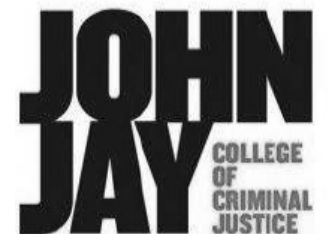# HIV Risk and Prevalence among New York City Injection Drug Users

2012 National HIV Behavioral Surveillance Study

NYC Health

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Background & Methods

Background

- NYC has a large population of IDUs
- In 2011, 4% of new HIV diagnoses in NYC were attributable to injection drug use (direct injection risk)
- The number of new HIV infections among IDUs 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 many IDUs continue to exhibit sexual and injection-related risks

National HIV Behavioral Surveillance (NHBS)

- 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*

- Third cycle of NHBS-IDU data collection in 2012

- Cross-sectional study design

NHBS Objectives

- 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-IDU3 Eligibility Criteria

- 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)

1. Study team recruit initial participants ("seeds") through street and facility-based outreach

2. Seeds then recruit up to 3 other participants who meet the eligibility criteria

3. Each of those 3 participants then recruits up to 3 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 for more information*
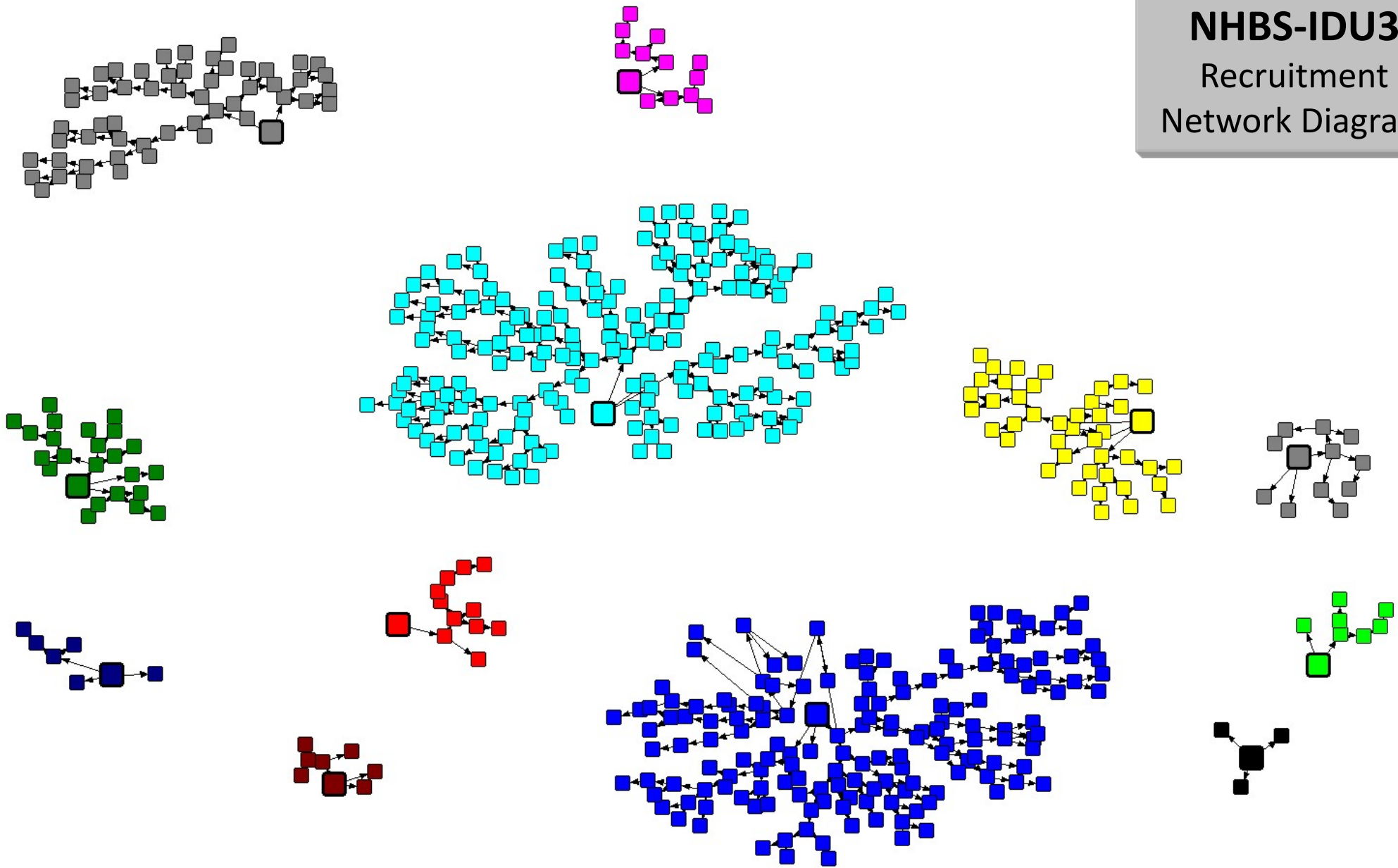
*larger nodes are network seeds

NHBS-IDU3 Statistical Analysis

- Weighted analysis conducted with RDS Analysis Tool (RDSAT) 7.1 and SAS 9.2

- 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)
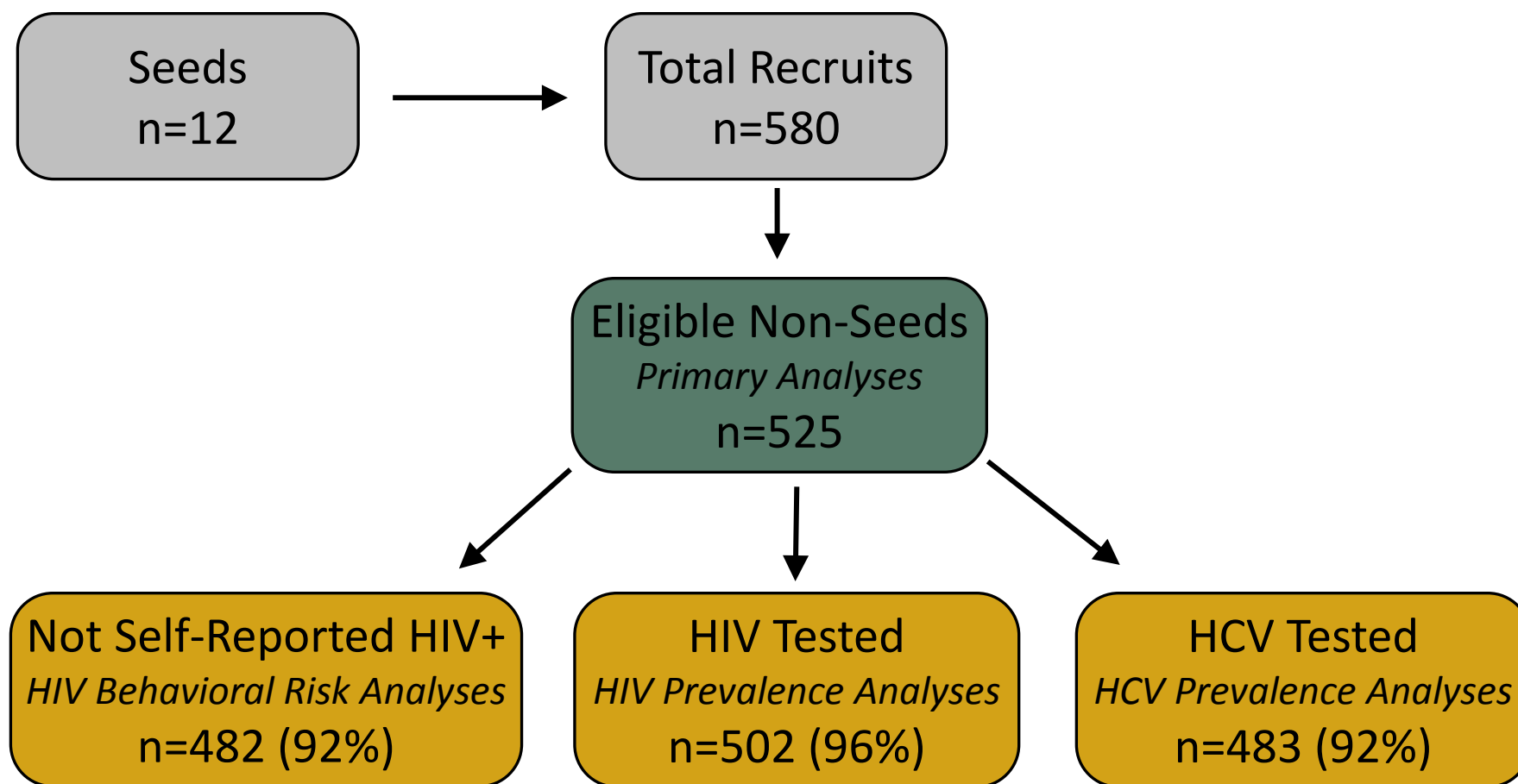
NHBS-IDU3 Statistical Analysis

- Self-reported HIV-positive IDUs (n=43) excluded from HIV behavioral risk analyses; IDUs untested for HIV (n=23) or HCV (n=42) excluded from seroprevalence analyses

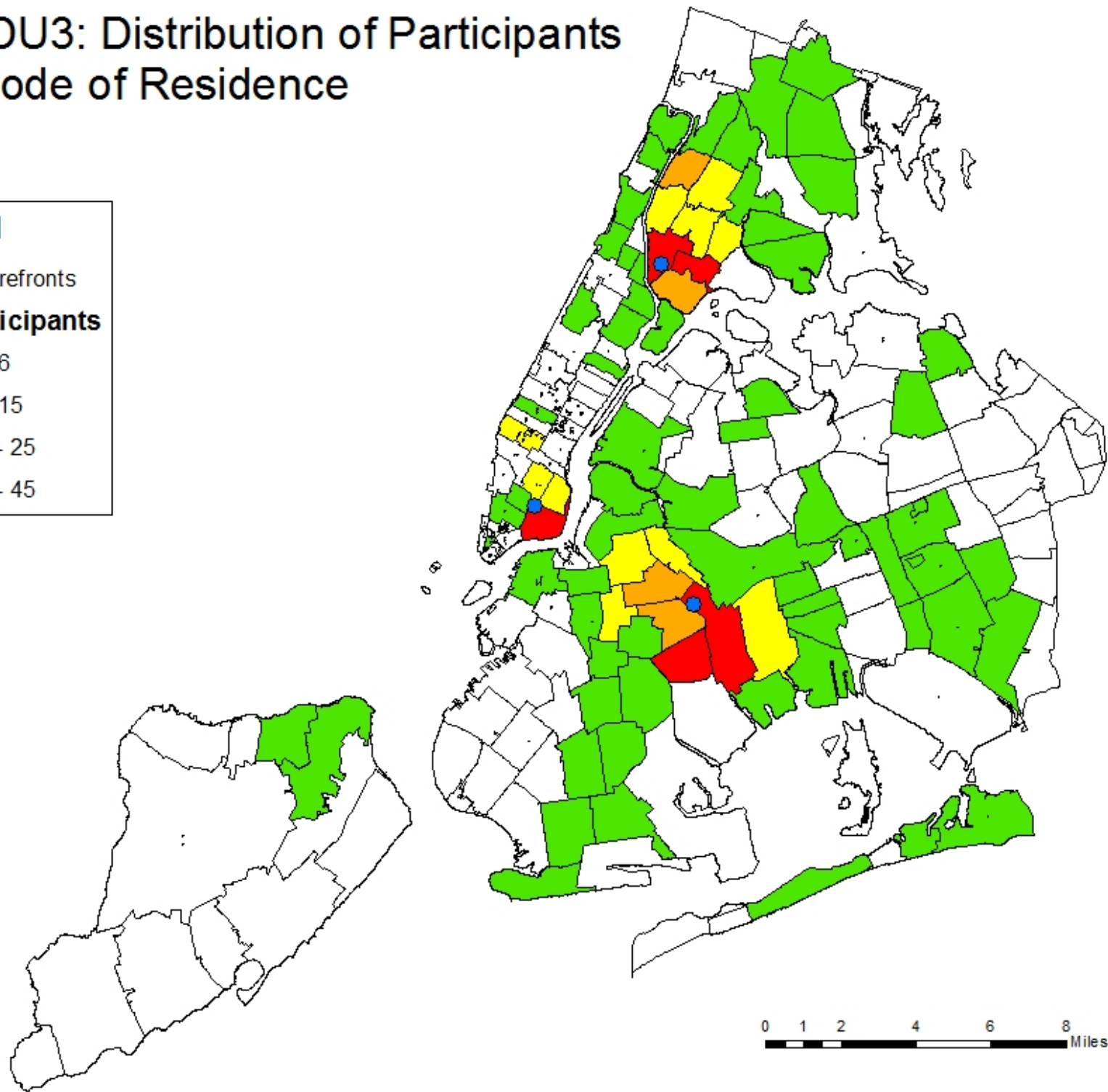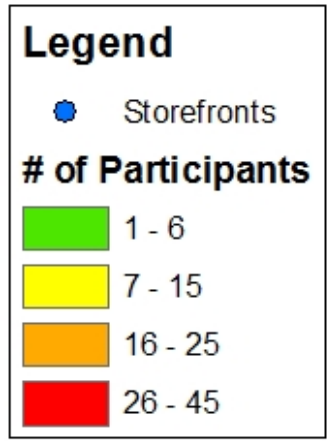- 11 specimens not tested for HCV due to lab closure associated with Hurricane Sandy

NHBS-IDU3 Sample

Sociodemographics

NHBS-IDU3: Distribution of Participants by Zip Code of Residence

Legend

- Storefronts

# of Participants

- 1 - 6
- 7 - 15
- 16 - 25
- 26 - 45

0 1 2 4 6 8 Miles

N

Demographics

NYC NHBS-IDU3, 2012, n=525

Race/Ethnicity

Black	26%
Hispanic	58%
White	14%
Other	1%

Age

18-29	13%
30-39	24%
40-49	30%
50+	33%

Gender

Male	63%
Female	35%
Transgender	1%

Birthplace

United States	69%
Puerto Rico	26%
Foreign	5%

Demographics

NYC NHBS-IDU3, 2012, n=525

Income

<10k	74%
10k+	26%

Education

<High School	46%
H.S. Grad+	54%

Marital Status

Never Married	62%
Currently Married or Cohabiting	8%
Previously Married	30%

Sexual Identity

Heterosexual	90%
Homosexual/Bisexual	10%

Demographics
NYC NHBS-IDU3, 2012, n=525

Homelessness

Past 12 months   45%

Currently   32%

Jailed >24 hours

Past 12 Months   38%

Injection Drug Use
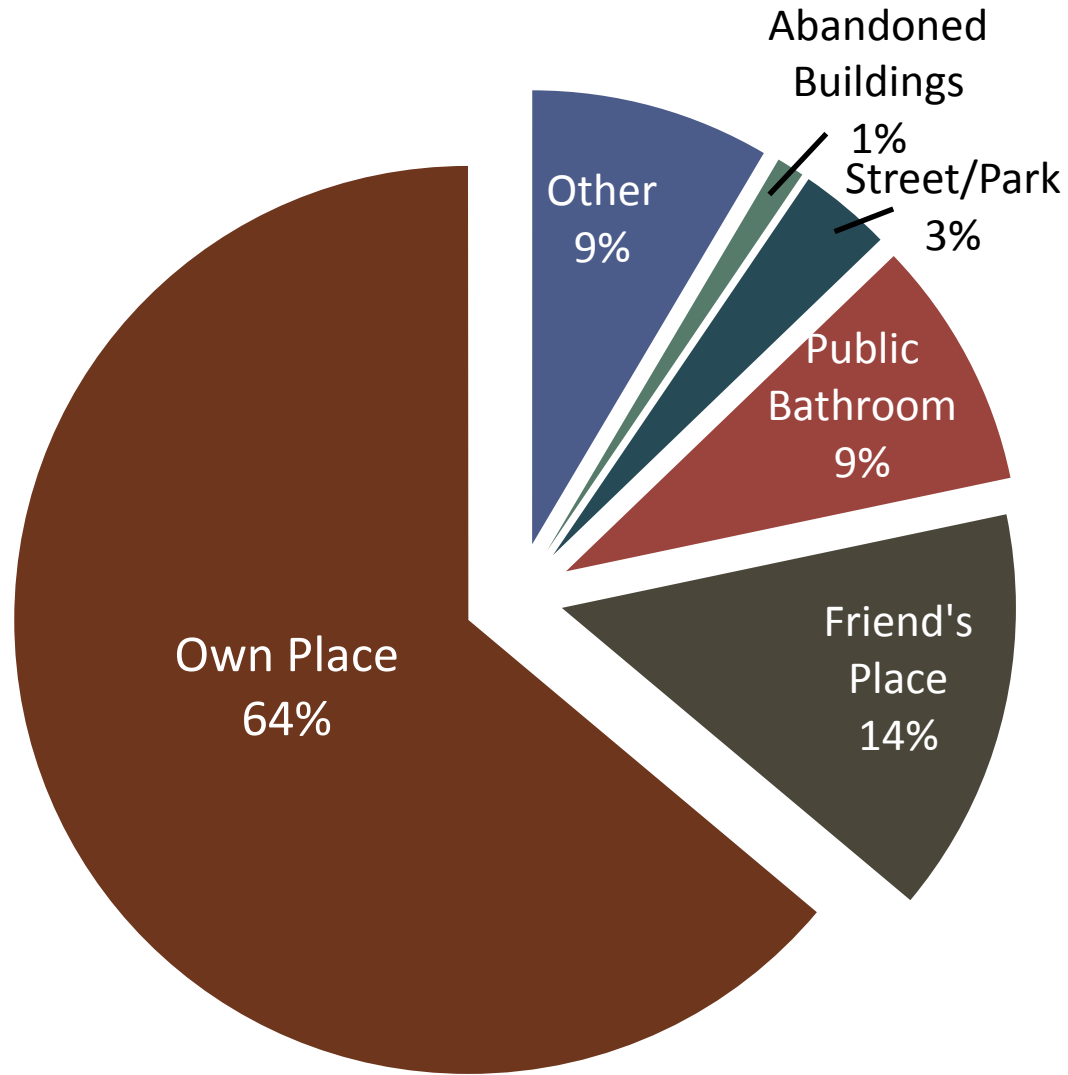
Lifetime Injection History, by Race/Ethnicity

NYC NHBS-IDU3, 2012, n=525

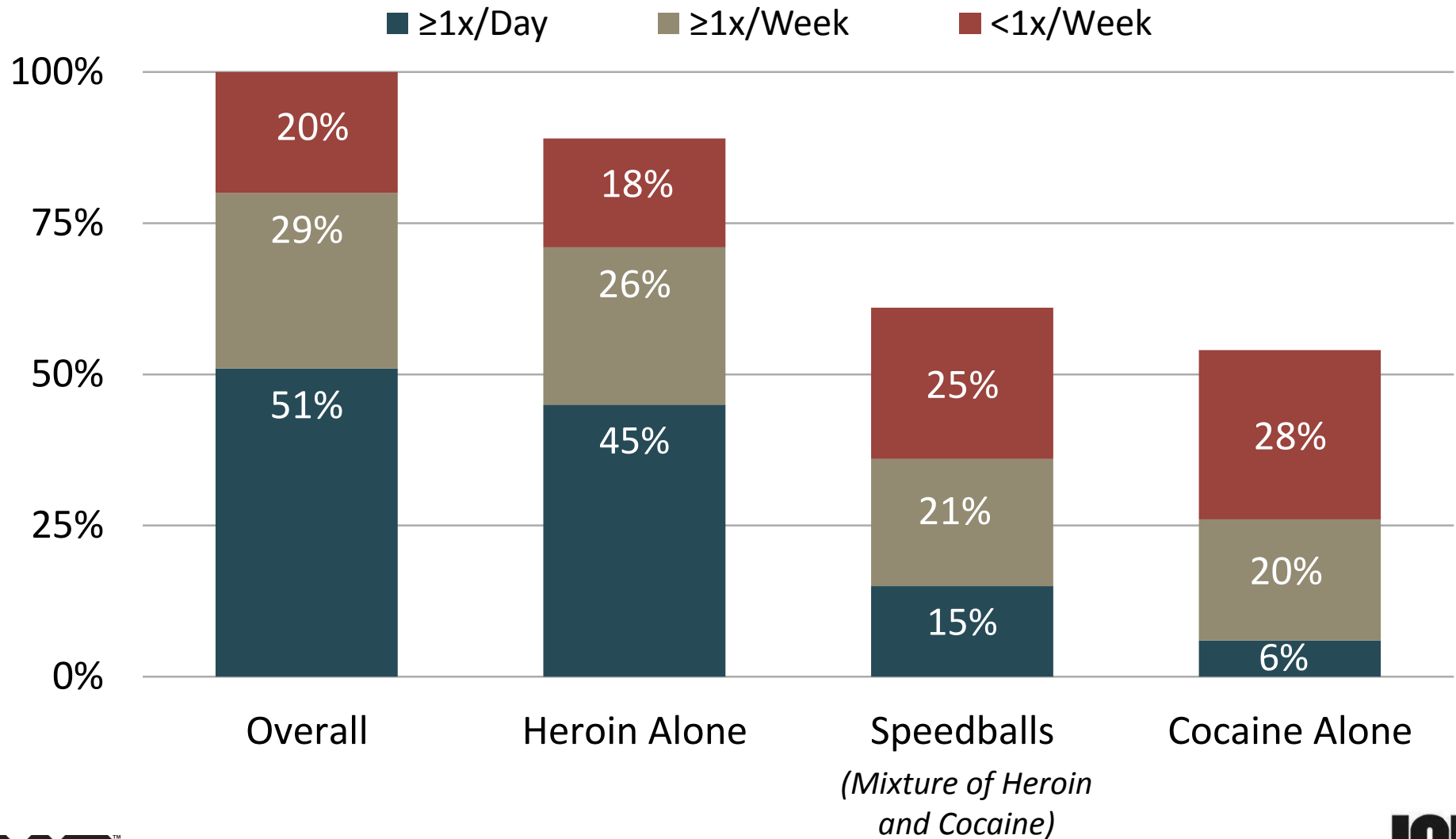|	Overall	Black	Hispanic	White
	Median	Median	Median	Median
Current Age*	45	52	43	40
Age at First Injection	19	21	19	19
Years Since First Injection*	22	30	22	19

*p<0.0001

Most Common Injection Location
NYC NHBS-IDU3, 2012, n=525
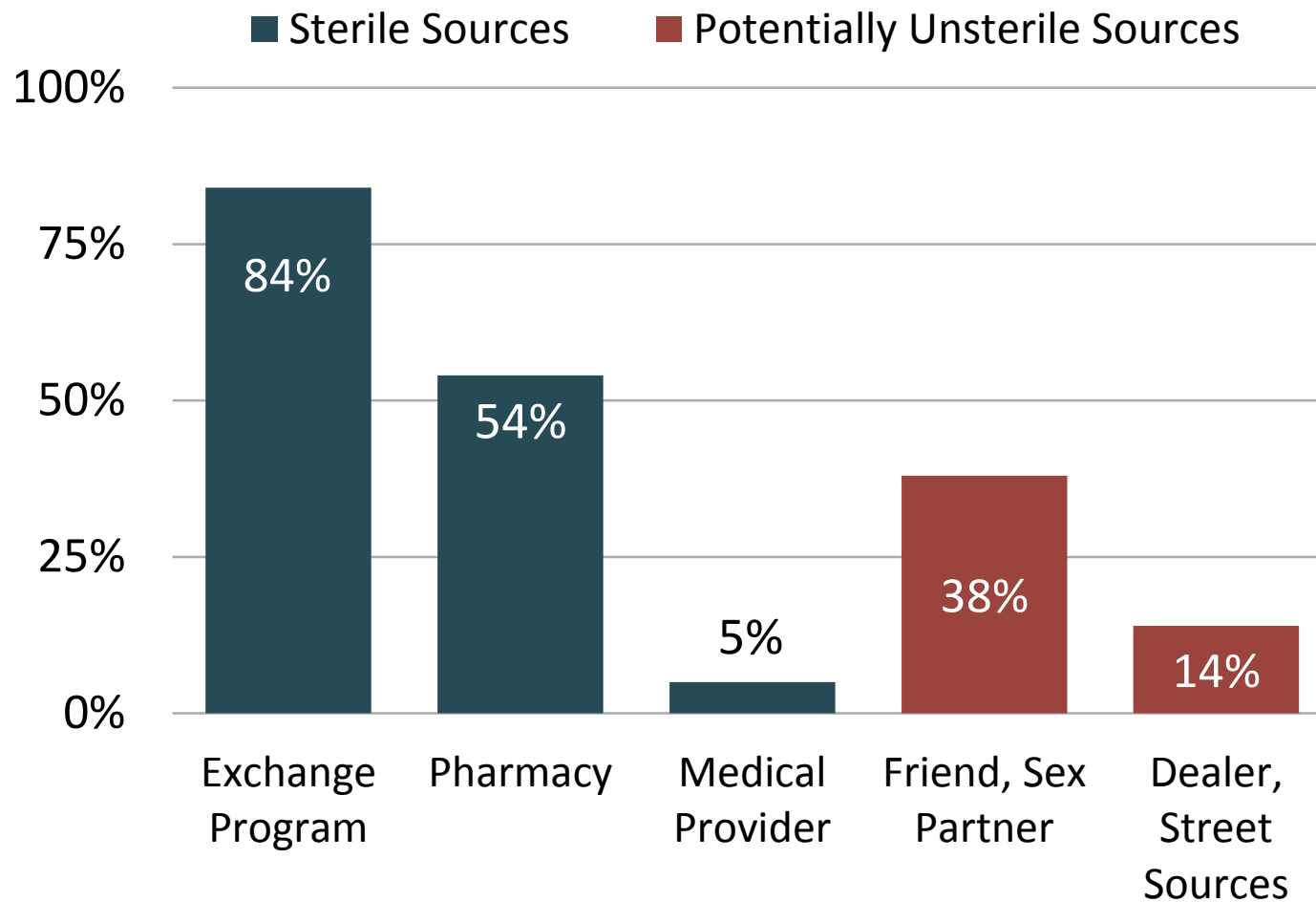
Frequency of Drugs Injected (Past 12 Months)

NYC NHBS-IDU3, 2012, n=525

Injection of other drugs was less common

21

Syringe Sources (Past 12 Months)
NYC NHBS-IDU3, 2012, n=525

Legend: ■ Sterile Sources ■ Potentially Unsterile Sources

Bar chart values:
- Exchange Program: 84% (Sterile)
- Pharmacy: 54% (Sterile)
- Medical Provider: 5% (Sterile)
- Friend, Sex Partner: 38% (Potentially Unsterile)
- Dealer, Street Sources: 14% (Potentially Unsterile)
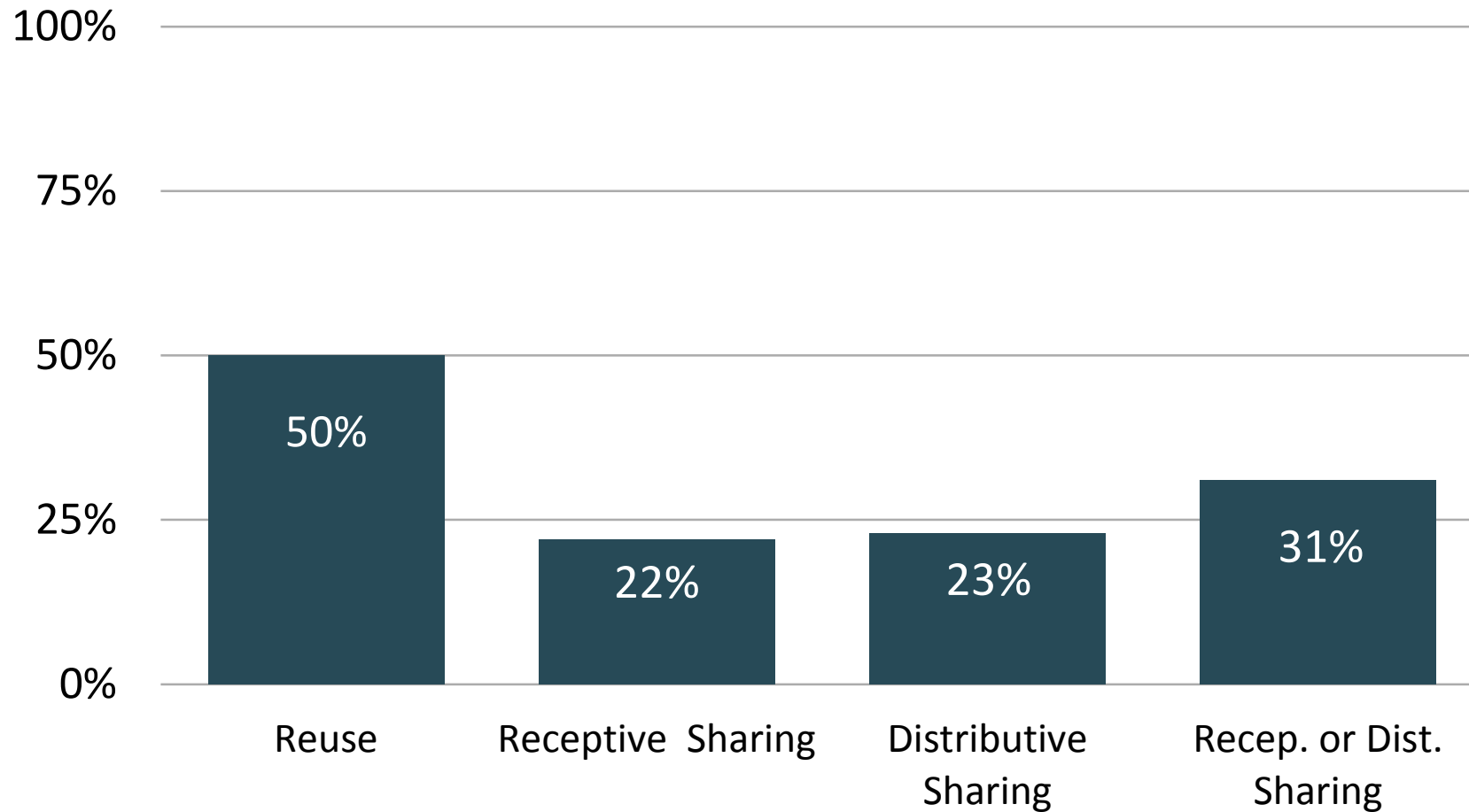
59% of IDUs obtained syringes *only* from sterile sources

5% obtained syringes *only* from potentially unsterile sources

Syringe Reuse and Sharing (Past 12 Months)
NYC NHBS-IDU3, 2012, n=482 (HIV-/Unk. IDU)

Syringe Reuse and Sharing (Past 12 Months)
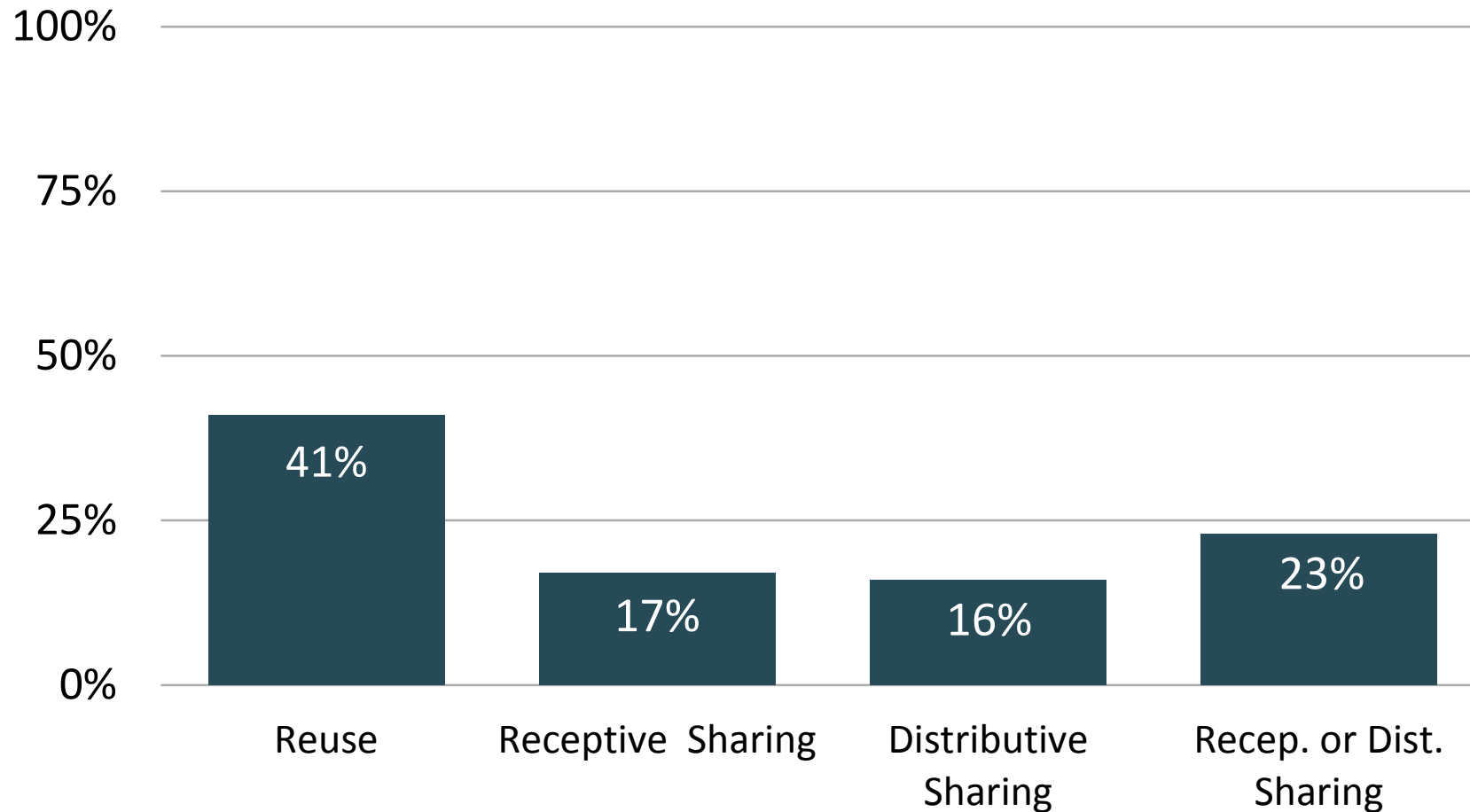*NYC NHBS-IDU3, 2012, n=482 (HIV-/Unk. IDU)*

- IDUs who shared receptively had a mean 3.5 and a median 2 partners who gave them used syringes

- IDUs who shared distributively had a mean 4.7 and a median 2 partners to whom participants gave their used syringes

Syringe Reuse and Sharing in Past 12 Months
NYC NHBS-IDU3, 2012, n=43 (self-reported HIV+)

Syringe Reuse and Sharing in Past 12 Months
NYC NHBS-IDU3, 2012, n=43 (self-reported HIV+)

- IDUs who shared receptively had a mean 1.9 and a median 1 partners who gave them used syringes

- IDUs who shared distributively had a mean 9.0 and a median 2 partners to whom participants gave their used syringes

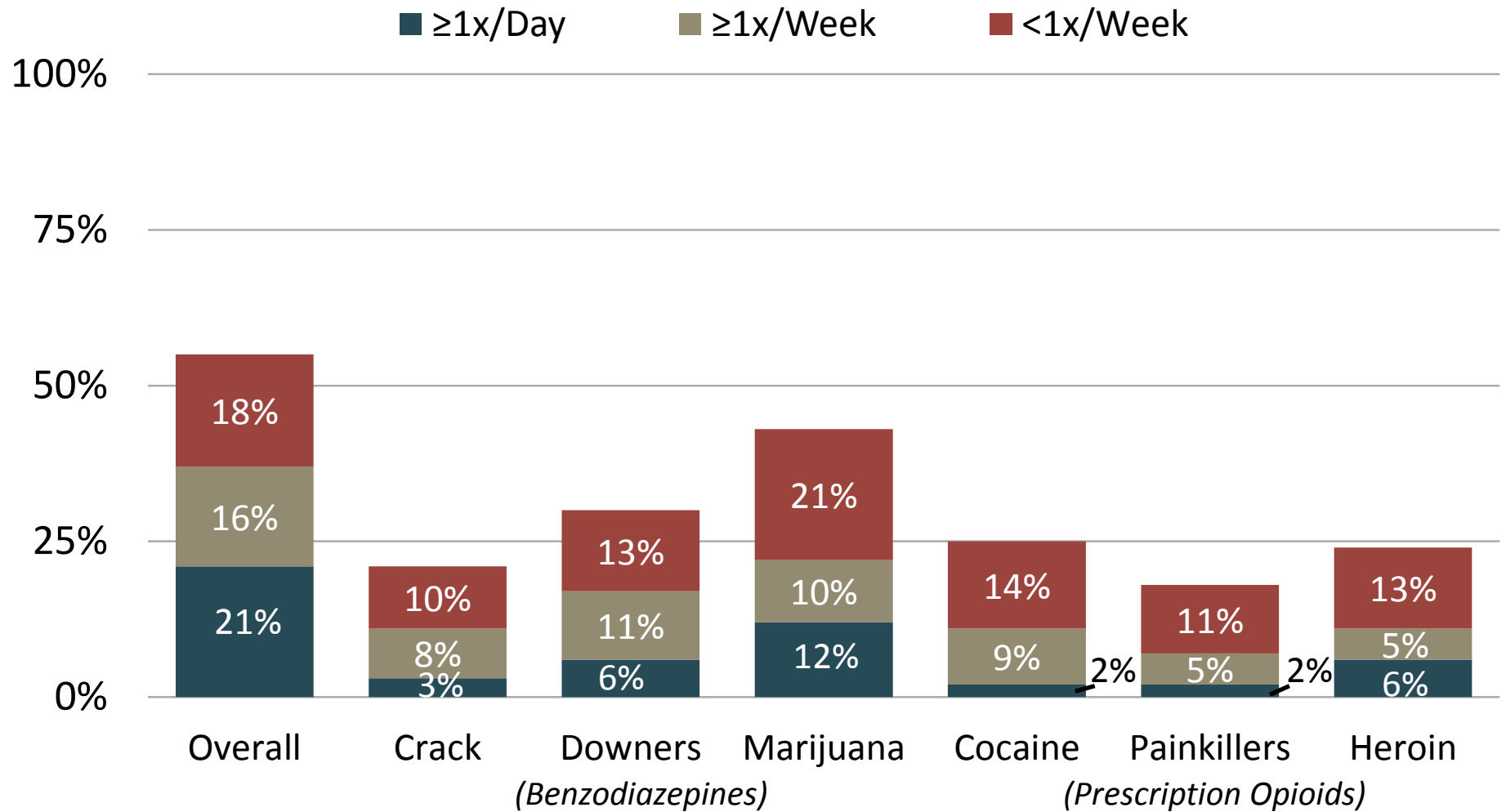# Other Equipment Sharing in Past 12 Months

NYC NHBS-IDU3, 2012, n=482 (HIV-/Unk. IDU)
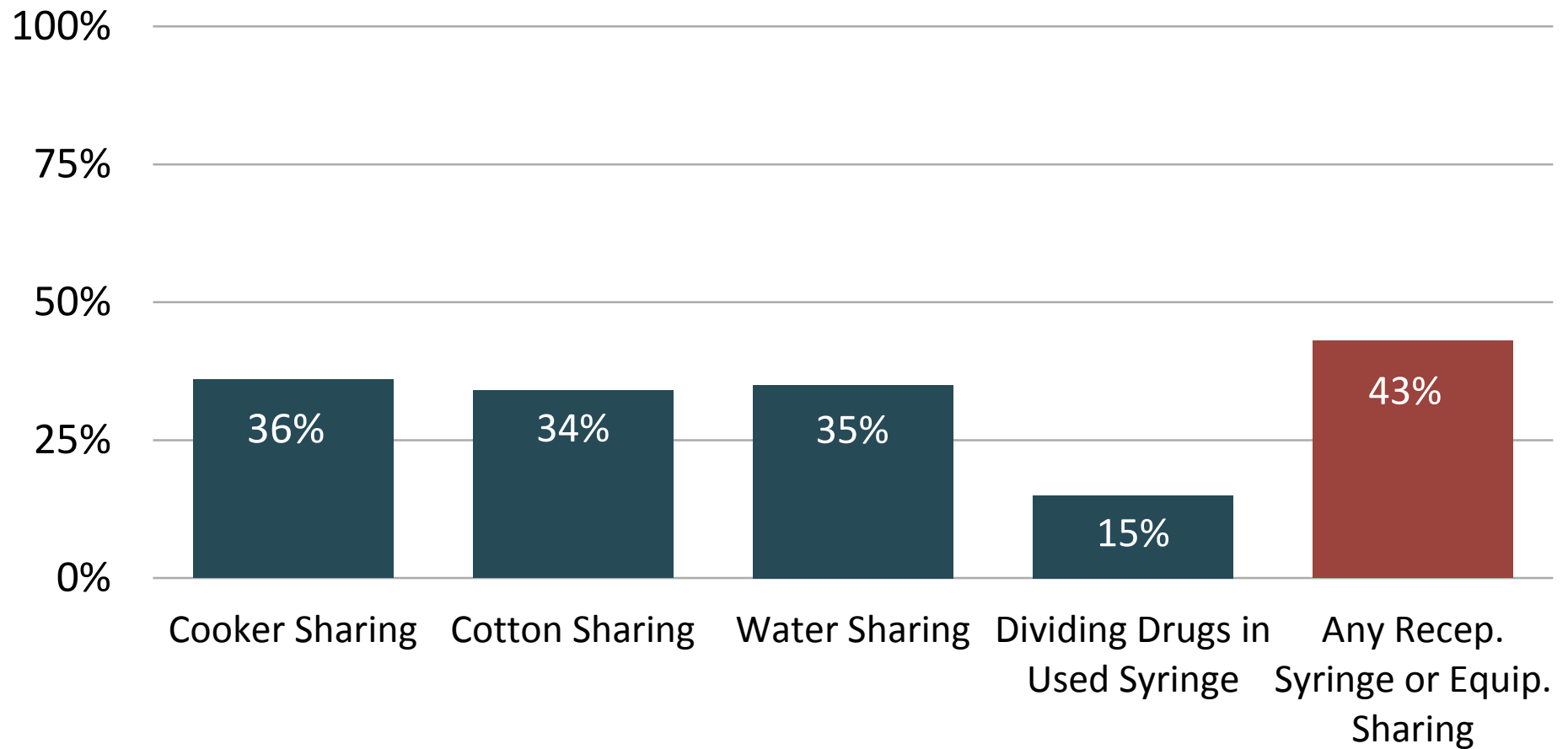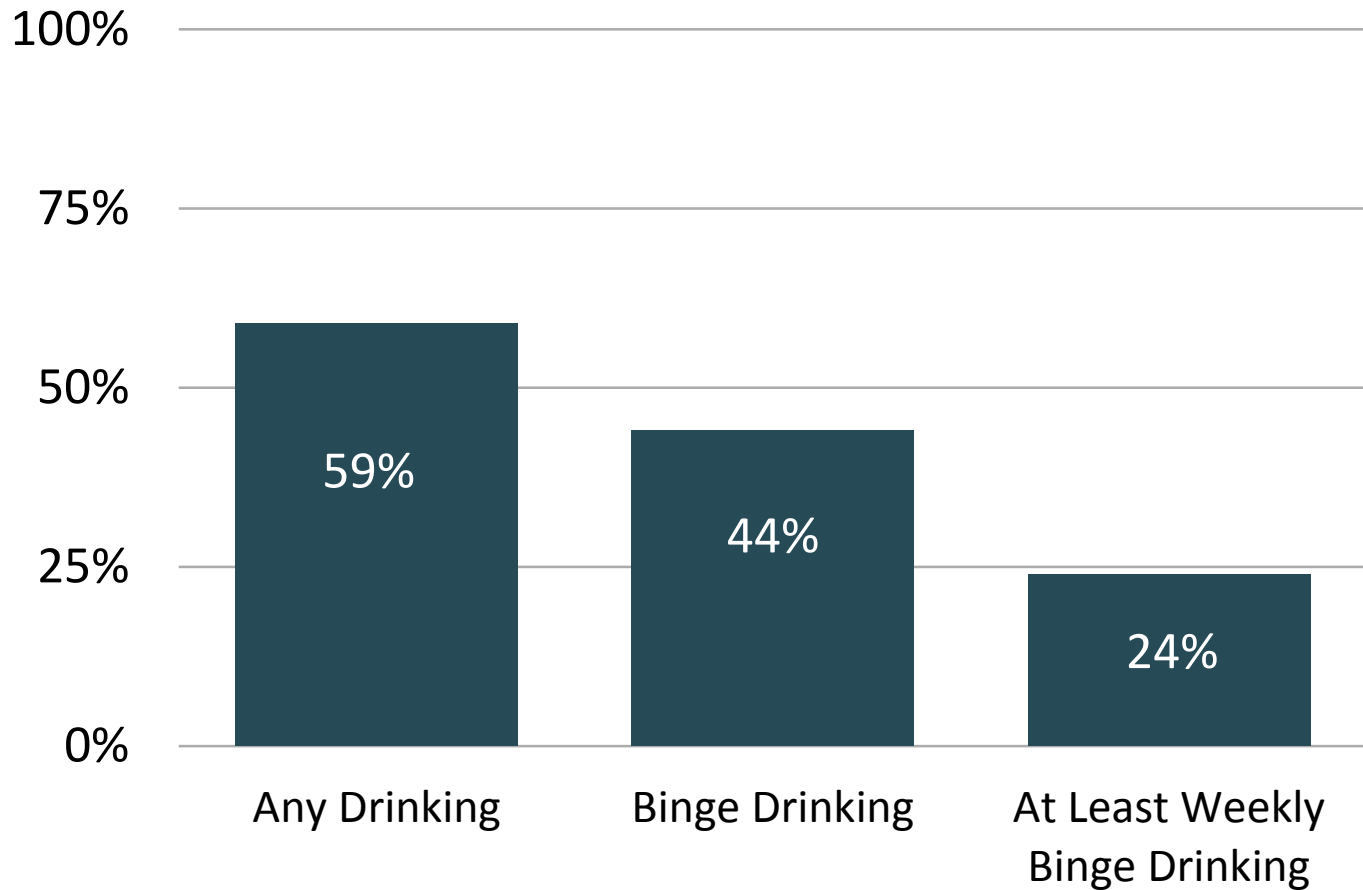
Non-Injection Drug & Alcohol Use

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

NYC NHBS-IDU3, 2012, n=525

Alcohol Use (Past 12 Months)
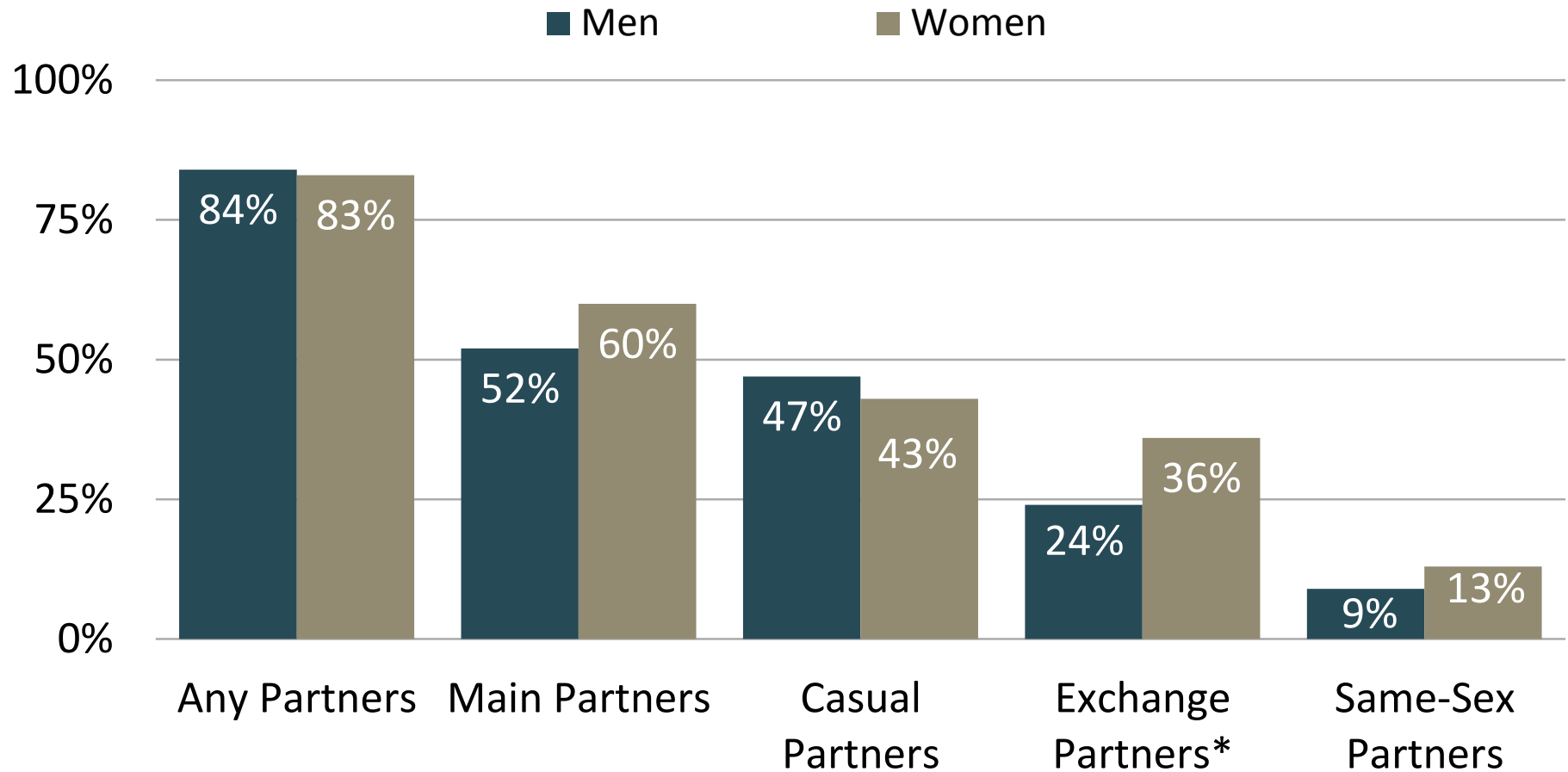
NYC NHBS-IDU3, 2012, n=525

Binge drinking is consuming at least 5 drinks for men or 4 drinks for women in "one sitting"

Sexual Activity

Sexual Partnerships (Past 12 Months)
NYC NHBS-IDU3, 2012, n=479 (HIV-/Unk. IDU)

Heterosexual Partners

*Reported giving or receiving money or drugs for sex with main or casual partners

Heterosexual Partnerships, by Gender (Past 12 Months)
NYC NHBS-IDU3, 2012, n=401 (HIV-/Unk. IDU with Heterosexual Partners)

	Total		Men		Women	
	Mean	**Median**	**Mean**	**Median**	**Mean**	**Median**
Main	0.8	1	0.8	1	0.8	1
Casual	3.7	1	3.0	1	5.9	1
All Types	4.5	2	3.8	2	6.7	2

Exchange Heterosexual Partnerships, by Gender (Past 12 Months)

NYC NHBS-IDU3, 2012, n=401 (HIV-/Unk. IDU with Heterosexual Partners)

	Total		Men		Women	
	Mean	**Median**	**Mean**	**Median**	**Mean**	**Median**
Exchange*	2.4	0	1.8	0	4.2	0

p=0.004

*Reported giving or receiving money or drugs for sex with main or casual partners

Heterosexual Risks, by Gender (Past 12 Months)

NYC NHBS-IDU3, 2012, n=401 (HIV-/Unk. IDU with Heterosexual Partners)

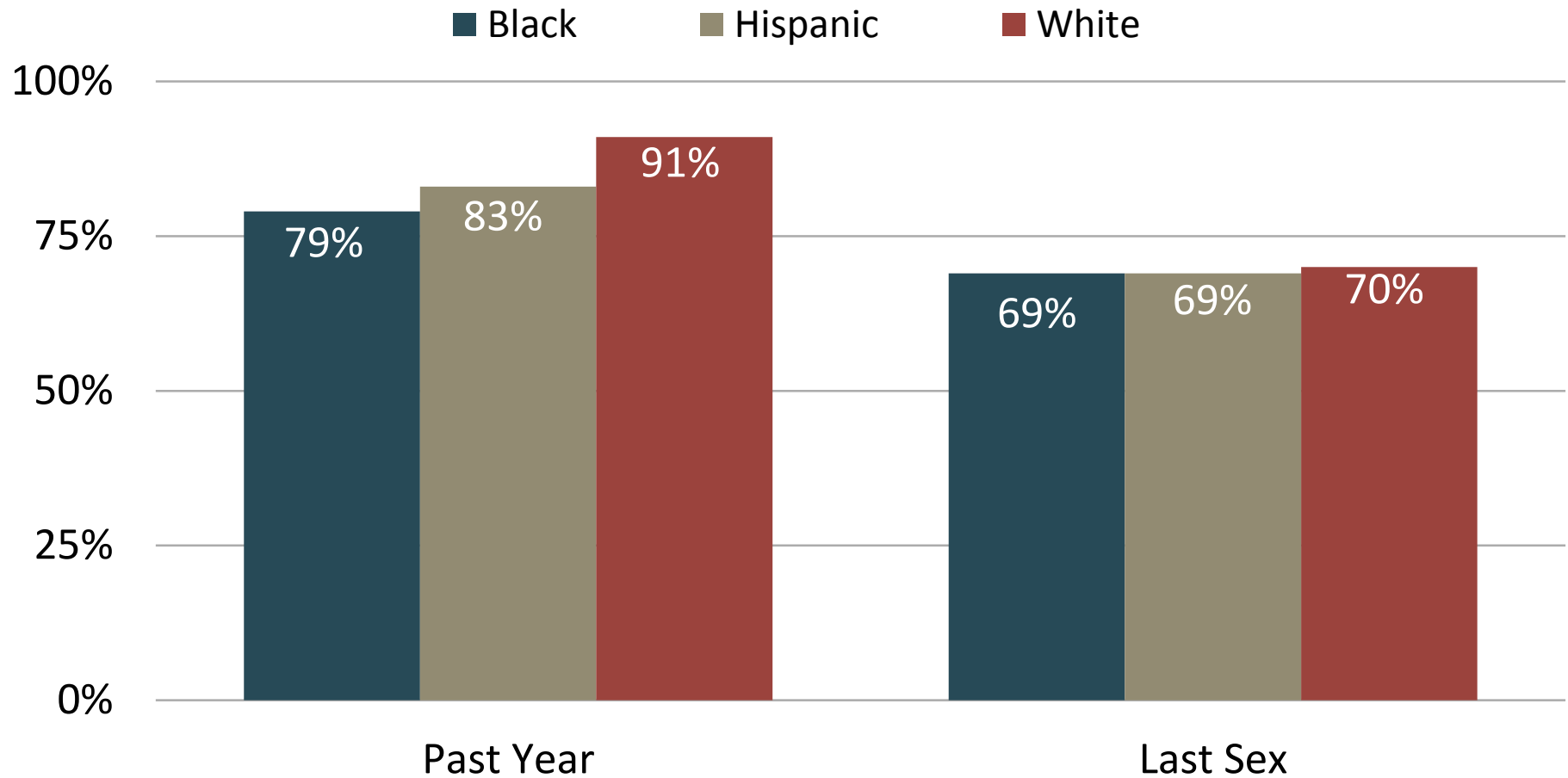|	Total	Men	Women	
	%	%	%	p
Unprotected Vaginal Sex (UVS)	83.2	83.0	83.9	0.84
Unprotected Anal Sex (UAS)	40.4	44.8	26.7	0.002
UVS or UAS	83.8	83.8	83.6	0.97
UVS or UAS w/ Casual Partner	35.0	37.0	28.5	0.12
≥ 3 Total Partners	33.2	33.8	31.2	0.62

Heterosexual Risks, by Age (Past 12 Months)
NYC NHBS-IDU3, 2012, n=401 (HIV-/Unk. IDU with Heterosexual Partners)

	Total	18-29	30-39	40+	
	%	%	%	%	p
Unprotected Vaginal Sex (UVS)	83.1	90.9	83.8	81.7	0.40
Unprotected Anal Sex (UAS)	40.4	44.9	51.0	34.9	0.01
UVS or UAS	83.8	90.8	83.5	82.8	0.51
UVS or UAS w/ Casual Partner	35.0	41.0	37.6	32.8	0.47
≥ 3 Total Partners	33.2	38.8	38.8	29.8	0.16

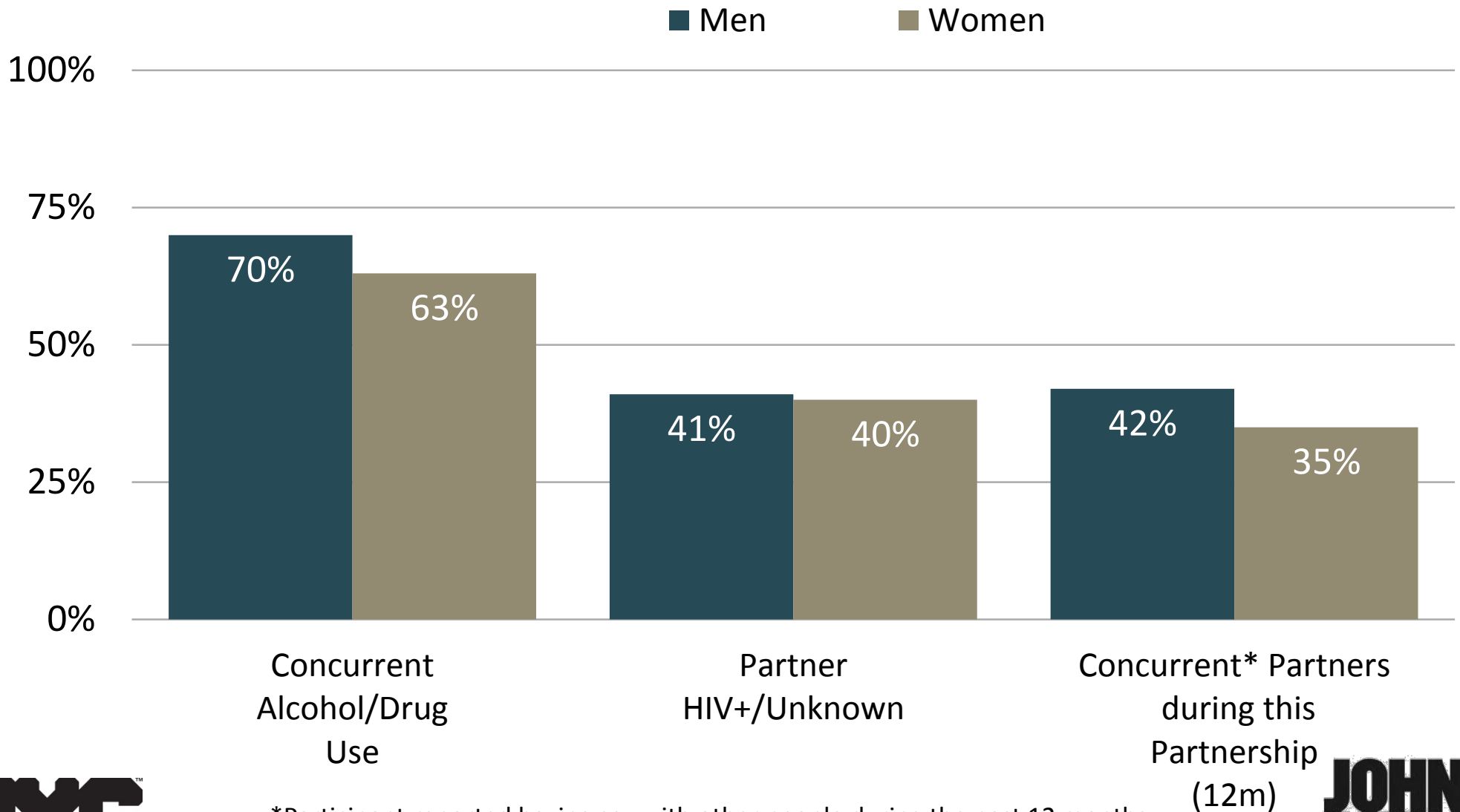# Unprotected Sex in Past 12 Months and Last Sex, by Race
NYC NHBS-IDU3, 2012, n=397 (HIV-/Unk. IDU with Heterosexual Partners)

Legend: ■ Black ■ Hispanic ■ White

	Past Year	Last Sex
Black	79%	69%
Hispanic	83%	69%
White	91%	70%

Other race removed because of small sample size

Risk Characteristics of Last Heterosexual Partner, by Gender

NYC NHBS-IDU3, 2012, n=401 (HIV-/Unk. IDU with Heterosexual Partners)

Legend: Men (dark), Women (tan)

Concurrent Alcohol/Drug Use: Men 70%, Women 63%
Partner HIV+/Unknown: Men 41%, Women 40%
Concurrent* Partners during this Partnership (12m): Men 42%, Women 35%

*Participant reported having sex with other people during the past 12 months when they were having a sexual relationship with this partner

Risk Characteristics of Last Heterosexual Partner, by Gender

NYC NHBS-IDU3, 2012, n=401 (HIV-/Unk. IDU with Heterosexual Partners)

Legend: ■ Men ■ Women

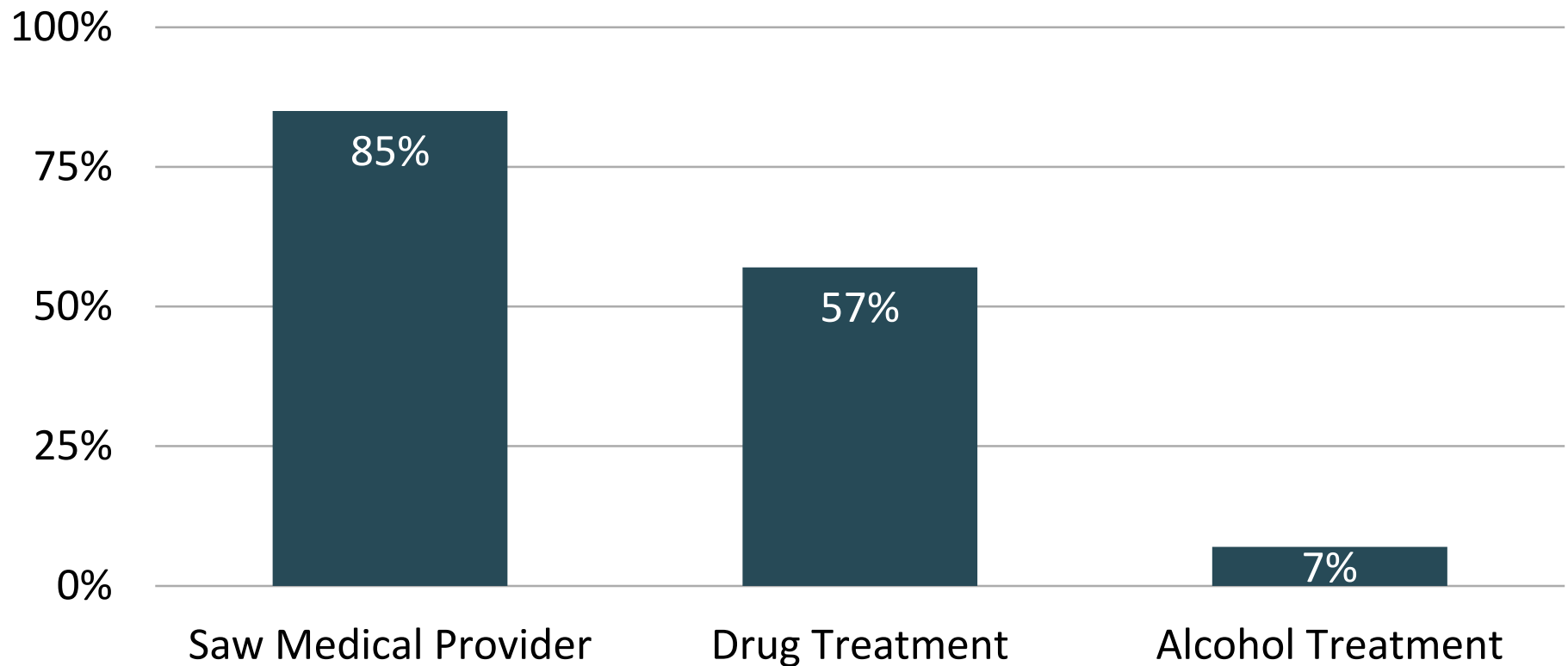|	Men	Women
Partner Ever IDU (p<0.0001)	46%	73%
Partner Ever Used Crack (p=0.04)	35%	47%
Partner Ever Incarcerated (p<0.0001)	33%	62%
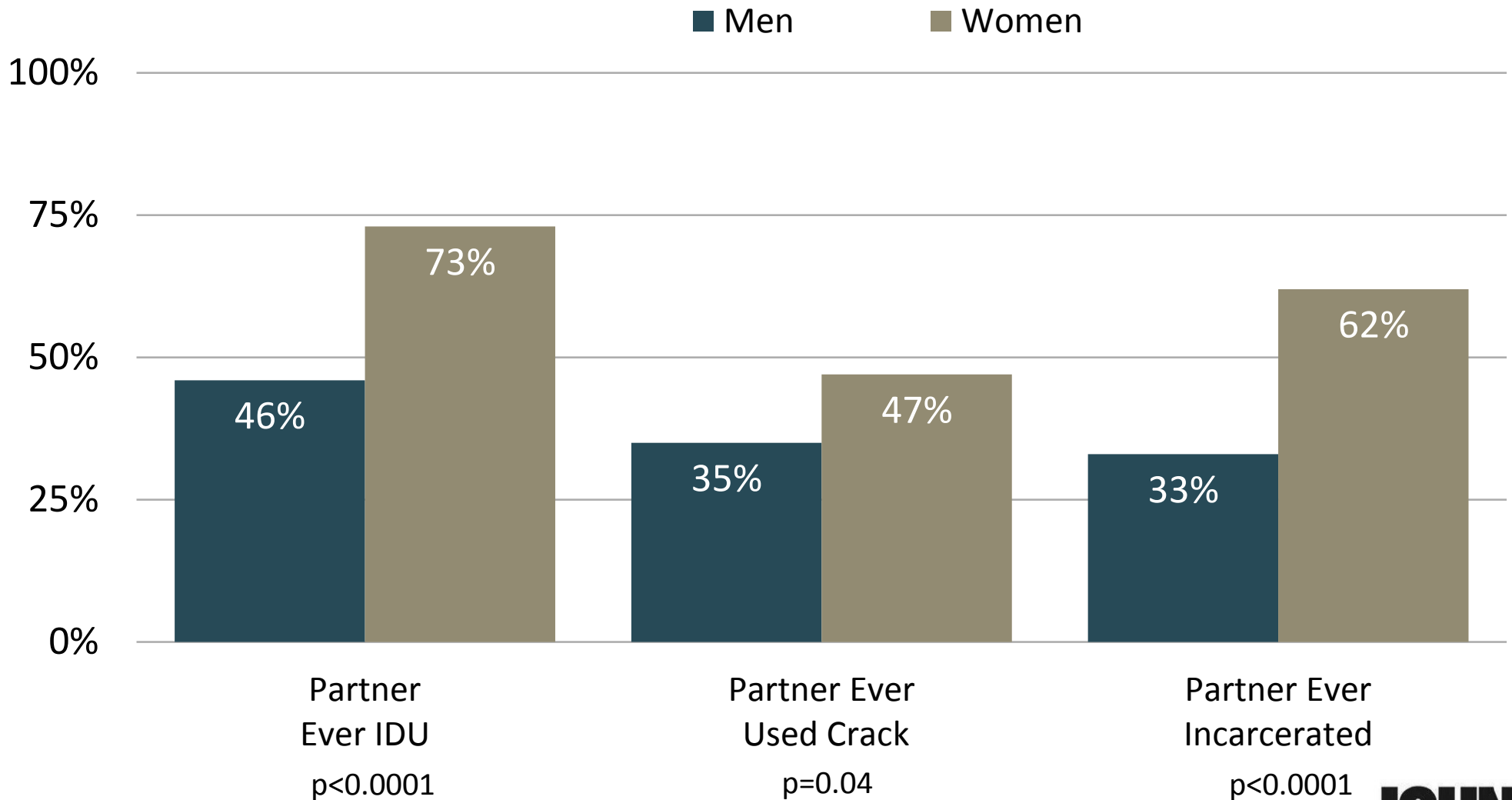
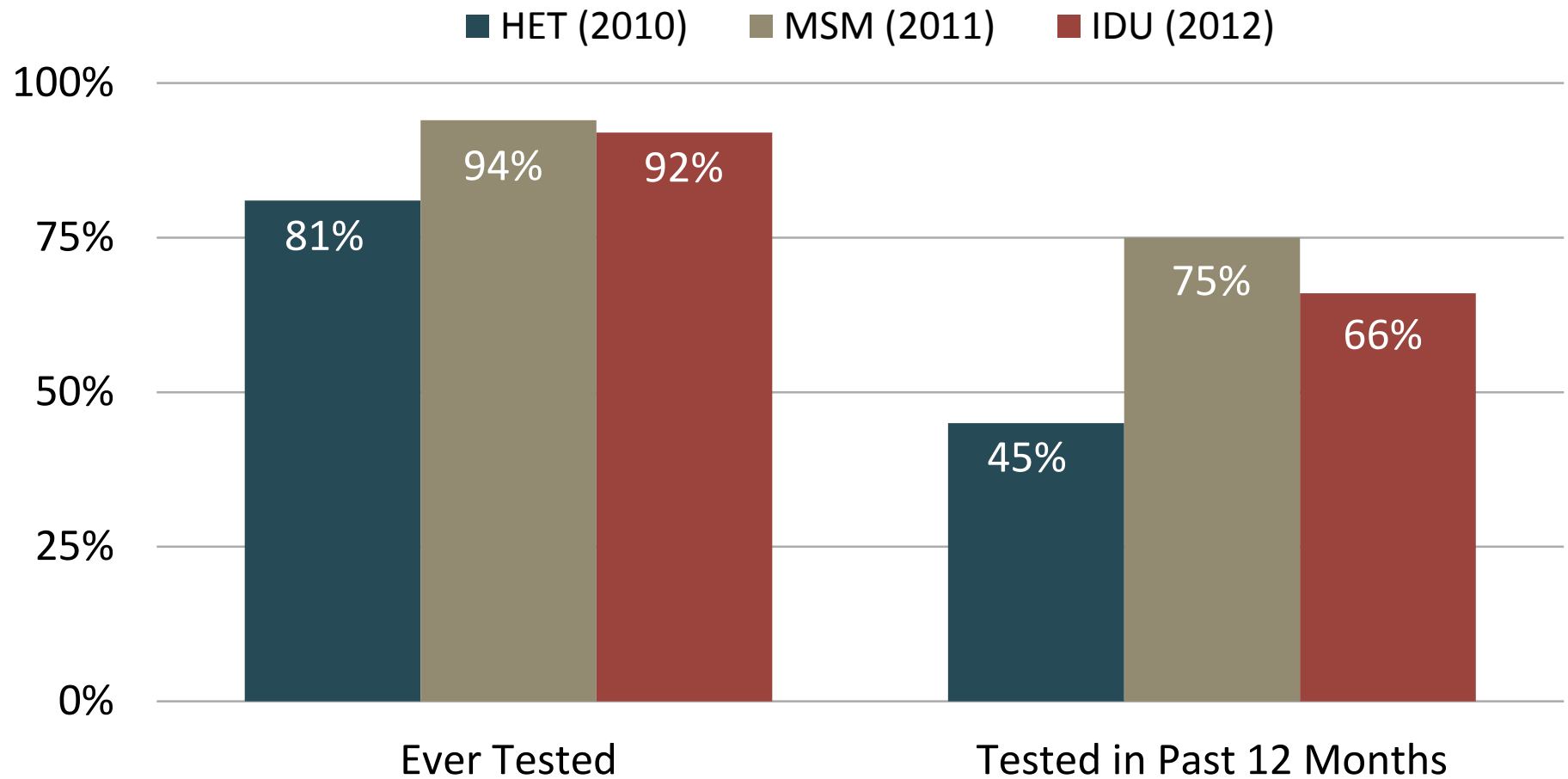*Definite or Probable*

HIV Testing and Other Healthcare

Healthcare, Drug and Alcohol Treatment Encounters (Past 12 Months)
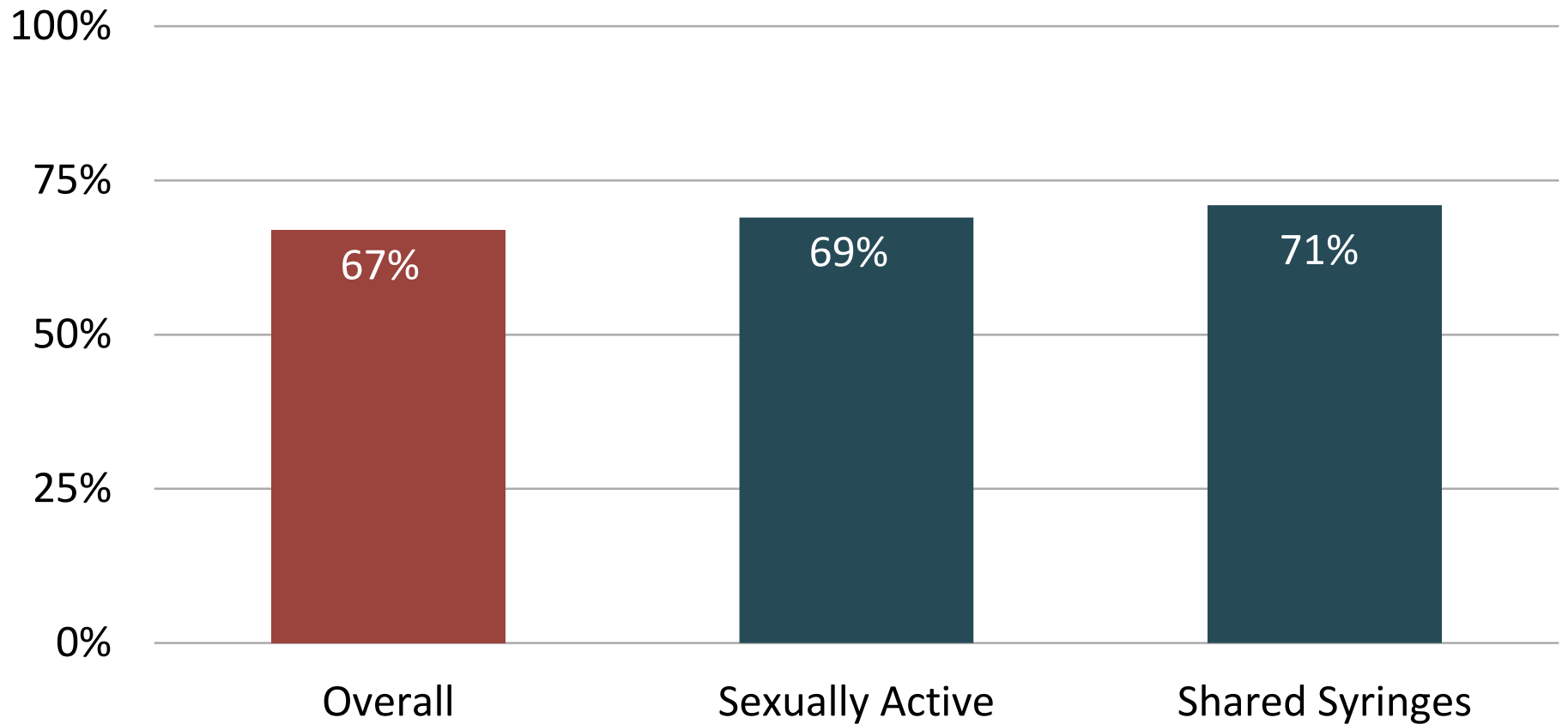*NYC NHBS-IDU3, 2012, n=525*

HIV Testing History by Risk Group
NYC NHBS (HET, MSM, and IDU), 2010-12

Offered HIV Test by Medical Provider (Past 12 Months)
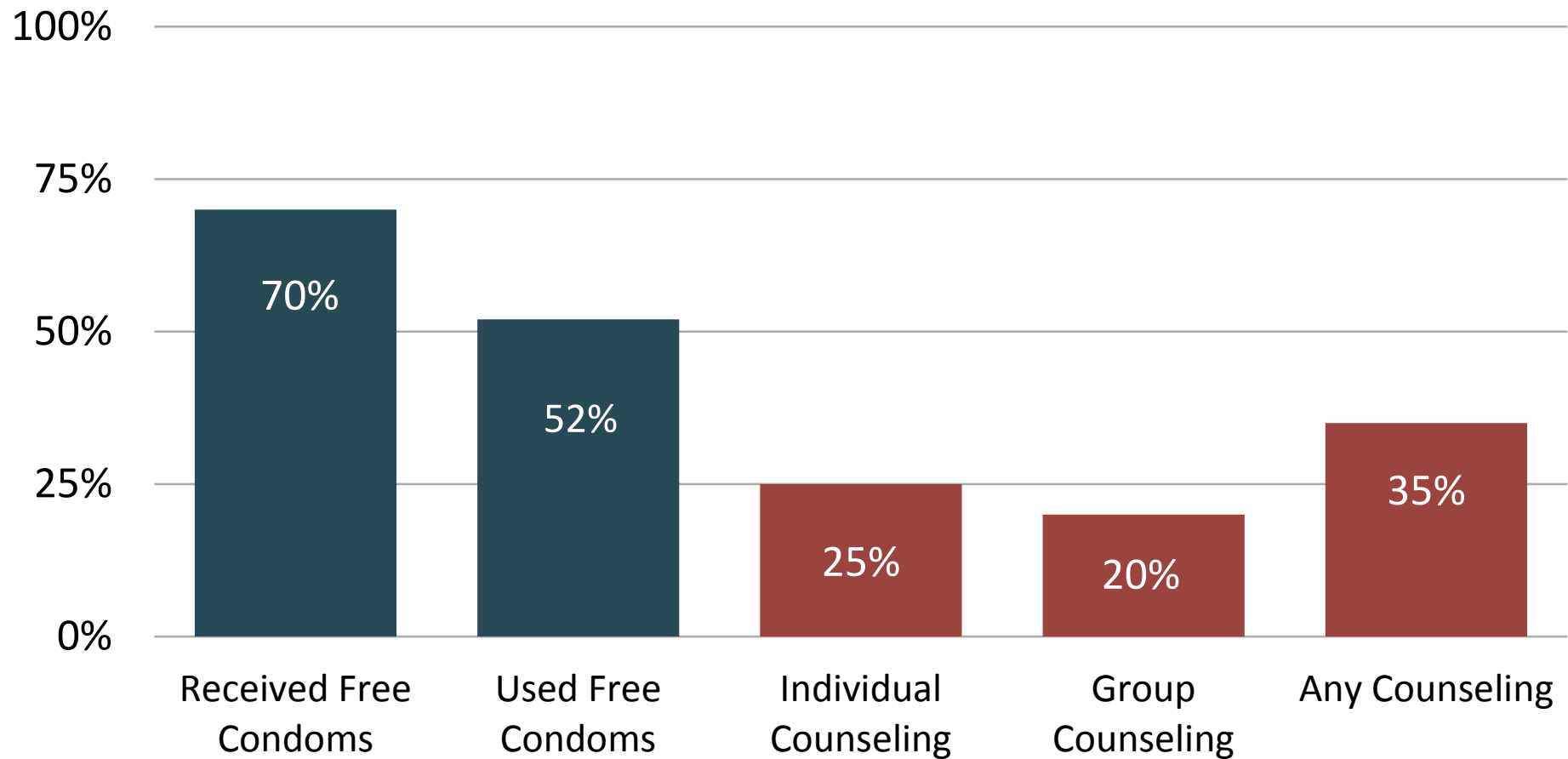*NYC NHBS-IDU3, 2012, n=420 (HIV-/Unk. IDU Who Visited a Medical Provider)*

HIV Prevention Activities

HIV Prevention Activities (Past 12 Months)

NYC NHBS-IDU3, 2012, n=525

HIV & HCV Prevalence

HIV Prevalence

NYC NHBS-IDU3, 2012, n=502 (Tested in Study)

	HIV-Positive	95% CI
Overall	18.1%	14.2% – 22.3%
By Race*		
Black	32.7%	22.8% – 42.6%
Hispanic	14.5%	9.8% – 19.3%
White	10.6%	2.0% – 19.3%
By Gender*		
Male	17.0%	12.6% – 21.6%
Female	22.3%	13.6% – 31.1%
By Age		
18-29	4.1%	0.0% – 11.9%
30-39	6.4%	1.0% – 11.7%
40+	23.8%	18.6% – 29.1%

* Other race and transgender IDUs excluded due to small sample size

HCV Prevalence

NYC NHBS-IDU3, 2012, n=483 (Tested in Study)

	HCV-Positive	95% CI
Overall	66.2%	62.0% – 70.5%
By Race*		
Black	51.1%	41.7% –60.5%
Hispanic	71.8%	66.6% – 77.0%
White	63.9%	52.6% – 75.2%
By Gender*		
Male	70.0%	65.2% – 74.8%
Female	55.2%	46.0% – 64.4%
By Age		
18-29	54.3%	38.4% – 70.2%
30-39	79.5%	72.1% – 87.0%
40+	62.9%	57.7% – 68.2%

* Other race and transgender IDUs excluded due to small sample size

Conclusions

Summary

- Continuing injection-related and sexual risk behaviors despite widespread encounters with exchange programs, pharmacies, medical providers, and other prevention outlets is a major concern

- 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

- Large dataset with 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

- 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

Contact

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