result in probation or prison. Women likely to receive prison sentences were screened out, so that all participants were either on probation at the time of the baseline interview, or were later placed on probation as a result of adjudication. If approved for participation, a more thorough clinical assessment was completed and the results used to develop an individual treatment plan. Women determined eligible for

study (n=109) were referred to research staff who set an appointment to discuss the purpose of the study, complete informed consent procedures, and administer the baseline interview.

Eligible women were admitted to the PCM condition until all slots were filled (n=65). Subsequent women who met eligibility criteria had the choice of entering the study in the comparison condition (n=44) with the option of entering Network upon completion of the 12-month follow-up study interview.

Data Collection Measures and Procedures

Research interviews included the Addiction Severity Index (ASI) (McLellan, Luborsky, Woody, & O'Brien, 1980), Beck Depression Inventory (BDI) (Beck, 1972), Brief Symptom Inventory (BSI) (Derogatis, 1983), Social Support Evaluation List (Cohen, Mermelstein, Kamarck, & Haberman, 1985), and a Women's Needs Questionnaire developed for this project.

ASI composite scores measure problem severity for the past 30 days in each of seven areas (medical, employment, legal, alcohol, drug, social, psychological) (McLellan et al., 1985). Composite scores for Drug and Alcohol severity may be artificially lowered when individuals are in a controlled environment, such as jail. Consequently, for those women incarcerated 15 days or more at the time of the first interview, baseline drug and alcohol scores were computed based the 30 days prior to incarceration.

The BDI and BSI provide measures of depression and psychiatric symptoms, respectively, in the past seven days. The Social Support Evaluation List includes questions regarding self-esteem, emotional support and social interactions. Responses are summed to a total score reflecting the structure and quality of social support. The Women's Needs Questionnaire was designed to address gender-specific issues. To assess child custody, women were asked whether they had biological children under the age of 18 living with them, and whether they had current custody of biological children. To assess service utilization, women were asked whether they

were currently enrolled in substance abuse treatment, and (at follow up only) whether during the past 6 months they had participated in parenting classes, seen a medical professional, received dental care or psychological counseling, or visited an emergency room.

Interviews were conducted at baseline, and at 6 and 12 months follow-up. Most interviews were conducted in-person. A few respondents (< 5%) who had relocated out of state completed follow up interviews by phone. Participants were reimbursed for interviews with \$20 at baseline, \$30 at 6-months, and \$40 at 12 months. Clients were asked to update contact information by phone at 3 and 9 months, and were reimbursed \$5 for each update call.

Data Analyses

Because prior research has shown that ASI composite scores may be non-normally distributed (Guydish, Ponath, Bostrom, Campbell, & Barron, 2003), we reviewed composite score distributions across all data collection points (reflecting 279 to 285 scores for each composite). The Alcohol score had the highest proportion of minimum (0) values (57%), and the Drug score had the lowest proportion of 0 values (25%). While most composite scores had higher proportions of zero values, the Employment composite had a higher proportion (74%) of maximum (1) values. Given these distributions we converted the continuous ASI composite scores to dichotomous measures using rules developed previously (Guydish et al., 2003). For six composites, zero values were grouped with the lowest one-third of the non-zero values to comprise a low score level, and all remaining values comprised the high score level. For the Employment composite, values of one (1) comprised the high score level and values less than one comprised the low score level. We then compared study groups on demographic characteristics and outcome variables (seven ASI composite scores, BDI, BSI, social support) measured at baseline.

We assessed change over time within and between groups using both Generalized Estimating Equation (GEE) (Liang & Zeger, 1986) and mixed effects regression analyses (Littell, Milliken, Stroup, & Wolfinger, 1996). For the dichotomized ASI composite outcome measures we applied GEE analyses to model the probability of having a high versus having a low ASI score. For continuous outcome measures (BDI, BSI, social support) we applied mixed regression effect analyses. GEE and mixed regression analyses do not require complete data from each subject. In addition, mixed regression models allow random effects so that intercepts can be considered different for all participants (Hedeker & Gibbons, 1997).

In the analysis of each outcome we treated time categorically and included main effects for group (PCM vs. Standard Probation), Time (baseline, 6-month and 12-month follow-up), and Group by Time interaction. We included in the model, as time-varying covariates, whether the participant was currently enrolled in substance abuse treatment (y/n) and whether they had been incarcerated at all in the 30 days preceding interview (y/n). We also controlled for baseline demographic differences between groups including ethnicity (coded as African-American, White, Other Ethnicity), being on probation (y/n) or incarcerated at baseline (y/n), reporting a lifetime history of injection drug use (y/n) or sexual abuse (y/n), and number of prior drug treatment episodes. In these analyses, a significant Group by Time interaction would indicate that the pattern of change over time differed by group, and would suggest group differences that may be attributable to the PCM or comparison condition. Data for all cases were included in outcome analyses, whether or not a particular case was re-interviewed at either follow up wave.

Last, we compared PCM and comparison groups on current incarceration, child custody, and services received at each time point. The proportion of women incarcerated in the past 30 days, by group, offers a general measure of criminal justice outcomes. Differential incarceration rates at follow up could differentially affect drug and alcohol composite scores because

incarcerated women would have less opportunity for drug and alcohol use in the past 30 days. Because the PCM intervention was designed to increase access to services, comparison of receipt of services between study groups offers a general check on the intervention.

Results

Comparison of Study Groups at Baseline

PCM and comparison participants showed no statistical differences on age, education, major drug problem, or history of incarceration. The groups did not differ on current pregnancy status, median number of past pregnancies, median number of biological children, or on lifetime history of physical abuse (Table 1). Women in the PCM condition, however, were more often White (32% v. 14%), more often reported history of injection drug use (43% vs. 18%) and a history of sexual abuse (49% vs. 27%), were more often on probation or parole (94% vs. 72%), and had a higher mean number of prior drug treatment episodes (5.4 vs. 1.8; see Table 1).

 Insert Table 1 about here

Comparison of ASI composite scores and other measures (BSI, BDI, social support) at baseline show one significant difference such that, compared to the PCM group, comparison group women more often reported a high legal problem severity (Table 2).

 Insert Table 2 about here

Outcome Analyses

For both groups combined, 6 and 12-month follow-up rates were 77% and 84%, respectively. Follow up rates for PCM and comparison groups were 77% and 77%, respectively, at 6 months (Fisher's exact, $p = 1.00$), and 88% and 79% at 12 months (Fisher's exact, $p = 0.29$).

Outcome analyses for Group effects and Group by Time interactions are summarized in Table 3, based on GEE analyses for dichotomous measures (ASI composites) and mixed regression effect analyses for continuous measures (BDI, BSI, social support). For dichotomized ASI scores, Odds Ratios express the increased risk of being in the high severity category associated with each predictor. All group comparisons are PCM/Comparison, so that Odds Ratios reflect the risk of being in the high severity category for the PCM group in relation to the comparison group. For continuous measures (BDI, BSI, social support) differences between means were calculated as PCM minus comparison. For BSI and BDI scores, a positive value means that the PCM group had higher severity and a negative number means that the comparison group had higher severity. This is reversed for the social support measure, where higher scores reflect more positive outcomes. Time comparisons are calculated as Later Time/Earlier Time for Odds Ratios, and as Later Time minus Earlier Time for continuous measures.

The first column in the table lists each outcome measure. Odds Ratios and their accompanying confidence intervals in the second column reflect probability of the PCM group having high severity relative to the comparison group. For example, the alcohol Odds Ratio in the second column reflects that the PCM group has an increase of 7% of the risk, relative to the comparison group, of being in the high alcohol severity category at 6 months. Confidence intervals and p values, however, show that none of these differences are significant either at 6 or 12 months. The next two columns show that the likelihood of being in the high severity group,

for any outcome measure, did not differ by group when averaged across all time points (Group P-Value), and that there were no significant Group by Time interactions.

 Insert Table 3 about here

The last two columns of Table 3 reflect the association between the outcome variable and either being in drug treatment or being in jail in the past 30 days. Being in treatment was significantly related to social support, such that women engaged in treatment reported higher levels of social support (estimated mean difference = 3.82, 95% CI 1.35, 6.30). Having been incarcerated in the past 30 days, irrespective of time and study condition, was associated with being in the high severity group for employment and legal problems measured by the ASI, and with having higher levels of depression and lower levels of social support (see Table 3).

Among the variables included to control for group differences at baseline, ethnicity was not associated with any outcomes (data not shown). History of injection drug use was associated with a being in the high severity group on the ASI drug composite (OR = 4.29, CI 1.85, 9.96). Being on probation or parole at baseline was associated lower severity on the ASI legal composite (OR = 0.39, CI 0.18, 0.87). Number of prior drug treatment episodes was associated with increased severity of medical (OR = 1.08, CI 1.01, 1.15) and psychological problems (OR = 1.08, CI 1.00, 1.16), and with more psychiatric symptoms on the BSI (estimated mean difference = 0.024, CI 0.002, 0.045). For each prior treatment episode, the risk of being in the high severity category for ASI medical and psychological measures increases by 8%, and mean difference on the BSI increases by .024. Last, lifetime history of sexual abuse was associated with higher psychiatric symptoms measured by the BSI (estimated mean difference = 0.030, CI 0.07, 0.52), and lower social support (estimated mean difference = -3.81, CI -6.90, -0.72).

Given that no Group effects or Group by Time interactions were observed, Time effects were assessed with groups collapsed. Odds Ratios in Table 4 reflect the probability of being in the high severity category, for PCM and comparison participants combined, across time. The baseline to 6 months odds ratio for Alcohol (0.55), for example, indicates that the odds of being in the alcohol high severity category at 6 months was about half that at baseline. P values at 6 months show that this relationship was significant for the Drug and Psychological measures, as well as a non-significant trend for the Alcohol measure. The last column shows the P-value for a global test of time across all 3 points. The lack of change between 6 and 12 months results in a more conservative test of overall change.

 Insert Table 4 about here

Current Incarceration, Child Custody, and Service Utilization

Measures of incarceration, child custody, and service utilization, by group and by time, are summarized in Table 5. The first four measures are reported for all three time points (baseline, 6 month and 12 month follow up), while the remaining service questions were asked at follow up only. Comparison participants, as compared to PCM participants, were more likely to have been incarcerated in the past 30 days at baseline only (100% vs. 87.7%). The proportion incarcerated at each follow up point did not differ significantly by group. The proportion of women living with children under 18 years of age did not differ at any time point and, while the proportion having custody of children was greater for the comparison group at baseline (30% vs. 9.8%), these proportions did not differ by group at either follow up. PCM participants were more likely to be enrolled in substance abuse treatment at baseline (53.8% vs. 27.3%), but no differences were seen for this measure on follow up. The proportion of women who had

participated in parenting classes, seen any medical professional, or received dental care or psychological counseling did not differ by group at either follow-up point.

As a reflection of whether or not PCM participants were less likely to be incarcerated at follow up, or more likely to be reunified with children at follow up, or more likely to receive substance abuse treatment or other health services during the follow up period, we can review between group comparisons at 6 and 12 months only. Considering the data in this way, there was one significant difference such that comparison group participants were less likely than PCM participants to report having visited an emergency room in the past 6 months (see Table 5).

 Insert Table 5 about here

Discussion

The Network project implemented a case management intervention designed to better serve drug-involved women offenders. The intervention incorporated traditional ISP characteristics, such as smaller caseloads for the supervising officer and increased monitoring for probationers, and case management activities including assessment, care planning, and linking the client with needed services. As suggested by Turner et al. (1992), the PCM intervention aimed to enhance the ISP approach by incorporating substance abuse treatment, as well as addressing other participant health and social needs. After assigning women based on availability of case management services, we compared outcomes for women who received either PCM or standard probation. Findings are of interest because the study evaluated a combined ISP plus drug abuse treatment model, because it evaluated a case management model with probation officers as case managers, and because it was directed to a growing criminal justice population for whom few interventions have been tested and reported in the professional literature.

Our analyses reflect three main findings. First that there were between group differences at baseline, second that both groups showed change over time but no differential change by condition and, third, that PCM participants did not appear more likely than those in standard probation to receive a number of services during the study period.

At baseline, PCM participants may have had more serious substance abuse problems reflected by more history of injection drug use, more prior substance abuse treatment, and being more often enrolled in such treatment at baseline. The study was designed so that all eligible women would have a similar probability, once PCM slots were filled, of being assigned to the PCM or comparison condition depending only on availability of a case management slot. The finding of group differences at baseline suggests that the design did not achieve its aim. To explain baseline differences we note that determination of eligibility, as well as determination of whether or not a PCM slot was available, was in the hands of the Network project team. We speculate that these determinations were sometimes made so that the staff offered what they believed to be the more effective (PCM) intervention to those women whom they believed were most in need of services (those with more serious substance abuse or other problems).

We also found that, while PCM participants were more likely to be on probation or parole at baseline, comparison participants reported higher legal problem severity. A possible explanation for this may relate to the administration of baseline interviews while participants were in jail with charges pending. Women not currently on probation or parole (more often in the comparison condition) would have charges pending, may be less experienced in the likely outcome of those charges (incarceration vs. probation), and may be concerned about how that outcome would impact their children. Women who were already on probation or parole (more often in the PCM condition) would be more knowledgeable about the criminal justice system and

the likely outcome of the current charges, and may also have had child custody issues addressed in previous criminal justice proceedings.

Outcome analyses controlling for baseline differences showed no significant Group effects or Group by Time interactions, which would have signaled differential change between groups. Analyses of outcomes collapsed across groups showed decreased likelihood of having high drug and psychological problem severity from baseline to 6 months.

Comparison of services at follow up suggests that, compared to those in standard probation, PCM participants were not more likely to have custody of children, and did not receive higher levels of counseling, or medical or dental care. That PCM participants were more likely to visit an emergency room is a negative outcome. In a study of opiate users, 2% of hospital patients accounted for 5% of overall institutional charges, mainly due to emergency room visits resulting in hospitalization (Masson et al., 2002). In a pattern of results showing no other differences in services, we do not interpret this difference as related to the intervention. Our finding of few differences in service utilization between groups, which is consistent with that of Longshore et al. (in press), could be due to limited experience of the case managers in helping probationers access services, or because the self report measure of service use was not sufficiently sensitive to detect differences that did occur. We were unable to assess, as Longshore et al. (in press) did, any relationship between dosage of case management and outcomes.

Women in both groups were equally likely to be enrolled in drug abuse treatment at follow up. All participants were on probation during this time, and a determination of a substance abuse problem was part of the study inclusion. Accordingly, women in both conditions were mandated to treatment as a condition of probation. Women in the PCM condition were assessed and referred to substance abuse treatment, and case managers were

supported by treatment service contracts with community providers. Women in standard probation may have assistance from their probation officer in finding treatment, and some level of compliance monitoring, but no standard assessment or referral process, and no access to the Network service contracts. Our data suggest that the more formal assessment and referral process bolstered by service contracts in the PCM condition did not lead to greater treatment enrollment. San Francisco offers a relatively developed system of drug treatment and related services, and comparison participants may have received services similar to case managed participants, but through usual community avenues. An alternative explanation is that the PCM intervention may not have contributed to treatment utilization above the effects of mandated treatment as a condition of probation. Research has shown that criminal justice clients do as well as others once engaged in treatment, that involvement of the criminal justice system helps retain clients in treatment (Hubbard et al., 1989), and that coerced treatment of drug-involved offenders is associated with positive outcomes (Anglin, 1988; Anglin & Hser, 1991; Polcin, 2001).

The combination of an ISP approach coupled with substance abuse case management, in this single study, did not yield improved outcomes as suggested by Turner et al. (1992). This conclusion would seem consistent with drug abuse treatment literature, where findings from quasi-experimental studies of case management intervention have shown promise while more controlled clinical trials have reported mixed results (Sorensen et al., 2003). However, other interpretations are possible. It may be that the probationary demands for supervision and monitoring are not well suited to therapeutic and advocacy demands of case management, so that external case management (provided outside of probation) may yield better outcomes. Community-based interventions also take time to develop their full impact, and this evaluation may have been timed too early to measure the full effects of the intervention. That there were few differences in services received between groups is a key limitation, and undermines the

between group comparisons of other outcomes. This observation is possible, however, only with the benefit of study data. Most project personnel believed that PCM would result in more services and improved outcomes. That there were few differences in services received is also a key finding. Correctional interventions aiming to provide a range of services to drug-involved offenders must make special efforts to ensure that such services are offered and utilized. If the Network case management component was ineffective, study findings still speak to the use of intensive probationary supervision among women offenders and add to the currently small literature evaluating correctional interventions for this population (Dowden & Andrews, 1999).

Our measures of implementation were limited to process interviews with stakeholders (Chan et al., 2002), and to self-reported receipt of services. Improved study designs would include manualized interventions with adherence monitoring, and measures of intervention exposure or degree of implementation (Dennis, Fetterman, & Sechrest, 1994). Our analyses controlled for whether participants were incarcerated in the 30 days preceding each interview. The proportion incarcerated at each follow up point did not differ between groups, and we suggest that incarceration did not have a differential effect on other outcomes. We did not measure time at risk, the amount of time participants were outside of a controlled environment during follow up and could have engaged in drug use or other outcome-related behaviors. If time at risk was greater in one group, and because the current analysis showed no differences between groups, then controlling for time at risk may show that the group with more time at risk also had (relatively) better outcomes.

While randomized designs remain challenging to implement in criminal justice settings, such designs minimize group differences at baseline and allow more forceful causal interpretation. Limited sample size restricts our interpretation. Confidence intervals reported, some of which are fairly large, represent the range of possible effect sizes consistent with the

data. Consequently we cannot offer the conclusion that no differences between groups occurred, but only that we are unable to show significant group differences given the sample size.

Notwithstanding these limitations, the Network project evaluated a case management intervention for drug-involved offending women, and found it did not result in more services or treatment, or in better drug, alcohol employment or other outcomes, than standard probation. The Network project was conducted in a community setting, and the difficulties encountered by the project would likely be encountered by other similar projects. The Network project was in some ways similar to statewide initiatives in both Arizona and California mandating drug abuse treatment as an alternative to incarceration for drug-involved offenders (Administrative Office of the Courts, 1999; Jett, 2001; Speigman, Klein, Miller, & Noble, 2003). We observe that, had there been no comparison group, the Network intervention would have appeared “effective” in reducing drug use. Evaluations of large scale initiatives mandating drug-involved offenders to treatment will require some comparison group in order to accurately assess impacts.

Table 1. Participant Demographic Characteristics at Baseline (N=109)

	Probation Case Management (n= 65)	Standard Probation (n= 44)	t value	P value*
Age (Mean, SD)	31.8 (7.1)	33.0 (7.6)	0.82	0.41
Years of education (Mean, SD)	11.2 (2.0)	11.7 (2.1)	1.27	0.21
Ethnicity (% , n)				0.0002
African-American	60 (39)	66 (29)		
White	32 (21)	14 (6)		
Latina	3 (2)	9 (4)		
Asian	0 (0)	5 (2)		
Other	5 (3)	7 (3)		
Major Problem Drug (% , n) **				0.27
None	3 (2)	5 (2)		
Alcohol	0 (0)	2 (1)		
Heroin, other opiates	0 (0)	2 (1)		
Amphetamines	0 (0)	2 (1)		
Cannabis	8 (5)	9 (4)		
Cocaine	18 (12)	30 (13)		
Alcohol + Drug	42 (27)	32 (14)		
Polydrug	29 (19)	18 (8)		
History of Injection Drug Use, Yes (% , n)	43 (28)	18 (8)		0.0074
History of Incarceration, Yes (% , n)	88 (57)	98 (43)		0.08
On Probation or Parole, Yes (% , n)	94 (60)	72 (31)		.0043
Prior Treatment Episodes (Mean, SD)	5.4 (9.4)	1.8 (2.5)	-2.9	.0049
Currently pregnant (% , n)	9.7 (6)	9.3 (4)		1.0
Median number of pregnancies	3	3		0.56
Median number of biological children	1	2		0.53
Lifetime history of sexual abuse (% , n)	49 (32)	27 (12)		.0287
Lifetime history of physical abuse (% , n)	78 (51)	66(29)		0.19

* Mean comparisons were made using t-test techniques. Medians were compared using Kruskal-Wallis, and proportions were compared using Fisher’s exact tests.

** Self-report based on past 30 days. Four women reported no major drug problem.

Table 2. Comparison of Outcome Measures at Baseline (n=109)

Outcome Measure	Probation Case Management (n=65)	Standard Probation (n=44)	t value	p value*
ASI Composite Scores (% high severity)				
Alcohol**	38%	30%		0.41
Drug**	69%	52%		0.11
Employment	83%	77%		0.47
Legal	29%	55%		0.0098
Medical	38%	36%		0.84
Psychological	33%	32%		1.0
Social	43%	30%		0.16
BDI (Mean, SD)	12.5 (8.4)	12.3 (7.5)	-0.23	0.82
BSI (Mean, SD)	.92 (.76)	.73 (.65)	-1.32	0.19
Social Support (Mean, SD)	38.4 (9.0)	38.8 (9.3)	0.26	0.80

* Comparisons were made using Fisher’s exact test for dichotomous and t-test for continuous variables.

** Women who were incarcerated 15 or more of the past 30 days were asked to respond to Drug and Alcohol questions in terms of the most recent 30 day period when they were actively using drugs and/or alcohol.

Table 3. Analysis of Group Differences and Group by Time Interactions (N=109)

Measure	At 6 months		At 12 months		Group P-value	GroupxTime P-value	Treatment in past 30 days	Incarcerated in past 30 days
	Odds Ratio	P-value	Odds Ratio	P-value				
Alcohol	1.07 (0.36, 3.24)	0.9005	0.92 (0.30, 2.81)	0.8815	0.7523	0.7934	0.1693	0.4206
Drug	1.84 (0.57, 5.92)	0.3089	0.92 (0.30, 2.87)	0.8864	0.3468	0.6806	0.2887	0.1446
Employment	0.83 (0.30, 2.27)	0.7183	1.46 (0.59, 3.66)	0.4135	0.5066	0.5052	0.5302	0.0291 ¹
Legal	1.74 (0.63, 4.86)	0.2869	1.01 (0.36, 2.85)	0.9892	0.8851	0.3967	0.0524	0.0001 ²
Medical	0.46 (0.19, 1.13)	0.0903	1.12 (0.45, 2.81)	0.8091	0.6783	0.2004	0.5212	0.9852
Psychological	0.97 (0.39, 2.45)	0.9557	1.62 (0.56, 4.70)	0.3749	0.5231	0.7215	0.9716	0.0565
Social	0.55 (0.22, 1.37)	0.1979	0.90 (0.36, 2.24)	0.8134	0.9688	0.0904	0.9572	0.4561

¹ Odds Ratio, 95% CI = 2.29 (1.11, 4.72)

² Odds ratio, 95% CI = 8.39 (3.45, 20.4)

Measure	At 6 months		At 12 months		Group P-value	GroupxTime P-value	Treatment past 30 days	Incarcerated past 30 days
	Mean Difference * (95% CI)	P-value	Mean Difference (95% CI)	P-value				
BDI	0.41 (-3.17, 4.00)	0.8197	2.02 (-1.58, 5.61)	0.2691	0.5992	0.5291	0.0597	0.0315 ⁴
BSI	0.039 (- 0.27, 0.35)	0.8052	0.17 (-0.14, 0.47)	0.2774	0.2900	0.7203	0.0589	0.5419
Social Support	-1.67 (- 5.86, 2.52)	0.4313	-2.06 (- 6.15, 2.03)	0.3207	0.3725	0.7918	0.0027 ³	0.0192 ⁵

³ Estimate (95% CI) = 3.82 (1.35, 6.30)

⁴ Estimate (95% CI) = 2.62 (0.24, 4.99)

⁵ Estimate (95% CI) = -3.22 (-5.91, -0.53)

* Difference (probation case management - comparison) in Least Squares Means from mixed model with current treatment, ethnicity, history of injection drug use, on probation or parole, prior treatment episodes, incarceration, history of sexual abuse, group, time and group by time effects.

Table 4. Analysis of Changes Over Time Collapsed Across Groups (N=109).

Measure	Baseline to 6 months		6 months to 12 months		All Times
	Odds Ratio	P-value	Odds Ratio	P-value	P-value
Alcohol	0.55 (0.28, 1.08)	0.0807	1.14 (0.57, 2.22)	0.7248	0.2080
Drugs	0.31 (0.15, 0.66)	0.0001	0.74 (0.31, 1.72)	0.4848	0.0003
Employment	1.03 (0.52, 2.08)	0.9210	0.61 (0.32, 1.14)	0.1164	0.2328
Legal	1.79 (0.84, 3.85)	0.1299	0.69 (0.33, 1.45)	0.3328	0.3009
Medical	1.35 (0.71, 2.56)	0.3546	0.77 (0.41, 1.45)	0.4149	0.6135
Psychological	2.00 (1.08, 3.70)	0.0272	0.70 (0.38, 1.43)	0.2636	0.0958
Social	0.76 (0.41, 1.39)	0.3696	1.11 (0.64, 1.92)	0.7060	0.6681

Measure	Baseline to 6 months		6 months to 12 months		All Times
	Mean Difference * (95% CI)	P-value	Mean Difference (95% CI)	P-value	P-value
BDI	0.092 (-2.17,2.35)	0.9359	-1.11 (-3.26,1.05)	0.3117	0.5400
BSI	-0.010 (-0.20, 0.18)	0.9193	-0.048 (-0.13,0.23)	0.6006	0.8587
Social Support	0.072 (-2.44, 2.58)	0.9552	0.14 (-2.24, 2.52)	0.9067	0.9848

* Difference (6 mo - baseline or 12 mo – 6 mo) in Least Squares Means from mixed model with current treatment, ethnicity, history of injection drug use, on probation or parole, prior treatment episodes, incarceration, history of sexual abuse, group, time and group by time effects.

Table 5. Comparison of Incarceration, Reunification, and Service Measures at each Time Point.

	Baseline		6 months +		12 months ++	
	PCM (n=65)	Standard Probation (n=44)	PCM (n=50)	Standard Probation (n=34)	PCM (n=57)	Standard Probation (n=35)
Incarcerated Past 30 days	87.7%	100%*	46%	55.9%	49.1%	50%
Children <18 Living with	4.8%	4.9%	12.5%	12.5%	25.5%	11.8%
Custody of Children	9.8%	30%*	22.9%	34.4%	25.5%	18%
Currently in Drug Treatment	53.8%	27.3%*	46%	44.1%	64.9%	80%
Enrolled in Parenting Classes (past 6 mo.)			32.6 (14)	19.4 (6)	8.2 (10)	23.3 (7)
Seen by Medical Professional (past 6 mo.)			87 (34)	76.5 (26)	84 (47)	94 (33)
Received Dental Care (past 6 mo.)			44.4 (16)	56.7 (17)	35 (19)	36.4 (12)
Received Counseling (past 6 mo.)			25 (11)	20.6 (7)	22.2 (12)	17 (6)
Visited Emergency Room (past 6 mo.)			49 (22)	18 (6)**	34 (19)	11.4 (4)*

+ Missing data at 6 months (N=84) varied from 0 missing values for Incarcerated past 30 days to 10 missing values for Parenting. Fisher’s exact test was computed using non-missing values.

++ Missing data at 12 months varied from 1 missing value for Seen by Medical Professional to 7 missing values for Parenting. Fisher’s exact test was computed using non-missing values.

* p < .05

** p < .01

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