

Linking Women in Jail to Community Services: Factors Associated With Rearrest and Retention of Drug-Using Women Following Release From Jail

NICHOLAS FREUDENBERG, DrPH
ILENE WILETS, PhD
MICHAEL B. GREENE, PhD
BETH E. RICHIE, PhD

Women in jail experience high rates of many health and social problems. This study examined the effects of preexisting social and health characteristics and the type of services received on retention in community aftercare for 193 drug-using women released from the New York City jail to two low-income communities. Rearrest rates for program participants were compared to a group of women not eligible for services because of their residence outside the target communities. Women who enrolled in residential programs with on-site drug treatment and other social services after release were compared to women who enrolled in less comprehensive services. The residential treatment group participated in the program significantly longer (276 v 180 days, $p=.02$) than women in other types of services. Women in residential programs were significantly more likely to have used crack or cocaine in the 30 days prior to arrest than women in other types of programs (84% v 59%, $p=.001$), but few other prior differences among the different treatment groups were noted. Therefore, differences in outcome are unlikely to be attributed to preexisting differences in risk profile. Women who participated in postrelease services were significantly less likely to be rearrested in the year after release than a comparable group of women who participated in jail services, but were not eligible for post-release services (38% v 59%, $p=.02$).

At the time of this study, Ilene Wilets was with the Institute for Chemical Dependency at the Beth Israel Medical Center; all other authors are at the Hunter College Center on AIDS, Drugs and Community Health in New York City.

Women constitute a rapidly growing sector of the incarcerated population, primarily because of increases in the number of drug-related arrests.¹⁻² Incarceration of women imposes high costs on both individuals and society, leading to family disruption, placement of children in foster care, and loss of current or future employment. Jails—facilities that detain inmates between arrest and sentencing and those sentenced to less than one year—house more people than any other sector of the criminal justice system.³ Since most jailed inmates return to their communities within a few weeks after arrest, jails offer a unique opportunity to reach women involved in crime and substance abuse and link them to drug treatment and other social services. Jails also hold high concentrations of women with such other health problems as human immunodeficiency virus infection and other sexually transmitted diseases, mental illness, and a history of physical and sexual abuse,³⁻⁶ making them an important site for health interventions.

Despite these opportunities to reach a population of highly vulnerable women, few correctional systems have developed systematic health programs.^{7,8} It is estimated that no more than 10% of drug-abusing offenders are offered drug treatment in jail or prison.⁹ Most jail systems also lack comprehensive discharge planning or community-based aftercare, which has been identified as a significant predictor of recidivism to drug use and criminal activity.¹⁰⁻¹¹ Women drug users face particular difficulties in finding community-based treatment, both because responsibility for children often precludes active participation in most forms of drug treatment and because many programs have been designed for men.¹²⁻¹⁴ Despite renewed interest in the needs of drug-using women, a recent study suggests that the availability of drug abuse treatment services has declined signifi-

cantly in the last decade.¹⁵ Thus, developing new ways to engage women in services after they return to their communities may help to reduce drug use and recidivism and to improve the health of the increasing number of low-income women caught up in the criminal justice system.⁸

We report here on Health Link, a demonstration program designed to help women jailed in New York City who are affected by drug or alcohol use to return to their communities and improve their health. Specifically, Health Link seeks to reduce rearrest, drug and alcohol use, and high-risk sexual behavior, and to promote effective use of health and social services. We present preliminary results from an analysis of program data on retention and rearrest.

Since 1992, Health Link has served women detained or sentenced to less than one year at the Rikers Island Detention Center, the New York City jail, and who will return to the program's target communities, the South Bronx and Harlem, within one year of their arrest. Health Link case workers provide health education, support and case management in the jail, and continuing community services for one year after the women are released. Postrelease services include counseling, case management, group support, and referrals to a network of community service providers associated with the program.¹⁶ This report describes characteristics of women enrolled in Health Link in 1994 and 1995 and examines factors related to continued participation in the program and to the likelihood of rearrest during the year following release. By understanding better characteristics of both clients and programs associated with retention and rearrest, it may be possible to develop more effective interventions to protect the health of incarcerated women and of the families and communities to which they return.

Methods

Health Link clients are enrolled while in jail after attending two or more health education sessions offered regularly at various sites in the facility. Women are invited to these groups by correctional staff, health care workers, and other participants in the program. Groups are open to all women regardless of the type of criminal charges or place of residence prior to arrest. Participants who plan to reside in Health Link's target communities, the South Bronx or Harlem, are invited to continue in the program after release from jail. Thus, Health Link is a voluntary program, different from alternatives to incarceration, which are usually court mandated, or other programs mandated for all inmates.

In 1994 and 1995, 211 women volunteered to continue participation after release. These women completed an informed consent agreement and were interviewed in jail by a Health Link case worker. The interviewer asked about demographic characteristics, drug and criminal histories, medical problems, and related social and health concerns.

After the interview, the Health Link case worker and client developed a discharge plan and selected one of more than 15 community-based programs that participated in this project. Case workers helped women to choose the program that together they judged would best meet the client's specific needs. For the purpose of this study, placements were divided into four categories, differing by the intensity and mix of services:

1. Residential services housed women, provided social services and drug treatment on site or at a nearby facility operated by the same agency, and employed at least some professional staff.

2. Transitional recovery programs housed women and offered regular 12-step programs such as Alcoholics or Narcotics Anonymous groups, but had limited social services, no formal on-site drug treatment, and did not employ professional staff.

3. Community placements offered day programs but not housing. This category included outpatient drug treatment programs, vocational training, and social service agencies. Clients in this category lived at home.

Characteristics of Women Enrolled in Health Link by Primary Program Placement

Client Characteristics At Intake	Comprehensive Residential Services n=51 (%)	Other Types of Services n=142 (%)	Total N=193 (%)
Race/ethnicity			
African American	64.4	73.0	70.6
Latina	17.0	20.0	19.4
White	11.1	5.2	6.9
Other	6.6	1.7	3.1
High school graduate or equivalent	43.1	40.1	40.9
Married or partnered	21.3	12.1	14.4
Children	89.4	83.1	84.3
If children: % living with relatives or placed in foster care	83.3	79.9	74.4
Public assistance (Ever)	97.9	81.7	87.0*
Current partner uses illegal drugs	20.6	37.5	32.7
Current partner uses alcohol	26.4	26.1	26.2
Never worked for pay	12.2	19.0	17.0
Admitted to hospital within year prior to arrest	31.9	29.6	30.2
Ever treated for drug abuse	66.2	65.1	65.9
Treated for drug abuse ≥ 3 times	37.5	33.3	34.4
Drug use one month prior to arrest			
Alcohol	32.6	33.9	33.5
Cigarettes	70.6	69.0	71.3
Cocaine	48.9	36.0	39.6
Crack	67.0	50.4	58.0*
Heroin	25.9	30.9	29.2
Marijuana	26.0	27.0	27.2
Crack or cocaine use	84.2	59.3	68.1†
Crack, cocaine, or heroin use	84.8	69.9	74.6*
Homeless at time of arrest	42.6	43.5	39.8
Homeless within year prior to arrest	55.6	41.1	46.9
Ever beaten so badly required medical treatment	36.2	33.9	34.5
Ever forced to have sex against will	53.2	51.5	52.4
Arrests:			
Drug possession	60.9	59.1	59.6
Selling Drugs	68.2	56.5	63.1
Loitering	23.9	20.9	21.7
Pimping/Prostitution	13.0	6.1	8.1
Shoplift	27.7	29.6	29.0
Robbery	10.9	10.4	10.6
Weapons	6.5	11.3	9.9
Assault	19.6	18.2	18.6
Total Charges (Mean, SD)	2.6 (1.3)	2.4 (1.8)	2.5 (1.4)

Other types of services include: transitional recovery program, community placement/home, shelters, and temporary housing.

* $p < .01$

† $p < .001$

4. Shelters or temporary housing programs offered housing but limited social services and drug treatment.

Once a client was referred to a primary placement, the case worker continued to meet with her regularly for the following 12 months, monitoring services provided

by community-based organizations, referring the client for additional services as needed, and helping her to solve family, health, or other crises. Clients were also invited to participate in weekly educational support groups.¹⁶

Program retention was selected as a

proxy outcome for this study because previous drug treatment research has shown that drop-out rates are high, especially in the first three months, and that length of time in treatment is directly associated with reduced drug use and improved social function.¹⁷⁻¹⁹ Retention was defined as continued participation in program activities such as drug treatment, social services, educational support groups, and ongoing contact with a Health Link case worker. Health Link case files were used to calculate the total number of days enrolled in Health Link. Data from case files and intake interviews were used to calculate differences between those who maintained enrollment for more than 90 days and those who dropped out at 90 days or less.

The second outcome variable, rearrest, was selected because of its interest to policy makers as an indicator of continued criminal activity and because of its cost to society and the individual. The annual per capita cost for incarceration in New York City's jails is estimated at more than \$40,000.²⁰ Rearrest data were obtained from the New York City Criminal Justice Agency (CJA) using a unique identifier known as the New York State Identification Number (NYSID), which is assigned to inmates on arrest and follows an individual throughout her criminal justice involvement. Using names and birth dates to locate NYSID numbers not provided by inmates, the CJA database was searched for arrest records of the female clients who were enrolled as community participants during 1994 and the first half of 1995. The criminal records of 100 clients out of a total pool of 145 (69%) were identified. The remaining 45 cases were either untraceable or incarcerated in state prisons. Comparison clients were women who had attended Health Link jail groups but were ineligible for postrelease community services due to their residence outside the program's catchment area. The same procedure was used to obtain their criminal records.

To assess the impact of participation in community services, investigators compared rearrest data in the 12 months after release from jail for Health Link clients enrolled in community services with data for the comparison group of

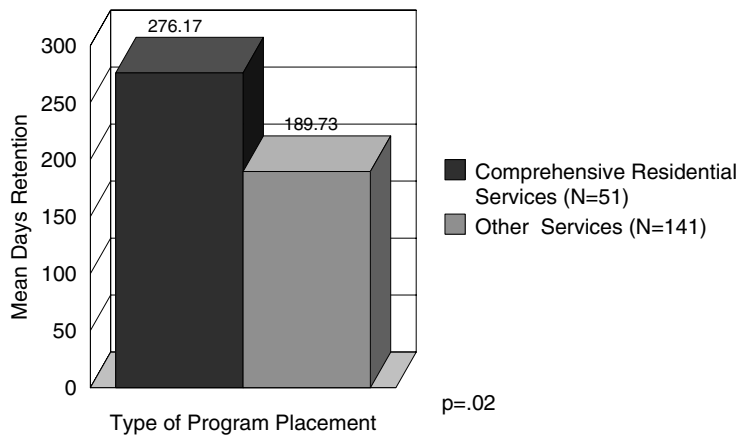


Figure 1. Mean days in program for Health Link women by program placement.

women who received only jail services. We compared criminal records prior to the index arrest in order to identify pre-existing differences between the two groups. The literature suggests that age and previous criminal charges are the strongest predictors of rearrest.²¹⁻²²

Descriptive statistics (frequency, percentage, mean, and standard deviation) were generated on all study variables. Missing data were addressed by adjusting the denominator of a given variable. Differences in the characteristics of women enrolled within the various types of community-based programs were assessed by chi square and analysis of variance tests (ANOVA). Differences in the mean number of days enrolled in placement programs were also tested with ANOVA. In addition, the probability of program retention and the probability of rearrest within one year were evaluated using the KaplanMeier method.²³ Differences between retention curves and rearrest curves for the two groups were tested by the log rank test. Findings were considered to be statistically significant for p values of less than .05.

Results

Complete data were available for 193 of the 211 women (91%) who were enrolled in Health Link in 1994 and 1995. The table displays demographic characteristics by primary program placement for these women. Seventy-one percent were African-American, 19% were Latina, 7% were white, and 3% belonged to other ethnic or racial groups. The mean age was 33 years. Eighty-four percent of the women had children, and 14% were married or

living with partners. Forty-one percent had completed high school or its equivalent, 87% had received public assistance, and 83% reported they had at some time worked for pay.

Women reported that they had been diagnosed with numerous illnesses and conditions including asthma (36%), pneumonia (19%), and hypertension (19%). More than a third had experienced at least one miscarriage (35%), and more than half (54%) had had a sexually transmitted disease. Approximately 10% reported being hospitalized for psychological problems.

These women faced difficult life circumstances. A third reported a current partner who used illegal drugs, and almost half (47%) had been homeless in the year prior to their arrest. Thirty-five percent had been beaten badly enough to require medical treatment, and 52% had been forced to have sex against their will.

Participating women reported high levels of drug and alcohol use; 29% reported heroin use and 68% crack or cocaine use in the month prior to arrest. Two-thirds of the women had been treated for drug or alcohol use, 34% three or more times, suggesting that many of these women were long-time substance users.

More than half the women (58%) had been arrested for selling or possessing drugs; smaller proportions had been arrested on such other charges as loitering, assault, shoplifting, and burglary, also sometimes related to drug use. On average, these women had 2.5 prior arrests.

Only two of these characteristics were

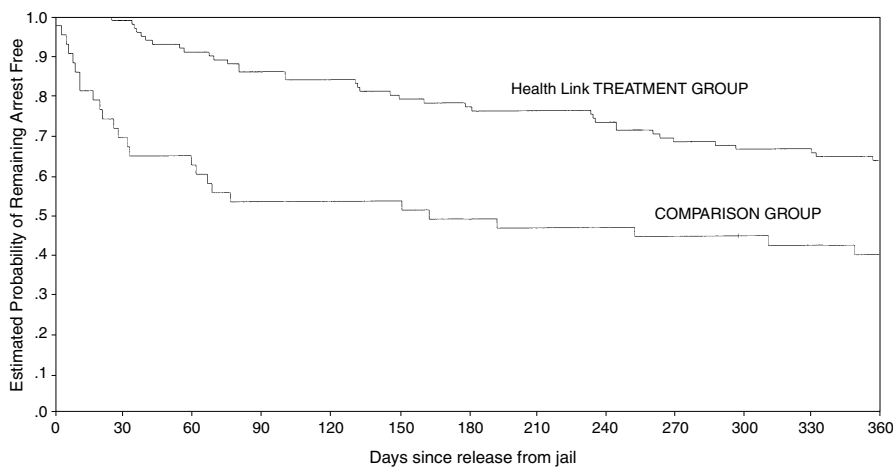


Figure 2. Probability of remaining arrest free within one year for Health Link participants and comparison groups.

associated with retention in the program beyond 90 days: women with children (90% v 78%, $p=.02$), and women who had been arrested for shoplifting (24% v 1%, $p=.0001$) were significantly more likely to maintain enrollment than to drop out.

We examined demographic and social variables for the women in each of the four types of primary placement in order to identify any preexisting differences among them. Since analysis revealed no significant differences among women enrolled in the three less-comprehensive types of services (transitional recovery programs, community placements, and shelters), the women in these programs were combined into a single group (other services) and compared to those enrolled in comprehensive residential services, as shown in the table. Women in comprehensive residential service programs were more likely than women enrolled in other types of services to have used crack or cocaine in the month prior to arrest (84% v 59%, $p=.001$) and to have ever received public assistance (98% v 82%, $p=.01$). No other significant differences between these two groups were detected.

To determine whether the type of service received after release from jail predicted retention, we examined the relationship between the type of primary placement and the total mean number of days enrolled in Health Link services and the overall probability of retention beyond 90 days. Women enrolled in residential services continued to participate

in the program significantly longer than women enrolled in the other types of services (276 days v 190 days, $p=.02$), as shown in Figure 1.

We compared the probability of rearrest within one year for the 100 women who participated in Health Link jail and community services for whom criminal justice records were available with the comparison group of 44 women who attended only jail services. To ascertain the validity of this comparison, socio-demographic characteristics of these 100 cases were compared to those of the original cohort of 193 women, as were prior drug use and arrest history. No significant differences were observed between the matched sample and the original Health Link cohort, thereby rendering them comparable.

To ascertain whether there were preexisting differences between those who participated in community services and the ineligible comparison group, we

compared both criminal records prior to the index arrest and average age, the two variables for which information was available for both groups and the strongest predictors of rearrest.²¹⁻²² No significant differences in prior charges or in age were found between the two groups.

Analysis of treatment and comparison groups revealed that women who were enrolled in Health Link community services were significantly less likely to be rearrested within one year of their release from jail (38% v 59%, $p=.02$) than women who attended only jail services. As shown in Figure 2, the lower probability of rearrest continued for the entire year of follow-up.

To examine the effect of program retention on rearrest, we compared rearrest rates in the year after release for enrolled Health Link participants who dropped out of the program in the first 90 days with those who maintained involvement for more than 90 days. (As previously noted, 90 days is widely viewed as a minimum “dose” of drug treatment from which benefits can be expected.¹⁷⁻¹⁹) As shown in Figure 3, the rearrest rates for these two groups differed significantly (61% v 32%, $p=.01$).

Finally, to ascertain whether the retention benefits associated with residential programs also contributed to lower rearrest rates, we compared rearrest rates for women enrolled in residential service programs to those of women enrolled in other services. Approximately 30% of women enrolled in comprehensive residential services were rearrested within one year of release compared to 48% of women enrolled in other services. This difference did not achieve statistical significance.

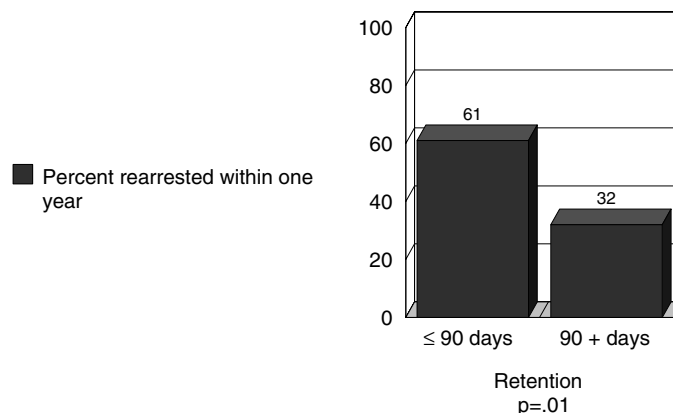


Figure 3. Rearrest rates by retention status.

Discussion

Previous studies have emphasized the role of women's characteristics *prior* to enrollment in drug treatment (self-esteem, depression, history of violence and victimization, criminal history, patterns of drug use) in predicting successful treatment outcomes.^{17,24,25} This study of drug-using incarcerated women found few such associations between prior characteristics and retention. Instead, the primary factor that appeared to influence program retention was the type of placement women entered after release from jail. Women who entered residential programs with comprehensive on-site services stayed in the program almost 90 days longer than women who entered other types of services. Moreover, the women who chose residential programs were poorer and more likely to be crack or cocaine users, a population shown to have less success in drug treatment than users of other drugs.²⁶ These findings support previous recommendations for more intensive and comprehensive after-care services for drug-using incarcerated women.^{8-11,17} They also confirm other recent studies that found intensive case management benefited drug users, including those involved in the criminal justice system.²⁷⁻²⁸

Our study also showed that participation in postrelease services can reduce rearrest, possibly because taking part in comprehensive community services offers women an alternative to criminal activity. Women who participated in community services for more than 90 days had half the rearrest rate of those who dropped out in the first three months. At a minimum, our findings suggest that voluntary programs like ours can play a role in reducing rearrest rates, even for women with a long history of drug use.

Future evaluations of Health Link and similar programs need to determine whether prolonged enrollment is related to long-term reductions in drug use and other risk behavior, more effective use of health and social services, improved health, and lower public costs. Based on the preliminary findings reported here, we began a four-year randomized trial of Health Link that should provide more insight into the program's impact.

The association between program

retention and reduced substance use documented in most¹⁷⁻¹⁹ (but not all²⁹) previous studies suggests that offering drug-using women the opportunity to participate in comprehensive community-based residential services after release from jail increases the likelihood that they will achieve positive changes in their lives. Expanding such programs offers health and social service providers an opportunity to engage a population of vulnerable women often excluded from other service delivery systems. It also offers women returning from jail to their communities access to the care and support they need to improve their own and the community's overall health and safety. ■

Health Link is supported by the Robert Wood Johnson Foundation and the Aaron Diamond Foundation; other contributing organizations include the New York City Department of Correction, the Montefiore/Rikers Island Health Service, Correctional Health Services of the New York City Health and Hospital Corporation, and numerous community service providers in the South Bronx and Harlem. Natalie Bimel, Gloria Jean Jenkins, and Ricardo Martinez made many helpful contributions to this article. We thank the women who participated in Health Link for their willingness to help us understand their lives.

References

1. Bureau of Justice Statistics. *Sourcebook of Criminal Justice Statistics, 1994*. Washington, DC: US Department of Justice; 1995.
2. DiMascio WM. *Seeking Justice. Crime and Punishment in America*. New York, NY: Edna McConnell Clark Foundation; 1995.
3. Magura S, Sung-Yeon K, Schapiro J, O'Day J. HIV risk among women injecting drug users who are in jail. *Addiction*. 1993;88: 1351-1360.
4. Moran JS, Peterman T. Sexually transmitted diseases in prison and jails. *Prison Journal*. 1989;69:1-6.
5. Steadman HJ, Morris SM, Dennis DL. The diversion of mentally ill persons from jails to community based services: A profile of programs. *Am J Public Health*. 1995;85:1630-1635.
6. Richie BE, Johnsen C. Abuse histories among newly incarcerated women in a New York City jail. *J Am Med Womens Assoc*. 1996;51:111-114.
7. Prendergast ML, Wellisch J, Falkin GP. Assessment of and services for substance abusing women offenders in community and correctional settings. *Prison Journal*. 1995;75:240-256.
8. Hammett TM, Gaiter JL, Crawford C. Reaching seriously at-risk populations: Health interventions in criminal justice settings. *Health Educ Behav*. 1998;25:99-120.
9. Wellisch J, Anglin MD, Prendergast ML. Treatment strategies for drug abusing women offenders. In: Inciardi JA, ed. *Drug Treatment and Criminal Justice*. Newbury Park, Calif: Sage; 1993: 5-29.
10. Falkin GP, Wexler HK, Lipton DS. Drug treatment in state prisons. In: Gerstein DR, Harwood HJ, eds. *Treating Drug Problems*. Vol 2. Washington, DC: National Academy Press; 1992: 89-131.

11. Austin J, Bloom B, Donahue T. *Female Offenders in the Community: An Analysis of Innovative Strategies and Programs*. San Francisco, Calif: National Council on Crime and Delinquency; 1992.
12. Reed BJ. Developing women sensitive drug dependence treatment services: Why so difficult? *J Psychoactive Drugs*. 1987;19:151-164.
13. Sutker PB. Drug dependent women: An overview of the literature. In: Beschner GM, Reed BG, Mondanaro J, eds. *Treatment Services for Drug Dependent Women*. Vol 1. Rockville, Md: National Institute for Drug Abuse; 1987:25-51.
14. Chavkin W, Paone D, Friedmann P, Wilets I. Reframing the debate: Towards effective treatment for inner city drug abusing mothers. *Bull N Y Acad Med*. 1993;70:50-68.
15. Etheridge RM, Craddock SG, Dunteman GH, Hubbard, RL. Treatment services in two national studies of community-based substance abuse treatment programs. *J Subst Abuse*. 1995; 7:9-26.
16. Freudenberg N. *Health Link: Description of a Model Program to Reduce Substance Abuse and Recidivism*. New York, NY: Hunter College Center on AIDS, Drugs and Community Health; 1997.
17. Gerstein DR, Harwood HJ, eds. *Treating Drug Problems*. Vol 1. Washington, DC: National Academy Press; 1990.
18. Leukefeld CG, Tims FM. *Compulsory Treatment of Drug Abuse: Research and Clinical Practice*. Washington, DC: US Government Printing Office; 1988. DHHS publication (ADM) 89-1578.
19. Anglin MD, Hser YI. Treatment of drug abuse. In: Tonry M, Wilson JQ, eds. *Drugs and Crime*. Chicago, Ill: University of Chicago Press; 1990:393-460.
20. Office of the Mayor. *The Mayor's Management Report Preliminary Fiscal 1998*. Vol 2, II Agency and Citywide Indicators. New York, NY: Mayor's Office of Operations; 1998.
21. Beck AJ. *Recidivism of Prisoners Released in 1983*. Washington DC: Bureau of Justice Statistics, US Department of Justice; 1989.
22. Bonta J, Pang B, Wallace-Capreta S. Predictors of recidivism among incarcerated female offenders. *Prison Journal*. 1995;75:277-294.
23. *SPSS for Windows: Advanced Statistics, Release 6.0. Kaplan-Meier Survival Analysis*. Chicago, Ill: SPSS; 1993:259-273.
24. Root MPP. Treatment failures: The role of sexual victimization in women's addictive behavior. *Am J Orthopsychiatry*. 1989;59:542-549.
25. Inciardi JA, McBride DC, Weinman BA. The assessment and referral of criminal justice clients. In: Inciardi JA, ed. *Drug Treatment and Criminal Justice*. Newbury Park, Calif: Sage; 1993: 149-164.
26. Mueller MD, Wyman JR. Study sheds new light on the state of drug treatment nationwide. *NIDA Notes*. 1997;12:1-3.
27. Rhodes W, Gross M. *Case Management Reduces Drug Use and Criminality among Drug-Involved Arrestees: An Experimental Study of an HIV Prevention Intervention*. Washington DC: National Institute of Justice; 1997.
28. Shwartz M, Baker G, Mulvey KP, Plough A. Improving publicly funded substance abuse treatment: The value of case management. *Am J Public Health*. 1997;87:1659-1664.
29. McCusker J, Bigelow C, Frost R, et al. The effects of planned duration of residential drug abuse treatment on recovery and HIV risk behavior. *Am J Public Health*. 1997;87:1637-1644.