

HIV Prevalence and Risk Among Injection Drug Users in New York City

**Results from the
National HIV Behavioral Surveillance System
(NHBS)**



**HIV Epidemiology Program,
New York City Department of Health and Mental Hygiene**

**Center for Drug Use and HIV Research,
National Development and Research Institutes**

Outline of Presentation

- Overview and Methods
- Recruitment and Social Networks
- Findings
 - Sociodemographics
 - HIV Testing
 - Sexual Risk
 - Drug-Related Risk
 - Prevention & Treatment Program Participation
- Conclusions

Overview and Methods

Objectives of NHBS

- Estimate the prevalence of HIV infection
- Determine frequency and correlates of HIV risk behaviors
- Assess HIV testing history and patterns
- Assess exposure to and use of HIV prevention services in NYC

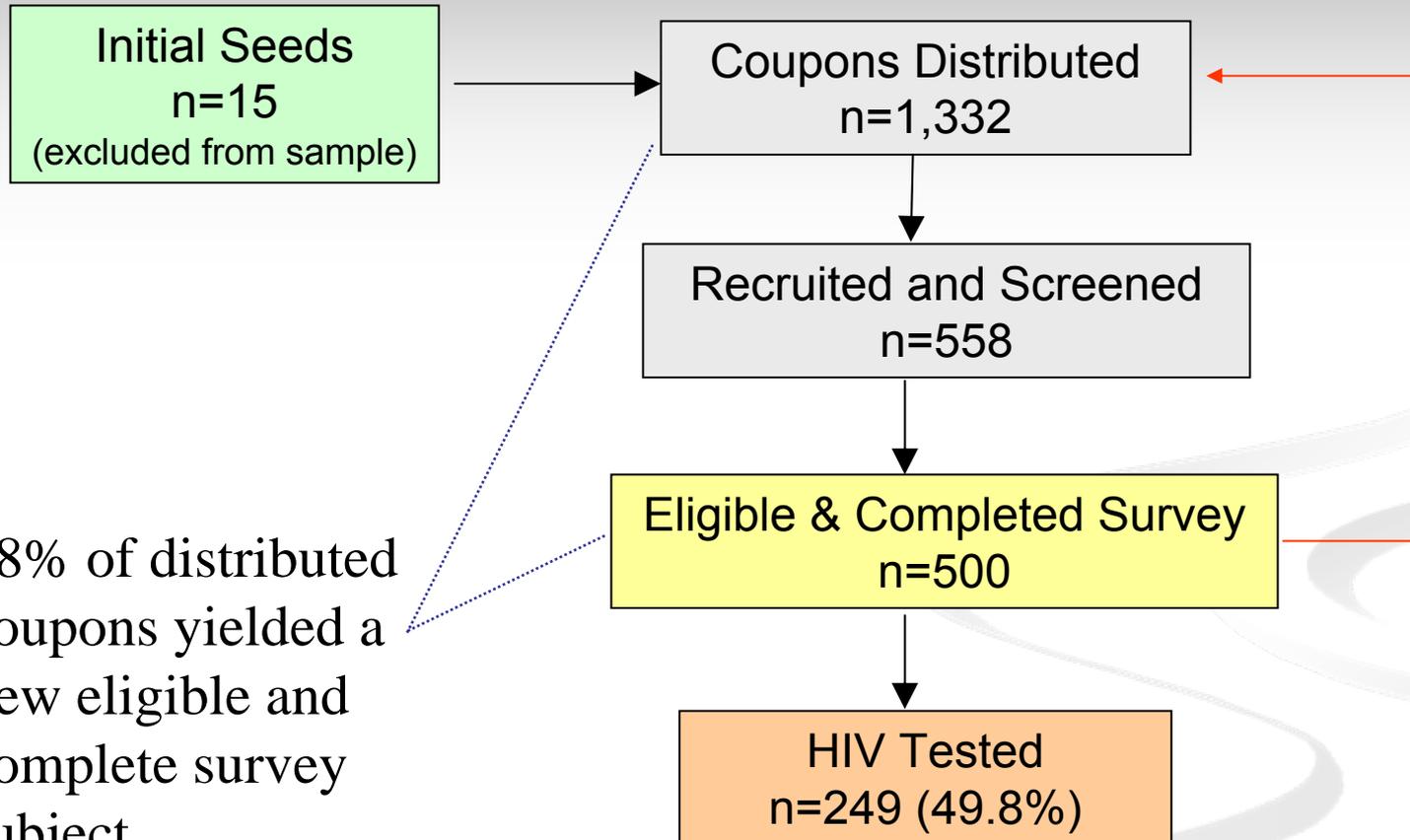
NHBS Study Design

- NHBS through All Cycles
 - National, multi-site survey
 - Rotates in yearly cycles through risk groups of men who have sex with men (MSM), injection drug users (IDU), and high-risk heterosexuals (HET)
 - 25 project areas throughout the United States
 - Recruitment goal of 500-750 individuals per project area
 - Cross-sectional study design
 - Anonymous recruitment, interviewing, and testing
- NHBS-IDU Cycle
 - Respondent-Driven Sampling (RDS) methodology
 - Surveyed only active IDU (injection in past year)
 - Interviews took place from July to December 2005

Study Eligibility

- Injected non-prescribed drugs within past 12 months
- Visible signs of injection (e.g., track marks) or detailed knowledge of injection drug use practices
- Resident of NYC metropolitan area (5 boroughs and Westchester and Rockland counties)
- 18+ years old
- Has a valid coupon from member in social network for NHBS-IDU study
- Has not previously completed the NHBS-IDU survey
- Alert and able to complete the survey in English or Spanish

NHBS-IDU Sample



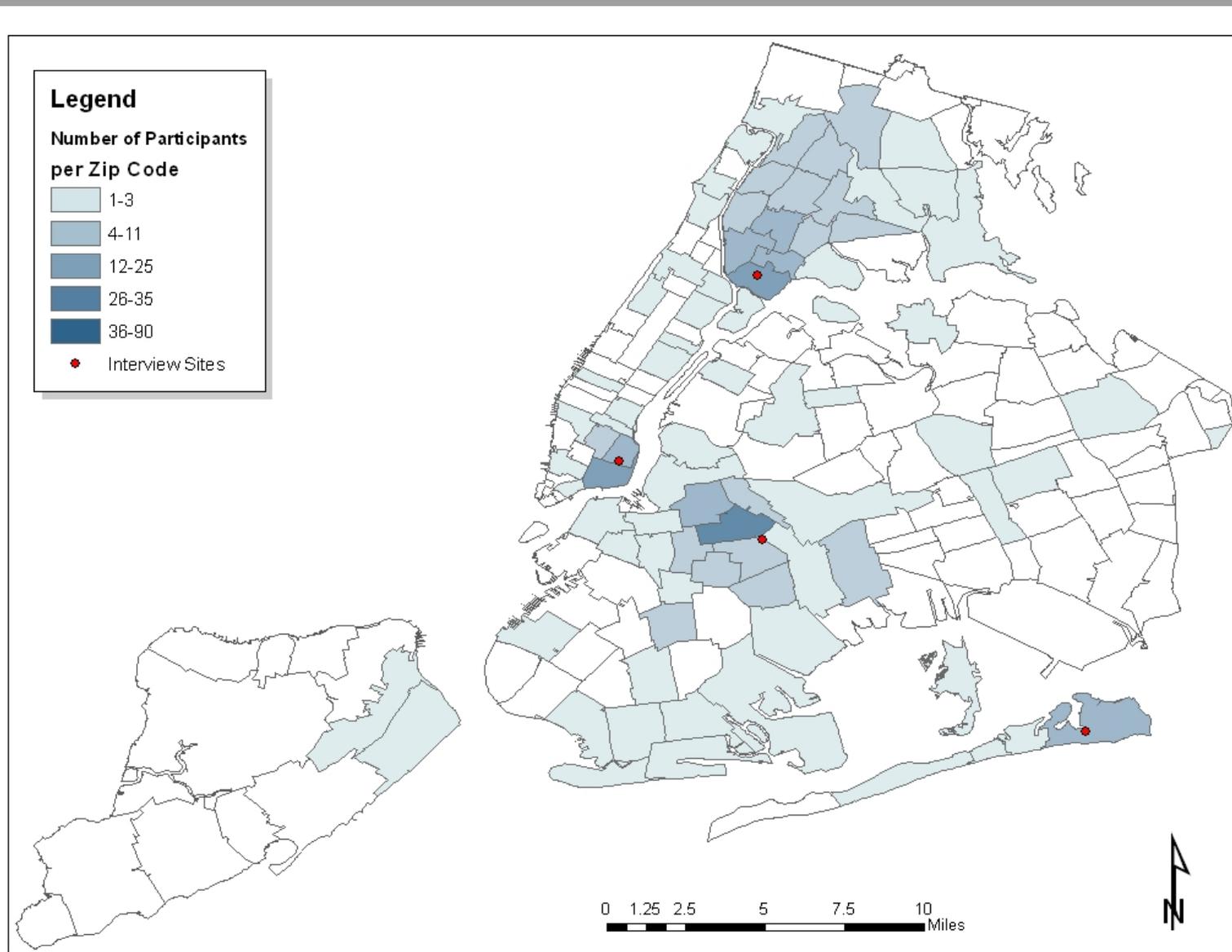
- 38% of distributed coupons yielded a new eligible and complete survey subject

Interview Locations

Syringe Exchange Program	Neighborhood	NHBS Participants	
		n	%
Citiwide Harm Reduction	Mott Haven, Bronx	198	40%
After Hours Project	Bushwick, Brooklyn	164	33%
Lower East Side Harm Reduction Center	Lower East Side, Manhattan	105	21%
AIDS Care Queens County	Far Rockaway, Queens	33	7%

- 86% of subjects traveled to an interview site in their own borough
- 65% traveled to the interview site by walking

Residence and Interview Locations



Social Networks and Recruitment

Respondent-Driven Sampling (RDS)

- Eligible study participants recruit members of their social networks to participate
- Relationship between recruiter and recruit is tracked through serial numbers
- RDS is a variation on snowball sampling that uses mathematical modeling to reduce biases associated with network recruitment.
- Biases include a tendency to recruit others with same traits and for those with large networks to recruit more than those with small networks.

For more information on RDS see: www.respondentdrivensampling.org

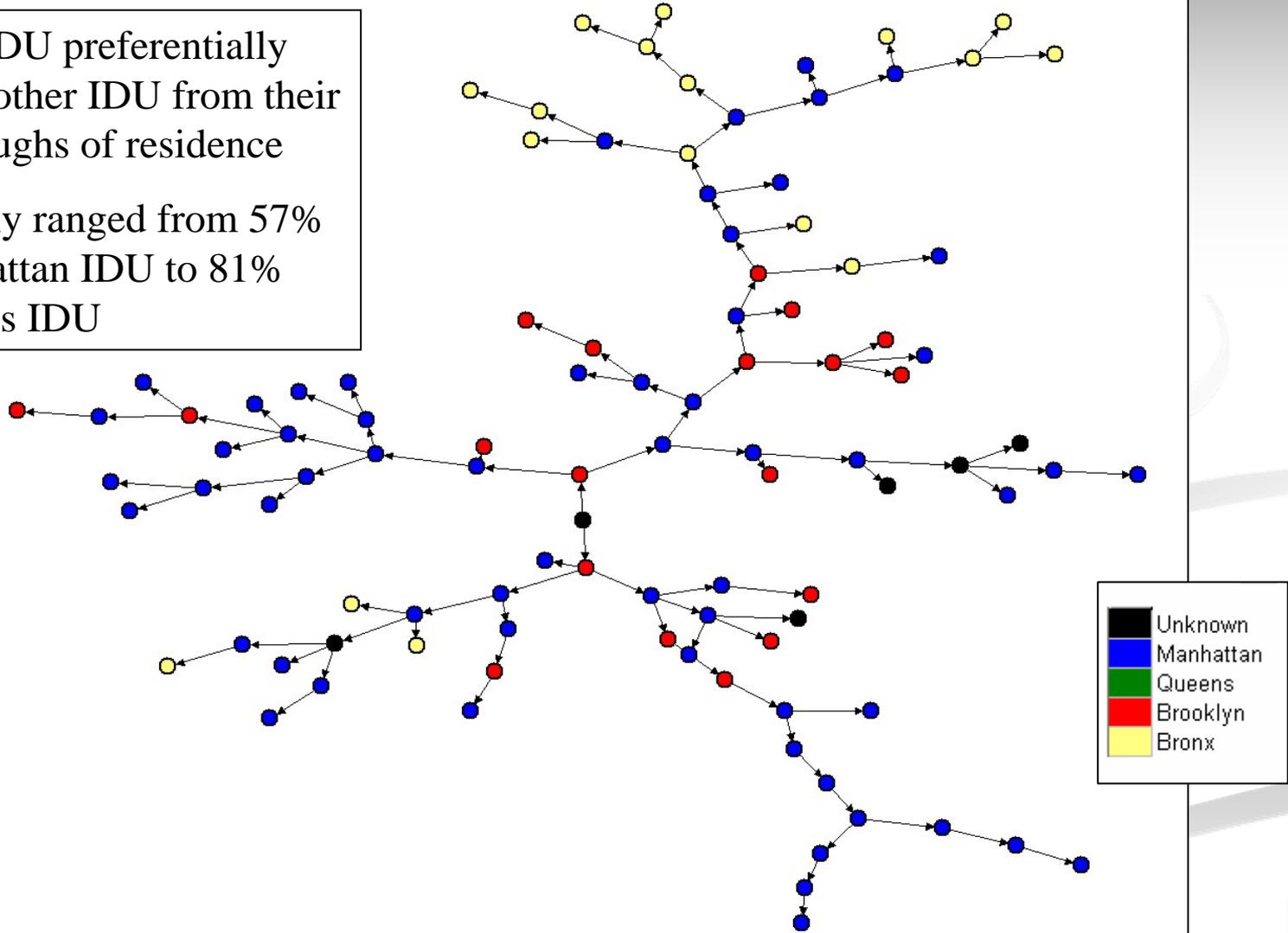
RDS Adjustment: Network Size and Homophily

- Used network size and recruitment patterns to adjust the data (weight variables up or down)
 - Groups with larger network sizes are weighted down
 - Groups with higher in-group recruitment (homophily) are weighted down
- Validity of adjusted population estimates depends on theoretical assumptions of RDS, including an accurate reporting of network size and random recruitment within one's network
- In this presentation, descriptive statistics have been adjusted. Analytic statistics (tests of significance and logistic regression models) have not been adjusted.

Recruitment Patterns by Borough

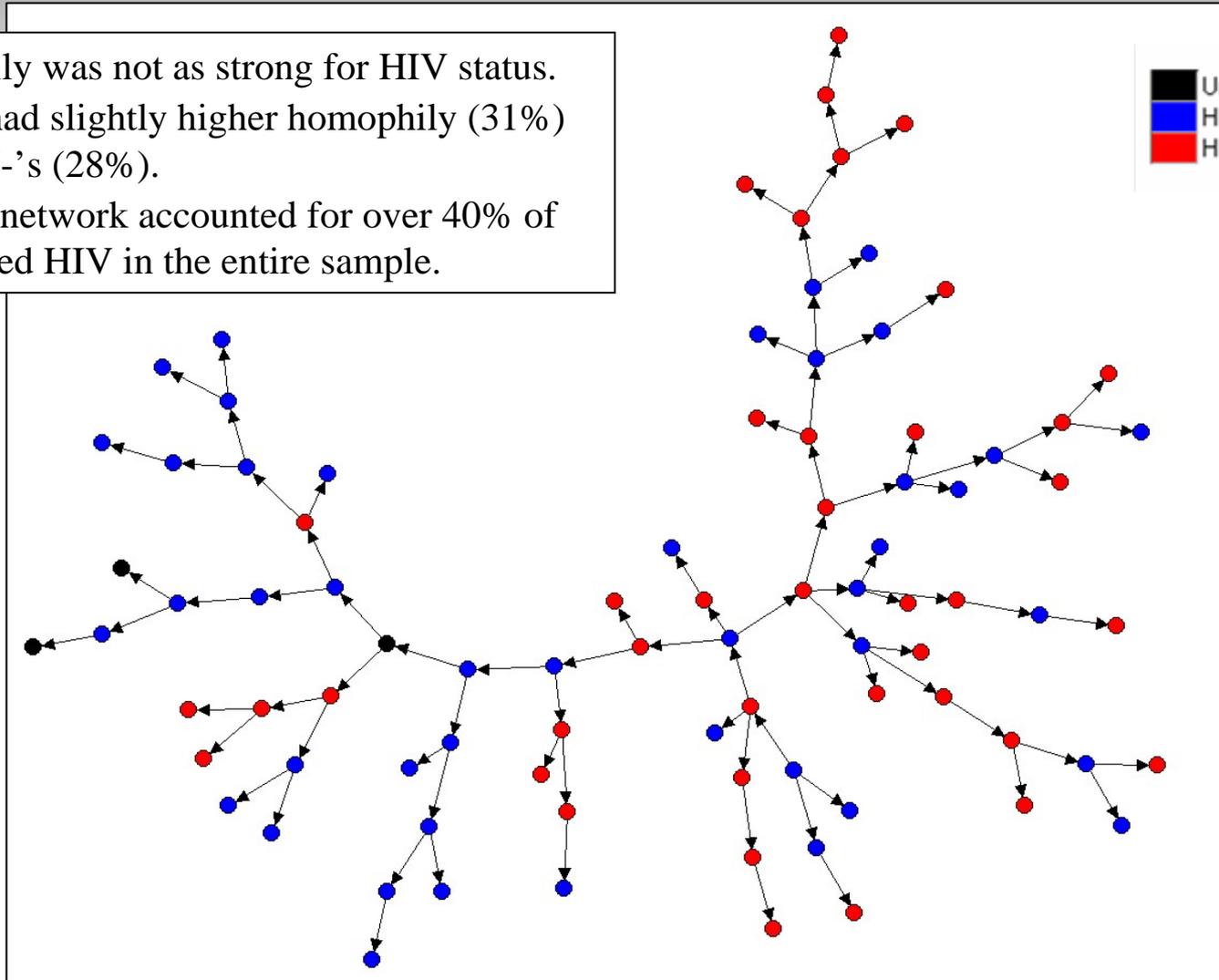
(One recruitment network only, n=101)

- Overall, IDU preferentially recruited other IDU from their own boroughs of residence
- Homophily ranged from 57% for Manhattan IDU to 81% for Queens IDU



Recruitment Patterns by Reported HIV Status (One recruitment network only, n=87)

- Homophily was not as strong for HIV status.
- HIV+'s had slightly higher homophily (31%) than HIV-'s (28%).
- This one network accounted for over 40% of all reported HIV in the entire sample.



NHBS-IDU Results: Demographics

Demographics

(NYC IDU, 2005, n=500)

Gender

Male	71%
Female	27%
Transgender	2%

Age

18 - 29	11%
30 - 39	29%
40 - 49	37%
50 - 59	21%
60+	2%

Race

Hispanic	58%
Black	29%
White	12%
Other	<1%

Sexual Orientation

Heterosexual	87%
Bisexual	8%
Homosexual	5%

Demographics

(NYC IDU, 2005, n=500)

Birthplace

United States	61%
Puerto Rico	35%
Foreign-Born	5%

Homeless

Past Year	42%
Currently (% of Past Year)	77%

Income

\$0 – 5k	40%
\$5k – 10k	29%
\$10k – 15k	13%
\$15k – 20k	5%
≥ \$20k	12%

Education

≤ Some High School	45%
≥ High School Grad	55%

NHBS-IDU Results: HIV Prevalence and Testing History

HIV and HCV Prevalence by Borough (NYC IDU, 2005)

Borough	HIV+ Self-Report	HCV+ Antibody Test
Brooklyn	19%	59%
Bronx	24%	80%
Manhattan	22%	46%
Queens	16%	56%
New York City	22%	58%

- NHBS participants were given the opportunity to have an HIV test. However, self-reported HIV status is considered a more valid measure of HIV prevalence in this study because less than half of participants decided to test and those who reported as HIV+ were less likely to test. The Hepatitis C (HCV) test, in contrast, is considered to be a more valid measure of HCV infection than self-report of HCV because of unknown latent infection.
- There were significant differences between boroughs in IDU self-reporting as HIV+ ($p < 0.0001$) and testing HCV+ ($p < 0.0001$).

HIV Testing History and Reported HIV Status by Age and Gender (NYC IDU, 2005)

	Age			Gender	
	18-24 (n=16)	25-39 (n=178)	40+ (n=306)	Male (n=358)	Female (n=139)
Ever HIV Tested	100%	98%	95%	95%	99%
HIV Tested in Past 12 Months	89%**	73%	64%	69%	67%
Reported HIV+	6%*	17%	27%	24%	17%

*p<0.01 **p<0.001

- The proportion of IDU who HIV tested in the past 12 months significantly differed by age.
- The proportion reporting as HIV+ also differed by age.

HIV Testing History and Reported HIV Status by Race/Ethnicity (NYC IDU, 2005)

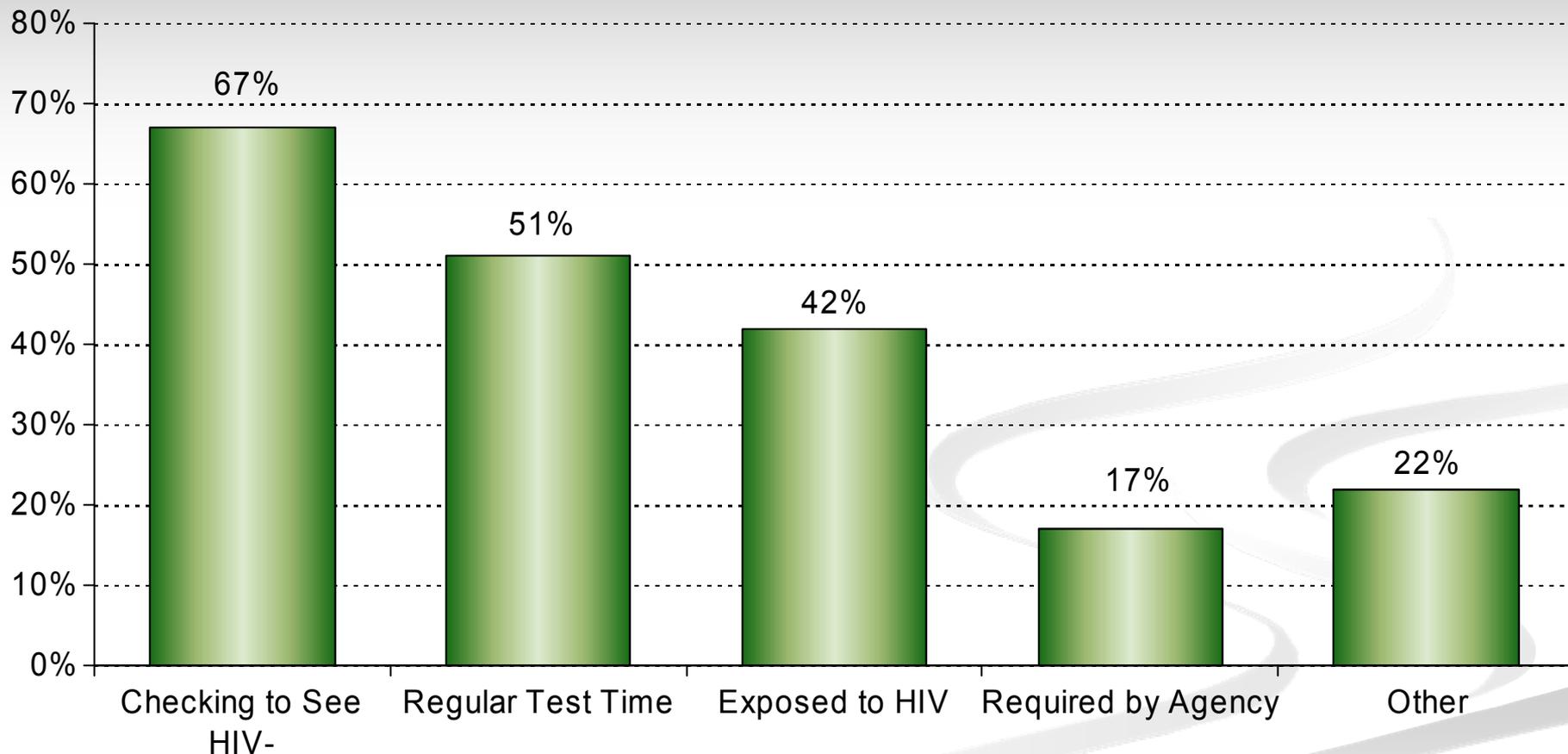
	Black (n=132)	Hispanic (n=284)	White (n=81)
Ever HIV Tested*	93%	99%	94%
HIV Tested in Past 12 Months*	61%	76%	47%
Reported HIV+	25%	17%	22%

*p=0.05

- Adjusted for reported HIV status, Hispanic IDU were 1.8 times more likely than Black IDU to have an HIV test in the past 12 months.
- No significant differences were found in reported HIV prevalence by race.

Reasons for HIV Testing in Past Year (NYC IDU, 2005, n=343)

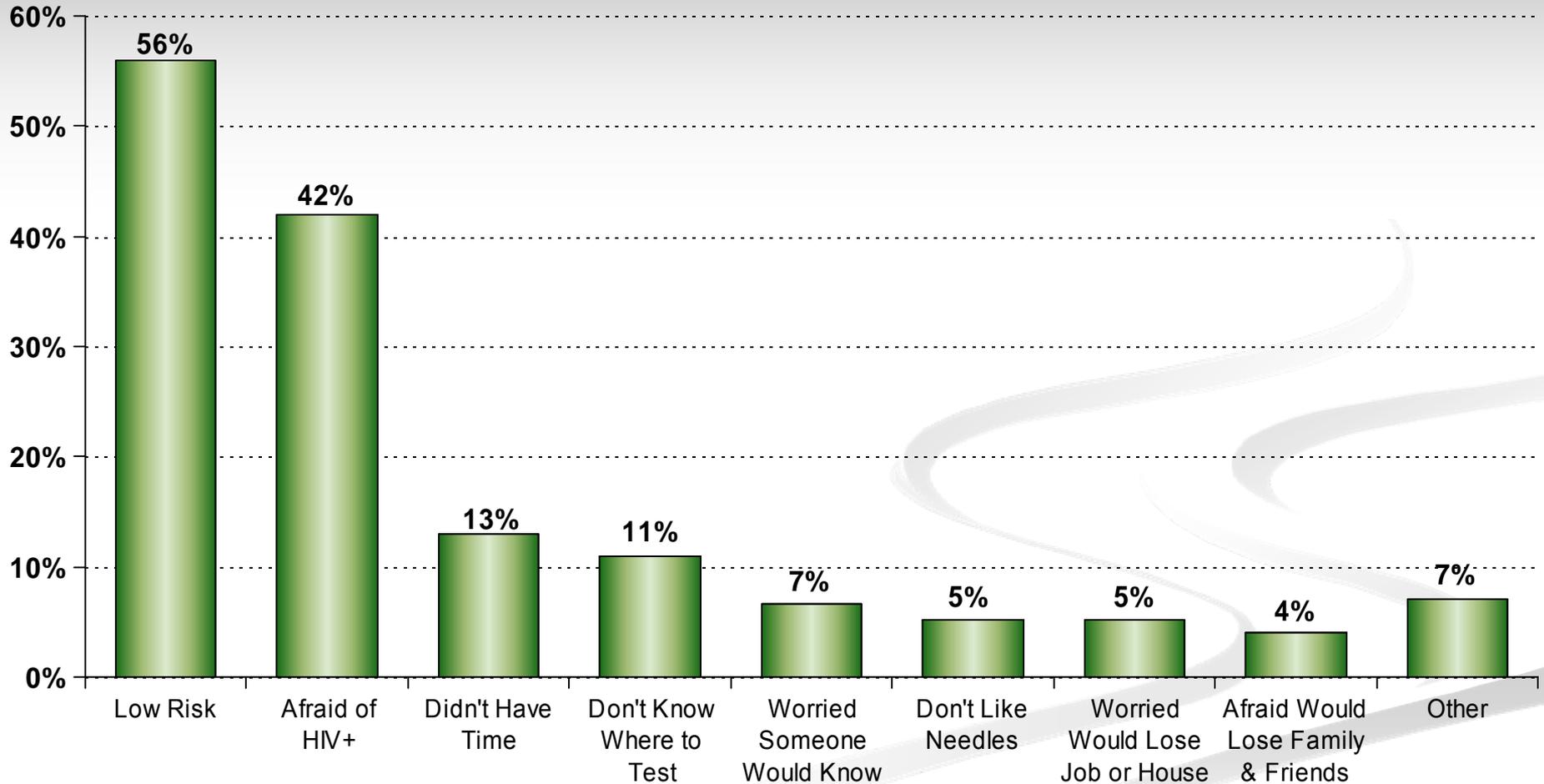
69% had an HIV test in the past year, for these reasons:



Note: Participants could cite more than 1 reason

Reasons for Not HIV Testing in Past Year (NYC IDU, 2005, n=103)

31% of HIV-/Unknown IDU did not have an HIV test in the past year, for these reasons:



Note: Participants could cite more than 1 reason

NHBS-IDU Results: Sexual Risk

Sexual Risk Factors in Past Year

(NYC IDU, 2005)

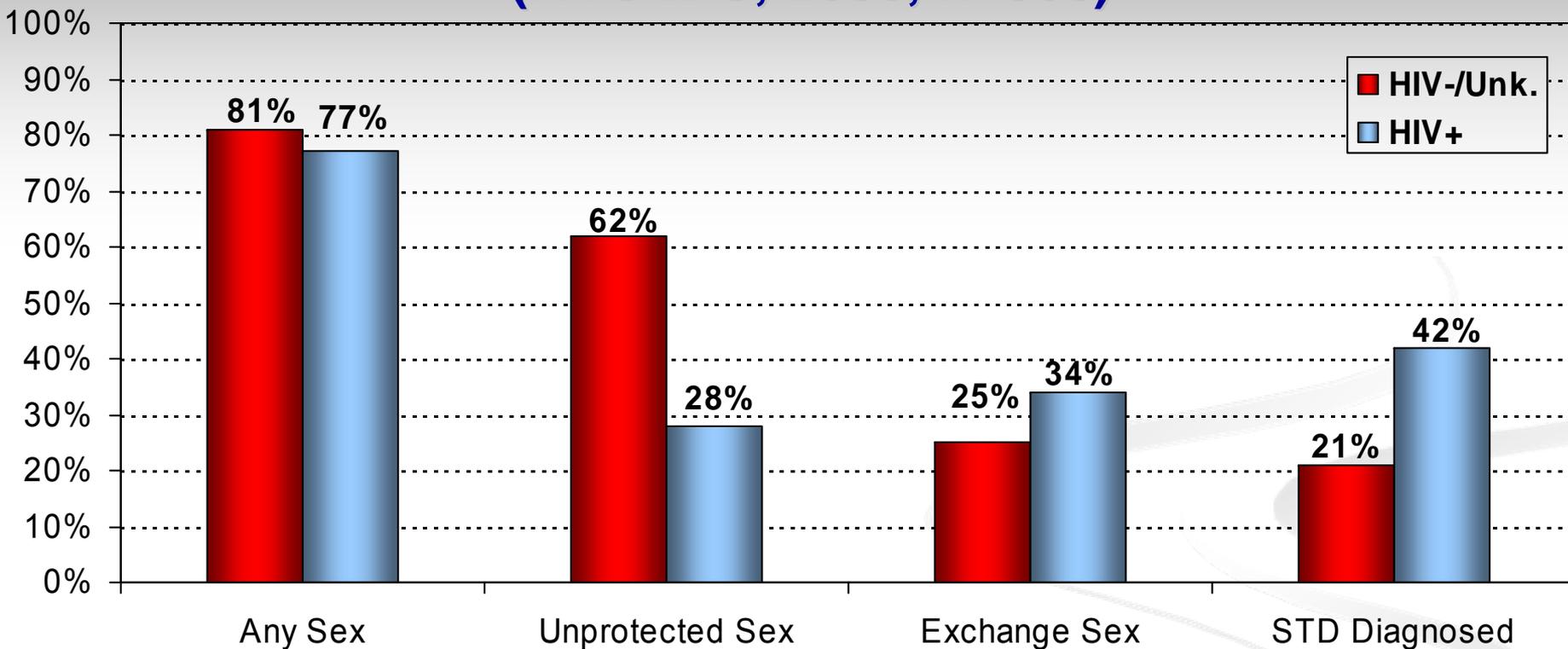
Sexual Risk Factors	Total (n=500)	Males Only (n=358)	Females Only (n=139)
Any Sex*	79%	85%	71%**
MSW Only		75%	
MSM Only		2%	
MSM&W		8%	
Any Unprotected Sex	54%	59%	53%
Exchange Sex***	26%	29%	20%
STD Diagnosed	25%	25%	22%

* Oral, vaginal, or anal sex

** NHBS did not ask about WSW, which may underestimate sexual activity among women. 13% of women reported a homosexual orientation.

*** Exchange sex is sex in which a person either pays for or is paid for sex.

Association of Sexual Risk Factors in Past Year and Reported HIV Status (NYC IDU, 2005, n=500)



- HIV-negative/unknown IDU were 3.7 times more likely than HIV+ IDU to report unprotected sex within the past year ($p < 0.0001$).
- HIV-positive IDU were 2.2 times more likely than HIV-negative/unknown IDU to have an STD diagnosis in the past year ($p < 0.002$).

Association of Unprotected Sex and Demographics (NYC IDU, 2005, n=494)

Demographics	Unprotected		p
	Sex	OR	
Race/Ethnicity			0.001
Black	45%	1.0	
White	62%	1.9	
Hispanic	65%	2.2	
Gender			0.01
Female	50%	1.0	
Male	63%	1.7	
Homeless in Past Year			0.009
No	54%	1.0	
Yes	65%	1.6	
Birthplace			0.0003
United States	53%	1.0	
Puerto Rico	68%	1.8	
Foreign-Born	88%	6.6	

- Hispanic and White IDU were significantly more likely than Black IDU to report unprotected sex.
- Males, the homeless, and the foreign-born were significantly more likely to report unprotected sex.

Multivariate Model to Predict Unprotected Sex

- Constructed a multivariate logistic regression model to predict which factors were associated with unprotected sex among IDU
- Factors in the model included demographics and drug-related risks found to be significantly associated with unprotected sex in bivariate analyses
- Adjusted Odds Ratios show the increased likelihood of unprotected sex with adjustment

Factors Associated with Unprotected Sex (NYC IDU, 2005, n=469)

Predictor Variables	Crude OR (95% CI)	Adjusted OR (95% CI)
Shared Drug Paraphernalia in Past Year Yes vs. No (Reference)	1.7 (1.1 - 2.5)	1.9 (1.1 - 3.2)
Borough of Residence		
Manhattan (Reference)	1.0	1.0
Brooklyn	1.5 (0.9 - 2.5)	2.3 (1.2 - 4.5)
Bronx	1.7 (1.0 - 2.8)	2.4 (1.2 - 5.0)
Queens	2.4 (1.1 - 5.2)	4.6 (1.7 - 12.4)
Shared Syringe in Past Year Yes vs. No (Reference)	2.2 (1.4 - 3.5)	2.5 (1.3 - 4.9)
Alcohol During Sex in Past Year Yes vs. No (Reference)	2.6 (1.8 - 3.7)	2.9 (1.6 - 5.3)
Sexual Orientation		
Homosexual (Reference)	1.0	1.0
Heterosexual	8.1 (2.7 - 24.1)	9.6 (2.8 - 32.9)
Bisexual	12.7 (3.7 - 43.9)	17.8 (4.3 - 73.1)

- Significant risk factors associated with unprotected sex among IDU were sharing of syringes and drug paraphernalia, Brooklyn, Bronx, or Queens borough of residence, use of alcohol during sex, and bisexual orientation

NHBS-IDU Results: Drug-Related Risks

Relationship of Age and Injection History to HIV Status

(NYC IDU, 2005, n=500)

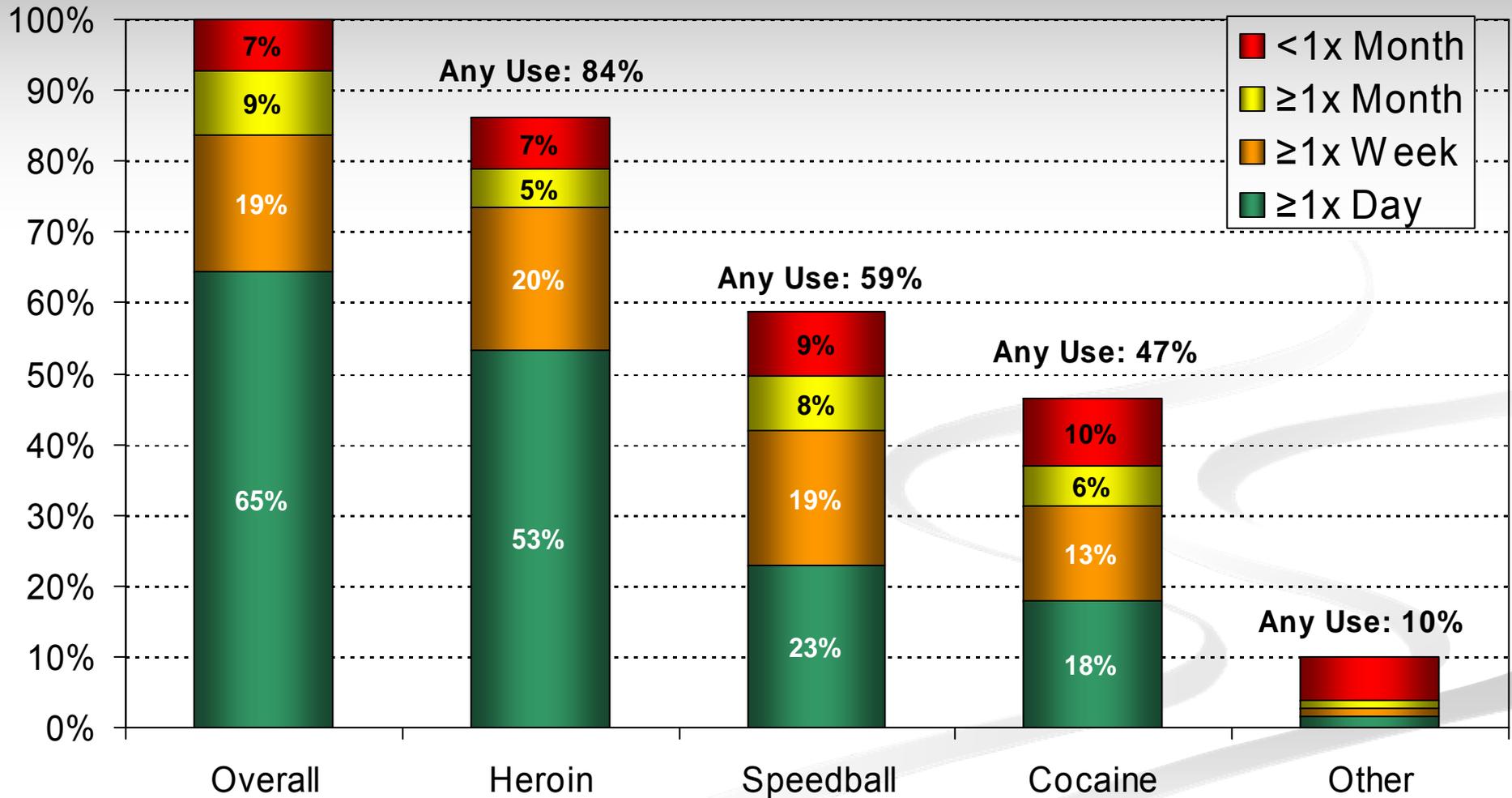
	Reported HIV+ Mean (95% CI)	Reported HIV-/Unknown Mean (95% CI)
Mean Age at Interview*	43.8 (42.2 - 45.4)	41.0 (40.1 - 41.9)
Mean Age at First Injection**	17.8 (16.6 - 19.0)	22.3 (21.4 - 23.1)
Mean Years of IDU**	26.0 (23.8 - 28.2)	18.7 (17.6 - 19.9)
Mean Year of First Injection	1979	1986

* p<0.01 ** p<0.0001

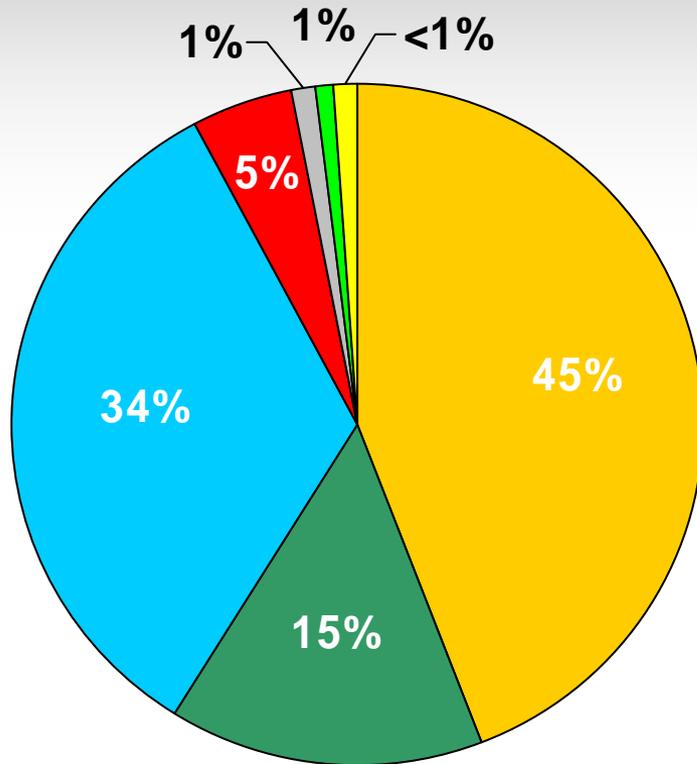
- IDU reporting as HIV+ were significantly more likely to be older, to have started injecting at an earlier age, and to have more years of injection drug use in their past.
- On average, HIV+ IDU began injecting before the discovery of HIV and before the availability of sterile syringes through syringe exchange programs.

Injection Frequency in Past 12 Months

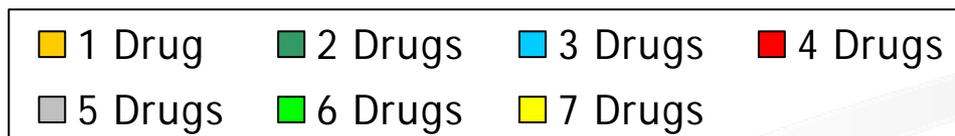
(NYC IDU, 2005, n=500)



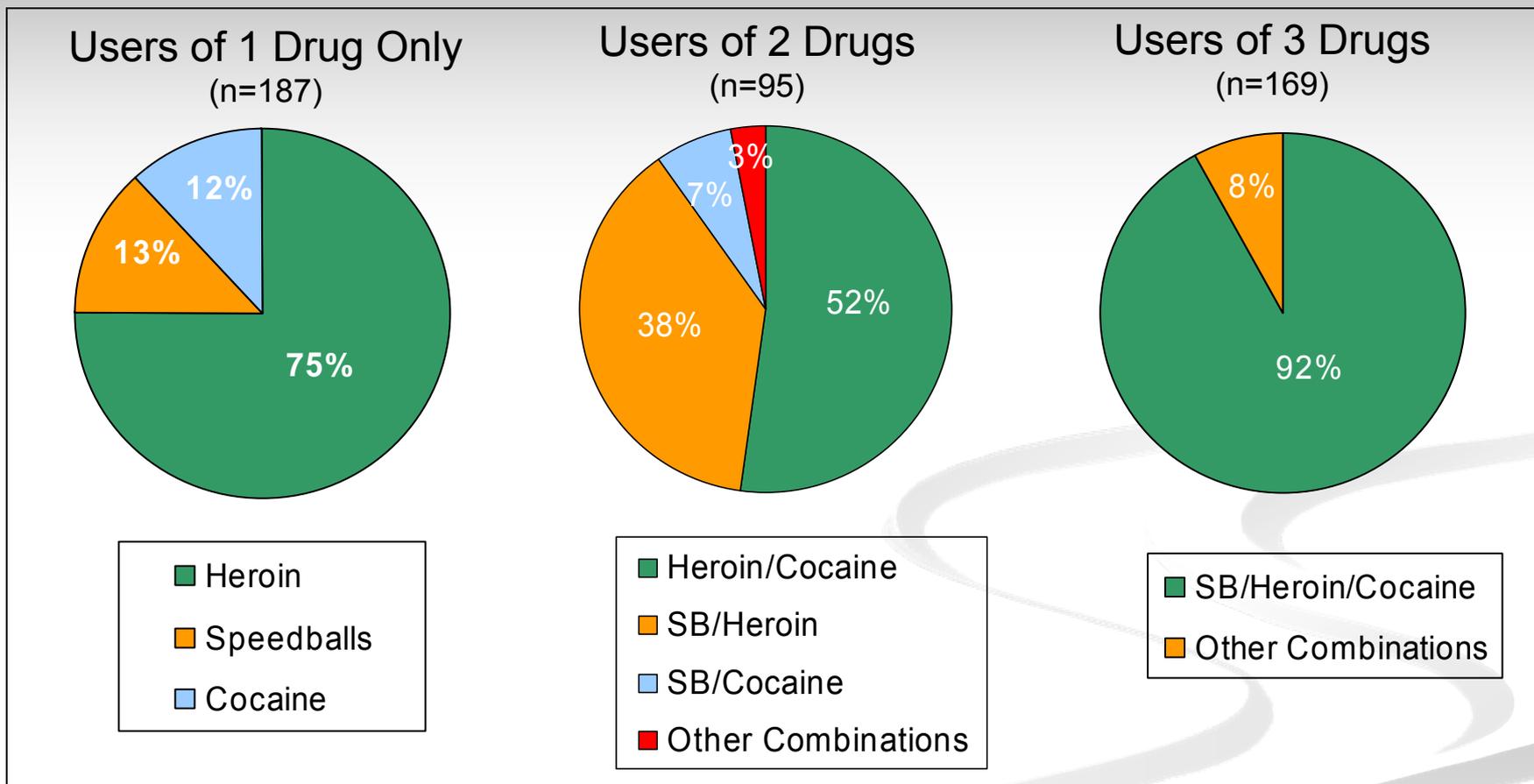
Number of Drug Types Injected in Past Year (NYC IDU, 2005, n=500)



- NHBS asked about injection of the following 7 types of drugs: speedballs, heroin, cocaine, amphetamines, crack, OxyContin, and 'other.'
- Most IDU (94%) injected 1 to 3 types of drugs in the past year.



Types of Drugs Injected by Number of Drugs Injected (NYC IDU, 2005)



- Of those IDU injecting 2 and 3 types of drugs, the majority inject some combination of speedballs, heroin, and cocaine.

Alcohol-Related Risks

(NYC IDU, 2005, n=500)

Overall Alcohol Use

Variable	%
Alcohol Use in Past Year	73
Alcohol Use in Past Month	67
# of Drinks per Day on Average in Past Month	
0	33
1-3	25
4-6	23
7-10	7
11+	12

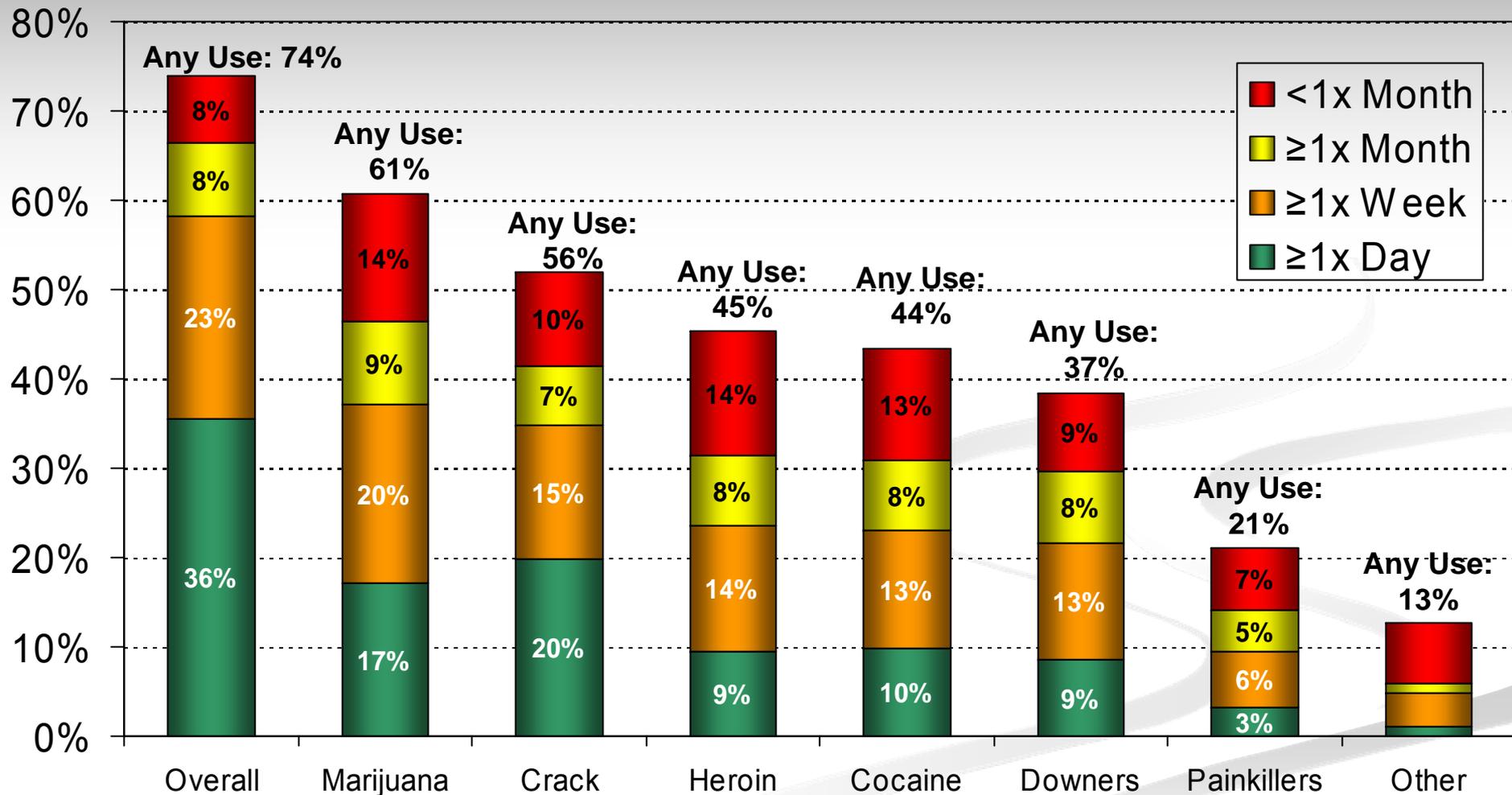
Alcohol Use and Injection Frequency

	>3 Drinks/Day	OR	p
Injection Frequency			0.008
Less than 1x/day	32%	1.0	
At least 1x/day	45%	1.7	

- 42% of IDU had at least 4 drinks per day on average in the past month.
- Overall, there is a significant association between high injection frequency and high alcohol use.

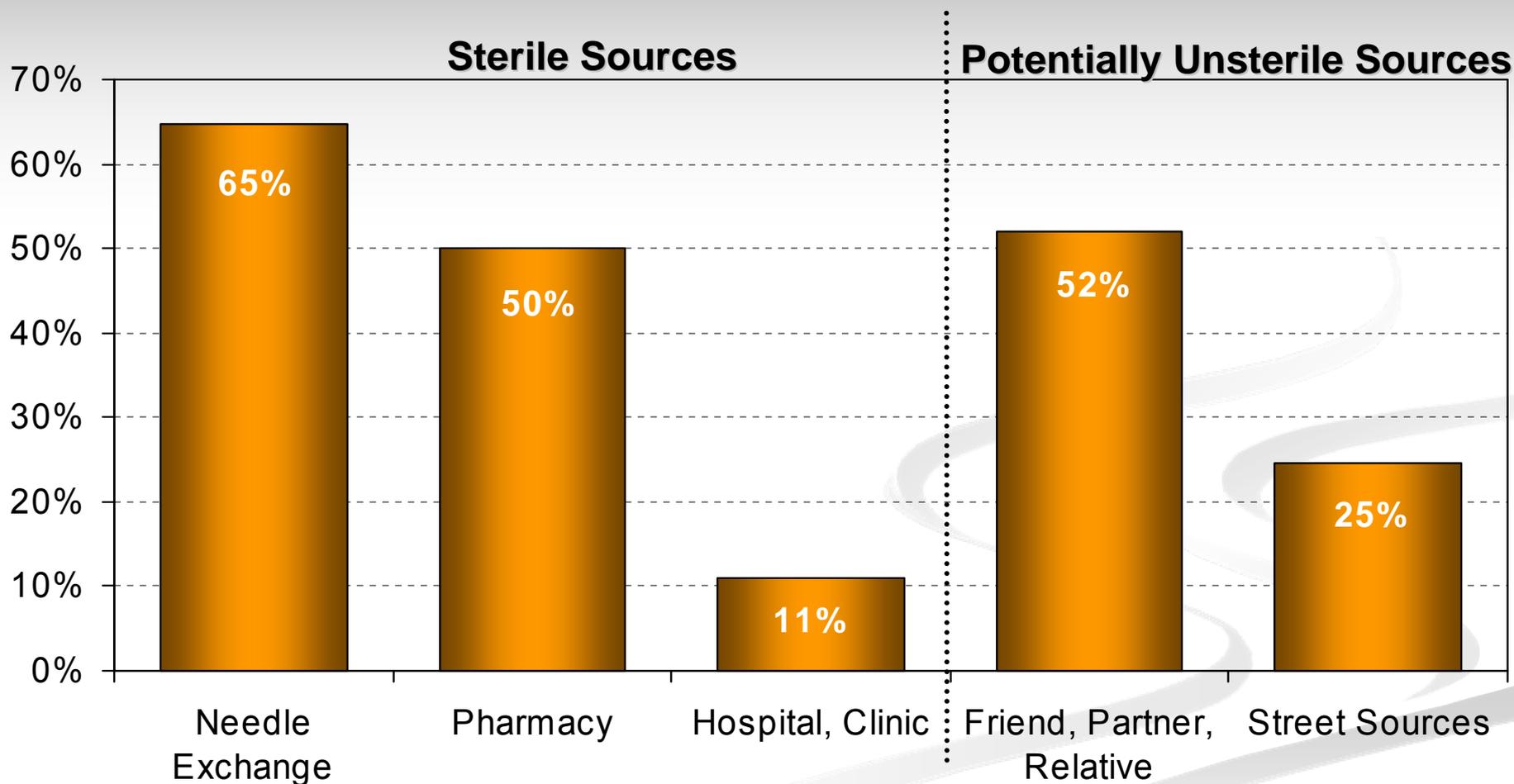
Non-Injection Drug Use in Past 12 Months

(NYC IDU, 2005, n=500)



Source of Syringes in Past 12 Months

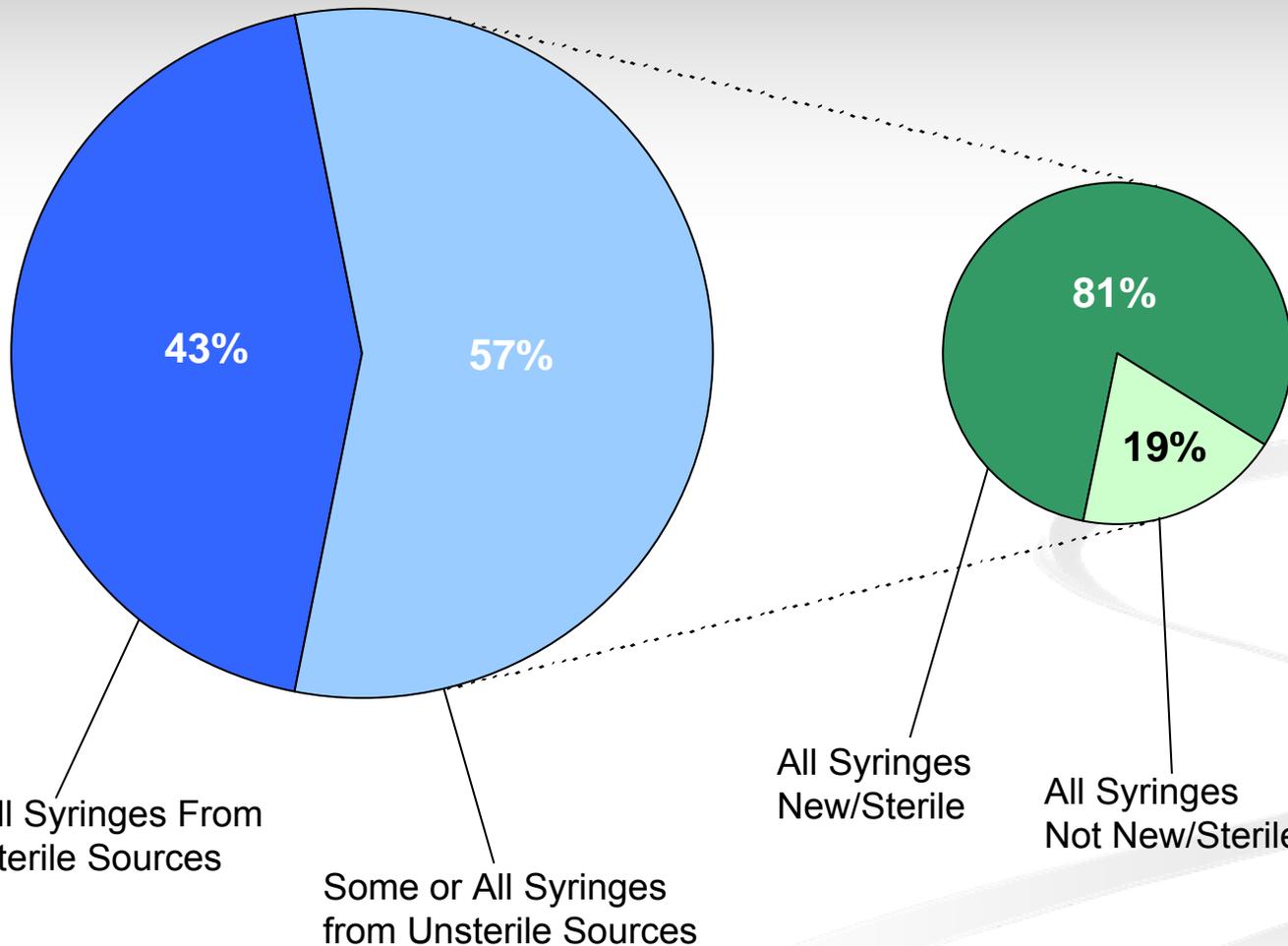
(NYC IDU, 2005, n=500)



* Street sources include "syringe or drug dealers, shooting gallery, hit house, or off the street."

Source vs. Sterility of Syringes

(NYC IDU, 2005, n=500)



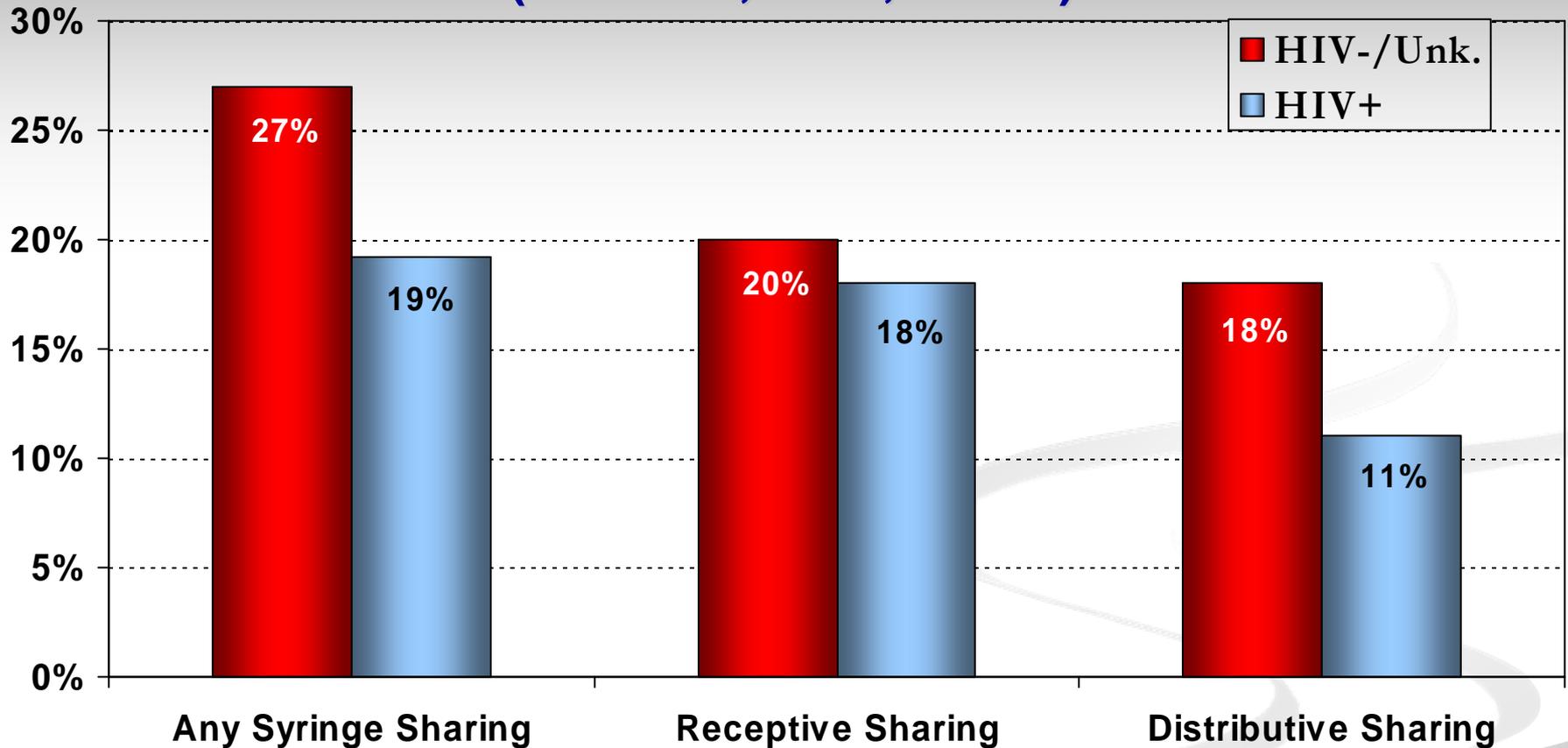
- 57% of IDU acquired syringes from potentially unsterile sources.
- Despite this, 81% of these IDU reported that those syringes were new and sterile despite the source.

Sharing-Related HIV Risk Factors

(NYC IDU, 2005, n=500)

Sharing Risks in Past Year	%
Paraphernalia Sharing Only	24
Shared Cooker	38
Shared Cotton	29
Shared Water	27
Any Syringe Sharing	24
Receptive Sharing (Used after someone else)	19
Distributive Sharing (Given to someone who then used)	16
Any Paraphernalia or Syringe Sharing	48

Association of Syringe Sharing and Reported HIV Status (NYC IDU, 2005, n=500)



- IDU reporting as HIV- or unknown were 3.7 times more likely ($p=0.002$) to receptively share syringes and 2.0 times more likely ($p<0.03$) to distributively share syringes than IDU reporting as HIV+.

Association of Receptive Syringe Sharing and Demographics (NYC IDU, 2005, n=500)

Demographics	Shared	OR	p
Race/Ethnicity			0.09
Black	15%	1.0	
White	21%	1.5	
Hispanic	25%	1.8	
Gender			0.24
Female	18%	1.0	
Male	23%	1.3	
Homeless in Past Year			<0.0001
No	13%	1.0	
Yes	31%	3.0	
Arrested in Past Year			0.006
No	17%	1.0	
Yes	28%	1.9	

- Syringe sharing appeared to be higher among whites and Hispanics compared to blacks, but the difference was not statistically significant.
- IDU who were homeless or who were arrested in the past year were more likely to report syringe sharing.

Association of Receptive Syringe Sharing and Geography (NYC IDU, 2005, n=500)

Geography	Shared	OR	p
Borough of Residence			0.26
Queens	19%	1.0	
Brooklyn	19%	1.0	
Bronx	21%	1.2	
Manhattan	29%	1.8	
Birthplace			0.02
U.S.	18%	1.0	
Puerto Rico	27%	1.6	
Foreign-Born	41%	3.2	

- Syringe sharing appeared to higher in the Bronx and Manhattan, but the difference was not statistically significant.
- IDU who were born in a foreign country or Puerto Rico were significantly more likely to share syringes.

Association of Receptive Syringe Sharing and Drugs Injected in Past Year (NYC IDU, 2005, n=500)

Drugs Injected	Shared	OR	p
Heroin			0.97
No	22%	1.0	
Yes	21%	1.0	
Speedballs			0.002
No	14%	1.0	
Yes	26%	2.1	
Cocaine			0.0001
No	14%	1.0	
Yes	28%	2.4	
Other			<0.0001
No	18%	1.0	
Yes	42%	3.2	

- Syringe sharing did not significantly differ for IDU who used heroin, mainly because the vast majority used heroin.
- The use of speedballs and cocaine was associated with a two-fold higher likelihood of syringe sharing.
- IDU who used other drugs (crack, amphetamines, OxyContin, and others) were over three times more likely to share syringes.

Association of Receptive Syringe Sharing and Drug-Related Factors (NYC IDU, 2005, n=500)

Drug-Related Factors	Shared	OR	p
“Shooting Gallery”* Attendance			<0.0001
No	15%	1.0	
Yes	35%	3.0	
Ever in Drug Treatment			0.04
No	11%	1.0	
Yes	23%	2.3	
Number of Drugs Injected			0.0001
1-2	15%	1.0	
>2	29%	2.3	
Frequency of Injection			0.005
1x Week or less	3%	1.0	
More than 1x Week	23%	10.3	

- IDU who inject in public or semi-public injection locales (“shooting galleries”) are 3 times more likely to report receptive syringe sharing.
- IDU who were ever in a drug treatment program are 2.3 times more likely to report sharing.
- IDU who inject more than 2 substances, or who inject more frequently, are more likely to report sharing.

* “Shooting Gallery” includes a hit house, a dealer’s house or other place where people go specifically to inject drugs.

Association of Receptive Syringe Sharing and Syringe Source (NYC IDU, 2005, n=500)

Predictor Variable	Shared	OR	p
All Syringes from Unsterile Sources			<0.0001
No	9%	1.0	
Yes	29%	4.1	
Number of Syringe Source Categories in Past Year (SEP, pharm., MD, friend, street sources*)			<0.0001
One Source	11%	1.0	
Two Sources	19%	1.8	
Three Sources	29%	3.3	
Four Sources	37%	4.7	
Five Sources	50%	7.9	

- Acquiring all syringes from potentially unsterile sources (friends or street sources*) in the past year was significantly associated with syringe sharing.
- As the number of syringe sources increases, so does the likelihood of sharing syringes. IDU who have acquired syringes from five sources are nearly 8 times as likely to share syringes as IDU who acquired syringes from one source.

* Street sources include “syringe or drug dealers, shooting gallery, hit house, or off the street.”

Multivariate Model to Predict Receptive Syringe Sharing

- Constructed a multivariate logistic regression model to predict which factors were significantly associated with receptive syringe sharing
- Factors in the model included demographics, drug-related risks, and sexual risks found to be significantly associated with unprotected sex in bivariate analyses
- Adjusted Odds Ratios show the increased likelihood of receptive syringe sharing after adjustment

Factors Associated with Receptive Syringe Sharing (NYC IDU, 2005, n=498)

Predictor Variable	Crude OR (95% CI)	Adjusted OR (95% CI)
Number of Drugs Injected (Past Year) >2 vs. 1-2 (Reference)	2.3 (1.5 - 3.6)	1.9 (1.0 - 3.6)
Homeless (Past Year) Yes vs. No (Reference)	3.0 (1.9 - 4.8)	2.0 (1.0 - 4.0)
Sexual Orientation		
Heterosexual (Reference)	1.0	1.0
Homosexual	2.0 (0.8 - 4.8)	3.4 (1.1 - 10.5)
Bisexual	2.1 (1.1 - 4.1)	4.0 (1.1 - 13.7)
Unprotected Sex (Past Year) Yes vs. No (Reference)	2.2 (1.3 - 3.5)	2.5 (1.2 - 5.2)
Arrested (Past Year) Yes vs. No (Reference)	1.9 (1.2 - 2.9)	2.6 (1.4 - 4.9)
All Syringes from Unsterile Sources Yes vs. No (Reference)	4.1 (2.4 - 7.0)	6.2 (3.0 - 13.0)

- Factors significantly associated with receptive syringe sharing are the number of drugs injected, homelessness, sexual orientation, unprotected sex, arrest history, and syringe source

Multivariate Model to Test Association between Receptive Syringe Sharing and Syringe Source

- Because of the importance of the aggregate syringe source variable (All Syringes from Unsterile Sources) in the multivariate model, we revised the model to include individual syringe sources
- Many IDU acquire syringes from multiple sources
 - The crude odds ratio shows the bivariate association between source and syringe sharing
 - The adjusted odds ratio takes into account acquiring syringes from multiple sources, as well as the same demographic, drug-related, and sexual risk factors in the original multivariate model

Association of Receptive Syringe Sharing and Syringe Source (NYC IDU, 2005, n=498)

Syringe Source	Shared	Crude OR (95% CI)	Adjusted OR (95% CI)
Syringe Exchange			
No	22%	1.0	1.0
Yes	21%	0.9 (0.6 - 1.5)	0.55 (0.31 - 0.99)
Medical Provider			
No	21%	1.0	1.0
Yes	21%	1.0 (0.5 - 2.0)	0.9 (0.4 - 2.0)
Pharmacy			
No	16%	1.0	1.0
Yes	27%	1.9 (1.2 - 3.0)	1.2 (0.7 - 2.0)
Street Sources*			
No	14%	1.0	1.0
Yes	39%	3.7 (2.4 - 5.9)	2.0 (1.2 - 3.6)
Friend			
No	13%	1.0	1.0
Yes	28%	2.6 (1.7 - 4.2)	2.2 (1.2 - 3.8)

- Acquiring syringes from an exchange program *reduces* the likelihood of receptive syringe sharing.
- Acquiring syringes from friends or street sources* *increases* the likelihood of receptive syringe sharing.

* Street sources include "syringe or drug dealers, shooting gallery, hit house, or off the street."

Acquired Sterile Syringes by UHF

(NYC IDU, 2005, n=500)

No Syringes from a Sterile Source

UHF of Residence*	No Syringes
Bed. Stuy. - Crown Heights	32%
Williamsburg - Bushwick	25%
Crotona - Tremont	14%
Hunts Point - Mott Haven	12%
Fordham - Bronx Park	12%
Rockaway	12%
High Bridge - Morrisania	5%
Union Square - Lower East Side	3%
NYC Average (all UHFs)	14%

No Syringes from an Exchange Program

UHF of Residence*	No Syringes
Rockaway	54%
Williamsburg - Bushwick	52%
Bed. Stuy. - Crown Heights	45%
Fordham - Bronx Park	24%
Hunts Point - Mott Haven	19%
Crotona - Tremont	18%
High Bridge - Morrisania	11%
Union Square - Lower East Side	5%
NYC Average (all UHFs)	28%

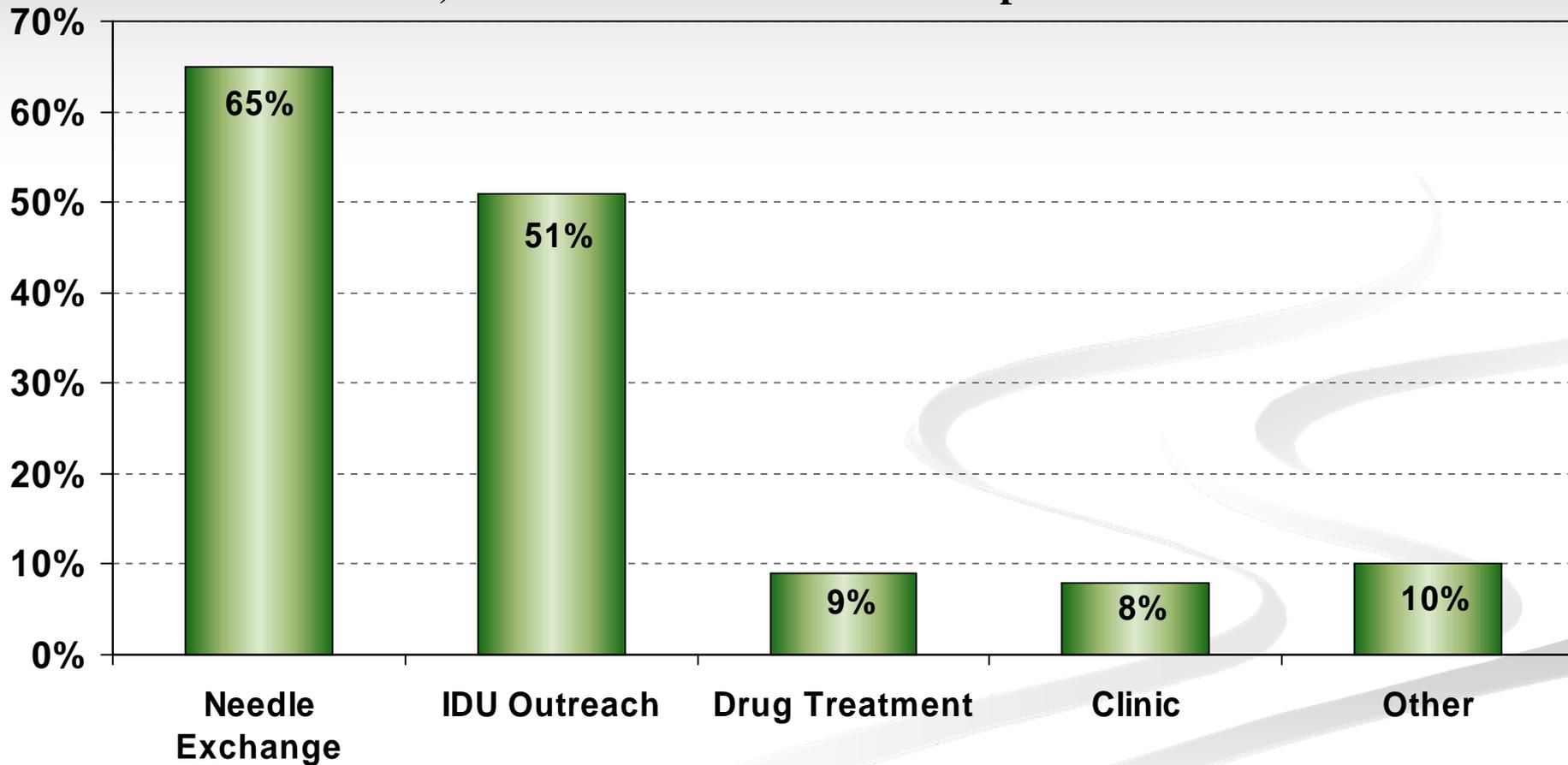
* Includes only UHFs with at least 15 NHBS-IDU participants. NYC average includes all UHFs with at least one study participant.

- Compared to the NYC average, those in Williamsburg & Bushwick were 4.3 times ($p < 0.0001$) and those in Rockaway were 3.1 times ($p < 0.01$) less likely to acquire syringes from a SEP.
- Compared to all NYC IDU, those in Bedford Stuyvesant & Crown Heights were 3.2 times ($p < 0.02$) and those in Williamsburg & Bushwick were 3.1 times ($p < 0.0001$) less likely to acquire syringes from a sterile source.

NHBS-IDU Results: Prevention and Treatment Program Participation

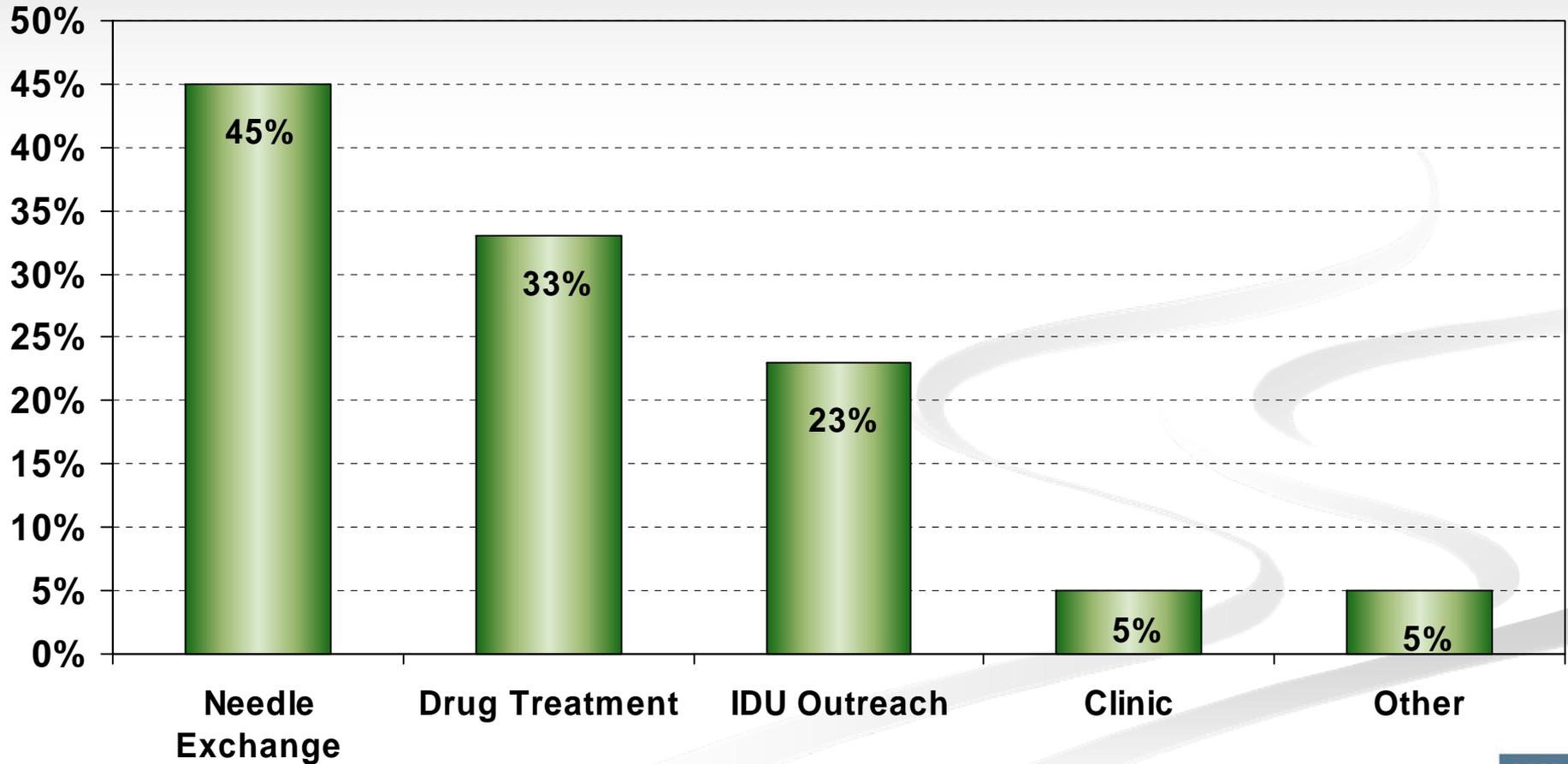
Participation in HIV Prevention Activities: Free Condoms (NYC IDU, 2005, n=393)

Overall, 74% received free condoms in past 12 months.



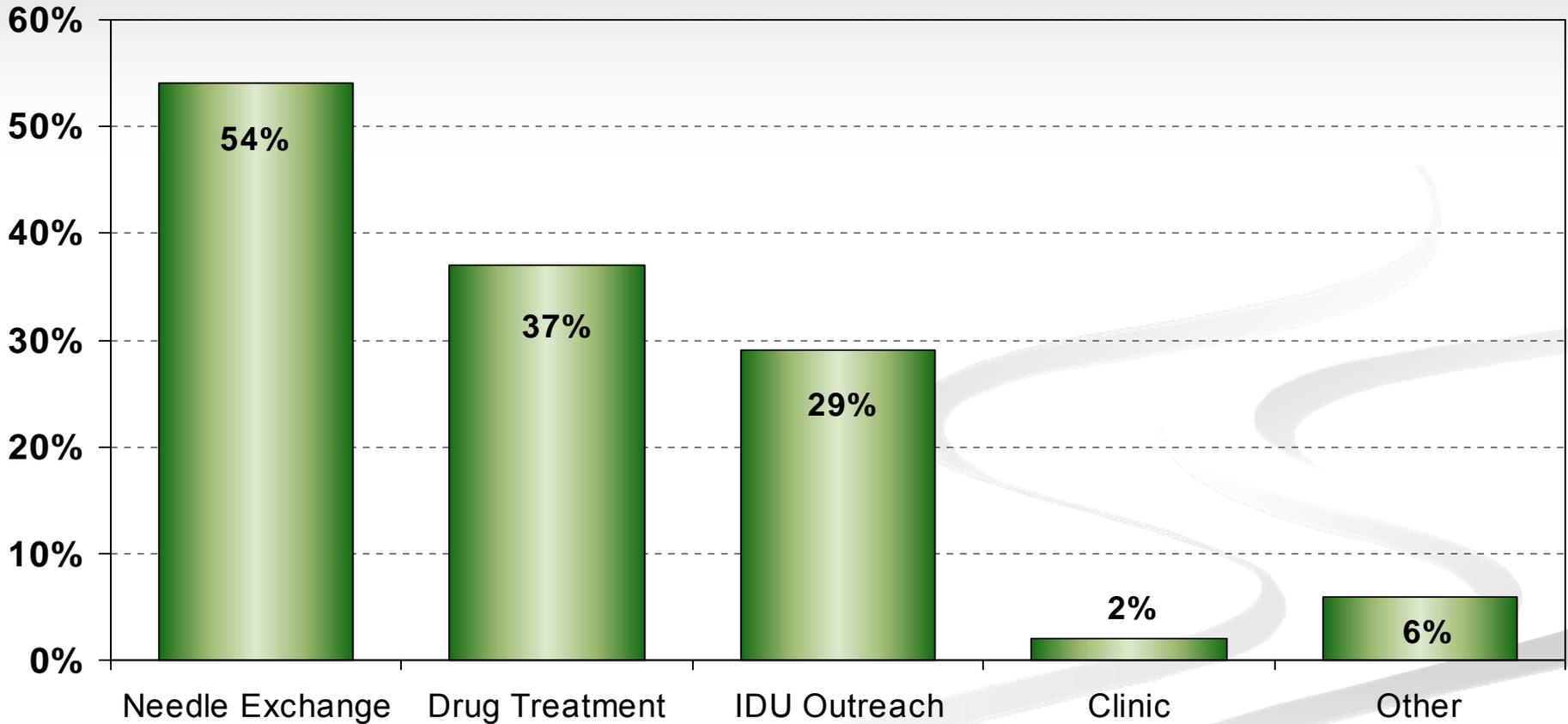
Participation in HIV Prevention Activities: One-on-One Counseling (NYC IDU, 2005, n=208)

Overall, 35% received HIV prevention counseling in past 12 months.



Participation in HIV Prevention Activities: Group Counseling (NYC IDU, 2005, n=211)

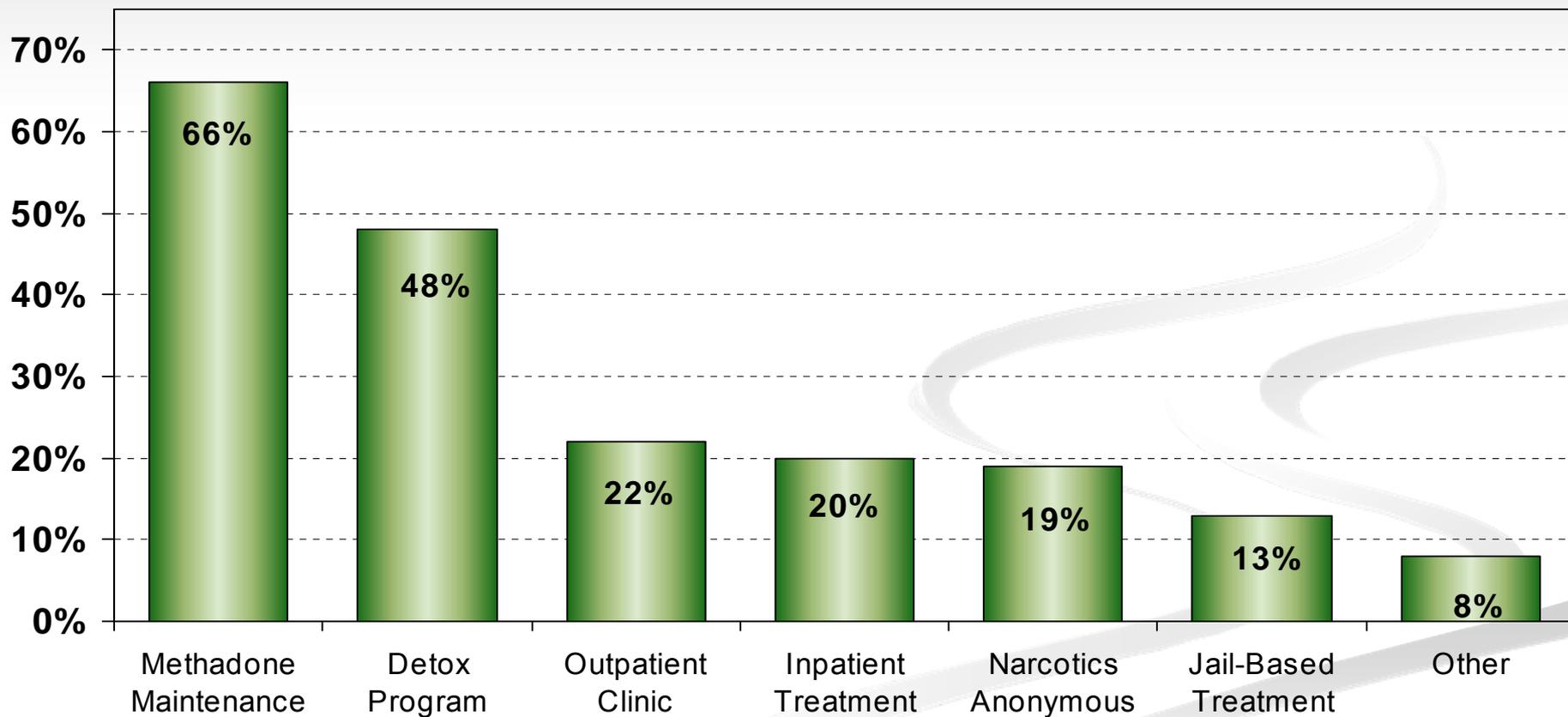
Overall, 39% received group HIV prevention counseling in past 12 months.



Participation in Drug or Alcohol Treatment Programs

(NYC IDU, 2005, n=500)

Overall, 52% received drug or alcohol treatment in the past 12 months.



Conclusions

Conclusions

- Self-reported HIV prevalence among IDU in NYC is 22%. HIV prevalence is highest among Bronx IDU (24%).
- Tested Hepatitis C prevalence among IDU is 58% in NYC. HCV prevalence is highest among Bronx IDU (80%).
- NYC IDU have high rates of unprotected sex (54%) and recent STD diagnoses (25%).
- HIV+ IDU were less likely to have unprotected sex than HIV-IDU, but more likely to have had a recent STD diagnosis.
- Age and years of injection are significantly higher among HIV+ IDU compared to HIV-IDU. On average, HIV+ IDU began injecting before the discovery of HIV while HIV-IDU began injecting after the discovery of HIV.

Conclusions

- NYC IDU mainly inject heroin, but also inject cocaine and speedballs. 65% of IDU inject drugs at least once a day.
- Marijuana and crack are the two most widely used non-injection drugs among NYC IDU. On average, IDU use non-injection drugs less frequently than injection drugs.
- 65% of NYC IDU have acquired syringes from an exchange program in the past year, which is higher than a pharmacy (50%), medical provider (11%), friend or relative (52%), or street sources (25%).
- 24% of NYC IDU report sharing syringes in the past year. Receptive syringe sharing is more common (19%) than distributive syringe sharing (16%). HIV+ IDU are significantly less likely to share syringes.

Conclusions

- Certain subpopulations of NYC IDU, including bisexual IDU, homeless IDU, and foreign-born IDU, are at greatly increased HIV risk through both sexual and sharing-related behaviors.
- Acquiring syringes only from potentially unsterile sources is the strongest predictor of syringe sharing among NYC IDU.
- IDU who report acquiring syringes from syringe exchange programs were less than half as likely to receptively share syringes.
- Syringe exchange programs are the most common source for free condoms and HIV prevention counseling.
- Unprotected sex and syringe sharing are strongly associated. The relationship of sexual and drug-related HIV risk is an important HIV prevention focus.

Strengths & Limitations

- Strengths
 - NHBS-IDU is the first citywide survey of HIV in active injection drug users in New York City
 - Sampling outside traditional venue-based or institutional settings may yield a more representative IDU population
 - Large dataset with multiple HIV risk factors
 - National, standardized survey and protocol
 - Extensive formative research supporting data collection
 - Local questions developed to explore issues relevant specifically to NYC IDU
 - Estimates of risk among NYC IDU similar to existing research¹
- Limitations
 - May not be a representative sample of the IDU population in NYC despite RDS adjustment
 - HIV status, risk behaviors, and other self-reported data may be misreported
 - Geographical gaps in recruitment do not allow for targeted neighborhood analyses

¹Des Jarlais, D. C., Perlis, T., Arasteh, K., et al. (2005). Reductions in hepatitis C virus and HIV infections among injecting drug users in New York City, 1990-2001. *AIDS*, 19 (Supplement 3), S20-S25.

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