

Awareness of HIV+ Status: What Does it Mean for Prevention?

Gary Marks

Division of HIV/AIDS Prevention
Centers for Disease Control and Prevention

The viewpoints expressed are those of the presenter and
do not necessarily represent the views of the CDC

Obvious fact

HIV transmission stems from behaviors of two general groups:

- Those who are HIV+ and aware of it
- Those infected with HIV and unaware of it

Question #1

Does HIV testing leading to awareness of seropositive status reduce sexual transmission risk behaviors?

Findings from meta-analyses

Weinhardt, Carey, Johnson, Bickham *AJPH*, 1997

- Published studies from 1985-1997
- Compared behavior before and after learning HIV+ status (5 studies)
- Significant reductions in frequency of unprotected intercourse
- Significant increases in condom use

Meta-analyses (cont.)

Marks, Crepaz, Senterfitt, Janssen *JAIDS*, 2005

11 published and unpublished findings from 1987-2003
(all unique from Weinhardt et al., except 1)

- Two types of comparisons
 1. Between-group (aware vs. unaware)
 2. Within-group (before & after learning HIV+ status)
- Relative reduction in prevalence of UAV in aware vs. unaware;
after vs. before learning HIV+ status
 - 53% (95% CI = 45%, 60%) reduction with any partners**
 - 68% (95% CI = 59%, 76%) reduction with at-risk partners**
- Similar findings when new STD diagnosis was the outcome

Brothers y Hermanos Study (2005-06)

- Black and Latino MSM
- Los Angeles, New York City, Philadelphia
- Respondent driven sampling
 - 18 years of age or older
 - Sex with a man in past 12 months
 - Any HIV status
- ACASI
- Tested for HIV (rapid oral + Western blot confirmation)

1154 black MSM

42% (n=489) HIV+/aware at entry

1081 Latino MSM

35% (n=376) HIV+/aware at entry

Classified as HIV+/unaware

Had a confirmed HIV-positive test result in study

and reported on the ACASI:

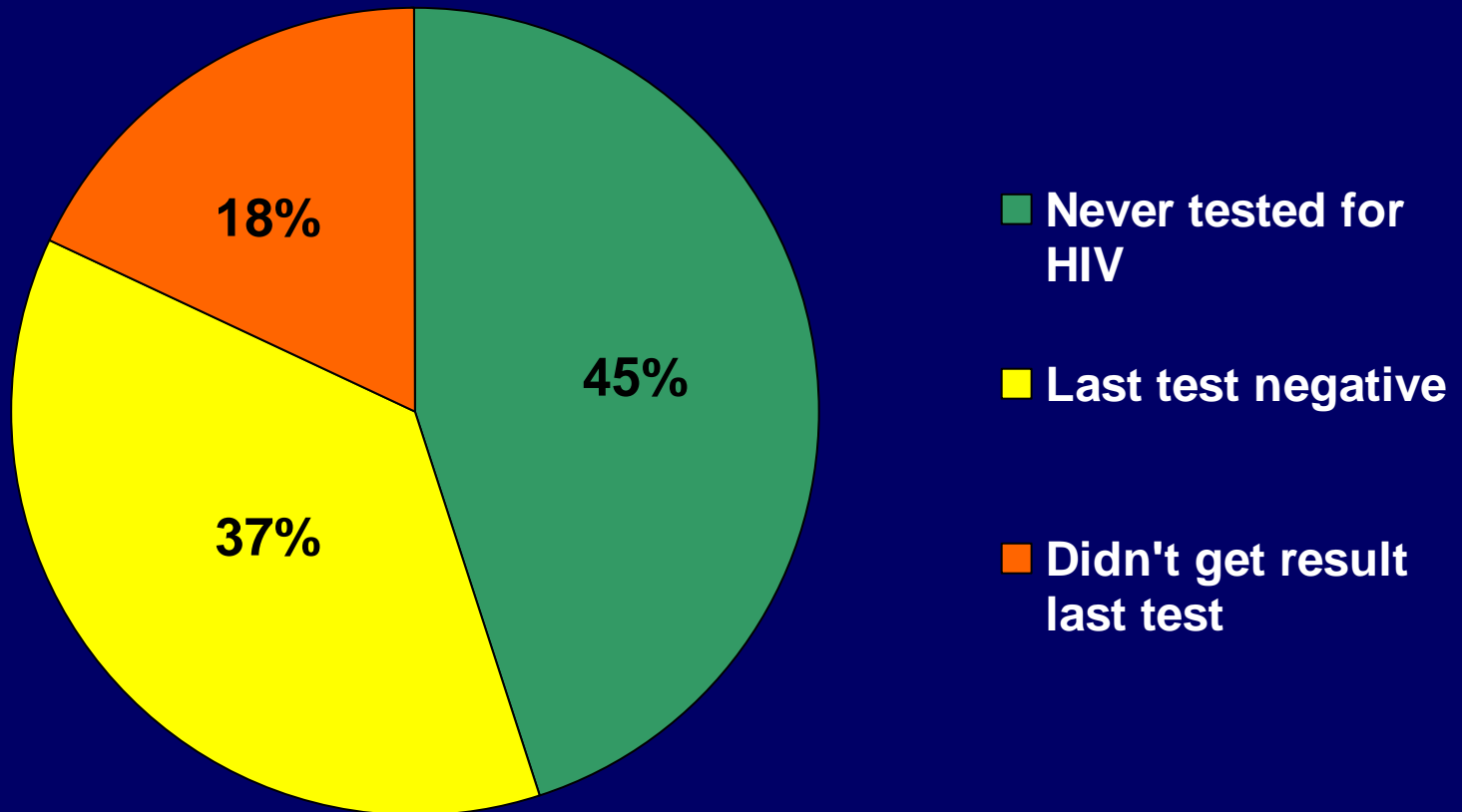
- that the result of their last test was HIV-negative
- that they did not get the results of their last test
- that they had never been tested before today

11% HIV+/unaware

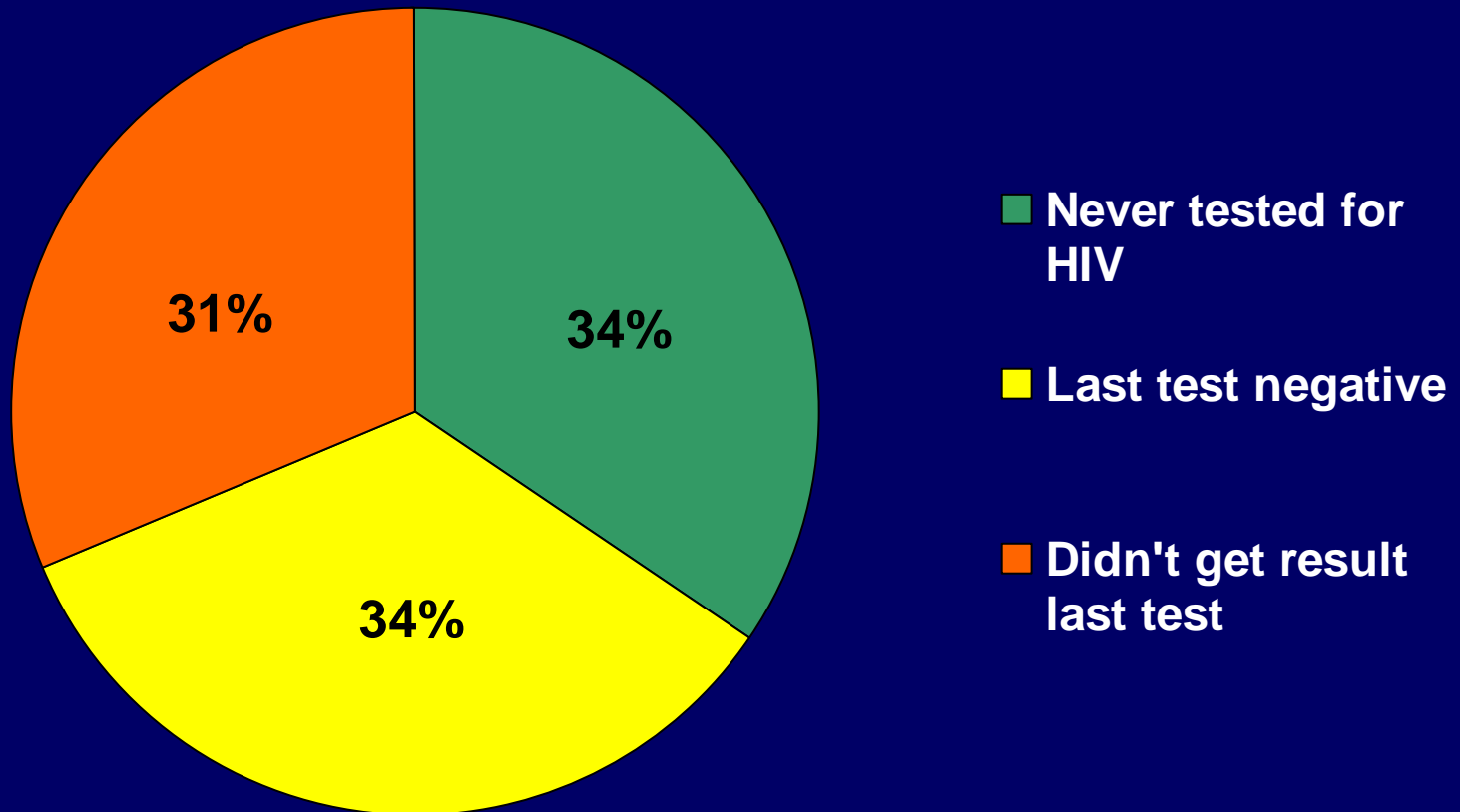
142 of 1340 Latino and black MSM who reported on ACASI that they were HIV-negative on last test, did not get the results of last test, or had never been tested for HIV

Black MSM	17% (110/651)
Latino MSM	5% (32/689)

Of the 110 HIV+/unaware black MSM



Of the 32 HIV+/unaware Latino MSM



Sexual behavior in past 3 months

Unprotected insertive and receptive anal intercourse (UA)
with male partners

According to perceived serostatus of partners

- > HIV-negative (“actually told you they were HIV-negative and you had no reason to doubt it”)
- > HIV-positive (“you knew were HIV-positive”)
- > Unknown serostatus (“not completely sure of their HIV status”)

At-risk partners = HIV-negative or unknown serostatus

Transmission risk behavior according to partner serostatus (black MSM)

Insertive UA	Perceived Partner Serostatus		
	HIV-pos	HIV-neg	HIV-unk
HIV+/unaware N=110	15%	16%	27%
HIV+/aware N=489	24%	6%	16%

Transmission risk behavior according to partner serostatus (Latino MSM)

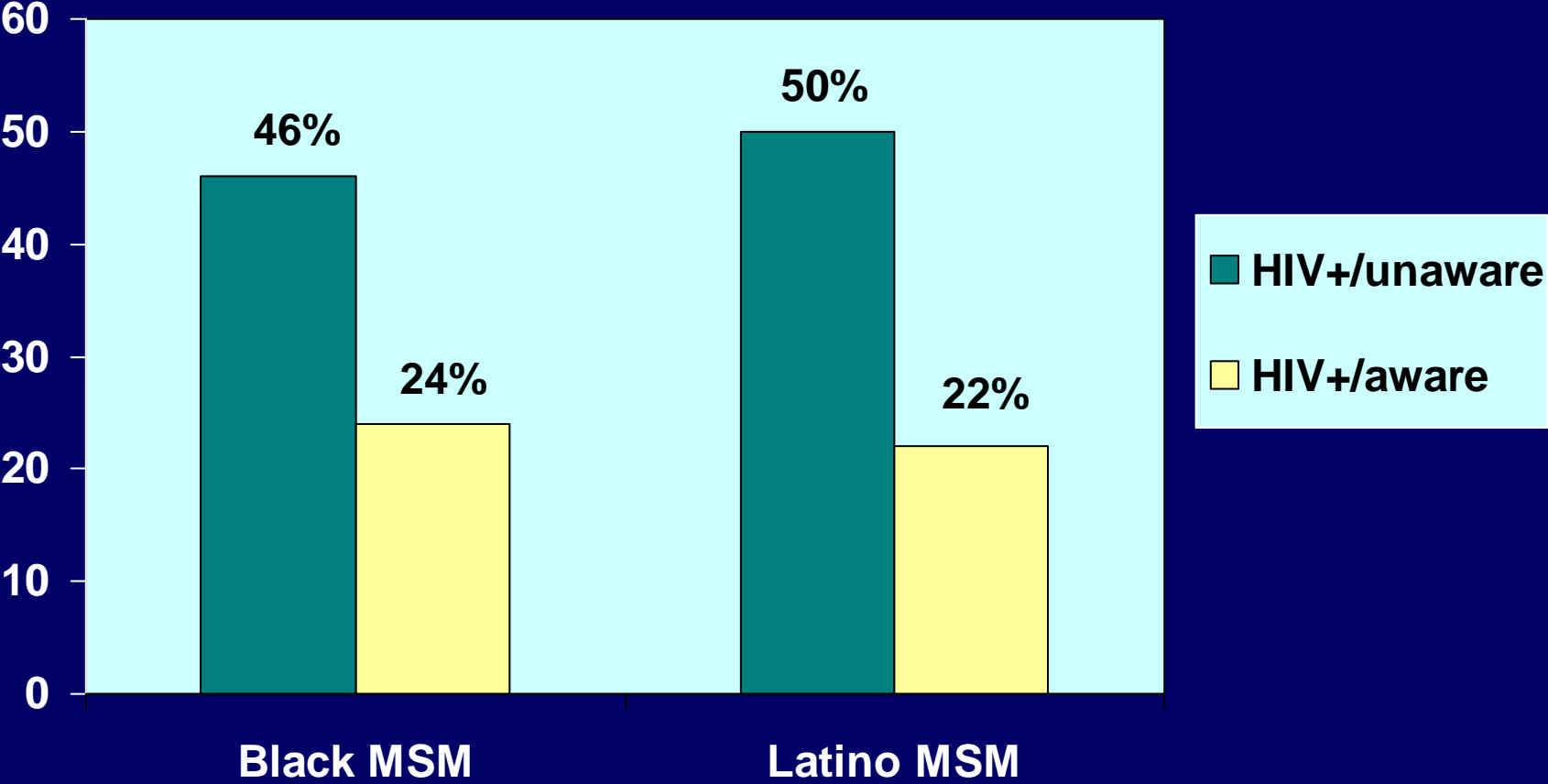
Insertive UA	Perceived Partner Serostatus		
	HIV-pos	HIV-neg	HIV-unk
HIV+/unaware N=32	16%	19%	22%
HIV+/aware N=376	20%	3%	10%

Of those who engaged in insertive UA with male partners, % who did so only with partners perceived to be HIV+

	Black MSM	Latino MSM
HIV+/unaware	17%	19%
HIV+/aware	49%	51%

Same pattern for receptive UA

Comparison of awareness groups in % who engaged in UA* with at-risk male partners



*Insertive or receptive UA

Multivariate comparison of awareness groups

Odds of UA* with at-risk male partners

	AdjOR	95% CI
HIV+/unaware	1.00	
HIV+/aware	.34	.23 - .50

Controlling for recruitment city, age, education, income, employment, born in US, alcohol, drugs used in the past 3 months.

Among HIV+/aware: being on ART not associated with risk behavior

*Unprotected insertive or receptive anal intercourse

Behavioral profiles very similar for black and Latino MSM

How do we reconcile these findings with surveillance data showing that incidence of new HIV infections is much higher among black than Latino MSM?

Unawareness of HIV infection is one major factor

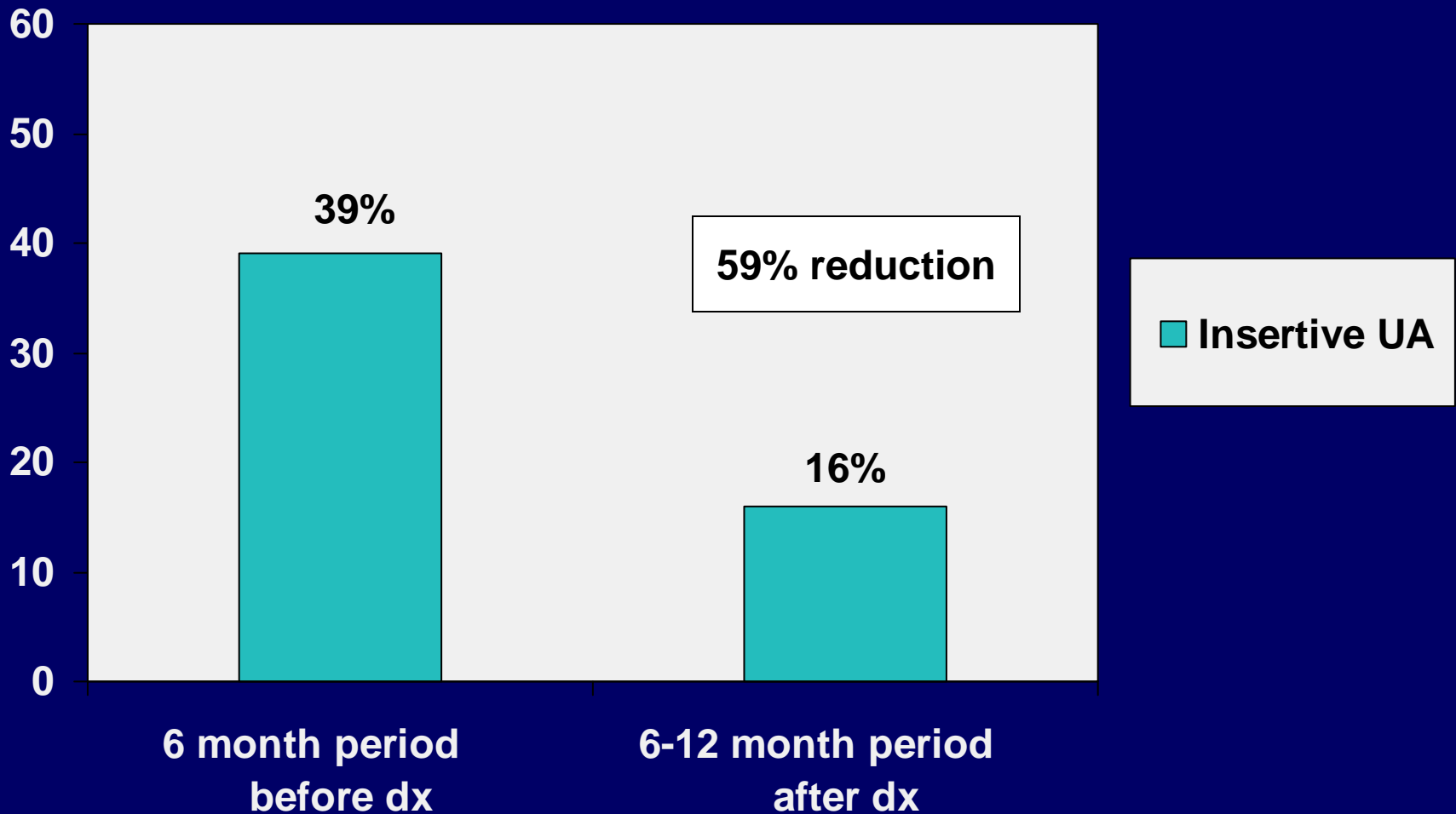
Unawareness more prevalent among black than Latino MSM

****More unawareness → More trans. beh → More new infections****

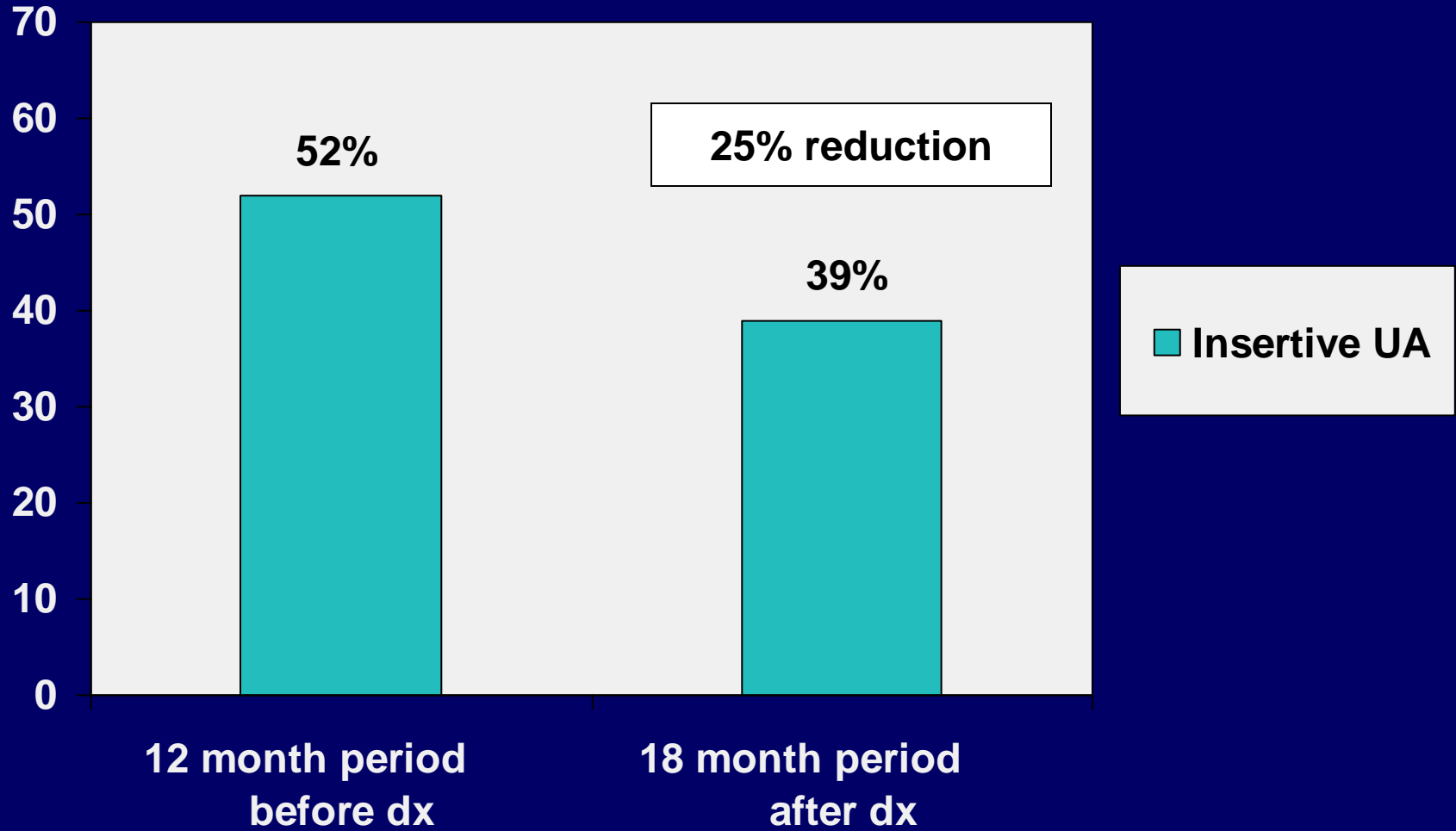
Question #2

How enduring is the behavior change following awareness of HIV+ status?

Longitudinal data from Colfax et al., AIDS 2002
% MSM reporting insertive UA with at-risk male partners
before and after learning HIV+ status

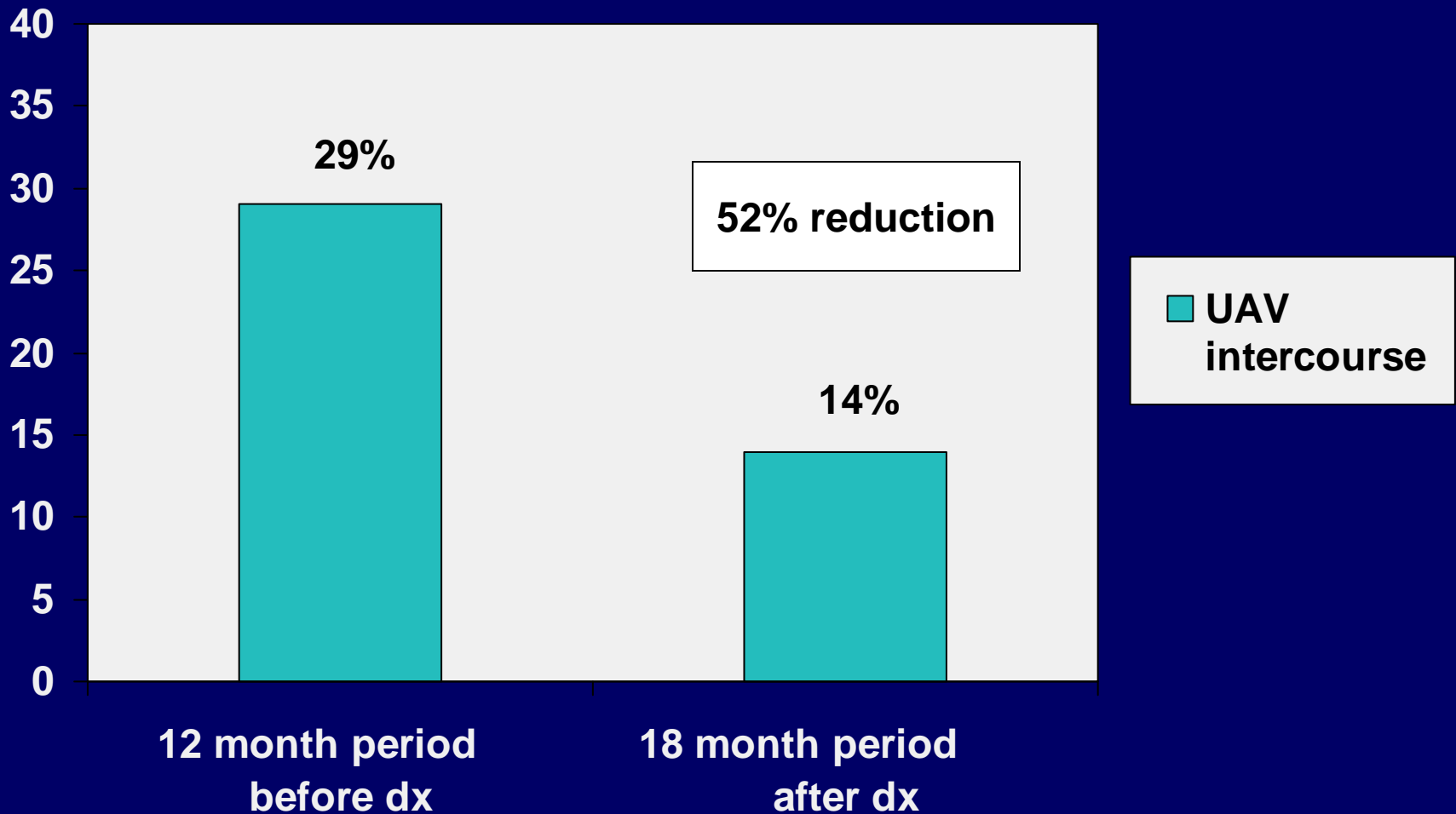


Longitudinal data from MACS
% MSM reporting insertive UA with any partners
before and after learning HIV+ status



Longitudinal data from HERS

% of women reporting UAV with “casual” sex partners before and after learning HIV+ status



Cross-sectional comparisons

Grouping people by how long they have known they are HIV+

Data from ByH study

% UA with at-risk male partners in past 3 months

	<u>Black MSM</u>	<u>Latino MSM</u>
HIV+/unaware	46%	50%
HIV+/aware	24%	22%
<u>Time since dx</u>		
Up to 5 years	27%	20%
6-10 years	26%	25%
Over 10 years	22%	22%

Supplement to HIV/AIDS Surveillance (SHAS), Phase 2 (2000-03)

Data collected from HIV+ persons in 19 cities or states
% UAV intercourse with at-risk partner (in last encounter)

334 HIV+/unaware men	<u>UAV</u> 39%	
2335 HIV+/aware men	16%	59% reduction
<u>Time since dx</u>		
≤ 2 years	17%	
3-4 years	16%	
5-6 years	17%	
7-8 years	14%	
> 8 years	13%	

Tentative conclusion

Behavior change after learning HIV+ status seems to be enduring but we need more longitudinal data

Question #3

What's causing the behavior change after people become aware they are HIV+?

Mere awareness?

Pre- & post-test counseling?

Exposure to prevention programs/services?

Need for cohort study?

Enroll those tested for HIV infection at health-care facilities implementing CDC's new testing recs

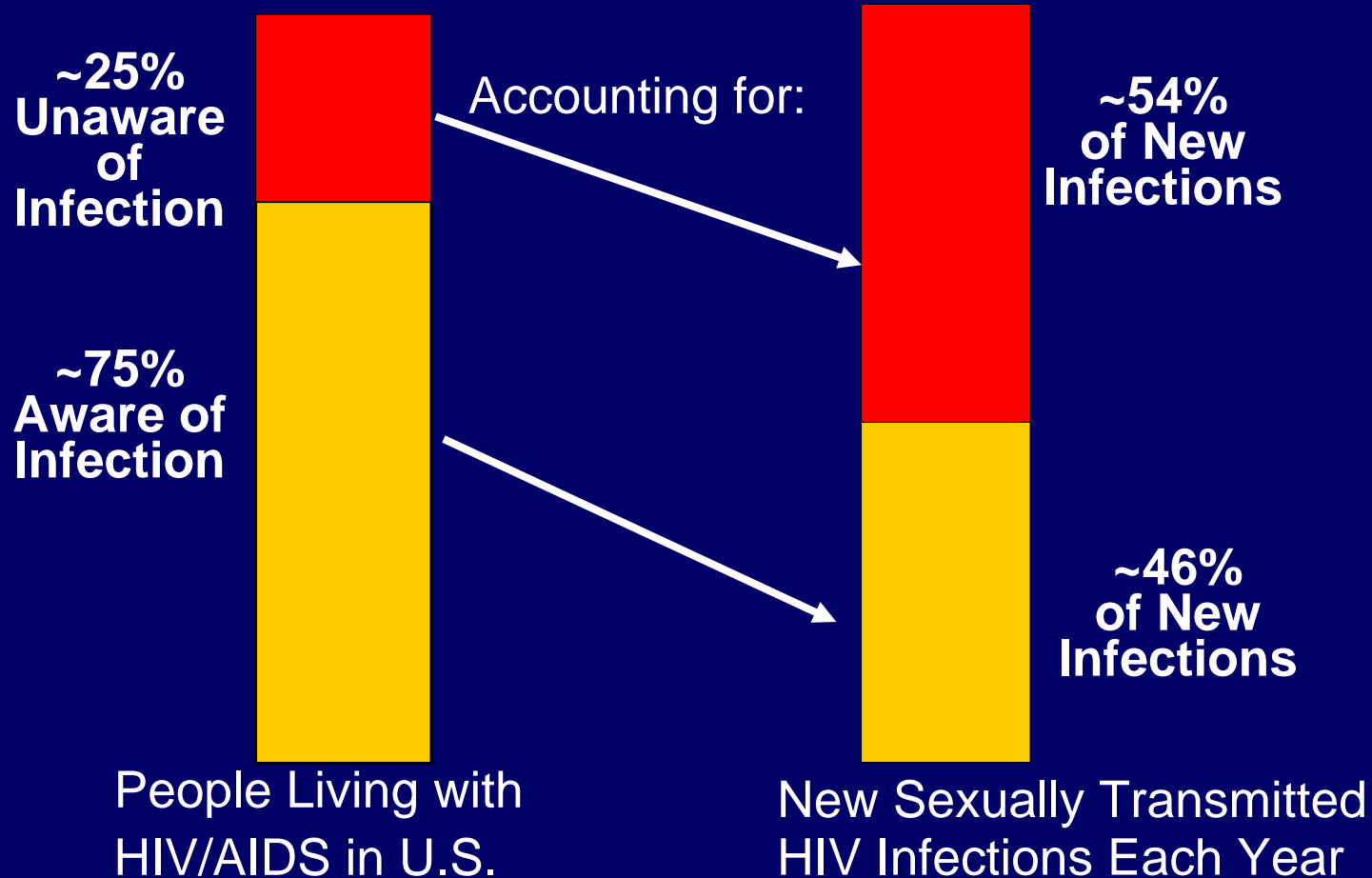
Followed for 2-3 years after testing (HIV+ & HIV-)

- Sexual risk behaviors 6 months before testing and periodically after HIV testing
- Assess linkage to care/prevention services (HIV+)
- Two randomized arms: HIV testing without counseling vs. testing plus counseling

Question #4

What are the implications of the
aware-unaware findings for prevention
in the U.S.?

HIV+/unaware group contributes disproportionately to HIV sexual transmission in the U.S.



This may underestimate transmission from the HIV+/unaware group

- Increased transmission during primary infection stage
- Many infected persons are undiagnosed for years
- STDs more prevalent among unaware than aware
- Unrecognized infection more prevalent in some sub-populations (e.g., young MSM, especially young black MSM)

Implications for prevention (three-pronged attack)

1. HIV Testing of Utmost Importance for Prevention

Learning HIV+ status reduces prevalence of high transmission risk behaviors **by HALF**

Exceeds our best behavioral interventions
(typically 30%-40% effect size)

Data argue that moving people from unaware to aware should reduce the number of new infections

2. Need Sustained Prevention Programs for HIV+/Aware Linkage and retention to care

15%-25% engage in high transmission risk behaviors

Behavioral programs: HIV clinics and CBOs

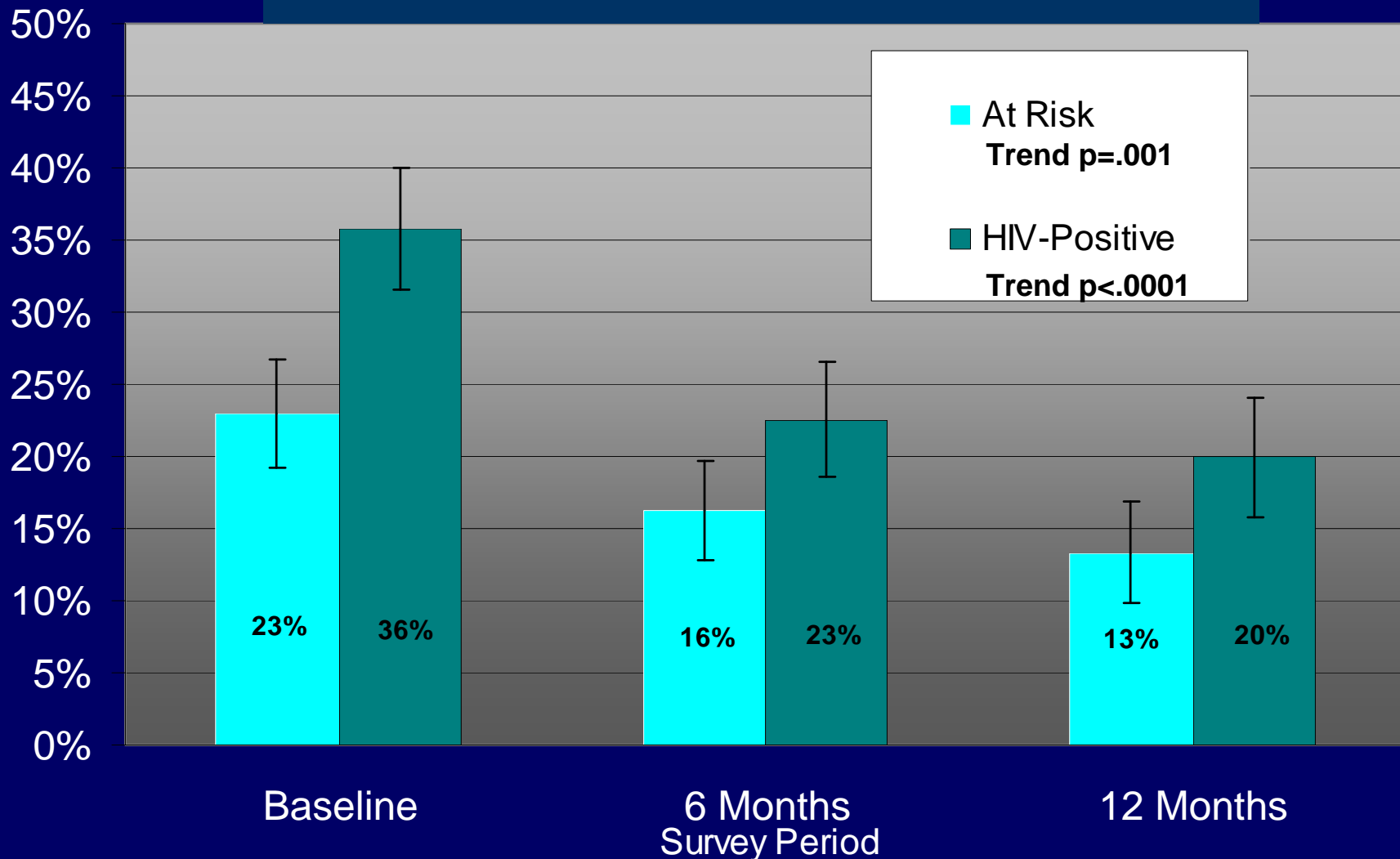
Recent successful clinic-based intervention (2005-06)

PICS demonstration project (“Positive Steps”)

Brief, provider-delivered intervention

6 HIV clinics

% of MSM engaging in UAV before and after onset of clinic-wide intervention



3. Interventions for People At-Risk for Infection (Susceptibles)

Testing may not do the trick

We don't see strong changes in risk behavior after people learn they are HIV-negative

Need other types of interventions (and we have them!!)

Approaches rooted in
social-normative models
social-cognitive theory

Acknowledgments

Brothers y Hermanos

Greg Millett

Adrian Liao

Byron Mason

Ann Stueve

Alex Carballo-Diequez

Alexi San Doval

Jennifer Lauby

Lisa Bond

Trista Bingham

Lucia Torian

Darrell Wheeler

Christopher Murrill

CDC

Nicole Crepaz

Robert Janssen

Paul Denning

Michael Campsmith

Glenn Nakamura

Merle Hamburger

Ramses Sadek

Others

Walt Senterfitt

Lisa Jacobson

Mary Elizabeth Gore

MACS Executive Committee

HERS Executive Committee