Young Injection Drug Users: Profile of Predominantly Suburban Populations and the Implications for HIV and Hepatitis C Infection Risk

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Introduction:

In recent years, injection drug use has increasingly been located in non-Hispanic white suburban communities rather than in poor urban neighborhoods. Despite engaging in higher risk behaviors than their African American and Hispanic counterparts, this new generation of persons who inject drugs (NG-PWID) have relatively low rates of human Immunodeficiency virus (HIV) and hepatitis C virus (HCV) infections. As NG-PWID increasingly interact with sex partners and drug users in urban areas with higher HIV and HCV prevalence, these HIV and HCV infection rates may increase.

Little is known about this new generation of PWID or their social networks pertaining to risk factors for drug initiation and transmission of HIV and hepatitis C. In the current study, factors that place this group at risk or protect against the chance of HIV or HCV infection were investigated.

Methods and Sample:

We conducted a cross-sectional study using interviewer-administered surveys and qualitative interviews of young (aged 18-30) of final sample 164 PWID who were recruited using outreach methods in metropolitan Chicago, Illinois, USA. This analysis is restricted to a sample of 122 quantitative surveys and 29 qualitative interviews.

For our analysis, participants (egos) were grouped by geography: Chicago residents were those who lived mostly in Chicago in the previous 12 months, suburban residents were those who lived mostly in suburban areas in the previous 12 months, and "bridge" participants were those who were lived in a suburban area but transitioned to living in Chicago in the previous 12 months.

Both injection and sexual networks were analyzed by ego and network characteristics (independent variables) and network characteristics including size, composition, density, and multiplexity (dependent variables).

Logistic regression (dichotomous) and negative binomial (count) analyses were performed using SAS v. 9.2, STATA v. 12, Atlas.ti v. 7 and Quantum GIS v. 1.8.0.

Conclusion:

Our egocentric analyses identified a highly risky "bridge" sub-population who exhibited the highest rates of injecting with used needles, having a sex partner who is also an IDU, and exchanging sex for money compared to their suburban and urban counterparts with more stable residence. From our qualitative interviews and experience with young PWID, users generally move to Chicago as a result of many

factors, including easier access to the drug market, loss of home/family connections in the suburbs, and/or financial reasons (panhandling or more opportunities to earn money). We also showed that Non-Hispanic White users have significantly riskier injection and sexual practices than other racial/ethnic groups, but exhibit generally low to modest levels of HIV and HCV infection compared to African Americans. After controlling for age, race/ethnicity and length of injection career, increasing total and core injection network size was associated with having an HCV-positive injection network member. In addition, female gender was associated with multiplex networks: having network members who are both injection and sexual partners.

Our geographic analyses identified the west side of Chicago as a centralized location where both suburban and urban PWID purchase and inject drugs, and is a location where further interventions can be implemented to reach both groups.

Results:

Characteristics of Participants (Egos)	Total (n=122)	Chicago (n=39)	Suburbs (n=40)	Both (n=42)
Age (Mean, Med, std)	26.4 27.0 2.9	26.9 **28.0** 2.6	25.9 26.0 2.8	26.4 26.0 3.2
Male	64%	**72%***	63%	57%
Homeless in past 6 mo	51%	46%	31%	**74%**
Age initiated regular drug injection (Med, range)	20.0 13-29	20.0 14-28	20.0 13-27	20.0 13-29
Years injection drugs (Med, range)	6.0 0-14	**7.0*** 0-13	6.0 0-14	6.0 0-14
Inject heroin daily	80%	**90%**	75%	71%
Non-injection drug use	37%	12%	28%	**46%***
Inject w/ a syringe used by others	32%	23%	28%	**43%***
Steady sex partner is an IDU	45%	40%	34%	**58%***
Sex for drugs/money (mostly women)	22%	15%	18%	**31%***
**p<.05*				

Ego Risk Practices by Race/Ethnicity	NH-White (n=83)	Hispanic (All) (n=19)	AA, Other/ Mixed (n=19)
Inject drugs 2-4 times per day	69%	63%	**74%**
Inject w/ others ≥ ½ the time	54%	47%	**59%**
Inject w/ a syringe used by others	**35%***	22%	26%
Sex partner is an IDU	**49%***	39%	33%
Sex for drugs/money (mostly women)	**16%***	5%	**16%***

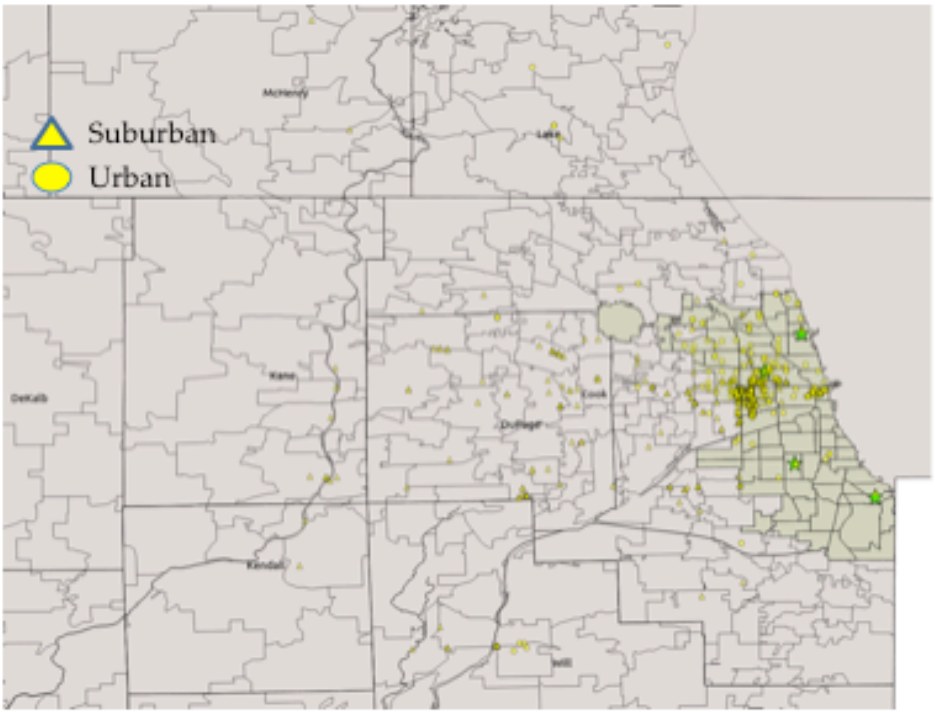
* p<.05

Multivariable Analyses: Injection Network
Ego Factors Associated with Injection Network Parameters

Outcome	Final Models
Total Network Size[3]	Age, Race/ethnicity, Gender,Years injecting, HCV status HCV+ vs. Neg: 2.1 (1.2-3.4)[1,2], HCV Unk vs. Neg: 1.13 (0.8, 1.6)
Core Network Size[3]	Age, Race/ethnicity, Gender,Years injecting, HCV status HCV+ vs. Neg: 1.5 (1.0-2.3)[1,2], HCV Unk vs. Neg: 1.0 (0.7, 1.3)
Injection alter also a sexual partner[4]	Age, Race/ethnicity, Gender, Years injecting, HCV status Female+ vs. Male: 3.1 (1.4-6.9)[1,2]
Injection alter who is HCV+	Age, Race/ethnicity, Gender, Years injecting, Network total size Network size (per increase in one count): 1.2 (1.1-1.3)[1,2]

[1] Model Wald Chi-square p-value (LR[2]) p-value< 0.05 for overall model fit.
[2] Rate ratios (negative binomial) or odds ratios (logisitic).
[3] Negative binomial.
[4] Logistic regression.

Drug Purchases: Urban vs. Suburban Residents



Injection Locations: Urban vs. Suburban Residents