



Health care utilization among young adult injection drug users in Harlem, New York

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Abstract

Purpose: This cross-sectional study investigated the predictors for and patterns of health care utilization among young adult injection drug users (IDUs). **Methods:** The subjects were 206 IDUs, ages 18–29, who were street-recruited from Harlem, New York. Participants were interviewed about their drug use, health conditions, and use of services such as health care, needle exchange programs (NEPs), and drug treatment in the preceding 6 months. Data were analyzed using logistic regression. **Results:** Health insurance was associated with use of health care both among NEP users [AOR (adjusted odds ratio) 10.66] and non-NEP users (AOR 2.45). Use of health care was independently associated with drug treatment (AOR 2.58), being gay/bisexual (AOR 3.86), and negatively associated with injecting cocaine (AOR 0.56). Half the participants (49%) had used health care in the previous 6 months; 48% were uninsured. Many participants who did not use health services reported a condition that would have warranted medical care. **Implications:** Health insurance was strongly associated with use of health care, particularly among those who attend NEPs. Young adult IDUs may benefit from increased efforts to help them arrange and maintain health insurance coverage, potentially at NEPs. NEPs may be connecting young IDUs with health insurance to medical care through referrals. © 2001 Elsevier Science Inc. All rights reserved.

Keywords: Health care utilization; Injection drug use; Health insurance; Needle exchange programs; Drug treatment

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1. Introduction

Injection drug users (IDUs) have higher rates of morbidity and mortality than the general population (Bradley & Zarkin, 1997; Chitwood, McBride, French, & Camerford, 1999; McLellan et al., 1999; Nelson et al., 1991; Selwyn, 1991; Selwyn, Budner, Wasserman, & Arno, 1993) but tend to underutilize health-related services (Booth, Kwiatkowski, & Weissman, 1999; Chitwood et al., 1999; Datt & Feinmann, 1990; Rhodes & Quirk, 1996; Widman, Platt, Lidz, Mathis, & Metzger, 1997). Health care, especially when focused on prevention, is particularly important for younger, newly initiated IDUs because the risk for blood-borne infections is highest during the first years of injecting (Heimer, 1998). Little is known about how and when young IDUs receive care.

We conducted a cross-sectional study to explore health care utilization patterns of young adult IDUs, from 18 to 29 years old, in New York City. Our study goals were (1) to describe the frequency of health care use, the level of insurance coverage and the type of health care used by participants, and (2) to identify whether use of HIV prevention services such as needle exchange programs (NEPs) was associated with increased use of health services.

From studies on health care utilization among older IDUs and in the general population, we expected that younger IDUs would be more likely to use health care if they had a real or perceived need for care (i.e., symptoms) (Hulka & Wheat, 1985; Solomon, Frank, Vlahov, & Astemborski, 1991) or if they had health insurance (Chitwood et al., 1999; Hulka & Wheat, 1985; Solomon et al., 1991; Spillman, 1992; Zuvekas & Weinick, 1999). We predicted that using health care would be positively associated with use of NEPs and drug treatment and would be negatively associated with cocaine use (Brooner et al., 1998; Needle, Coyle, Normand, Lambert, & Cesari, 1998; Selwyn et al., 1993; Watters, Estilo, Clarck, & Lorvick, 1994). We thought that people who were gay or bisexual would be less likely (Berkman & Zinberg, 1997; Friedman, 1994; Lehmann, Lehmann, & Kelly, 1998; Nelson, 1997) and that women would be more likely to receive health care (Chitwood et al., 1999; Hulka & Wheat, 1985; Selwyn et al., 1993).

2. Methods

2.1. Recruitment and eligibility

In 1997 and 1998, 209 participants were recruited from Harlem, New York for a longitudinal study, the Collaborative Injection Drug User Study II (CIDUS II), conducted by the Center for Urban Epidemiologic Studies at the New York Academy of Medicine. The Harlem site was one of six Centers for Disease Control and Prevention sites for CIDUS II, and one of two sites in New York City. The purpose of CIDUS II is to assess drug use initiation factors associated with risk for HBV, HCV, and HIV among young adult IDUs.

The study was conducted from a building in Central Harlem, and recruitment took place in East and Central Harlem, neighborhoods that are mostly Latino and African American, respectively. Eligible participants were between 18 and 29 years old, who reported injecting

drugs within the previous 6 months. For assessment of eligibility, additional questions unrelated to eligibility criteria were asked so that potential participants would not misrepresent information in order to be included in the study. Ethnographic methods were used to map out the area to determine where to find young IDUs. Study recruiters went to these areas, spoke with potential participants, assessed their eligibility, and invited them to participate in the study. People who were willing and eligible went with the recruiter to the study office where informed consent was obtained. The New York City Department of Health and the Centers for Disease Control and Prevention granted IRB approval for the study.

2.2. Interviews

Trained interviewers used a standardized questionnaire to obtain baseline data from participants. Included were questions on demographics, symptoms and medical conditions, service utilization, health insurance, drug use patterns, and sexual practices. Participants were asked about the presence of specific symptoms or events over the preceding 6 months, such as abscesses, a suicide attempt, or trauma. They were asked about their HIV serostatus and whether a health care professional had told them they had an STD or hepatitis within the past 6 months. Women were also asked if they were pregnant at the time of the interview.

We asked participants if they had used a NEP for at least 25% of their syringes and if they had been in drug treatment at any point during the preceding 6 months. We chose this measure of using an NEP to eliminate those participants who tried an NEP once and did not return. Participants were asked whether and how often they had used medical services, and where the services were received. Questions about health care utilization were specifically phrased to exclude drug treatment. Reasons for not using health services were ascertained, as was the level of satisfaction with the last medical care they had received. Insurance variables included types of insurance, and, if the person was not covered, how long he or she had been uninsured and his or her understanding of why health insurance had been lost.

We offered participants referrals for drug treatment, social services, medical care, and hepatitis B vaccination as needed. We provided risk-reduction counseling on safer injection and sexual practices and gave participants a small amount of money as compensation for their time. All counseling was done at the close of the interview to decrease bias due to social desirability.

2.3. Statistical analyses

We calculated frequencies for all variables, sorted by insurance status. We performed chi-square or Fisher's exact tests for categorical variables, a Student's *t* test to compare age, and the Wilcoxon test for years of injecting (because of a skewed distribution).

Because the prevalence of many symptoms or conditions was low, we created a binary variable that indicates whether health care was needed. A participant needed health care if s/he reported an abscess, trauma, a suicide attempt, an STD, hepatitis, or knew s/he was HIV-positive. For trauma, only questions to which affirmative responses would likely result in a need for medical care were included in this analysis, such as rape, broken bones, burns, or a loss of consciousness.

The primary outcome analyzed here is whether a person reported receiving health care services in the preceding 6 months. We used univariate and multivariate logistic regression to generate odds ratios with confidence intervals to assist generating inferences using the approach described by Schlesselman (1982). We used SAS version 7.0 and EpiInfo version 6.0 to perform these analyses.

3. Results

3.1. Demographics

A total of 206 people were enrolled, interviewed, and included in the analysis. Table 1 presents demographic characteristics of the participants, sorted by insurance status.

Looking at participants' health status, 31% reported at least one symptom or condition that would warrant seeking health care. During the 6 months prior to the interview, 15% of participants had an abscess or sore, 18% had sustained trauma, and 7% had attempted suicide. Of the women, 8% were pregnant at the time of the interview. Self-reports of having had an

Table 1
Sociodemographic information of young IDUs in Harlem, by health insurance status

	Total (N=206)	Insured (n=108)	Uninsured (n=98)	χ^2 P value
Female	30%	31%	28%	.54
Race/ethnicity				
White	13%	10%	16%	.24
Hispanic	75%	79%	72%	
Black	10%	10%	8%	
Other	2%	1%	4%	
Median age (years)	26	26	26	.63 ^a
Median years injecting	4	4	5	.26 ^b
Completed high school or GED	44%	40%	49%	.19
Homeless in past 6 months	42%	43%	41%	.80
Ever incarcerated	80%	72%	82%	.60
Drugs injected in last 6 months				
Heroin	92%	96%	88%	.02
Speedball ^c	44%	36%	53%	.01
Cocaine	39%	30%	50%	.0028
Primary income source				
Regular or temporary job, or self-employed	20%	16%	26%	.08
Government benefits	21%	33%	8%	<.0001
Family/friend	17%	15%	18%	.49
Illegal income (sell drugs, theft, sex)	42%	36%	48%	.09

^a t test.

^b Wilcoxon test.

^c Injecting heroin and cocaine at the same time.

STD were infrequent (4%), but 5% of participants reported HIV seropositivity and 3% reported symptoms of hepatitis or liver disease in the past 6 months.

Slightly more than half of the participants had Medicaid (51%), two had Medicare (1%), and the remaining 48% were uninsured. Insured people were more likely to report heroin use, while the uninsured were more likely to report using speedball and/or cocaine during the preceding 6 months. Yes/no questions were asked about an array of possible drugs used over the past 6 months, so answers about drugs used were not mutually exclusive.

3.2. Utilization of services

Table 2 describes patterns of service utilization for the young IDUs surveyed, showing that 49% of participants had received medical care over the preceding 6 months. Sixty percent were in a drug treatment program during part of the time, and 47% received at least one quarter of their needles from an NEP. Among those who used health care services, nearly two thirds made two or more visits over a 6-month period. When asked where they had most recently received health care, the most frequent response was "hospital outpatient department" (41%); yet 21% reported using an emergency room the last time they received care.

Those with health insurance were more likely to use care ($P < .001$) than the uninsured. The insured also reported more frequent use of care and tended to use the emergency room less and hospital outpatient departments more, although these figures are not significantly

Table 2
Service utilization in past 6 months of young IDUs in Harlem, by health insurance status

	Total (N=206)	Insured (n=108)	Uninsured (n=98)	χ^2 P value
Used health services	49%	67%	30%	<.0001
In drug treatment	60%	70%	50%	.0017
Used an NEP for at least 25% of syringes	47%	46%	47%	.86
Frequency of health service use				
Once	36%	32%	46%	.42
2-3 times	41%	43%	36%	
>3 times	23%	25%	18%	
Where health care was most recently received				
Emergency room	21%	18%	30%	.75
Physician's office	16%	16%	15%	
Community health center	11%	10%	11%	
Hospital outpatient department	41%	45%	33%	
Other	11%	10%	11%	
Report they put off health care because of the cost	5%	0	11%	.0005*

* Fisher's exact test.

different. Participants were asked whether they had put off getting medical care in the preceding 6 months because of concerns about the cost. None of those with insurance deferred care, but 11% of those without insurance did ($P < .001$).

Table 3
Unadjusted factors associated with use of health services among young IDUs in Harlem

	N (%)	% using care	Odds ratio	95% CI
<i>Health insurance</i>				
No	98 (48)	33	Ref.	
Yes	108 (52)	67	4.76	(2.64, 8.59)
<i>Drug treatment</i>				
No	82 (40)	34	Ref.	
Yes	124 (60)	59	2.76	(1.55, 4.93)
<i>Used needle exchange >25% time</i>				
No	108 (54)	52	Ref.	
Yes	95 (46)	49	1.14	(0.66, 1.98)
<i>Gender</i>				
Men	145 (70)	56	Ref.	
Women	61 (30)	46	1.46	(0.80, 2.68)
<i>Age</i>				
18-25	96 (47)	47	Ref.	
26-29	110 (51)	51	1.18	(0.68, 2.03)
<i>Race/ethnicity</i>				
White	27 (13)	56	Ref.	
Hispanic	155 (75)	48	0.73	(0.30, 1.79)
Black	19 (10)	47	0.72	(0.19, 2.74)
Other/mixed	5 (2)	60	1.20	(0.12, 16.47)
<i>Injected cocaine</i>				
No	125 (61)	54	Ref.	
Yes	81 (39)	41	0.57	(0.32, 1.01)
<i>Sexual orientation</i>				
Heterosexual	177 (86)	47	Ref.	
Lesbian, gay or bisexual	28 (14)	64	2.04	(0.83, 5.06)
<i>Participant with symptom or diagnosis warranting care^a</i>				
No	142 (69)	46	Ref.	
Yes	64 (31)	56	1.41	(0.81, 2.46)

Behaviors and medical conditions all within preceding 6 months unless otherwise noted.

^a Participant reported a suicide attempt, an abscess, trauma, known HIV-positive status, pregnancy, an STD, or hepatitis during past 6 months.

We present univariate associations between use of health services and other variables in Table 3. People who had received drug treatment and those who identified themselves as lesbian, gay, or bisexual were more likely to receive health care, and those who had injected cocaine were less likely to have received care. There were no significant associations between using health care and any specific disease/condition included in the survey, nor between number of years injecting, education level, or other demographic variables we examined.

Participants who attended an NEP were no more likely than non-NEP attenders to have used health care (OR 1.14), however, stratification by insurance status revealed divergent ORs (Breslow–Day test, $P=.05$). We noted that there were a few differences between those who did and did not use an NEP for more than 25% of their syringes. NEP users were more likely to report having been homeless at some point in the preceding 6 months (48% compared to 35%, $P=.06$) and were more likely to have had trauma (24% compared with 14%, $P=.06$). NEP users did not differ from non-NEP users by gender, race/ethnicity, age, education, income source, drugs used, or number of years injecting. NEP users were no more likely to be insured, but they reported less emergency room use than non-NEP users (18% compared to 25%, $P=.22$).

Women were more likely than men to report a need for care, as measured by our binary variable (OR = 3.37 [1.80, 6.29]), but were not significantly more likely to receive care, and did not differ from men on insurance status, use of drug treatment, or use of NEPs.

3.3. Multivariate analysis

Multivariable analysis results are presented in Table 4. Receiving drug treatment remained an independent predictor of health care use (OR 2.57), as did self-identification as gay, lesbian, or bisexual (OR 3.89). Cocaine use was negatively associated with receiving health care (OR 0.45). We found a significant multiplicative interaction between insurance status and using an NEP for at least 25% of one's syringes ($-2\log$ Likelihood test, $P=.027$). Among those who did not attend an NEP, insured people were 2.45 times more likely to have

Table 4
Logistic regression model for predictors of health care utilization among young adult IDUs in Harlem ($N=203$)

Variable	Adjusted odds ratio (AOR) ^a	95% CI
Drug treatment	2.57	(1.31, 5.04)
Gay/bisexual	3.86	(1.40, 10.76)
Inject cocaine	0.45	(0.22, 0.92)
Using NEP		
No insurance	1.0	–
Insurance	10.66	(1.46, 77.6)
Not Using NEP		
No insurance	1.0	–
Insurance	2.45	(1.04, 5.76)

^a Adjusted for race/ethnicity.

received medical care than uninsured people. Among those who used an NEP, the odds ratio associated with health insurance increased to 10.66.

3.4. Insurance

Of the 98 participants who were uninsured, 32 (15% of total) reported that they had never had health insurance. Another 44 (21% of total) had not had insurance for at least 6 months. The remaining 23 either had lost their insurance in the past 6 months or did not know when they were last insured. The majority (69%) of those who had lost health insurance had had Medicaid. The most frequent responses participants gave for why they were no longer covered were “didn’t keep appointment” (11) or “case was closed” (7). Five had been covered under their parents’ insurance. Six reported they had left or lost their jobs, but three reported that getting a job or working caused them to lose their health insurance.

3.5. Impressions of care received

Those who had not used medical care in the preceding 6 months were asked why they had not done so. Most (83%) responded that it was because care was not necessary; they “didn’t need” it or “felt healthy” or the problem was “not serious enough.” Thirteen percent said that lack of insurance or financial reasons had kept them from using health care. One participant cited lack of trust in medical providers and another said it was because of the long wait to see a health care provider. Most participants (75%) would return to the place where they last received care if they needed care again. Those who would not return to the same place cited a variety of reasons including: different medical needs (13), not satisfied with care (11), moved (3), insurance issues (9), care received while in prison (7), and other (11).

Among those who reported that they had not used health care because they had not needed it, 34% reported a symptom or condition that met our criteria for needing care. Approximately one half of those people who, by our definition, needed care had received it.

4. Discussion

The major finding of this study is that health insurance, especially among those who used NEPs, was associated with increased use of health care services by young IDUs in Harlem. The association between use of health care and health insurance is consistent with findings from older IDUs (Chitwood et al., 1999; Solomon et al., 1991) and the general population (Chitwood et al., 1999; Hulka & Wheat, 1985; Spillman, 1992), but the interaction with NEP use has not previously been described. Among uninsured IDUs, NEP use was not associated with use of health care services. These data suggest that NEPs can be effective mechanisms to connect insured IDUs to health services, but NEP attendance in itself does not increase the likelihood of receiving health care. Brooner et al. (1998) have found that NEPs can also help link IDUs to drug treatment programs. Alternately, these results may reflect a group of people who are more health-conscious: going to an NEP, maintaining health insurance, and seeking

medical care. If this were the case, we would expect to find an association between use of an NEP and having health insurance (two markers of health consciousness), however, no such association is present. Further, one would expect to see a significant positive association between NEP use and medical care, which we did not find.

Needing care was not associated with actual use of health care services, in contrast with other studies among IDUs (Solomon et al., 1991) and in the general population (Hulka & Wheat, 1985). This is the only such study among young adults of which we are aware. There may be a tendency among young adults to ignore, deny, or not recognize symptoms because they still feel invulnerable to disease or are embarrassed to disclose it (Morse, Morse, Burchfiel, & Zeanah, 1998). That one-third of those who said they had not needed care did in fact report a condition that warranted care lends credence to this interpretation.

It is not surprising that drug treatment is independently associated with use of medical care. Methadone maintenance programs, the type of drug treatment most heavily used by participants in this study, require brief initial and annual physical exams in order to receive treatment (Selwyn et al., 1993). IDUs can receive referrals for medical care from drug treatment facilities. Some drug treatment centers have health care services on site, although the range of services offered varies widely, from HIV testing alone to full acute and preventative care. Facilities that offer on-site medical care have reported high rates of service use (Selwyn et al., 1993). Conversely, IDUs sometimes seek medical care as a way to enter drug treatment, as recently demonstrated by Strathdee et al. (1999). Increasing the availability and accessibility of drug treatment slots would likely help to improve the overall health of IDUs. In the short term, medical problems may be identified and treated on site or via referral. In the long term, decreased dependence on drugs will decrease risk behaviors for a host of injection-related problems.

Cocaine users were less likely than other IDUs to have received medical care. Cocaine use has been associated with poorer drug treatment outcomes and increased high-risk behavior (Brooner et al., 1998; Needle et al., 1998; Watters et al., 1994). In a drug treatment program with access to on-site health care, those who used cocaine were less likely to make use of medical services than noncocaine users (Selwyn et al., 1993). These findings reinforce the need for more research on improving outcomes of treatment for cocaine addiction. Also, outreach workers may wish to focus extra attention on the health care needs of those who inject cocaine.

Participants who identified themselves as gay, lesbian, or bisexual were three times more likely to have used health care than those who said they were heterosexual. This was unexpected and contrary to general findings already cited about discrimination and intolerance among some medical providers. New York City has a very active gay and lesbian community that has been instrumental in developing a range of outreach services for HIV prevention and general advocacy. It appears that these services are making an impact on young homosexual IDUs and their use of health services.

It is important to acknowledge several study limitations. This was a cross-sectional study, so we cannot draw conclusions about the temporality of the associations that we have found. Also, because subjects were paid for participating in the study, it is possible that people for whom money is a strong incentive were overrepresented. Since subjects were street-recruited

from one New York City neighborhood, we cannot generalize these findings to all young adult IDUs, or even to other IDUs in New York City.

There has been some debate about the reliability and validity of self-reported information from IDUs (Fendrich, Mackesy-Amiti, Wislar, & Goldstein, 1997; Goldstein et al., 1995; Hser, 1997; Latkin, Vlahov, & Anthony., 1993; Magura & Sung-Yeon, 1997). While reports from IDUs have been found to be reliable (i.e., repeatable) over time (Goldstein et al., 1995; Hser, 1997; Magura & Sung-Yeon, 1997), the validity of those reports can depend on the context in which the information has been requested (Fendrich et al., 1997; Magura & Sung-Yeon, 1997). Settings in which the participant perceives no risks or benefits from the content of responses provide the most valid data, which is the setting used for this study. Also, risk-reduction counseling and referral information were provided after the interview was complete to minimize socially desirable reporting.

While increasing health care utilization is not always justifiable or appropriate, young IDUs have a plethora of legitimate reasons to seek care and are not doing so. Although many participants said that they did not use care because they had not needed treatment, their own reports suggest otherwise. Among young IDUs, as with other groups, having health insurance is a strong predictor for use of health care services. Assisting young IDUs with obtaining and maintaining health insurance coverage, perhaps at NEPs, which already may be serving as an important source of health care referrals for those who have insurance, could lead to earlier identification of problems and, in the long run, lower financial and human costs.

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