Factors Associated with Linkage to HIV Care among Recently Diagnosed Persons in Los Angeles County

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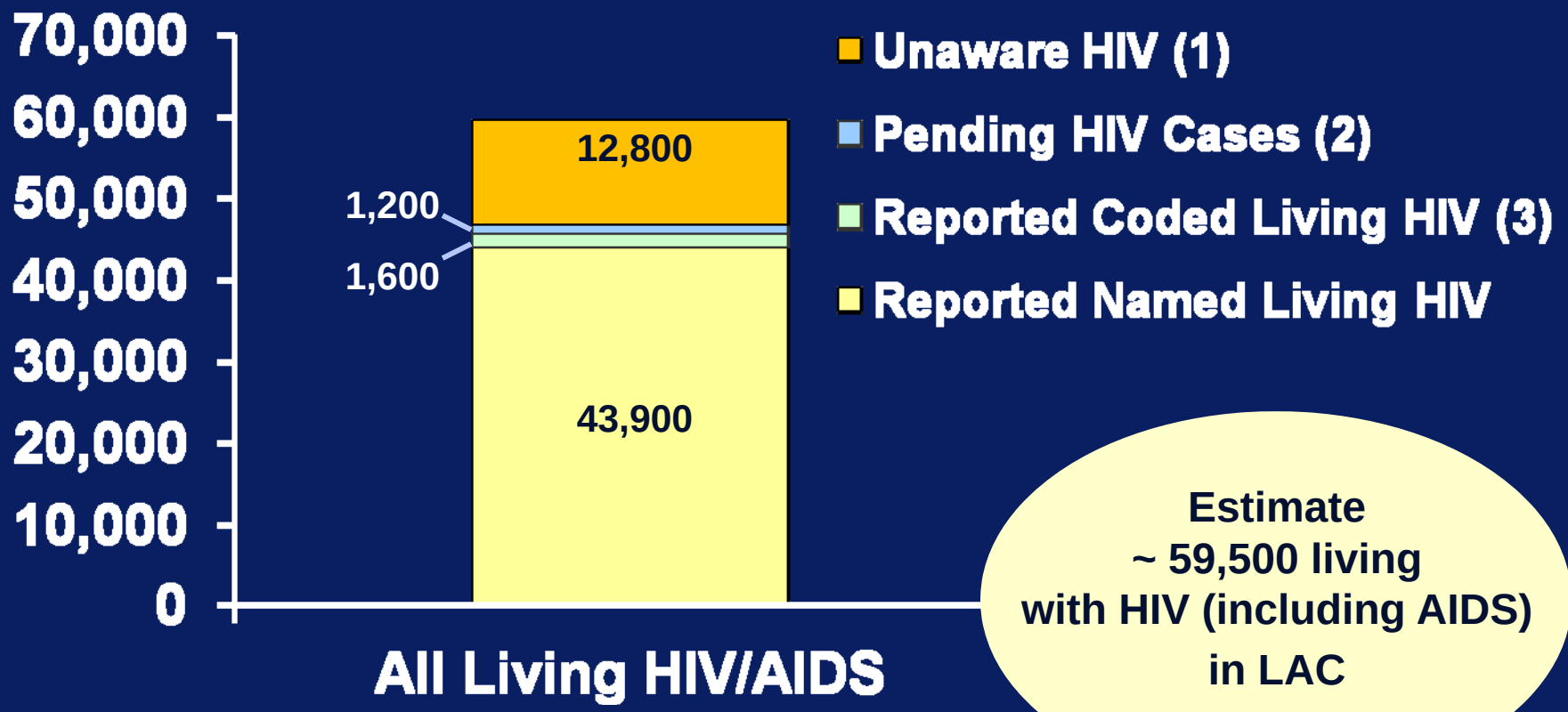
County of Los Angeles Public Health

2012 Estimated Number of Persons Living with HIV and AIDS in LAC



Estimate ~ 59,500 living with HIV (including AIDS) in LAC

Source: LAC Division of HIV and STD Programs, reported as of 12/31/2011.

(1) Estimate that 21.5% of HIV+ in LA County are unaware of their infection; modified from CDC estimate.
(2) Of 4,853 notifications pending investigation, estimate half of 2,400 who have detectable VL or confirmatory test to be unduplicated cases.
(3) Out of the 3,200 cases reported as code, half are thought to represent unduplicated cases.

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State of the HIV Epidemic

- 21%[1] of HIV-positive are individuals unaware of their status.
  - 54%[2] of new infections are attributable to those unaware.
- 33%[3] of those aware of their infection are not engaged in care.
  - 40%[4] of those diagnosed with AIDS had their first positive test result within1-yr. of their AIDS diagnosis.
  - For those who are linked to care, treatment improves health outcomes

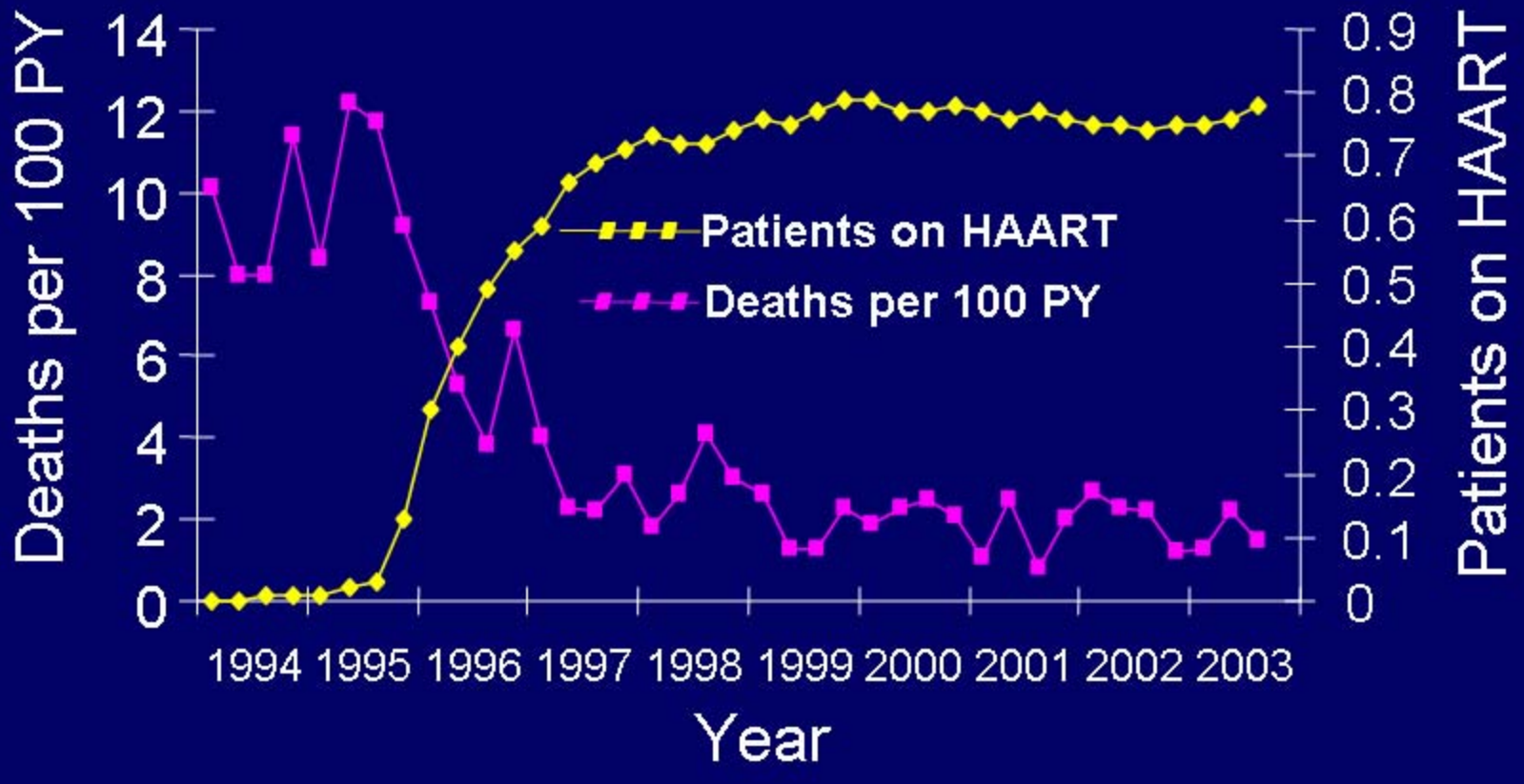
[1] CDC HIV/AIDS Facts October 2008, *New Estimates of U.S. HIV Prevalence, 2006* .

[2] Marks G et al., *Estimating sexual transmission of HIV from persons aware and unaware that they are infected with the virus in the USA.* AIDS 2006: 20(10).

[3] HRSA., HIV/AIDS Bureau. *Outreach: Engaging people in HIV care*. August 2006.

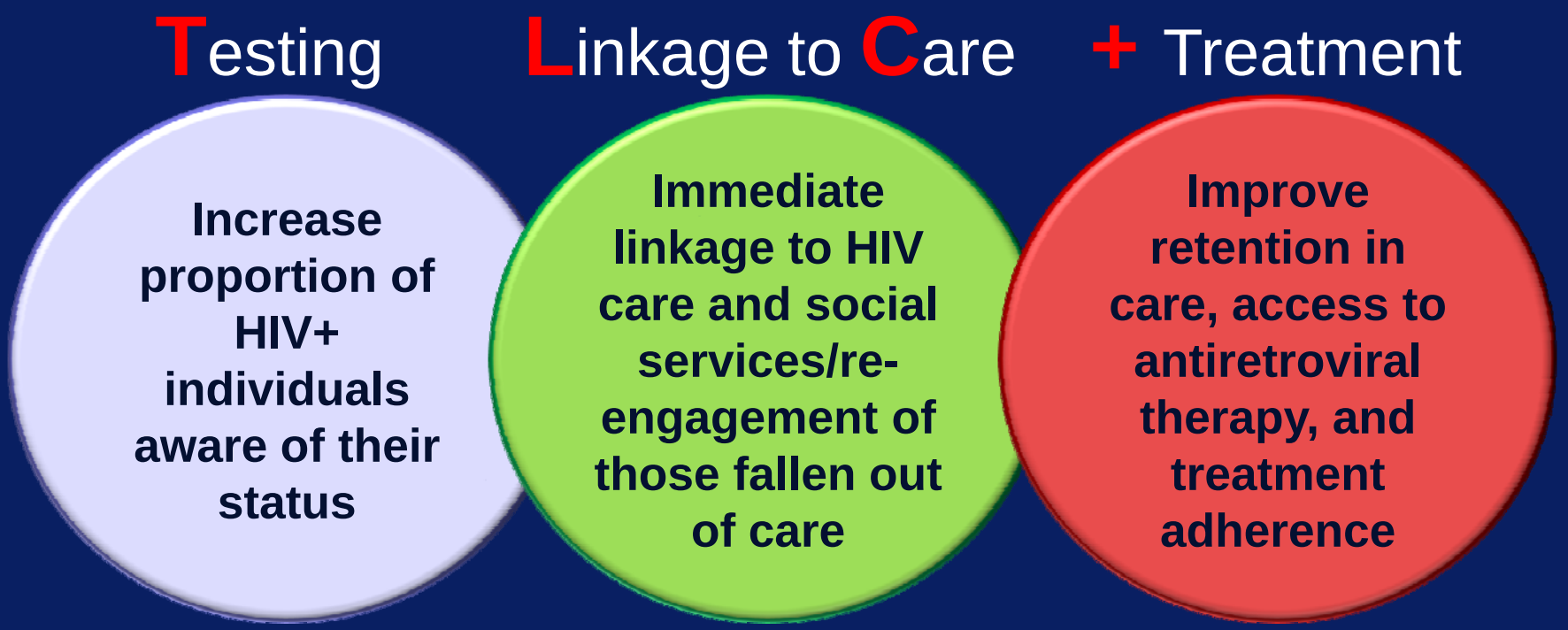
[4] Valdiserri RO. *Late HIV Diagnosis: Bad Medicine and Worse Public Health*. PLoS Medicine, June 2007: 4(6).

Mortality and HAART Use Over Time
HIV Outpatient Study, CDC, 1994-2003



Testing and Linkage to Care Plus (TLC+)

- TLC+ is a holistic approach to HIV prevention, medical care, and supportive services that aims to…



Source: The Report of a U.S. Think Tank on HIV Treatment as Prevention - February, 2010
http://www.projectinform.org/testandtreat/index.shtml

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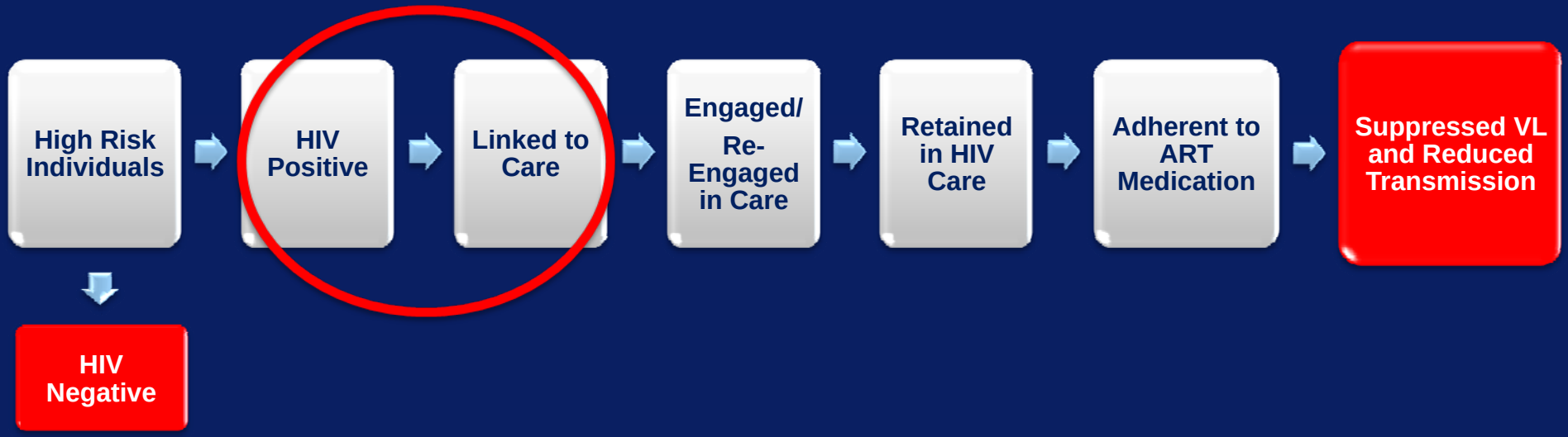
Los Angeles County Spectrum of Engagement in HIV Care



Objectives

- Who are the approximately 34% of clients who are aware of their status but are unwilling/unable to enter Care?

Goal: Increase access to care and improve health outcomes for people living with HIV.

Objectives:

- Identify factors of being unlinked to care
- Inform targeted interventions

Hypothesis: Clients who experience institutional and/or socio-economic challenges to accessing care are more likely to not be in care.

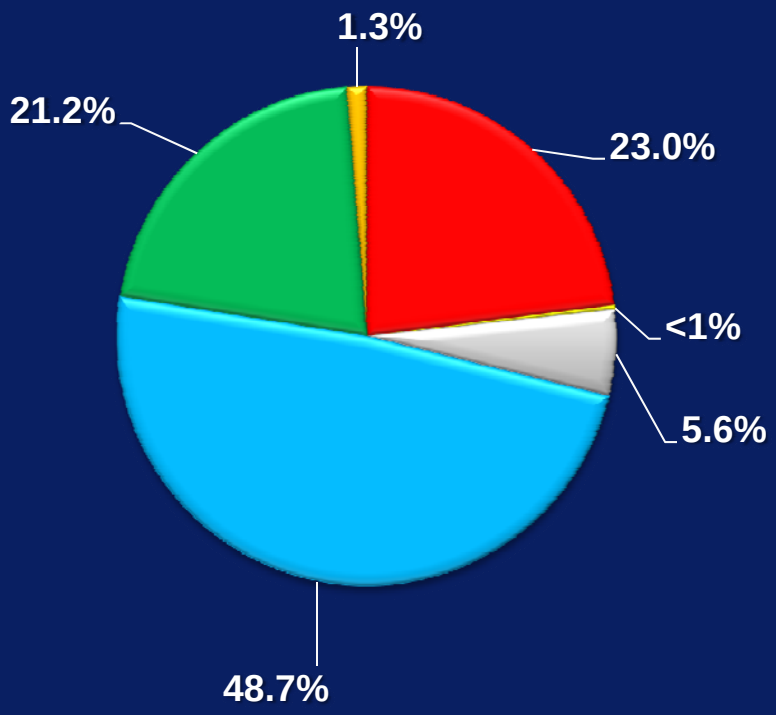
Methodology

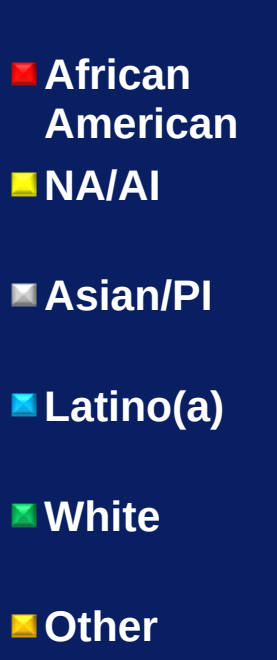
- Newly identified HIV Positive Clients (n = 717) identified through DHSP-funded testing facilities from 2006-2008.
- Data Source: HIV Information Resources System (HIRS) with care information collected through HIV/AIDS Reporting System (HARS)
- **Unlinked to care** defined as a client who did not receive a CD4 or Viral Load Test within one year of testing positive for HIV

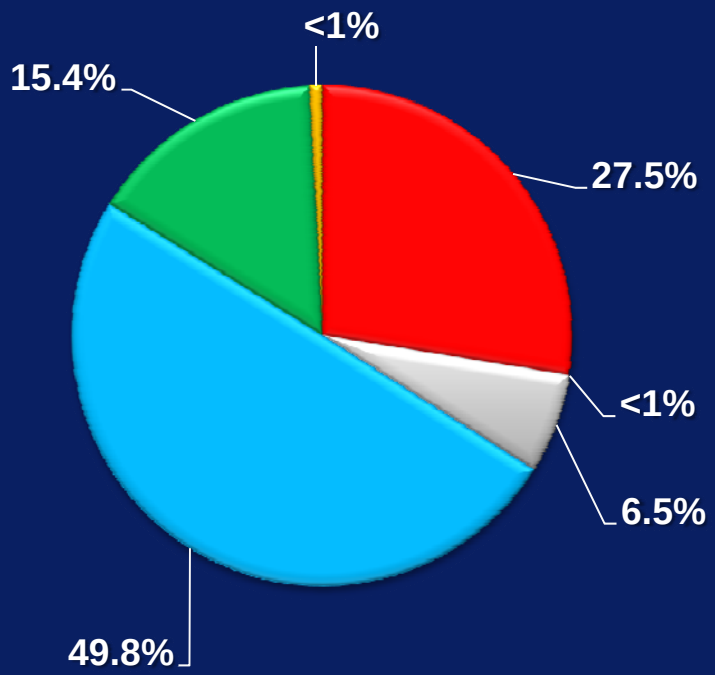
Methodology cont.

- Conduct Bivariate and Multivariate Logistic Regression Analysis to identify factors associated with being unlinked to care
- Dependent variable: Unlinked to Care
- Independent variables:
  - Demographic information
  - Testing background
  - Risk behaviors

Demographics, Study Sample[1]







Overall, n = 717

Unlinked, n = 247

[1]HIV Information Resources System (HIRS) & HIV/AIDS Reporting System (HARS), 2006-08.
*Represents lab data collected through December 31, 2009

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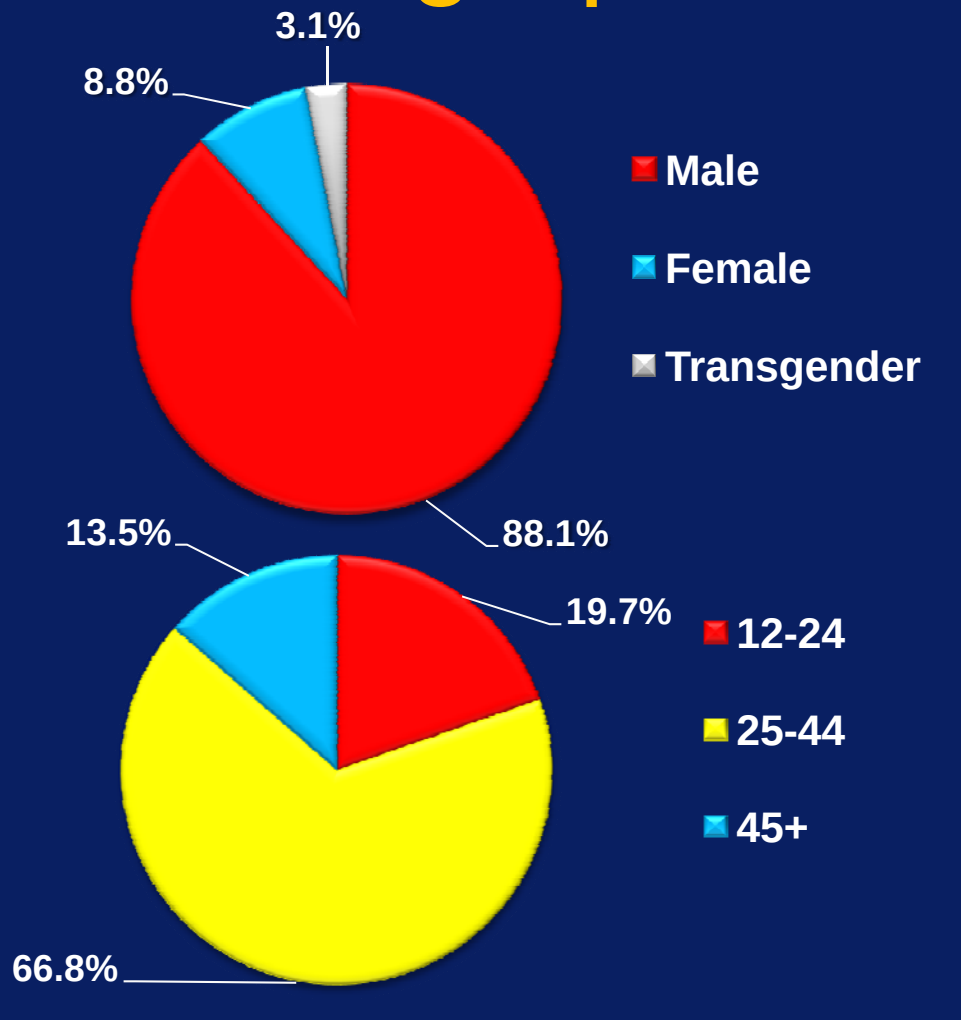
Demographics, Study Sample[1]



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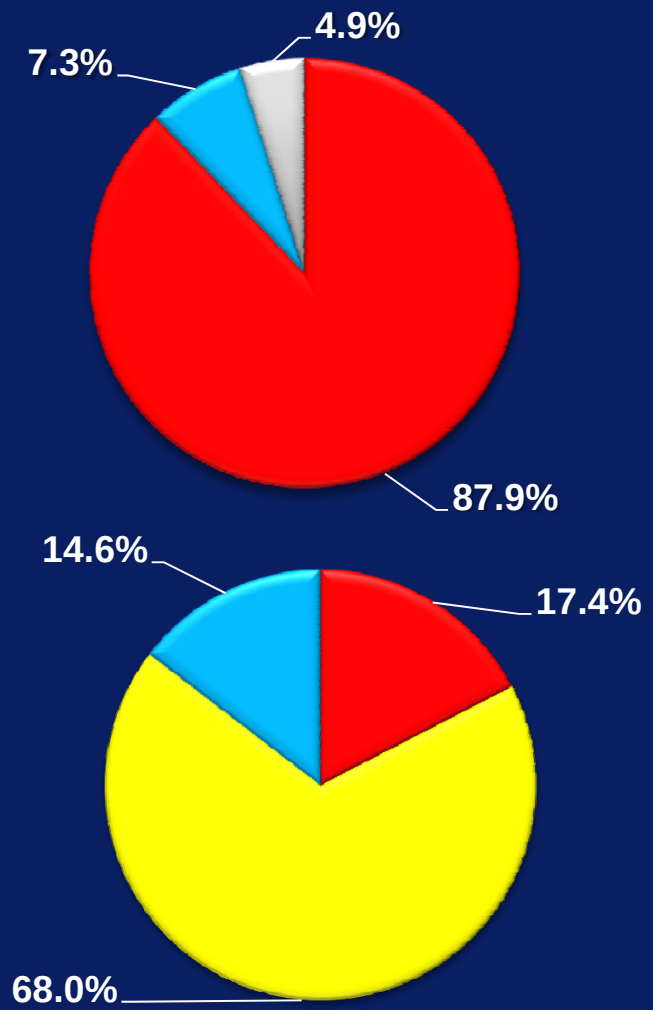

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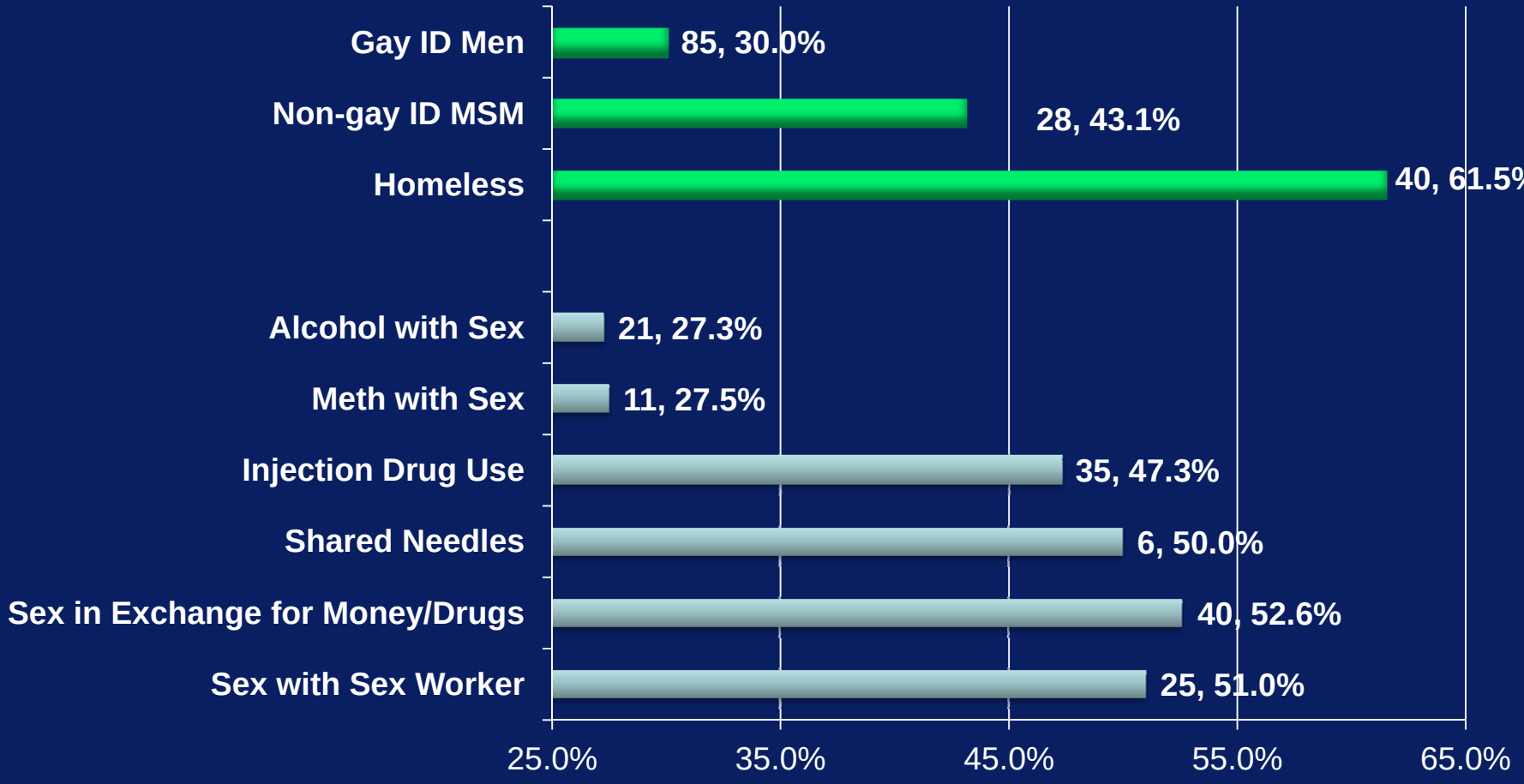
Linkage to Care by Test Year, 2006-08 (n = 717)

Characteristic	No	%
Linked to Care	**470**	**66.0**
2006 (n = 252)	150	60.0
Within 3 months	116	46.0
Within 4-6 months	16	6.3
Within 7-12 months	18	4.0
2007 (n = 218)	156	71.6
Within 3 months	132	60.6
Within 4-6 months	16	7.4
Within 7-12 months	8	4.0
2008 (n = 247)	164	66.4
Within 3 months	145	59.0
Within 4-6 months	9	3.6
Within 7-12 months	10	4.0

[1]HIV Information Resources System (HIRS) & HIV/AIDS Reporting System (HARS), 2006-08.
*Represents lab data collected through December 31, 2009

Unlinked to Care

At Risk Groups and Risk Behaviors



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

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Unlinked to Care: Multivariate Model

- Multivariate logistic regression (n = 717)
- Dependent variable: Unlinked to Care
- Independent variables:

- race
- age
- gender
- living situation
- sexual orientation
- HIV test type
- co-location of treatment facility with testing site
- injection drug use
- non-injection drug use
- sex worker
- sex with sex worker

Demographic Factors Associated with Being Unlinked to Care[1]: Multivariate Analysis, (n = 717)

Characteristic	Adjusted OR	95% CI
Race (White = reference)		
African-American	2.49*	1.48 – 4.21
Asian/Pacific-Islander	2.55*	1.18 – 5.51
Latino	1.96*	1.24 – 3.10
Other	0.81	0.16 – 4.09
Age (45+ yrs. = reference)		
12-24 yrs	0.65	0.35 – 1.20
25-44 yrs.	0.95	0.57 – 1.58
Gender (Male = reference)		
Female	0.65	0.31 – 1.36
Transgender	1.70	0.61 – 4.78

[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

Demographic Factors Associated with Being Unlinked to Care[1]: Multivariate Analysis, (n = 717)

Characteristic	Adjusted OR	95% CI
Sexual Identity (Straight = reference)		
Gay	1.20	0.73 – 1.99
Bisexual	1.18	0.62 – 2.25
Living Situation (Stable = reference)		
Homeless	2.68*	1.44 – 4.99

[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

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Behavioral Factors Associated with Being Unlinked to Care[1]: Multivariate Analysis, (n = 717)

Characteristic	Adjusted OR	95% CI
Illicit Drug Use[2] (Didn't Use Illicit Drugs = reference)		
Non-injected Drug Use	0.87	0.54 – 1.41
Injected Drug Use	1.16	0.58 – 2.30
Sex Work (Not a Sex Worker = reference)		
Sex Worker	1.31	0.70 – 2.46
Sex with Sex Worker (No Sex with Sex Worker = reference)		
Had Sex w/ a Sex Worker	1.34	0.68 – 2.65

[1]Time frame from within last 2 years or since last test.
[2] Includes crack, cocaine, methamphetamines, heroin
* 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

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Testing Factors Associated with Being Unlinked to Care[1]: Multivariate Analysis, (n = 717)

Characteristic	Adjusted OR	95% CI
Care Facility at Testing Site (Care Facility = reference)		
No Care Facility at Testing Site	3.16*	2.07 – 4.83
HIV Test Type (Rapid Test = reference)		
Standard	1.24	0.84 – 1.84

[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

Summary of Findings

- Overall, 34.5% of those in HIRS/HARS sample were not linked to care
  - Most were male, Latino or African American, and younger: ages (12 – 34)

- Through adjusted analysis, the following were identified as factors of being unlinked to care:

- African American
- Latino
- Asian/PI
- Homeless
- Testing Site with no Care Facility

Next Steps

- Increase sample size of analysis in order to increase generalizability
  - Match and analyze full set of most recent data available, 2009-2011.
- Interventions designed to improve timely linkage to care should focus on ethnic minorities, who have unstable housing, who tested at nonmedical testing facilities.
  - Active confirmation of linkage to care by HCT provider, and increased re-imbursement for meeting linkage goals
  - Linkage workers, ARTAS Partner Services

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