

The Heterosexual HIV Epidemic in Chicago: Insights into the Social Determinants of HIV

Nikhil Prachand, MPH

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STI/HIV/AIDS Division

Chicago Department of Public Health



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Today's Presentation

- Epidemiology of heterosexual HIV
- Identifying the heterosexuals at highest risk
- Chicago HIV behavioral surveillance survey
- Exploring measures of social determinants of health
- Using results to inform prevention and planning efforts



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Outline Topics

- **Epidemiology of heterosexual HIV**
- Identifying the heterosexuals at highest risk
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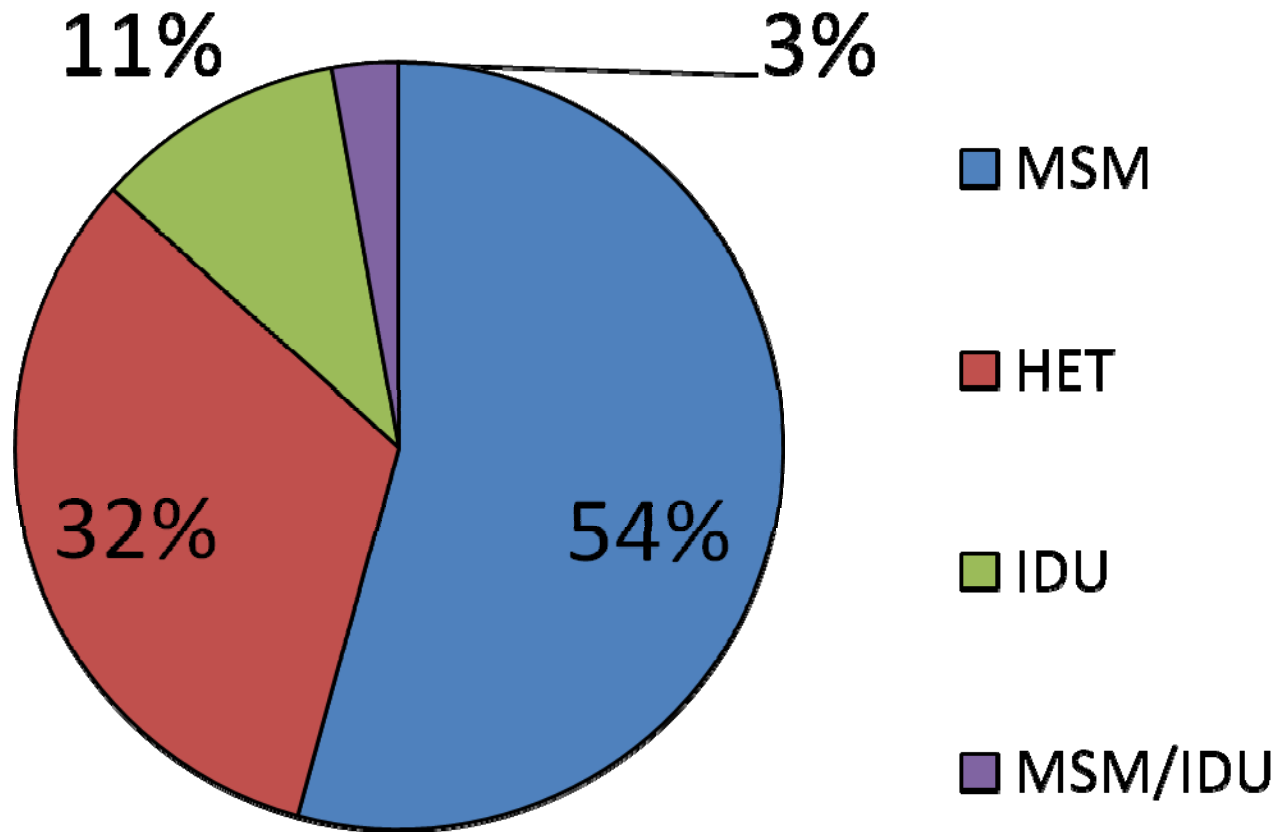


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United States - HIV Diagnoses by Mode of Transmission, 2008



CDC Surveillance Report, 2009



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United States - HIV Diagnoses among Heterosexuals by Race, 2008

	# HIV Diagnoses	%
Non-Hispanic Black	9,233	68
Non-Hispanic White	1,840	14
Hispanic	2,288	16
Other	279	2
TOTAL	13,640	

CDC Surveillance Report, 2009

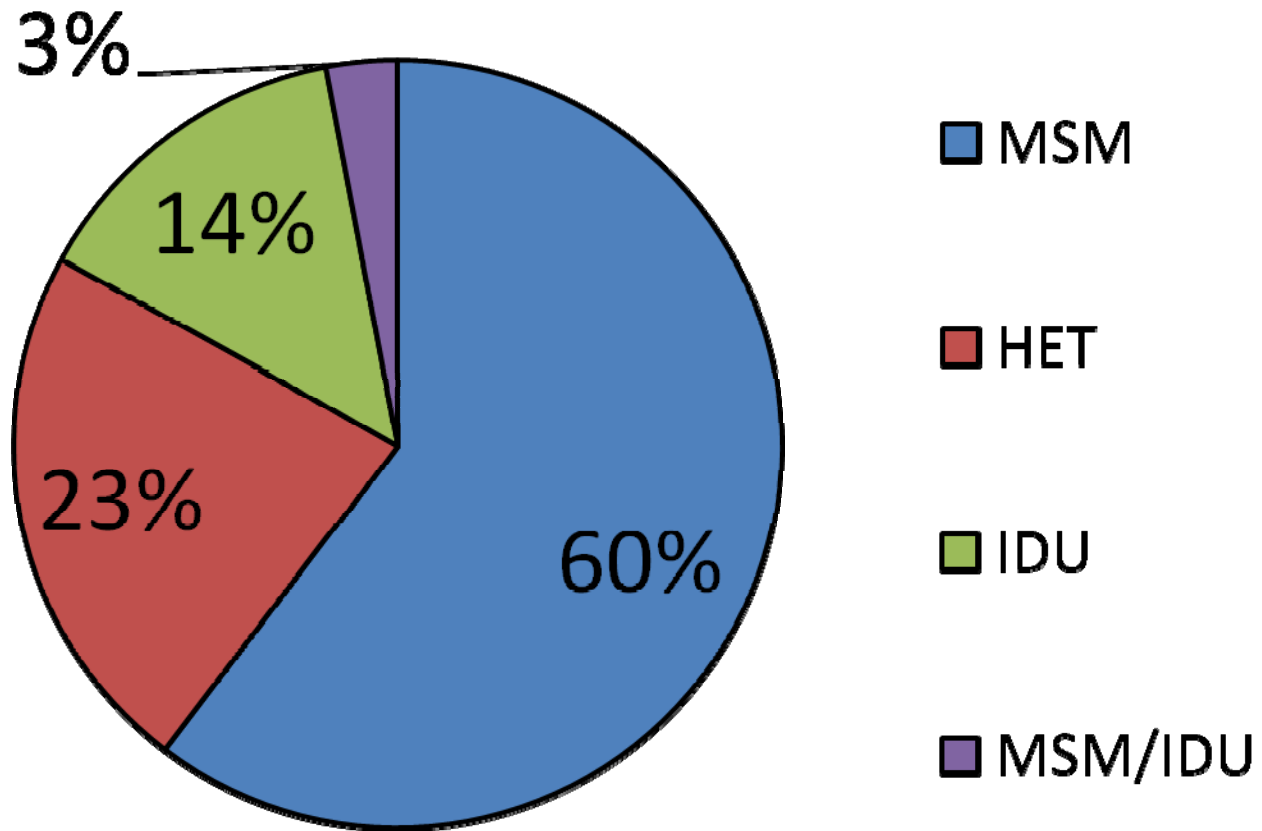


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Chicago HIV Diagnoses by Mode of Transmission, 2008



Chicago HIV Diagnoses among Heterosexuals by Race, 2008

	# HIV Diagnoses	%
Non-Hispanic Black	220	75
Non-Hispanic White	14	5
Hispanic	46	16
Other	15	5
TOTAL	295	



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HIV Behavioral Surveillance

- Ongoing national system to characterize populations at risk for HIV infection
- Designed to monitor:
 - HIV prevalence
 - HIV risk, testing and prevention behaviors
- 2010 – Heterosexuals
- Begins with a formative research phase to define and locate the population of interest



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Linking HIV and Poverty

- 2005 study by Peterman, *et al.*, described the characteristics of 20 counties with the highest and lowest increases in heterosexual AIDS incidence
- Poverty was found to be the strongest predictor of an increase in AIDS case rates
- Aggregate-level poverty can be used to define and locate the heterosexuals at highest risk for HIV

Peterman TA, Lindsey CA, Selik RM. This place is killing me: a comparison of counties where the incidence rates of AIDS increased the most and the least. *J Infect Dis.* 2005 Feb 1;191 Suppl 1:S123-6.

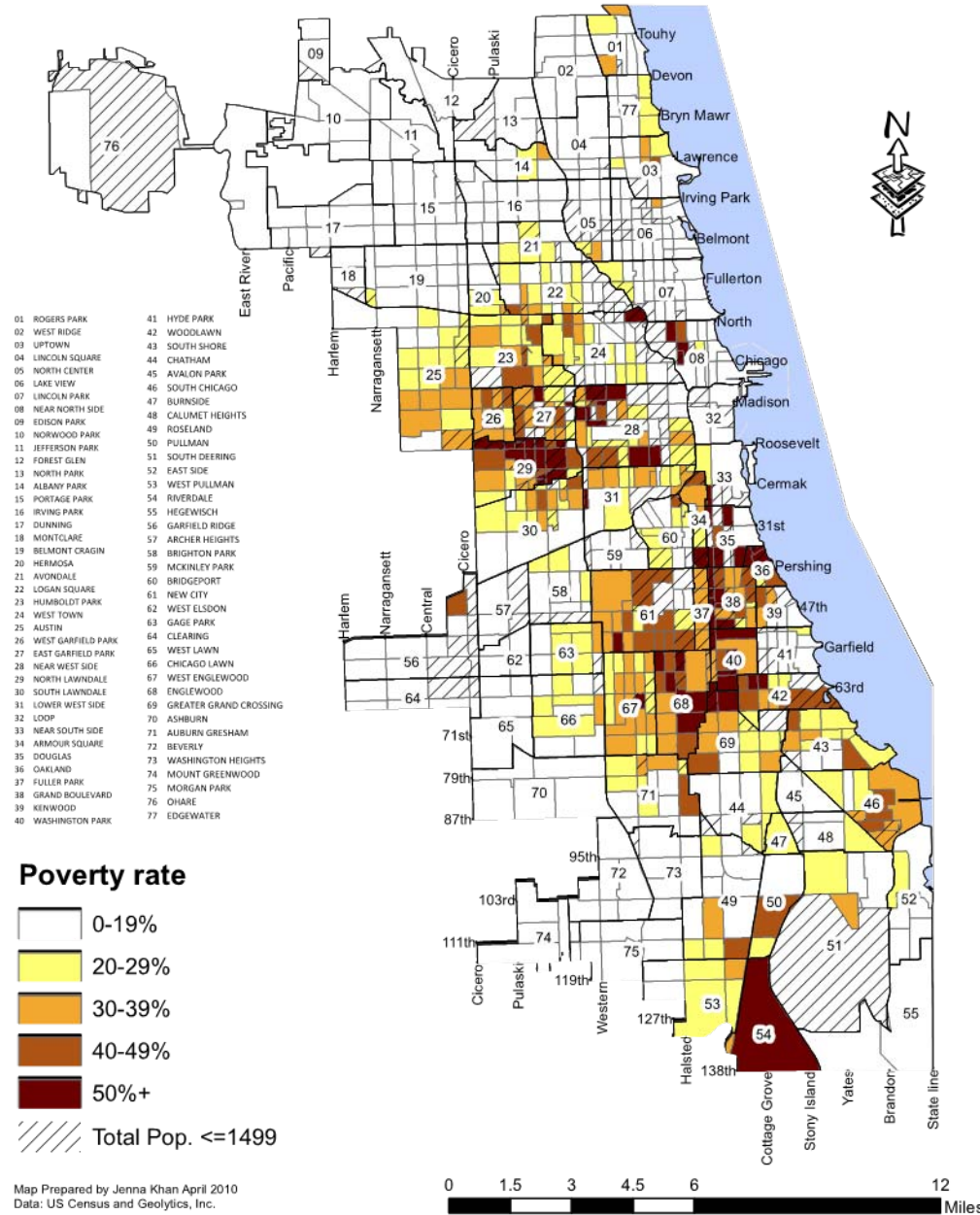


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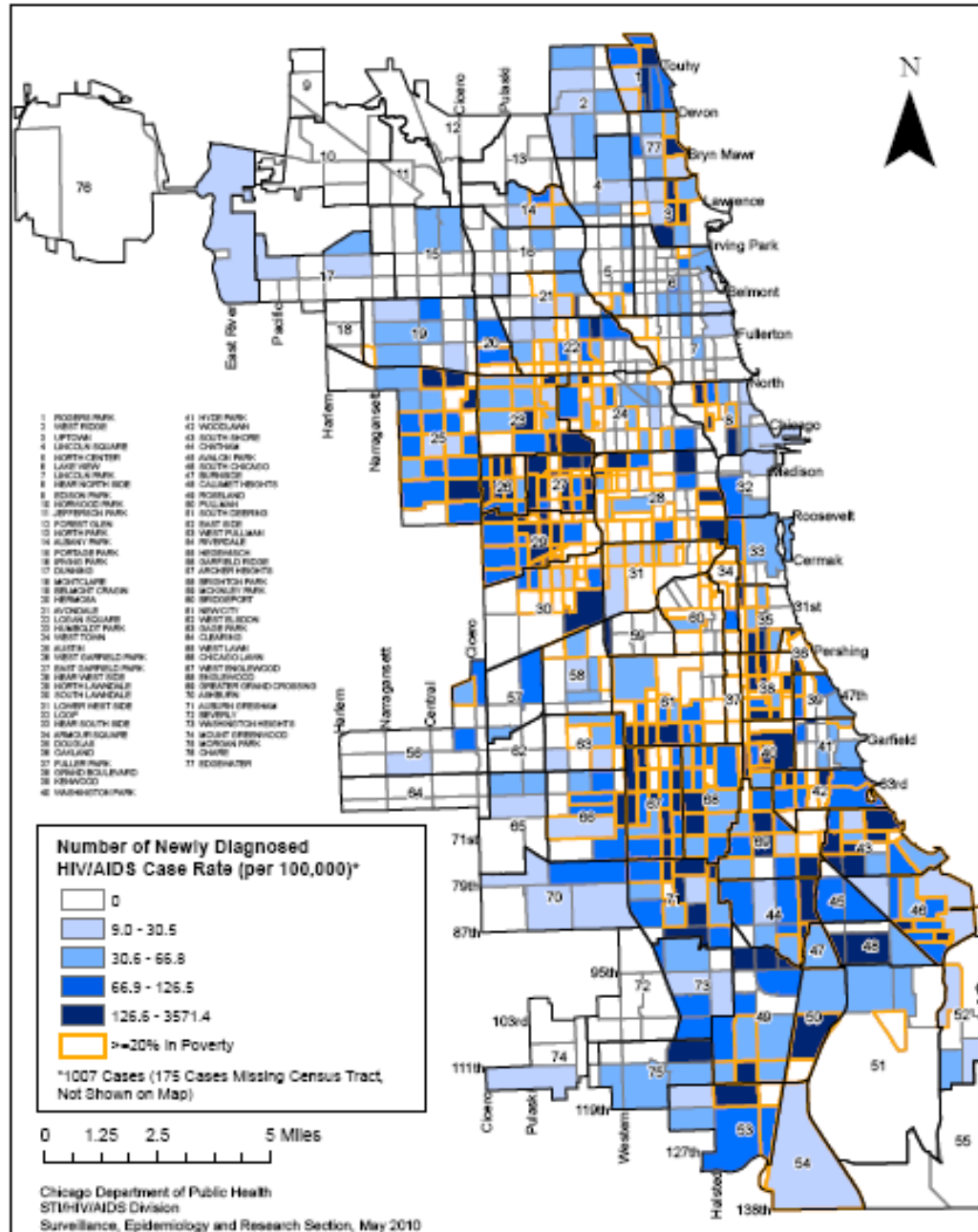
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Percentage of Families Living In Poverty by Census Tract City of Chicago, 2009



Cumulative HIV/AIDS Newly Diagnosed Case Rates (2006-2009) among Heterosexually Exposed Adults/Adolescents; and $\geq 20\%$ Poverty (2009) by Census Tract, Chicago



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Methods

- Respondent-Driven Sampling (RDS) - form of chain referral
- Participants recruit up to 5 members of their social network using study coupons
- Coupons are redeemed at several central study sites
- Face-to-face survey and rapid HIV testing
- Respondents paid up \$100 for participation and recruiting others
- Data collection: August 2010 – November 2010

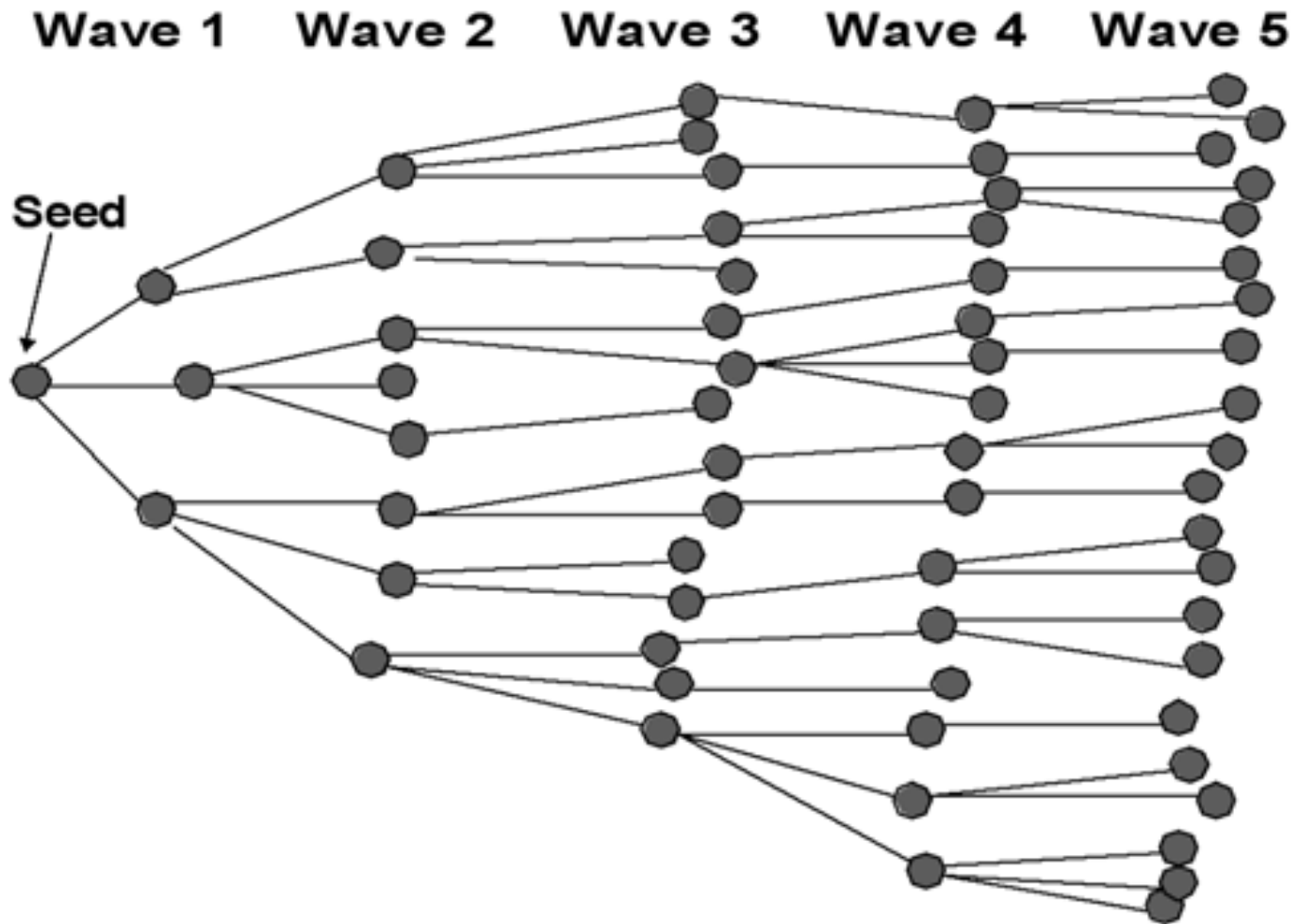


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Example of RDS Recruitment Chain



Recruitment Summary

- 16 initial recruits identified during formative phase
- 1052 coupons distributed
- 561 coupons returned
- 535 eligible interviews (eligibility rate: 93%)
 - Eligibility criteria: Between the ages of 18-60, engaged in heterosexual vaginal or anal sex within the past 12 months
 - 18 current IDUs excluded from analysis
 - 3 additional interviews excluded due to validity concerns

514 heterosexuals



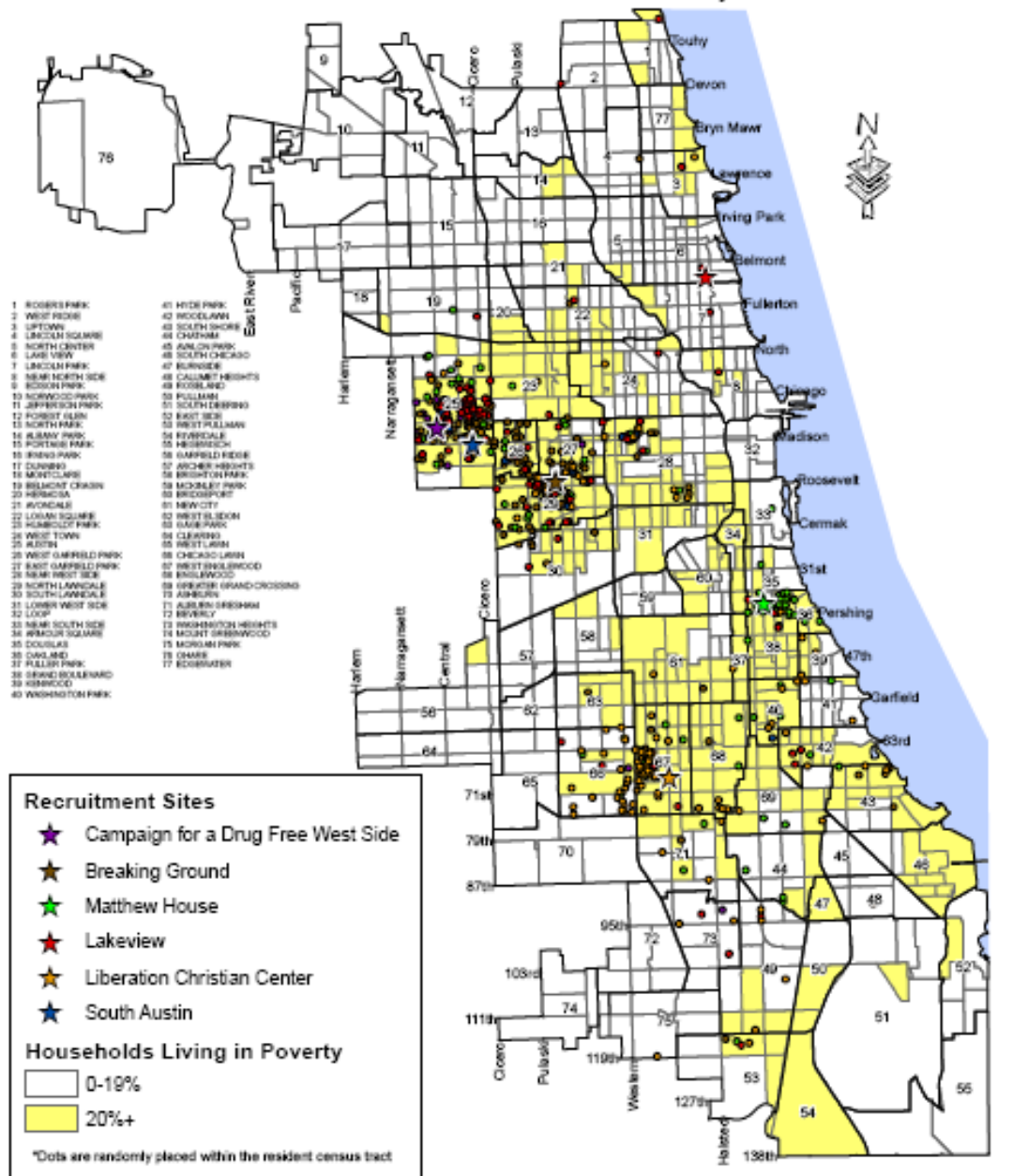
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Census Tract of Survey Respondents by Recruitment Site and Household Poverty

National HIV Behavioral Surveillance - Heterosexual Cycle 2010



Did respondents live in impoverished census tracts?

Level of Household Poverty	Census Tracts in Chicago	Census Tracts of HET2 respondents
<20%	563 (62)	83 (17)
20 – 29%	133 (15)	100 (20)
30 – 39%	105 (11)	172 (35)
40 – 49%	55 (6)	39 (8)
50 – 59%	20 (2)	26 (5)
60 +%	39 (4)	75 (15)

38% (bracketed around 40-49% and 50-59% rows)

83% (bracketed around 40-49%, 50-59%, and 60+% rows)



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Sample Characteristics



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Gender

Gender	#	%
Male	318	62
Female	195	38



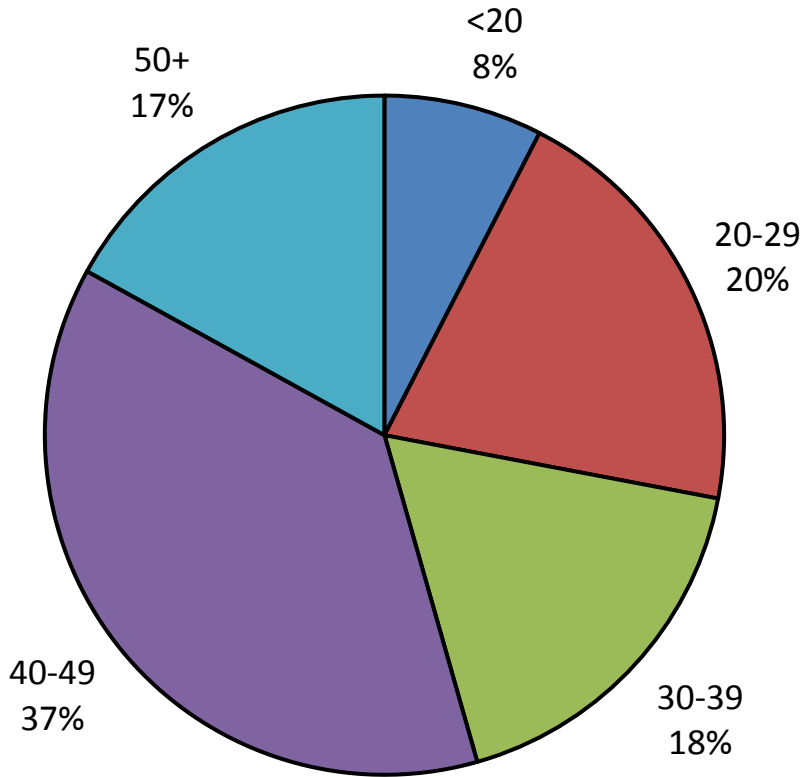
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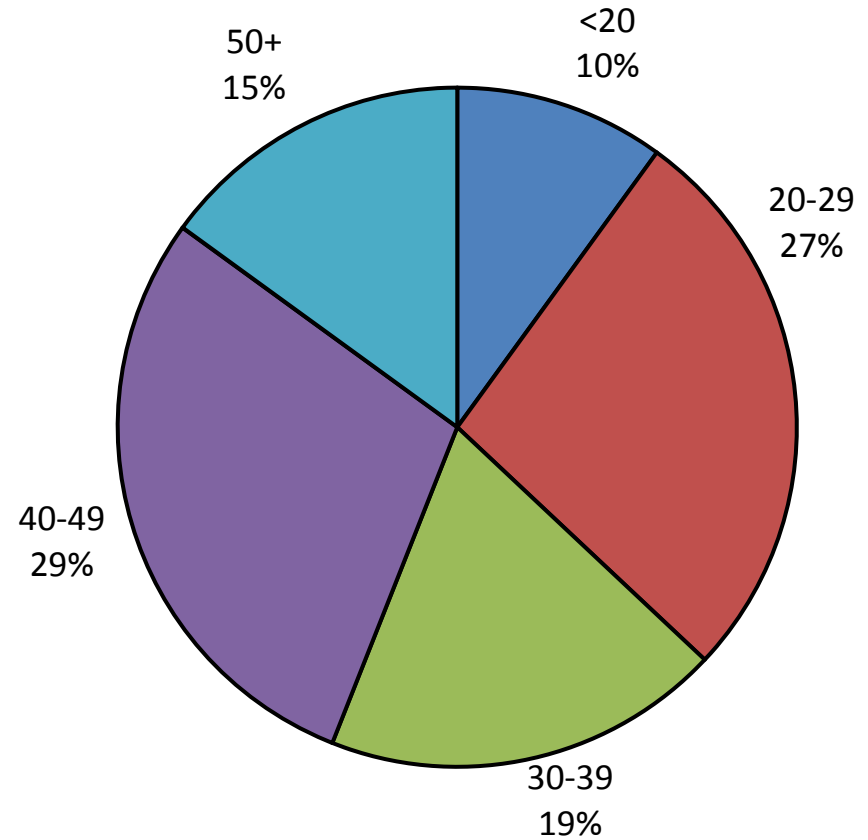
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Age

Males



Females



Median Age (years)

Males: 41

Females: 35



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Race/Ethnicity

Race/Ethnicity	Males		Females	
	#	%	#	%
NH Black	305	96	186	97
NH White	6	2	2	1
Hispanic/Latino	6	2	4	2
Asian	1	<1	0	0



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HIV Prevalence

5 HIV+ of 514 tested

0.98%

Chicago HIV prevalence

0.83%

HIV prevalence among Chicago
Heterosexuals*

0.14%

*CDPH estimate



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Sexual Behaviors



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Number of Opposite Sex Partners Past 12 Months

Number of opposite sex partners past 12 months	Male		Female	
	#	%	#	%
One partner	50	16	44	23
Two partners	43	13	29	15
Three or more partners	225	71	122	63

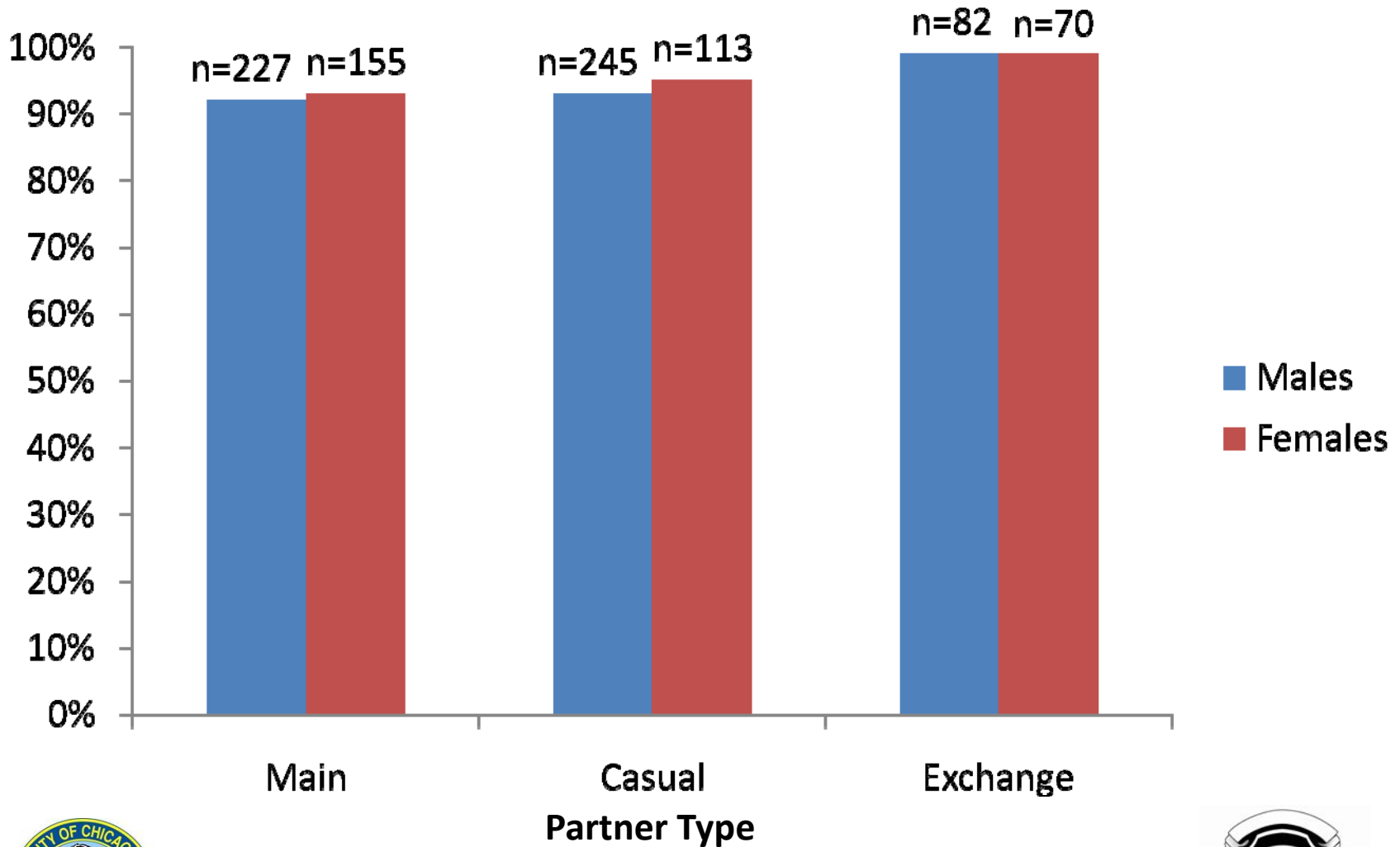


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Percentage of respondents that reported inconsistent condom use during vaginal sex in past year



Did respondents know their most recent sex partner's HIV status?

35% of males and 34% of females knew their most recent sex partner's HIV status



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Drug and Alcohol Use

- 73% of respondents reported non-injection drug use in the past 12 months
- 41% of respondents reported binge drinking once a week or more
- ***62% of respondents used drugs or alcohol during last sexual encounter***



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Going beyond individual risk behaviors

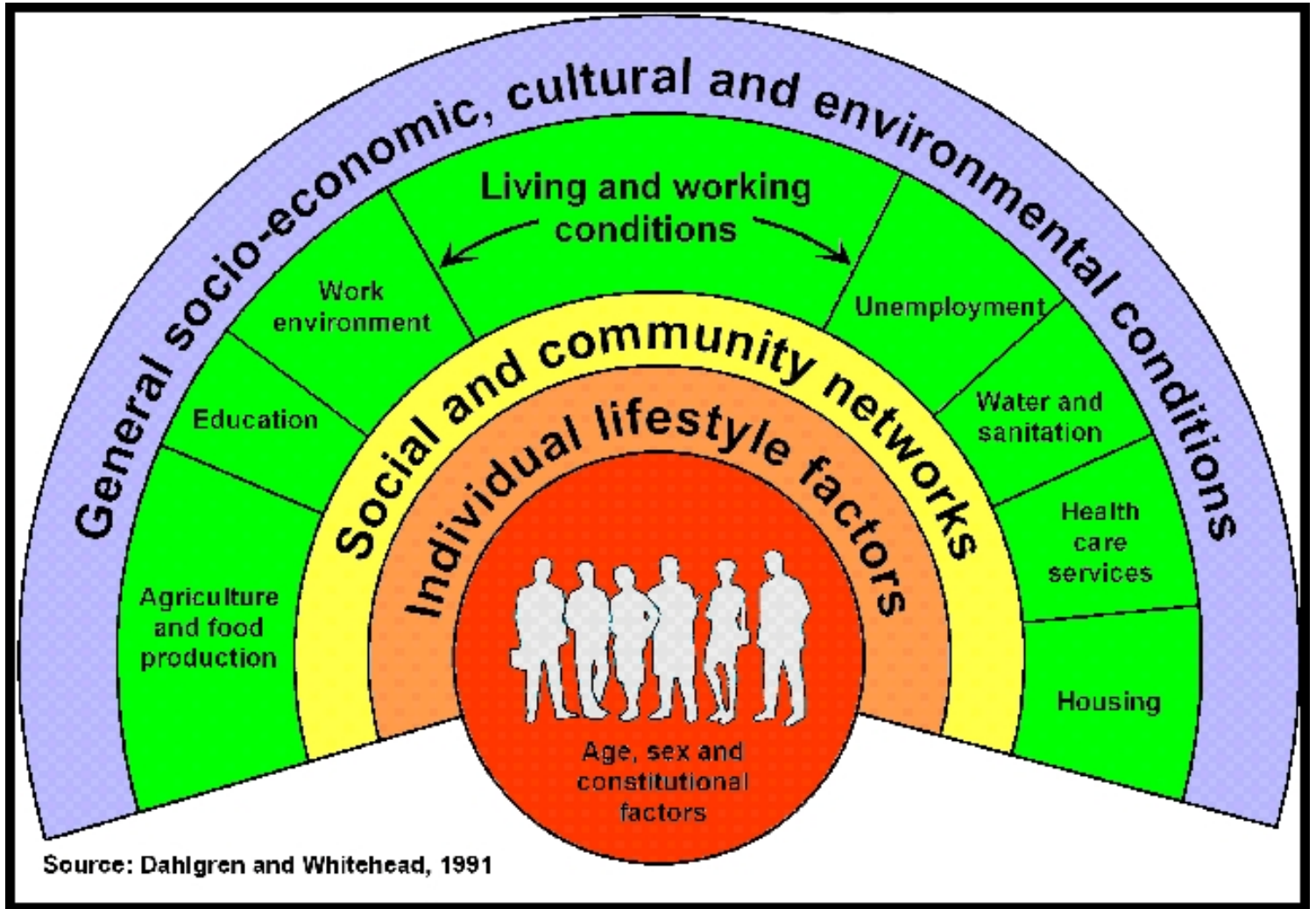
- What are broader contributors to HIV risk?
- Complex set of intertwining social and economic structures and systems
- **Social Determinants of Health (SDH)**



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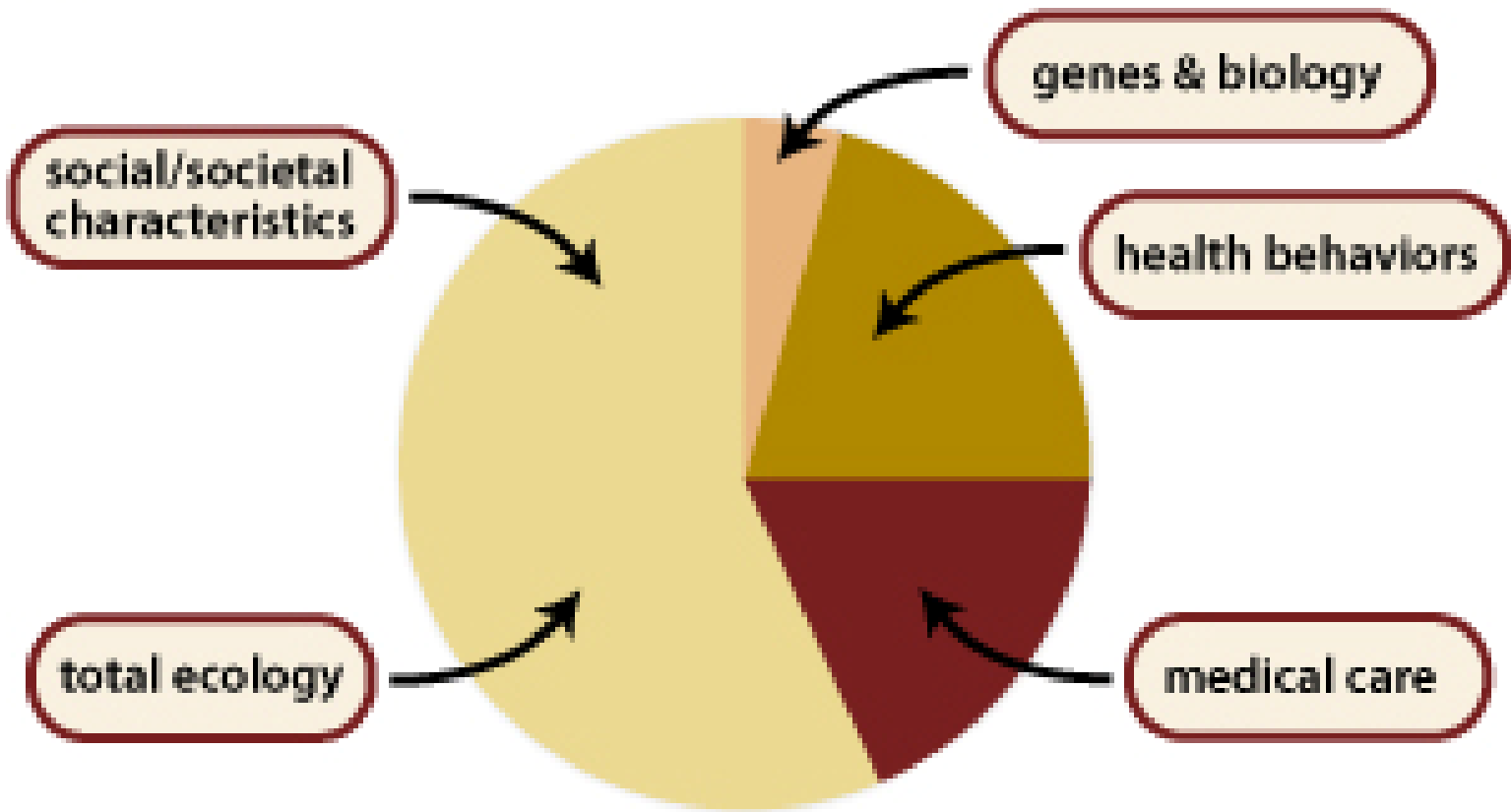


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DETERMINANTS OF POPULATION HEALTH



Source: NCHHSTP White Paper on Social Determinants of Health, 2010



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Social Determinants of Health

Income and the economic environment

Social environment and social status

Physical environment

Early childhood experiences

Community factors

Health services



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Social Determinants of Health

- Income and the economic environment
 - relative poverty
 - employment
 - education



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Annual Household Income

Median Household Size of Sample: 2 persons

Yearly Income	Males		Females	
	#	%	#	%
\$0-9,999	181	58	125	64
\$10,000-19,999	70	22	45	23
\$20,000-29,999	20	6	11	6
\$30,000-39,000	25	8	9	5
\$40,000+	19	6	4	2

Poverty level for 2-person U.S. household: \$14,568

Average Chicago household income: \$38,625

Current Employment Status

Employment Status	Males (n=318)		Females (n=195)	
	#	%	#	%
Unemployed	192	60	117	60
Employed Full-time	31	10	16	8
Employed Part-time	52	16	20	11
Homemaker	1	1	12	6
Full-time Student	14	4	10	5
Retired	3	1	0	0
Disabled for work	20	6	16	8



Education

34% of respondents reported not completing high school

This rate is slightly higher than the Chicago average (28%)

Social Determinants of Health

- Income and the economic environment
- Social environment and social status
 - social support
 - discrimination
- No data to measure this determinant in current NHBS

Underscores the need to enhance current surveillance systems to collect SDH



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Social Determinants of Health

- Income and the economic environment
- Social environment and social status
- Physical environment
 - homelessness
 - neighborhood safety and condition



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Homelessness

	Males (n=318)		Females (n=195)	
	No.	%	No.	%
Homeless in the past 12 months	117	37	79	41

	Males (n=318)		Females (n=195)	
	No.	%	No.	%
Currently homeless	64	20	41	21



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Social Determinants of Health

- Income and the economic environment
- Social environment and social status
- Physical environment
- Early childhood experiences
 - Exposure to trauma/neglect/abuse



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Adverse Childhood Experiences

Category of Childhood Exposure	Sample Population Prevalence (n=512) %	General Population Prevalence * (n=26,229) %
Parents not together	59	27
Lived with substance abuser	52	29
Physical Abuse	37	14
Psychological Abuse	36	26
Lack of Emotional Support	34	-
Mother treated violently	30	16
Sexual Abuse	26	12
Had a mentally ill family member	21	19
Physical Neglect	17	-

* Adverse Childhood Experiences Reported by Adults, Five States, 2009. (2010, December 17) MMWR: Morbidity and Mortality Weekly, 59 (49); 1609-1613.



Social Determinants of Health

- Income and the economic environment
- Social environment and social status
- Physical environment
- Early childhood experiences
- **Community factors**
 - Marriage/Relationships
 - Concurrent sexual relationships
 - Incarceration

Marital Status

Marital Status	Males		Females	
	No.	%	No.	%
Never married	221	69	143	71
Married	21	7	14	7
Living together as married	5	2	5	2
Separated	29	9	14	8
Divorced	33	10	14	9
Widowed	9	3	5	3



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Concurrent Sexual Relationships

With MAIN Partner:

- **70%** of male respondents and **59%** of female respondents had sex with other people during their current relationship

With CASUAL Partner:

- **84%** of male respondents and **73%** of female respondents had sex with other people during their current relationship with a **casual** partner



Incarcerated in the Past year

Male (n=318)		Female (n=195)	
#	%	#	%
95	30	26	13



Incarceration and Sexual Relationships

- **19%** of women had male partners who were incarcerated at the time of her survey
- **65%** of these women had sex with an outside partner *while* their partner was incarcerated
 - Reason: **62%** said it was to help with living expenses



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Social Determinants of Health

- Income and the economic environment
- Social environment and social status
- Physical environment
- Early childhood experiences
- Community factors
- **Health services**
 - access to routine medical care
 - access to HIV prevention
 - access to HIV testing



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Healthcare

	Males		Females	
	#	%	#	%
Currently have health insurance	67	21	104	54

	Males		Females	
	#	%	#	%
Visited healthcare provider in past 12 months for any reason	183	57	150	77



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Routine medical care

- 55% of males and 81% of females have a usual place they go for routine medical care

Medical Care Locations	Males (n=174)		Females (n=159)	
	#	%	#	%
Public health clinic	41	24	42	26
Emergency room	64	37	18	11
Community health center	31	18	42	26
Private doctors office	23	13	42	26
Family planning clinic	4	2	9	6



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HIV Prevention Utilization

9% of respondents participated in *individual-level or group-level* HIV prevention interventions



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Free Condoms

Less than half (42%)

of the survey respondents reported having access to free condoms in the past 12 months



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HIV Testing in the Past Two Years

Number of tests	Males (n=318)		Females (n=195)	
	#	%	#	%
Never tested	79	25	32	16
0	98	31	53	27
1	69	22	53	27
2	37	11	34	17
3	16	5	9	5
4+	22	7	14	7

Note: A bracket groups the rows for 2, 3, and 4+ tests, with a label '26%' pointing to the percentage column.



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Location of Most Recent HIV Test

Location	Males (n=189)		Females (n=126)	
	#	%	#	%
Public health clinic	35	18	33	26
Correctional facility	44	23	9	7
Community based organization	21	11	13	10
Emergency room	16	9	12	10
Hospital (inpatient)	17	9	9	7
HIV/AIDS street outreach	17	9	7	6
Drug treatment program	13	7	8	6



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Data Limitations

- Have not fully explored predictive associations or causal relationships between SDH and HIV risk
- Data does not represent all persons living in poverty in Chicago (e.g. Latinos)
- Unable to set up interviewing sites and hours convenient to entire target population



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Data Summary

- Measuring aggregate level poverty is an effective way of identifying at-risk urban heterosexuals
- Prevention efforts should be focused on
 - Reducing unprotected sex and substance use
 - Increasing HIV testing and knowledge of status
- New approaches that address the social determinants of health may have a greater impact on reducing disparities when combined with efforts aimed at individual behavior change



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Looking Ahead

- Many opportunities exist for improving prevention efforts among heterosexuals living in high poverty Chicago neighborhoods
 - Enhance current programs aimed at providing condoms, housing, linkage to care, and treatment services for vulnerable populations
 - Devise new and innovative interventions that are aligned with goals of the National HIV/AIDS Strategy
- Establishing cross-disciplinary collaborations are essential to winning the battle



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