

# Disparities in HIV Care

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**MRISP Lecture Series**  
**Charles Drew University**  
**April 18, 2006**



# Overview

- **Disparities in HIV/AIDS health services**
- **Factors explaining disparities in services**
- **Health consequences of disparities and barriers**
- **New study addressing disparities**

## U.S. AIDS Death Rates by race (per 100,000 Population)

	Total	Men	Women
White	4	6	1
Black	27	42	14
Hispanic	9	14	4
American Indian/Alaska Native	3	4	Unknown
Asian Pacific Islander	1	2	Unknown

NCHS 2000

# HCSUS Was the Only Nationally Representative Study of People in care for HIV/AIDS (1996-02)

**Stage 1:  
Random  
areas**



**Stage 2:  
Random  
providers**



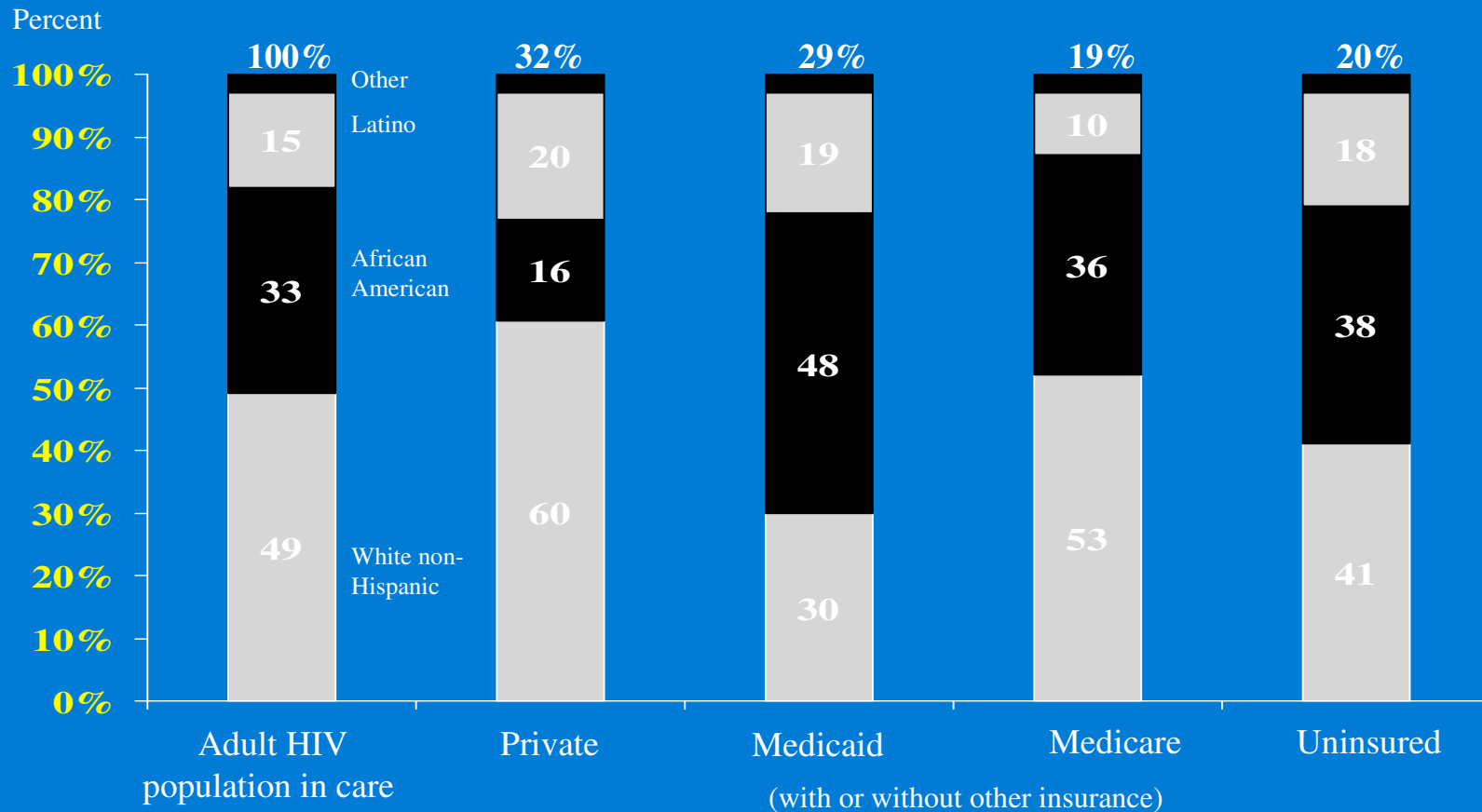
**Stage 3:  
Random  
patients**



# Disparities in AIDS Health Services

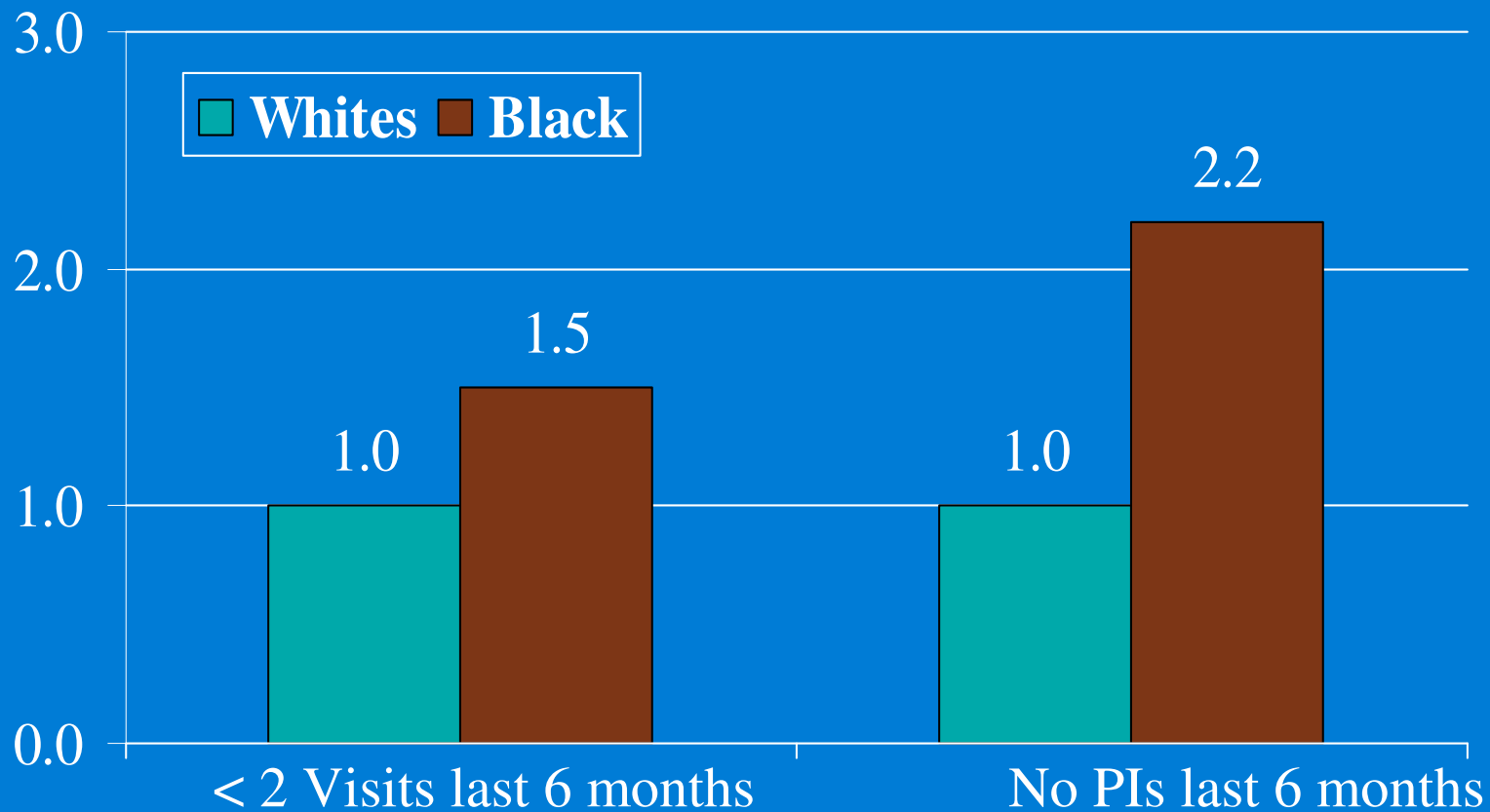
- Insurance coverage
- Outpatient
- Emergency Room
- Hospital Care
- Medications

# Insurance Profile of Adults Living with HIV in Care by Race/Ethnicity



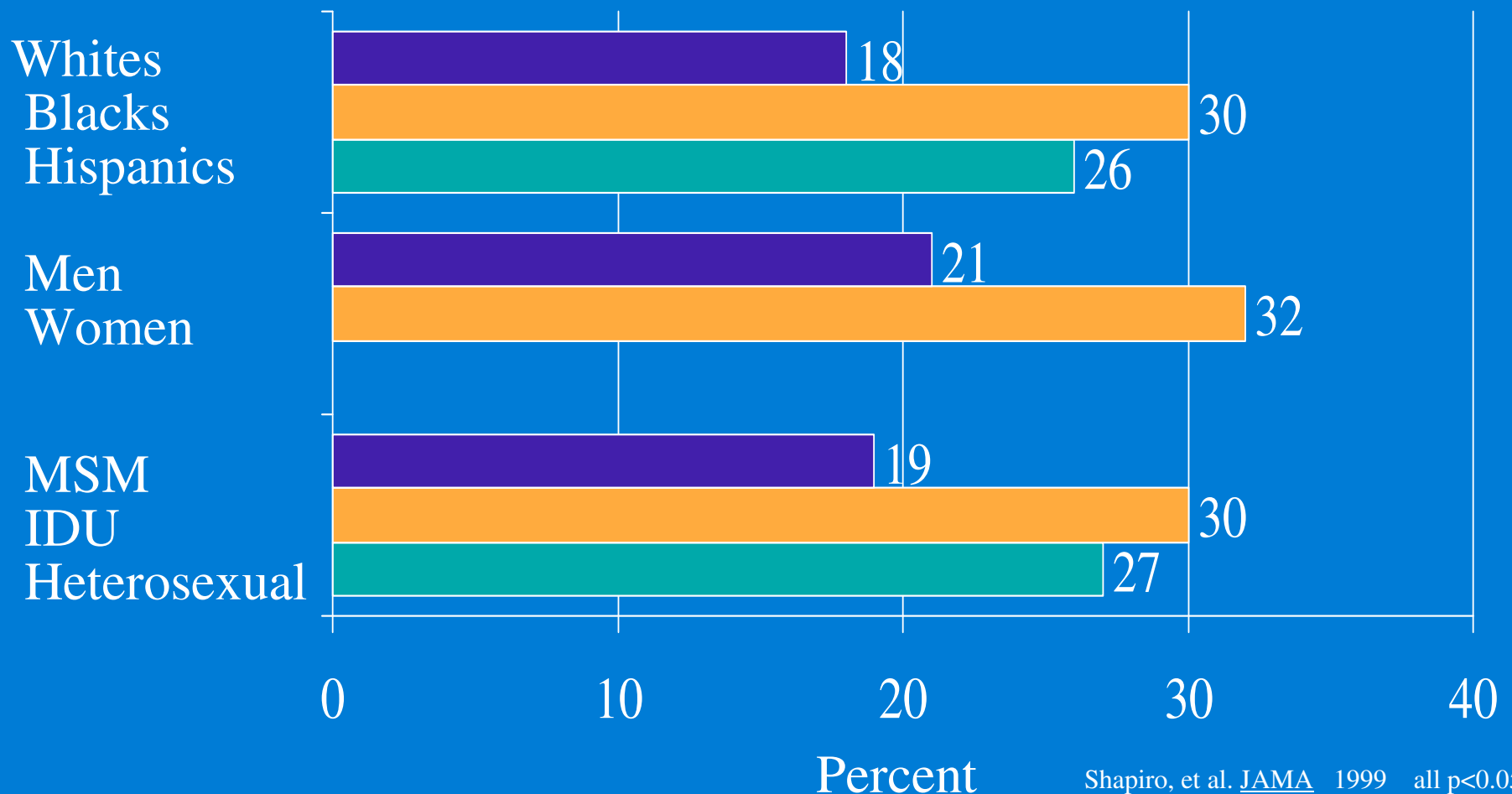
Bozzette, *NEJM* 1998

# Disparities in Outpatient Visits and Protease Inhibitor Use



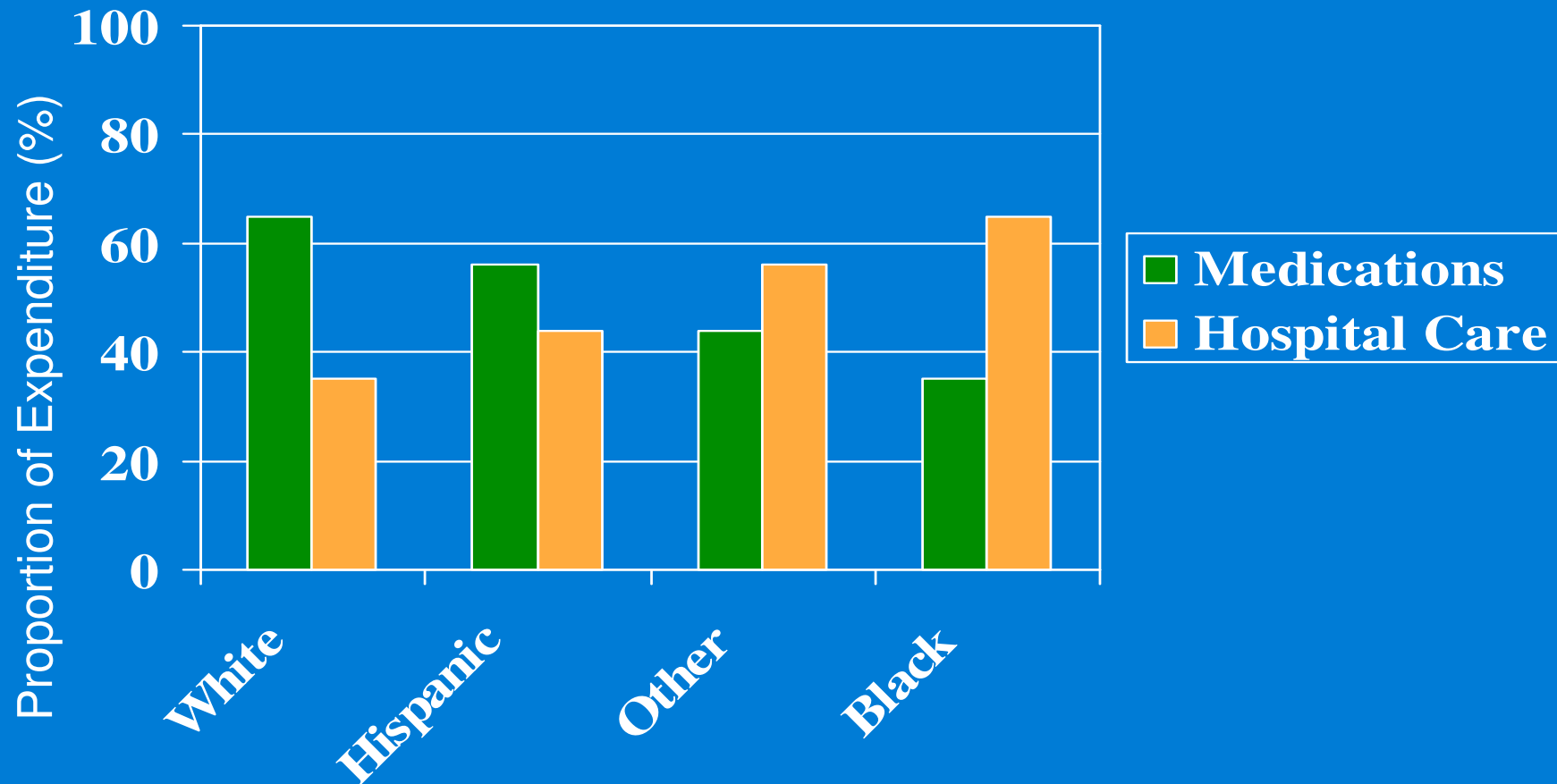
Shapiro et al., *JAMA* 1999 all P<.01

# Proportion Using Emergency Room without Associated Hospitalization



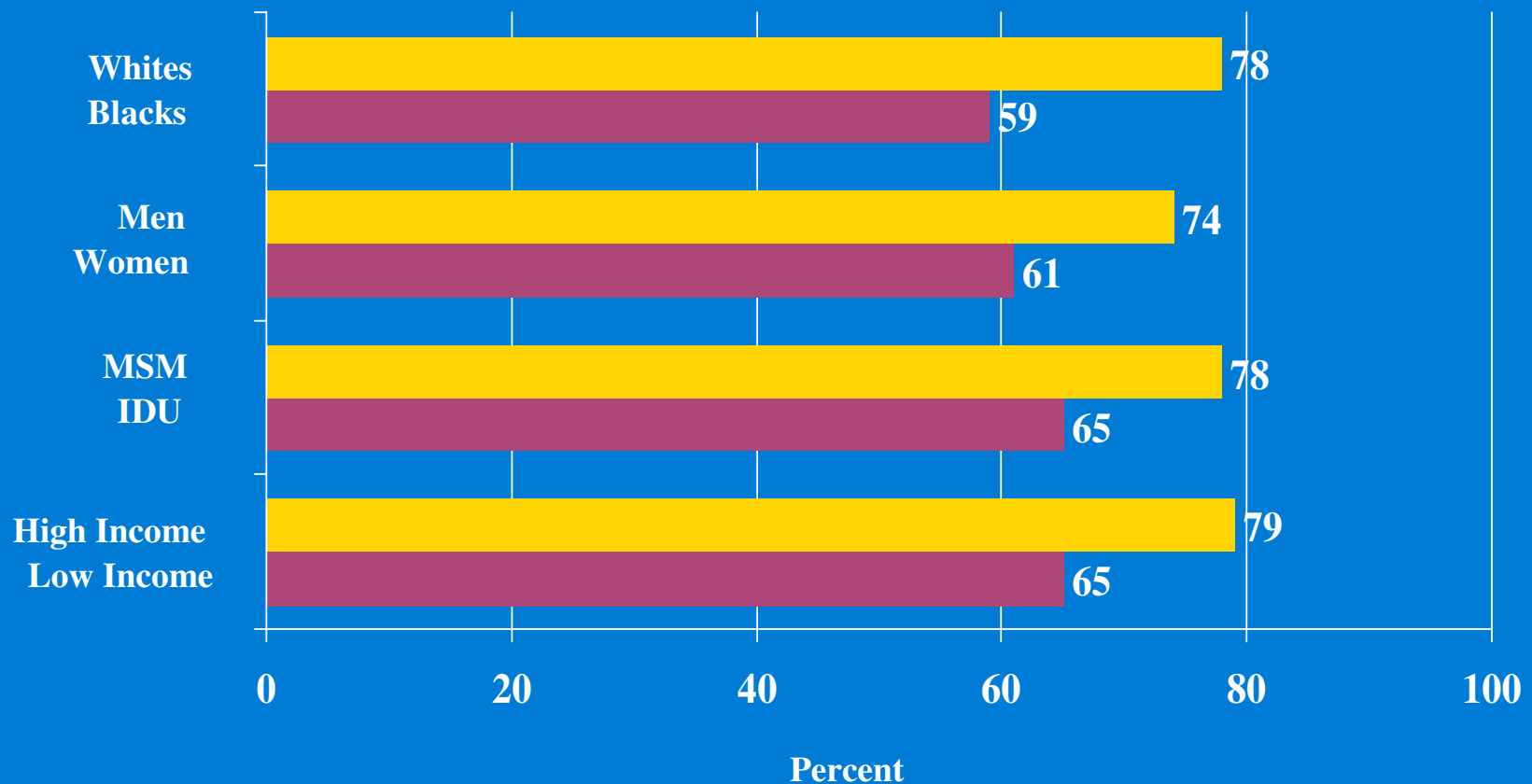
Shapiro, et al. JAMA 1999 all p<0.05

# Expenditures for Medications vs. Hospital Care by Race



Bozzette, et al NEJM 2001 All  $p < .01$

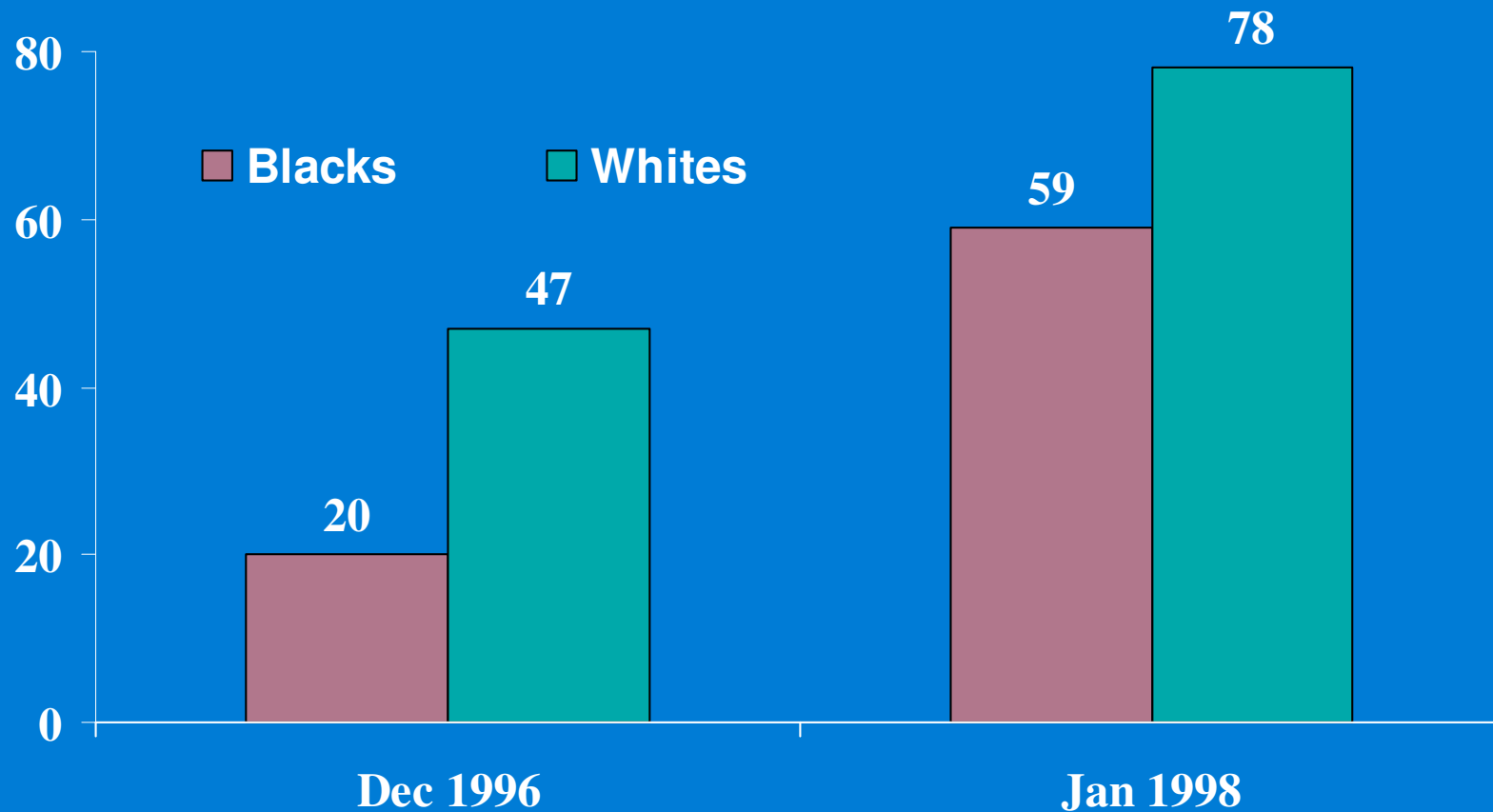
# Percent Ever Using HAART by Vulnerable Characteristics



Cunningham, et al., JAIDS 2000

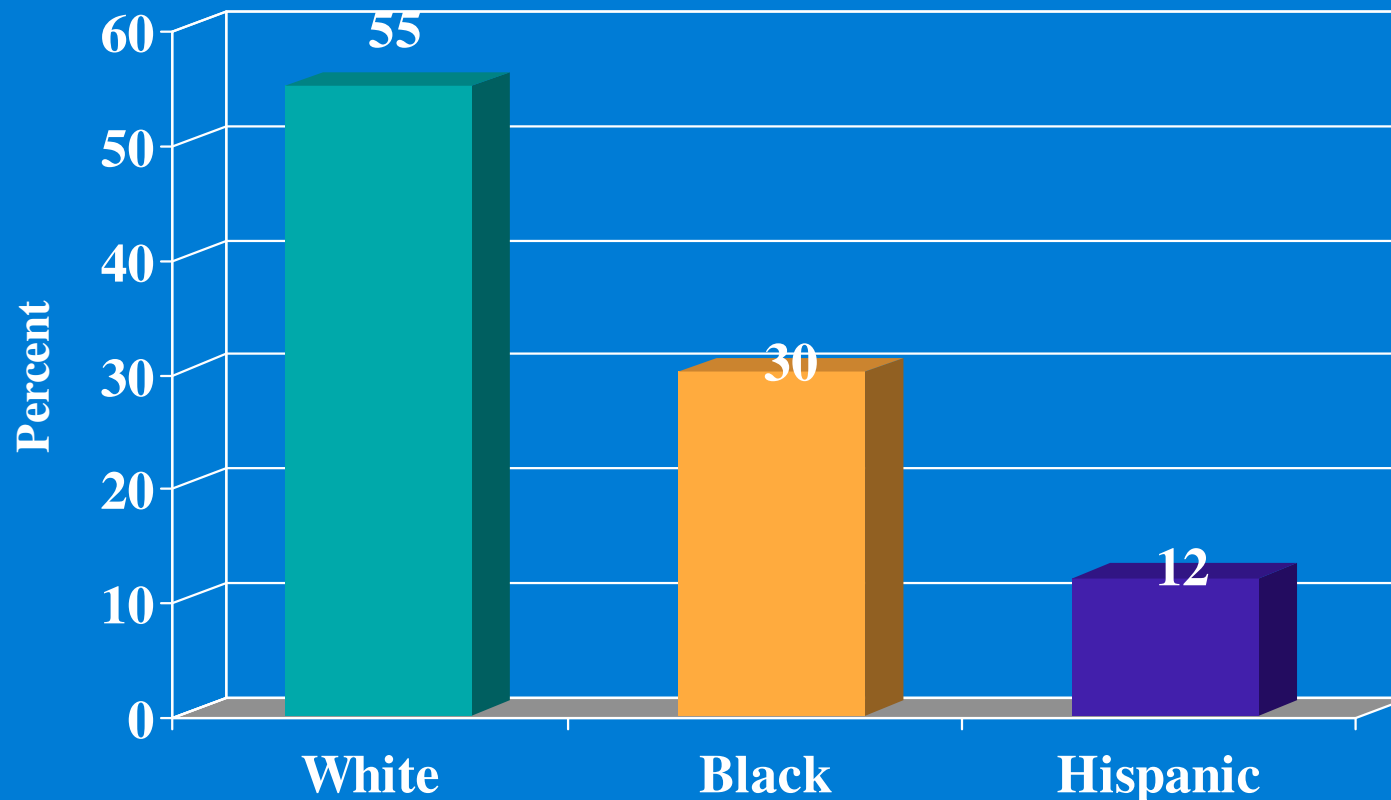
all  $p < 0.01$

# Percent of Blacks and Whites Who Ever Received HAART



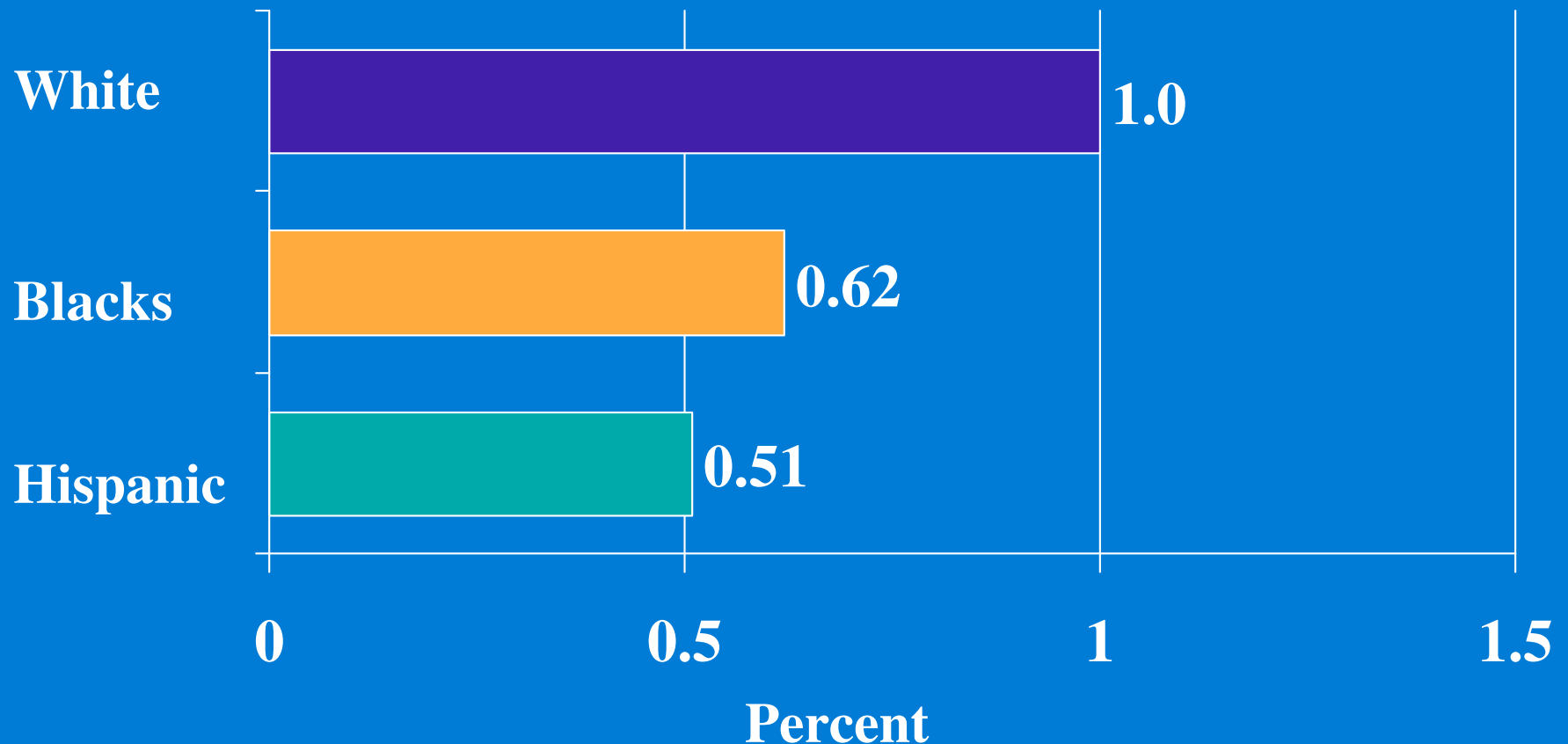
Cunningham, et al., JAIDS 2000 Both  $p < .001$

# Percent Adhering “all of the time” to Antiretroviral Medications



Wenger, Cunningham, et al., SGIM 2000 abstract;  $p < .001$

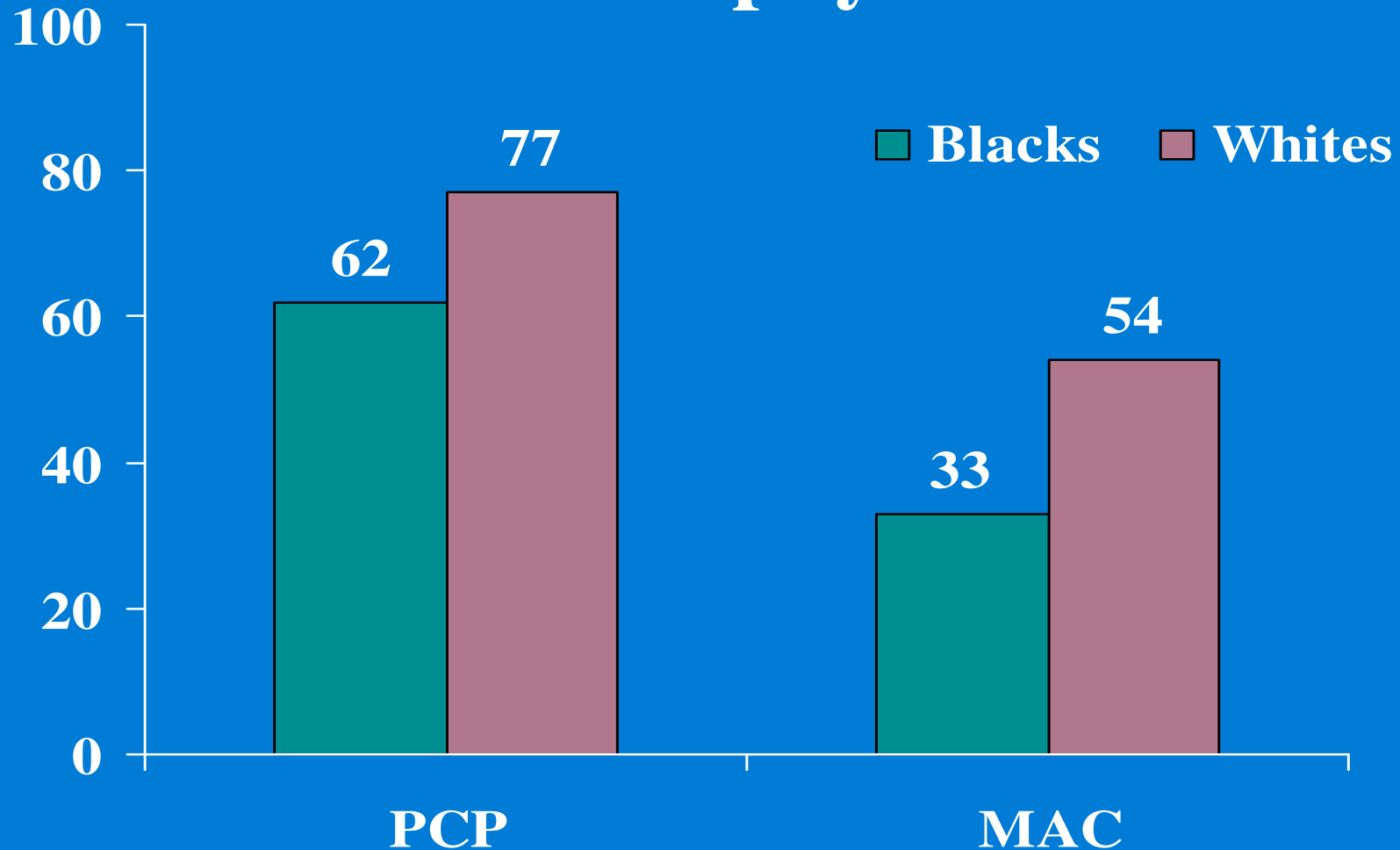
# Multivariate Association of Race with Adherence



All  $P < .01$

Wenger, Cunningham, et al., Abstract AHSR 2000

# Percentage With Access to PCP and MAC Prophylaxis

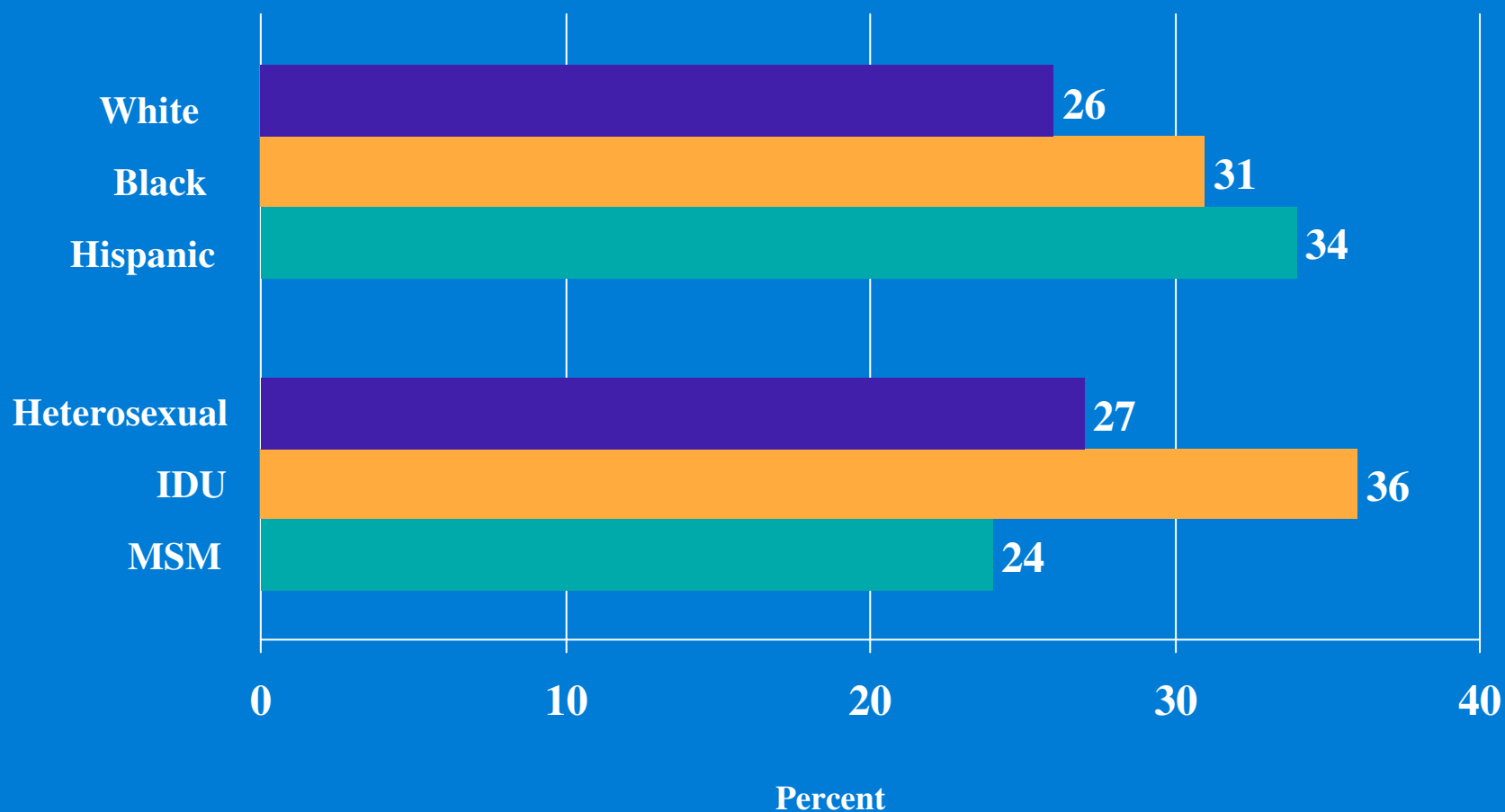


Among those meeting criteria. Asch, Cunningham, et al. *JAIDS* 2001 ; Both  $p < .001$

# Factors That Help Explain Disparities in Care

- Setting of care
- Access to clinical trials
- System and provider factors
- Competing subsistence needs
- Lack of supportive services / case-management

# Greater than 3 months' delay from HIV diagnosis to first HIV medical care by race, exposure (%)



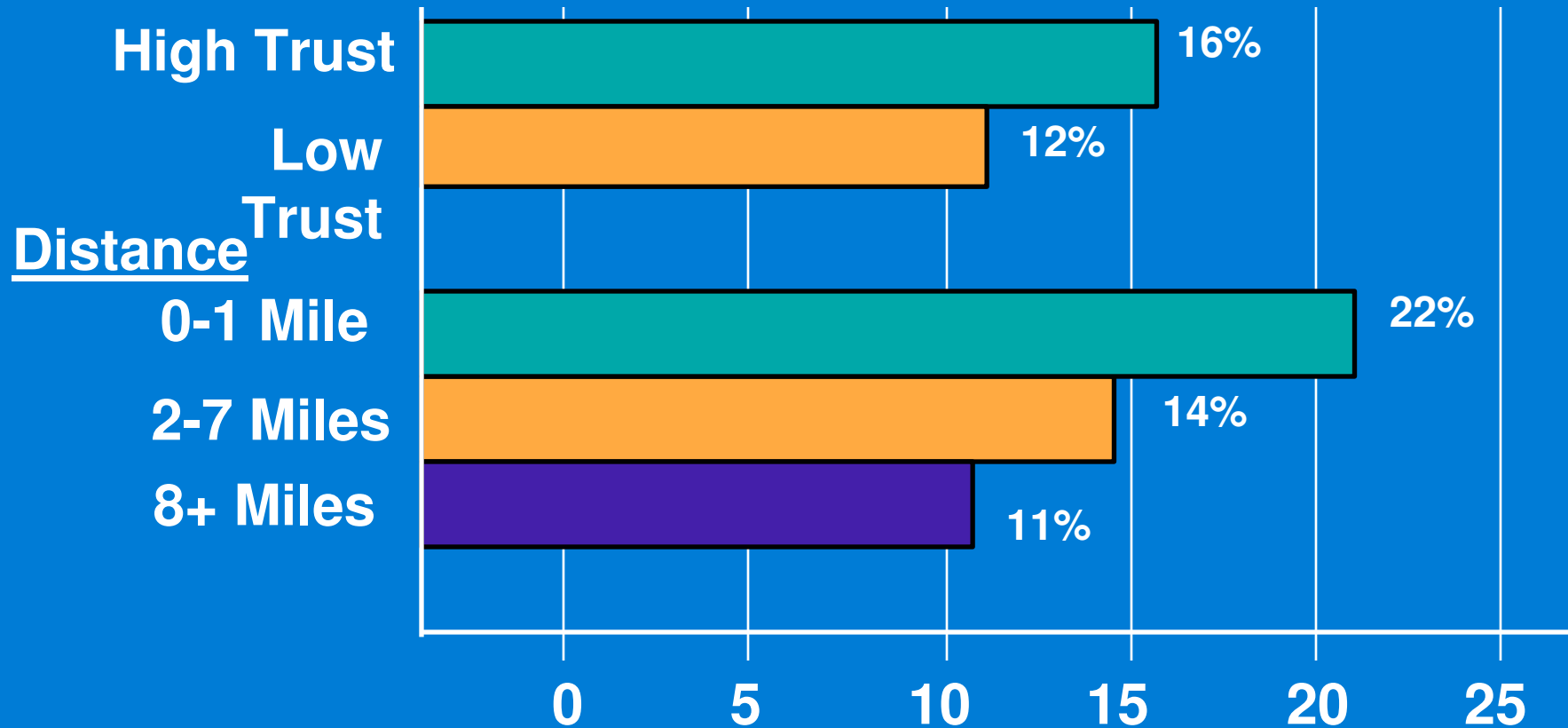
Turner, Cunningham et al *Archives* 2000 all p<0.05

# Adjusted Odds of Access to an HIV Clinical Trial by Patient Characteristics



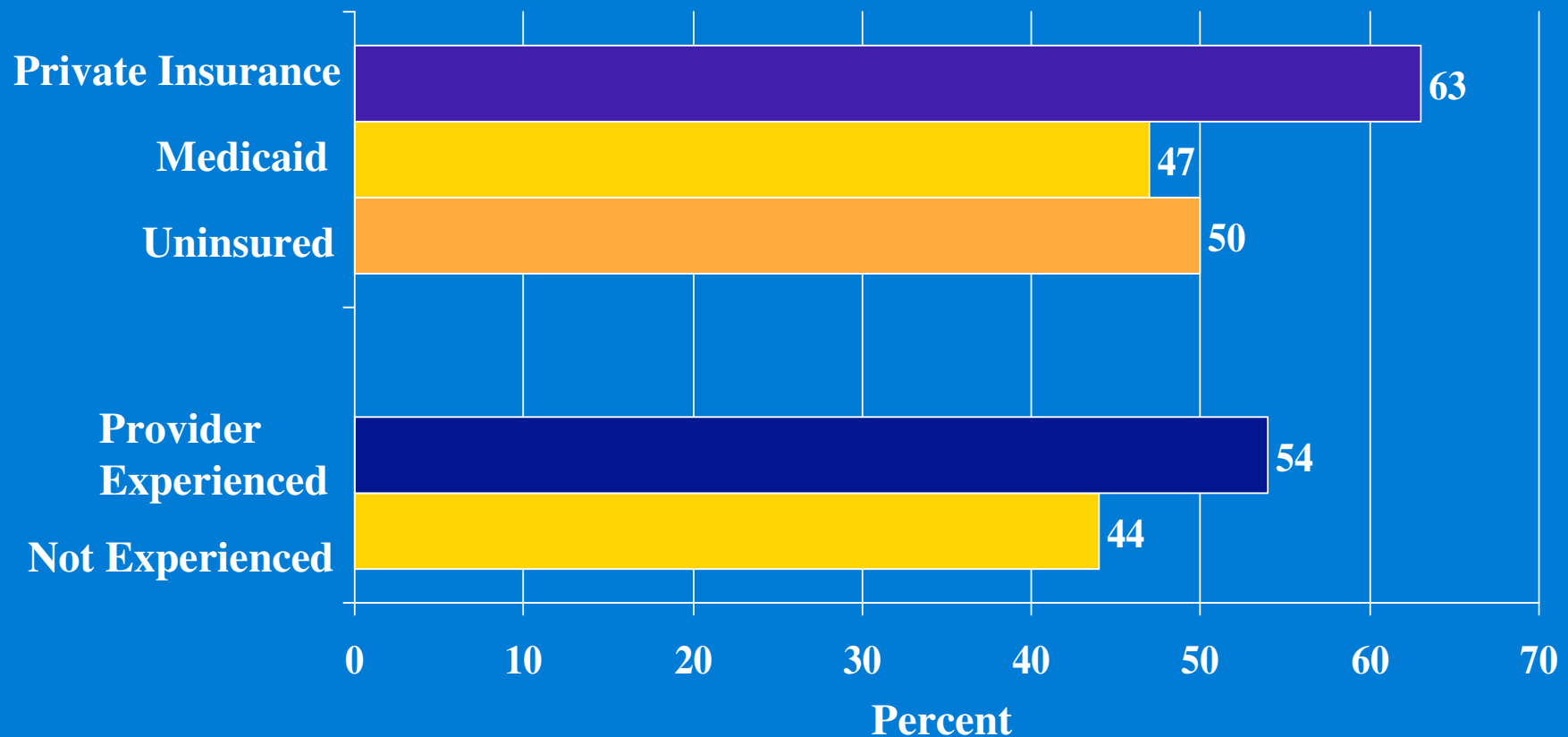
Gifford, Cunningham et al. *NEJM* 2002, all  $p < .01$

# Participation in a HIV Clinical Trial by Level of Trust in Providers and Distance from Center of Excellence



Gifford, Cunningham, et al. NEJM 2002 P-value <.05

# System and Provider Factors Help Explain Disparities in HAART Use (%)



Cunningham, et al., AHSR 1999 all  $p < 0.05$

## Days Until First Protease Inhibitor Use by Patient-Provider Race Groups

	White Providers		Black Providers	
	White Patients	Black Patients	White Patients	Black Patients
Unadjusted	278	443***	206	419**
Adjusted for patient characteristics	353	461**	251	342
Adjusted for patient and provider characteristics	377	460*	227	285*
Adjusted for patient, provider, and attitude characteristics	383	467*	223*	288*

Source: King, Cunningham, et al., JGIM 2004

P value: \* < .05  
 \*\* < .01  
 \*\*\* < .001

## Days Until First Protease Inhibitor Use Among Selective Providers

	Predicted Median Days to First PI Use (95% CI)	Difference in Days to First PI Use Compared to Reference (95% CI)
<b>Race/Ethnicity</b>		
Whites	311 (284 to 333)	reference
African Americans	409 (368 to 445)	98 (51 to 148)***
Latinos	360 (316 to 404)	50 (1 to 98)*
Other Race Ethnicity	300 (228 to 379)	-10 (-80 to 71)
<b>Gender</b>		
Men	329 (305 to 350)	reference
Women	400 (356 to 443)	71 (16 to 125)**

Source: Wong et al., JGIM 2004

P value: \* < .05

\*\* < .01

\*\*\* < .001

## Days Until First Protease Inhibitor Use Among Selective Providers (Continued)

	Predicted Median Days to First PI Use (95% CI)	Difference in Days to First PI Use Compared to Reference (95% CI)
<b>Annual Family Income</b>		
> \$25,000	306 (267 to 337)	reference
≤ \$25,000	366 (339 to 388)	60 (17 to 102)**
<b>Drug / Heavy Alcohol Use</b>		
Nonuser	342 (319 to 361)	reference
User	394 (336 to 447)	51 (-1 to 117)

P value: \* < .05

\*\* < .01

\*\*\* < .001

Source: Wong et al., JGIM 2004

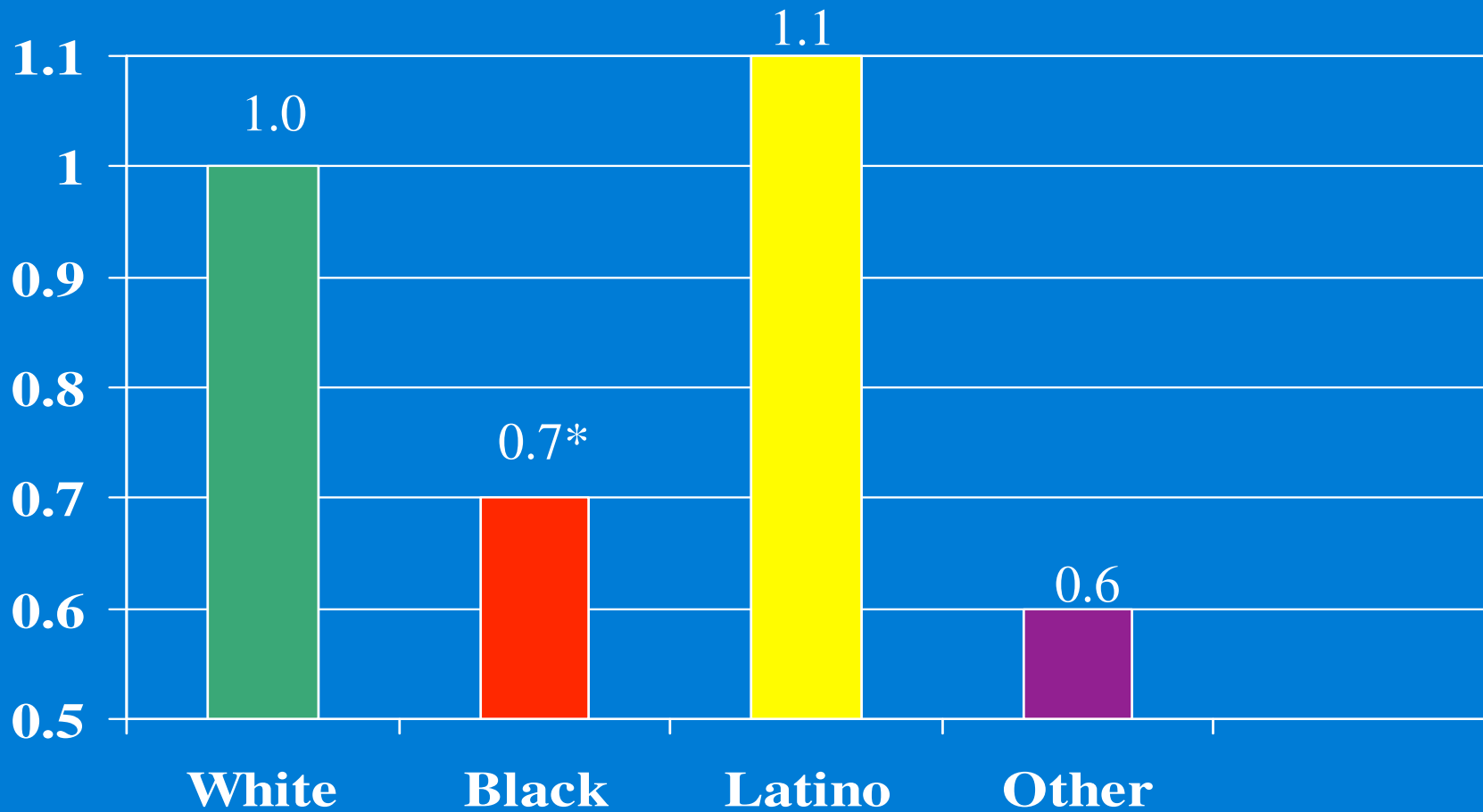
# Access to Infectious Disease Specialist by Race

	<u>RR</u>	<u>95% CI</u>
<b>Black</b>	<b>0.67</b>	<b>(0.57, 0.80)*</b>
<b>Latino</b>	<b>1.09</b>	<b>(0.87, 1.35)</b>
<b>Other</b>	<b>0.64</b>	<b>(0.40, 1.04)</b>

Heslin, Cunningham JGIM 2005

\*p<0.01

# Access to Infectious Disease Specialist by Race



Heslin, et al. JGIM 2005 \*p<0.01

# Access to Experienced HIV Provider by Race

Difference in #  
HIV patients      **95% CI**

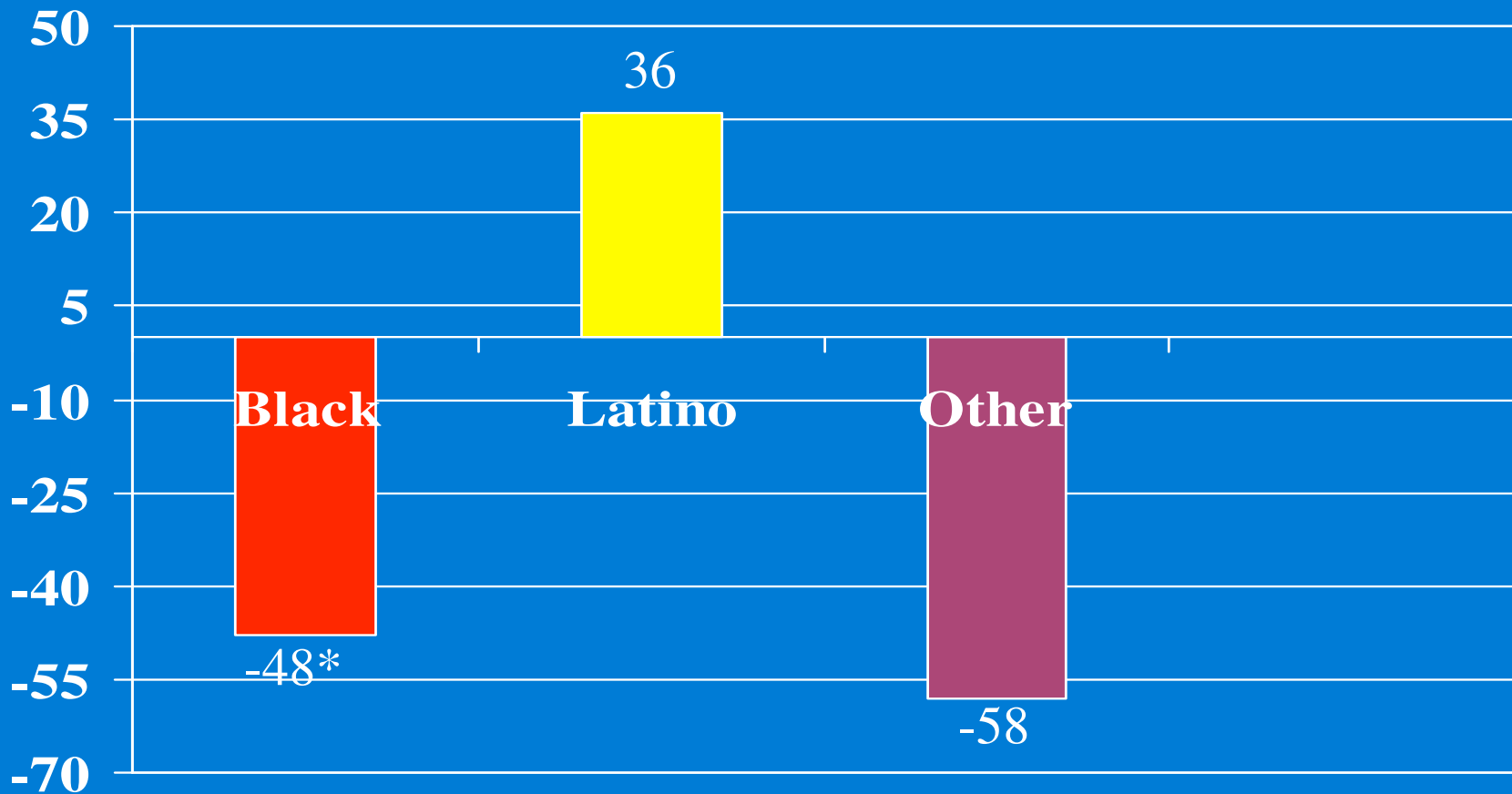
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<b>Black</b>	<b>-48</b>	<b>(-86, -5)*</b>
<b>Latino</b>	<b>36</b>	<b>(-7, 95)</b>
<b>Other</b>	<b>-58</b>	<b>(-136, 13)</b>

Heslin, Cunningham JGIM 2005

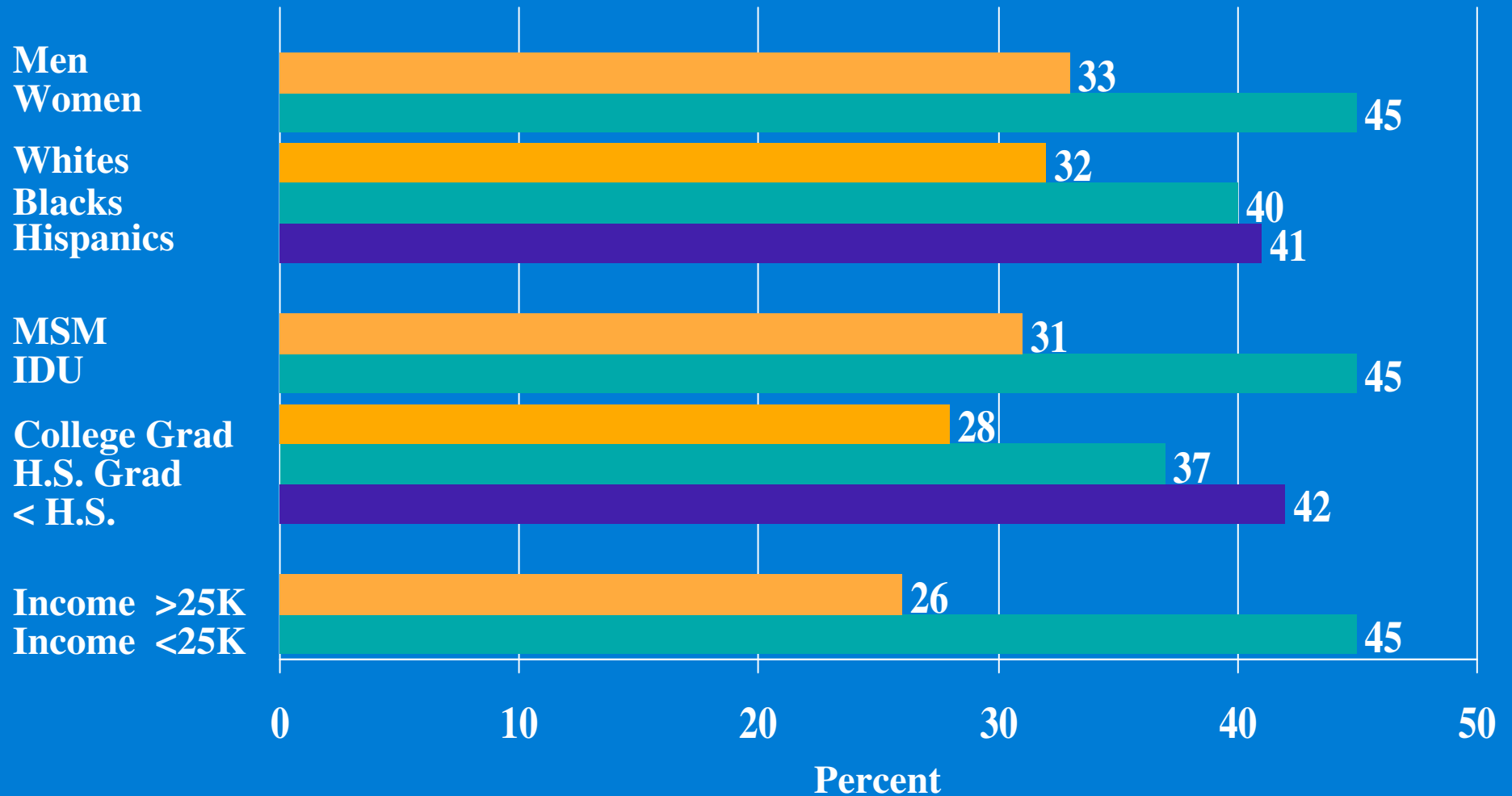
\*p<0.01

# Access to Experienced HIV Provider by Race



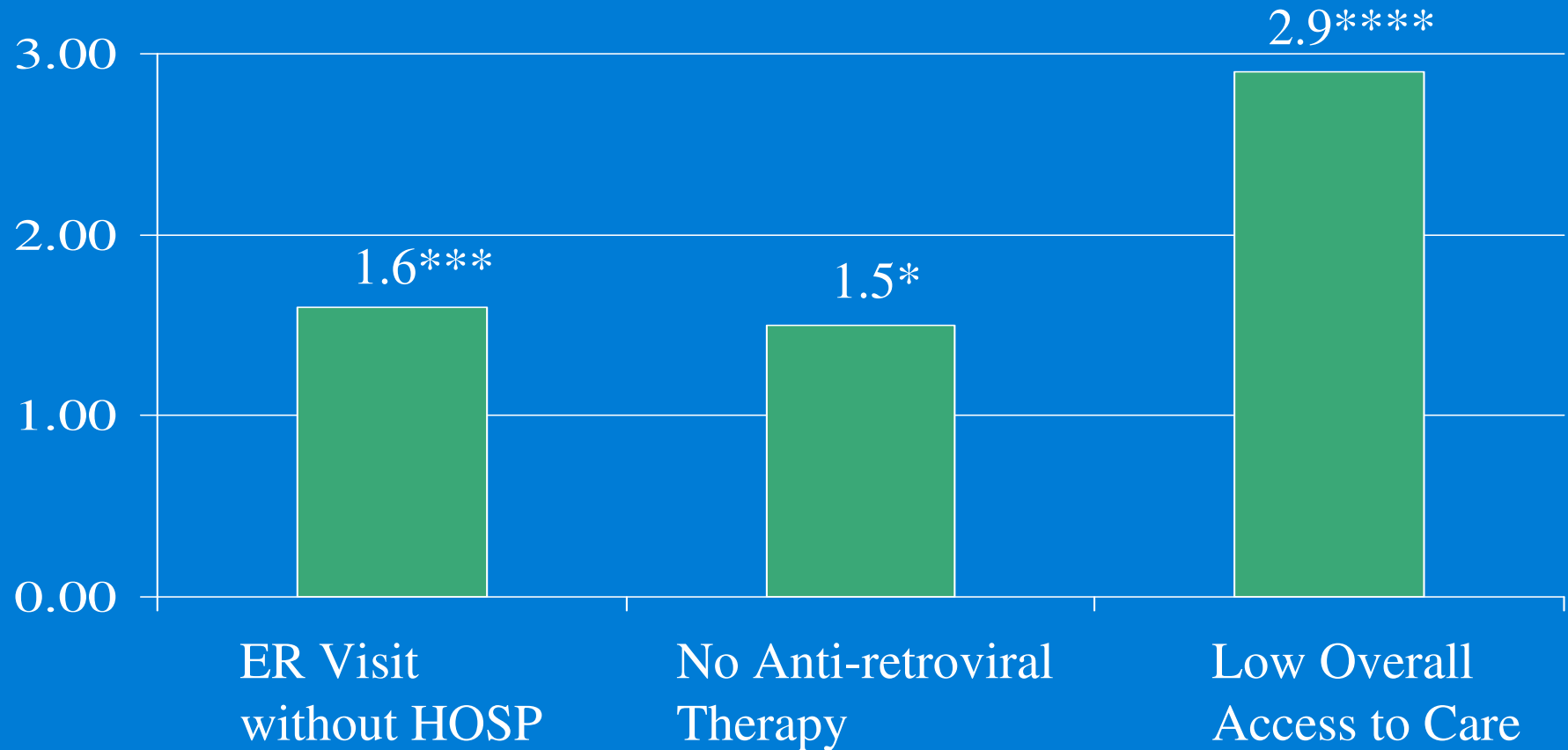
Heslin, et al. JGIM 2005 \*p<0.01

# Percent Delays in Care Due to Competing Subsistence Needs by Vulnerable Group



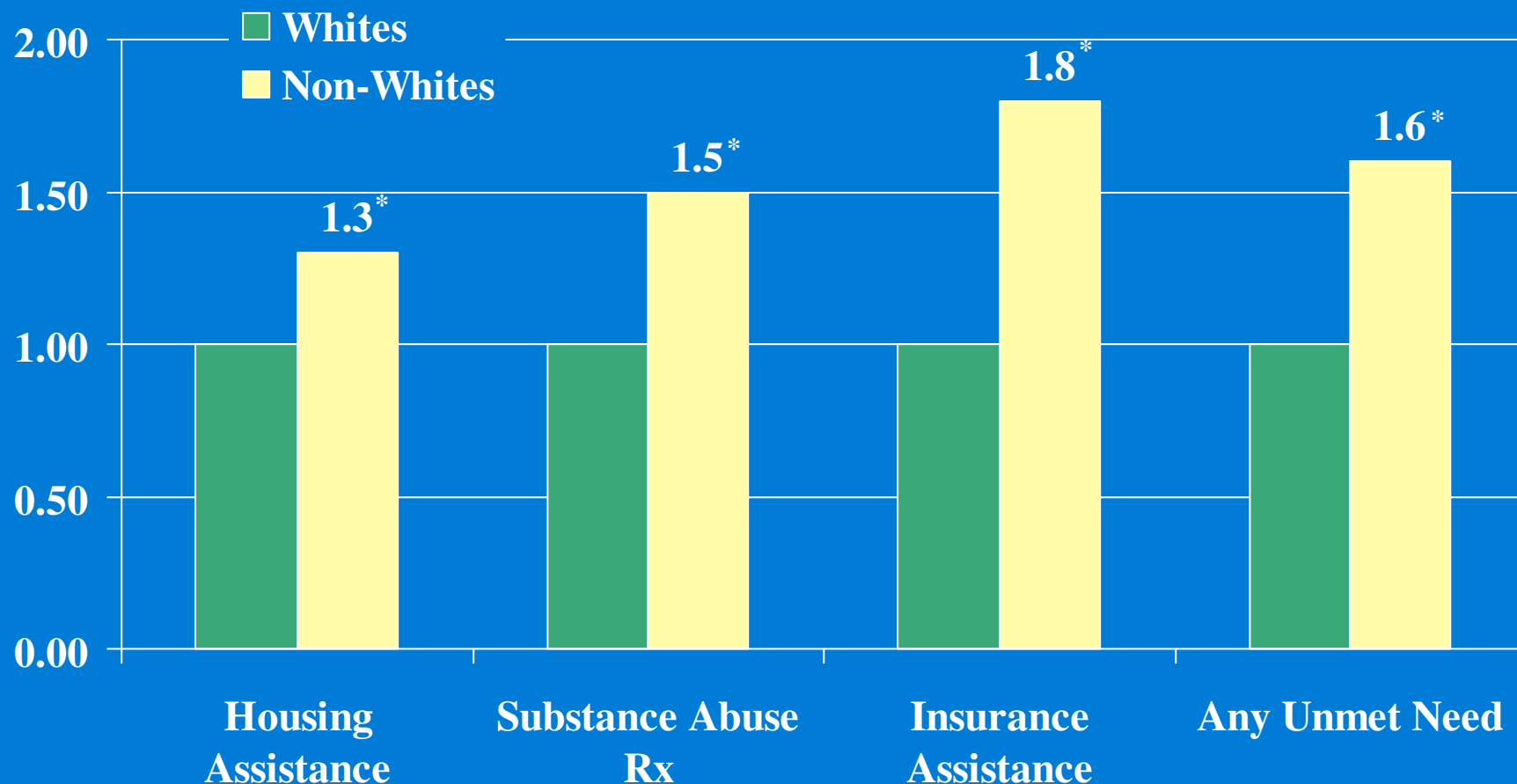
Cunningham, et al. Medical Care, 1999 all  $p < 0.05$

# Effect of Competing Needs on Access to Care



Cunningham, et al. Medical Care 1999 P<.05\*; P<..01\*\*; P<.001\*\*\*; P<.0001\*\*\*\*

# Adjusted Odds of Unmet Need for Supportive Services, Non-Whites Compared with Whites

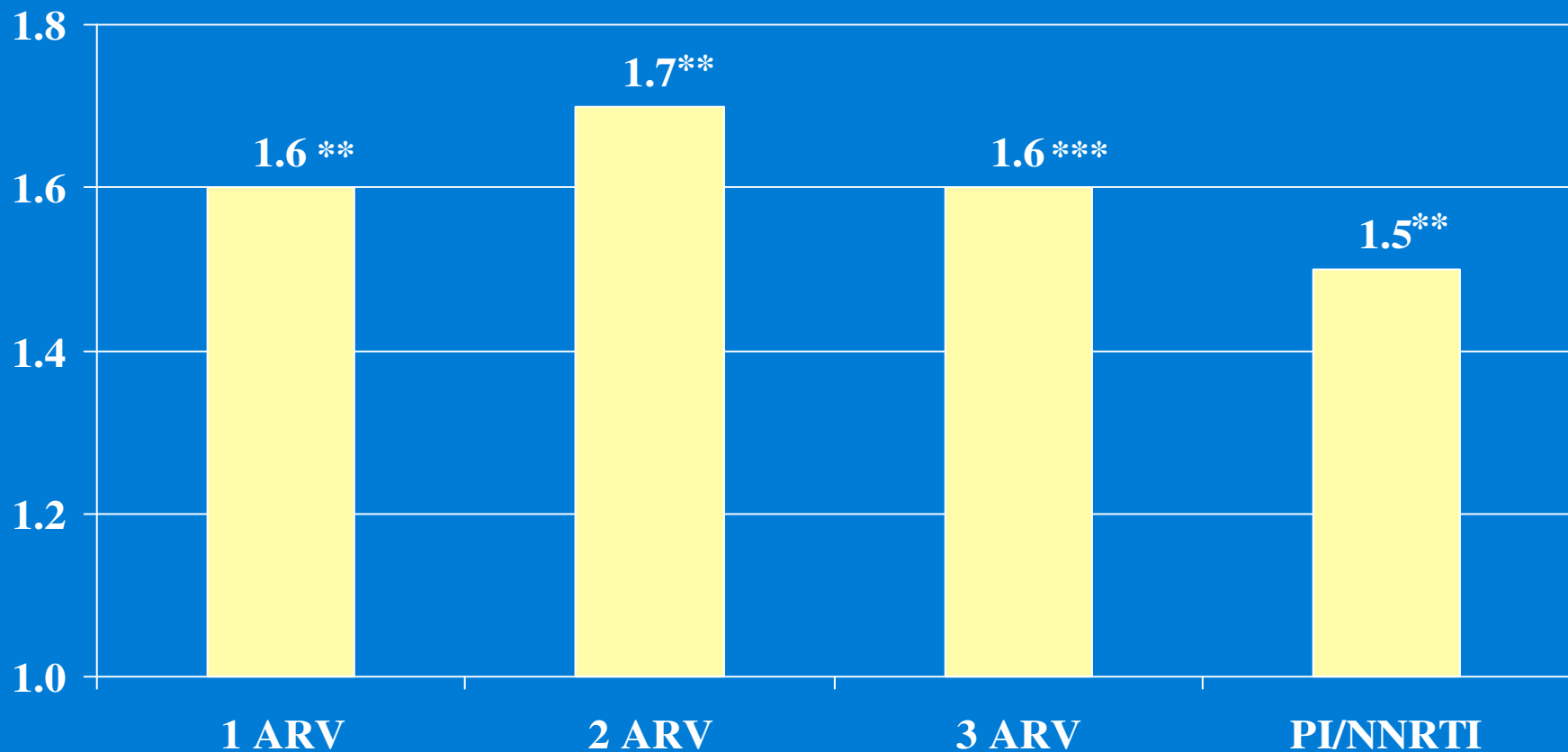


Katz, Cunningham, et al. Medical Care 2000 \* all p<0.05

# Adjusted Odds of Receiving Antiretrovirals for Those on Case-Management (OR)

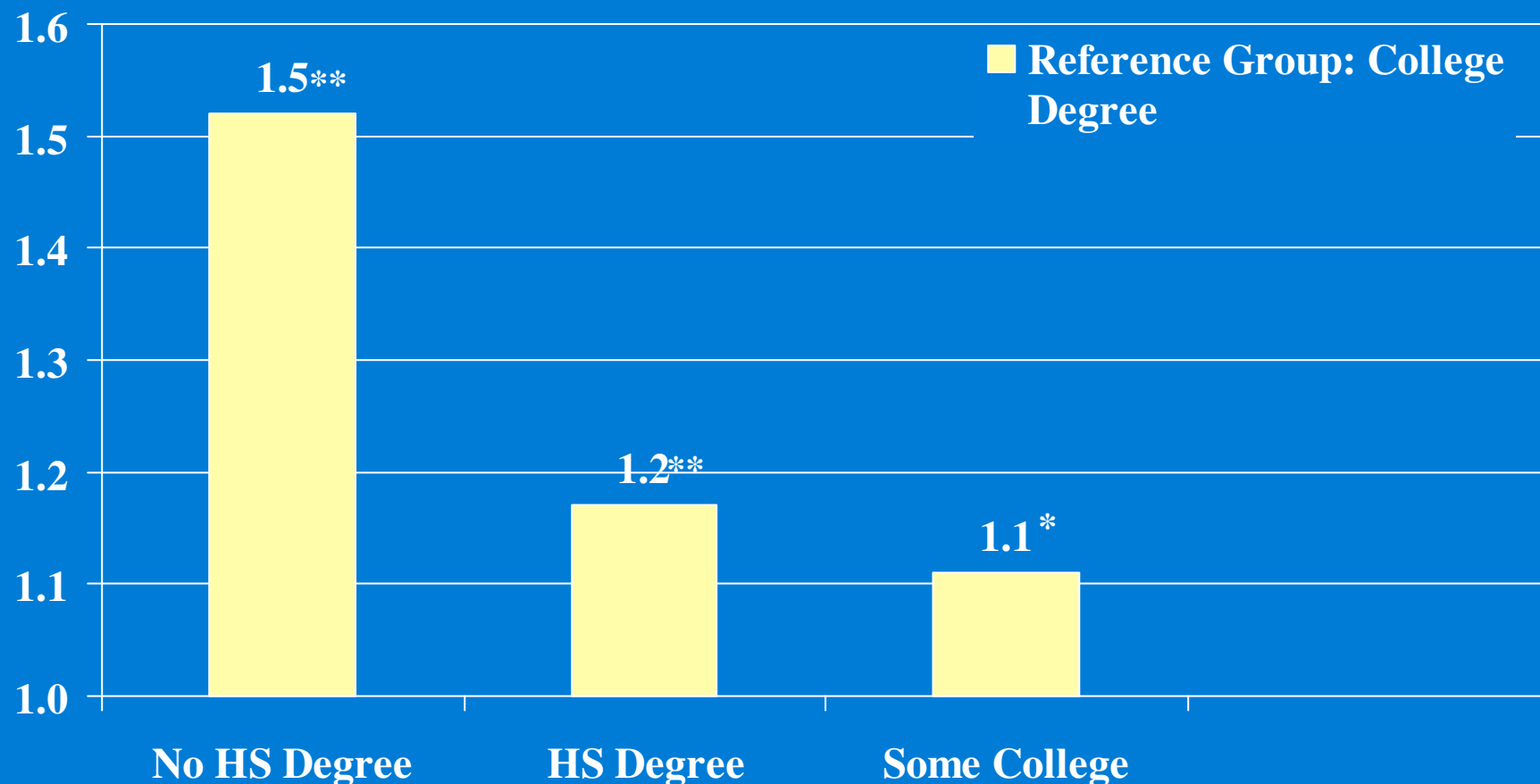
Katz, Cunningham, et al. *Annals of Internal Medicine* 2001

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001



# Proportional Hazard Analysis of Mortality by Educational Level

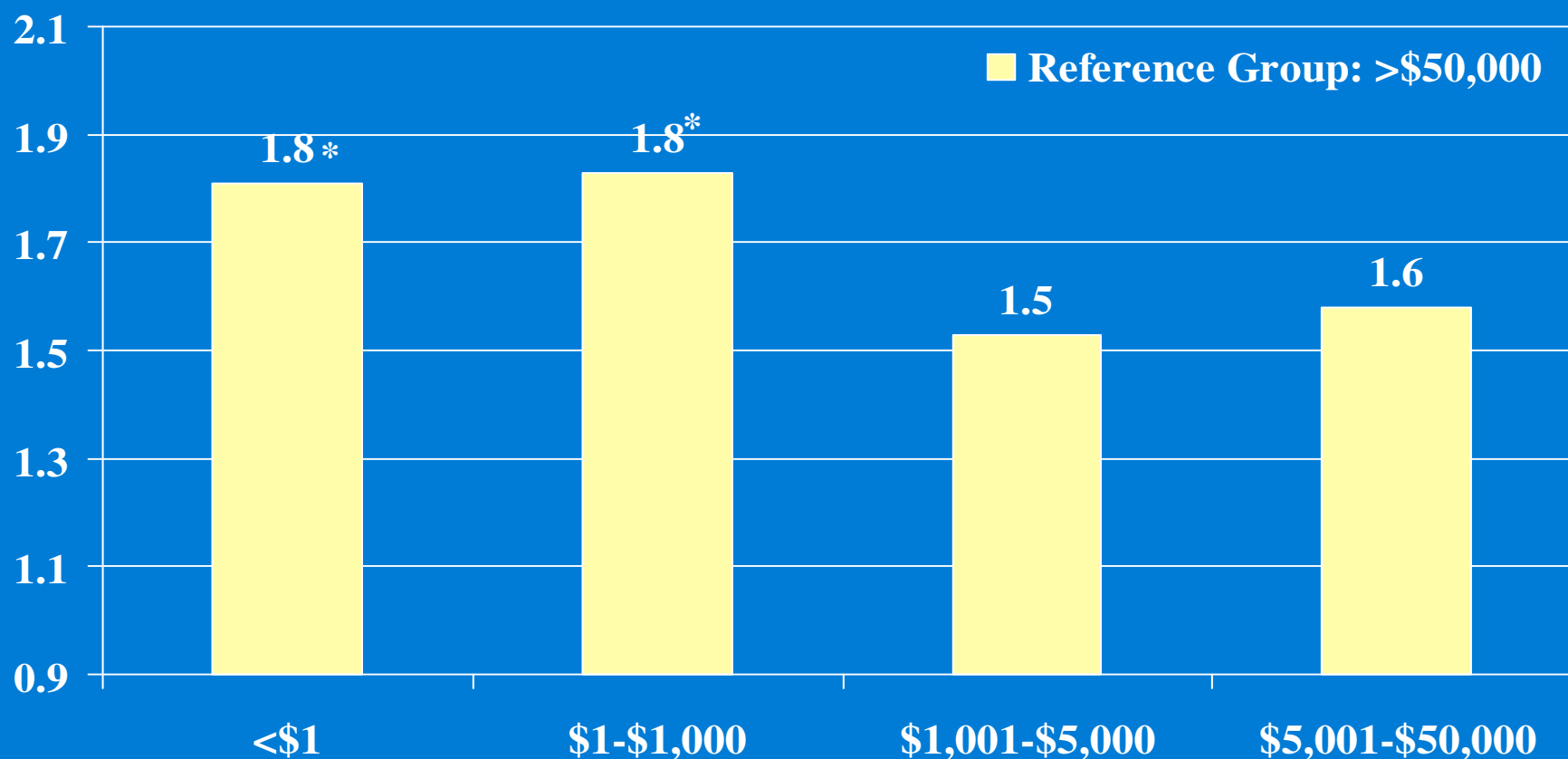
Source: Cunningham et al., JHCPU 2005



Adjusted for Sociodemographics, Clinical, and Treatment variables. \* $p < .05$ ; \*\* $p < .01$

# Proportional Hazard Analysis of Mortality by Net Wealth

Source: Cunningham et al., JHCPU 2005



Adjusted for Sociodemographics, Clinical, and Treatment variables. \*p<.05; \*\*p<.01

# Factors That Help Explain Disparities in Treatment and Outcomes

- Provider/system factors
  - financing
  - experience/ specialization
  - service organization, coordination, proximity
- Provider/patient factors
  - communication/language
  - racial/gender concordance
  - trust
  - case management
- Barriers - financial and non-financial
- Patient attitudes, beliefs, behaviors

# Summary and Recommendations

- Vulnerable groups are increasingly HIV Infected
- Vulnerable groups get fewer medications for HIV, report more barriers to care, have worse health outcomes
- Need to develop and test interventions to overcome barriers, reduce disparities, and improve outcomes

# New Studies

- Outreach to underserved with HIV
- Preventing disparities in future HIV vaccine dissemination

# Comparison of Outreach and HCSUS Samples

Characteristics	Outreach %	HCSUS %
<b>Race/Ethnicity</b>		
White	18.4	49.3****
Black	58.6	32.3
Hispanic	19.7	15.5
<b>Spanish Language</b>	8.8	2.5**
<b>Annual Income (&lt;\$10,000)</b>	75.4	44.6****
<b>Homeless in Last 6 months</b>	34.1	6.8***
<b>No Insurance</b>	28.8	18.7

Source: HRSA HCSUS Comparison paper, submitted 2005

# Multivariate Comparison of Outreach and HCSUS Associations with Ambulatory Visits

<b>Sociodemographic Characteristics</b>	<b>Outreach (Odds Ratio [(95% CI)])</b>	<b>HCSUS (Odds Ratio [(95% CI)])</b>	<b>Interaction P-Values</b>
<b>Race/Ethnicity (White)</b>			
Black	1.21 (0.75-1.94)	1.71 (1.18-2.49)**	0.24
Hispanic	0.81 (0.39-1.69)	2.34 (1.56-3.52)****	0.02
Other	0.70 (0.31-1.57)	1.19 (0.50-2.80)	0.37
<b>Education (College Degree)</b>			
Some College	1.24 (0.61-2.54)	1.02 (0.66-1.56)	0.63
High School Degree	1.49 (0.86-2.59)	0.74 (0.44-1.25)	0.07
No High School Degree	2.03 (1.11-3.73)*	0.92 (0.53-1.60)	0.06

Source: Cunningham et al., Medical Care under-review 2006

# Multivariate Comparison of Outreach and HCSUS Associations with Ambulatory Visits

Sociodemographic Characteristics	Outreach (Odds Ratio [(95% CI)])	HCSUS (Odds Ratio [(95% CI)])	Interaction P-Values
Annual Income (\$10,000+)	0.73 (0.56-0.96)*	1.35 (1.04-1.75)*	0.002
Insurance Status (Private)			
Medicaid	1.13 (0.67-1.89)	1.00 (0.57-1.75)	0.75
Medicare	0.95 (0.45-2.02)	0.97 (0.50-1.90)	0.98
No Insurance	1.51 (0.93-2.45)	1.47 (1.03-2.11)*	0.94

Source: Cunningham et al., Medical Care under-review 2006

# Comparison of Outreach and HCSUS Samples (cont.)

Clinic Characteristics	Outreach (Odds Ratio [(95% CI)])	HCSUS (Odds Ratio [(95% CI)])	Interaction P-Values
<b>CD4 Count (&lt;500+)</b>			
350-499	0.99 (0.66-1.47)	1.25 (0.90-1.73)	0.37
200-349	1.05 (0.77-1.43)	1.08 (0.74-1.58)	0.90
50-199	1.32 (0.84-2.07)	1.00 (0.63-1.58)	0.39
0-49	1.53 (1.00-2.36)*	0.93 (0.36-2.36)	0.14
<b>Used Heroin or Cocaine Ever</b>	0.82 (0.56-1.20)	1.05 (0.84-1.32)	0.27
<b>Heavy Alcohol Use in Past 30 days</b>	1.74 (1.23-2.45)**	1.00 (0.73-1.37)	0.02

Source: Cunningham et al., Medical Care under-review 2006

# Conclusion

- **Outreach sample had more vulnerable persons, lower utilization than HCSUS**
- **Different associations between 2 samples**
- **Heavy alcohol associated with low use in Outreach sample only**
- **Generalization from in-care populations may not be warranted**

Source: Cunningham et al., Medical Care under-review 2006

# What can I do to reduce disparities?

- **DVD : “Working Together to end Racial and Ethnic Disparities: One Physician at a Time”**
- **Source: American Medical Association (AMA)**

**[www.ama-assn.org/go/healthdisparities](http://www.ama-assn.org/go/healthdisparities) or  
call 800.621.8335**