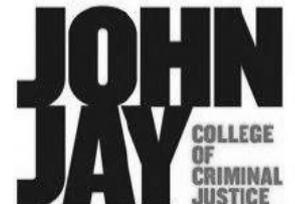


HIV Risk and Prevalence among Heterosexuals at Increased Risk for HIV in New York City

2013 National HIV Behavioral Surveillance Study

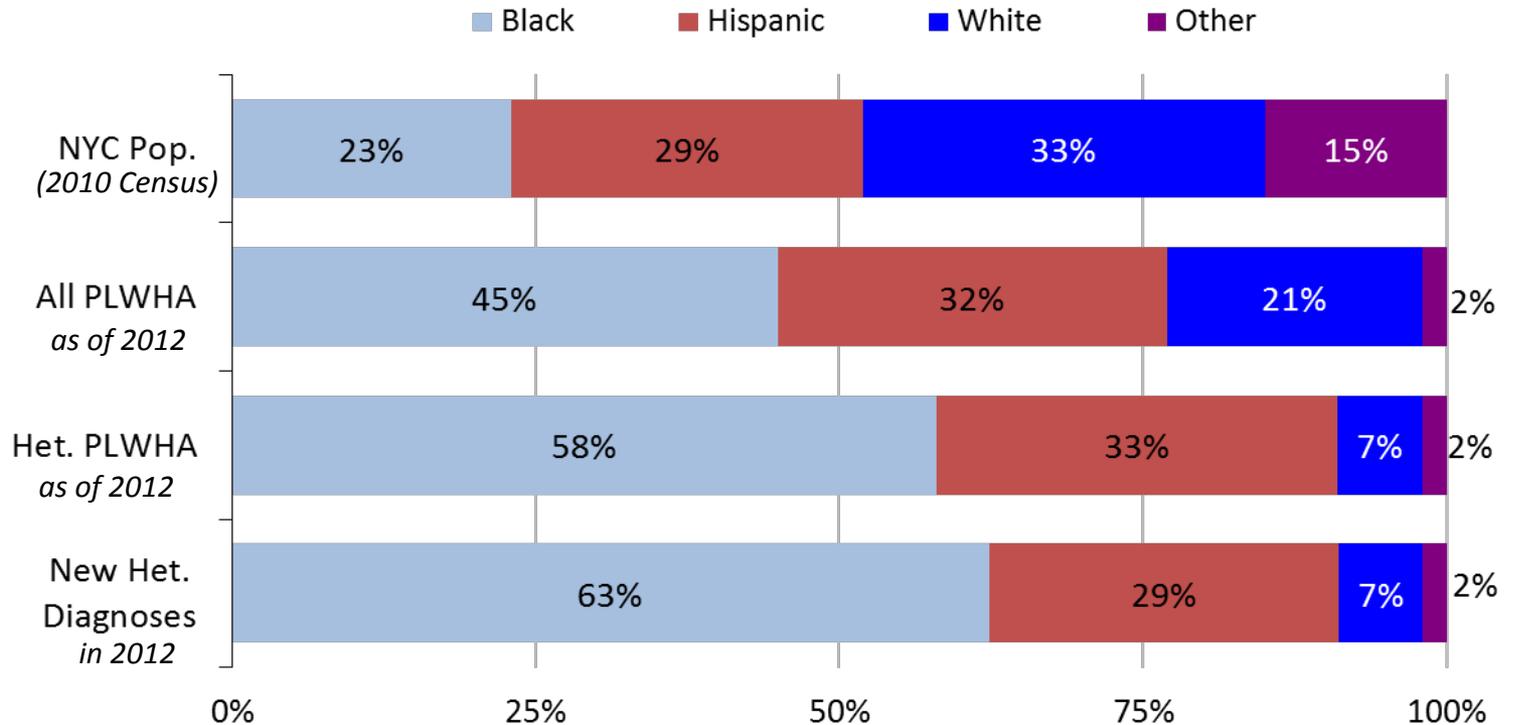


Background

- Heterosexual transmission* HIV case surveillance in NYC
 - 616 new heterosexual diagnoses in 2012
20% of all new diagnoses and 25% of new diagnoses with known risk
 - 22,767 heterosexual PLWHA as of 2012
20% of all PLWHA and 26% of PLWHA with known risk
- Heterosexual transmission case categorization is complicated by need for known partner risks
 - Heterosexual HIV epidemic is partially driven by sexual partnerships with high-risk partners (including men who have sex with men (MSM) & injection drug users (IDU))
 - Partner risks are often unknown

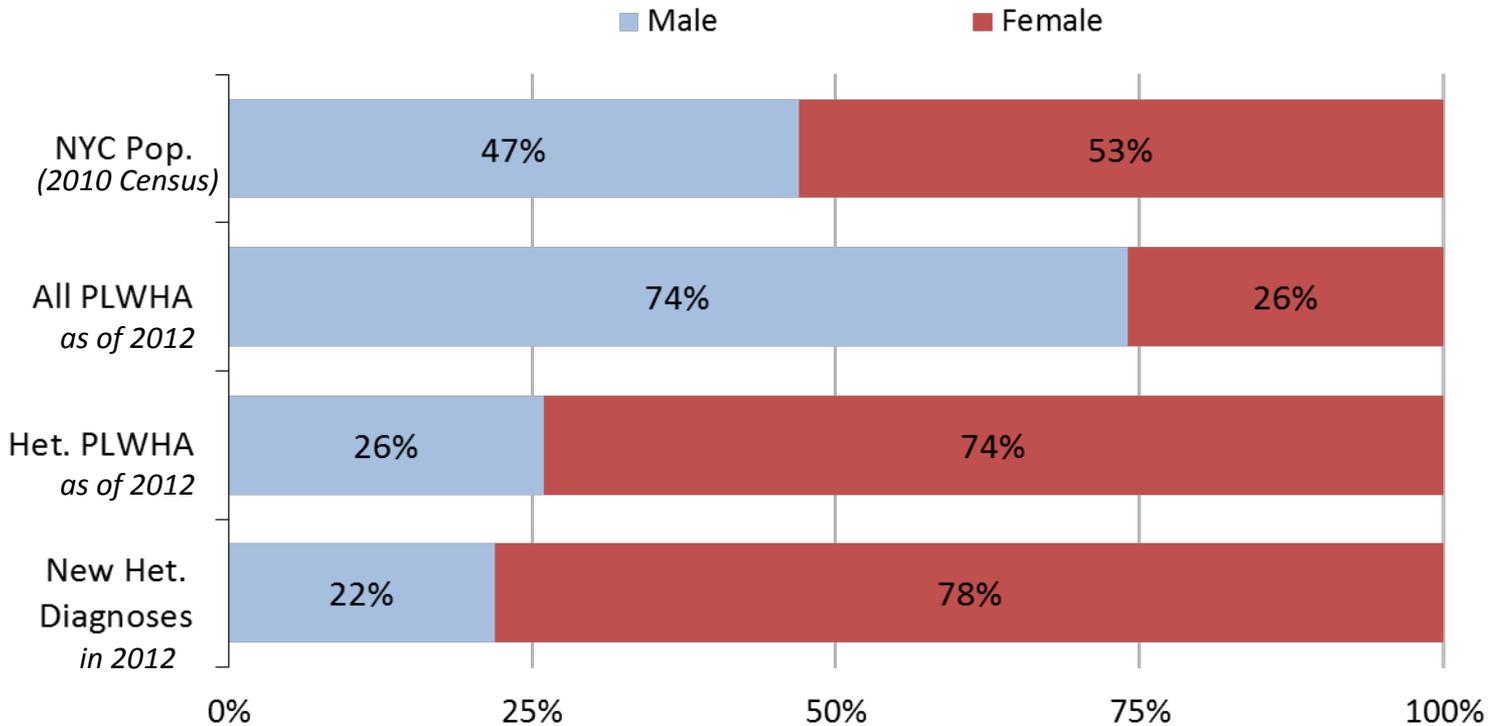
*Includes persons who had heterosexual sex with a person they know to be HIV-infected, an injection drug user, or a person who has received blood products; for females only, also includes history of prostitution, multiple sex partners, sexually transmitted disease, crack/cocaine use, sex with a bisexual male, probable heterosexual transmission as noted in medical chart or sex with a male and negative history of injection drug use

Racial Disparities in Heterosexual HIV Transmission in New York City



Compared to the overall NYC population, heterosexual PLWHA and new diagnoses are disproportionately black

Gender Disparities in Heterosexual HIV Transmission in New York City

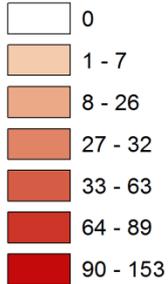


Heterosexual PLWHA and new heterosexual diagnoses are disproportionately female

New York City HIV Case Surveillance Data (2007-2011)

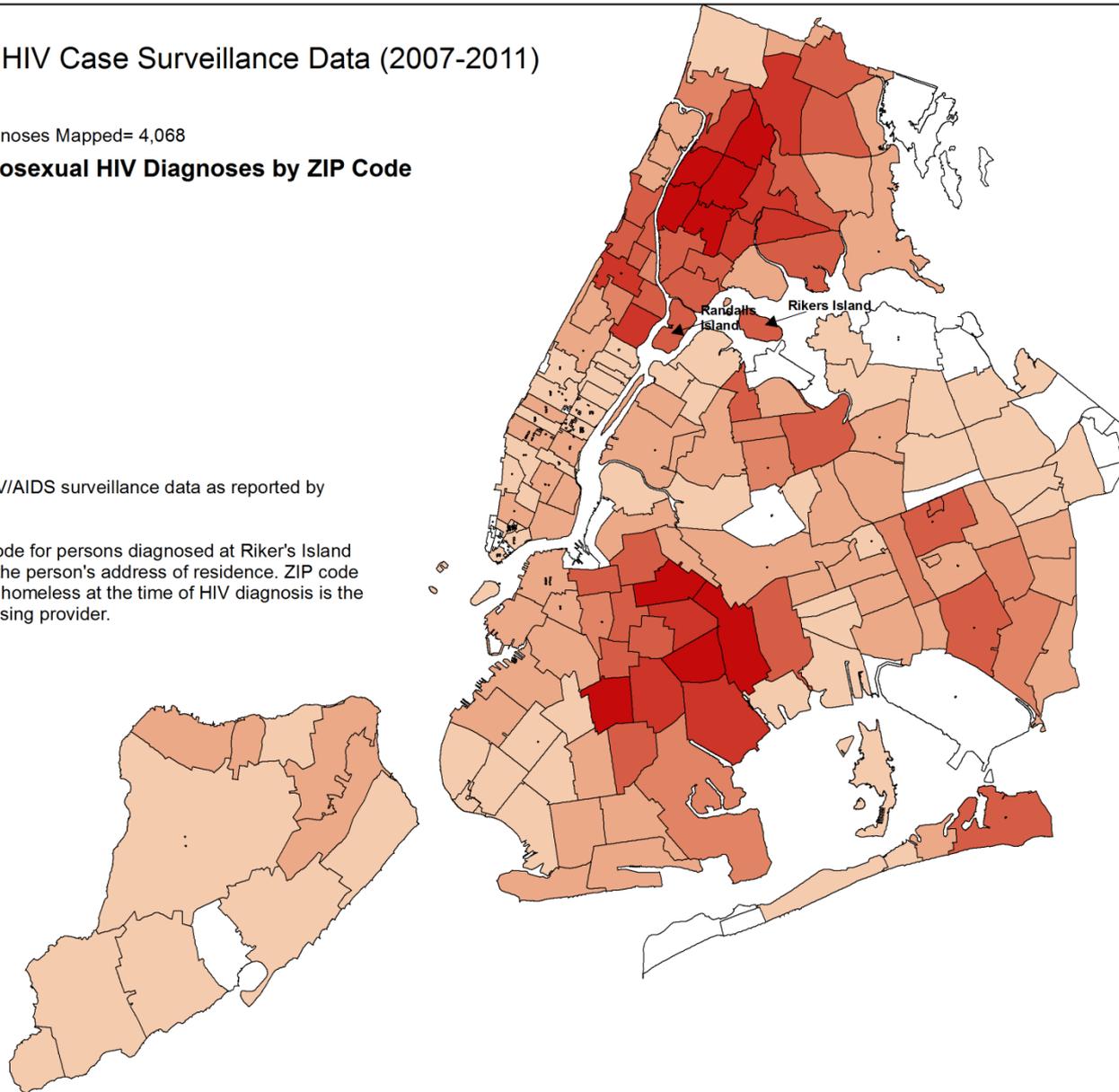
Heterosexual HIV Diagnoses Mapped= 4,068

Number of Heterosexual HIV Diagnoses by ZIP Code



Data Source: NYC HIV/AIDS surveillance data as reported by September 30, 2012

*In most cases, ZIP code for persons diagnosed at Riker's Island Jail Complex reflects the person's address of residence. ZIP code for persons who were homeless at the time of HIV diagnosis is the zip code of the diagnosing provider.



National HIV Behavioral Surveillance (NHBS)

- Ongoing, cyclical study of three HIV risk groups: MSM, IDU, and high-risk heterosexuals (HET)
 - Conducted in 20 cities through the U.S.
 - Funded by CDC, designed collaboratively
 - Cross-sectional study design
 - Anonymous, structured interview and HIV testing
- Current results are from third HET cycle (NHBS-HET3)

NHBS Study 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 HIV risk and prevalence

NHBS-HET3 Eligibility Criteria

- Vaginal or anal sex with an opposite sex partner in the past 12 months
- Male or female (not transgender)
- Resident of NYC metropolitan statistical area
- Speaks English or Spanish

Respondent-Driven Sampling

1. Study team recruits small number of initial participants (“seeds”) through community outreach
 - To focus recruitment in geographic areas of interest, seeds must have resided in High Risk Areas (HRAs)
 - HRAs were defined as the 25% of census tracts in New York City that have the highest proportion of residents who live below the Census Bureau’s poverty threshold (census tract poverty rate $\geq 24.2\%$)
2. Seeds participate in the study then recruit up to three peers in their social networks
3. If eligible, those three peers participate and each recruits up to three more peers
 - Recruitment chains continually monitored to ensure demographic representativeness
 - Incentives provided for participating in study and peer recruitment

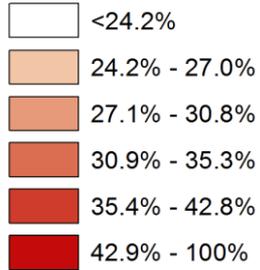
New York City High Risk Areas

Total census tracts=2122

HRA census tracts=623

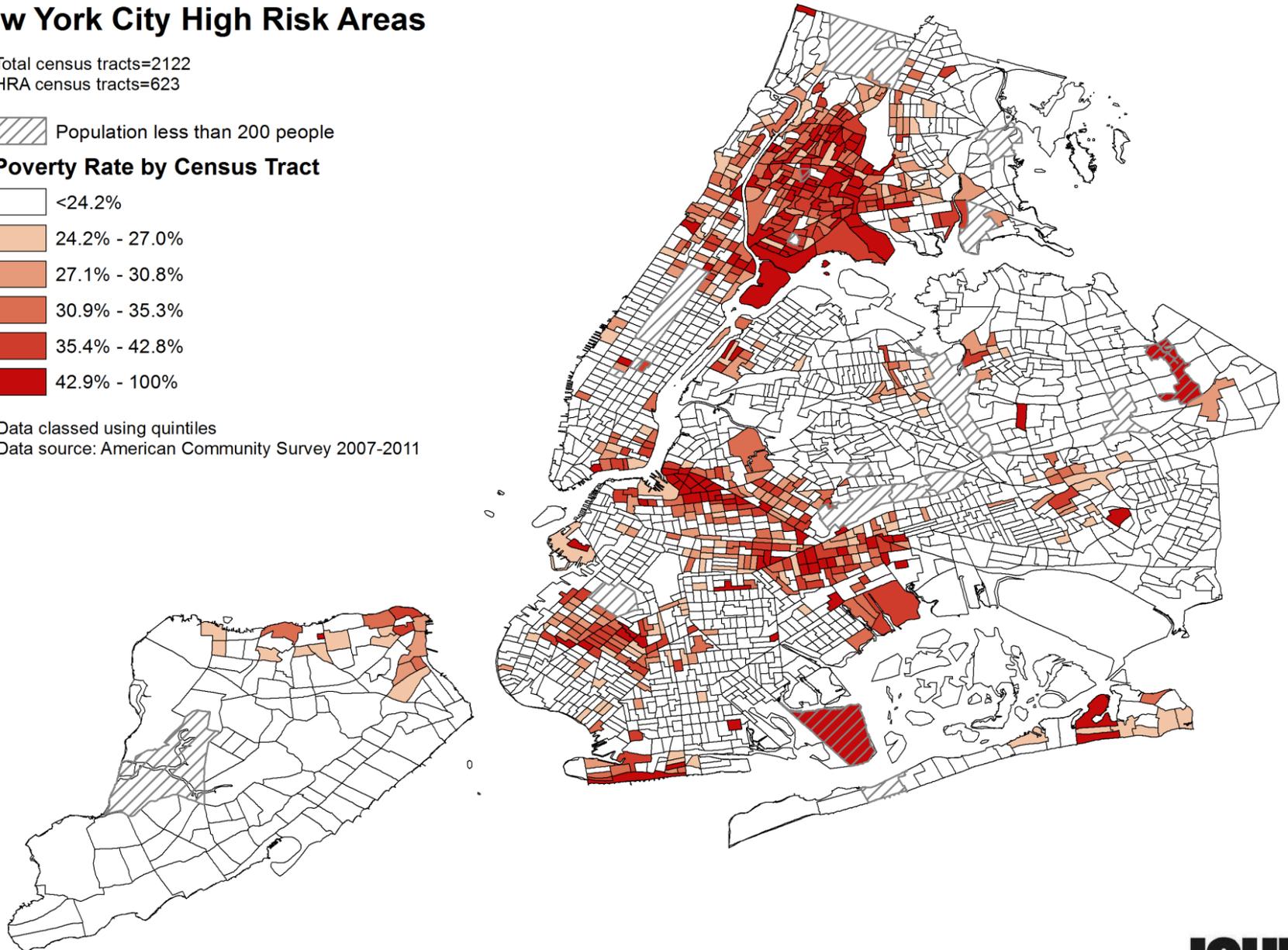
 Population less than 200 people

Poverty Rate by Census Tract

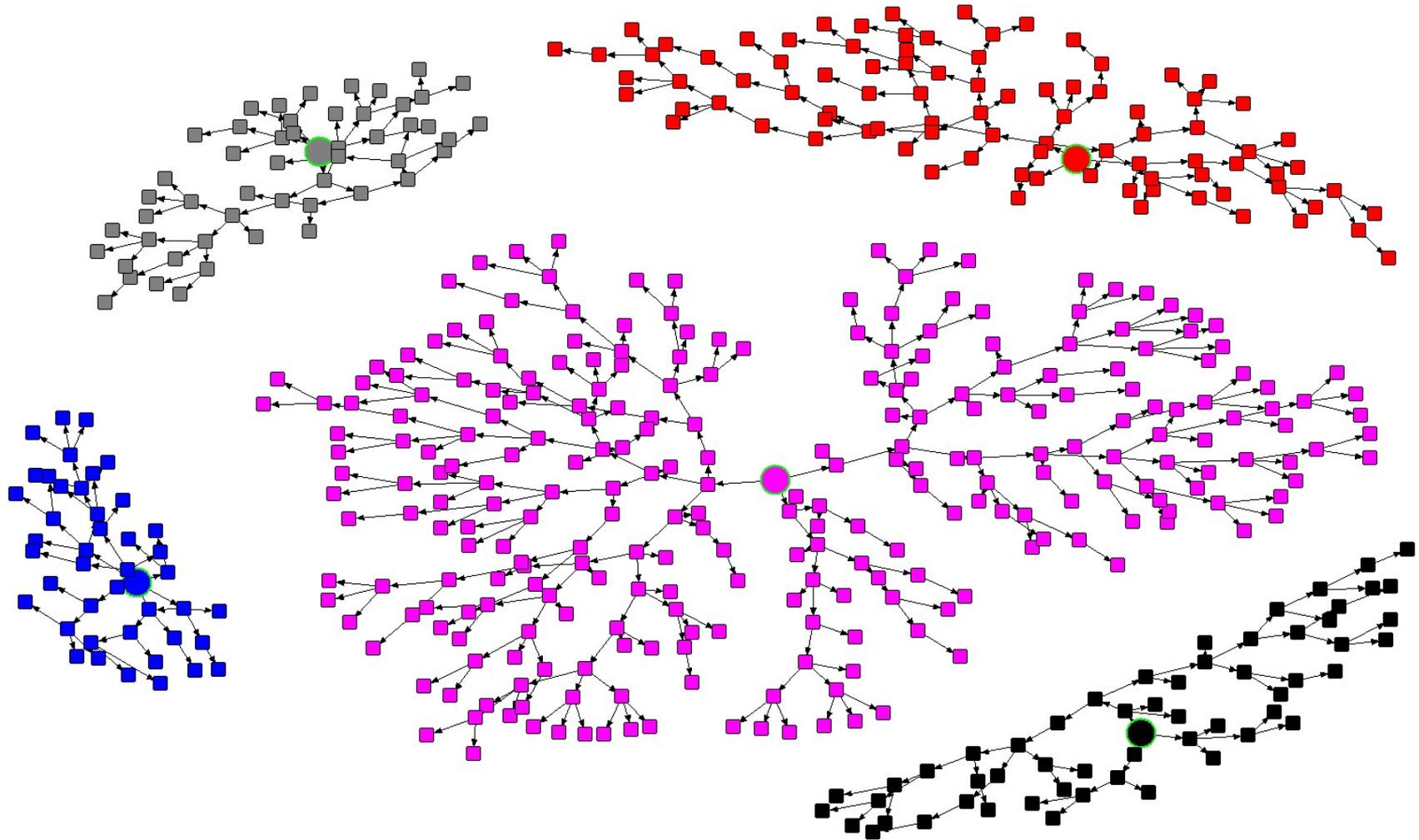


Data classed using quintiles

Data source: American Community Survey 2007-2011



Recruitment Chain Diagram

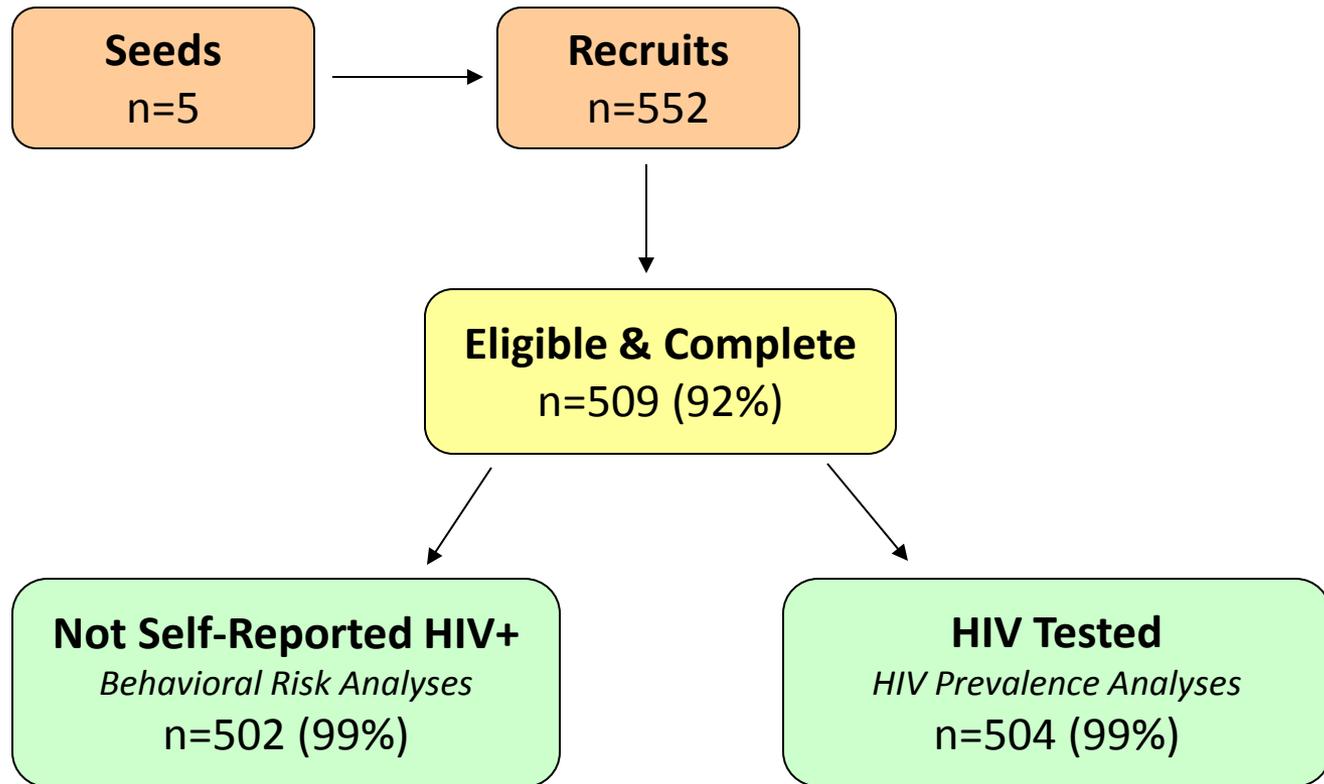


- Each node represents a study participant. Linking lines show recruitment chains, initiated by 5 productive seeds (represented by larger circular nodes outlined in green)
- To focus recruitment in high-risk heterosexual social networks, those who injected drugs without a prescription in the past 12 months and those that do not have low socio-economic status (SES) (having income that does not exceed Health and Human Services (HHS) poverty guidelines or educational attainment not greater than high school) were not eligible to recruit other participants

Statistical Analysis

- Weighted analysis conducted with RDS Analysis Tool 7.1.38 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)
- Self-reported HIV+ HET (n=7) removed from behavioral risk analyses; HET untested for HIV (n=5) excluded from seroprevalence analyses

NHBS-HET3 Sample Diagram



Demographics

NYC NHBS-HET3, 2013, n=509

Gender

Male	53%
Female	47%

Race/Ethnicity

Black	67%
Hispanic	30%
White	3%
Other	<1%

Age

18-29	29%
30-39	14%
40-49	24%
50+	33%

Birthplace

United States	87%
Puerto Rico	8%
Foreign	5%

Demographics

NYC NHBS-HET3, 2013, n=509

Marital Status

Never Married	65%
Currently Married or Cohabiting	7%
Previously Married	28%

Homeless*

Ever	24%
Currently	11%

Household Income*

< \$10k/year	60%
--------------	-----

Criminal Justice*

Arrested	30%
Incarcerated	18%

Education

< H.S. Grad	41%
-------------	-----

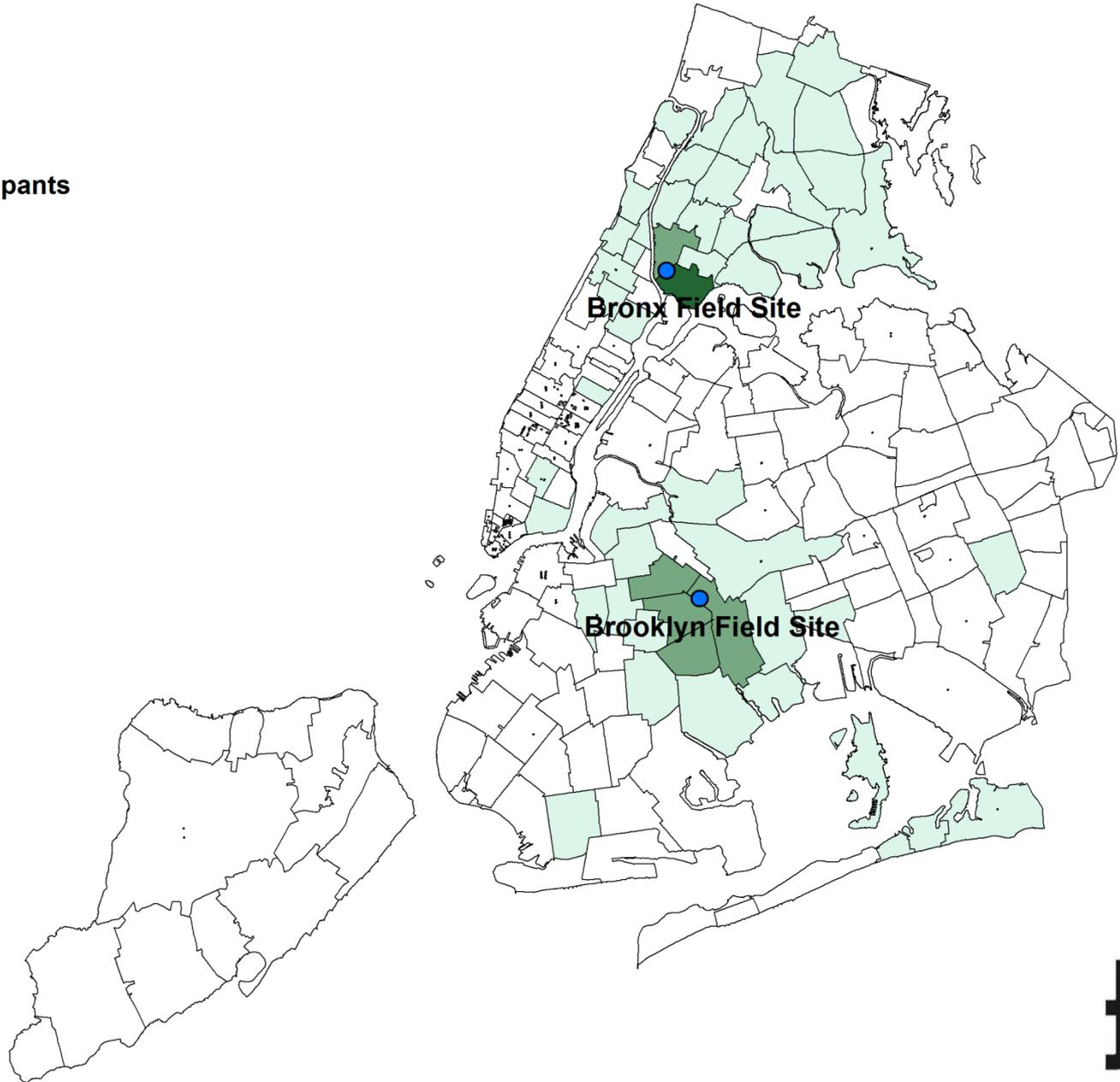
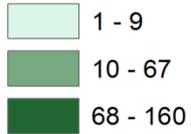
* In the past 12 months

NHBS-HET3: Distribution of Participants by ZIP Code of Residence

Legend

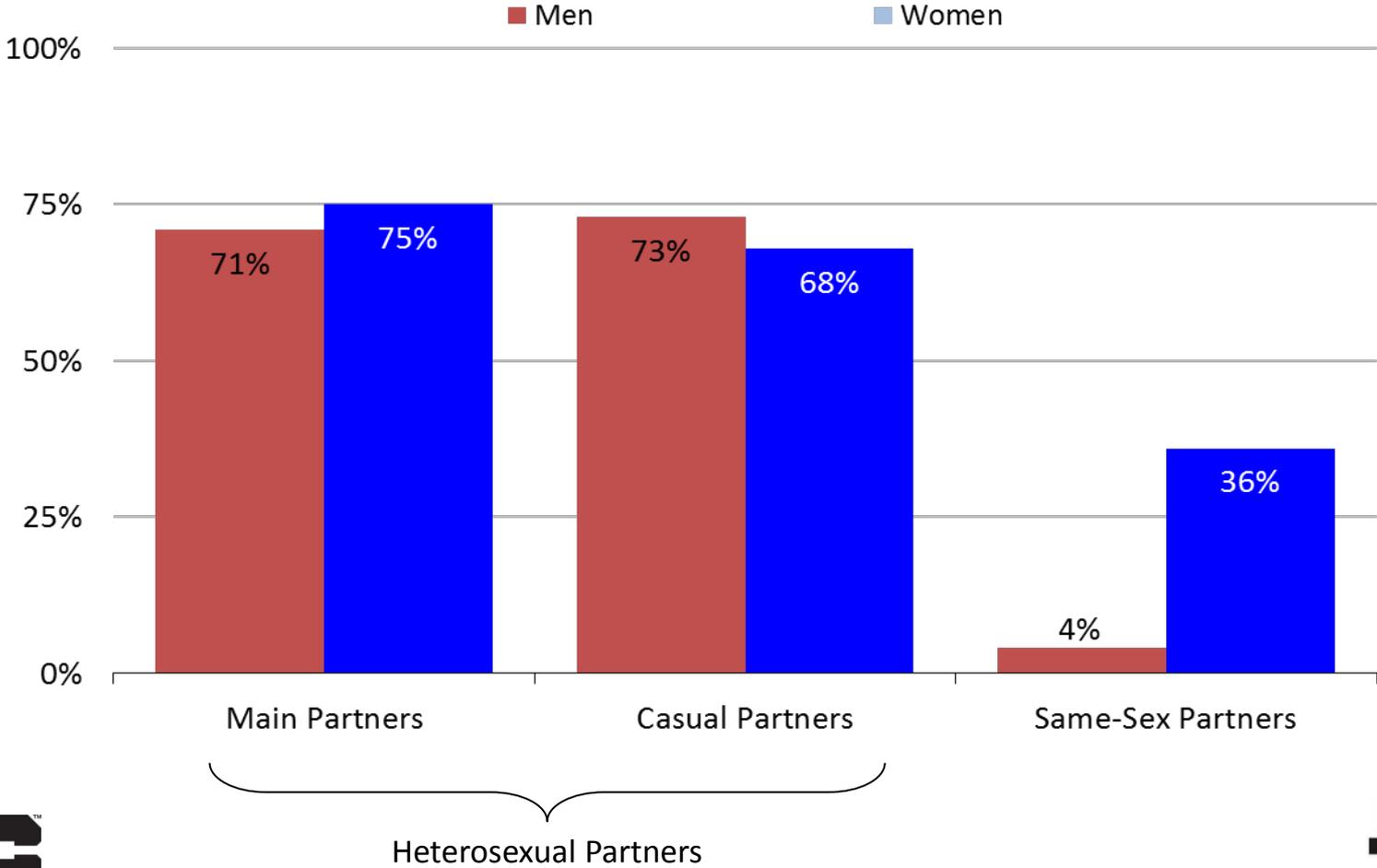
● Field Sites

Number of Participants



Type of Sexual Partnerships (Past 12 Months) by Gender

NYC NHBS-HET3, 2013, n=502 (HIV-/Unknown Status)



Number of Heterosexual Partners, by Gender (Past 12 Months)

NYC NHBS-HET3, 2013, n=502 (HIV-/Unknown Status)

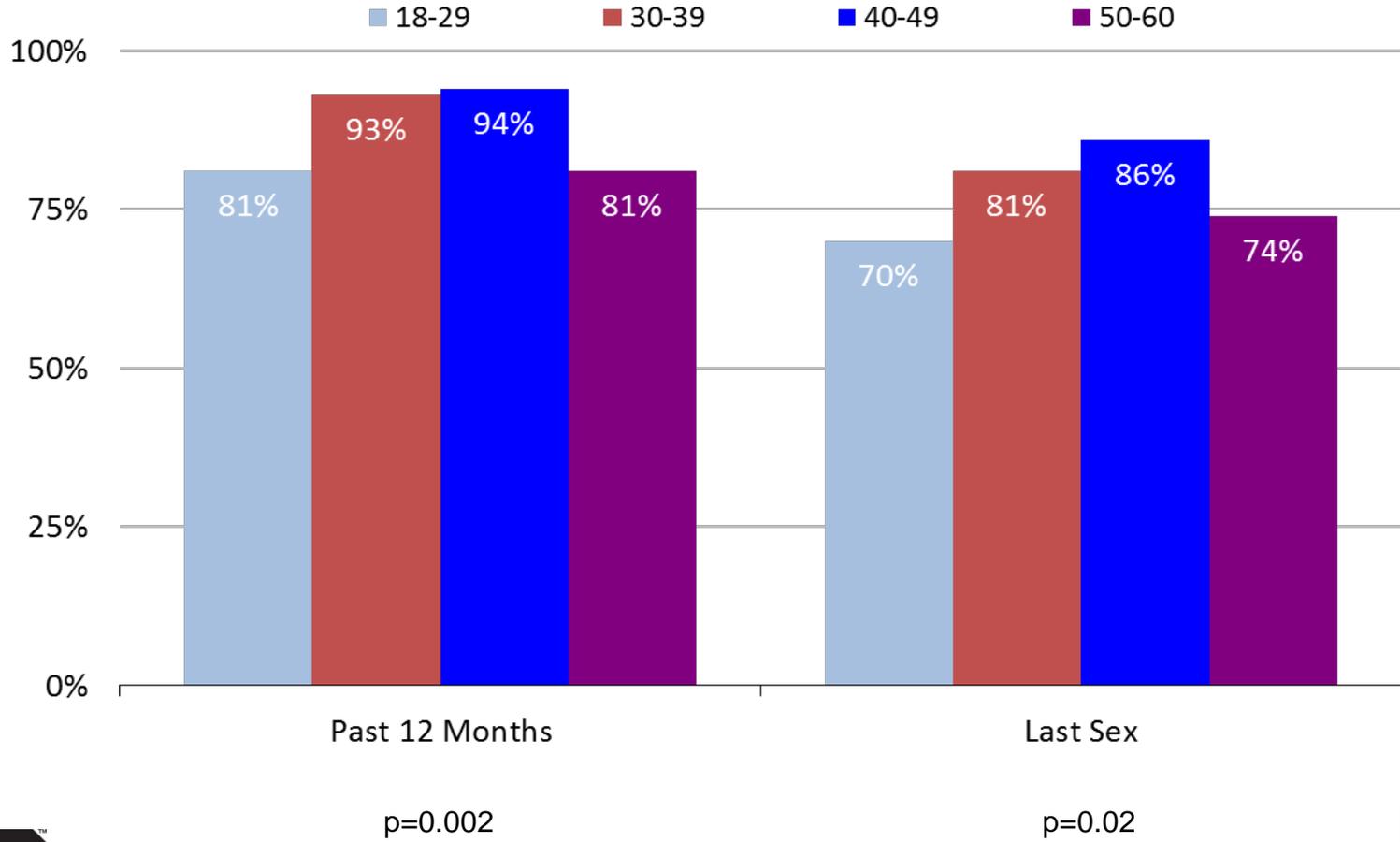
	Total (n=502)		Men (n=296)		Women (n=206)	
	Median	Mean	Median	Mean	Median	Mean
Main	1	1.4	1	1.3	1	1.4
Casual*	2	7.4	3	6.9	2	8.2
All Types†	3	8.8	4	8.2	3	9.6

Men had more casual partners than women (p=0.01, Wilcoxon)

Men had more total heterosexual partners than women († p=0.02, Wilcoxon)

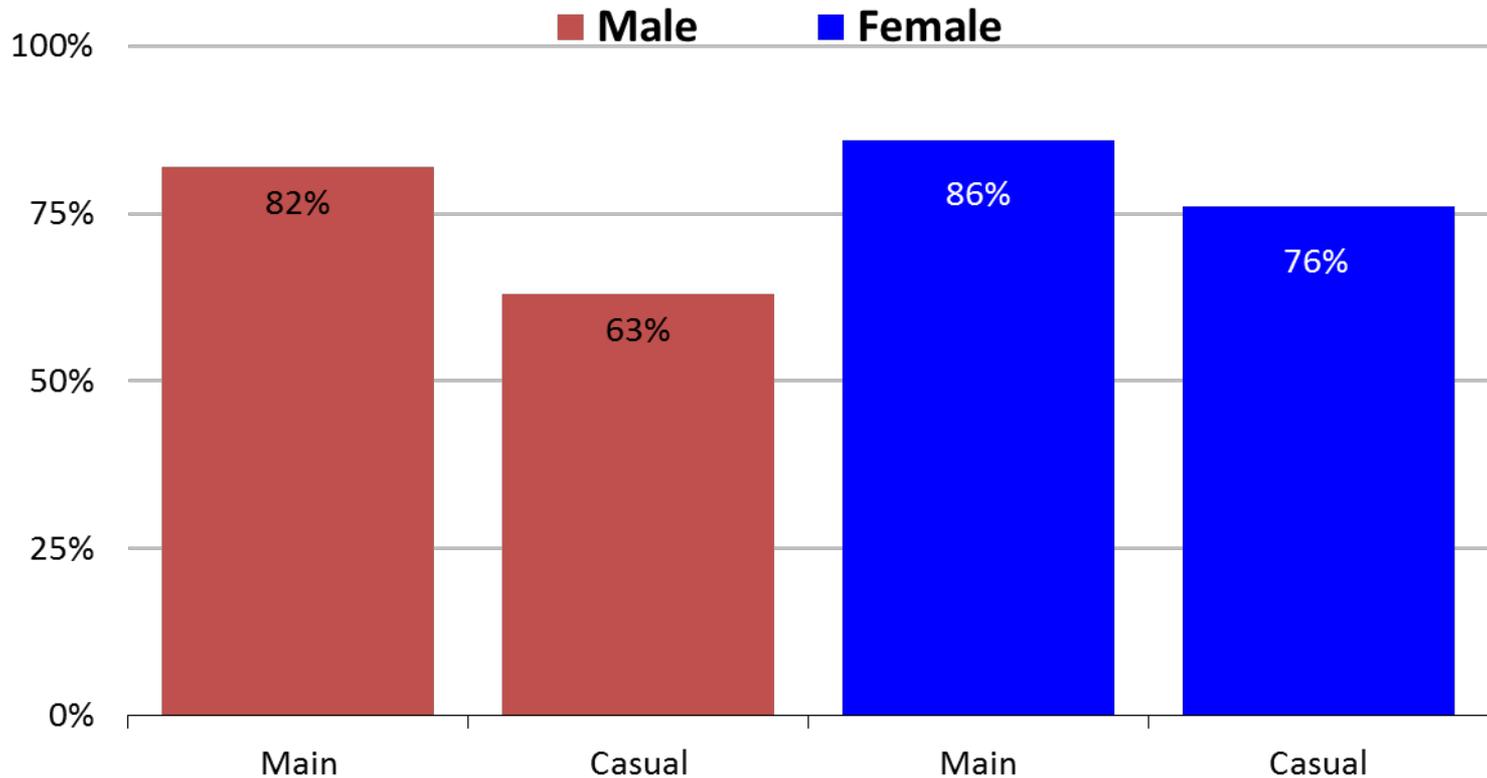
Sex without a Condom in Past 12 Months and at Last Sex, by Age

NYC NHBS-HET3, 2013, n=502 (HIV-/Unknown Status)



Sex without a Condom at Last Sex by Partner Type and Gender

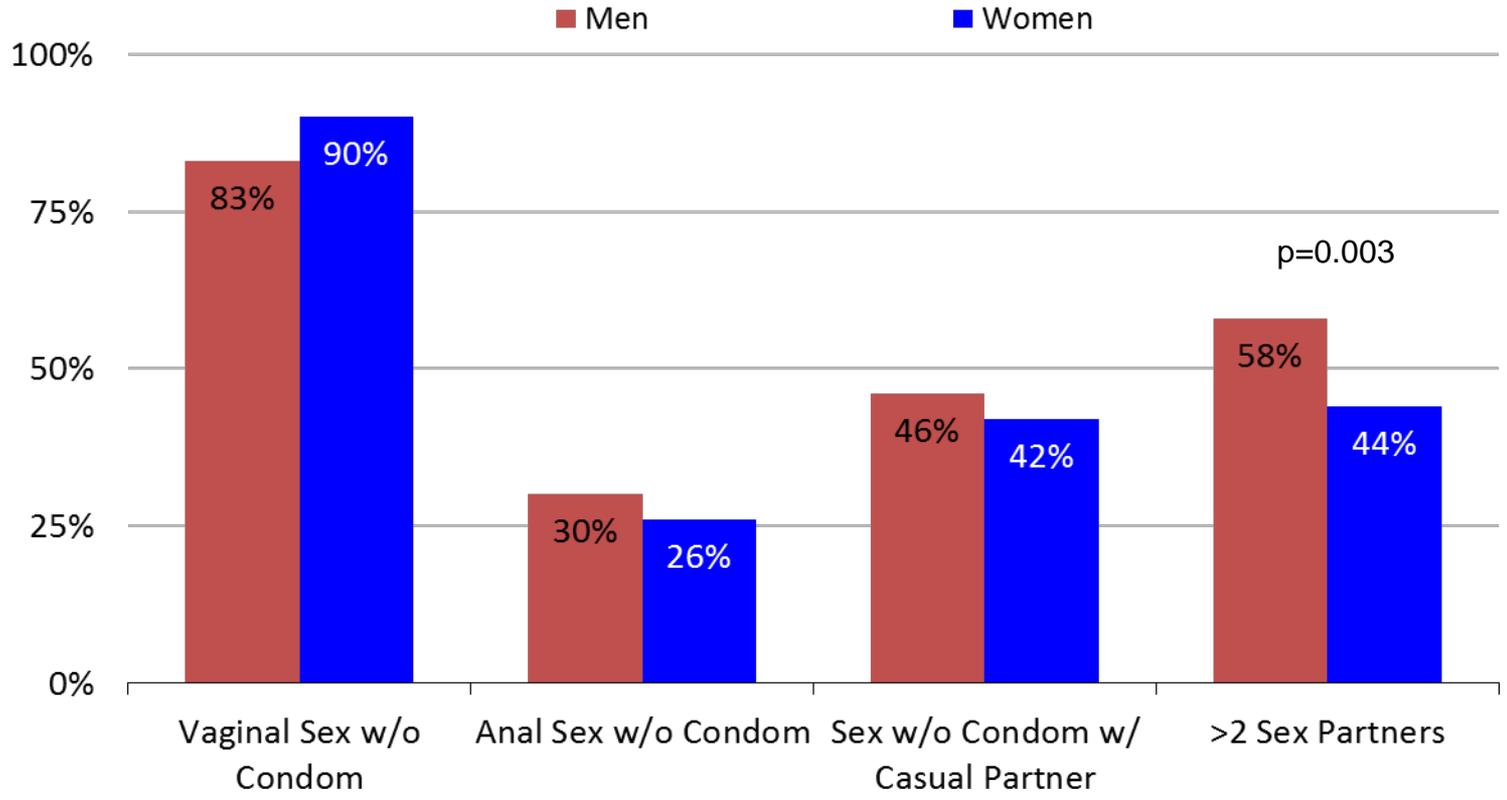
*NYC NHBS-HET3, 2013, n=500 (HIV-/Unknown Status)**



**Denominators: of those with a respective partner type at last sex*

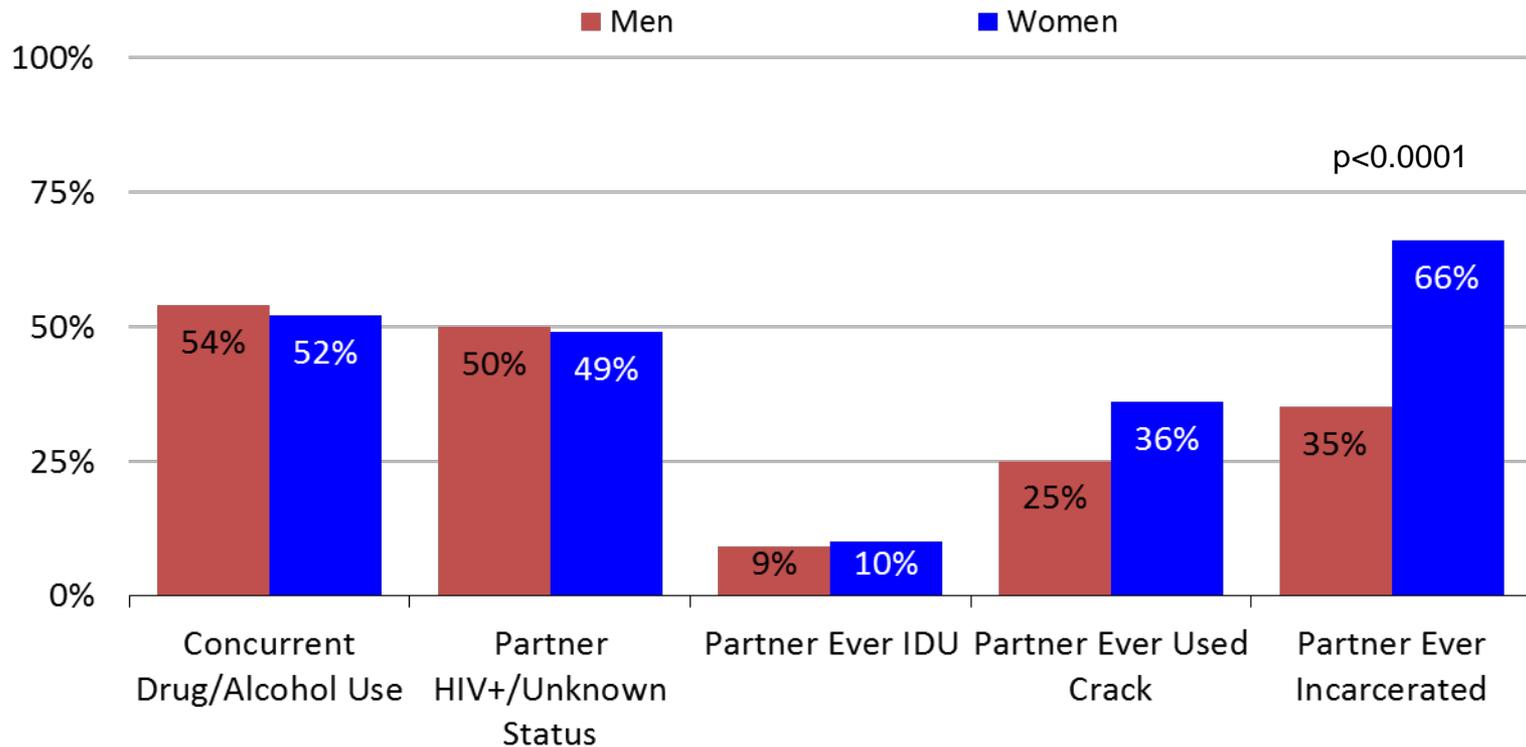
Past 12 Month Sexual Risks among Heterosexual Partnerships by Gender

NYC NHBS-HET3, 2013, n=502 (HIV-/Unknown Status)



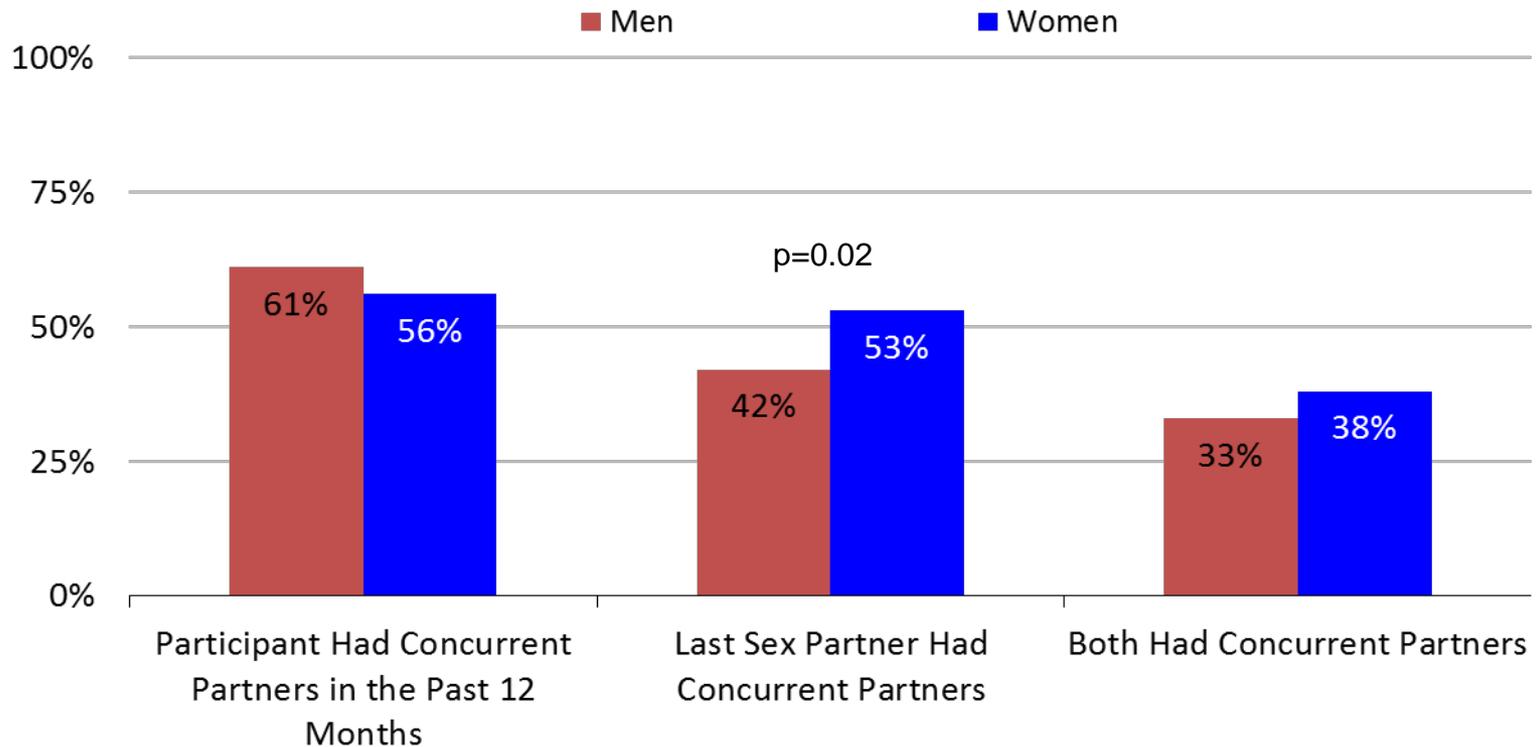
Risk Characteristics of Last Heterosexual Partnership by Gender

NYC NHBS-HET3, 2013, n=502 (HIV-/Unknown Status)



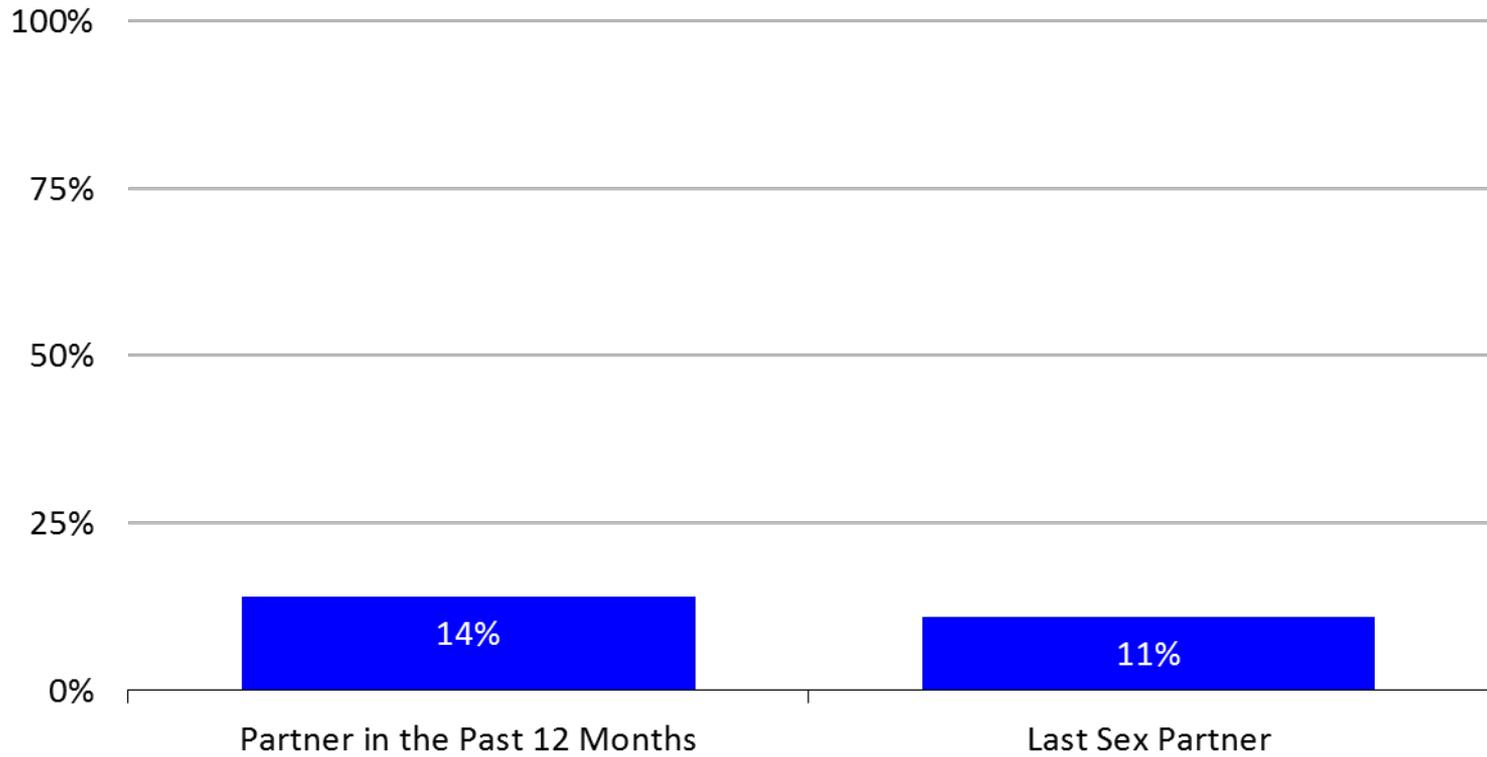
Concurrent* Partnerships by Gender

NYC NHBS-HET3, 2013, n=502 (HIV-/Unknown Status)



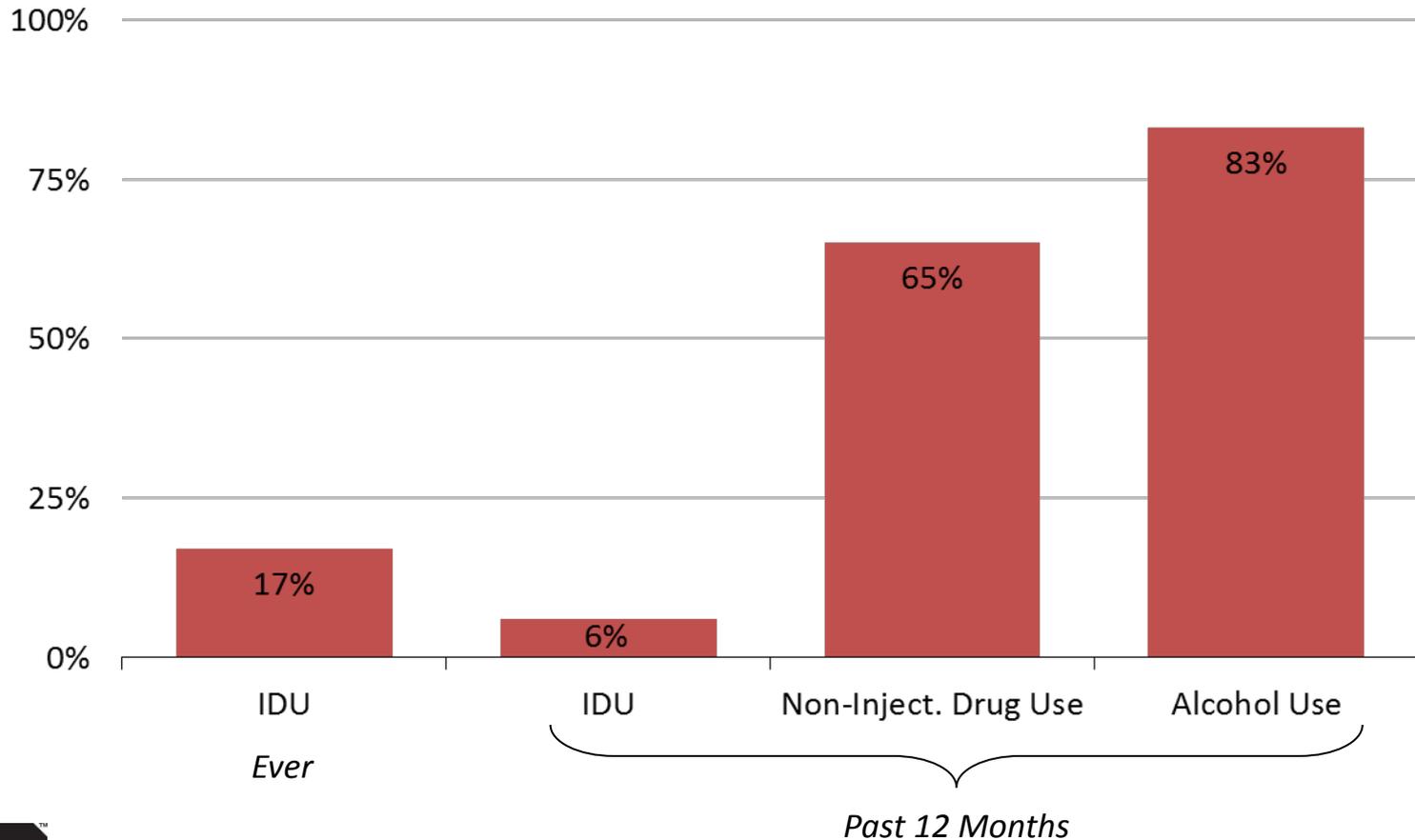
Women with a Male Sex Partner Who Ever Had Sex with Men

NYC NHBS-HET3, 2013, n=206 (HIV-/Unknown Status)



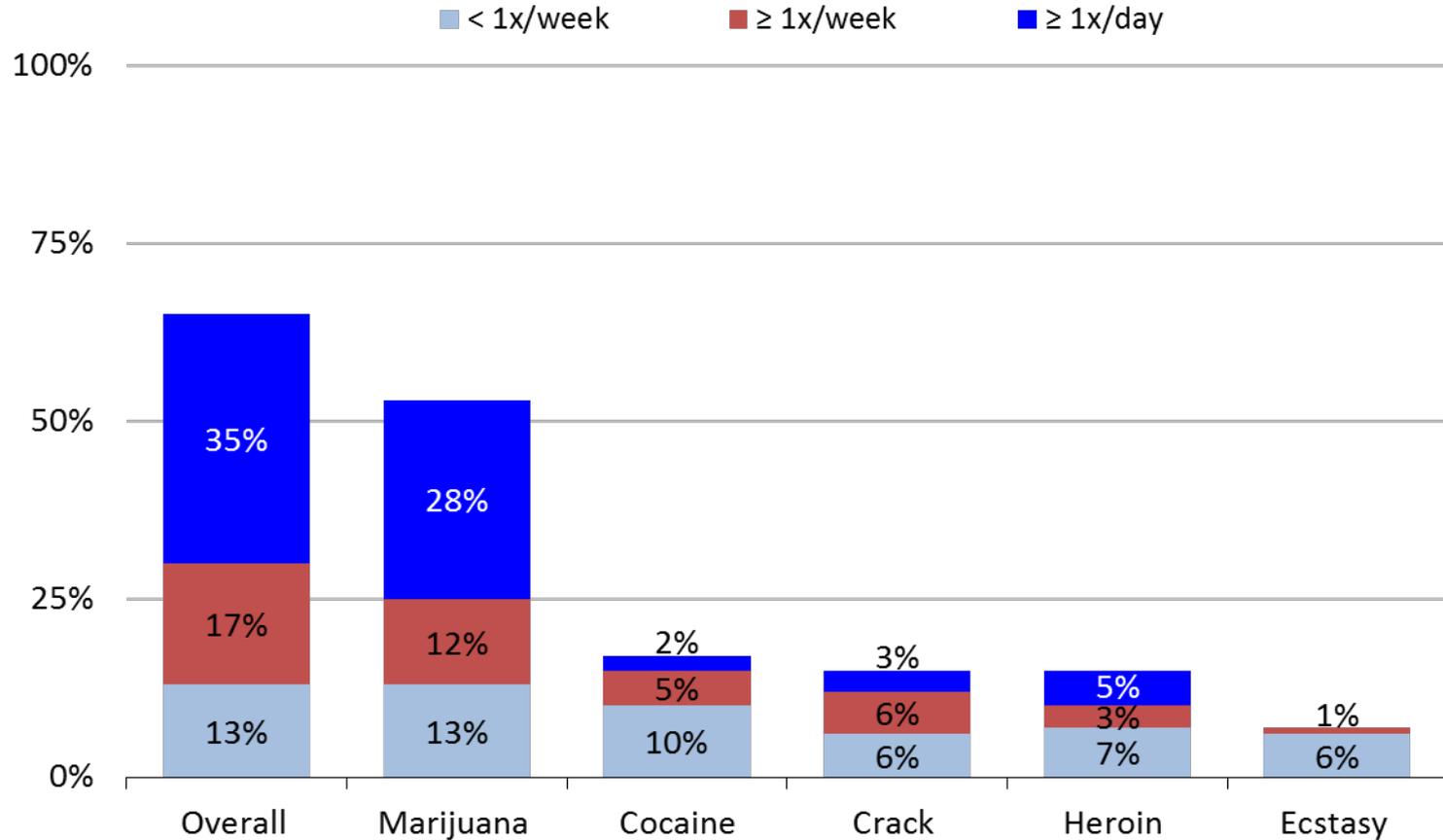
Drug and Alcohol Use History

NYC NHBS-HET3, 2013, n=509



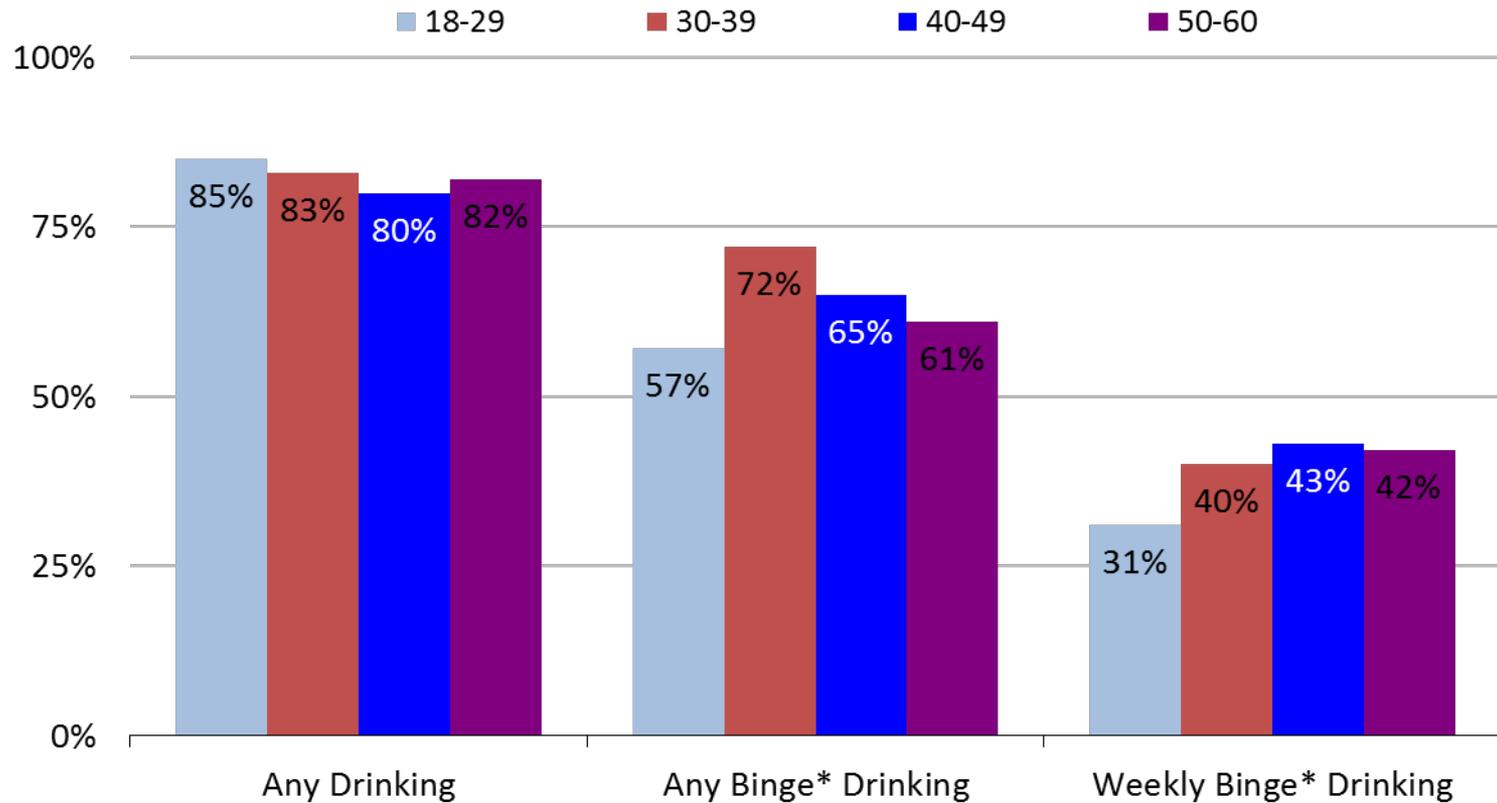
Non-Injection Drug Use in Past 12 Months

NYC NHBS-HET3, 2013, n=509



Alcohol Use (Past 12 Months) by Age

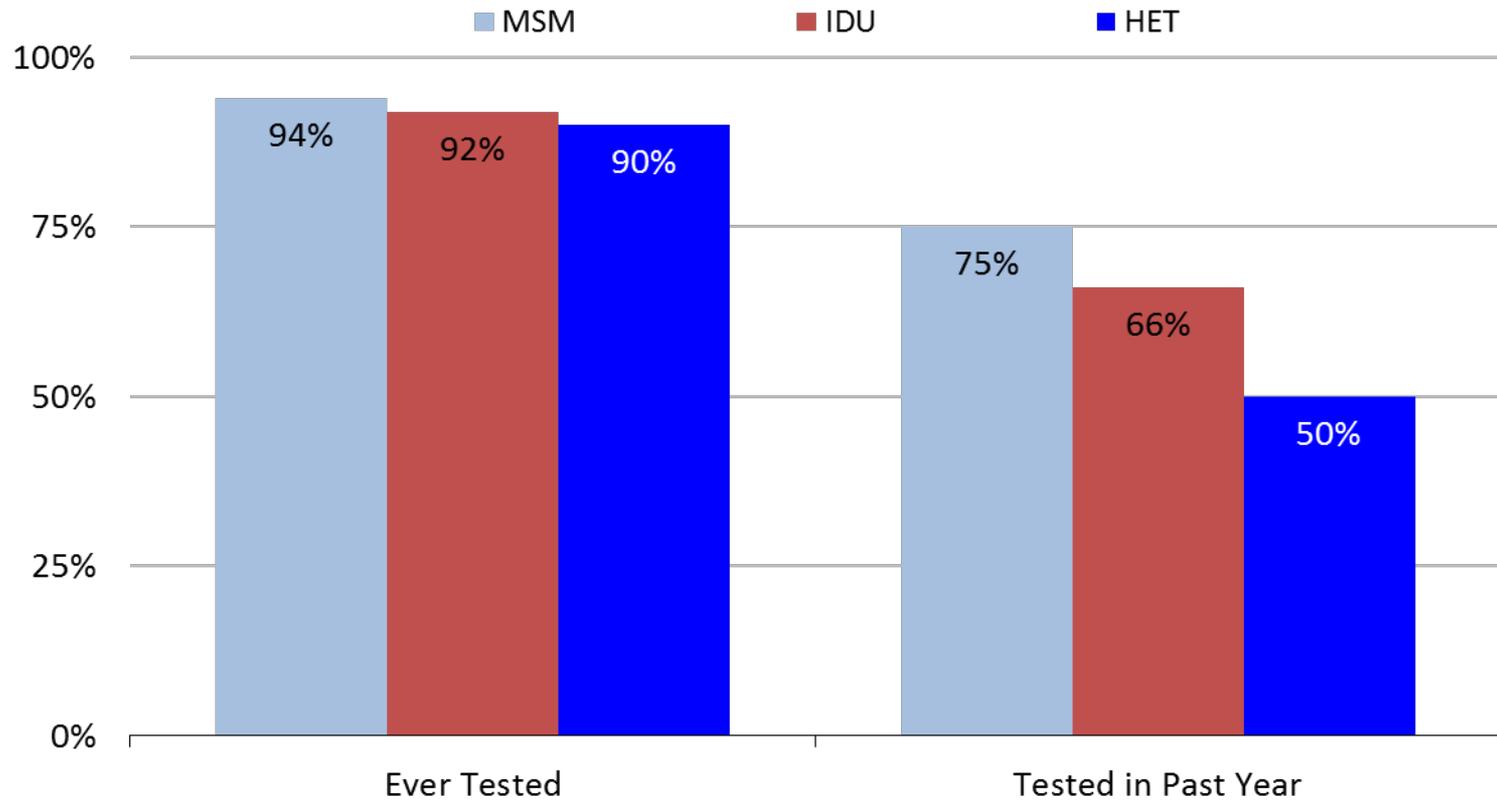
NYC NHBS-HET3, 2013, n=509



*4 or more drinks in one sitting for females and 5 or more drinks in one sitting for males

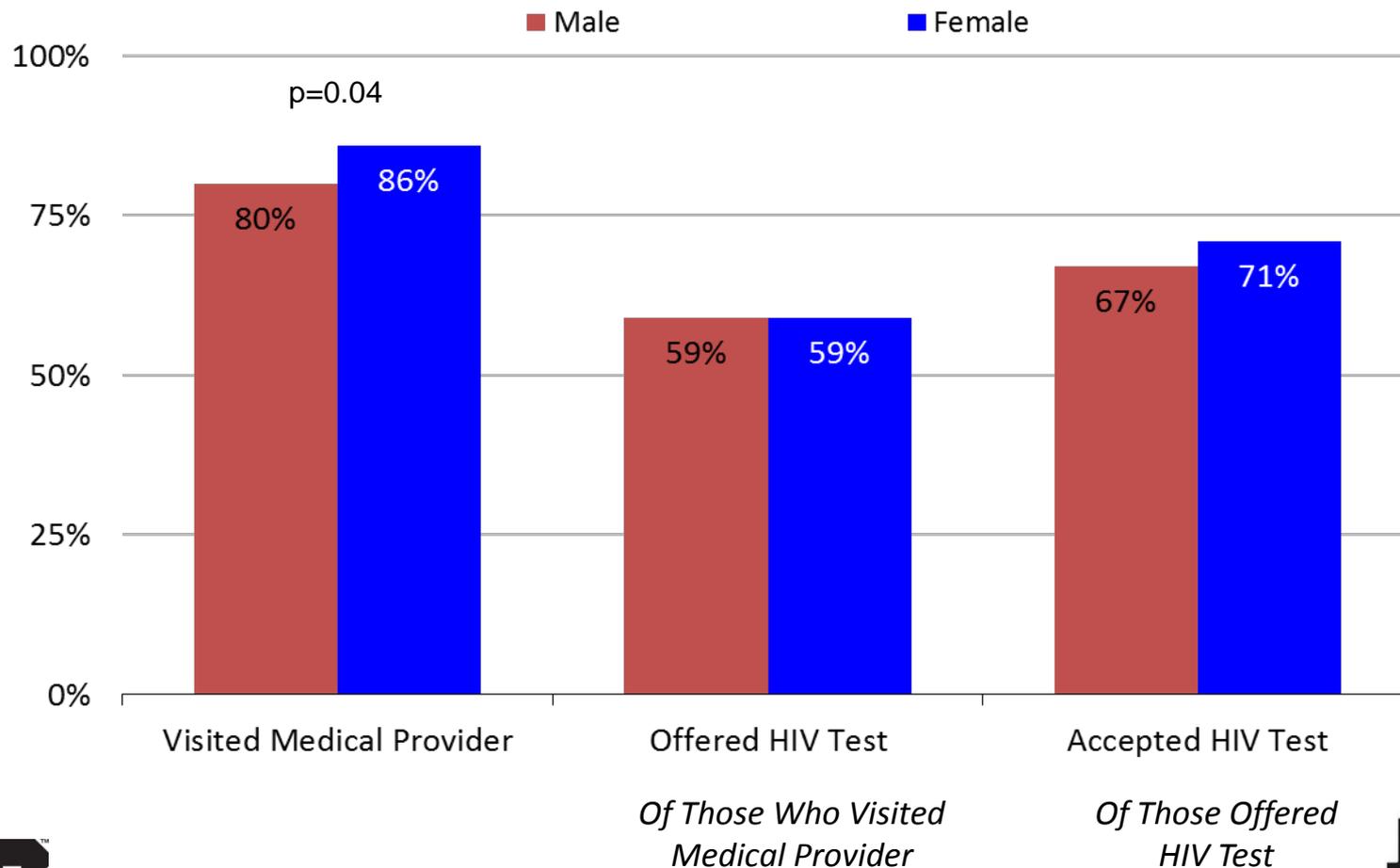
HIV Testing History Across NHBS Cycles

NYC NHBS MSM (2011), IDU (2012), and HET (2013)



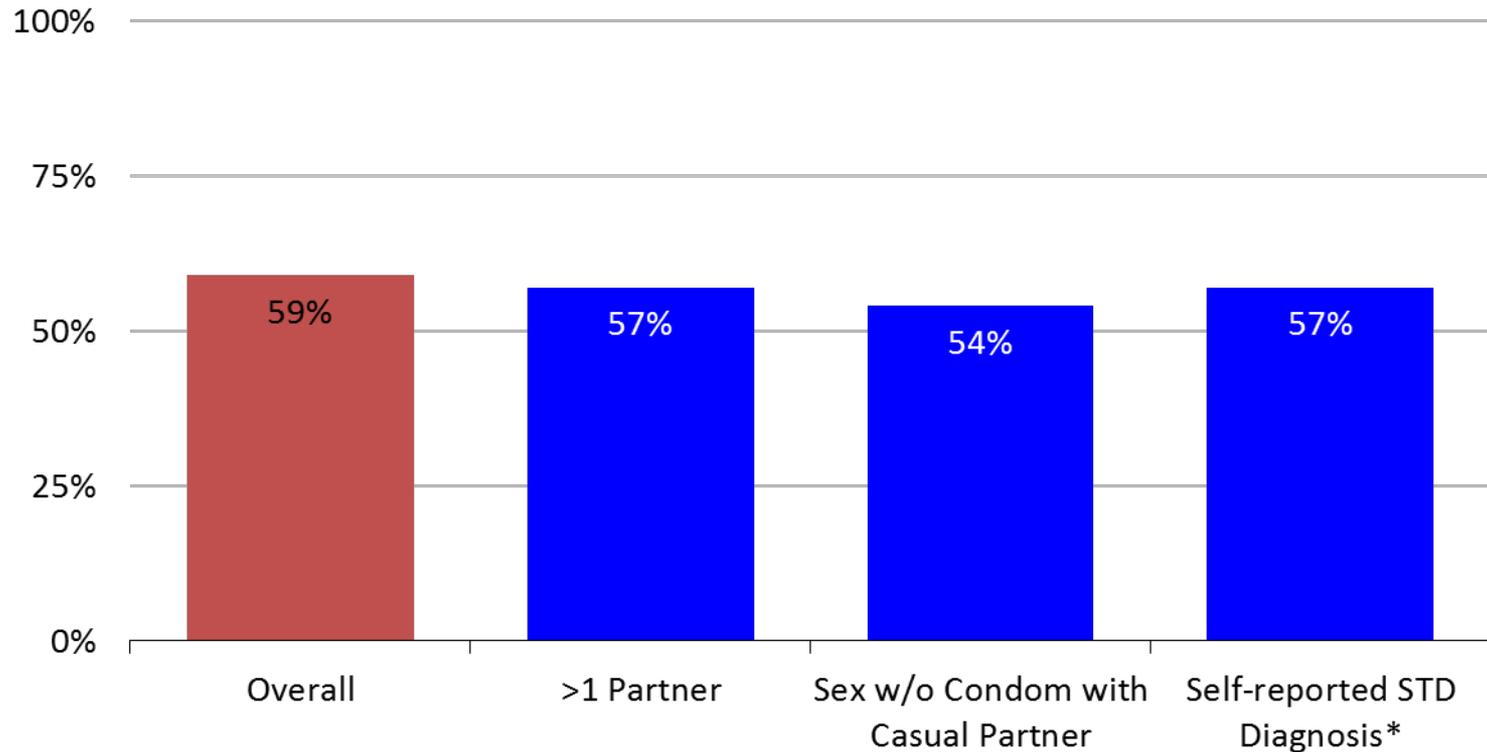
Medical Visits and HIV Testing in Past 12 Months by Gender

NYC NHBS-HET3, 2013, n=502 (HIV-/Unknown Status)



Offered HIV Test by Medical Provider by Past 12 Month Risks

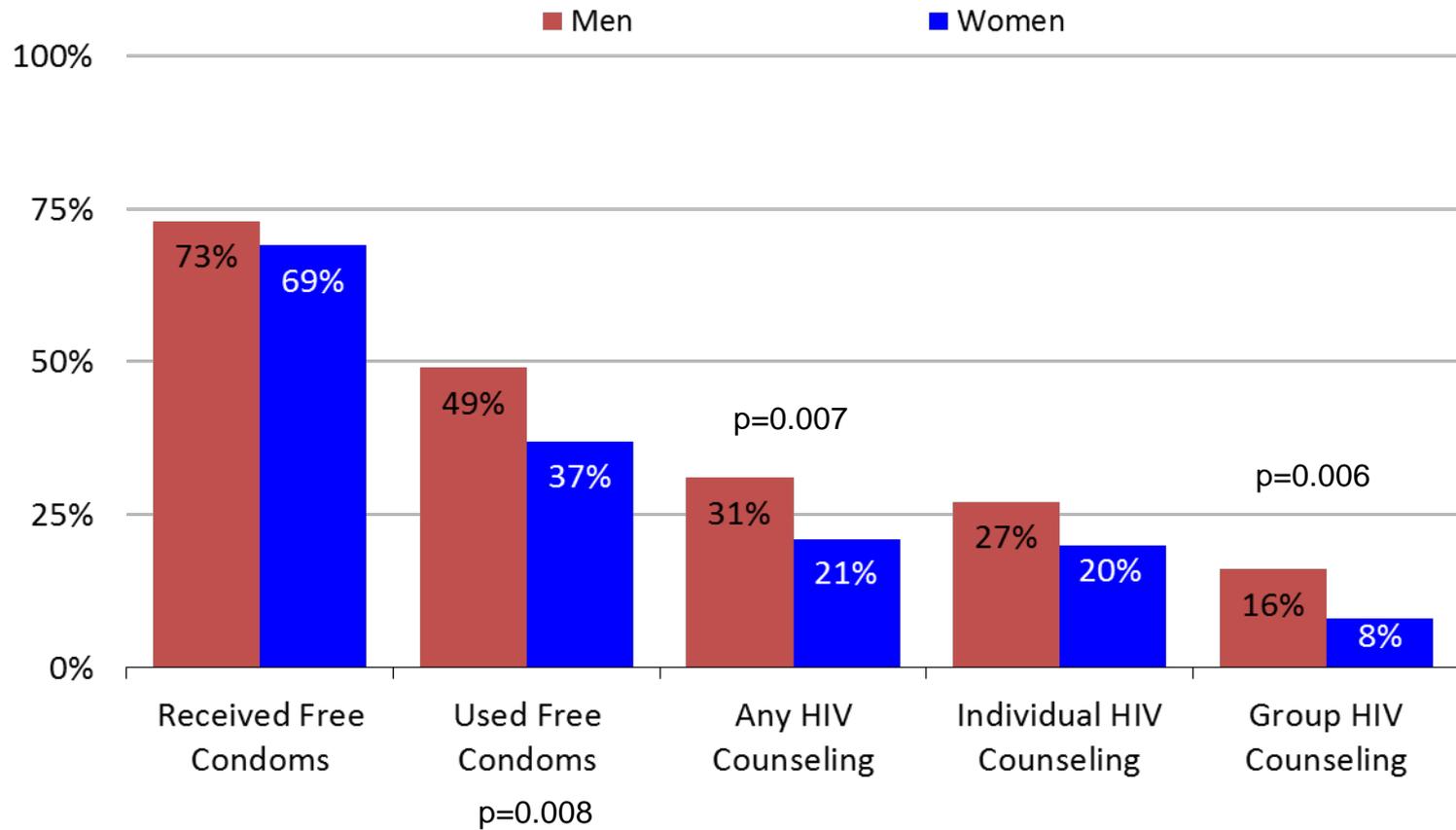
NYC NHBS-HET3, 2013, n=404 (HIV-/Unk. Visiting Med. Provider)



*Chlamydia, gonorrhea, or syphilis diagnosis

HIV Prevention Activities in Past 12 Months by Gender

NYC NHBS-HET3, 2013, n=509



Estimated HIV Prevalence

NYC NHBS-HET3, 2013, n=504 (Tested in Study)

	HIV-Positive	95% CI
Overall	3.9%	2.1%-5.8%
Lifetime Risks		
HET only	2.4%	0.7%-4.0%
HET & MSM	16.4%	0.0%-33.1%
HET & IDU	9.0%	2.2%-15.9%
HET & MSM & IDU	0.0%*	-
Gender		
Male	3.9%	1.5%-6.3%
Female	4.0%	1.1%-6.9%

*no cases of HIV identified among those who reported lifetime HET & MSM & IDU risk

Estimated HIV Prevalence

NYC NHBS-HET3, 2013, n=504 (Tested in Study)

	HIV-Positive	95% CI
Overall	3.9%	2.1%-5.8%
Age*		
18-29	0.8%	0.0%-2.4%
30-39	1.4%	0.0%-4.1%
40-49	5.0%	0.7%-11.7%
50-60	7.3%	3.0%-11.7%
Race/Ethnicity		
Black	4.4%	2.1%-6.8%
Hispanic	3.4%	0.1%-6.7%

*p=0.03

Summary

- NHBS study able to sample heterosexuals with multiple types of sexual risk
- Many participants experienced poverty, homelessness, and incarceration
- Most participants used drugs and alcohol

Summary

- Some participants reported high numbers of recent sexual partners, however, the overall average number of sexual partners was relatively low (median=3)
- Sex without a condom among main and casual partnerships was common
- Nearly all engaged in unprotected sex
 - Rates of unprotected sex at last encounter were highest in main partnerships, but still common with casual partners
- Sexual partnerships with high-risk partners (HIV+/unknown status, drug users, previously incarcerated) and partner concurrency were frequent
- A considerable number of women reported sexual partnerships with men who had ever had sex with men

Summary

- Compared to MSM & IDU, HET have lower levels of recent HIV testing despite high levels of risk
 - Slightly more than half of those visiting a medical provider were offered an HIV test by the provider
 - Offers of HIV testing did not vary by HIV risk factors
- Many participants received free condoms in the past 12 months, but less than half reported using free condoms during this time period

Summary

- Overall HIV prevalence (4%) was higher than the general population
 - HIV prevalence varied by lifetime risk factors, with the highest rates among those with MSM (16%) and IDU (9%) lifetime risks
 - HIV prevalence was higher among older participants

Strengths

- Large dataset with multiple HIV risk factors
- National, standardized survey and protocol
- Extensive formative research supporting data collection
- RDS can reach “hidden” populations for which no sampling frame exists

Limitations

- RDS-based estimates may not be generalizable to all high risk heterosexuals in New York City if methodological assumptions are not met
- All data except HIV serostatus were collected by self-report, and may be biased by recall error or social desirability and self-selection

Conclusions

- Continued work is needed to define and identify high-risk heterosexuals across multiple dimensions of risk
 - Individual, partner, network, community, and structural
- Innovative strategies are needed to encourage condom use and other preventive behaviors among this population, including reducing sex partner concurrency

NYC National HIV Behavioral Surveillance Team

NYC Department of Health

Alan Neaigus

Katie Reilly

New York University

College of Nursing

Holly Hagan

John Jay College of Criminal Justice

Travis Wendel

Roberto Abadie

CDC

Gabriela Paz-Bailey

Dita Broz

Michael “Trey” Spiller

Contact

Katie Reilly, PhD, MPH

NHBS Project Director

HIV Epidemiology Program

NYC Department of Health

Phone: 347-396-7755

Email: kreilly3@health.nyc.gov