LENGTH OF TIME INJECTING AND ITS ASSOCIATION WITH RECEPTIVE SYRINGE SHARING AMONG PERSONS WHO INJECT DRUGS IN PHILADELPHIA, PA

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ABSTRACT

Injection drug use has reached epidemic rates in the United States. Persons who inject drugs (PWID) are at increased risk for blood borne diseases such as HIV and HCV, due to their injection behaviors. Different factors interact and may determine injectors' sharing behaviors. Age has been determined to be a significant predictive variable in numerous studies. This study attempted to show that length of time injecting is also a significant predictor of sharing behaviors. Using multivariate logistic regression, this study examines length of time an individual has been injecting as it relates to receptive syringe sharing. Receptive syringe sharing, using a syringe after another individual, presents the greatest risk for contracting blood borne pathogens such as HIV and hepatitis C. Utilizing National HIV Behavioral Surveillance System data from PWID in Philadelphia, PA, results indicate that neither age of the injector nor experience are significant predictors of RSS. However, history of being homeless and race, identifying as White, non-Hispanic, are both significant predictors of RSS in an adjusted multivariate model. Based on these findings, current strategies to address risk behavior may not adequately address those most at risk for RSS. This paper concludes with recommendations for increased targeted interventions among those PWID with greater housing instability. The aim of this recommendation is to decrease receptive syringe sharing and ameliorate HIV and HCV infection risk.

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CHAPTER 1

INTRODUCTION

Persons who inject drugs (PWID) are at increased risk for blood borne illness such as Hepatitis C (HCV) and Human Immunodeficiency Virus (HIV). In the United States, PWID accounted for one third of new HIV infections and in 2014 accounted for a significant number (68.2%), of those with a reported risk factor, of new diagnosed HCV cases. These diagnoses are due to sharing of drug injection equipment behaviors associated with injection drug use. Sharing is also associated with infections such as Hepatitis B and conditions such as endocarditis and abscesses (Wejnert et al., 2016). These negative health effects make understanding PWID's injecting behavior a public health priority.

Research on the associations between injection risk behaviors and the age of the injector indicates that younger PWID have riskier sharing behaviors (Broz et al., 2013; Fennema, Ameijden, Van Den Hoek, Coutinho, 1997; Krahl, Lorvick, & Edlin, 2000). However, an avenue that has not been investigated is the risk associated with the length of time an individual has been injecting (i.e. their experience as an injector) and their associated risk behaviors, regardless of age. From this point forward length of time injecting will be referred to as experience.

With the growing opioid epidemic in the US, there is a marked increase among all age groups who are injecting drugs (Centers for Disease Control and Prevention [CDC], 2015). A gap in the literature, however, is understanding the risks associated with experience of an injector beyond age and gender. Research addressing this gap to elucidate what role experience of the injector plays and whether it is associated with injection risk behaviors is needed; particularly the high risk injection activity of receptive

syringe sharing (RSS) where a syringe is used to inject drugs after someone else has already used it.

This study will use pre-existing data from the National HIV Behavioral Surveillance (NHBS) system, a cross sectional study, to investigate the association between the length of time someone has been injecting, experience, with RSS. The purpose of this study is to determine whether the length of time an individual has been injecting can be used as a predictor for RSS. We hypothesize that length of time PWID have been injecting, their experience, will be a predictor of RSS. Confirmation of this hypothesis could provide evidence to support efforts to make programmatic changes in outreach efforts to PWID, in order to develop interventions which target newly initiated injectors to provide prevention strategies in order to reduce negative health outcomes.

CHAPTER 2

BACKGROUND

In the United States, an estimated 2.6% of the population has ever injected drugs (Lansky, et al. 2014), making them most vulnerable to blood borne illnesses such as HIV infection and HCV. While a number of behaviors make PWID more susceptible to these blood-borne diseases, the sharing of drug injection equipment provides an effective transmission method. Despite the advances in the field of HIV and HCV prevention, injection drug use continues to contribute to new infections. In the United States PWID continue to account for a substantial proportion of new HIV diagnoses. This population accounts for the third most frequently reported risk factor for HIV infection, after male-to-male sexual contact and high-risk heterosexual contact; this pattern of risk factors associated with contracting HIV is mirrored in Philadelphia (AIDS Activities Coordinating Office [AACO], 2016; Tempalski et al., 2013). Similar trends are seen in HCV infection; data from the 2003-2010 National Health and Nutrition Examination Survey (NHANES) estimated that 3.6 million people in the US have HCV antibodies to HCV (Denniston et al., 2014). An estimated 60% of current and former PWID are infected (CDC, 2012; Metts, Carmichael, Kokor, & Scharffenberg, 2014). Due to the considerable role that injection drug use plays in the transmission of blood-borne diseases it is important to monitor and follow the prevalence of PWID and their trends of usage.

PWID Population Trends

Several epidemiological studies have documented significant increases in heroin use (Jones, 2013; Hedden et al., 2015). Through the 1990's it was found that the overall population prevalence of PWID decreased (Brady et al., 2008; Tempalski, et al., 2013).

Similarly, in a study conducted by Cooper et al. it was found that there was a slight decline among African American PWID between 1992-2002 while white PWID prevalence remained steady (2008). It has also been shown that there is a 35% average increase among young PWID, age 15-29, across the US between 1996 and 2007, while the prevalence of overall PWID has remained constant since 2002 (Tempalski, et al., 2013).

The number of individuals utilizing heroin has nearly doubled between 2005 and 2012 from 380,000 to 670,000 (Substance Abuse and Mental Health Services Administration [SAMHSA], 2013; National Survey on Drug Use and Health, 2015; Hedden, et al., 2015). These findings are supported by the CDC, in a report released it showed that between 2002-2004 & 2011-2013 there were significant increases across almost every demographic; 50% increase among males who reported heroin and a 100% increase in the number of females; across age groups for those 18-25 there was a 109% increase in the number of individuals reporting heroin use; and a 56% increase in those 26 and older. Among white, non-Hispanic individuals there was a 114% increase in reported heroin use (2015; Cicero, Ellis, Surrat & Kurtz, 2014).

Not only does the increase in number of PWID directly relate to increases in blood borne illnesses in this population, but an indicator of population prevalence that can also be used is the number of heroin-related overdose deaths reported. According to the CDC, between 2002 to 2013 the heroin-related overdose death rate increased 286%, while other sources identify that the number of unintentional overdose deaths in the US has quadrupled between 1999 and 2014 (Muhuri, Gfoerer & Davies, 2013).

In Philadelphia, the number of drug-related overdose deaths observed in 2016, over 900, indicated a 25% increase was observed from 2015, 702 drug-related overdose deaths; a 37% increase from the number of drug-related overdose death in 2014 (655); and an 82% increase from those reported in 2013 (493) (Drug Enforcement Administration Philadelphia Field Office, 2015; Sapatkin & Farr, 2016). The increase in overdose deaths is indicative of the increase in growing population of PWID. The increase in drug-related overdose deaths is indicative of the increase in growing population of PWID.

Prescription Opioid Epidemic and PWID

A significant driver of the heroin epidemic has been abuse of opioid pain relievers. Many individuals switch to heroin after becoming addicted to opioid pain relievers, because heroin is less expensive and easier to obtain. The increase in the prevalence of opioid addiction has been associated with the increased use of heroin; this is marked by the increase in heroin-related morbidity and mortality. In a study conducted by, The National Survey on Drug Use and Health in 2009, 4 out of 5 heroin users reported that their use began with opioid pain relievers (SAMSHA, 2009). This is consistent with findings that show nearly 80% of individuals reported using prescription opioids prior to heroin in more recent studies (Jones, 2013; Muhuri et al, 2013). In 2009 and 2014, non-medical prescription pain relievers were reported to be the second most common form of illicit drug use (SAMHSA, 2015). The pattern of prescription opioid misuse is a key feature in the trajectory into injection drug use.

PWID & Injection Risk Behaviors

Blood-borne injection risk. There are hierarchies of risk associated with contracting HIV; the majority of the knowledge surrounding these risks is associated with sexual behaviors. Estimates have been made in a per-act probability of acquiring HIV for sexual acts; included in this estimate are 'Needle-Sharing During Injection Drug Use' (CDC, 2015). However, beyond this estimate, there is no official guidance regarding a hierarchy of risk for different sharing behaviors to determine which sharing behaviors have a higher probability of transmitting HIV or HCV.

Unsafe injection behaviors are not inherent to the practice of injecting drugs. Socioeconomic factors, such as homelessness, incarceration, illegalization of drugs and paraphernalia, and sharing of injection equipment when using injection drugs becomes a part of many PWID's practice. Specific injecting practices that increase risk of blood borne infections include sharing needles, syringes, rinse water, cookers, and other injection equipment with a person already infected. Using unclean or sharing injecting drug equipment are the most efficient methods of transmitting both HIV and HCV (AIDSmap, 2016).

At the start of every injection, blood is introduced into the needle and syringe. Blood remains in the needle and syringe after someone has used it and can be passed on to anyone else who uses that same injection equipment; the same is true for other injection equipment such as cookers, cottons and rinse water (Harm Reduction Coalition [HRC], nd). Transmission of HIV or HCV occurs when an infected person shares equipment, and hence their blood, with another person. HCV is actually more infectious than HIV; it is approximately 10 times more infectious than HIV through blood to blood

contact and has been shown to survive for weeks in syringes (Budd & Robertson, 2005; USDHHS, 2014). Dried blood contaminated with HCV can remain infectious for up to six weeks at normal room temperature (Paintsil, Binka, Patel, Lindenbach & Heimer, 2014). There is a risk of HIV and HCV infection through intravenous injection, subcutaneous (injecting into the fat under the skin) injecting and intramuscular injection. HIV infection will not automatically occur from a single incident of shared needle/syringe use. Baggaley et al. found that infectivity estimates for IDU ranged from 0.63% to 2.4% (2006). This is consistent with Kaplan and Heimer's estimate of infectivity, .67% per exposure (1992). A study conducted in Chicago aimed to discover the risk of HCV infection among young adult PWID (18-30). They found that those who shared cookers were at an increased risk for seroconverting [RH 3.54 CI(1.26-9.94)] and those who shared cottons were also at an increased risk, however not as great [RH 2.4 CO(1.1-5.0)]. Risk was associated with syringe-sharing and sharing of rinse water, however it was not significant (Thorpe et al., 2002).

Syringe Exchange Programs

Syringe exchange programs (SEPs) were created as an intervention to decrease risk behaviors of PWID which transmit blood borne diseases. As previously stated the prevalence of these diseases is much higher in the PWID population because they are efficiently transmitted through the sharing of injection drug equipment. Research has shown that SEPs are cost-effective and decrease the incidence of HIV and HCV among PWID (Allen, Ruiz & Jones, 2016; Wodak & Cooney, 2006). Research has also shown that SEPs do not increase drug use, crime, or the presence of discarded needles in neighborhoods. SEPs may also have additional benefits to those engaged with them, such

as referrals to other health programs (substance use treatment, medical care), HIV and HCV testing, and social services (work and housing placements) (Allen, Ruiz & Jones, 2016).

Characteristics associated with utilizing SEPs include: Male gender, HIV-positive status, frequent injection, having a sexual partner who is IDU, homelessness, and a history of incarceration (Hahn, Vranizan & Moss, 1997; Macneil & Pauly, 2011; Maurer et al., 2016). In Philadelphia, in 1992 the City declared a health emergency under in order to institute a city-wide SEP. As a result of this, in 1992, Prevention Point Philadelphia (PPP), an SEP, was founded and became the city's first legal distributor of syringes. PPP has had a total of 20,621 individual newly registered between 1999 and 2014 (Maurer et al., 2016).

PWID & Social Risk Factors

Drug use is associated with impaired judgment and decreased impulse control (El-Bassel, Shaw, Dasgupta & Strathdee, 2014). These changes in a one's decision making process can lead to a person's increased risk of acquiring HIV, HCV, or HBV, or developing endocarditis and abscesses through sharing syringes or other drug equipment. A study conducted regarding the Inventory of Drug Use Consequences (InDUC) showed that individuals using drugs are impacted on different social and physical levels, including their intrapersonal and interpersonal relationships, social responsibilities, and impulse control (Tonigan & William, 2002).

Additional factors that put PWID at risk for acquiring negative health consequences are criminalization of drugs, poverty, sex work, and other socially related problems

(AVERT, 2016). Criminalization of the possession of drugs or drug paraphernalia such as needles leads to risky behaviors surrounding the use of the drugs (AVERT, 2016; Friedman et al., 2006). PWID concerned with arrest surrounding drug paraphernalia are less likely to carry their own works and therefore more likely to share syringes (Bluthenthal, Lorvick, Kral, Erringer & Khan, 1999).

Poverty and drug use are linked in a complex relationship which reinforce each other. The relationship between unstable housing and health harm, including among PWID, is well established (Fountain & Howes, 2002; Galea & Vlahov, 2002; Kemp, et al., 2006; Magura, Nwakeze, Roseblum & Joseph; 2000; Song Safaeian, Strathdee, Vlahov & Celentano, 2000; Wincup, Buckland & Bayliss, 2003). PWID experience higher rates of housing instability (Topp, Iversen, Baldry, & Maher, 2013) and are less likely to have a reliable source of income. Individuals who are homeless suffer from worse health than the general population (Martens, 2001), and are more likely to be engaging in drug use. A recent meta-analysis indicated the 54% of homeless individuals are dependent on at least one illicit drug (Fazel, Khosla, Doll & Geddes, 2008). Evidence links unstable housing with initiation into injection drug use, relapse and injection-related risk behavior (Briggs et al., 2009; Linton, Celentano, Kirk, & Mehta, 2013; Roy, Boivin & Laclerc, 2011; Song, Safaeian, Strathdee, Vlahov & Celentano, 2000). Homelessness has also been associated with receptive syringe sharing among 14-25 year olds (Boudreau, Leclerc, Boivin & Godin, 2007). Injection in public or semi-public settings has been identified as common among injectors, but is often the norm among homeless injectors (Briggs et al., 2009). Public injecting is associated with higher levels of risk behaviors in drug injection

(Deren, Kang, Colon, Andia & Robles, 2004; Fuller, et al., 2003; Koester, et al., 2005; Thorpe, et al., 2000).

PWID and Age

Several studies have shown that younger PWID are more likely to practice riskier injection behaviors, such as receptive syringe sharing, receptive paraphernalia sharing attending shooting galleries, and injecting more frequently, and are at increased risk for acquiring blood-borne infections (Battjes, Leukefeld, & Pickens, 1992; Broz, et al. 2013; Thiede et al., 2007; Novelli, Sherman, Havens, Strathdee & Sapun, 2005; Fuller et al., 2005; Carneiro, Fuller, Doherty & Vlahov, 1999). The Centers for Disease Control and Prevention (CDC) conducted the Collaborative Injection Drug Users Study III/Drug User Intervention Trial (CIDUS-III/DUIT), prevention intervention specifically designed for young IDUs, 15-30 years old, in the U.S. The baseline analysis for this study found that the majority of young PWID, 69%, believed that their peers were against syringe sharing and most of them also believed that syringe sharing would put them at risk for infection for HIV (84.1%) or HCV (86.9%). However, despite these beliefs more than half of the participants had still recently engaged in syringe sharing and at least 17% of them did so at least half the times they injected. Among this sample syringe sharing was more commonly associated with having recently exchanged sex for money or drugs, having multiple sex partners, high depression and anxiety scores and not perceiving peer norms as being opposed to sharing (Bailey, et al. 2007). These are factors that are also associated with sharing behaviors among older PWID. In an additional analysis of this study, conducted by Rondinelli, found that newer IDUs are adopting similar injection risk behaviors of older IDUs despite intervention efforts and HIV prevention knowledge

(2009). Among younger PWID, those who reported recent receptive syringe sharing (RSS) reported injection initiation at a younger age, 18-24 versus 20-25 (Novelli et al., 2005). Finally, it was found that persons who used a syringe that had been previously used by someone else at their first injection were much more likely to report recent sharing (Novelli et al., 2005).

It has been found that among older PWID (≥ 30) who practice sharing behaviors there are higher levels of close social relationships like friendships, family relationships, or romantic relationships between the injecting partners (Bailey et al., 2007). Additional correlates that have been found for sharing behaviors among older PWID are being female, poverty, arrest history, mental health disorders, history of childhood neglect or abuse, trading sex, having multiple sex partners, and having frequent unprotected sex (Bailey et al, 2007).

PWID and Experience

A limitation is that recent literature surrounding PWID who are new to injection drug use is sparse. The majority of literature focuses on the age of the injector, with young, recently initiated PWID being identified as a group at high risk for blood borne illnesses. This lack of current data on risk behaviors based on experience of PWID is a significant gap. Little is known about current risk behaviors in new, inexperienced, injectors. . This study aims to address this gap. PWID who have recently begun injecting have high risk behaviors, however those who initiated at an older age, +40 years old, were more likely to practice safer injection behaviors – using sterile syringes, and injecting with their own works (Carneiro et al., 1999).

Current literature suggests that young PWID are at increased risk for blood-borne infection due to riskier injection practices. However, current trends in surveillance data in Philadelphia do not support this. Local surveillance data indicates that injectors between the ages of 18-29 are the only age group to have seen a decrease in new infections (AACO, 2016). Based on this, the gap in the literature regarding experience of the injector should be addressed to determine if this, rather than age of injector, is associated with risky injection practices (e.g. receptive syringe sharing). The following hypothesis is projected:

Hypothesis: Those with less experience injecting drugs, regardless of age, will report a greater prevalence of RSS.

CHAPTER 3

METHODS

National HIV Behavioral Surveillance System

This study utilizes data from the National HIV Behavioral Surveillance System (NHBS). In 2003, NHBS was established by the Centers for Disease Control and Prevention (CDC) to collect HIV prevalence and risk behavior data among persons at high risk for HIV infection. As of 2016, NHBS is funded by CDC in 22 project areas with a high prevalence of HIV. NHBS is conducted in rotating, annual cycles among three different populations at increased risk for acquiring HIV. The three populations are:

1) Gay, bisexual and other men who have sex with men - known as the MSM cycle;
2) Persons who inject drugs (PWID) - known as the IDU cycle;
3) Heterosexuals at increased risk for HIV infection - known as the HET cycle.

Respondent-driven sampling (RDS) is used during the IDU and HET cycles. During each cycle, a minimum of 500 eligible persons from each participating project area are interviewed. All NHBS participants are offered an HIV test, whether or not they are aware of their status. This analysis uses survey responses from the NHBS IDU-4 cycle conducted in Philadelphia from July to November 2015.

Sampling, Eligibility, and Data Collection

For the 2015 NHBS-IDU4 cycle, PWID were recruited utilizing RDS, a peer-referral sampling method. A small number of initial participants were identified during a period of formative assessment. The initial recruits were identified through a variety of methods: focus groups, street intercepts, key informants, and referrals. Several factors

were taken into consideration when selecting initial recruits: well connected to the community of interest, reflective of geographic diversity as well as identified sub-populations (i.e. race, age, and gender), and motivated to recruit other individuals into the study. These initial participants, who were found to be eligible, completed the survey. Those who completed the survey were then asked to recruit up to five persons that they knew personally and who inject drugs to participate in the survey. Those recruited then went through the same eligibility screener, completed the survey and were asked to recruit others. The recruitment process continued until the desired sample size, n=500, had been reached. The CDC notes:

> The sample size of 500 eligible respondents per each project site was determined by considering the presumed HIV prevalence and desired standard error for key indicators of interest, as well as the efficiency of the sample method used, termed the design effect. This approach was presented by Salganik to calculate sample size for RDS… Analyses of NHBS-IDU data suggest that a design effect approaching 4 is appropriate for RDS studies. (CDC, 2014, p13)

Recruitment was tracked using a series of coded coupons. Participants received incentives for completing the survey, for opting to take the HIV test, as well as for recruiting others. HCV testing was not offered at all of the participating NHBS jurisdictions. Locally, Philadelphia provided opt-in rapid HCV tests, for which no additional incentive was provided.

Individuals were considered eligible if they were 18 years or older and had reported injecting drugs in the past 12 months and were able to provide physical proof of recent injection. Without physical proof individuals were asked a series of in-depth knowledge questions about their injection behaviors to determine their eligibility. In addition, the following four inclusion criteria were applied: 1) Had not previously completed any part of the current NHBS-IDU survey; 2) Resided in the Metropolitan

Statistical Areas (Philadelphia, Bucks, Chester, Delaware or Montgomery Counties); 3) Were able to complete the survey in English or Spanish; and, 4) Were capable of providing consent to participate in the survey. NHBS uses a standardized, interviewer-administered instrument to determine eligibility. This instrument is programmed into a portable computer used for the survey. The survey is an anonymous standardized questionnaire about HIV-related risk behaviors, HIV testing, and use of HIV prevention services; the survey takes approximately 40 minutes to complete. All HIV and HCV test results are linked to the survey data.

Survey Instrument

The NHBS questionnaire consists of three components: a core questionnaire, a local questionnaire, and cycle specific questions.

1) Core Questions: The core questionnaire is used by all NHBS sites and covers the following areas:

- Network Size(Specific to RDS cycles) – Participants are asked about the number of males and females that they know who inject drugs, these questions are summed and the participant is asked to confirm this number. This number is categorized as the participants' personal network size.
- Demographics – age, race, homelessness, country of birth, marital status, socioeconomic status, healthcare access and utilization, sexual identity
- Alcohol and drug use history – alcohol use in the last 30 days, binge drinking assessment, injection and non-injection drug use – type of drug and frequency of use drug treatment history

- Assessment of prevention activities, including exposure to and use of intervention activities – incarceration history and HIV and HCV testing in jail; use of various prevention and outreach activities such as free condoms, sterile needles and works; participation in counseling sessions and what organizations are providing outreach to the community of interest; PrEP/PEP/HIV perceptions (pre-exposure prophylaxis, PrEP and post exposure prophylaxis, are antiretroviral medications taken by people who do not have HIV to reduce their risk of contracting HIV. PrEP is an antiretroviral pill, Truvada, taken every day to reduce ones' chance of getting HIV. PEP is antiretroviral pills taken for 28 days after a person has had a single high-risk exposure to HIV.)

2) Local Use Questions: Project sites may include supplemental questions to the core questions on topics of local interest. During the NHBS-IDU4 cycle Philadelphia included questions regarding:

- Needle and Syringe source information and preference

3) Cycle-specific Questions: The NHBS questionnaire is a single document, with sections used only during each appropriate cycle: MSM, IDU, or HET. Cycle-specific questions are standardized, but they are asked only during the relevant cycle. For the IDU cycle, cycle specific questions pertain to injection risk behaviors. For NHBS-IDU the cycle specific questions relate to injection behaviors in the 12 months prior to the date of interview:

- History of injection, age at first injection;

- Frequency of injections, including what drug was being injected and how often it was being injected in the last 12 months;
- Injection behaviors using syringes with removable needles,
- Sources for obtaining needles and needle disposal;
- Injection sharing behavior in the last 12 months;
- Questions regarding the last sharing event, including the sharing behaviors experienced and information about the last sharing partner.

Variables of Interest

The primary purpose of this analysis is to understand the relationship between the experience of the injector and the likelihood of participating in receptive syringe sharing, i.e. injecting drugs with a syringe that someone else has already used. ***To assess receptive syringe sharing and experience level of the PWID, the following measures were used and/or created.***

Outcome

1. RSS was assessed using the question: 'In the past 12 months when you injected, how often did you use needles that someone else had already injected with?" In the original survey this is measured with a likert scale and the answer options are:

0 = 'Never'

1 = 'Rarely'

2= 'About half of the time'

3 = 'Most of the time'

4 = 'Always'

This question was re-categorized into a binary variable: any individual who answered 0 or ‘Never’ was coded as ‘0’ or ‘No’, for not using a needle after someone else; any individual who answered ‘Rarely’, ‘About half the time’, ‘Most of the Time’, or ‘Always’ was re-categorized into 1 or ‘Yes’, for having reported that they used a needle after someone else.

Exposures

2. Experience injecting was assessed by creating a variable labeled ‘Experience,’ which was created by subtracting the reported age of first injection from age at time of interview in order to obtain the length of time (in years) the participant had been injecting at the time of interview.

EXPERIENCE = AGE – AGEINJ;

Those individuals who reported have injected for <=5 years were categorized as ‘Inexperienced,’ and those who reported having injected for >5 years were categorized as ‘Experienced’. The time frame <=5 was selected based on other analysis of newly initiated injectors (Buxton et al., 2004; Fuller et al., 2001; Garfein Vlahov, Galai, Doherty, & Nelson, 1996; Vlahov, Ompad, Fuller, & Nandi, 2011),

3. Age was categorized as either young or old, based on the individual’s age at the time of data collection. Age is a calculated variable based on the participants’ reported date of birth. Young is defined as <=29 years old and Old is defined as 30+ years old. These ages were selected based on other analysis of young injectors (Broz et al., 2013; Vlahov, Ompad, Fuller, & Nandi, 2011).

Covariates

4. Race/Ethnicity was assessed using the following two questions:

‘Do you consider yourself to be of Hispanic, Latino/a, or Spanish origin’ which was answered with a ‘Yes’ or ‘No’ and ‘Which racial group or groups do you consider yourself to be in? You may choose more than one option’ In the original survey the options for this question are as follows: ‘American Indian or Alaska Native’ ‘Asian’ ‘Black or African American’ ‘Native Hawaiian or other Pacific Islander’ or ‘White’. These two questions were re-categorized into a single un-ordered variable. Those who answered ‘Yes’ to considering themselves Hispanic were categorized as Hispanic whether or not they identified as another race as well. Those who identified as White but not Hispanic were categorized as ‘White, non-Hispanic’, those who identified as Black but not Hispanic were categorized as ‘Black, non-Hispanic’. Any other race or combination or races identified were categorized into ‘Other’.

5. Gender was assessed using the following question ‘Do you consider yourself to be male, female, or transgender?’

6. Education was assessed using the following question ‘What is the highest level of education you completed?’ This was measured with the following answers:

0 = ’Never attended school’

1 = ’Grades 1 through 8’

2 = ‘Grades 9 through 11’

3 = ‘Grade 12 or GED’

4 = ‘Some college, Associate's Degree, or Technical Degree’

5 = ‘Bachelor's Degree’

6 = ‘Any post graduate studies’

This question was re-categorized into a binary variable, those who answered 0, 1, 2, 3 were categorized as 0 = 'Less than High School'; any individual who answered 4, 5, 6 were coded 1='High School or Higher'.

7. Ever homeless in the past 12 months was assessed with the following yes or no question 'In the past 12 months, have you been homeless at any time? By homeless, I mean you were living on the street, in a shelter, in a Single Room Occupancy hotel (SRO), or in a car.'

8. Incarceration in the past 12 months was assessed with the following yes or no question 'During the past 12 months, have you been held in a detention center, jail, or prison for more than 24 hours?'

Statistical Analysis

All reported percentages were weighted. Individual weights were obtained through RDS Analysis Tools (RDSAT) version 7.1.38 (RDS, Inc. Ithaca, NY). Reported RSS in the last 12 months was chosen to be weighted, in order to assess the probability that an individual who did or did not report RSS in the last 12 months would be sampled.

The following methods were employed to obtain the individual weights. In RDSAT the number of re-samples for bootstrap was set to 15,000; this is the recommended number for optimal accuracy. Dual-component estimates were used with a mean size of 12 in order to correct for any chain referrals with more connections and larger personal network sizes; and the algorithm type as "enhanced data-smoothing". To account for outliers in reported network sizes, the top and bottom 2.5% of reported network sizes were trimmed. Individual weights are calculated based on a respondents' individual network size; these differ from population weights. Individual weights are

recommended for multivariate analysis (Spiller, Cameron & Heckathorn, 2012; Wejnert, 2010). The RDSAT-generated individual weights were exported into a text file, which was then merged with the existing SAS file. These individual weights were included in all analysis.

Chi-square tests were used to compare the prevalence of inexperience and RSS across levels of each covariate including age (young/old). Logistic regression models, using RSS as the dependent variable, were used to determine the odds of inexperience associated with RSS both with and without covariate adjustment. Hosmer-Lemeshow Goodness-of-Fit test was used to test the fit of the model.

CHAPTER 4

RESULTS

Overall Sample Characteristics

In all, 848 individuals were screened for eligibility; 185 were found to be ineligible and 16 surveys were deemed invalid and were excluded from this analysis. Five participants who identified as transgendered and sixteen participants who identified their race as 'Other' were excluded due to the small sample size; this limited the sample size to n=626 (Table 1).

Table 1. Sample characteristics (n=626)

Characteristic	n (%)[a]
RSS	
Yes	201 (26.4)
No	425(73.56)
Age	
Younger (18-29 y)	160 (25.0)
Older (30+ y)	466 (75.0)
Injection experience	
Inexperienced (≤5 y)	157 (23.6)
Experienced (>5 y)	469 (76.4)
Race/ethnicity	
Black, non-Hispanic	67 (10.9)
Hispanic, any race	126 (21.1)
White, non-Hispanic	433 (68.0)
Gender	
Female	155 (23.9)
Male	471 (76.1)
Education	
Less than high school	484 (76.1)
High school or higher	142 (23.9)
Ever homeless	
Yes	441 (55.6)
No	185 (44.4)
Recent incarceration	
Yes	270 (38.7)
No	356 (61.3)

a Unweighted n and weighted percentage. Due to rounding, percentages may not add to 100.0% across levels of a characteristic

Of the 626 participants, the majority were male, and 30 years old or older (Table 1). The majority of the sample identified as White, non-Hispanic and over half reported being homeless at any point in the last 12 months. Just over a third reported having been incarcerated in the last 12 months.

Exposure Relationship

The majority of participants were experienced injectors and reported RSS (Table 1a). Among young injectors (n=160) 49.4% were inexperienced; among older injectors, only 15.1% were identified as inexperienced (Table 1a).

Table 2. Relationship between age and drug injection experience

Age	Inexperienced (≤5 y) n (%)[a]	Experienced (>5 y) n (%)[a]	Total n (%)[a]
Younger (18-29 y)	89 (49.4)	71 (50.6)	160 (100.0)
Older (30+ y)	68 (15.1)	398 (84.9)	466 (100.0)

a Unweighted n and weighted percentage. Due to rounding, percentages may not add to 100.0% across levels of a characteristic

Table 2 shows the relationship between each covariate and how it is related to both of the exposures, age and experience, and the outcome, RSS. Gender was not associated with either of the exposures or the outcome.

In a chi-square test race/ethnicity was found to be independently associated with being younger and RSS, p=.0012 and p=.009 respectively.

Recent incarceration was also found to be significantly associated with being younger and inexperienced, p=<.0001 and p=.04, respectively (Table 2).

Homelessness was found to be significantly associated with age, inexperience, and RSS, p=002, p=<.0001 and p=<.0001. Of those who reported homelessness 29.8% were younger, 31.2% were inexperienced and 33.6% reported RSS in the last 12 months. Only 18.9% of those who did not report homeless were younger, 14.2% were inexperienced and 17.4% had reported RSS (Table 2).

Table 3. Relationship between sociodemographic characteristics and age, drug injection experience, and receptive syringe sharing (RSS)

Characteristic	Younger n (%)[a]	*p* value	Inexperienced n(%)[a]	*p* value	RSS n(%)[a]	*p* value
Race/ethnicity						
Black, non-Hispanic	8 (13.1)		12 (20.3)		8 (12.9)	
Hispanic, any race	27 (17.2)	.001	33 (22.5)	.71	36 (19.3)	.001
White, non-Hispanic	125 (29.2)		112 (24.5)		157 (30.8)	
Gender						
Female	38 (21.1)	.22	41 (28.9)	.08	55 (30.8)	.17
Male	122 (26.2)		116 (22.0)		146 (25.1)	
Education						
Less than high school	129 (25.7)	.68	126 (25.9)	.01	158 (27.2)	.40
High school or higher	31 (22.4)		31 (16.1)		43 (23.7)	
Ever homeless						
Yes	133 (29.8)	.002	125 (31.2)	<.0001	158 (33.6)	<.0001
No	27 (18.9)		32 (14.2)		43 (17.4)	
Recent incarceration		<.0001		.04		.81
Yes	76 (19.2)		78 (28.1)		84 (27.0)	
No	84 (34.0)		79 (20.8)		117 (26.1)	

a Unweighted n and weighted percentage. Due to rounding, percentages may not add to 100.0% across levels of a characteristic

Unadjusted Association with RSS

In a bivariate analysis, those with young age and inexperience, are at an increased risk for RSS. When age is adjusted for experience the OR decreases from 1.29 to 1.13. When experience is adjusted for by age the OR decreases from 1.50 to 1.44. In all cases the ORs are not statistically significant (95% CI includes 1) (See Table 3).

Table 4. Prevalence and unadjusted odds of receptive syringe sharing (RSS) associated with age of user and drug injection experience

Characteristic	RSS n(%)[a]	Unadjusted Odds (95% CI)	Adjusted Odds (95% CI)
Age			
Younger (18-29 y)	66 (30.2)	1.29 (.861, 1.92)	1.13 (0.74,1.74)[b]
Older (30+ y)	135 (25.1)	Reference	Reference
Injection experience			
Inexperienced (≤5 y)	53 (32.7)	1.50 (1.00, 2.24)	1.44 (0.93, 2.21)[c]
Experienced (>5 y)	148 (24.5)	Reference	Reference

a Unweighted n and weighted percentage.

b adjusted for experience (inexperienced, experienced)

c adjusted for age (younger, older)

Multivariable Associations with RSS

In an adjusted multivariable logistic regression, Race/Ethnicity and homelessness remain significantly associated with RSS. Black, non-Hispanics are at decreased risk of RSS [AOR .370 (95% CI .17, .79)] as are Hispanics [AOR .523 (95% CI .318, .86)] compared to White, non-Hispanics. Those who experienced homeless in the last 12 months are at an increased risk of RSS compared to those who did not report homeless [AOR 2.4 (95% CI 1.61, 3.58)].

Table 5. Adjusted odds of receptive syringe sharing (RSS) associated with age of user and drug injection experience

Characteristic	Adjusted Odds (95% CI)
Age	
Younger (18-29 y)	1.0 (0.64, 1.56)
Older (30+ y)	Reference
Injection experience	
Inexperienced (≤5 y)	1.19 (0.76, 1.87)
Experienced (>5 y)	Reference
Race/ethnicity	
Black, non-Hispanic	.370 (.174, .79)
Hispanic, any race	.523 (.318, .86)
White, non-Hispanic	Reference
Gender	
Female	1.32 (0.86, .2.03)
Male	Reference
Education	
Less than high school	1.42 (.90, 2.24)
High school or higher	Reference
Ever homeless	
Yes	2.4 (1.61, 3.58)
No	Reference
Recent incarceration	
Yes	1.09 (0.75, 1.60)
No	Reference

Overall Findings

This study shows that neither age nor experience are significant predictors of receptive syringe sharing after accounting for covariates. The final multivariate model shows a 19% increased risk of RSS among inexperienced IDU, although this finding is not statistically significant. While neither age nor experience were significant predictors of RSS, it was discovered that Race/Ethnicity and homelessness are. White, non-Hispanic PWID and those who have experienced homelessness are at an increased risk of RSS.

CHAPTER 5

DISCUSSION

The results of this study indicate that the main exposures of interest were not statistically significant predictors of RSS. This finding contrasts with earlier studies which show that the greatest predictor of sharing behaviors is age (Broz, et al. 2013; Carneiro, Fuller, Doherty & Vlahov, 1999; Fuller et al., 2005; Novelli, Sherman, Havens, Strathdee & Sapun, 2005; Thiede et al., 2007). The results from this study show that there is no difference in RSS among younger and older injectors.

While the two exposures of interest were not found to be significant, it was found that homelessness is a significant predictor of RSS. This supports findings from other studies in which homelessness has been found to be a predictive factor for varying risk behaviors among PWID (Aidala, Cross, Stall, Harre & Sumartojo, 2005; Metsch et al., 1995; Pyett & Warr, 1997; Surratt & Inciardi, 2010). Homelessness has been a historic public health and societal problem. Homelessness has been linked with re-lapse among injectors who had stopped injection and has been linked with injection risk behaviors (Linton, Celentano, Kirk & Mehta, 2013). Homelessness has also been linked to initiation of injection drug use among youth; however, this study was unable to evaluate homelessness at initiation.

Future studies may focus on homelessness and injection drug use and their temporal relationship. It is possible that in the case of PWID, homelessness may be an outcome of injection drug use. Stable housing has emerged as a key indicator of RSS. This finding indicates that supportive housing programs may help prevent RSS among PWID. A limitation to this finding is that questions regarding shelter use were not asked, nor were

questions regarding length of time of homelessness, as these could be indicators for rates of sharing (German, Davey & Latkin, 2007; Palepu, Marshall, Lai, Wood, & Kerr, 2010).

Studies and surveillance data have shown that HIV is unevenly distributed across racial/ethnic groups in the US. African Americans and Hispanics are disproportionately affected by HIV (Lelutiu-Weinberger et al., 2009). This fact is contrary to the finding that Black, non-Hispanics and Hispanics are at lower risk of RSS, a risk factor for contracting HIV. This could be because the sample did not have a representative group of minorities. . A number of studies point to racial minorities as being at increased odds for a wide range of risk behaviors, from injection practices to sexual behaviors (Brooks, Lokhnygina, Meade, Potter, Calsyn & 2013; Neaigus et al., 2013; Weinberger, 2009). Because the outcome was related to behavior in the last 12 months, in future studies it would be pertinent to look at other things that may have happened in these groups across that time span, and may ameliorate the association with RSS. In this study, more than a third of the sample had been incarcerated in the last 12 months. However, this study did not look at the race/ethnicity of those incarcerated and the original data does not collect length of time incarcerated. It would be important to assess if both play a role in the decreased rates of minority reported RSS.

There were several limitations to this study. Most significantly, the sample had a limited number of new injectors. This may be indicative of the population, however due to the sampling method it could be assumed that those who have been injecting for a shorter amount of time are not as networked as longer term injectors and were not referred to us via the RDS. The lack of participation by new injectors may also show that newer injectors are less comfortable being surveyed. All of the data included in this

analysis was obtained via self-report and participants may have had difficulty recalling information or may have underreported their socially undesirable behaviors.

CHAPTER 6

CONCLUSION

This study makes a useful contribution to research of PWID and shows that there is a disparity among homeless PWID and their risk of RSS, which in turn increases their risk of contracting HIV and HCV. HIV is sometimes believed not to be a significant health issue among PWID because of the decrease in new infections in this population. These findings may suggest that targeted interventions aimed towards homeless PWID would be significant in reducing RSS and in turn blood-borne illnesses among PWID.

This study advances the existing research by exploring experience of the injector along with age as predictors for RSS among PWID, an avenue which has little existing research. While the main exposures of interest were not significantly related to RSS, race/ethnicity and homelessness were. Future studies to evaluate homeless PWID and studies with a larger sample of minority PWID are necessary to further elucidate information regarding these findings in order to expand our knowledge and develop evidence-based interventions.

As the burden of injection drug use continues to increase, through the cost of treatment for blood borne illnesses, as well as through other adverse health outcomes such as overdoses, targeting interventions and support towards PWID most at risk for RSS could decrease these burdens.

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APPENDIX A

IRB EXEMPTION

This secondary data analysis was deemed exempt from institutional review board (IRB) review. Due to the de-identified nature of the data it did not meet the definition of 'human subjects' research.

The following documents are City of Philadelphia IRB approval documents, Continuing Approval for Existing Study & Stamped Consent form, for the original survey, NHBS-IDU4.

APPENDIX B

CONTINUING APPROVAL FOR EXISTING STUDY

CITY OF PHILADELPHIA

DEPARTMENT OF PUBLIC HEALTH
INSTITUTIONAL REVIEW BOARD
HEALTH CENTER #5
1900 N 20th Street
Philadelphia, PA 19121
(215) 685-7630
FAX (215) 685-0867
http://www.phila.gov/health/Commissioner/IRB.html

James W. Buehler, MD
Health Commissioner

Sam Gulino, MD
Chairperson

Judith Samans-Dunn, MSIA, CIP
Administrator

February 17, 2015

Kathleen Brady, M.D.
Philadelphia Department of Public Health
1101 Market St, 8th Fl
Philadelphia, PA 19104

RE: 2009-13 National HIV Behavioral Surveillance System (NHBS): The Key Project

Dear Dr. Brady:

The City of Philadelphia Department of Public Health Institutional Review Board [OHRP IRB#49, operating under FWA#3616] has approved the recently submitted update report for the above subject research proposal. Continuing approval was granted through expedited review, in accordance with 45 CFR 46, section 110, studies that are no more than minimal risk and fall into categories:

(2) Collection of blood samples by finger stick, heel stick, ear stick, or venipuncture as follows:

(a) from healthy, non-pregnant adults who weigh at least 110 pounds. For these subjects, the amounts drawn may not exceed 550 ml in an 8 week period and collection may not occur more frequently than 2 times per week; or

(b) from other adults and children[2], considering the age, weight, and health of the subjects, the collection procedure, the amount of blood to be collected, and the frequency with which it will be collected. For these subjects, the amount drawn may not exceed the lesser of 50 ml or 3 ml per kg in an 8 week period and collection may not occur more frequently than 2 times per week.

And

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

In addition to the update, we note the following revisions:

- Study to focus on injection drug users.
- Revised protocol, survey and consent forms.

This approval is for the period 2/26/2015 through 2/25/2016 or closure, if sooner. An update report will be required at least one month before the expiration of the approval period. Serious adverse events or protocol violations must be reported within two working days of discovery. Non-serious adverse event should be reported upon your receipt of a DSMB summary report or with your continuing review update report. Changes in investigators, contact information, procedures or consent procedures or forms must be reviewed and receive approval prior to implementation.

If you have any questions, I can be reached at Health Center #5, 1900 N. 20th Street, Philadelphia, PA 19121, phone number (215) 685-5747 or e-mail at Judith.Samans Dunn@Phila.Gov

Sincerely,
Candace Adams

Judith Samans-Dunn, MSIA, CIP
Administrator
Institutional Review Board

cc: Correspondence file
2009-13
C. Terrell
S. Gulino, MD

APPENDIX C

IRB STAMPED CONSENT FORM FOR ORIGINAL SURVEY

Consent Form for KEY Project

English Version; Grade Reading Level by Flesch-Kincaid Method: 7.2

National HIV Behavioral Surveillance System

The Philadelphia Department of Public Health and the Centers for Disease Control and Prevention (CDC) invite you to be part of a research study of persons who may be at risk for HIV infection. The information I will give you can help you make a good choice about joining the study.

A. Why we are doing this project

The purpose of this study is to learn about risk for HIV. We will use this information to plan better HIV prevention and treatment programs for people in your community. This study is anonymous which means that no one will know your name or be able to identify you. Being in this study is voluntary.

B. What will happen?

If you agree to be in this study, this is what will happen.

1. You will do a survey with a trained staff member.

The survey has questions about your health, drug use, sex practices, and HIV prevention services. It will take about 40 minutes. At the end of the survey, I may offer you a chance to recruit up to 5 other people for this study.

2. If you agree to the survey, we will offer you a free HIV test. If you already know that you are HIV-infected, we would still like to offer you an HIV test today so that we can link today's HIV test result with your survey results.

3. If you agree to an HIV test, you will also be asked to have your blood sample stored

4. If you agree to the HIV test, we will also offer you free hepatitis C testing.

This is an anonymous survey. We will not ask for your name or other identifying information. The survey has questions that are personal. They may be hard to talk about. You may refuse to answer any question at any time for any reason. If you refuse to answer a question or want to end the interview you will not be punished in any way.

If you agree to the HIV test, you will have a 10- to 15-minute HIV prevention counseling session with a trained staff member. The session will cover the meaning of results from the HIV test. You will also learn about how to reduce your chances of being infected with HIV and other infectious diseases.

The HIV test will be done by a rapid test as discussed below.

We will stick the tip of one of your fingers to obtain a few drops of blood. You will get counseling about what the test result means. You can get the result of your HIV test within 45 minutes. You will get referrals to services, if needed.
If the rapid test result is reactive, or if you know you are already HIV- infected, we will **re-stick** the tip of one of your fingers to obtain a few drops of blood for a second test to confirm your rapid test result. The

result of the confirmatory test will be ready within two weeks. We will set up a day and time for you to get your results.

Hepatitis C Testing
If you agree to an HIV test, we can offer you free screening for hepatitis C infection. We will collect a blood sample by sticking the tip of your finger. This test is not able to determine whether or not you are currently infected with hepatitis C, it is just able to let us know if you have ever been exposed to Hepatitis C. You will get counseling about what the test results mean. You will get the results of your Hepatitis C test within 45 minutes. You will get referrals to confirmatory testing, counseling and services, if needed.

Linkage
We will link your test results with your survey so we can learn about sexual and drug-use risk behaviors known to be connected with HIV infection. We will link your test results using the same ID assigned to the survey. This is an anonymous survey and testing project. Your name will not be on the test results or the survey. No one besides you will be told your test results, and neither the survey nor the test will be placed in any medical record.

Storage for Additional Tests
We would like to store any blood that is left over after we do your test. We plan to use this sample for studies we will do in the future. We will store your sample with some data about you, such as your age, race, and sex. We will not put your name on the sample and there will be no way to know it is yours: thus, we will not be able to report back any test results to you. We will not conduct any human genetic testing or use blood for cloning. You can decline to let us store your blood and still be in this study. If you do not wish to have us store your blood, your blood sample will be destroyed after this testing is completed. If you agree to have us store your blood, we will destroy your blood sample within 10 years.

C. Things to consider

There are minimal risks from being in this study:

1. Some of the questions in the survey are about sex and drugs and may make you feel uncomfortable. All answers you give will be kept private.

2. Drawing blood may cause temporary discomfort from the needle stick, bruising, bleeding, light-headedness, and local infection.

3. You may feel uncomfortable finding out you might have been infected with HIV. You can talk about your concerns with the trained staff member who tells you your HIV test results, if you wish.

4. If your HIV test result is negative, there is a slight chance that the results are wrong and that you could still be infected.

D. Benefits

Benefits you may get from being in this study include:

1. You will receive condoms and information on HIV/AIDS and STDs.

2. You will, if you wish, receive free referrals to other local programs, medical programs, support groups and health programs, as needed.

3. If your HIV or Hepatitis C results are reactive, you will be counseled about ways to prevent the spread of infection and you will be able to talk about your concerns, if you wish. You will also be referred for medical care.

4. If your test results are negative, you will receive counseling on how to prevent future infections.

Also, information gained from this study will help the Philadelphia Department of Public Health to know more about HIV and how it is spread. This information will be used to improve health programs and to develop new ways of helping others prevent disease and promote good health.

E. Alternatives

If you choose not to take part in the study but would like to take an HIV test, we will inform you of agencies or organizations that provide testing. You will get no medical treatment in this study.

F. Compensation

You will be paid for the time you spend taking part in the study. For completion of the survey, you will get *$25 in the form of a gift card or gift check*. If you take part in the HIV test, you will get an additional $25 in the form of a gift card or gift check. You may also get a $10 gift card each for up to 5 people whom you send to us for the study.

G. Persons to Contact

This study is run by: Dr. Kathleen A. Brady, (215) 685-4778. You may call her with any questions about being in the study.

If you have questions about your rights as a participant or if you feel that you have been harmed, contact The Research Participant Coordinator, Philadelphia Department of Public Health Review Board, at 215-685-0869.

If you want one, you will get a copy of this form to keep.

H. Confidentiality Statement

This survey is anonymous. Your responses and test results will be labeled with a study number only. The study staff at **Philadelphia Department of Public Health** and CDC will have access to the survey. Other collaborators will have access to the survey, but will not be allowed to see any information that could identify you. Your responses will be grouped with survey answers from other persons. However, any information about child abuse or intent to harm self or other **will** be report to authorities, as required by law.

Survey forms and handheld computers will be locked in a file cabinet at the study office. Computers with study data will be physically secured and protected by coded passwords. Only specific study staff will have access to the locked file cabinet or the computers. Paper records will be stored for 5 years and electronic records will be stored indefinitely.

If you know me, you may ask for another staff member so that your answers will be fully anonymous.

I. Costs

You will not be charged for counseling, the HIV test, safer sex and HIV prevention materials, referrals to appropriate agencies, or any other services provided by this study.

J. Right to Refuse or Withdraw

This study is completely VOLUNTARY. You are not giving up any legal claims or rights for being a part of this study. If you agree to participate, you are free to quit at any time. You may refuse to answer any question. You can choose to only do the survey and not to have an HIV test or the HCV test. You can also choose not to recruit others.

K. Agreement

Do you have any questions?

Interviewer: Answer the participant's questions before proceeding to the next question.

You have read or had read to you the explanation of this study, you have been given a copy of this form, the opportunity to discuss any questions that you might have and the right to refuse participation. I am going to ask for your consent to participate in this study.

(Consent will be documented by the interviewer in the portable computer as follows:)

Do you agree to take part in the survey?

- ☐ Yes
- ☐ No

Do you agree to HIV counseling and testing?

- ☐ Yes
- ☐ No

Do you agree to Hepatitis C counseling and testing?

☐ Yes
☐ No

Do you agree to storing a blood sample for future testing (if offered)?

☐ Yes
☐ No

If survey declined:
We're interested in knowing why people do not want to do this study. Would you mind telling me which of the following best describes the reason you do not want to do this study?

You don't have time.....	1
You don't want to talk about these topics.....	2
Some other reason, or	3
You'd rather not say why.....	9