Engagement in Care in Los Angeles County

Jennifer N Sayles, MD, MPH
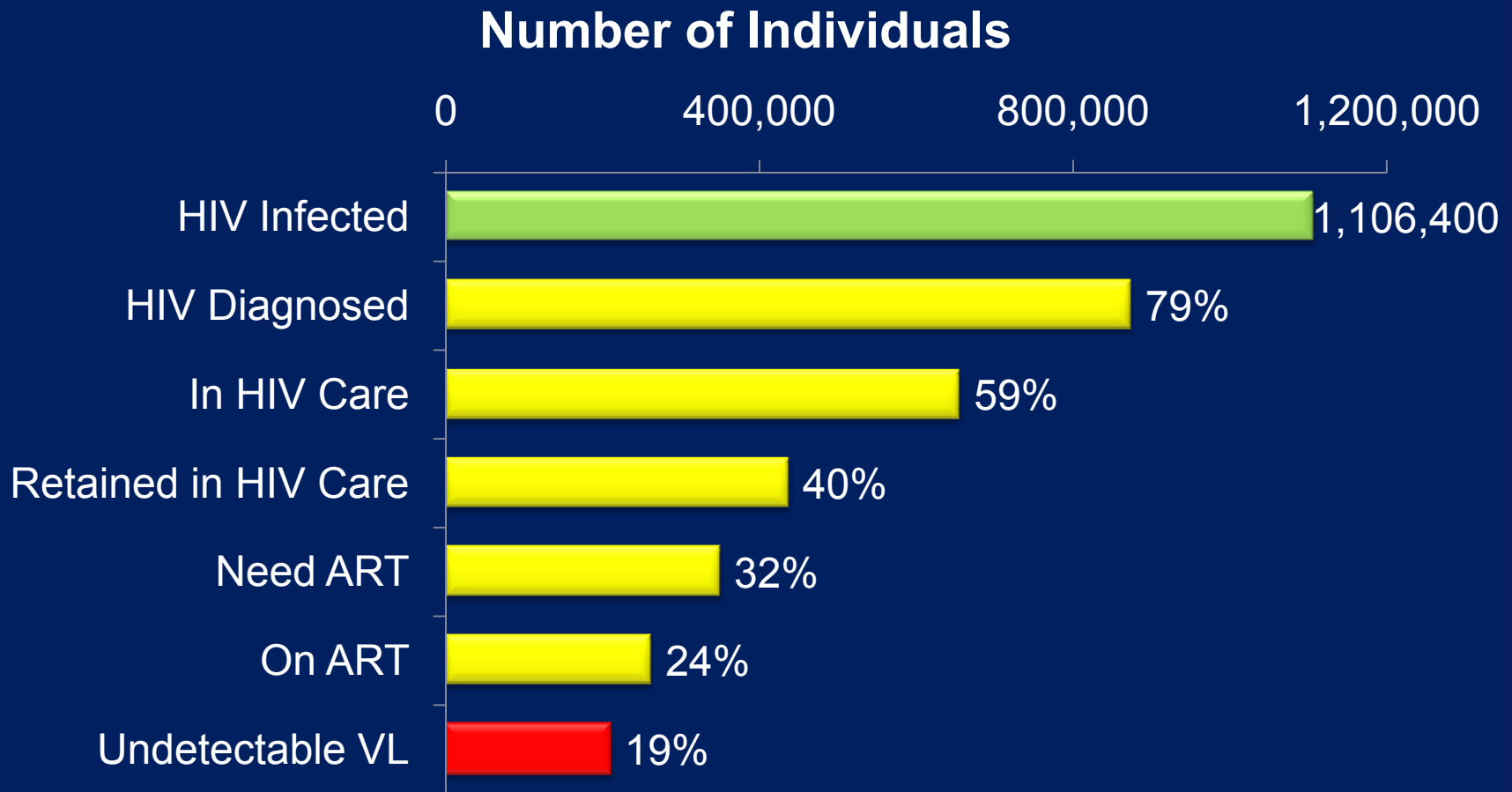Mike Janson, MPH

Los Angeles County Department of Public Health
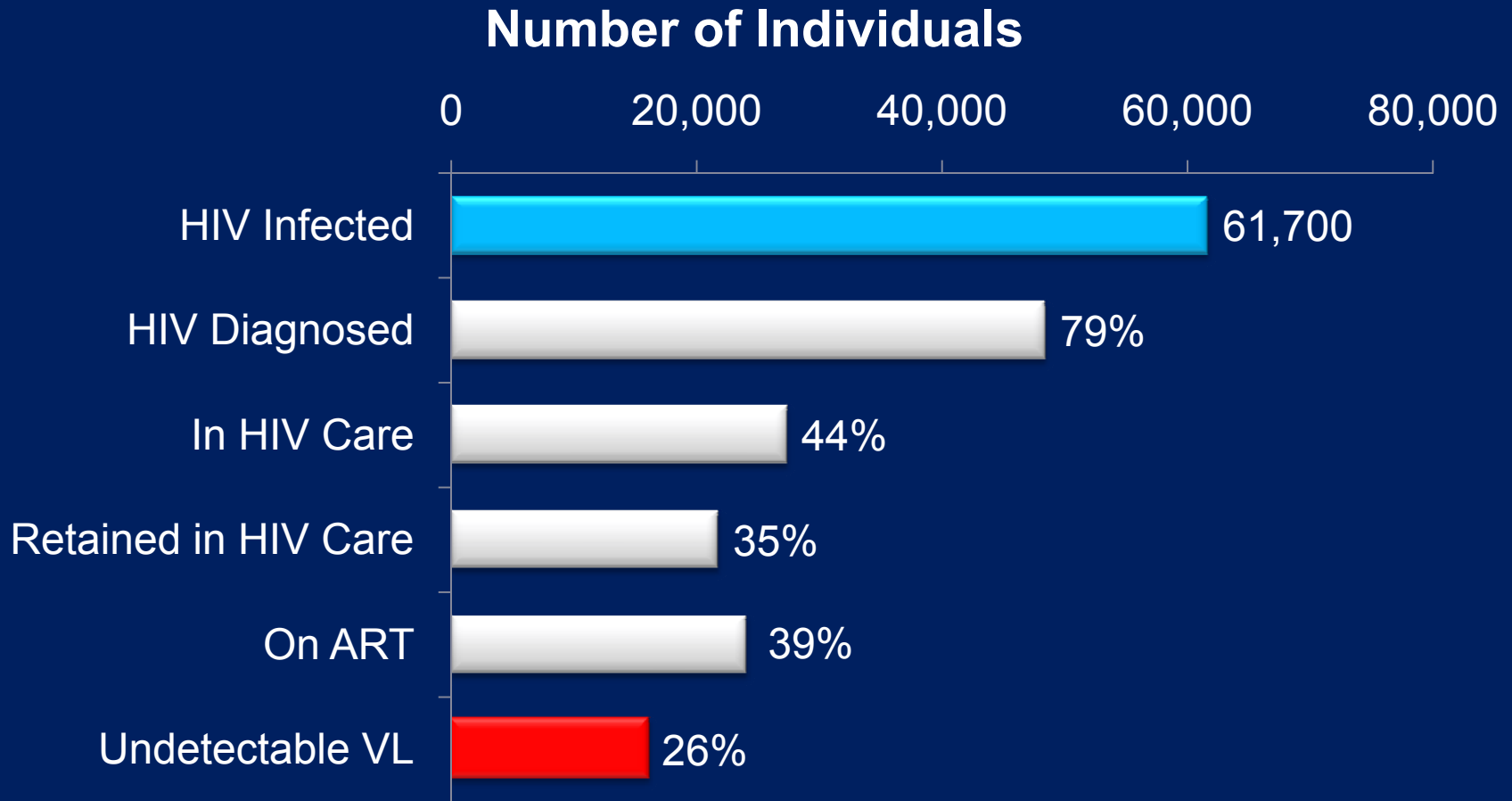Division of HIV and STD Programs

January 20, 2012

Spectrum of Engagement in Care in the United States

Number of Individuals

Category	Value
HIV Infected	1,106,400
HIV Diagnosed	79%
In HIV Care	59%
Retained in HIV Care	40%
Need ART	32%
On ART	24%
Undetectable VL	19%

Axis: 0, 400,000, 800,000, 1,200,000

Spectrum of Engagement in Care in Los Angeles County

Number of Individuals

Category	Value
HIV Infected	61,700
HIV Diagnosed	79%
In HIV Care	44%
Retained in HIV Care	35%
On ART	39%
Undetectable VL	26%

Note: **U**sing Gardner et al. (CID 2011) treatment cascade criteria

Los Angeles County HIV Surveilance Data 2009-2010

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3

Spectrum of Engagement in Care: USA vs. Los Angeles County

USA

Number of Individuals

1,106,400	HIV Infected
79%	HIV Diagnosed
59%	In HIV Care
40%	Retained in HIV Care
32%	Need ART
24%	On ART
19%	Undetectable VL

Los Angeles County

Number of Individuals

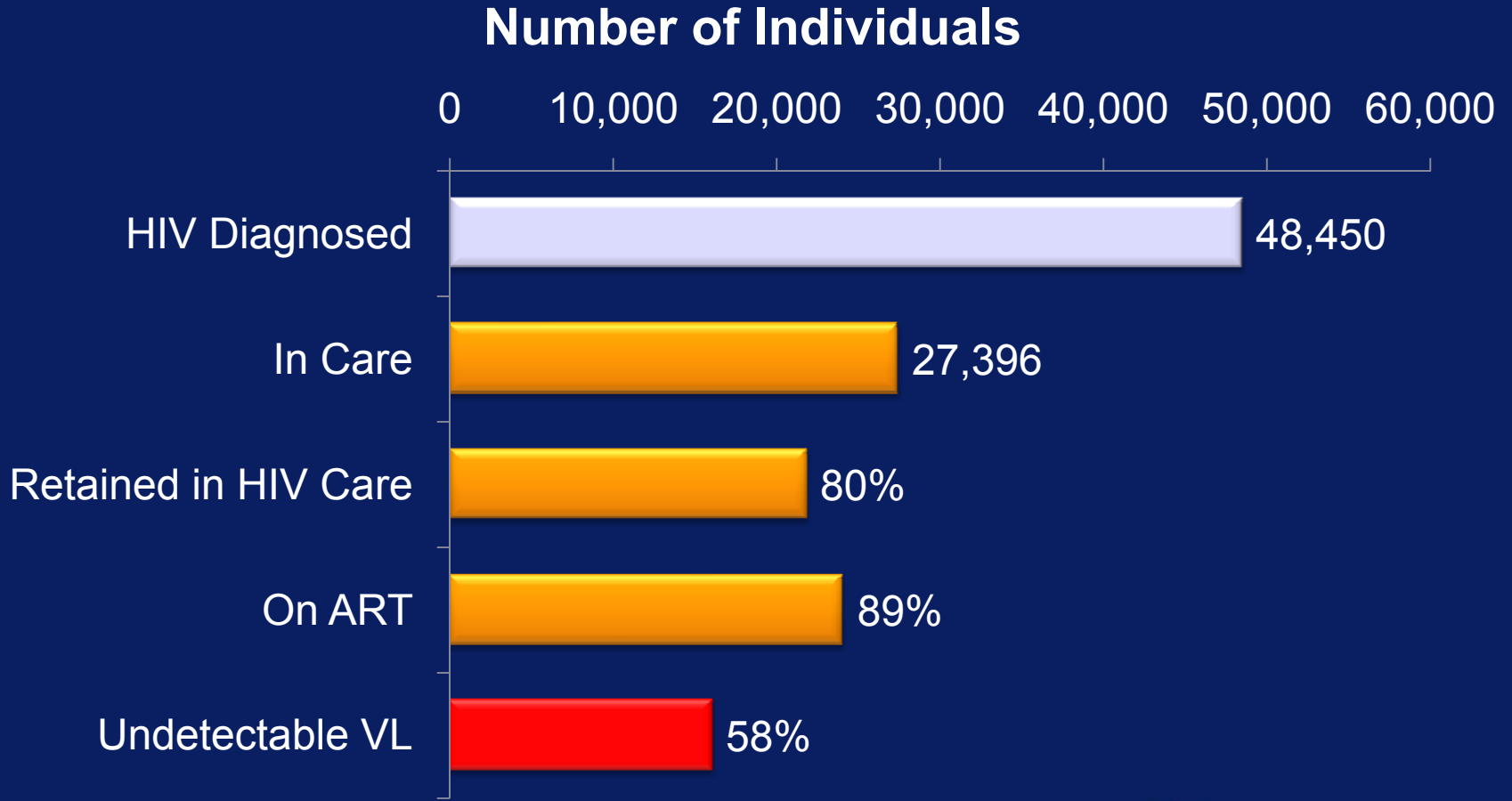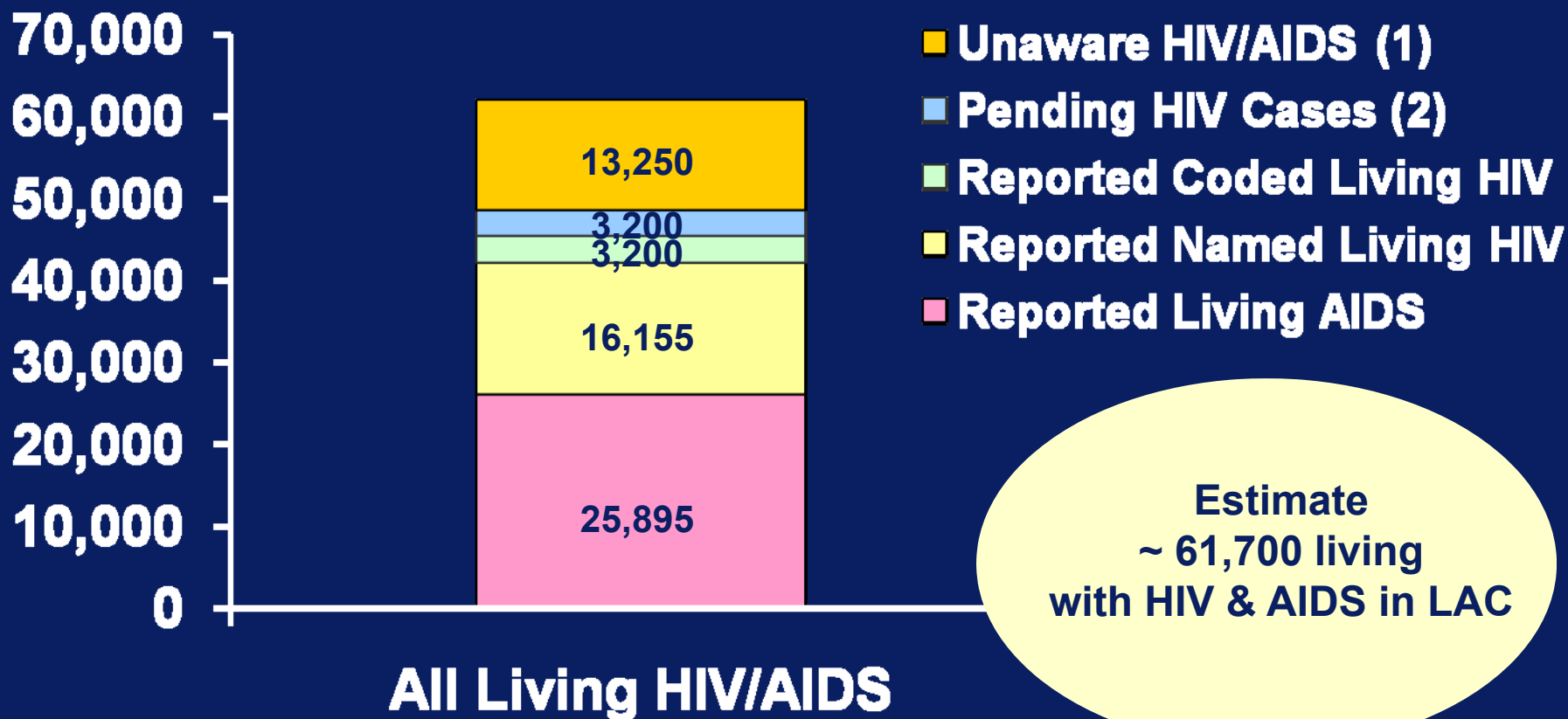|	
HIV Infected	61,700
HIV Diagnosed	79%
In HIV Care	44%
Retained in HIV Care	35%
Need ART	**Not Applicable**
On ART	39%
Undetectable VL	26%
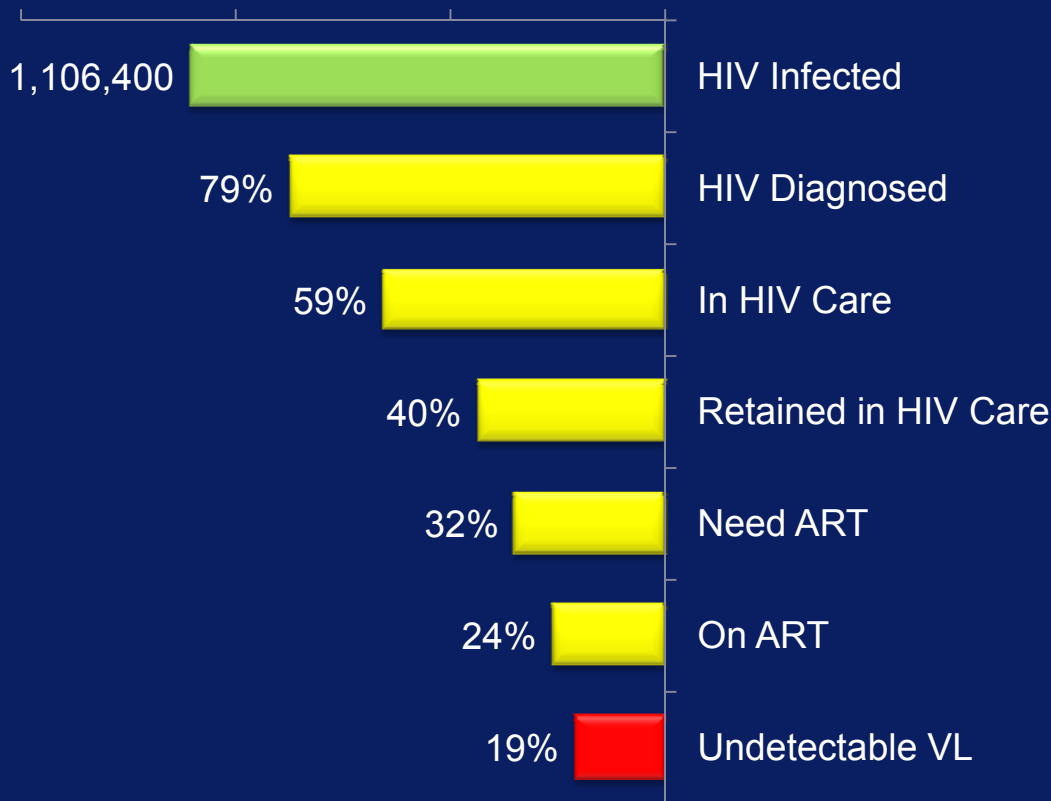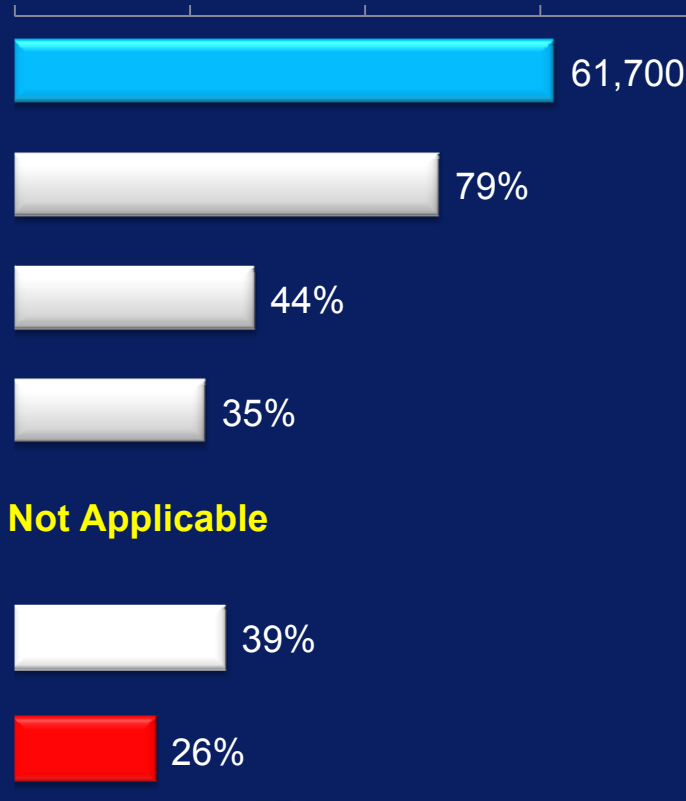
Gardner et al. CID 2011

Los Angeles County HIV Surveillance Data 2009-2010

4

Los Angeles County Treatment Cascade among PLWH in Care, 2009

Number of Individuals

Los Angeles County HIV Surveillance Data 2009-2010

Estimated Number of Persons Living with HIV and AIDS in LAC

Chart: All Living HIV/AIDS (stacked bar)

- Unaware HIV/AIDS (1): 13,250
- Pending HIV Cases (2): 3,200
- Reported Coded Living HIV: 3,200
- Reported Named Living HIV: 16,155
- Reported Living AIDS: 25,895

Y-axis: 0 to 70,000 (increments of 10,000)

**Estimate ~ 61,700 living with HIV & AIDS in LAC**

Source: LAC HIV Epidemiology Program, reported as of 12/31/2010.
(1) Estimate that 21.5% of HIV+ in LA County are unaware of their infection (Campsmith et al. 2010).
(2) Of 5,100 notifications pending investigation, estimate 2,200 who have detectable VL to be cases, as well as about 1,000 of the remaining cases.
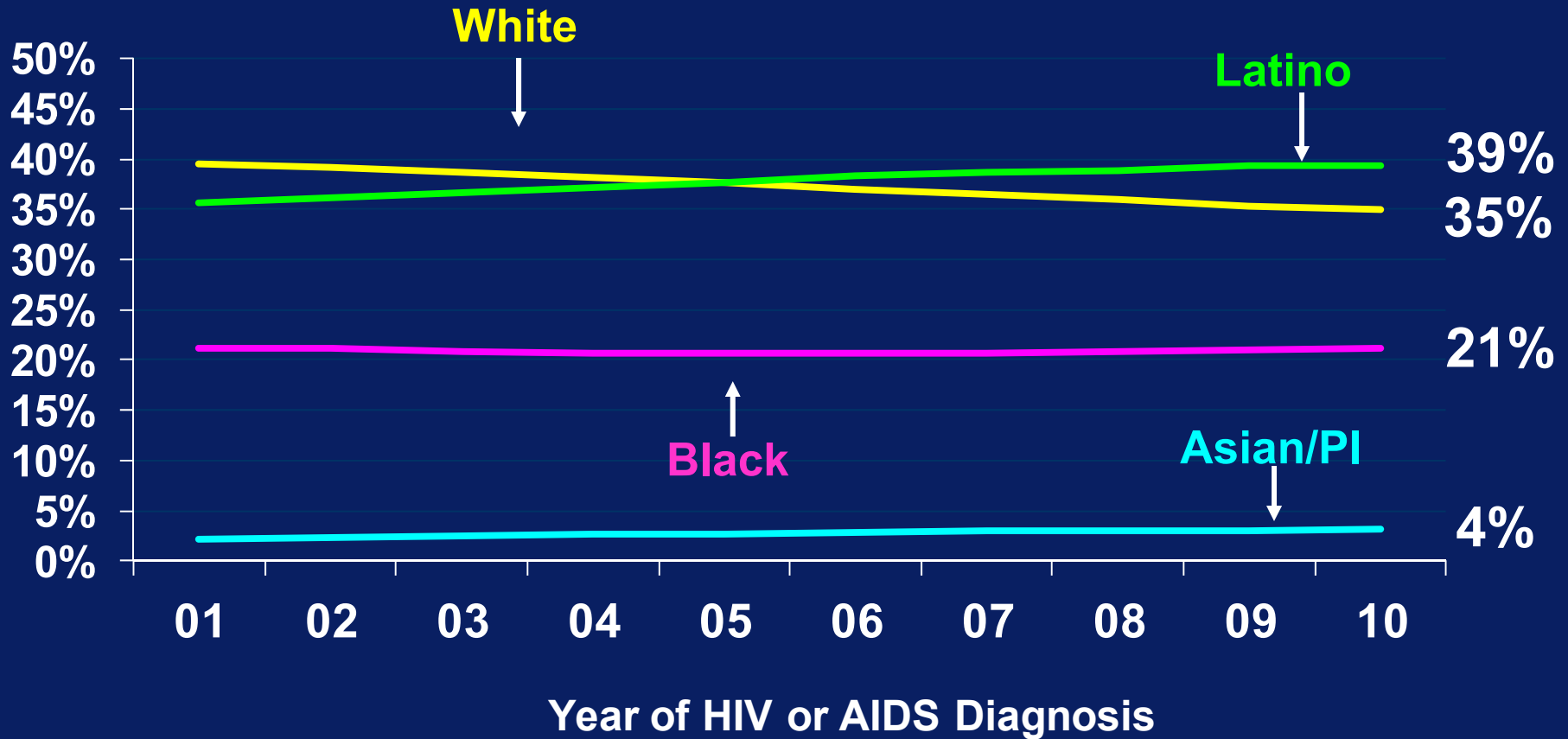
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Persons Living with HIV/AIDS in LAC per 100,000 population* by Race/Ethnicity, as of December 2010

per 100,000 Population

Black	AI/AN	White	Latino	A/PI
951	652	473	339	94
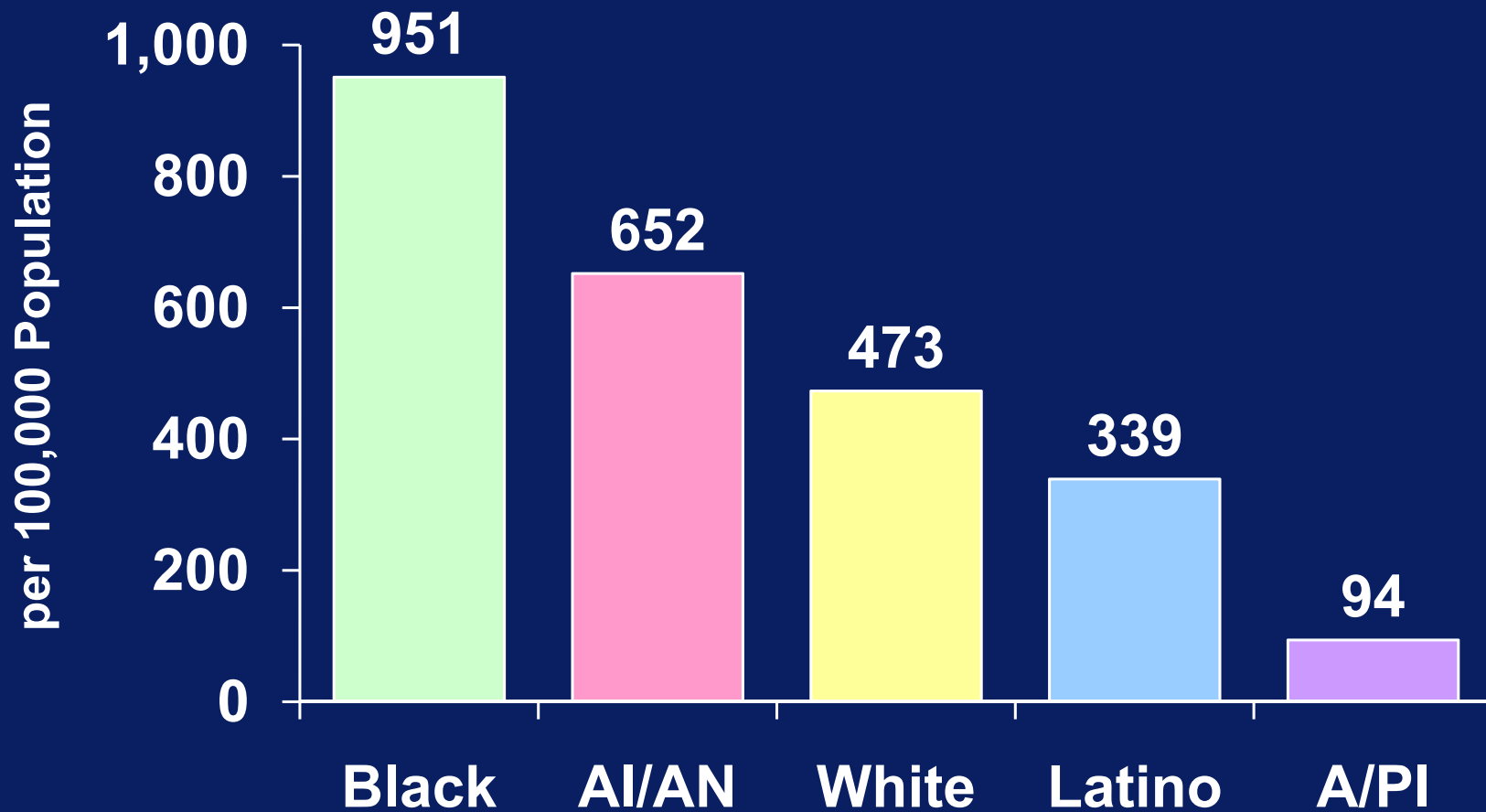
*Sometimes called "Prevalence Rate"; it is really a proportion.

Proportion of LAC PLWH/A Cases by Race/Ethnicity* & Diagnosis Year, 2001-10

White

Latino

Black

Asian/PI

39%

35%

21%

4%

Year of HIV or AIDS Diagnosis

50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%

01 02 03 04 05 06 07 08 09 10

*American Indian and Alaska Native are not presented here but consistently comprise <1% of cases, including 0.4% in 2010.
 *Data are provisional due to reporting delay.
Source: HIV Epidemiology Program, LAC-DPH; data as of December 31, 2010

Percent of HIV/AIDS Diagnoses Among Adults/Adolescents, by Transmission Category* and Year of HIV Diagnosis, Los Angeles County, 1992-2010
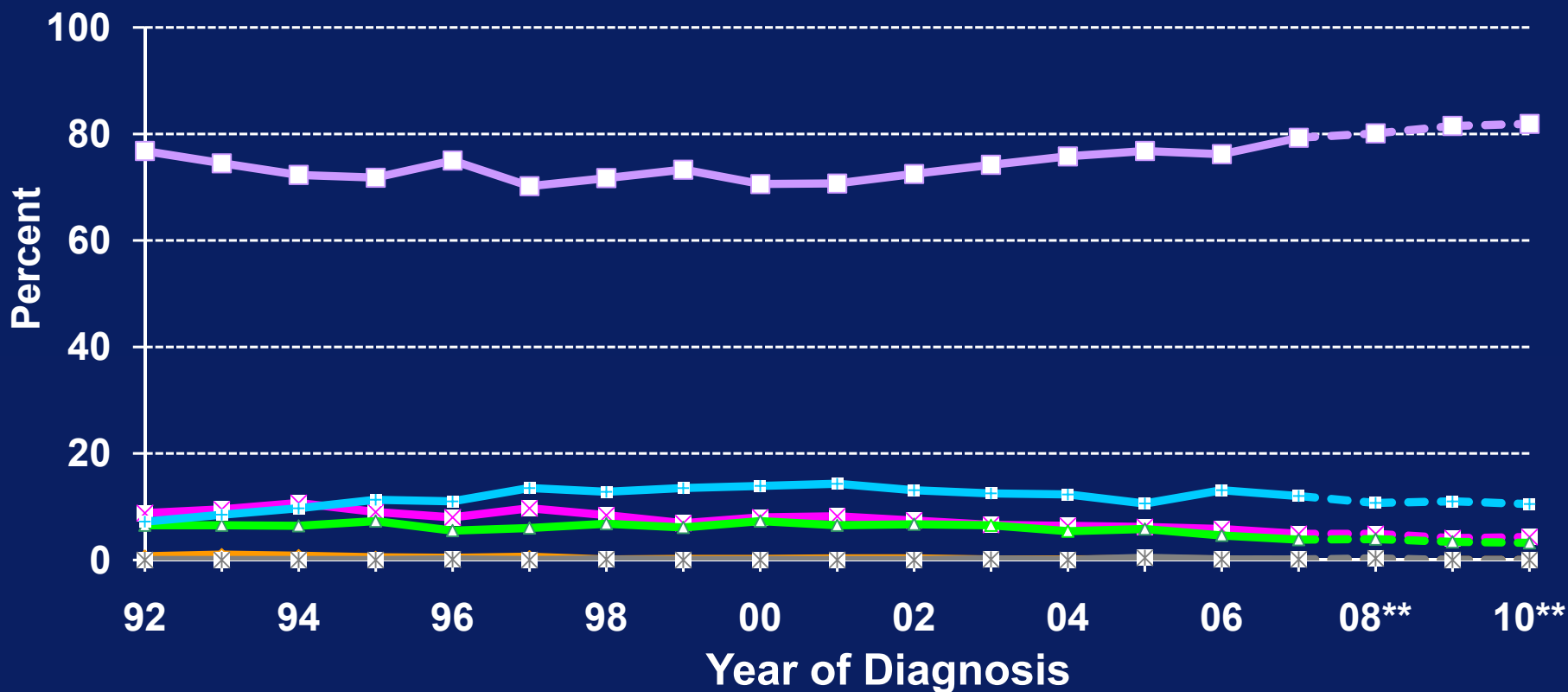
Legend: MSM, IDU, MSM/IDU, Heterosexual contact, Other*, Undetermined

* Persons with an undetermined transmission category are assigned a risk factor using multiple imputation (MI) methods (see technical notes in HIV/AIDS Surveillance Summary). Other risks include hemophilia or coagulation disorder, transfusion recipient, perinatal exposure, and confirmed other risk.
** Data are provisional due to reporting delay.

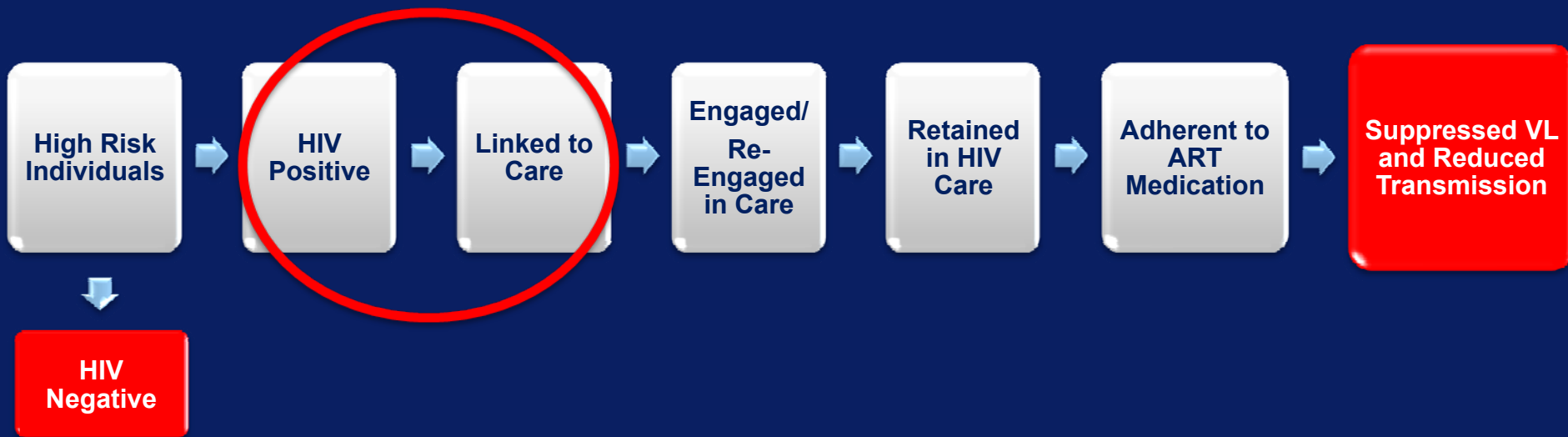Source: *HIV/AIDS Surveillance Summary,* data as of December 2010

Trend in Proportion of Persons Living with AIDS by Age, 2001-2010
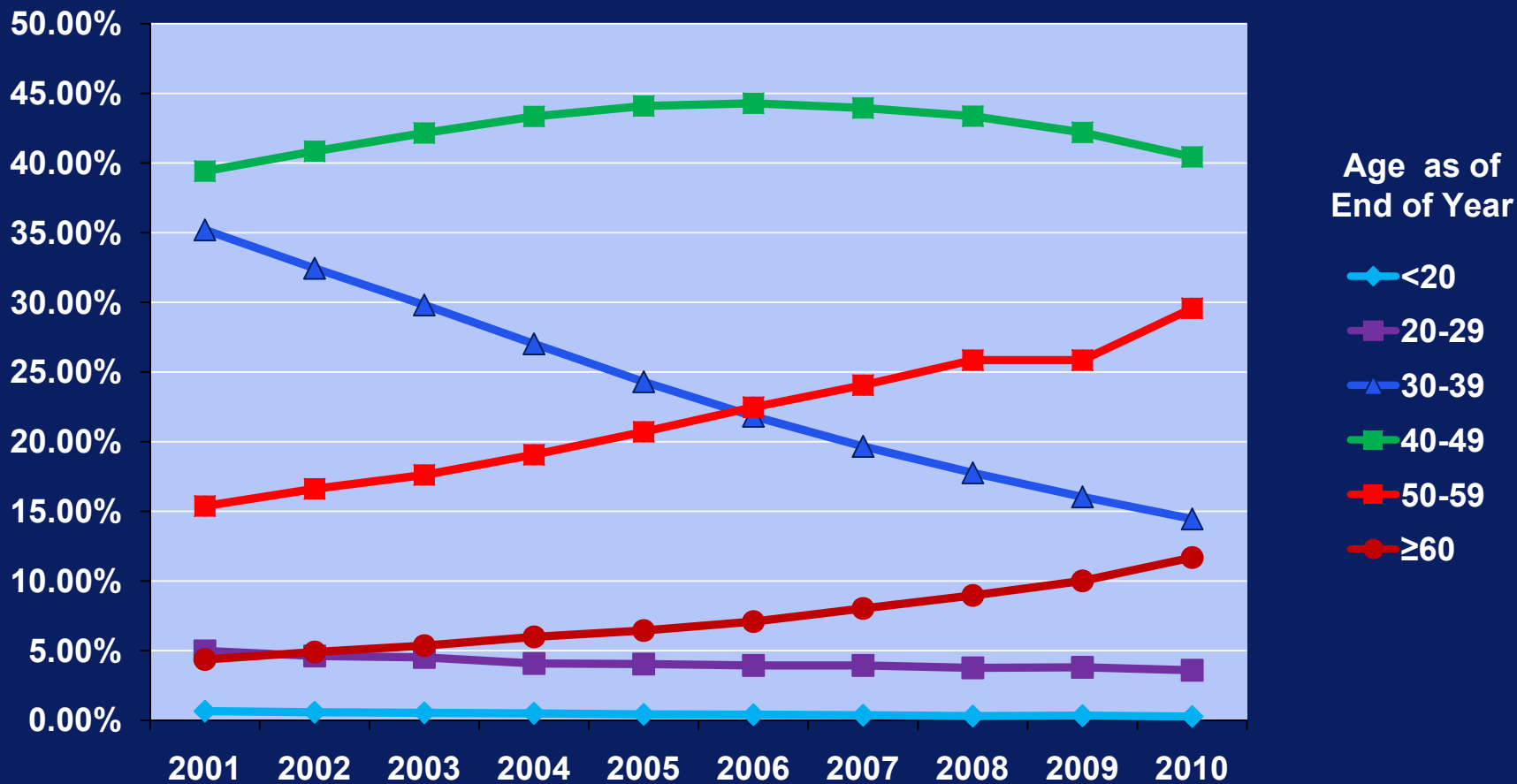
Data Source: HIV Surveillance Report 2009 and 2010. HIV Epidemiology Program.
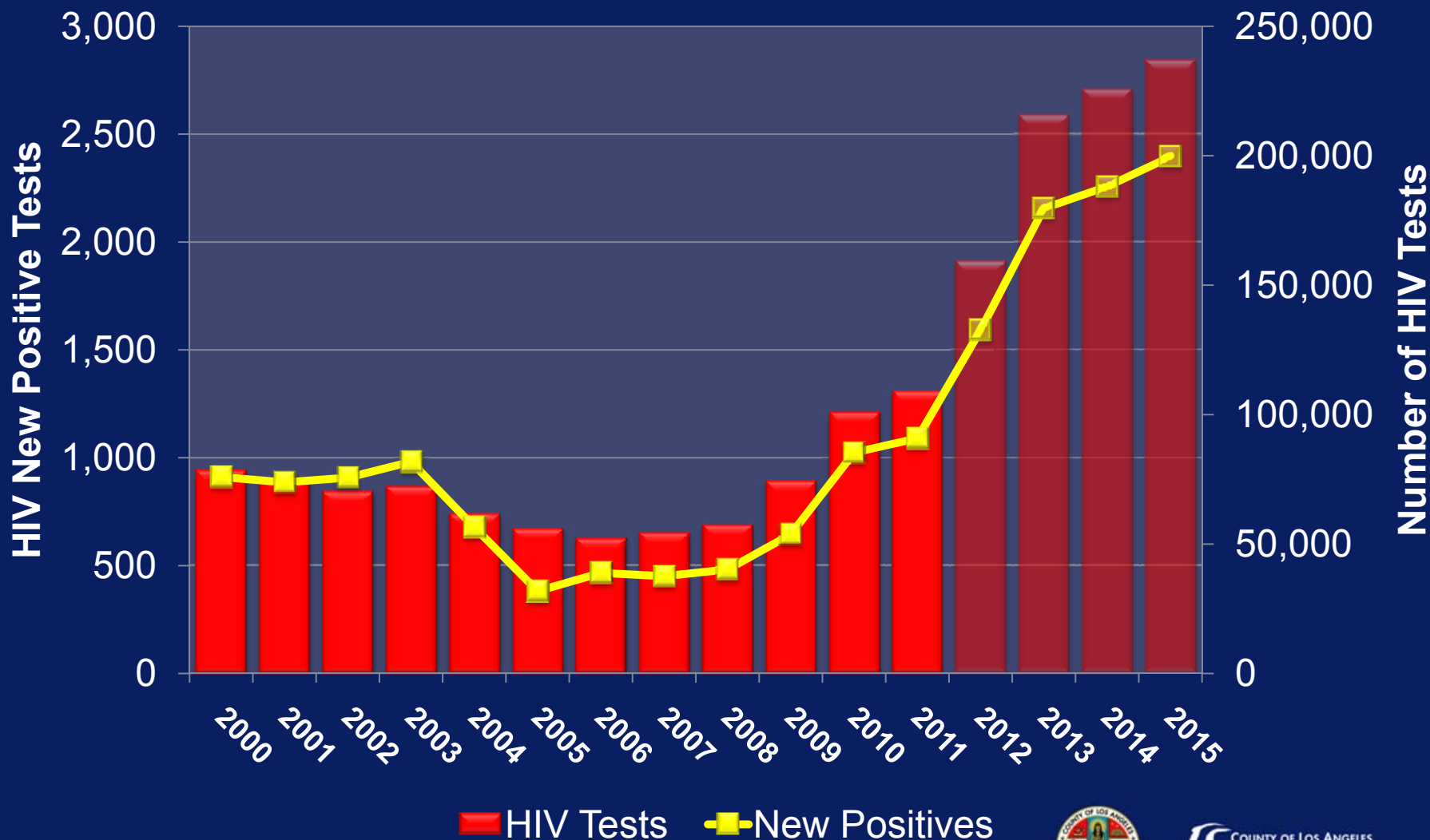Note: Data for 2008, 2009, and 2010 are provisional.

Los Angeles County Spectrum of Engagement in HIV Care

Division of HIV and STD Programs
HIV Tests and New Positive Tests By Year*

Data Source: Division of HIV and STD Programs, HIV Testing Services, 2011
*Includes all HIV testing supported by Public Health, HIV and STD Programs with projected numbers based on NHAS implementation (2011-15)

HIV Testing by Modality, 2010

Type of Testing Program	Number of HIV Tests	HIV Positivity Rate		HIV New Positivity Rate	
	N	n	(%)	n	(%)
Grand Total	**100,686**	**1,203**	**1.19%**	**1,024**	**1.02%**
Public Health STD Clinics	**24,776**	**184**	**0.74%**	**154**	**0.62%**
Routine Testing in Healthcare Settings	**17,799**	**354**	**1.99%**	**348**	**1.96%**
Testing within Jail Settings	**12,932**	**73**	**0.56%**	**25**	**0.19%**
Targeted Testing	**45,179**	**592**	**1.31%**	**497**	**1.10%**

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13

Data Source: HIV Testing System (HTS) as of 101411
[1] Indentation shows that the characteristic is a subset (sample) of the characteristic above it.

HIV Testing by Modality, 2010 cont.

Type of Testing Program	Number of HIV Tests	HIV Positivity Rate		HIV New Positivity Rate	
	N	n (%)		n (%)	
Targeted Testing cont.	**45,382**	**594**	**1.31%**	**499**	**1.10%**
Storefront	27,829	334	1.20%	285	1.02%
Mobile Testing Unit Program	9,262	90	0.97%	79	0.85%
Multiple Morbidity Mobile Testing Units Programs	3,565	44	1.23%	35	0.98%
Social Network Testing Program	707	55	7.78%	44	6.22%
Bathhouses and Sex Clubs	1,984	33	1.66%	31	1.56%
Court Ordered and Drug Expansion	1,832	36	1.97%	23	1.26%

Linkage to Care by Test Year, 2006-08

Linked to Care by Test Year, Jan 2006 -Dec 2008[1] (n = 807)

Characteristic	No.	%
Linked to Care[2]	528	65.4%
2006 (n=273)	164	60.1%
Within 3 months	123	45.1%
Within 6 months	18	6.6%
Within 1 year	23	8.4%
2007 (n=237)	163	68.8%
Within 3 months	138	58.2%
Within 6 months	17	7.2%
Within 1 year	8	3.4%
2008 (n=297)	201	67.7%
Within 3 months	177	59.6%
Within 6 months	13	4.4%
Within 1 year	11	3.7%

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Not Linked to Care: Demographics

Gender
- 7.8%
- 4.6%
- 87.6%
- Male
- Female
- Transgender

Race
- <1%
- 14.93%
- 29.5%
- 46.9%
- <1%
- 5.9%
- African American
- NA/AI
- Asian/PI
- Latino(a)
- White
- Other

Age
- 4.61%
- 11.3%
- 17.7%
- 28.4%
- 38%
- 12-24
- 25-34
- 35-44
- 45-54
- 55+

BRG
- 5.1%
- 5.9%
- 6.7%
- 10.3%
- 10.7%
- 61.3%
- MSM
- MSMW
- MSM/IDU
- IDU
- WASR
- Transgender
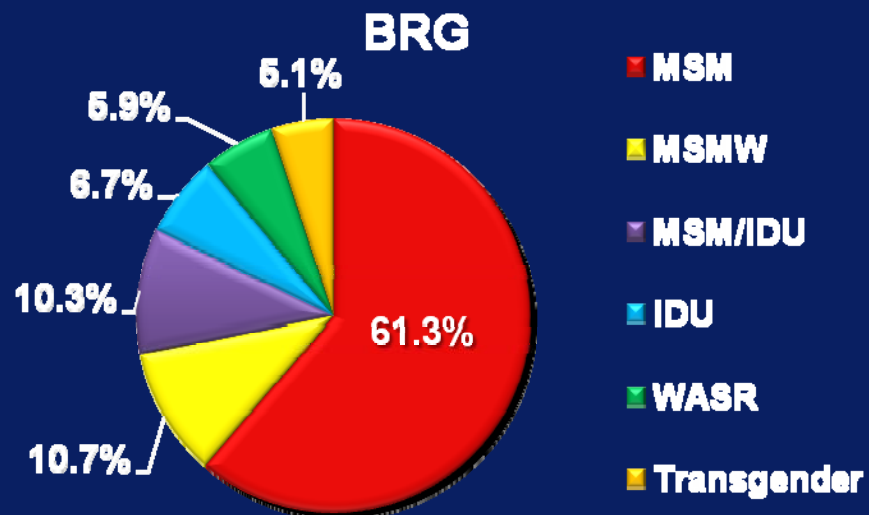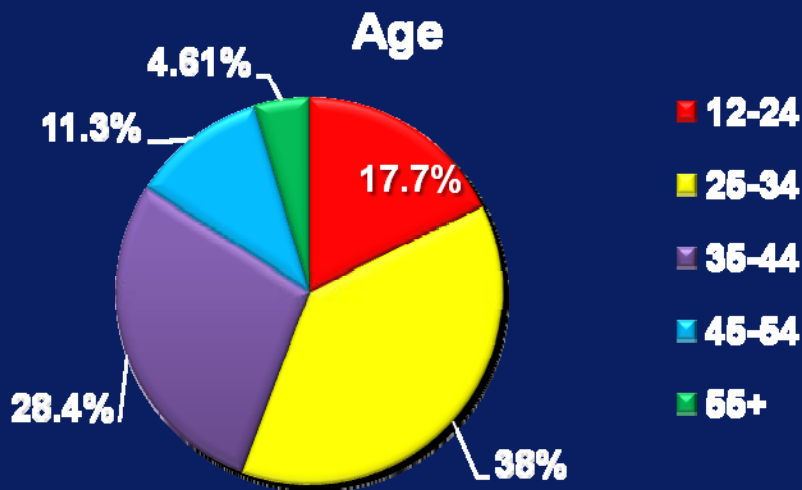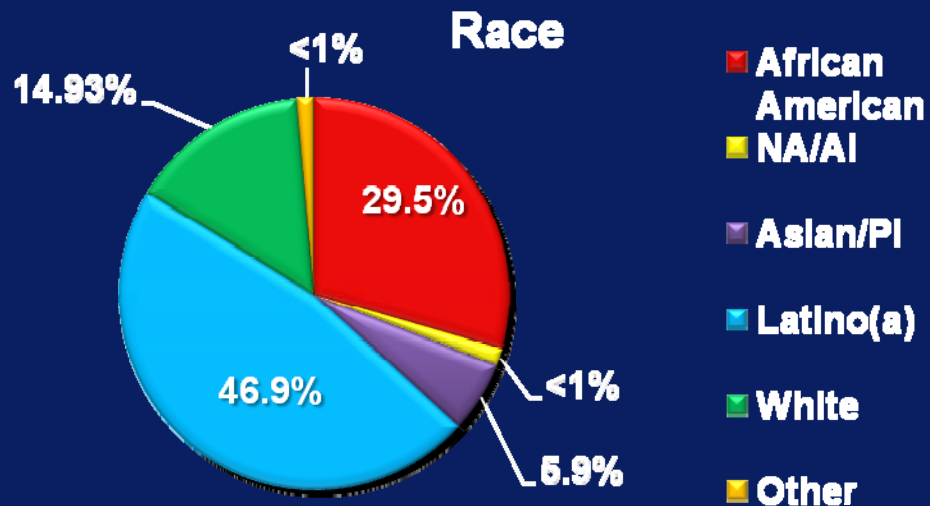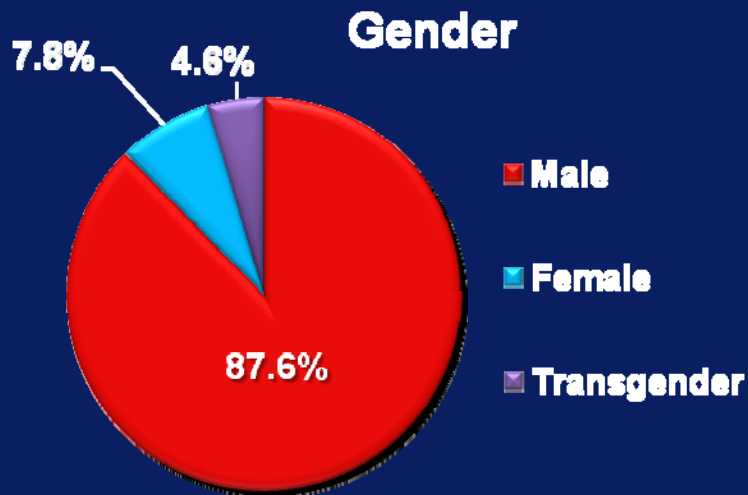
Predictors of Unlinked to Care in LAC

- Multivariate regression model on data from HCT clients who tested positive at a OAPP-funded site from 2006-2008.

- Used unlinked to care as the outcome (dependent variable).

- Independent covariates include:

Race, Age, Gender, Injection Drug Use, MSM, Living Situation, HIV Test Site Type

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Demographic Predictors of Not Linked to Care[1]: Multivariate Analysis, (n = 804)

Characteristic	Unadjusted OR	95% CI
Race (White = reference)		
African-American	3.07*	1.88 – 5.01
Asian/Pacific-Islander	1.80	0.88 – 3.69
Latino	1.73*	1.13 – 2.66
Other	0.95	0.18 – 5.03
Age (45+ yrs. = reference)		
12-24 yrs	0.61	0.35 – 1.08
25-44 yrs.	0.85	0.54 – 1.35
Gender (Male = reference)		
Female	0.57	0.30 – 1.06
Transgender	2.68*	1.09 – 6.62

[1]Time frame from within last 2 years or since last test.
* p-value < 0.05

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Behavioral Predictors of Not Linked to Care[1]: Multivariate Analysis, (n = 804)

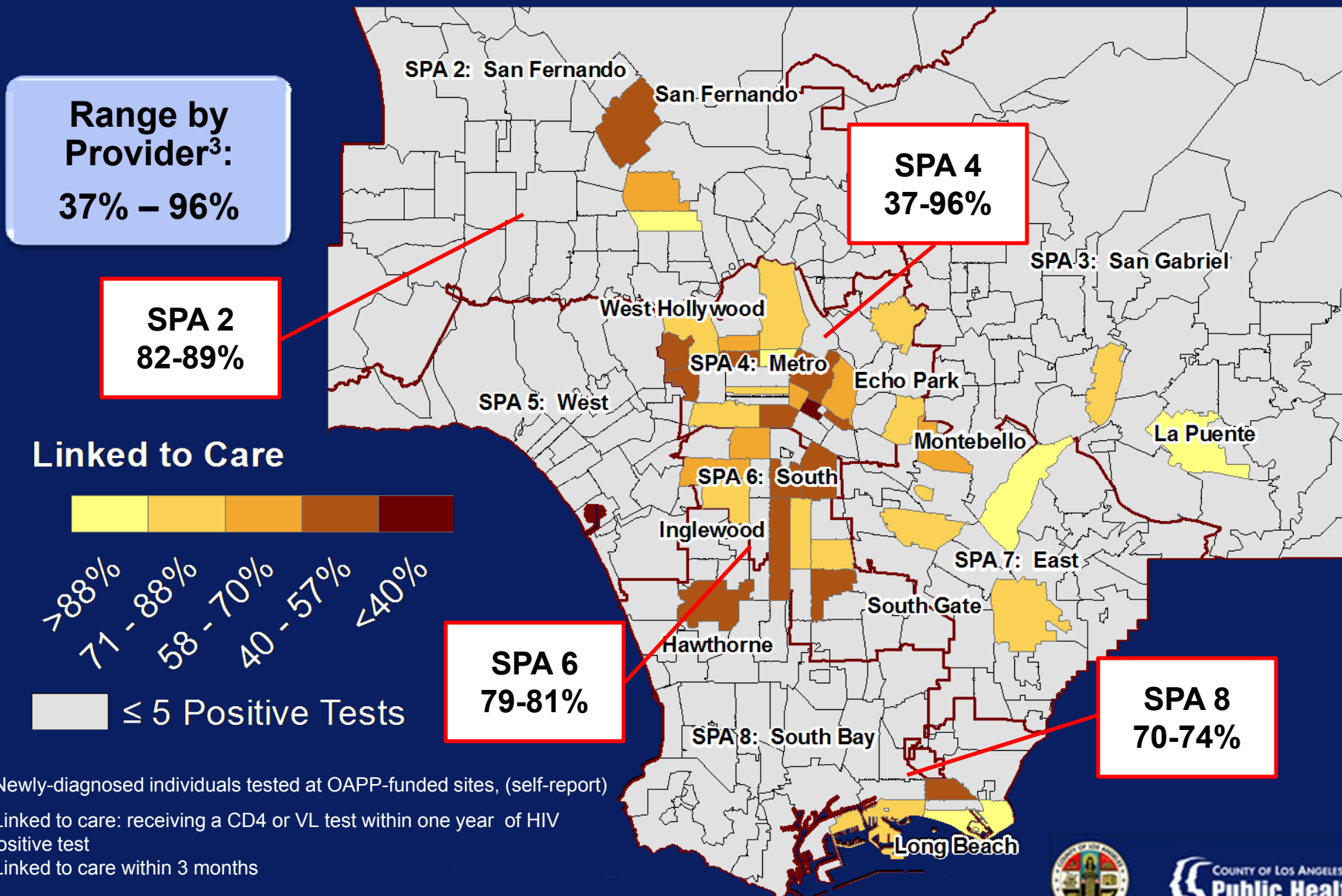| Characteristic	Unadjusted OR	95% CI
Injection Drug Use (Didn't Inject Drugs = reference)		
Injected Drugs	1.70	0.97 – 2.98
Behavioral Risk Group (All other BRG's = reference)		
MSM only	0.78	0.53 – 1.16
Living Situation (Stable = reference)		
Homeless	3.39*	1.94 – 5.94
HIV Test Site Type (Fixed Site = reference)		
Mobile Testing Unit	1.59*	1.13 – 2.23

[1]Time frame from within last 2 years or since last test.
* p-value < 0.05
Data Source: HIV Information Resources System (HIRS) and HIV/AIDS Reporting System (HARS), 2006-2008. Represents lab data collected through December 31, 2009

HIV-positive Individuals[1] Linked to Care[2], 2006-08 by Zip Code

Range by Provider[3]:
37% – 96%

SPA 4
37-96%

SPA 2
82-89%

SPA 6
79-81%

SPA 8
70-74%

SPA 2: San Fernando
San Fernando
SPA 3: San Gabriel
West Hollywood
SPA 4: Metro
Echo Park
SPA 5: West
Montebello
La Puente
SPA 6: South
Inglewood
SPA 7: East
South Gate
Hawthorne
SPA 8: South Bay
Long Beach

Linked to Care

>88% 71 - 88% 58 - 70% 40 - 57% <40%

≤ 5 Positive Tests

[1]Newly-diagnosed individuals tested at OAPP-funded sites, (self-report)

[2]Linked to care: receiving a CD4 or VL test within one year of HIV positive test

[3]Linked to care within 3 months

Data Source: OAPP, HIV Information Resources System (HIRS) and HIV Epidemiology, HIV/AIDS Reporting System (HARS), 2006-2008. *Represents lab data collected through December 31, 2009

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Los Angeles County Spectrum of Engagement in HIV Care

High Risk Individuals → HIV Positive → Linked to Care → Engaged/Re-Engaged in Care → Retained in HIV Care → Adherent to ART Medication → Suppressed VL and Reduced Transmission

HIV Negative

Ryan White "in Care" Treatment Cascade, 2009

Number of Individuals

Category	Value
RW System of Care	18,345
RW Medical Care	12,752
On ART	90%
Retained in HIV Care	74%
Undetectable VL	65%

Ryan White Casewatch Data, January – December 2009 (CY2009)

Ryan White "in Care" Treatment Cascade, 2010

Number of Individuals

Category	Value
RW System of Care	19,228
RW Medical Care	14,753
On ART	90%
Retained in HIV Care	87%
Undetectable VL	75%

Ryan White Casewatch Data, March 2010 – February 2011 (Year 20)
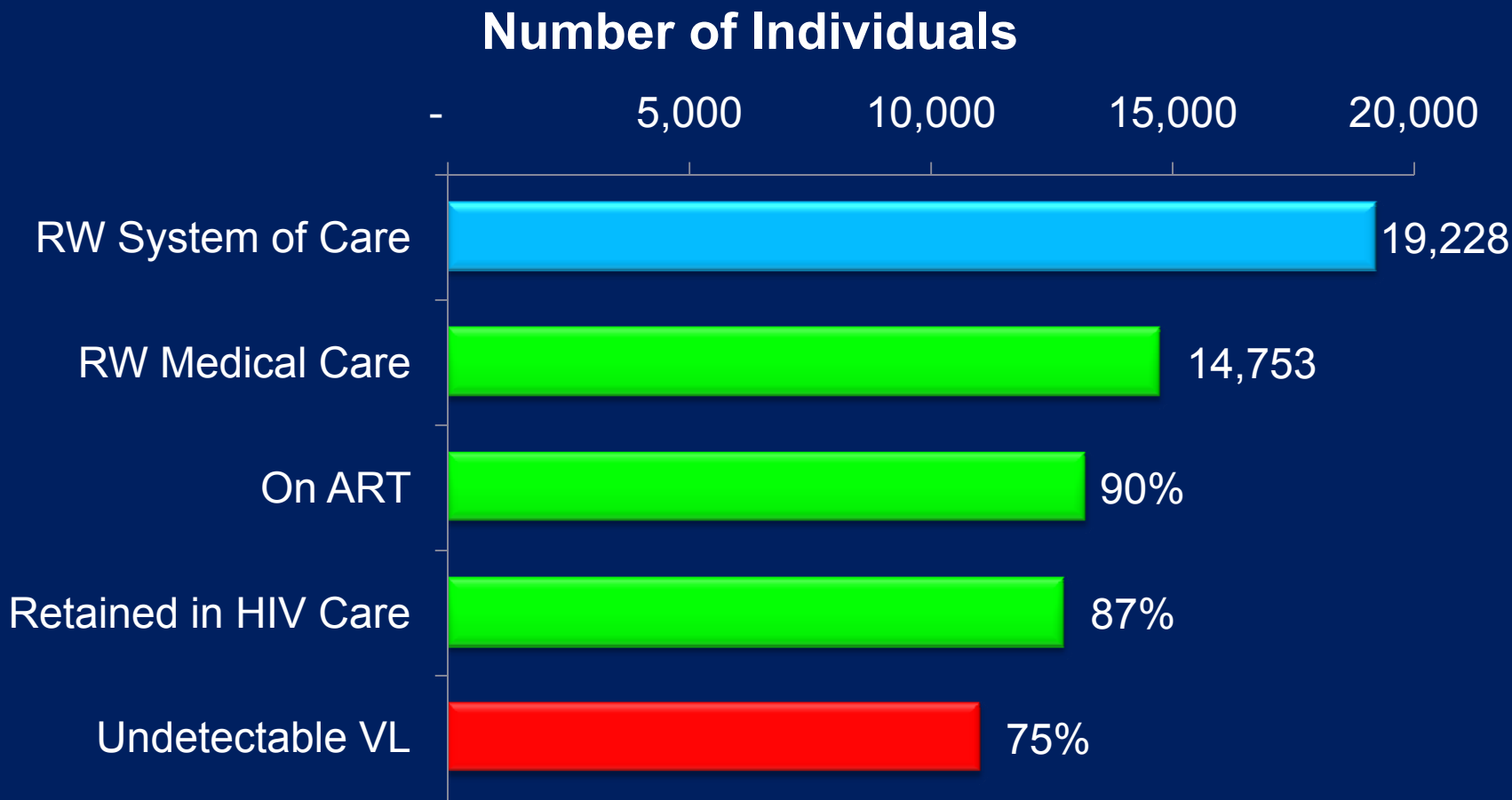
Predictors of Retention in Care in LAC

- Multivariate regression model on data from Ryan White Care clients who accessed medical outpatient services during Feb. '09 – Mar. '10.

- Used falling out of care (defined as < 2 medical outpatient visits in a span of one year) as the outcome (dependent variable).

- Independent covariates include:

  Race, Age, Gender, Poverty, Homelessness, Health Insurance, Immigration, Substance Use, Incarceration, Mental Health History, Antiretroviral Medication Use, CD4 Levels, Undetectable Viral Load

Source: *Casewatch YR 19 (Feb. '09 – Mar. '10*):
Limited to RW clients w/ 1 or more MOP visit

Demographic Predictors of Poor Retention in Care*: Multivariate Analysis

Characteristic	Adjusted OR	95% CI
Race (White = reference)		
African-American	0.98	0.84 – 1.14
Asian/Pacific-Islander	0.74	0.53 – 1.03
Latino/Hispanic	**0.70****	**0.61 – 0.81**
Native-American/Alaskan Native	1.32	0.69 – 2.50
Other	2.19	0.96 – 4.98
Age (50+ = reference)		
Youth (0-24 yrs.)	**1.73****	**1.29 – 2.32**
Young Adult (25-39 yrs.)	**1.47****	**1.26 – 1.71**
Adult (40-49 yrs.)	**1.21****	**1.04 – 1.39**

Source: *Casewatch YR 19 (Feb. '09 – Mar. '10)*: Limited to RW clients w/ 1 or more MOP visit
* Defined as fewer than 2 medical outpatient visits at least 90 days apart in a span of 1 year.
** p-value < 0.05

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Public Health

Demographic Predictors of Poor Retention in Care*: Multivariate Analysis

Characteristic	Adjusted OR	95% CI
Gender (Male = reference)		
Female	0.85	0.73 – 1.00
Transgender	1.19	0.82 – 1.74
Other/Unknown	< 0.01	<0.01 - >999.99
Poverty (> FPL = reference)		
≤ Federal Poverty Level (FPL)	0.97	0.87 – 1.09
Living Situation (permanent housing = reference)		
Homeless/Transitional Housing	**1.37****	**1.12 – 1.68**

Source: *Casewatch YR 19 (Feb. '09 – Mar. '10*): Limited to RW clients w/ 1 or more MOP visit
* Defined as fewer than 2 medical outpatient visits at least 90 days apart in a span of 1 year.
** p-value < 0.05

Demographic Predictors of Poor Retention in Care*: Multivariate Analysis

Characteristic	Adjusted OR	95% CI
Immigration Status (U.S. born/not recent immigrant = reference)		
Recent Immigrant (≤ 4 yrs.)	0.91	0.71 – 1.17
Health Insurance (private insurance = reference)		
Public (MediCal, Medicare, Medicaid)	**0.58****	**0.47 – 0.72**
No Health Insurance	**0.67****	**0.54 – 0.83**

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Public Health

Behavioral Predictors of Poor Retention in Care*: Multivariate Analysis

Characteristic	Adjusted OR	95% CI
Substance Abuse Hx (never used = reference)		
Recently used (≤ 1 yr.)	0.85	0.71 – 1.02
Previously used (> 1 yr.)	0.87	0.73 – 1.03
Incarceration Hx (never in jail = reference)		
Recently in Jail (≤ 2 yrs.)	**1.71****	**1.42 – 2.06**
Previously in Jail (> 2 yrs.)	1.10	0.91 – 1.33
Mental Health Hx (no history = reference)		
Recent History (≤ 1 yr.)	0.90	0.79 – 1.03
Previous History (> 1 yr.)	0.86	0.69 – 1.07

Source: *Casewatch YR 19 (Feb. '09 – Mar. '10)*: Limited to RW clients w/ 1 or more MOP visit
* Defined as fewer than 2 medical outpatient visits at least 90 days apart in a span of 1 year.
** p-value < 0.05

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Clinical Predictors of Poor Retention in Care*: Multivariate Analysis

Characteristic	Adjusted OR	95% CI
Antiretroviral Medication (not on ART = reference)		
Currently on ART	**0.26****	**0.22 – 0.31**
CD4 Levels (> 500 = reference)		
< 200	**1.37****	**1.16 – 1.62**
201 – 350	0.99	0.85 – 1.15
351 - 500	0.93	0.81 – 1.06
Viral Load Levels (≥ 200 copies/mL = reference)		
Undetectable VL (< 200 copies/mL)	**0.60****	**0.53 – 0.67**

Source: *Casewatch YR 19 (Feb. '09 – Mar. '10)*: Limited to RW clients w/ 1 or more MOP visit
* Defined as fewer than 2 medical outpatient visits at least 90 days apart in a span of 1 year.
** p-value < 0.05

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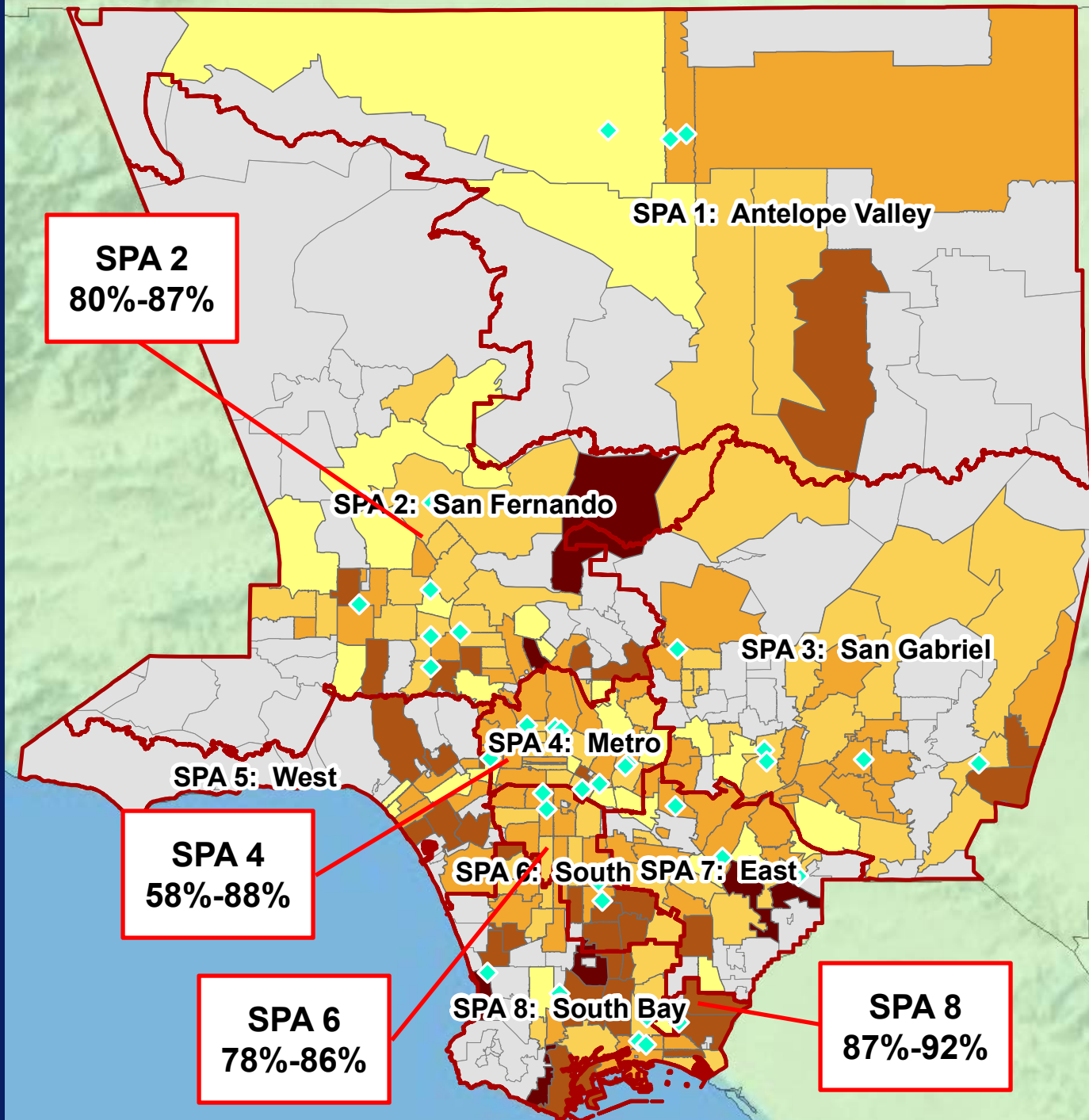
Range by Provider:
58% – 92%

Retention in Care* by Resident Zip Code

<= 60%
61-72%
73-79%
80-86%
> 86%

<= 10 RW Clients

◆ Medical Outpatient Sites

Source: *Casewatch YR 19 (Feb. '09 – Mar. '10):*
Limited to Zip-Codes w/ > 10 RW clients.
* Defined as 2 MOP visits at least 90 days apart in a span of one year.

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SPA 1: Antelope Valley

SPA 2
80%-87%

SPA 2: San Fernando

SPA 3: San Gabriel

SPA 4: Metro

SPA 5: West

SPA 4
58%-88%

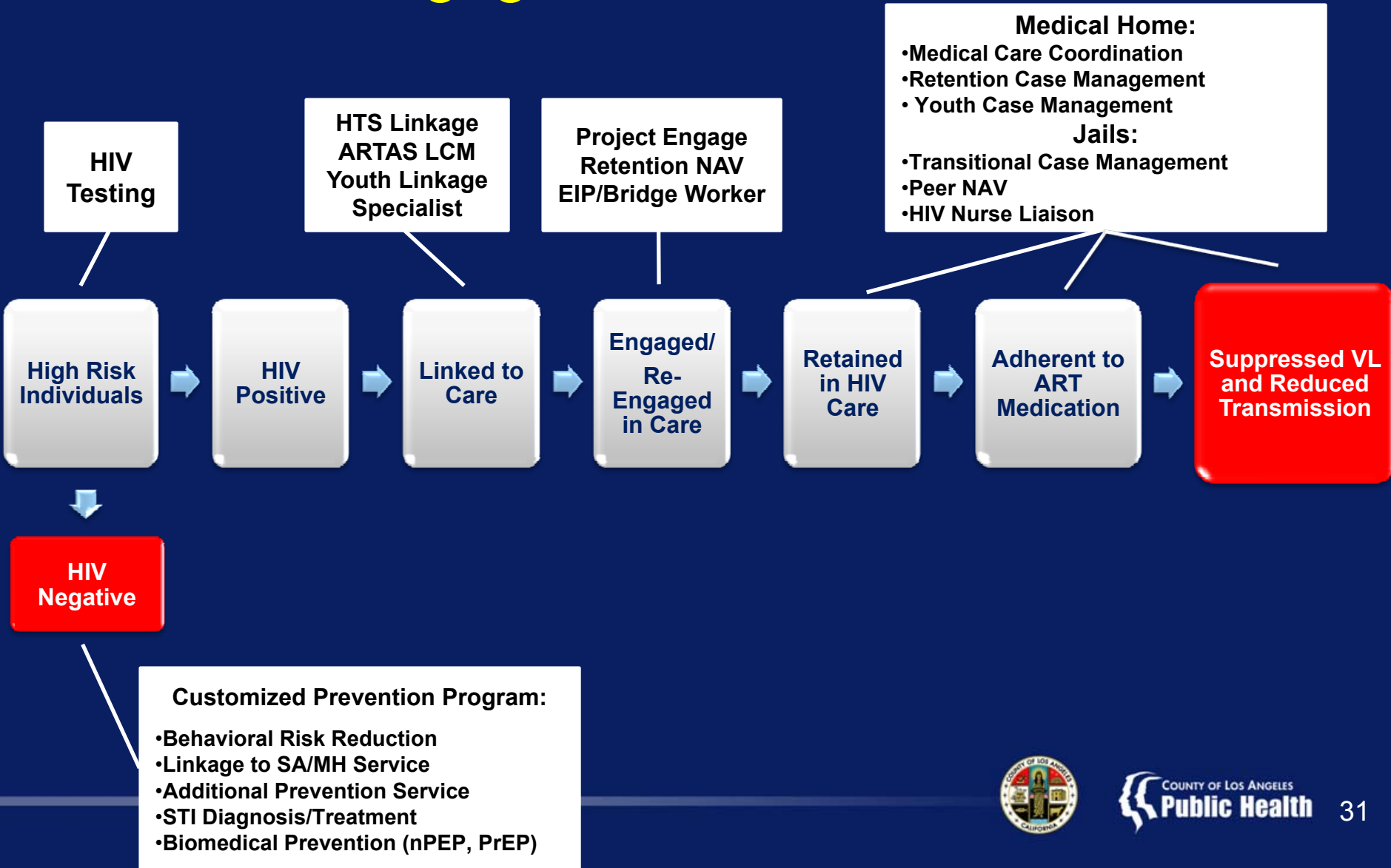SPA 6: South   SPA 7: East

SPA 6
78%-86%

SPA 8: South Bay

SPA 8
87%-92%

Los Angeles County Spectrum of Engagement in HIV Care

Medical Home:
- **Medical Care Coordination**
- **Retention Case Management**
- **Youth Case Management**

Jails:
- **Transitional Case Management**
- **Peer NAV**
- **HIV Nurse Liaison**

HIV Testing

HTS Linkage ARTAS LCM Youth Linkage Specialist

Project Engage Retention NAV EIP/Bridge Worker

High Risk Individuals → **HIV Positive** → **Linked to Care** → **Engaged/ Re-Engaged in Care** → **Retained in HIV Care** → **Adherent to ART Medication** → **Suppressed VL and Reduced Transmission**

HIV Negative

Customized Prevention Program:
- **Behavioral Risk Reduction**
- **Linkage to SA/MH Service**
- **Additional Prevention Service**
- **STI Diagnosis/Treatment**
- **Biomedical Prevention (nPEP, PrEP)**

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31

Questions

- What processes has your clinic implemented to ensure timely linkage to care for newly dx?

  - Have they worked?

- What approaches has your clinic taken to improve retention in care and reduce lost to follow up rates?

  - Have they worked?

- What additional interventions should be considered to improve linkage and retention for HIV+ patients in LAC?