Recommendations to Improve Public Health and Public Safety on Behalf of Individuals who are Incarcerated or are Returning to the Community

Statement to the Medicaid Commission
July 11, 2006
Washington D.C.

The undersigned organizations appreciate this opportunity to discuss critical public health issues regarding individuals who are incarcerated. Our recommendations are presented in an effort to assist the Medicaid Commission in its task of making longer-term recommendations on the future of the Medicaid program.

We jointly urge the Medicaid Commission to fully examine the role of Medicaid in ensuring proper health care services for persons who are incarcerated and for those who are making the difficult transition from incarceration back into society. Currently well over 650,000 persons are reentering society each year from state and federal prisons with some 7 million leaving jails annually.

Accordingly, we offer policy recommendations to ensure proper health care services for persons while incarcerated and during the critical reentry period. Adoption of the following reforms will reduce recidivism and crime thereby improving public health and promoting public safety:

- Medicaid rules should be changed to allow correctional facilities to receive Medicaid funding to help cover the costs of providing health care to eligible prisoners;
- Until Congress acts, states should ensure that benefits are available to ex-offenders immediately upon release; and
- States should be encouraged to provide addiction treatment services that are fully integrated with the individual's health care needs.

Background

According to the June 2006 report of The Commission on Safety and Abuse in America's Prisons, "Every year, more than 1.5 million people are released from jail and prison carrying a life-threatening infectious disease. At least 300,000 to 400,000 prisoners have a serious mental illness - a number three times the population of state mental hospitals nationwide. And prisoners on average require significantly more health care than most Americans because of poverty, substance abuse, and because they most often come from underserved communities."

While the Commission found dramatic improvements over recent years in health care in some correctional facilities, improvements are still needed in many others. The release of

so many persons with complicated health problems, including mental illness, addiction to alcohol and other drugs and infectious diseases like HIV/AIDS, hepatitis B and C infection and tuberculosis from our nation's prisons and jails constitutes a serious public health threat and challenge.

For many the period of incarceration provides an opportunity to address health problems in a much less costly and far more effective way than delaying care. Failure to provide needed health care treatment while incarcerated and during the critical reentry transition period greatly contributes to the high recidivism rates. According to the Department of Justice, 67% of those released from state and federal prisons will be rearrested within three years.

In recent testimony to the House Judiciary Committee, Dr. Nora D. Volkow, M.D., Director of the National Institute on Drug Abuse, said "those who participated in prison-based (drug) treatment followed by aftercare were seven times more likely to be drug free after 3 years than those who receive no treatment. Moreover, nearly 70 percent of those in the comprehensive drug treatment group remained arrest-free after 3 years - compared to only 30 percent in the no-treatment group." The failure to provide addiction treatment often results in a relapse to drug use and return to criminal behavior; unfortunately, 70 to 85 percent of state inmates have substance abuse problems serious enough to warrant treatment, but only 13 percent received treatment while incarcerated.

In 2002 the National Commission on Correctional Health Care recommended that Medicaid benefits for eligible inmates should be maintained throughout their incarceration. In addition they recommended that continuity of ex-offender health care should be promoted by mandating Medicaid eligibility immediately upon release. The recent Commission on Safety and Abuse in America's Prisons recommends changing, "...the Medicaid and Medicare rules so that correctional facilities can receive federal funds to help cover the costs of providing health care to eligible prisoners. Until Congress acts, states should ensure that benefits are available to people immediately upon release."

In addition, in order to fully address this issue, states should pay special attention to providing the healthcare services necessary to help people succeed in the community after a period of incarceration---particularly addiction treatment services, which are an optional service under Medicaid. States should be encouraged to provide these services in order to ensure that such addiction treatment services are fully integrated with the individual's primary health care needs.[1] Another barrier is the IMD exclusion from the original Medicaid law, which excludes community residential substance abuse treatment from reimbursement and denies those citizens most at risk or relapse and reincarceration the care they need.

Thank you for your work and your consideration of our recommendations. We urge you to act and stand ready to offer any assistance we can provide.

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[1] See discussion in 2005 Institute of Medicine report, "Improving the Quality of Health Care for Mental and Substance Use Conditions.

AIDS Action Council

All of Us or None, Oklahoma

American Catholic Correctional Chaplains Association

American Probation and Parole Association

Armor Correctional Health Services

Backbone Campaign

Barnabas Transitional Program

Benedict Center, Milwaukee, WI

Bon Secours Baltimore Health System

Capital Area Community Services, Lansing, Michigan

Collins Center for Public Policy, Inc

"Community Voices" National Center for Primary Care, Morehouse School of Medicine

Community Voices Miami

Connections to Success

D.C. Prisoners' Legal Services Project, Inc

East Bay Community Law Center

Families to Amend California's Three Strikes – FACTS

Family Justice

Family Service Agency, Phoenix, Arizona

Forum for Understanding Prisons

Health Through Walls

Hepatitis Education Project

International Community Corrections Association

International CURE

Justice Fellowship

Justice Works

Legal Action Center

Maryland Health Care for ALL! Coalition

Mental Health Policy Institute for Leadership and Training, Inc

Mount Hope Church Prison Ministry

NAADAC - The Association for Addiction Professionals

National African American Drug Policy Coalition

National Association of Criminal Defense Lawyers

National Consortium of TASC Programs

National Disability Rights Network

National H.I.R.E. Network

National Prison Project of the ACLU

National Re-Entry Resource Center

New Jersey Association on Correction

Penal Reform International

Power Inside

Presbyterian Church (USA), Washington Office

Prison Fellowship

Prisoner Information Network

Public Justice Center

Public/Private Ventures

Resource Information Help *for* the Disadvantaged (RIHD, Inc)

Restoration Enterprises, Inc

The Fortune Society

The National Trust for the Development of African-American Men

The Women at the Well Transition Center

Therapeutic Communities of America

Turn Around Village

United Methodist Church, General Board of Church and Society

Urban Knights, Inc

Virginia C.U.R.E.

Washington Defender Association

Western Prison Project

Women Accepting Responsibility

Project
MUSE

Primary Care and Health Insurance among Women Released from New York City Jails

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Abstract: Factors associated with primary care utilization and health insurance coverage were examined among 511 women leaving jail in New York City from 1997–2001. One year after release, roughly half of the sample reported primary care utilization (47%) and health insurance coverage (56%). Neither outcome was more likely among those reporting diabetes, asthma, or depression. Primary care utilization was more likely among those reporting receipt of public benefits, health insurance coverage, moderate social support, avoidance of illegal activity, and HIV seropositivity. Health insurance coverage was associated with receipt of public benefits, hospitalization, primary care, and avoiding re-arrest. This study demonstrated that a majority of women leaving jail, including those with chronic diseases, lack primary care. These data highlight the need to plan for continuity of care from corrections to the community and suggest further that this can be facilitated with provision of health benefits and social support.

Key words: Prisoners, prisons, jails, female, primary health care, ambulatory care, health insurance, medically uninsured.

Each year more than 10 million individuals are released from U.S. jails, the short-term detention centers housing those being held for adjudication or sentenced to less than one year.[1] An additional 600,000 people return to the free world from state and federal prisons.[2] This population has extraordinarily high rates of infectious diseases, chronic conditions, and mental health and substance abuse problems, morbidities that are well suited for primary care medical management.[3–5] Incarceration and the discharge planning process may represent an important opportunity to link this vulnerable population to the ongoing primary health care that could help reduce health problems and associated costs for returning individuals, their families, and their communities. Availability and increased use of such services have been shown to decrease preventable hospitalizations among the underserved, and possibly reduce recidivism and arrest in HIV seropositive and drug-using women.[6–9]

To assess the patterns and correlates of primary care utilization (PCU) of women released from a large municipal jail system, this report used data from a randomized

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trial evaluation of Health Link, a program designed to help incarcerated women and adolescent males to reduce drug use and HIV risk after they leave New York City (NYC) jails to return to the communities of the South Bronx and Harlem.[10] Health Link provided case management, referrals, counseling, health education, and supported community organizations that served people returning from jail.[10]

In this report, we describe the relationships at 12 months after release among primary care utilization (PCU), health insurance and demographic and health status variables for all female Health Link participants and a subset of females reporting a diagnosis of asthma. We selected asthmatics for further analysis because asthma was the most common chronic condition reported by the women studied and because continuity of outpatient care is a central component of evidence-based asthma management.[11] We hypothesized that PCU would be more likely among older women, those with health insurance, and those reporting a chronic medical problem (such as asthma, diabetes, or HIV) than among their respective counterparts.[6,7,12,13] Additionally, we hypothesized that women reporting post-release receipt of public benefits and avoidance of re-arrest and illegal activity would be more likely to report PCU than their counterparts.

Health and health care among individuals released from jail and prison. Research has demonstrated that women in the criminal justice system have higher rates of chronic conditions, infectious diseases, psychiatric diagnoses, addictions, and social problems than non-incarcerated women and, for some conditions (such as HIV infection, substance abuse, mental illness, and asthma), higher rates than incarcerated men.[9,14–17] Recent reviews summarize the myriad obstacles inmates face in obtaining post-release health care, including lack of discharge planning, inadequate health insurance coverage, few programs equipped to meet the complex health problems many inmates face, and discrimination against ex-offenders by health providers.[17,18] Few studies, however, have described or analyzed use of community health care services among individuals released from jail or prison.

A 2000 survey of inmates admitted to the Hampden County jail in Springfield, Massachusetts, reported frequent medical and substance use problems, and irregular access to primary care services in the year prior to arrest.[19] Most inmates in this study reported emergency rooms as their usual source of care, and cited lack of insurance and cost as the main barriers to regular community care. Another study found that pregnant women incarcerated during pregnancy were more likely to get adequate prenatal care than women who had an incarceration prior to pregnancy, suggesting that incarceration can provide a bridge to services.[20] However, incarcerated women had much lower levels of prenatal care services than non-incarcerated women and jailed women who had Medicaid coverage got more prenatal services after release than those without coverage.[20]

These difficulties in getting care may be compounded by return to communities with limited access to health care. For example, a study in Harlem, one of the communities to which Health Link participants returned, showed that lack of insurance and lack of public benefits were associated with lower utilization of health services among men and women of all ages.[12] Having a usual source of care was associated with female gender, age greater than 25 years, health insurance, multiple medical problems, and an annual income exceeding $9,000.

Methods

Sample. From 1997–2002, the Health Link study assessed the impact of case management and peer support during and after release from jail on drug use, HIV risk behavior and re-arrest. The program enrolled 1,410 women and male adolescents in the city jails and offered one year of post-release services to those randomly assigned to the full service group (n=704). Those in the comparison group were offered a single jail-based discharge planning session prior to release (n=706). One year after release, an independent research firm completed follow-up interviews with 1,048 (74%) participants concerning their experiences in the 12 months following release. Methods and instruments have been described elsewhere.[10, 21] The institutional review boards of the NYC Department of Health and of Hunter College approved the study protocol.

This report is based on secondary analyses of the data collected from the 511 women available at study intake (baseline) and follow-up. Forty percent (n=206) of these 511 women were randomized to the intervention group. Participation status in the Health Link program was not considered as a variable of interest, in part because the program did not explicitly seek to link people to primary health care and because previously published analyses have shown that PCU and insurance status did not vary by group assignment at 12 months post-release.[22] Although the participants in this study volunteered to enroll, they resemble the general population of women leaving NYC jails in terms of ethnicity, age, and previous criminal charges (data not shown).

Study variables. We defined PCU as a study participant reporting having visited a doctor's office, private clinic, or hospital outpatient clinic one or more times during the twelve months following release. This included visits to medical, obstetric, and gynecologic providers. In addition, given the organization of HIV clinics in NYC at the time of this study, women who were HIV seropositive at follow-up were also counted as using primary care if they had visited an HIV specialty clinic. Health insurance status was defined by the presence or absence of health insurance coverage at the follow-up interview (respondents were asked *Are you currently covered by any health insurance plan...?*). Health insurance status upon release from jail or for other periods preceding the 12 month follow-up interview was not assessed. Thus, women who may have lost insurance coverage since release and prior to the follow-up interview were counted as uninsured. Other utilization variables of interest were self-reported emergency room use, hospitalization, and use of substance abuse and mental health services. Additional independent variables included age, ethnicity, employment, housing status at follow-up, self-reports of illegal activity, re-arrest, drug and alcohol use at follow-up, and medical and psychiatric history. After confirming that the dependent variables considered here did not vary by group assignment in the Health Link study, we did not further consider this variable.

Statistical analyses. We examined differences in baseline and follow-up medical history data using chi-squared tests for differences in means. Regarding the outcomes of PCU and health insurance coverage, bivariate logistic regression was performed for crude odds ratios. Independent variables of interest were further analyzed within six distinct groupings of demographics, social support, risk behavior and illegal activity,

medical conditions, and health care utilization using a change-in-estimate approach to multivariate logistic regression.[23,24] In final models, we include variables from these groupings whose odds ratios did not include unity and confounding variables that changed such odds ratios by 10% or more. All analysis was performed using Stata SE 8.0 (Stata Corp., College Station, TX).

Results

Baseline characteristics. Table 1 shows selected baseline characteristics for the 511 women in the total sample, the 240 women who reported PCU during the 12 months preceding follow-up, and the 288 women who reported health insurance coverage at follow-up. The sample was primarily African American (65%) and Hispanic (26%) with a mean age of 35 years (range, 18–56). Approximately half reported a General Equivalency Diploma or a high school diploma at the intake interview. Two thirds had never married or were not living as married. One third of participants reported living in a shelter, single room occupancy facility, or being homeless in the 12 months prior to baseline, and fewer than one in five reported formal employment (18%). Sixty-one percent had been receiving some form of public benefits, which excluded unemployment benefits and Medicaid coverage. One quarter of participants had obtained welfare for single adults. Among those reporting PCU at follow-up, there were no significant differences from the total sample with respect to these demographic variables. Almost all the women (95%) had prior arrests; and the mean number of prior arrests was 10. Most women were tobacco smokers (90%) and many had used powdered cocaine (36%), crack (63%), or heroin (31%) at least once in the six months prior to the baseline interview index arrest.

Most women reported at least one medical or psychiatric problem or pregnancy-related condition in the 12 months prior to study intake, including asthma (40%), depression (23%), current or recent pregnancy (23%), or current or recent syphilis infection (12%). In the 12 months prior to arrest, emergency room visits (42%) were the most common health service used, followed by hospitalization (27%) and mental health services (14%). Neither HIV nor health insurance statuses were assessed at enrollment. None of these baseline health status or health utilization measurements differed between the total sample and those reporting PCU.

We compared baseline data of the 511 women available at follow-up and used in this analysis with the 196 women enrolled in the initial study but lost to follow-up prior to the second interview. There were no differences in mean age; ethnicity; educational attainment; marital status; recent employment; drug and alcohol use in the preceding six months; prior arrests; recent use of emergency room, hospital, or mental health services; or rates of self-reported asthma, diabetes, or anxiety (data not shown). Compared with those lost to follow-up, the 511 women present at follow-up were less likely at baseline to have reported recent homelessness (33% vs. 47%, p for chi- squared analysis $<.044$), were more likely to be receiving public benefits (61% vs. 38%, $p<.002$), and were less likely to report depression (24% vs. 33%, $p<.014$), recent syphilis infection (12% vs. 19%, $p<.008$) or recent gonorrheal infection (3% vs. 8%, $p<.002$).

Table 1.

HEALTH LINK, BASELINE CHARACTERISTICS: ALL SUBJECTS (n=511), SUBJECTS REPORTING PRIMARY CARE UTILIZATION (PCU) (n=240), HEALTH INSURANCE COVERAGE (n=288)

	All subjects n (%)	With PCU[a] n (% all subjects per row)	With health insurance n (% all subjects per row)
Total subjects	511 (100)	240 (47)	288 (56)
Age (mean (range))	35 (18-56)	36 (18-56)	35 (18-56)
Ethnicity			
African American, Non-Hispanic	332 (65)	161 (48)	191 (55)
Hispanic	134 (26)	54 (40)	77 (57)
Other	45 (9)	25 (56)	20 (69)
Married or living as married	162 (32)	83 (51)	95 (59)
No GED or high school degree	280 (55)	129 (46)	157 (56)
Employed at time of arrest	90 (18)	45 (50)	46 (51)
Receipt of public benefits	312 (61)	129 (41)	217 (70)
Any homelessness, previous 12 mos.	162 (32)	80 (49)	82 (51)
Current smoker	462 (90)	217 (47)	262 (57)
Drug use, previous 6 mos.			
Crack	322 (63)	154 (48)	179 (56)
Cocaine	185 (36)	90 (49)	109 (59)
Heroin	158 (31)	62 (39)	86 (54)
Alcohol binge episodes, previous 3 mos. (mean (range))	2.5 (0-7)	2.21 (0-7)	2.59 (0-7)
Prior arrests, mean (range)	10.0 (0-99)	7.5 (0-65)	8.1 (0-65)
Self-reported health status			
Asthma	205 (40)	102 (50)	117 (57)
Syphilis	61 (12)	28 (46)	31 (51)
Diabetes	19 (4)	11 (58)	12 (63)
Depression	120 (23)	60 (50)	84 (70)
Pregnancy	118 (23)	59 (50)	65 (55)
Health care utilization, previous 12 mos.			
1 or more ER visit	215 (42)	101 (47)	131 (61)
1 or more Hospitalization	136 (27)	70 (51)	82 (60)
Mental health treatment	69 (14)	35 (51)	45 (65)
Substance abuse services	249 (49)	124 (50)	148 (59)

[a] PCU = Primary Care Utilization

Follow-up characteristics. A follow-up survey administered 12 months after release from jail assessed employment status, illegal activity, drug use, and health-related variables since release. Table 2 shows results for selected variables within

the total sample (n=511) and those reporting PCU (n=240) or health insurance coverage (n=288).

About one third of women at follow-up were formally employed (29%) and more than one half were receiving public benefits (60%). Most reported at least some social support (defined as having *a close relationship with at least one friend or relative*, or sometimes or always receiving *help or encouragement from family or friends when having problems with jobs, the law, using drugs, or other things*). More than one third (37%) of participants had been re-arrested. A minority reported weekly or more frequent drug use in the three months preceding the follow-up interview, with crack use being more common than the use of cocaine or heroin.

Since release, a majority of women had attended an addiction recovery peer support group, including Alcoholics Anonymous, Cocaine Anonymous, or Narcotics Anonymous (55%), or had attended or participated in some other form of drug treatment besides support groups (60%). Notably and not shown in Table 2, compared with the total sample, women who reported recent heavy cocaine, crack, or heroin use were less likely to have received formal drug treatment (53% vs. 60% [OR .64, 95% CI .44-.92]). One third of the total sample (37%) had been admitted to a residential drug and alcohol rehabilitation program, and 13% had received some form of methadone maintenance treatment.

The proportion of participants reporting the presence of asthma, diabetes, high blood pressure, anemia, gonorrhea, or dental problems during the 12 months following release from jail did not differ significantly from baseline reports of these conditions. However, more women did report depression (32% vs. 24%, $p<.005$), anxiety (25% vs. 15%, $p<.001$), and hepatitis (11% vs. 6%, $p<.005$) at follow-up compared with baseline. Fewer women reported recent syphilis (7% vs. 12%, $p<.01$) or chlamydia (2% vs. 6%, $p<.01$) infections at the same points in time. Ninety-five women (19%) reported positive HIV serostatus at follow up.

Of the 288 individuals who reported health insurance at follow-up, the vast majority (91%) had Medicaid coverage. Almost half reported some form of PCU (47%). A similar proportion had had at least one emergency department visit since release (48%); fewer had been hospitalized overnight (23%). More than a quarter reported use of mental health services (28%) (defined as *any mental health or psychological counseling for a mental health or emotional problem)*. Of the 95 women who reported HIV positive status, 82% had received treatment for HIV, 71% were on HIV medications, and 66% reported an HIV specialist as their usual doctor for HIV-related care.

Compared with the proportion of PCU (47%) in the general sample (n=511), PCU differed according to a number of follow-up variables: receipt of public benefits since release (OR 3.78), any close relationships since release (OR 1.97), any illegal activity since release (OR .57), HIV seropositive status (OR 3.80), and health insurance coverage (OR 3.90). The 95% confidence intervals for these crude odds ratios are displayed in Table 3.

Primary care utilization. To identify predictors of PCU we used bivariate and change-in-estimate multivariate logistic regression within the total sample of 511 women and among the 235 individuals who had reported asthma symptoms at

Table 2.
HEALTH LINK, OOUTCOMES POST-RELEASE: ALL SUBJECTS (n = 511), SUBJECTS REPORTING PRIMARY CARE UTILIZATION (PCU) (n = 240), HEALTH INSURANCE COVERAGE (n = 288)

	All subjects	With PCU[a]	With health insurance
	n (%)	n (% all subjects per row)	n (% all subjects per row)
Total subjects	511 (100)	240 (47)	288 (56)
Homeless, shelter, or SRO	130 (25)	60 (46)	71 (55)
Formal employment	147 (29)	68 (46)	77 (52)
Informal employment	58 (11)	29 (50)	32 (55)
Receipt of public benefits	305 (60)	182 (60)	240 (79)
Health insurance	288 (56)	176 (61)	288 (100)
Any close friends or relatives	427 (84)	212 (50)	247 (58)
Encouragement from others – never	80 (16)	31 (39)	36 (45)
Re-arrest	190 (37)	79 (42)	74 (39)
Any illegal activity	125 (24)	46 (37)	56 (45)
Any heavy drug use	190 (37)	88 (46)	106 (56)
Weekly or more frequent drug use, previous 3 mos.			
Heroin	39 (8)	15 (38)	22 (56)
Crack	85 (17)	32 (38)	48 (56)
Cocaine	56 (11)	24 (43)	30 (54)
Any binge alcohol use, previous 3 mos.	48 (9)	19 (40)	28 (58)
Self-reported health status			
Health is fair or poor	154 (30)	75 (49)	89 (58)
Asthma	200 (39)	93 (47)	111 (56)
Syphilis	37 (7)	19 (51)	15 (41)
Diabetes	21 (4)	10 (48)	14 (67)
HIV-positive	95 (19)	69 (73)	70 (74)
Depression	163 (32)	79 (48)	105 (64)
Pregnancy	71 (14)	41 (58)	42 (60)
Addiction services since release			
Peer support (AA, NA, CA)	281 (55)	138 (49)	169 (60)
Residential drug or alcohol treatment	190 (37)	93 (49)	124 (65)
Methadone program participation	67 (13)	34 (51)	48 (72)
Health care utilization since release			
Primary care	240 (47)	240 (100)	173 (72)
1 or more ER visit	245 (48)	116 (47)	154 (63)
1 or more hospitalization	116 (23)	62 (53)	86 (74)
Mental health treatment	143 (28)	77 (54)	89 (62)

[a]PCU = Primary Care Utilization

baseline or follow-up (Table 3). In a final model and analytic sample of 465 women with complete data for all variables of interest, PCU was more likely among those reporting receipt of public benefits at follow-up (adjusted OR 2.33), health insurance coverage (AOR 2.24), having at least one close friend or relative since release (AOR 1.99), and positive HIV status (AOR 3.54). Primary care utilization was less likely among those reporting any illegal activity (AOR .52) or a gonorrheal infection (AOR .10) since release. There was no difference in PCU among those with other disease states such as depression or asthma, those reporting recent emergency room visits, hospitalizations, or re-arrest, or by demographic variables including housing status, formal employment, or income level.

In a final model using the sub-population reporting a history of asthma (n=218), PCU was more likely in those receiving public benefits at follow-up (AOR 3.21), having at least one close friend or relative (AOR 9.85), and reporting HIV positive status (AOR 8.79) or participation in a long-term drug or alcohol residential program (AOR 2.41). No variables were inversely associated with PCU among asthmatics.

Health insurance. Because having health insurance is known to be a strong predictor of health service utilization,[25–28] we sought to identify factors associated with health insurance coverage both among all women and among those reporting a history of asthma (Table 4). In a final model of all women with complete data for all variables of interest (n=473), factors significantly associated with having health insurance included receiving public benefits both at follow-up (AOR 13.08) and at baseline (AOR 2.23), and PCU (AOR 2.45) and hospitalization since release (AOR 2.49). Only re-arrest since release (AOR .23) was inversely associated with having health insurance. Insurance status did not vary by disease state, including HIV seropositivity, formal employment, income level, marital status, or age in this adjusted model. Among women reporting a history of asthma, health insurance was more likely among those receiving public benefits at follow-up (AOR 22.32), and hospitalization since release (AOR 4.02), and less likely among those re-arrested at follow-up (AOR .19).

Re-arrest. Further analysis was performed surrounding health status and health care utilization associations with re-arrest within 12 months of enrollment. Re-arrest was less likely if a woman reported health insurance coverage (AOR .30, 95% CI .19-.50) or participation in addiction peer support groups (AOR .52, 95% CI .31-.89). Mental health service use, PCU, hospitalization, and emergency room use showed no associations with re-arrest.

Social support. The finding that all women and those with asthma who reported one or more close friends or relatives were more likely to report PCU was of interest. To identify factors associated with this particular type of social support, we examined associations with demographic, other social support, risk behavior, medical history, and addiction and health service utilization variables. Reporting no close personal relationships was more likely among Hispanics (AOR 2.39, 95% CI 1.25–4.56), the homeless (AOR 1.92, 95% CI 1.01–3.62), those never receiving encouragement from family or friends since release (AOR 2.67, 95% CI 1.32–5.39), and HIV seropositives (AOR 3.11, 95% CI 1.49–6.47) than among their respective counterparts. A lack of any close relationship was less likely among women who reported always receiving

Table 3.

HEALTH LINK, FACTORS ASSOCIATED WITH PRIMARY CARE UTILIZATION (PCU): ALL SUBJECTS (N=465), ASTHMATICS WITH COMPLETE DATA (n=218)

	All subjects, with PCU crude OR	**All subjects, with PCU** adjusted OR[a]	**Asthmatics, with PCU** crude OR	**Asthmatics, with PCU** adjusted OR[b]
Demographics and social support				
Age	1.04 (1.01-1.06)	1.03 (1.00-1.06)	1.01 (.98-1.05)	1.02 (.98-1.06)
Public benefits at baseline	1.30 (.92-1.84)	.79 (.50-1.22)	1.78 (1.06-2.99)	1.00 (.49-2.05)
Public benefits at follow-up	3.78 (2.58-5.52)	2.33 (1.38-3.93)	5.18 (2.93-9.15)	3.21 (1.41-7.28)
Health insurance at Follow-up	3.90 (2.72-5.78)	2.24 (1.31-3.83)	3.70 (2.14-6.39)	1.34 (.56-3.19)
One or more close friend since release	1.97 (1.21-3.22)	1.99 (1.02-3.88)	4.03 (1.76-9.22)	9.85 (2.85-34.06)
Re-arrest since release	.71 (.49-1.02)	1.07 (.64-1.80)	.75 (.44-1.28)	.86 (.40-1.88)
Illegal activity since release	.57 (.38-.87)	.52 (.29-.93)	.60 (.32-1.14)	.67 (.28-1.60)
Self-reported medical conditions				
Asthma at baseline	1.20 (.84-1.71)	1.50 (.78-2.89)	2.97 (1.21-7.29)	2.15 (.74-6.26)
Asthma at follow-up	.97 (.68-1.38)	.71 (.36-1.39)	.92 (.45-1.89)	.70 (.27-1.82)
Syphilis since release	1.20 (.62-2.35)	1.66 (.67-4.12)	2.64 (.89-7.87)	n.a.
Gonorrheal infection since release	.33 (.09-1.21)	.10 (.02-.71)	.31 (.06-1.54)	n.a.
HIV-positive at follow-up	3.80 (2.33-6.22)	3.54 (1.89-6.61)	6.32 (2.97-13.44)	8.79 (3.01-25.68)
Sickle cell anemia at follow-up	5.24 (1.12-24.50)	5.56 (.95-32.58)	4.68 (.52-42.51)	n.a.
Depression, anxiety, or other mental health problems at follow-up	1.08 (.75-1.54)	.80 (.78-1.33)	1.38 (.82-2.31)	.53 (.23-1.23)
Pregnancy since release	1.65 (.99-2.74)	1.89 (.97-3.68)	2.07 (.96-4.67)	1.30 (.46-3.67)

Health services since release				
1 or more ER visit	1.03 (.73-1.46)	.82 (.51-1.31)	1.70 (1.01-2.86)	1.78 (.84-3.75)
1 or more hospitalization	1.40 (.92-2.12)	.95 (.53-1.70)	1.82 (.99-.35)	1.03 (.44-2.44)
Mental health treatment	1.46 (.99-2.12)	.80 (.48-1.33)	2.19 (1.25-3.76)	1.66 (.69-3.97)
More than 30 days residential drug or alcohol program	1.65 (1.13-2.40)	1.23 (.76-1.98)	2.11 (1.20-3.70)	2.41 (1.08-5.39)

[a]Model adjusted for variables shown above and income, a one-item measure of emotional support, crack, cocaine, heroin and alcohol use, recent hospital and emergency room use at baseline, short-term (less than 30 days) residential alcohol or drug, and outpatient methadone maintenance treatment since release.

[b]Model adjusted for variables shown above and income, a one-item measure of emotional support, and outpatient methadone maintenance treatment and addiction peer support group activity since release.

Table 4.

HEALTH LINK, FACTORS ASSOCIATED WITH HEALTH INSURANCE COVERAGE: ALL SUBJECTS (N=473), ASTHMATICS WITH COMPLETE DATA (n=219)

	All subjects, with health insurance, crude OR	**All subjects, with health insurance,** adjusted OR[a]	**Asthmatics, with health insurance,** crude OR	**Asthmatics, with health insurance,** adjusted OR[b]
Demographics				
Age	1.02 (1.00-1.05)	.99 (.96-1.03)	1.00 (.97-1.04)	1.02 (.97-1.08)
Public benefits at enrollment	2.73 (1.91-3.93)	2.23 (1.33-3.73)	3.12 (2.27-6.74)	2.06 (.86-4.94)
Public benefits at follow-up	12.08 (7.91-18.45)	13.08 (7.37-23.21)	14.89 (7.88-28.12)	22.32 (8.24-60.45)
Formal employment since release	.79 (.54-1.16)	.74 (.42-1.31)	.57 (.31-1.04)	.51 (.18-1.42)
Re-arrest since release	.32 (.22-.47)	.23 (.12-.41)	.35 (.20-.60)	.19 (.07-.48)
Illegal activity since release	.53 (.35-.80)	.72 (.36-1.40)	.65 (.35-1.20)	1.19 (.39-3.63)
Self-reported medical conditions				
Asthma at baseline	1.06 (.74-1.51)	.98 (.45-2.15)	1.77 (.80-3.94)	.79 (.19-3.20)
Asthma at follow-up	.94 (.65-1.34)	.87 (.38-1.98)	1.06 (.51-2.16)	.81 (.23-2.79)
HIV-positive at follow-up	2.53 (1.54-4.15)	.97 (.44-2.11)	3.53 (1.70-7.32)	1.46 (.39-5.55)
Pregnancy since release	1.15 (.69-1.91)	.78 (.29-2.06)	1.42 (.66-3.06)	.49 (.09-2.62)
Depression, anxiety, or other mental health problems at follow-up	1.52 (1.06-2.19)	1.09 (.63-1.88)	1.90 (1.12-3.22)	.97 (.31-3.06)
Pregnancy since release	1.15 (.69-1.91)	.78 (.29-2.06)	1.42 (.66-3.06)	.49 (.09-2.62)
Health services since release				
Primary care utilization	3.20 (2.22-4.62)	2.45 (1.44-4.18)	3.03 (1.77-5.19)	1.29 (.49-3.36)
1 or more ER visit	1.65 (1.16-2.36)	1.56 (.88-2.77)	1.83 (1.09-3.08)	1.40 (.55-3.56)

1 or more hospitalization	2.73 (1.72-4.32)	2.49 (1.15-5.42)	3.38 (1.70-6.72)	4.02 (1.17-13.89)
Mental health treatment	1.38 (.93-2.05)	na	1.78 (1.02-3.10)	.47 (.13-1.65)
Methadone maintenance program	1.86 (1.04-3.36)	1.62 (.65-4.06)	2.08 (.91-4.74)	1.43 (.35-5.84)
More than 30 days residential drug or alcohol program	1.70 (1.16-2.51)	1.37 (.74-2.55)	1.86 (1.05-3.31)	2.16 (.72-6.48)

[a]Model adjusted for variables shown and income, ethnicity, marital status, informal employment since release, housing status at follow-up, other medical conditions reported at baseline and follow-up, and addiction peer support group participation since release.
[b]Model adjusted for variables shown and income, ethnicity, marital status, informal employment since release, and other medical conditions reported at baseline and follow-up.

encouragement from family and friends (AOR .15, 95% CI .07–.30), PCU (AOR .46, 95% CI .24–.87), and attending an addiction or other peer support group (AOR .56, 95% CI .31–1.00), than among their counterparts.

Discussion

In this population of women leaving a New York City jail, only about half the women who reported a recent history of asthma (47%), depression (48%), or diabetes (52%) also reported post-release primary care utilization. They were no more likely than women without these conditions to report PCU, a finding contrary to one of the study's hypotheses. This represents a lost opportunity to connect people with serious and expensive health conditions to the primary care that might help to improve their health and reduce medical expenses. Notably, PCU was more likely among women who reported HIV seropositive status (73%), pregnancy (58%) or pregnancy complications (61%) since release. In the last decade, a variety of outreach and follow-up programs have worked to link pregnant and HIV seropositive women to health and social services.[29–31] Higher rates of PCU for women with HIV and pregnancy problems may indicate success of this type of program and the value of extending outreach services to women with other chronic conditions such as asthma, diabetes or depression.

Characteristics of successful outreach programs include attention to non-medical issues such as housing and employment; low thresholds for entry into services; culturally, linguistically and gender appropriate services; integration of physical, mental health and substance use services; and efforts to provide health insurance or special funding for uncovered services.[29–35] Incorporating these characteristics into jail transitional health programs may increase their effectiveness.

Primary care utilization was positively associated with receipt of public benefits and reporting a minimal level of social support, both for all women and among asthmatic women. Health insurance was strongly associated with PCU among all women but not among asthmatics. Additionally, PCU was more likely among asthmatic women who participated in long-term drug or alcohol rehabilitation programs. These findings supported the hypothesis that insurance coverage and public benefits contribute to primary care utilization. Though cross-sectional analysis cannot demonstrate causation, these results and those of other studies suggest that linking women to public benefits, increasing health insurance coverage, and fostering positive social support may facilitate the post-release use of primary care services.[20,36] This, in turn, may improve health, increase access to preventive services, and reduce the costs associated with avoidable ER use and hospitalization. Among asthmatics, strengthening links between primary care and needed addiction services may also increase these desirable outcomes.

Moderate to high levels of social support have been associated with a wide range of health benefits both in the general population and specifically among women, including risk reduction (e.g., smoking cessation) and increases in preventive care.[37, 38] While studies of cohorts similar to the Health Link population have shown a more complicated relationship between social support and health care utilization, our own analysis argues that the presence of a modest degree of social support is more likely among those individuals who use primary care services.[39, 40]

A remaining hypothesis posited an association between age and primary care utilization. This association was present in bivariate analysis but not in a final multivariate model. The Health Link cohort had a younger mean age (35 years) and narrower range (18–56 years) than in a community-based study of a comparable low-income non-incarcerated population.[12] These sample characteristics, in addition to analyzing age as a continuous rather than categorical variable, likely limited this analysis's ability to detect any real differences in PCU by advancing age.

Because health insurance is a strong determinant of health care and primary care in the literature, we further analyzed variables associated with having health insurance. Receiving public benefits and reporting a post-release hospitalization were associated with health insurance coverage for all women and for those with asthma. The recent concerted, aggressive effort in many New York hospitals to identify and enroll eligible patients in Medicaid may explain the latter association.

Our findings show that re-arrest following release was inversely associated with insurance coverage while reporting illegal activity since release was inversely associated with PCU. These results suggest little overlap between women who return to illegal activity and the successful user of health care. Such findings mirror those of a comparable cohort study following high-risk substance-using and HIV seropositive women in which increasing use of primary care services was inversely related to arrest.[8] Possible explanations of an inverse association between re-arrest and health insurance coverage within the Health Link study include women not having been eligible for insurance while in jail or because federal regulations allowed jurisdictions to terminate rather than suspend Medicaid coverage at the time of incarceration.[41]

Having health insurance and participating in addiction recovery support groups including Alcoholics, Narcotics, and Cocaine Anonymous were the only health variables that were inversely associated with re-arrest in our analysis. While this does not definitively demonstrate that health insurance or Medicaid coverage, along with public benefits, social support, or 12-step attendance, reduces re-arrest, it does suggest that, within a cohort of women leaving jail, those receiving economic benefits, addiction-centered peer support, and health insurance coverage are better equipped to make a stable return to their communities than those without these services.

Associations between insurance status, particularly Medicaid coverage, public benefits and health care utilization are plausible and have been demonstrated in the general population.[42–46] While certain hospitalizations (e.g., for asthma) have been shown to result from lack of insurance or access to primary care,[47] it is also known that increased insurance coverage can result in increased use of health care services, including ambulatory care and hospitalization.[25,46]

Important limitations in this study must be acknowledged. These include a cross-sectional multivariate analysis, a follow-up survey completion rate of less than 100% of enrolled clients, the sensitive nature of many of the survey items, and dichotomous, *post-hoc* utilization outcomes. Only a longitudinal study incorporating multiple time points would be able to demonstrate causation between post-release variables such as health insurance coverage, obtaining primary care services, or avoiding re-arrest. Such data are available in this study only from a single follow-up interview. The 196 women lost to follow-up reported more recent depression and sexually transmitted

infections at baseline, were more likely to be homeless prior to arrest, and were less likely to be receiving public benefits than women who completed the twelve-month follow-up interview. It is likely that these individuals had different patterns of health service utilization than the 511 women available at follow-up. Worse health status, poor health outcomes, or increased arrest or illegal activity may have contributed to unavailability at follow-up as well differing rates of PCU or health insurance coverage. These differences limit the generalizability of our findings. In addition, all participants volunteered to enroll in this study, an action that may distinguish them from the general population of women leaving jail.

Those present at follow-up may not have accurately reported drug use, drug-related activity, or other risk behavior. To assess the extent of misreporting in survey-based, self-reported data on drug use, the evaluation team collected and chemically analyzed hair samples from sample members who were not incarcerated at the time of the follow-up data collection, thereby developing alternative measures of the extent of drug use that are not subject to misreporting.[21] Nevertheless, reliance on only survey-based data could lead to an inaccurate estimation of relationships between these variables and the outcomes of interest. Likewise, health status and medical history were assessed by self-report. No corroboration with clinical records or diagnostic criteria was performed. Individuals may over- or underestimate a self-reported condition such as asthma or depression, which would diminish the validity of our findings. Finally, our definition of PCU may have failed to capture other primary care services such as mobile exam and outreach services for homeless people, leading to an underestimation of those who received primary care. Conversely, our PCU definition may include visits to specialists such as pulmonologists or allergists, and thereby overestimate actual visits with generalist physicians. Moreover, by using a dichotomous definition of PCU we may oversimplify our measurement of this variable, masking more complex dimensions of primary care quality and comprehensiveness.

In this study of 511 women discharged from New York City jails from 1997 to 2001, approximately half of those reporting a chronic medical or psychiatric problem did not receive primary care services within 12 months of release. Those who did use primary care services were more likely to report health insurance coverage, receipt of public benefits, and a moderate degree of social support. Health insurance coverage was more likely among those using primary care services, reporting hospitalization, receiving public benefits, and among individuals who avoided re-arrest within one year of release. Efforts to increase health insurance coverage in the general population should have beneficial effects on those released from correctional settings. In addition, programs that aid incarcerated individuals in obtaining health insurance coverage and appropriate benefits upon release may facilitate appropriate health service utilization and thus contribute to improved health.

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