

# **HIV Risk and Prevalence among New York City Injection Drug Users**

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2015 National HIV Behavioral Surveillance Study



# Background & Methods

# Background

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- NYC has a large population of IDUs
- In 2014, 2% of new HIV diagnoses in NYC were attributable to injection drug use (direct injection risk)
- The number of new HIV diagnoses among people with a history of injection drug use (IDU) in NYC has decreased over the course of the epidemic
  - Largely based on the success of sterile syringe access programs and increased safe injection practices by NYC IDUs
- Yet ongoing sexual and injection-related risk among IDU persist

# National HIV Behavioral Surveillance (NHBS)

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- 20 metropolitan statistical areas throughout the United States
- Funded by CDC, designed collaboratively
- Ongoing, cyclical study of three risk groups: *men who have sex with men, IDU, and heterosexuals at increased risk of HIV infection*
- Cross-sectional study design
- Fourth cycle of NHBS-IDU data collection in 2015

# NHBS Objectives

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

# NHBS-IDU4 Eligibility Criteria

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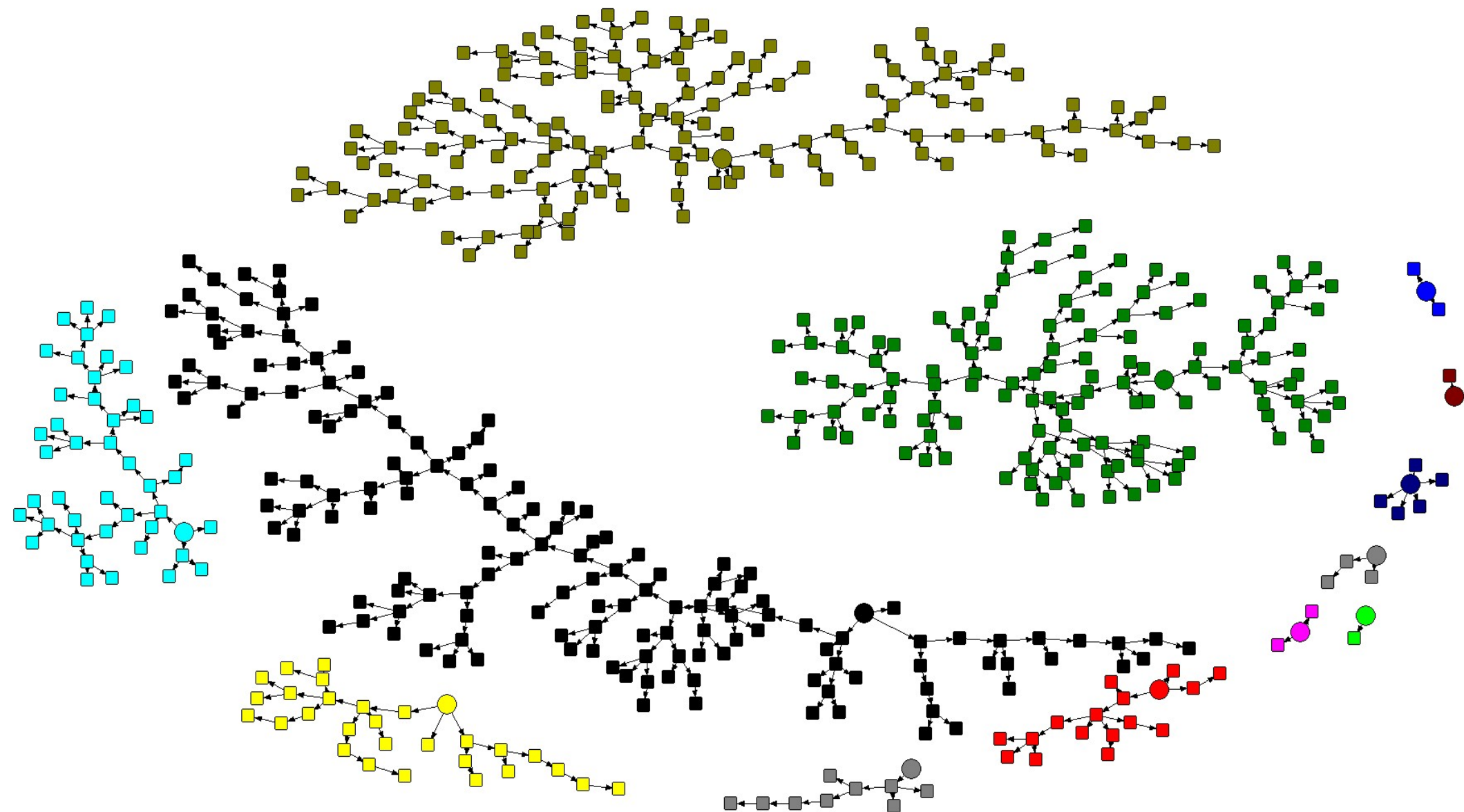
- Injected drugs not prescribed for participant in past 12 months
  - Verified through visible signs of injection (e.g., track marks) and/or knowledge of injection practices
- At least 18 years old
- Resident of NYC metropolitan statistical area
- Speaks English or Spanish

# Respondent-Driven Sampling (RDS)

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1. Study team recruit initial participants (“seeds”) through street and facility-based outreach
2. Seeds then recruit 3-5 other participants who meet the eligibility criteria
3. Each of those 3-5 participants then recruits 3-5 more, and so on until the target sample size is met
  - Study team continually monitors recruitment chains to ensure demographic representativeness
  - Study incentives provided for the survey, blood tests, and peer recruitment
  - *See [www.respondentdrivensampling.org](http://www.respondentdrivensampling.org) for more information*

# NHBS-IDU4 Recruitment Network Diagram





# NHBS-IDU4 Statistical Analysis

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- Weighted analysis conducted with RDS Analysis Tool (RDSAT) 7.1 and SAS 9.3
- RDS weighting may reduce recruitment biases common in chain-referral methods (preferential in-group recruitment [homophily] and large networks)
- If methodological assumptions are met, RDSAT may estimate generalizable population proportions (%'s) but not population sizes (n's)

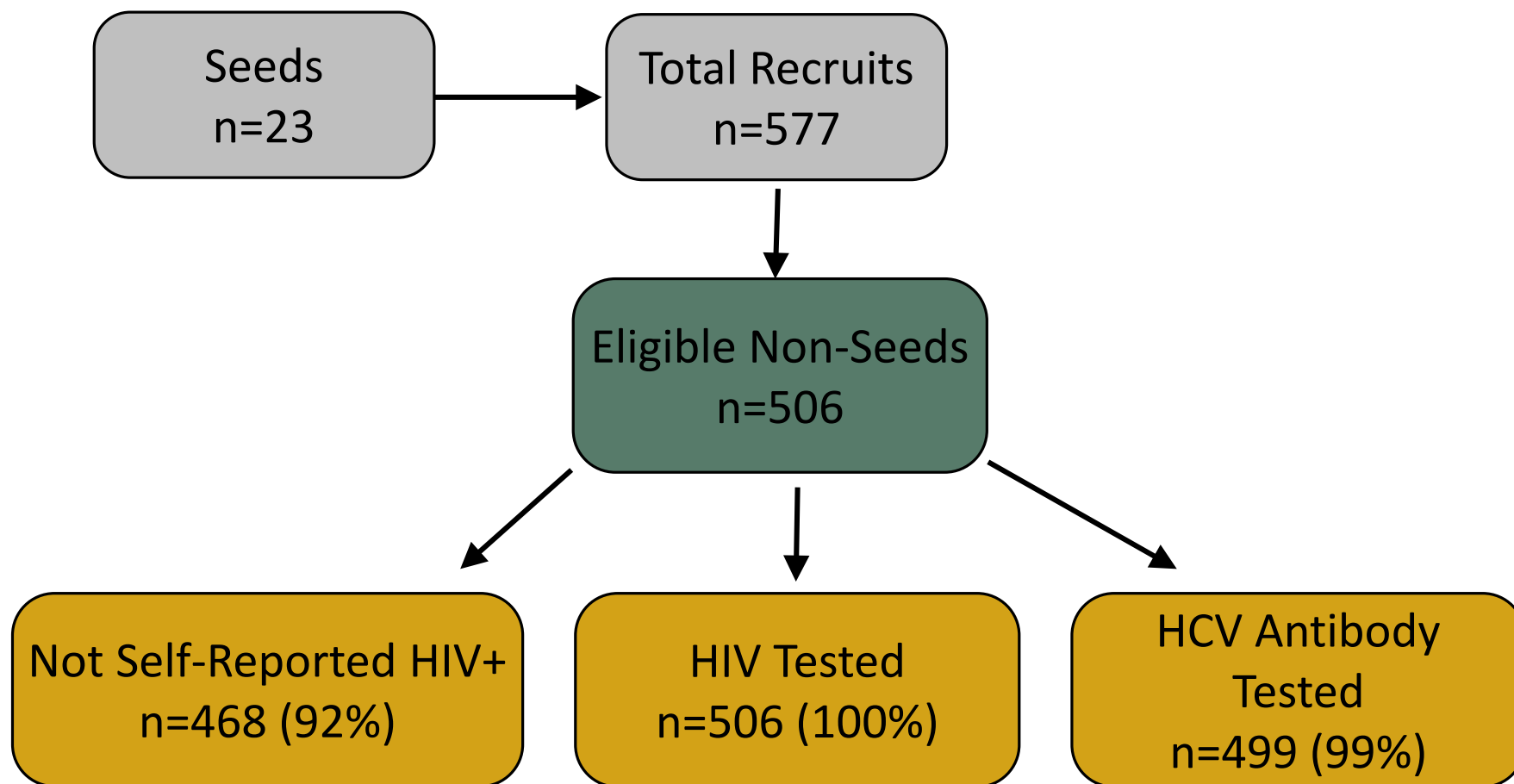
# NHBS-IDU4 Statistical Analysis

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- Basic descriptive frequencies of demographics, risks, and use of HIV testing and prevention services
- Chi-square tests (categorical variables) and Wilcoxon tests (non-normal continuous variables) were used to compare differences in risk among IDUs who did not self-report as HIV-positive (n=468)
- Overall prevalence of HIV infection determined by confirmed Western Blot
- Seeds (n=23) excluded from all analyses

# NHBS-IDU4 Sample

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# Sociodemographics

# Demographics

NYC NHBS-IDU4, 2015, n=506

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## Race/Ethnicity

Hispanic/Latino	45%
Black	40%
White	15%
Other	1%

## Age

18-29	12%
30-39	24%
40-49	31%
50+	33%

## Gender

Male	58%
Female	40%
Transgender	2%

## Birthplace

United States	81%
Puerto Rico	17%
Foreign	2%

# Demographics

NYC NHBS-IDU4, 2015, n=506

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## Income

Less than \$10k/year	73%
\$10k or more/year	27%

## Education

<High School	34%
High School Grad+	66%

## Marital Status

Never Married	60%
Currently Married	18%
Previously Married	21%

## Sexual Identity

Heterosexual	83%
Homosexual/Bisexual	17%

# Demographics

NYC NHBS-IDU4, 2015, n=506

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## Homelessness

Past 12 months	61%
Currently	48%

## Jailed for more than 24 hours

Past 12 Months	32%
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## Borough of residence

Bronx	40%
Brooklyn	40%
Manhattan	15%
Queens	5%
Staten Island	1%

# Injection Drug Use



# Lifetime Injection History, by Race/Ethnicity

NYC NHBS-IDU4, 2015, n=506

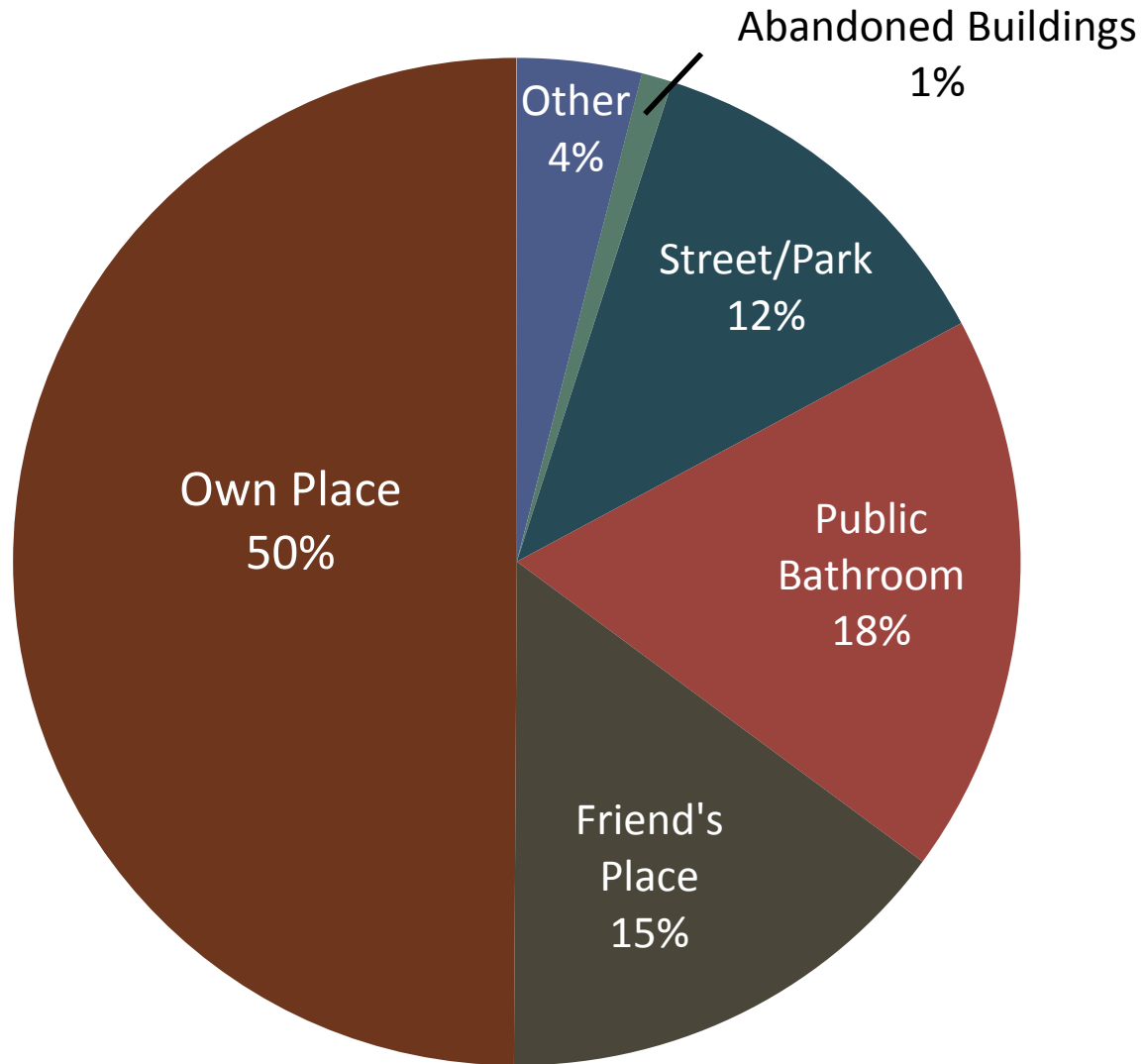
	Overall	Black	Hispanic/ Latino	White
	Median (Interquartile Range)			
Current Age*	44 (21)	50 (12)	44 (13)	33.5 (14)
Age at First Injection	20 (10)	20 (11)	20 (10)	20 (9)
Years Since First Injection*	20 (20)	26 (22)	21 (19)	11 (14)

\* $p < 0.0001$

Black and Hispanic/Latino IDUs were older and injected for a longer period of time, compared to white IDUs

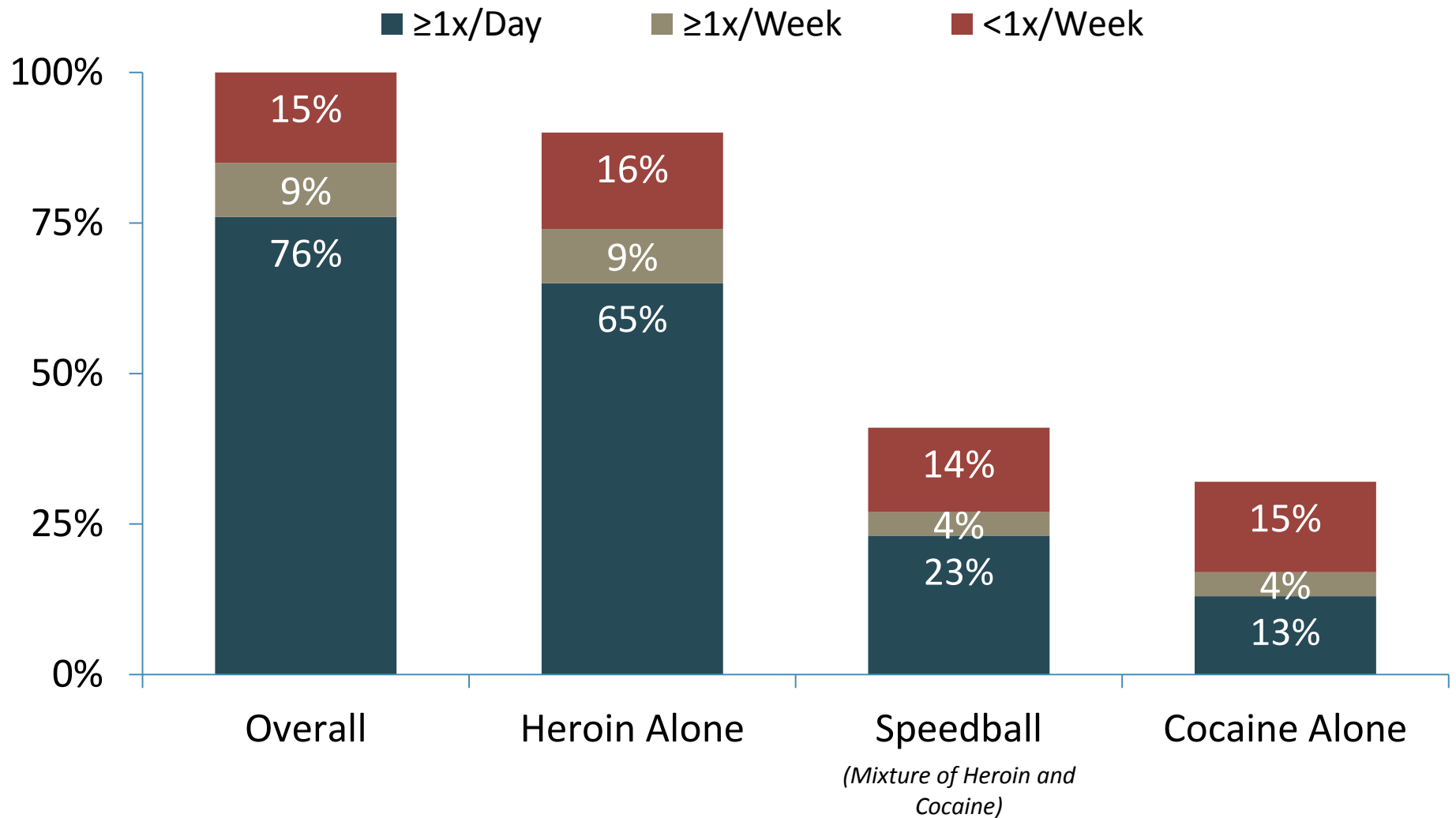
# Most Common Injection Location

NYC NHBS-IDU4, 2015, n=506



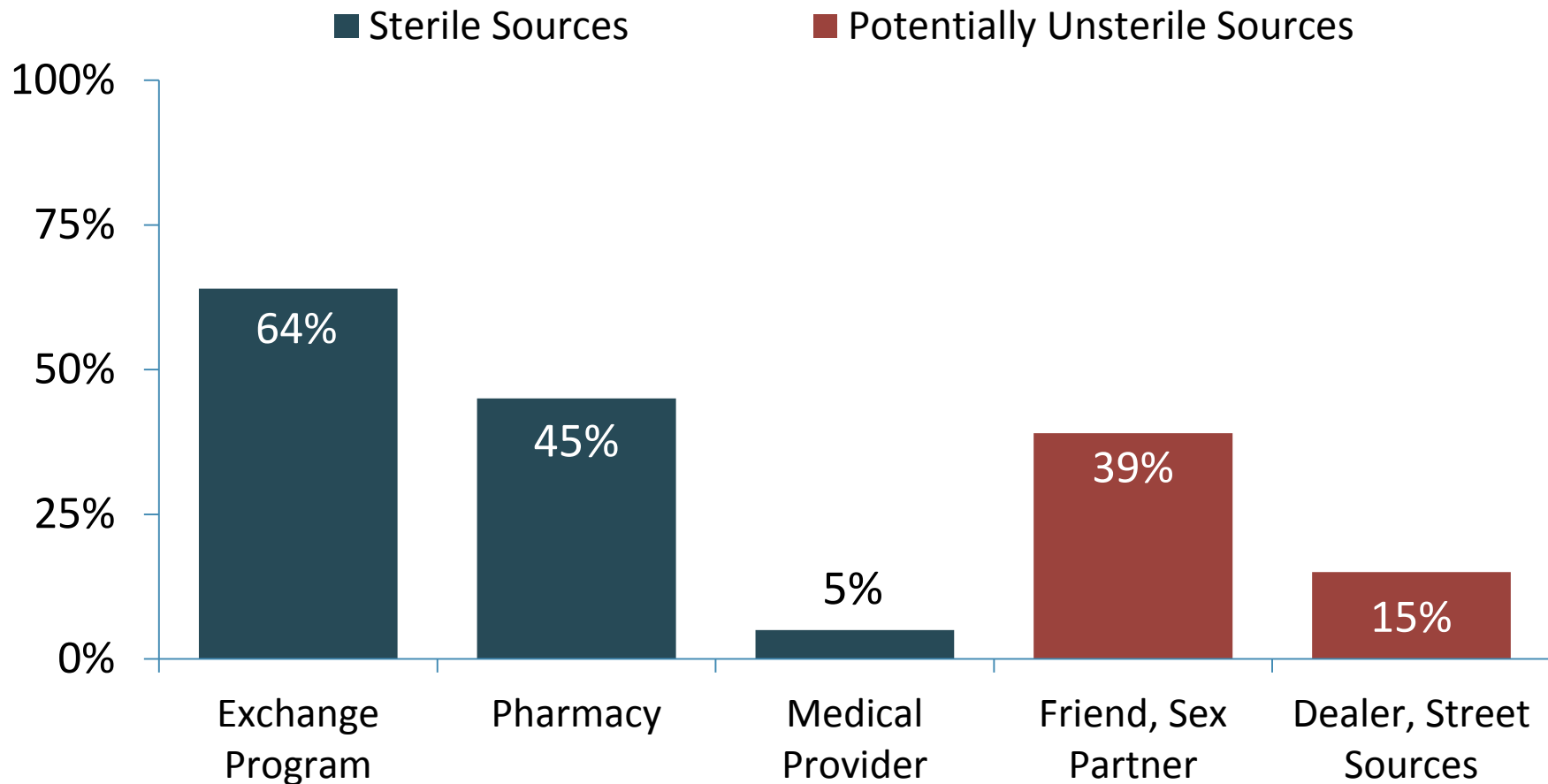
# Frequency of Drugs\* Injected (Past 12 Months)

NYC NHBS-IDU4, 2015, n=506



# Syringe Sources (Past 12 Months)

NYC NHBS-IDU4, 2015, n=506

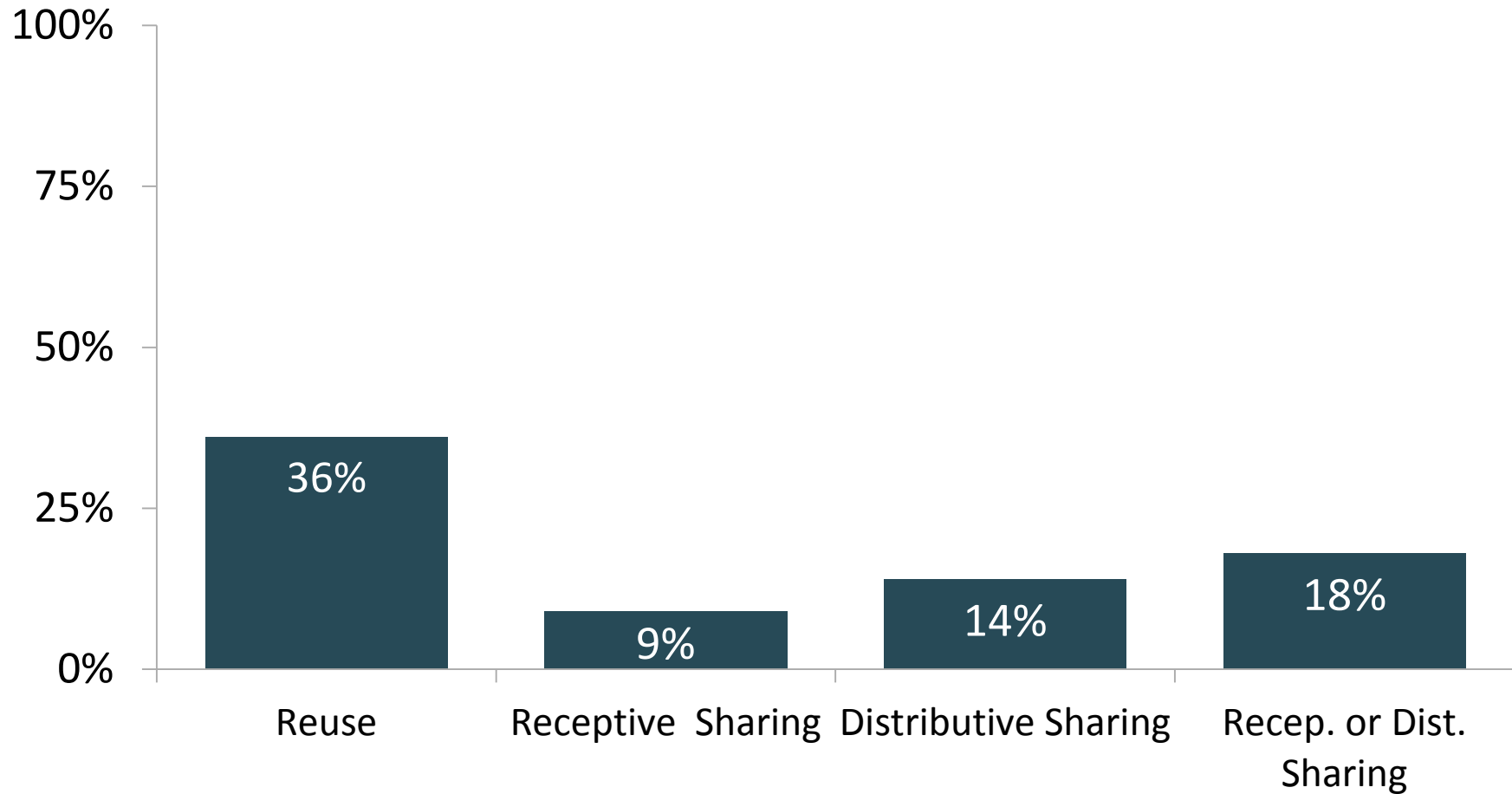


55% of IDUs obtained syringes *only* from sterile sources

16% obtained syringes *only* from potentially unsterile sources

# Syringe Reuse and Sharing (Past 12 Months) among HIV-/Unk.

NYC NHBS-IDU4, 2015, n=468 (HIV-/Unk. IDU)



# Syringe Reuse and Sharing (Past 12 Months) among HIV-/Unk.

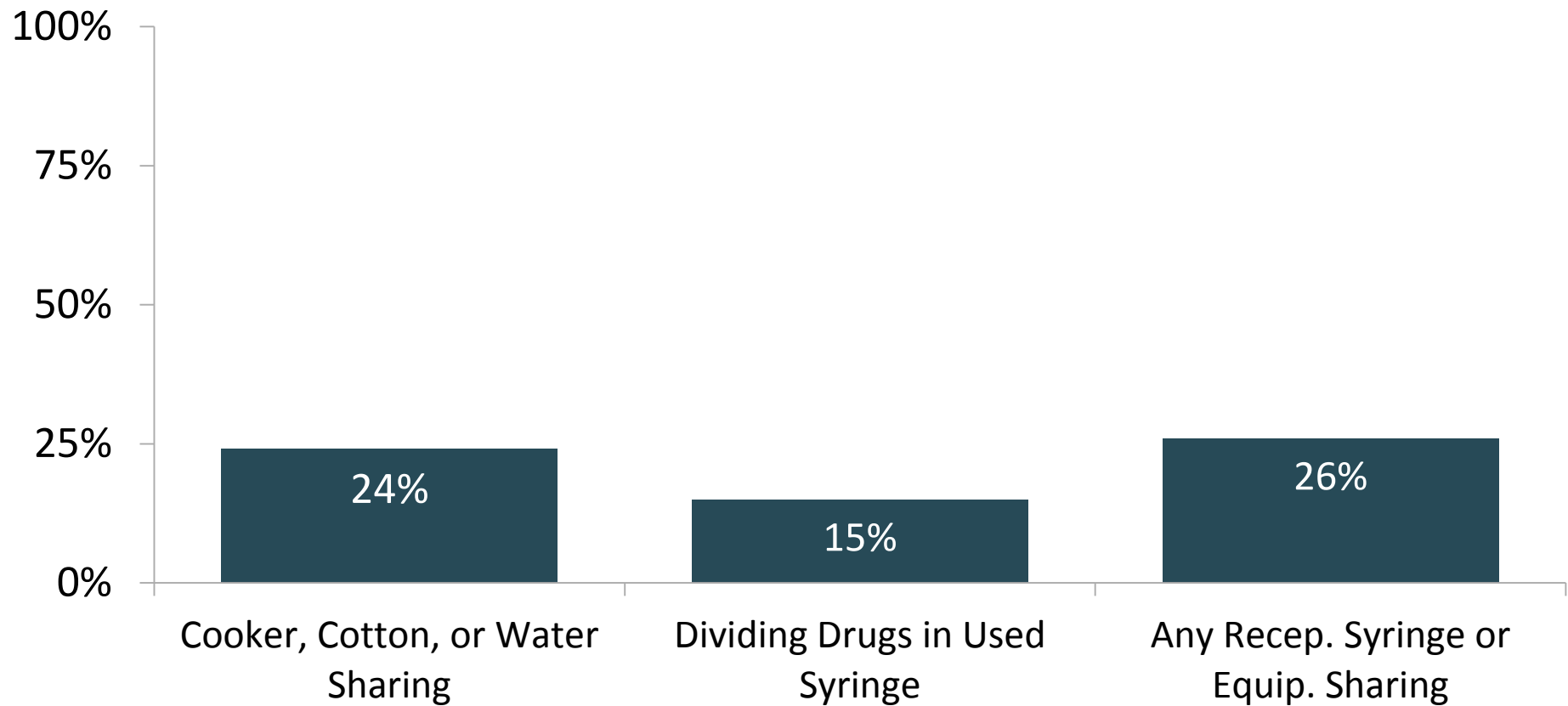
*NYC NHBS-IDU4, 2015, n=468 (HIV-/Unk. IDU)*

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- IDUs who shared receptively had a mean 4.1 and a median 1.5 partners who gave them used syringes
- IDUs who shared distributively had a mean 5.9 and a median 2 partners to whom they gave their used syringes

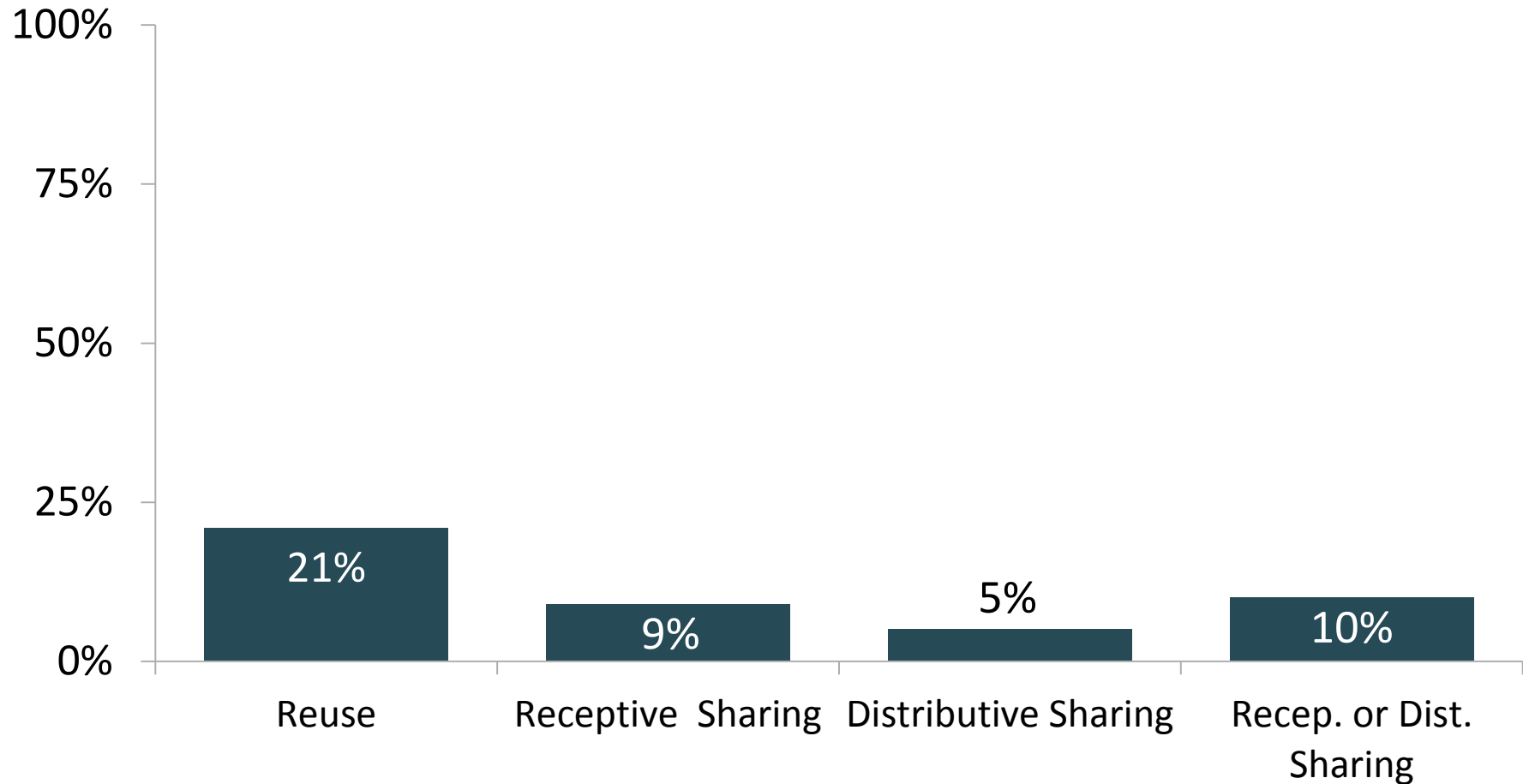
# Other Equipment Sharing in Past 12 Months among HIV-/Unk.

NYC NHBS-IDU4, 2015, n=468 (HIV-/Unk. IDU)



# Syringe Reuse and Sharing in Past 12 Months among Self-Reported HIV+

NYC NHBS-IDU4, 2015, n=38 (self-reported HIV+)





# Syringe Reuse and Sharing in Past 12 Months among Self-Reported HIV+

*NYC NHBS-IDU4, 2015, n=38 (self-reported HIV+)*

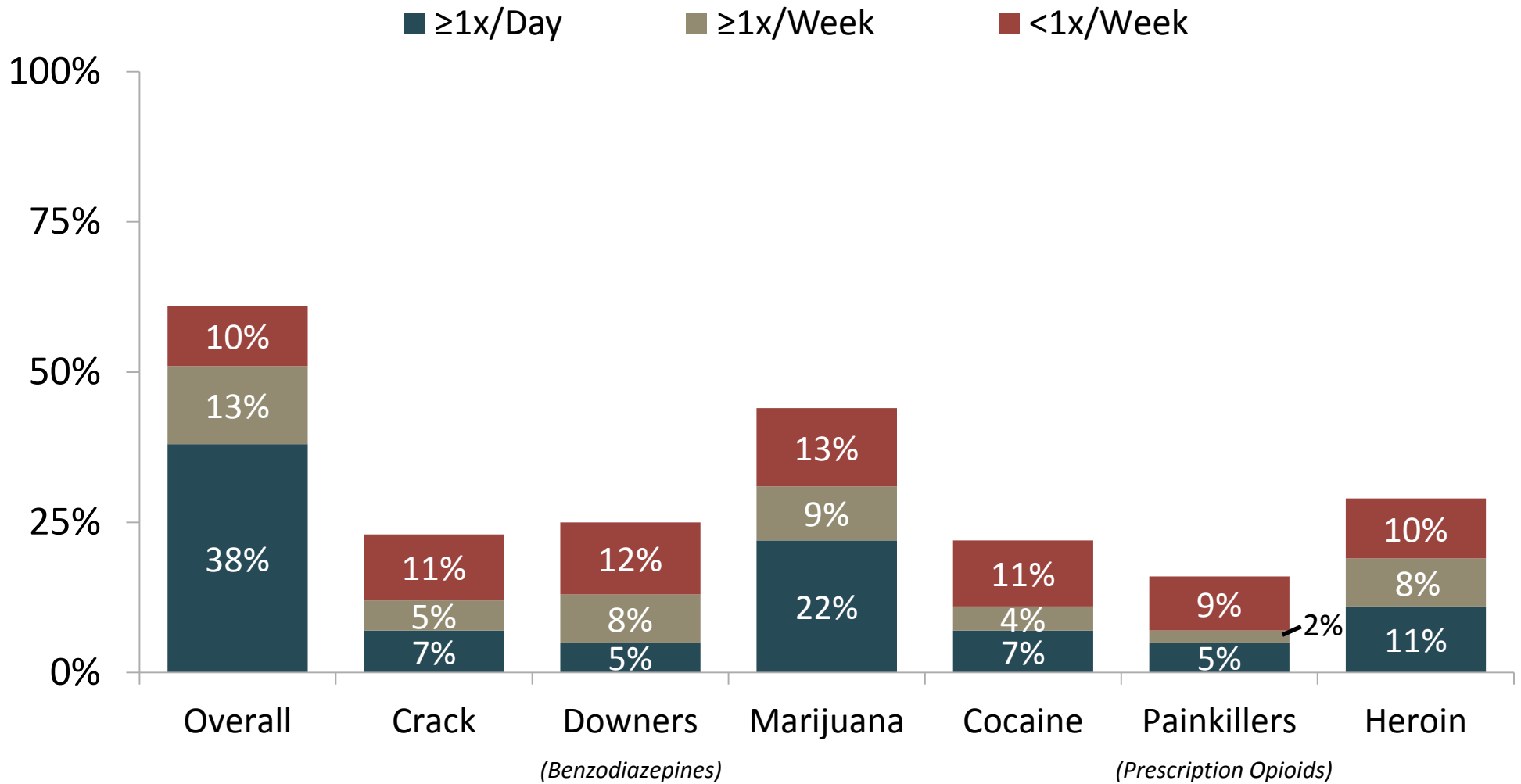
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- IDUs who shared receptively had a mean 1.8 and a median 1.5 partners who gave them used syringes
- IDUs who shared distributively had a mean 1.3 and a median 1 partners to whom they gave their used syringes

# Non-Injection Drug & Alcohol Use

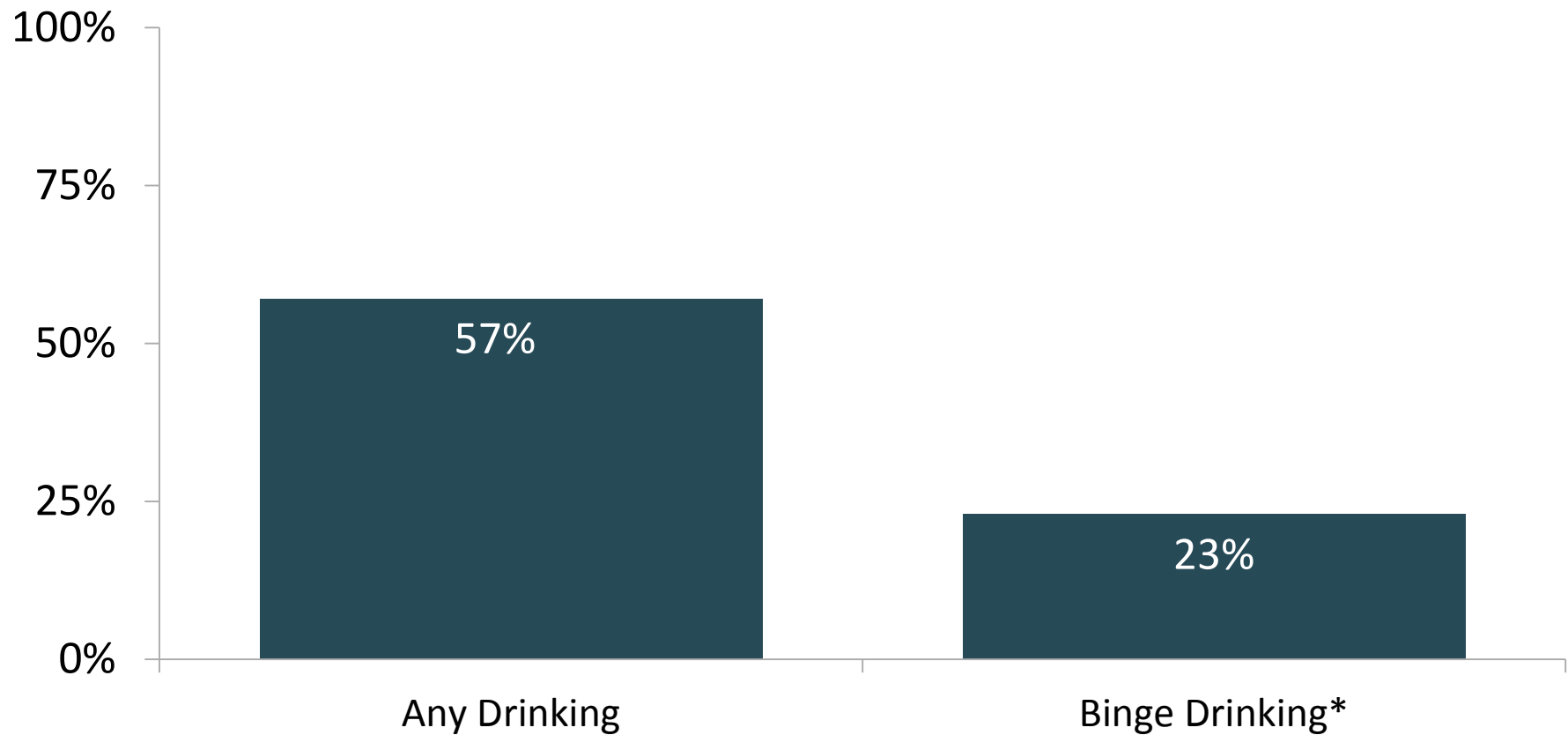
# Frequency of Non-Injection Drugs Used (Past 12 Months)

NYC NHBS-IDU4, 2015, n=506



# Alcohol Use (Past 30 Days)

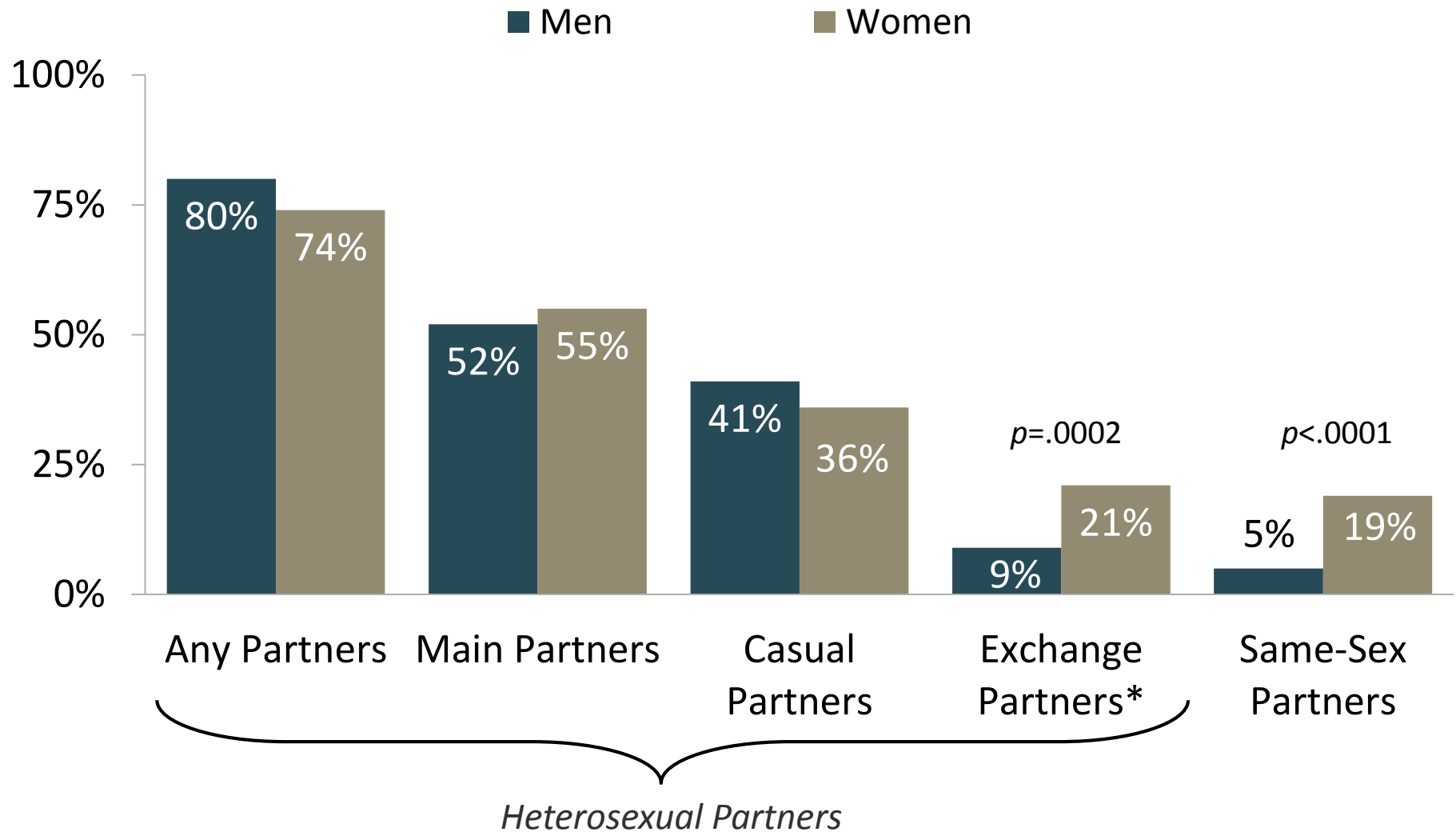
NYC NHBS-IDU4, 2015, n=506



# Sexual Activity

# Sexual Partnerships (Past 12 Months)

NYC NHBS-IDU4, 2015, n=460 (HIV-/Unk. IDU; transgender persons excluded)



\*For men, defined as giving money or drugs in exchange for sex with casual partners. For women, defined as receiving money or drugs in exchange for sex with casual partners.

# Number of Heterosexual Partners by Participant Gender (Past 12 Months)

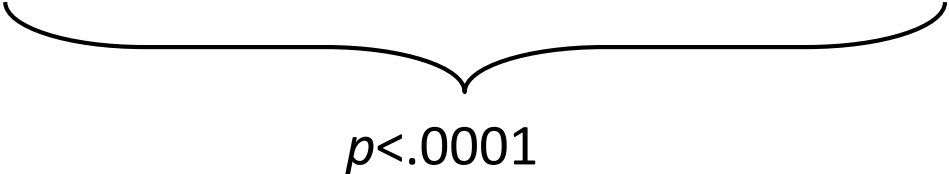
*NYC NHBS-IDU4, 2015, n=381 (HIV-/Unk. IDU with Heterosexual Partners)*

	Total		Men		Women	
	Mean	Median	Mean	Median	Mean	Median
Main	0.93	1	0.94	1	0.90	1
Casual	5.6	1	5.6	1	5.5	1
All Types	6.5	2	6.6	2	6.4	2

# Number of Heterosexual Exchange Partners by Participant Gender (Past 12 Months)

NYC NHBS-IDU4, 2015, n=381 (HIV-/Unk. IDU with Heterosexual Partners)

	Total		Men		Women	
	Mean	Median	Mean	Median	Mean	Median
Exchange*	1.9	0	1.0	0	4.3	0


  
 $p < .0001$



# Risk Behaviors with Heterosexual Partners by Participant Gender (Past 12 Months)

*NYC NHBS-IDU4, 2015, n=381 (HIV-/Unk. IDU with Heterosexual Partners)*

	Total	Men	Women	
	%	%	%	<i>p</i> *
Condomless Vaginal Sex (CVS)	74.5	73.7	76.9	0.57
Condomless Anal Sex (CAS)	22.4	22.5	22.3	0.96
CVS or CAS	76.6	76.0	78.2	0.68
CVS or CAS w/ Casual Partner	30.8	31.6	28.7	0.57
≥ 3 Total Sex Partners	24.3	25.0	22.3	0.54

\**p*-value<0.05 indicates difference between men and women

# Risk Behaviors with Heterosexual Partners by Participant Age (Past 12 Months)

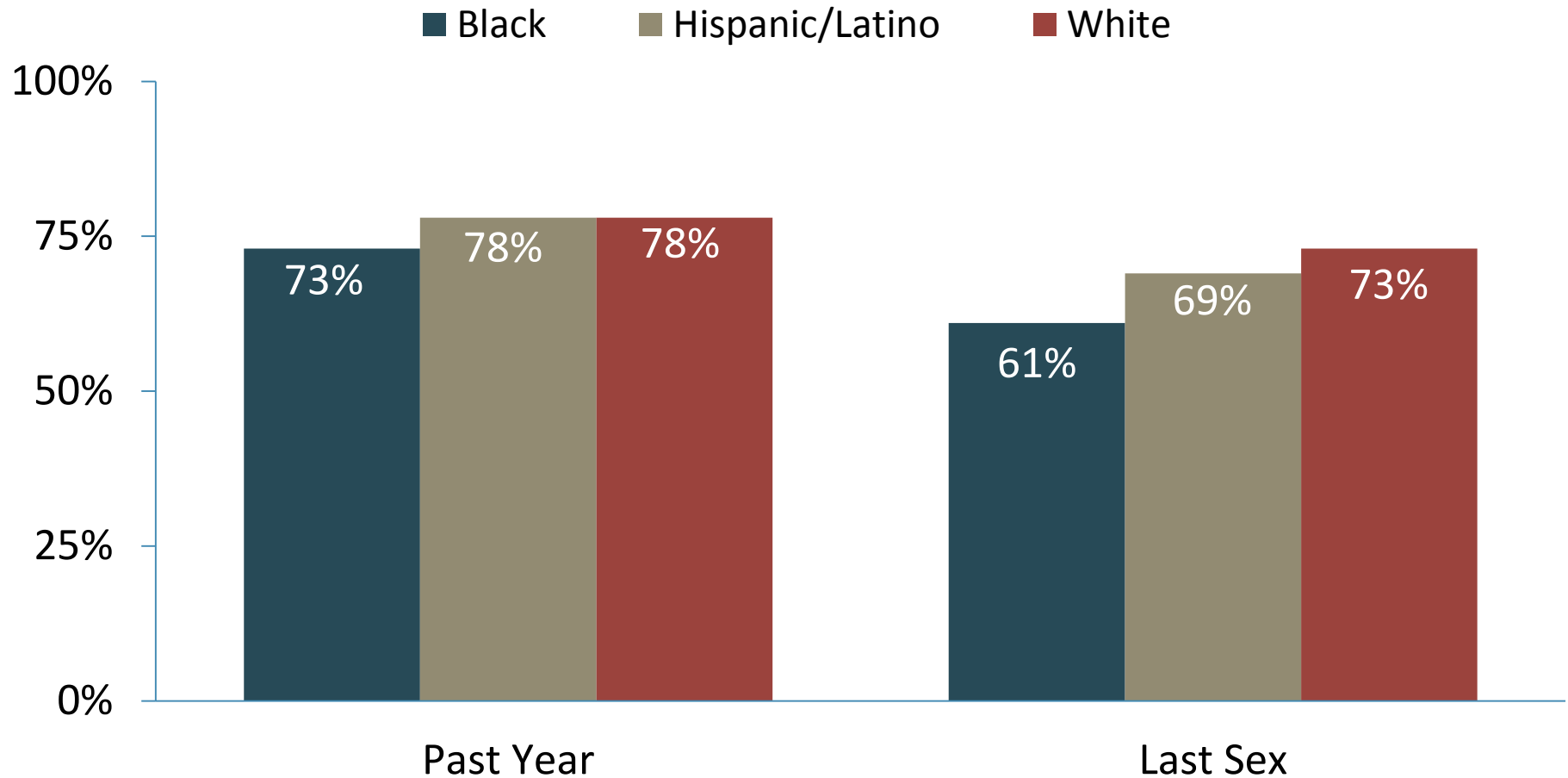
*NYC NHBS-IDU4, 2015, n=381 (HIV-/Unk. IDU with Heterosexual Partners)*

	Total	18-29	30-39	40+	
	%	%	%	%	<i>p</i> *
Condomless Vaginal Sex (CVS)	74.6	78.8	73.8	73.8	0.75
Condomless Anal Sex (CAS)	22.5	36.3	27.5	16.9	0.001
CVS or CAS	76.6	83.0	75.1	75.5	0.51
CVS or CAS w/ Casual Partner	30.8	35.2	29.7	30.1	0.69
≥ 3 Total Sex Partners	24.3	36.0	22.3	22.2	0.05

\**p*-value <0.05 indicates difference across age groups

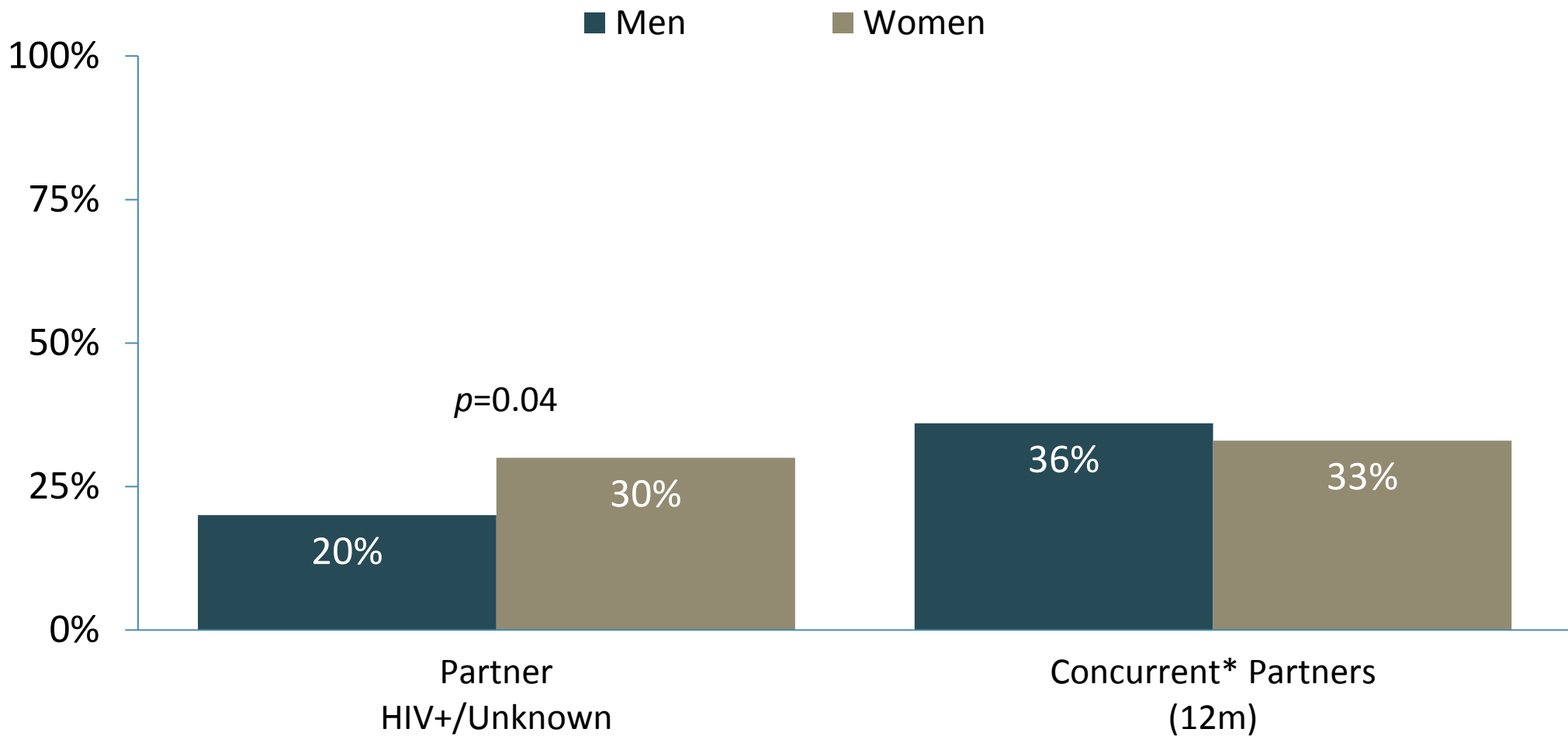
# Condomless Sex in Past 12 Months and Last Sex, by Participant Race\*

NYC NHBS-IDU4, 2015, n=381 (HIV-/Unk. IDU with Heterosexual Partners)



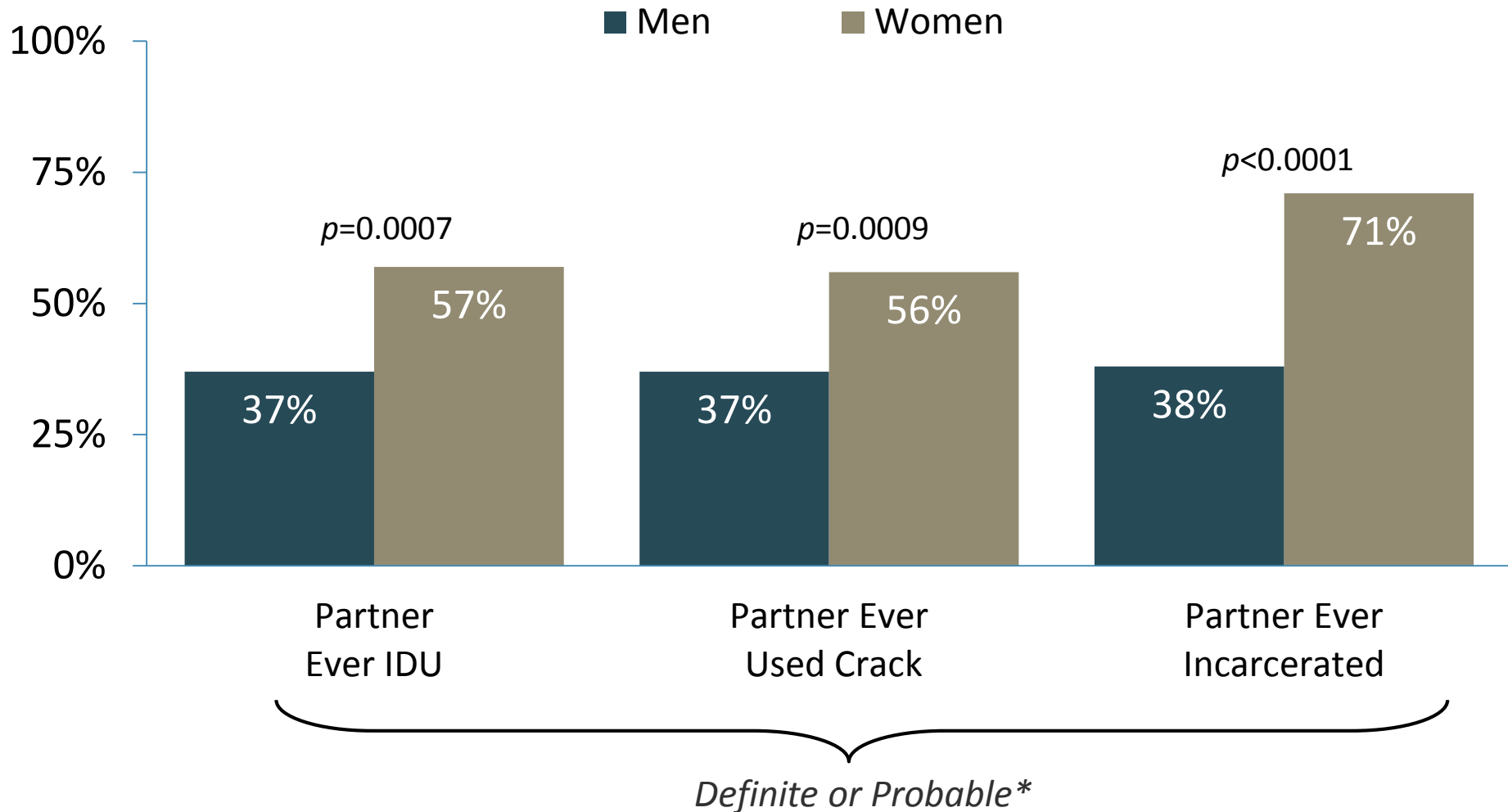
# Risk Characteristics of Last Heterosexual Partner, by Participant Gender

NYC NHBS-IDU4, 2015, n=381 (HIV-/Unk. IDU with Heterosexual Partners)



# Risk Characteristics of Last Heterosexual Partner, by Participant Gender

NYC NHBS-IDU4, 2015, n=381 (HIV-/Unk. IDU with Heterosexual Partners)

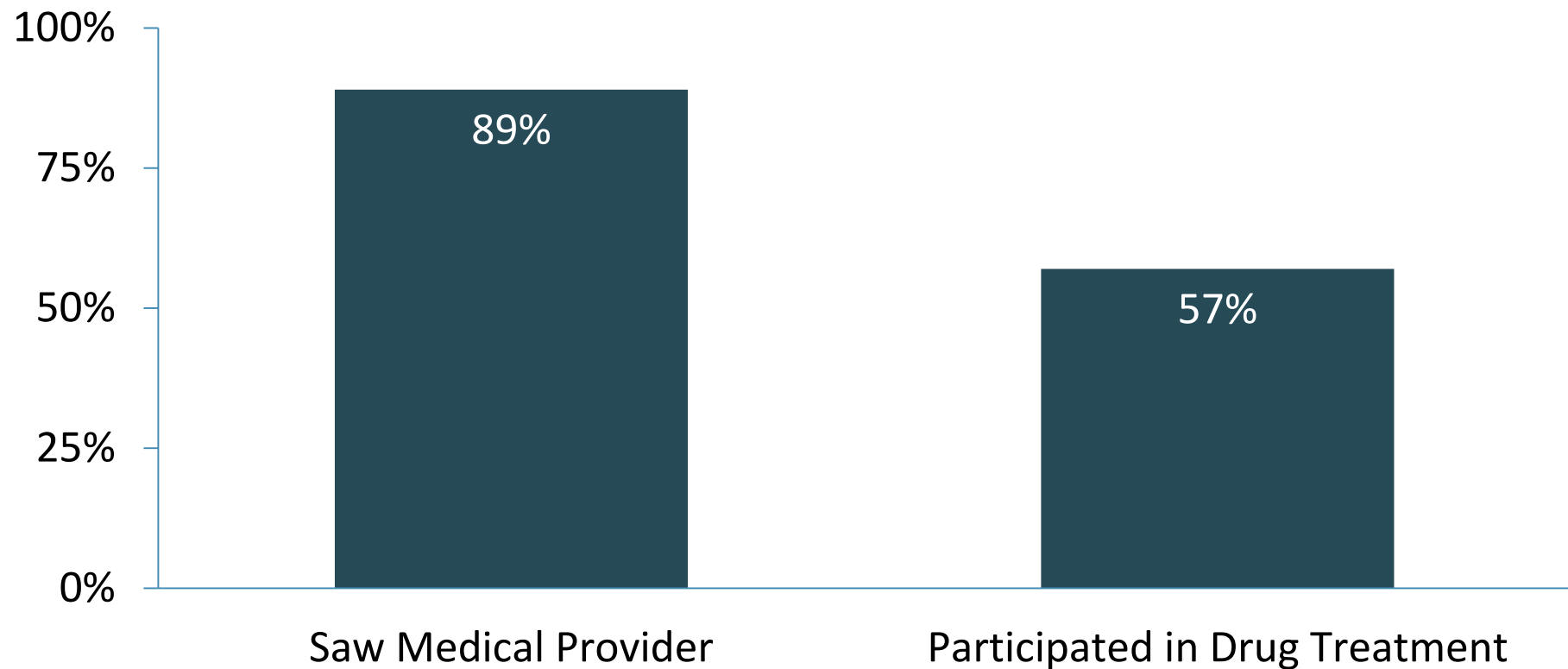


# HIV Testing and Other Healthcare

# Healthcare and Drug Treatment Encounters (Past 12 Months)

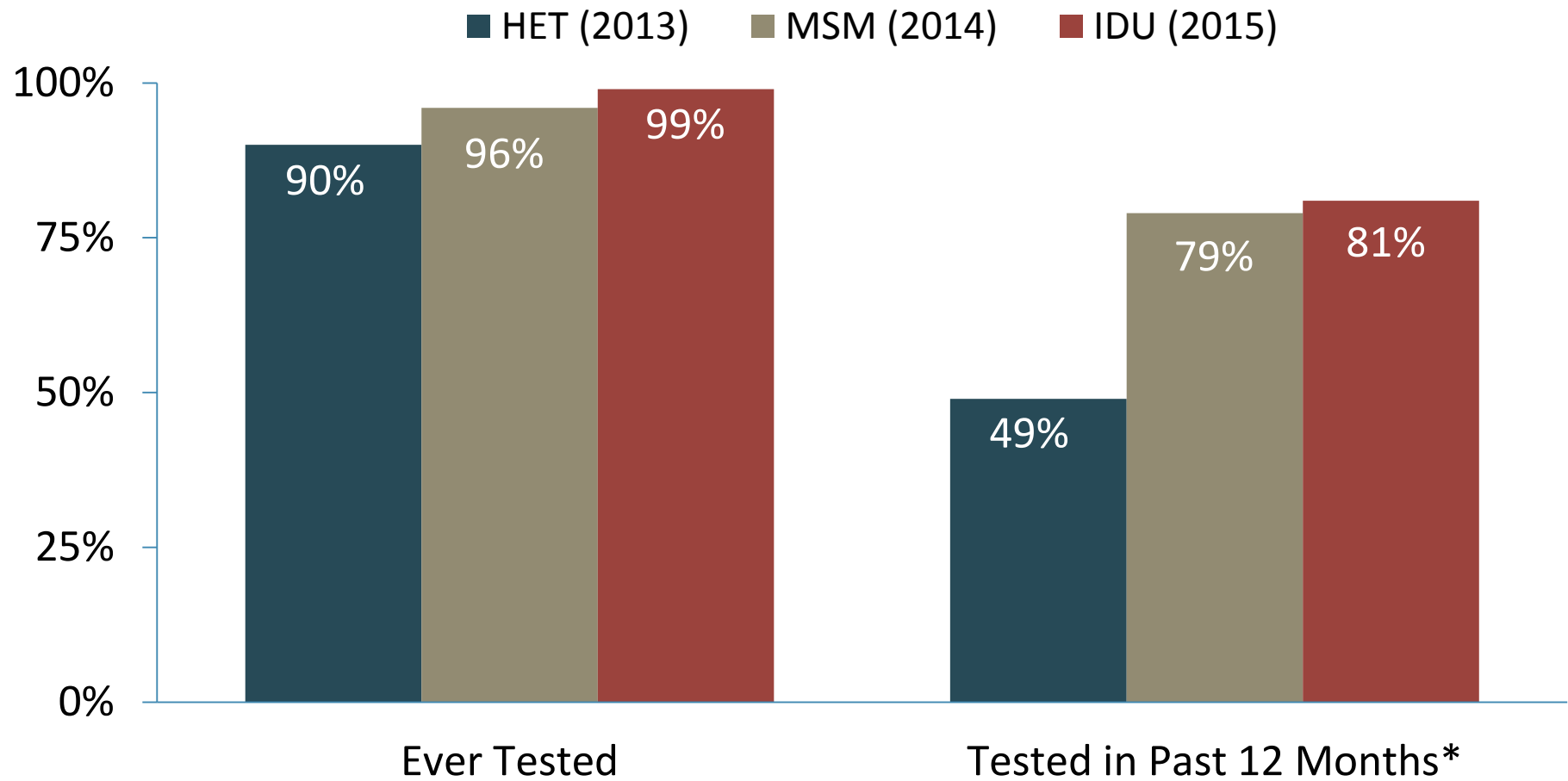
*NYC NHBS-IDU4, 2015, n=506*

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# HIV Testing History by Risk Group

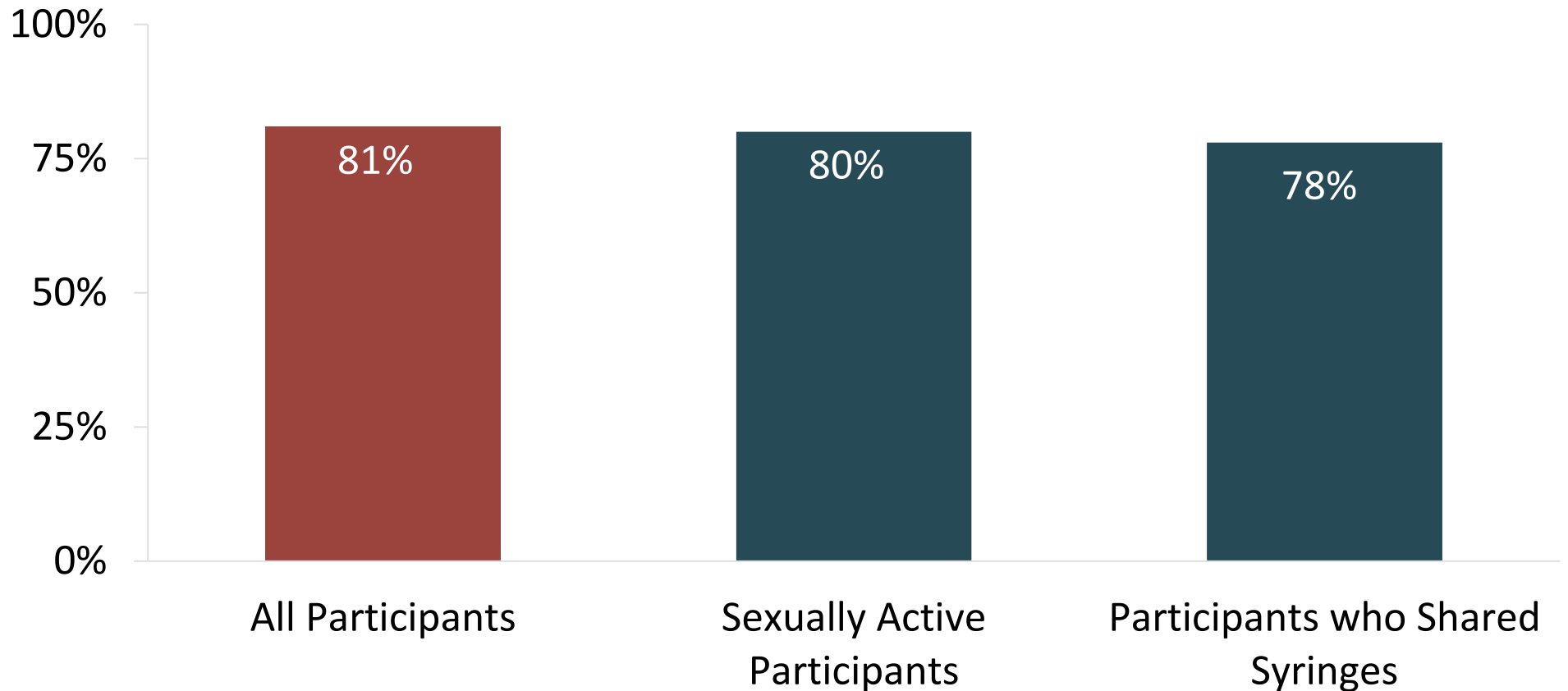
NYC NHBS (HET, MSM, and IDU), 2013-15





# Offered HIV Test by Medical Provider (Past 12 Months)

*NYC NHBS-IDU4, 2015, n=422 (HIV-/Unk. IDU Who Visited a Medical Provider)*

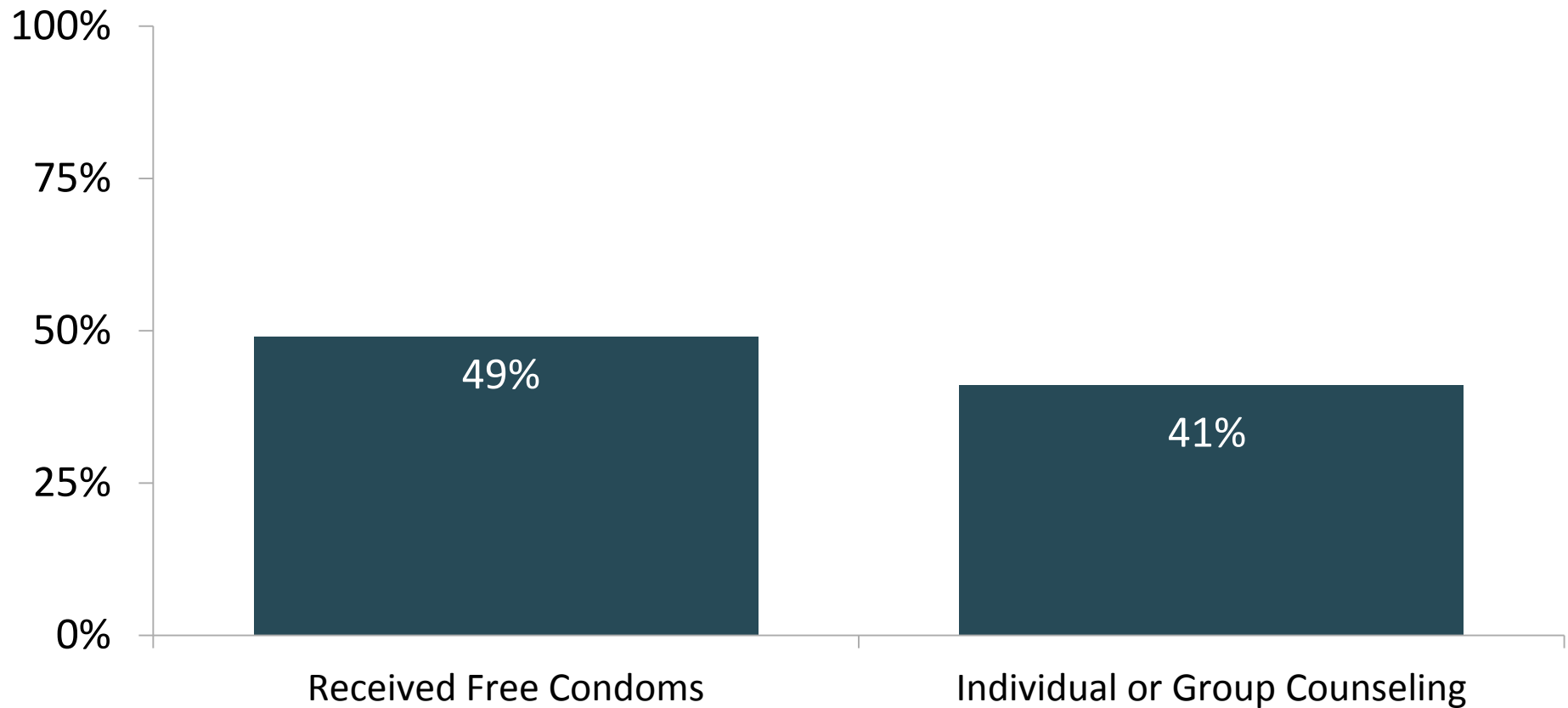


# HIV Prevention Activities

# HIV Prevention Activities (Past 12 Months)

*NYC NHBS-IDU4, 2015, n=506*

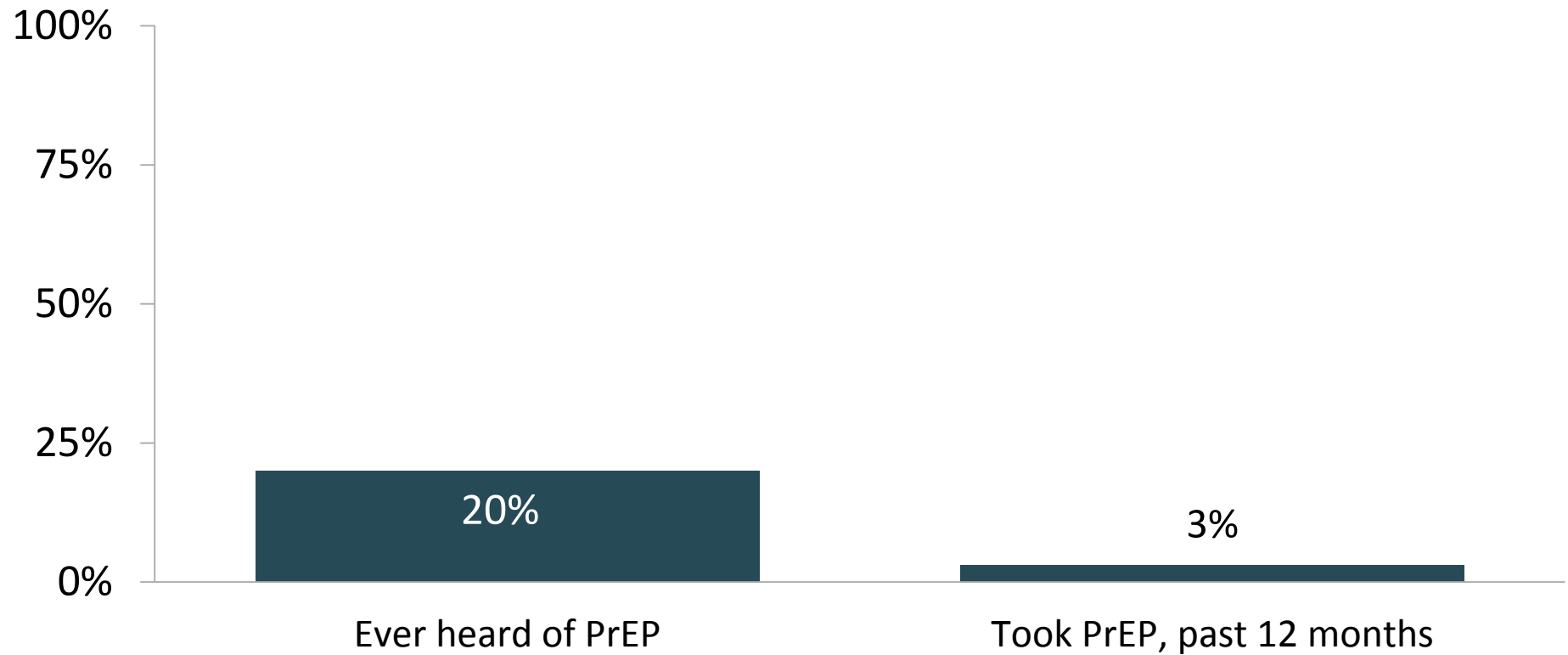
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# Pre-exposure Prophylaxis Awareness and Use

NYC NHBS-IDU4, 2015, n=468 (HIV-/Unk. IDU)

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# HIV & HCV Prevalence

# HIV Prevalence

NYC NHBS-IDU4, 2015, n=506 (Tested in Study)

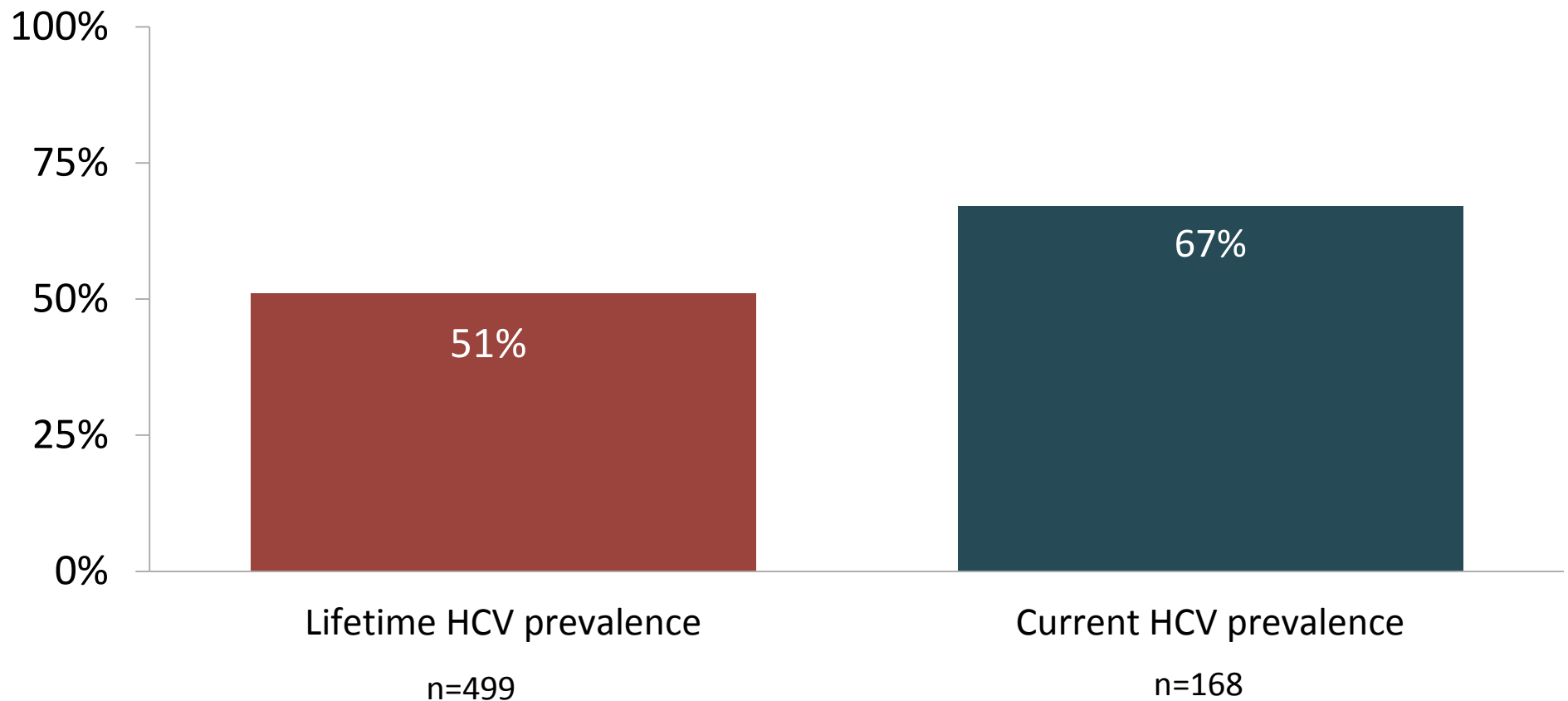
	HIV-Positive	95% CI
<b>Overall</b>	8.2%	5.9% – 10.5%
<b>By Race*</b>		
Black	11.7%	6.7% – 16.6%
Hispanic/Latino	8.4%	5.1% – 11.7%
White	2.9%	0.35% – 6.1%
<b>By Gender*</b>		
Male	5.8%	3.4% – 8.1%
Female	13.0%	7.6% – 18.3%
<b>By Age</b>		
18-29	0	0
30-39	4.7%	1.0% – 8.4%
40+	11.3%	8.0% – 14.7%

\*Other race (including Asian, American Indian or Alaska Native, and Native Hawaiian or Other Pacific Islander ) and transgender persons excluded due to small sample sizes.

# Hepatitis C Virus Prevalence

NYC NHBS-IDU4, 2015

Of the 506 participants, 499 (99%) underwent rapid HCV testing for lifetime infection with HCV.



\*Among those with a positive rapid test and who underwent confirmatory testing. Of the participants with a positive rapid test, 34% (n=86) were not able to provide a blood sample for confirmatory testing because phlebotomy was unavailable.

# Lifetime Hepatitis C Virus Prevalence

NYC NHBS-IDU4, 2015, n=499 (Tested in Study)

	Lifetime HCV infection	95% CI
<b>Overall</b>	51.0%	46.6% – 55.4%
<b>By Race*</b>		
Black	24.9%	18.0% – 31.9%
Hispanic/Latino	63.6%	57.6% – 69.6%
White	61.2%	51.4% – 71.0%
<b>By Gender*</b>		
Male	56.3%	51.1% – 61.6%
Female	39.1%	31.1% – 47.2%
<b>By Age</b>		
18-29	31.5%	20.3% – 42.6%
30-39	60.8%	52.0% – 69.7%
40+	51.6%	46.0% – 57.1%

\*Other race (including Asian, American Indian or Alaska Native, and Native Hawaiian or Other Pacific Islander ) and transgender persons excluded due to small sample sizes.



# Conclusions

# Summary

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- Participants reported frequent encounters with exchange programs, pharmacies, medical providers, and other prevention outlets
- However, there were continuing injection-related and sexual risk behaviors
- High levels of HIV infection were found, with notable disparities by race/ethnicity
- Many IDU face structural risk factors that may increase HIV infection risk: poverty, homelessness, and arrest/incarceration

# Strengths

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- Large dataset with data on multiple HIV risk factors
- National, standardized survey and protocol
- Extensive formative research supporting data collection
- RDS can reach “hidden” populations of IDUs who may not access treatment programs and other institutionalized settings
- Local questions developed to explore issues relevant specifically to NYC IDUs

# Limitations

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- RDS-based estimates may not be generalizable to population of New York City IDUs if methodological assumptions are not met
- RDS can only recruit those who are socially networked to other IDUs
- All data except HIV and HCV serostatus were collected by self-report, and may be biased by recall error or social desirability and self-selection

# NYC National HIV Behavioral Surveillance Team – IDU4

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## NYC Department of Health

### Principal Investigators

Alan Neaigus

### Project Director

Katie Reilly

### Project Coordinator/Field Supervisor

Valentina Ramirez

Olga Gromadzka

### Data Collection Team

Anna Andel

Joshua Hinkson

Nicole Holder

Emma Molina

Nevin Rao

## CDC

Gabriela Paz-Bailey

Dita Broz

CDC Grant#: 5U1BPS003262-05

# Contact

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**Alexis Rivera, MPH**

NHBS Project Director

HIV Epidemiology and Field Services Program

NYC Department of Health

Phone: 347-396-7750

Email: [arivera6@health.nyc.gov](mailto:arivera6@health.nyc.gov)