

HIV in the US

Challenges for Prevention

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Current Status of the HIV Epidemic in the US

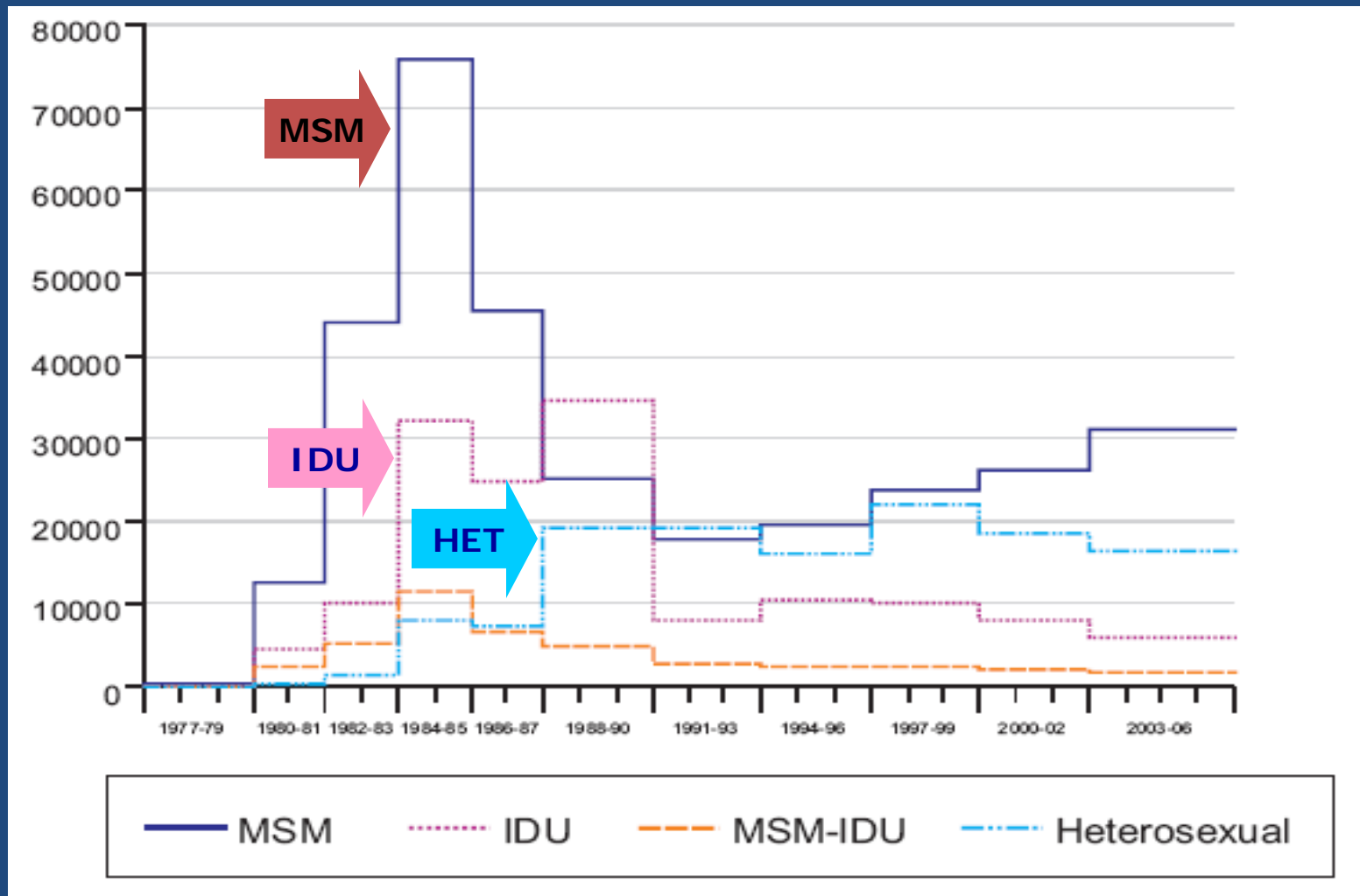
- Approximately 1 million people in the US are living with HIV infection
- 24-27% of HIV-infected individuals are unaware of their serostatus
- An estimated 60,000 new infections annually

HIV Prevalence in US

% HIV seropositive, 95%CI

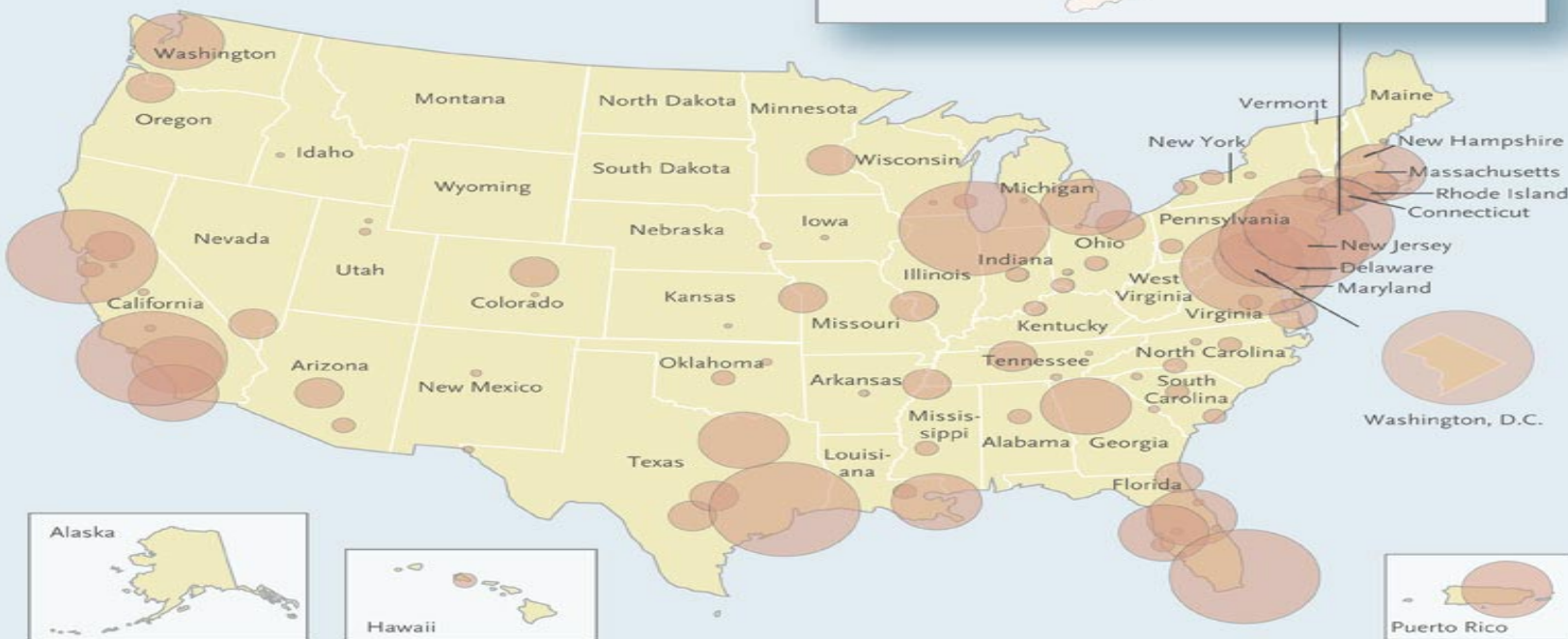
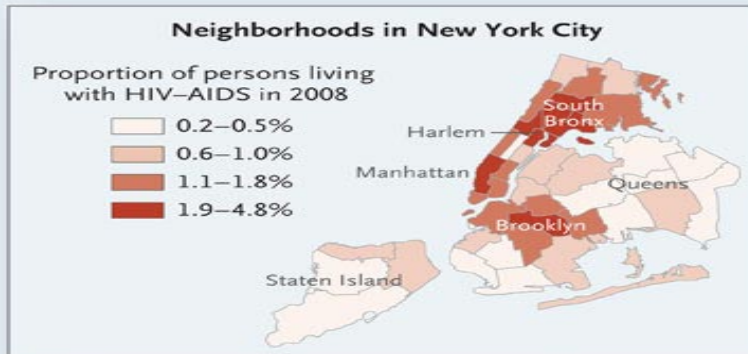
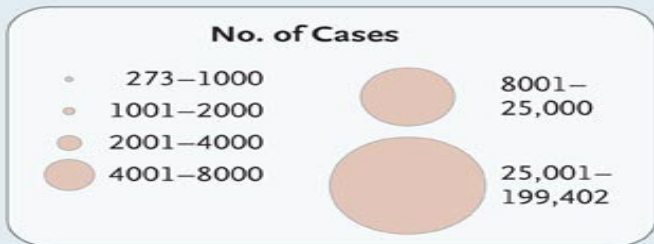
	Add Health Adolescents	NHANES Age 18-39	NHANES Age 40-49
Whites	0.022 (0.00,0.64)	0.26 (0.05,0.38)	0.36 (0.14,0.92)
Blacks	0.49 (0.18,0.87)	1.42 (0.71,2.84)	3.58 (1.88,6.71)
White men		0.52 (0.11,2.45)	0 (0,0.92)
Black men		1.93 (0.77,4.72)	4.54 (2.24,8.97)
White women		0 (0,0.31)	0 (0,0.92)
Black women		1.01 (0.36,2.84)	2.78 (1.00,7.45)

Estimated number of new HIV infections by transmission category, 1977-2006



	% of total by Sex		% of total by Sex & risk		% of total by Sex, Risk & Race						
Men	70%	MSM	49%	White	—————→ 22%						
				Black	—————→ 18%						
				Hispanic	8%						
				Other	1%						
		IDU	10%			White	2%				
						Black	4%				
						Hispanic	4%				
						Other	0%				
						MSM+ IDU	4%				3%
										Heterosexual	7%
										Black	5%
										Hispanic	2%
		Other	0%								
		Other^[1]	0%		0%						
Women	30%	Heterosexual	23%	White	4%						
				Black	—————→ 15%						
				Hispanic	4%						
				Other	0%						
		IDU	7%			White	2%				
						Black	3%				
						Hispanic	2%				
						Other	0%				
		Other¹	0%				0%				

Reported AIDS Cases By Metropolitan Area



Current Research

- HPTN 061 (BROTHERS) BMSM Feasibility
- HPTN 064 (ISIS) Women at risk Feasibility
- HPTN 065 (TLC-Plus) Feasibility
- HPTN 066 TDF/FTC Intensive PK

HPTN 061: BROTHERS

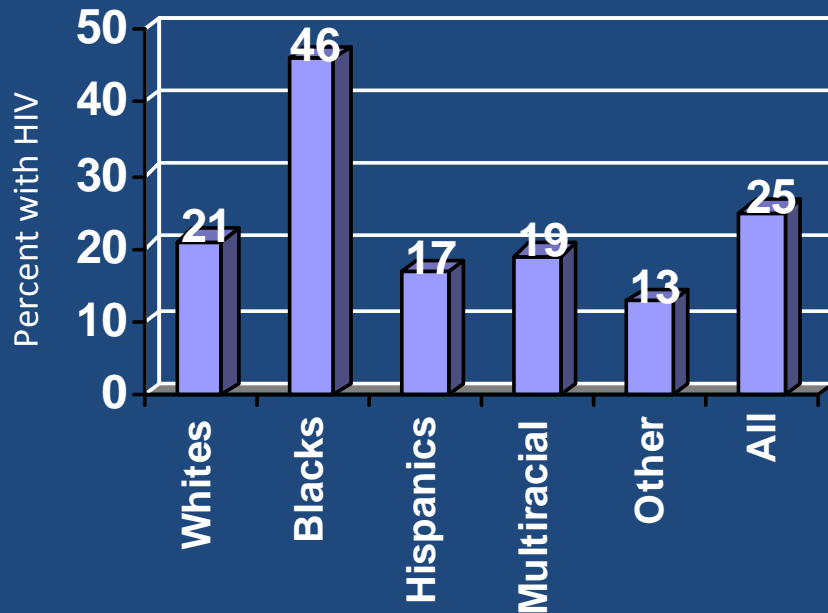


Co-Chairs: Beryl Koblin
Kenneth Mayer
Darrell Wheeler

Why Focus on Black MSM ?

High HIV prevalence despite lower rates of high risk behaviors

HIV Prevalence Among MSM,
5-City CDC Survey, 2004-2005



- Young Black MSM less likely than young white MSM to engage in unprotected anal sex and to use drugs
- Black MSM are more likely to engage in sex with other Black MSM, than other racial partners
- High rates of Bacterial and Viral STI increase risk of HIV transmission

Interventions aimed only at modifying individual risk behaviors may not be effective in preventing HIV

Epidemiology

Intervention

Intermediate outcomes

High proportion unaware of status and risk

Screening for HIV

Identify undiagnosed infections

High HIV prevalence in networks

Involve networks: Engage and refer recent partners

↓ risk, ↑ disclosure; ↑ acceptance of testing

High prevalence of other STIs

Screen/treat GC, CT, syphilis

Fewer STIs

Health care barriers; Mental Health and substance use

Peer health navigators; Triage to clinical services

Treatment, ↓ PVL; modify behavior

Reduce HIV incidence

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graph LR; E1[High proportion unaware of status and risk] --> IO1[Identify undiagnosed infections]; E2[High HIV prevalence in networks] --> IO2[↓ risk, ↑ disclosure; ↑ acceptance of testing]; E3[High prevalence of other STIs] --> IO3[Fewer STIs]; E4[Health care barriers; Mental Health and substance use] --> IO4[Treatment, ↓ PVL; modify behavior]; I1[Screening for HIV] --> IO1; I2[Involve networks: Engage and refer recent partners] --> IO2; I3[Screen/treat GC, CT, syphilis] --> IO3; I4[Peer health navigators; Triage to clinical services] --> IO4; IO1 --> R[Reduce HIV incidence]; IO2 --> R; IO3 --> R; IO4 --> R;
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Can large numbers be enrolled?

Will network partners be referred?

Will referred partners enroll?

Motivation to join study?

Culturally acceptable?

Best Estimate of Intervention Effect?

Different local HIV/STI Prevalence, Incidence?

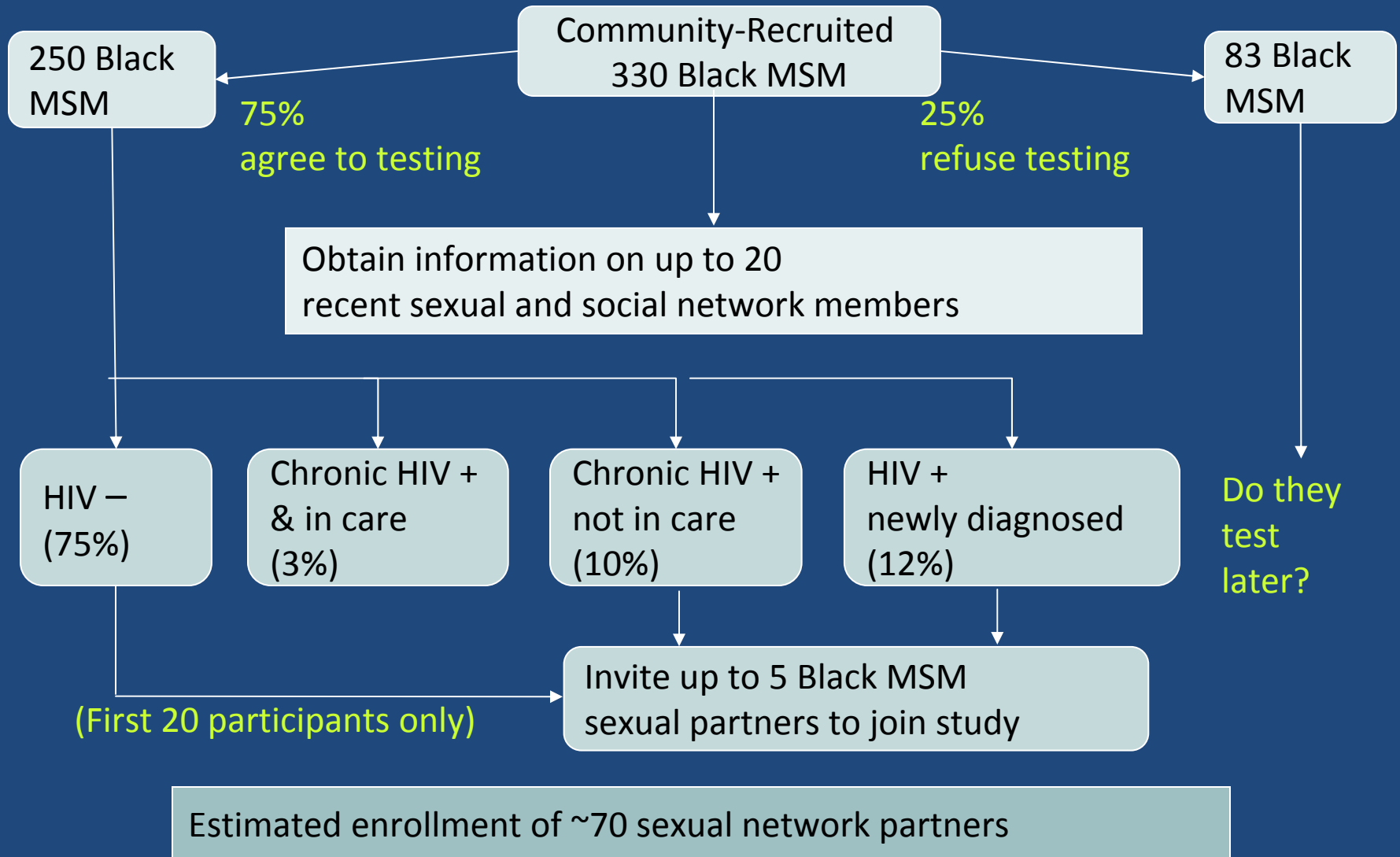
Different recruitment strategies by city?

What needs to be known first?

Primary objectives

- Recruit Black MSM
- Assess uptake of potential intervention components
 - % agreeing to HIV and STI testing
 - % who utilize peer health navigation
- Estimate intervention effect
 - % who are newly diagnosed with HIV at baseline
 - HIV incidence at 6 months and one year
 - ↓ in PVL and STI in those treated
 - ↑ in condom use

Feasibility Study: Social & Sexual Networks

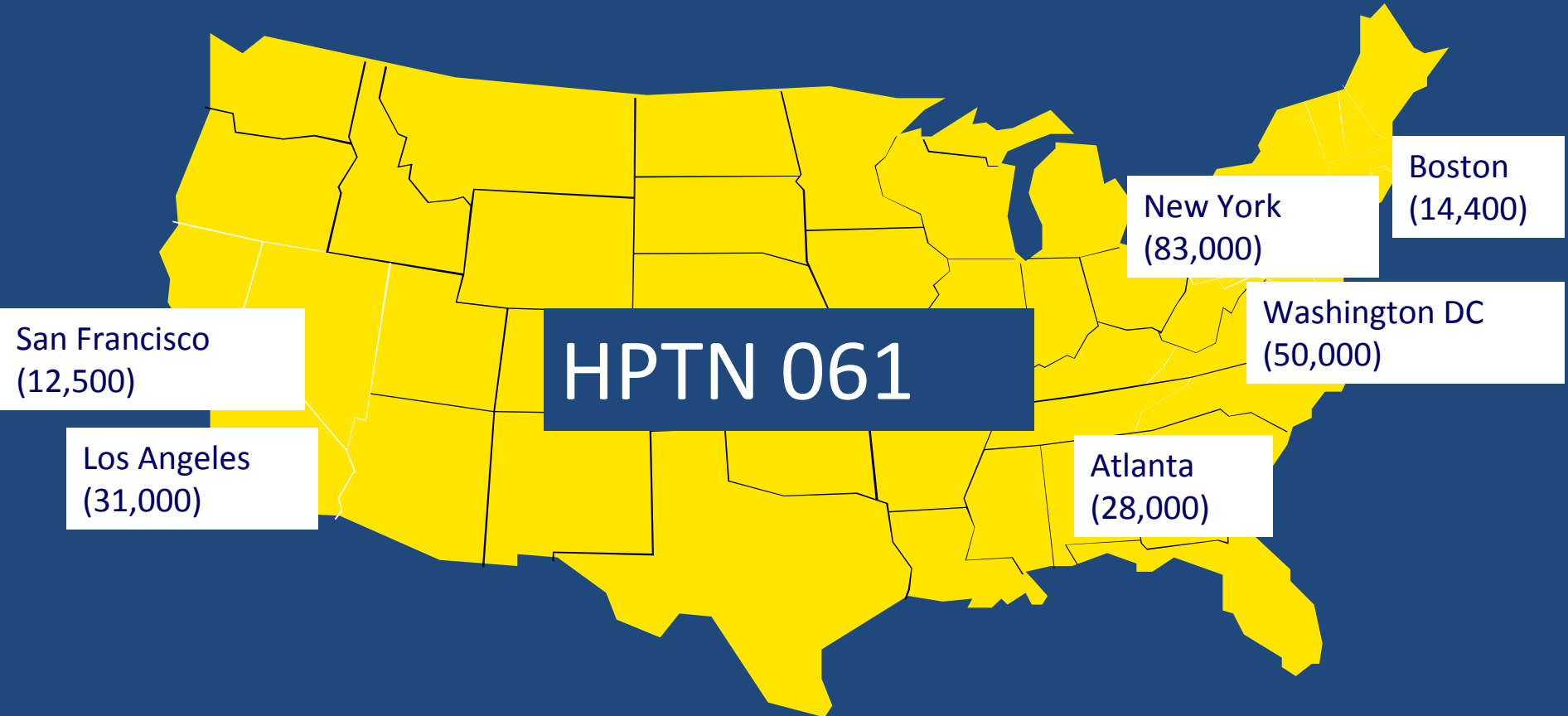


Study Assessments and interventions

- Behavioral assessment with ACASI
 - Sexual/substance use behaviors, access to care, attitudes about prevention methods
- Biological assessment
 - HIV, syphilis, urine/rectal GC/CT (NAAT)
 - Blood saved to test diagnostic algorithms for recent and acute HIV infection
- Interventions
 - Counseling, using Project Respect Model
 - Provide peer health system navigators
 - Referral to local substance use and mental health programs

HPTN 061 Sites

(Estimated BMSM in population)



Design of the Future Intervention Trial

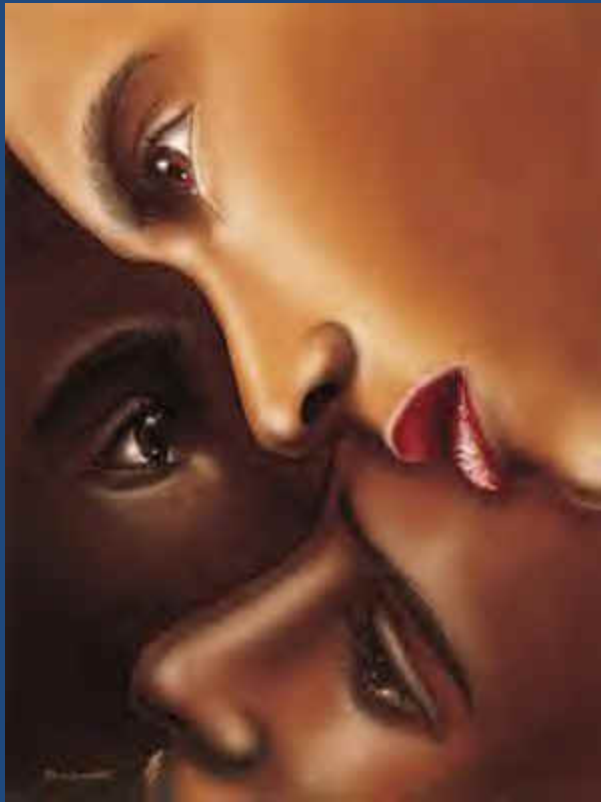
**Community-level randomization in
12-30 cities (depending on HIV incidence)**

Intervention cities
1-2 year intervention

Control cities

Venue-based, time-space sampling of Black MSM
(CDC surveillance approach)

HIV incidence estimates



HPTN 064: ISIS

HIV SeroIncidence Study in Women



Co-Chairs: Sally Hodder
Jessica Justman

HPTN 064: Rationale for ISIS

- Need to identify women in the US who are at high risk for HIV acquisition
 - Seroincidence rates in past longitudinal studies <1% per year
 - Novel recruitment strategies are needed
- Need for improved assays/algorithms for accurate identification of incident HIV infections in cross-sectional studies

ISIS Study Design

- Prospective observational cohort study with retrospective components
- Venue-based sampling to enrollment of 2,000 women across 10 communities, followed over 6 to 12 months
- Quantitative assessments
- Qualitative components
 - Semi-structured interviews of women
 - Focus Groups in women and men
- Estimation of HIV incidence by combining laboratory assessments from cross-sectional surveys with cohort follow-up
- Approximately 2 years total duration with follow-up of all participants to a common closing date.

ISIS: Inclusion Criteria

- Women ages 18-44 years
- Residence in high-risk areas
- Individual risk characteristics of each woman (e.g., drug and alcohol use, STI)
- Risk characteristics of her male partner(s) (e.g., incarceration, HIV diagnosis, STI, drug and alcohol use)

ISIS Objectives

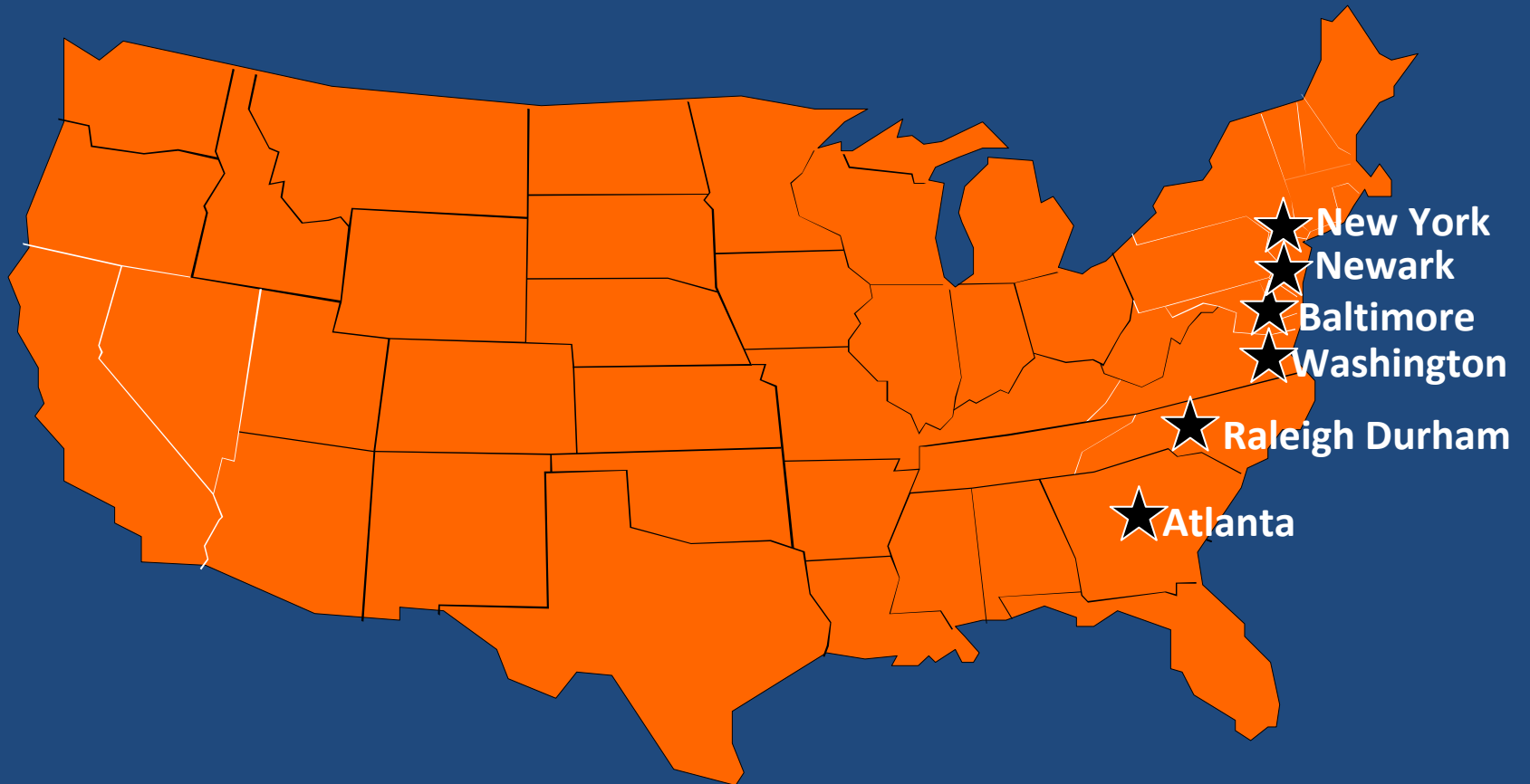
Primary:

- Estimate HIV incidence in a cohort of women at risk for HIV in the US

Secondary:

- Evaluate lab assays for HIV-1 incidence determination
- Describe social and behavioral HIV risks
 - risk behaviors, alcohol/drug use, domestic violence, mental health and structural factors
- Describe contextual factors in subgroups of women and men to inform future interventions

ISIS Study Sites



10 distinct communities within 6 geographical locations

ISIS-Plus

Multilevel Factorial Design

Potential ISIS trial

Community-level		
	Intervention	Control
Individual-level		
Intervention	WI-CI	WI-CC
Control	WC-CI	WC-CC

HPTN 065

TLC-Plus:

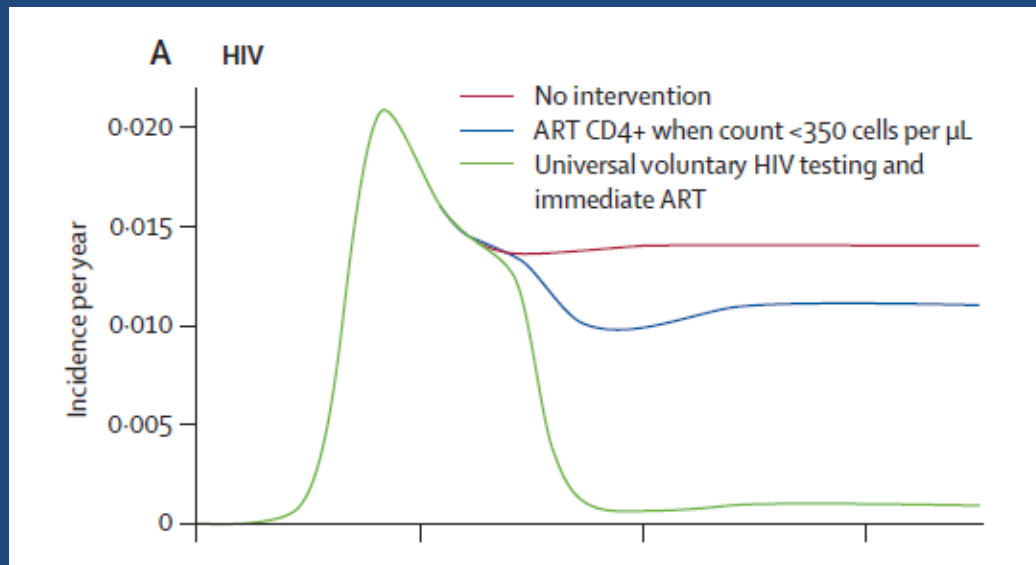
Feasibility of an enhanced test, link-to-care plus treat approach for HIV prevention in the U.S.

Chair: Wafaa El-Sadr

Co-Chair: Bernie Branson

Test and Treat

Test and Treat enough HIV+ people



Decrease in
HIV
Transmission

Model Assumptions

- High uptake of annual testing by all >15 year old individuals
- All HIV+ individuals start ART immediately, irrespective of stage of HIV disease
- 99% decrease in infectiousness
- High adherence with ART
- Low failure with first line ART

HPTN 065 Protocol Overview

PURPOSE

**To evaluate the feasibility of an enhanced
community-level HIV
test, link-to-care plus treat strategy in the
U.S.**

Study Communities

- **Intervention communities**
 - Washington DC
 - Bronx, NY
- **Comparison communities**
 - Houston
 - Philadelphia
 - Chicago
 - Miami

Study Components

I. Testing

II. Linkage to care

III. Viral suppression

IV. Positive prevention

V. Patient and provider survey

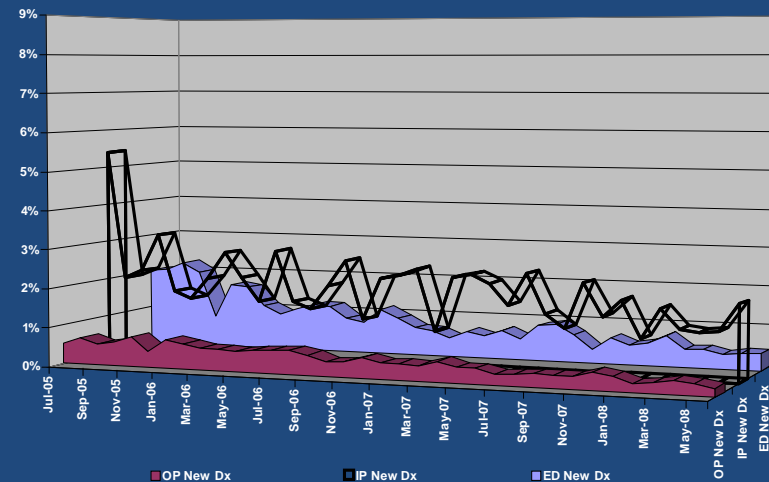
Study Components

I. Expanded HIV Testing



1- social mobilization, with targeted messaging to promote testing

2- universal offer of HIV testing in emergency departments (EDs) and hospital inpatient admissions



Study Components

II. Linkage to Care



- HIV test site randomization (20 per community)
- determine feasibility and effectiveness of
 - » financial incentives vs.
 - » standard of care (SOC)

Outcome: Proportion of newly identified HIV+ patients from HIV test sites who complete two clinical visits at HIV care sites



Study Components III. Viral Suppression



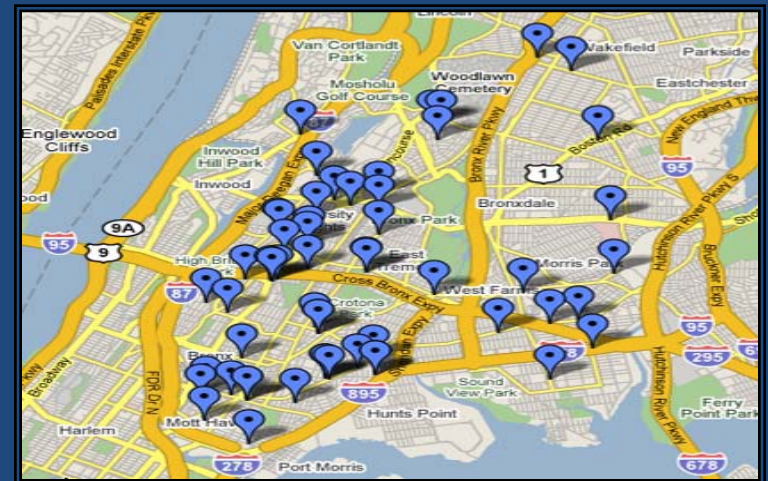
- care site randomization (20 per community)
- determine feasibility and effectiveness of
 - » financial incentives vs.
 - » standard of care (SOC)

Outcome: Proportion of patients at HIV care site achieving and maintaining viral suppression

Site Selection

- HIV test sites:
 - The number of HIV-positive individuals identified in the previous year, selecting highest volume sites
- HIV care sites:
 - The number of HIV-positive patients, selecting highest volume sites

These sites include community clinics, hospitals, emergency departments, community-based organizations



Study Components

IV. Prevention for Positives

- individual randomization of patients (6 care sites per community)
- determine effectiveness in decreasing risk behaviors
 - » computer-delivered intervention vs.
 - » standard of care (SOC)



Study Components

V. Patient and Provider Surveys

These surveys aim to determine:

- knowledge, attitudes and practices regarding early initiation of ART
- knowledge and attitudes regarding financial incentives for linkage to care and viral suppression

Summary of Study Components

Study Component	Design	Outcomes
Expanded HIV Testing	Descriptive, ecologic study	Feasibility
Linkage-to-Care	Two-arm, site-randomized, prospective	Feasibility and effectiveness
Viral Suppression	Two-arm, site-randomized, prospective	Feasibility and effectiveness
Prevention for Positives	Two-arm, individual-randomized, prospective	Effectiveness
Patient and Provider Surveys	Quantitative survey	Knowledge, attitudes, practices

TLC-Plus:

Study Objectives and Outcomes

- **Assesses feasibility and effectiveness outcomes, dependent on study component**
- **Assesses the feasibility of using surveillance data for outcomes**
- **All aim at determining feasibility of overall strategy**
- **TLC-Plus is not designed to measure a change in HIV incidence**

Unique Features of TLC-Plus

- **Partnerships**
 - **Between NIH and CDC**
 - **Across NIH institutes**
 - **With departments of health in major cities**
 - **With diverse stakeholders in communities**
- **Community (rather than research site) focus**
- **Combine feasibility and effectiveness outcomes**
- **Use of routine HIV surveillance data for key outcomes**
- **Galvanize community support for expanded testing, care and treatment**

Way Forward

Domestic HIV Prevention Research Meeting Objectives

- Review state-of-art regarding US epidemic and prevention strategies
- Identify research gaps for future domestic HIV prevention research
- Form new collaborations and partnerships to address the gaps
- Develop concepts/capsules of research ideas for future development (HPTN, RO1, others)

Meeting Agenda

Session 1: Structures, community and Empowerment

Session 2: Interventions and Populations

Session 3: Interventions and Populations II

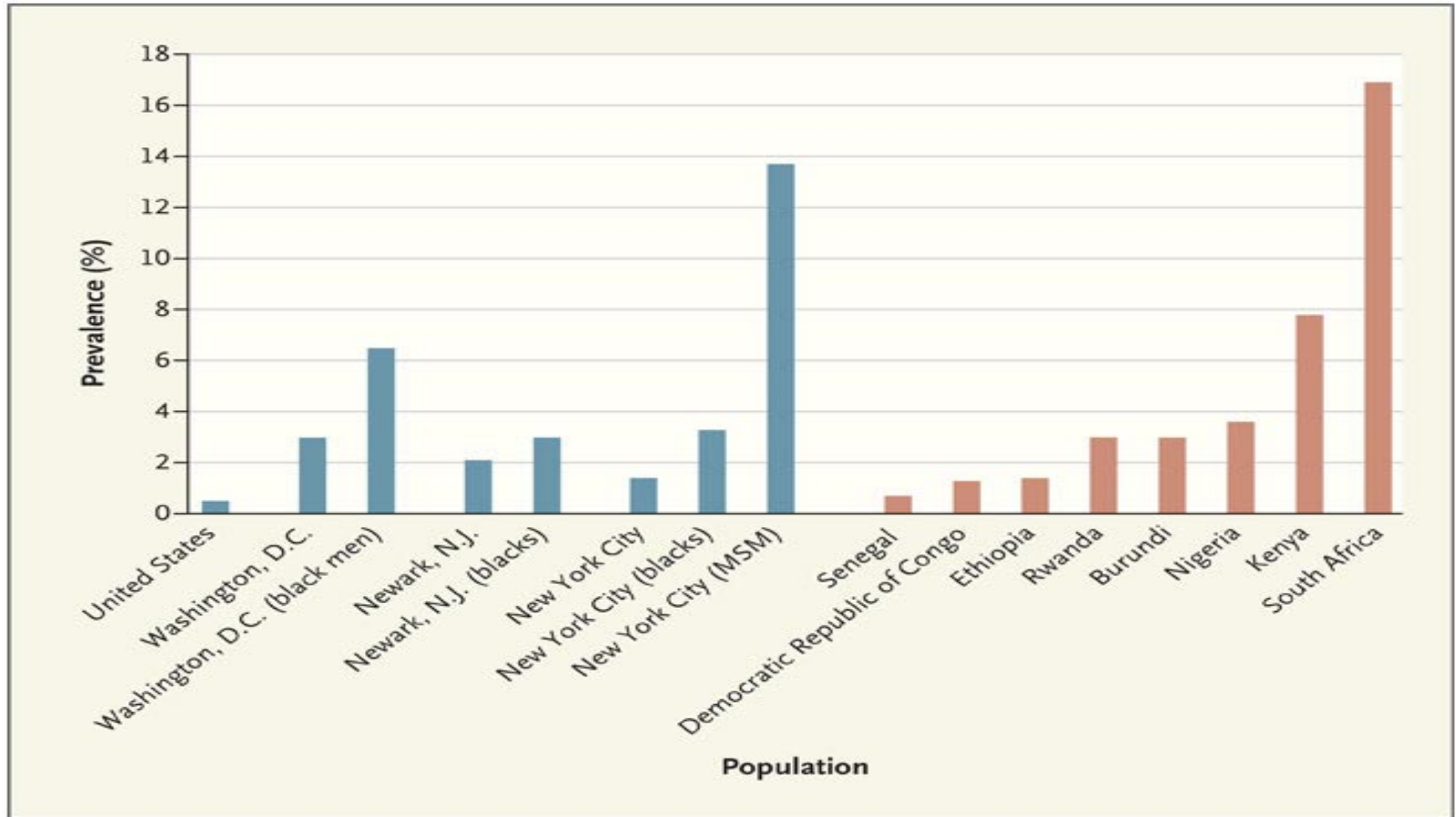
Session 4: Biomedical Issues

Session 5: Design and Outcomes

Structural intervention

Brainstorming and idea generation

AIDS in America: As Severe as in Africa in some Subpopulations in the US



Thank you

