Using HIV Surveillance Data to Calculate Measures for the Continuum of HIV Care

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Symposium on Measuring the HIV Care Continuum
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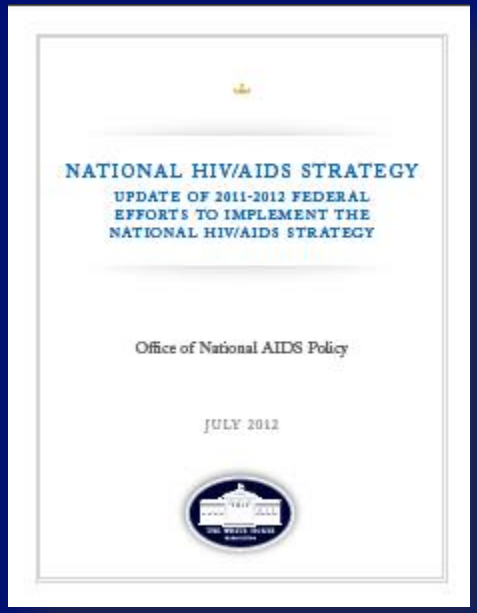
National HIV/AIDS Strategy Primary Goals

- Reduce the number of people who become infected with HIV
- Increase access to care and optimize health outcomes for people living with HIV
- Reduce HIV-related health disparities



The White House Office of National AIDS Policy. Washington D.C.: White House, July 13, 2010
www.whitehouse.gov/sites/default/files/uploads/NHAS.pdf

Indicators Monitored: National Level

- **Incidence**
- **Prevalence**
  - Includes diagnosed and undiagnosed
- **Persons living with diagnosed infection**
- **Linkage to care**
- **Retention in care**
- **ART**
- **Viral suppression**

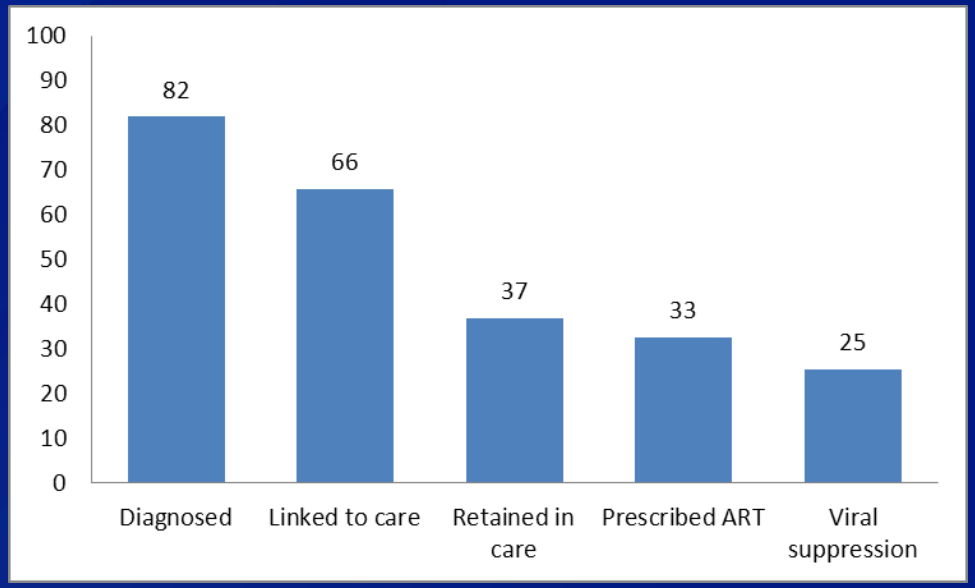
All the above may not be available locally

Data

- **National HIV Surveillance System (NHSS)**
  - All states, District of Columbia, and U.S. dependent areas
  - Mandatory reporting of HIV diagnoses (any stage)
  - Evidence of care: CD4 and VL test results
  - No data on ART use
- **Medical Monitoring Project (MMP)**
  - Cross-sectional survey of patients in care
  - Sample: 17 states and Puerto Rico, outpatient HIV care facilities, HIV-infected adults receiving medical care January-April
  - Medical record abstraction and interview

Hall et.al.
Continuum of HIV Care in the United States

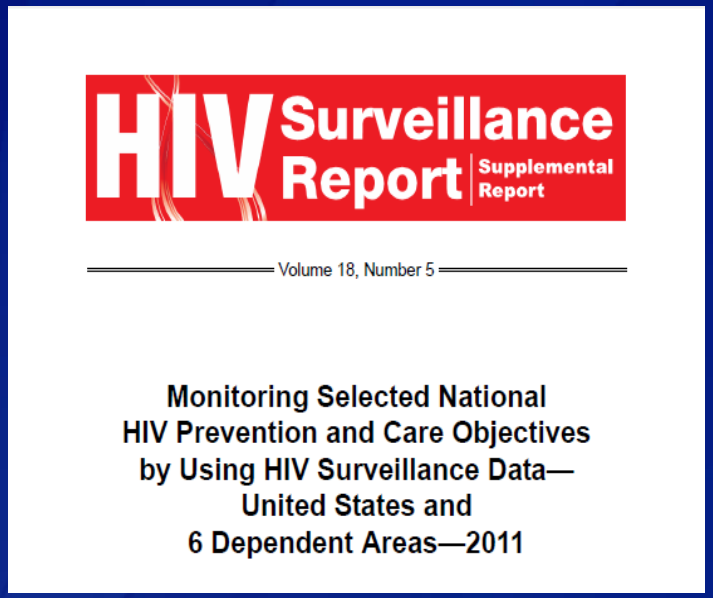
- Based on data from NHSS and MMP
- Diagnosed based on 2009 prevalence estimate
  - 46 states with HIV reporting
  - Includes undiagnosed
- Linkage to care based on data from 14 jurisdictions
- Retention, ART, and viral suppression based on MMP (persons ≥18 years)



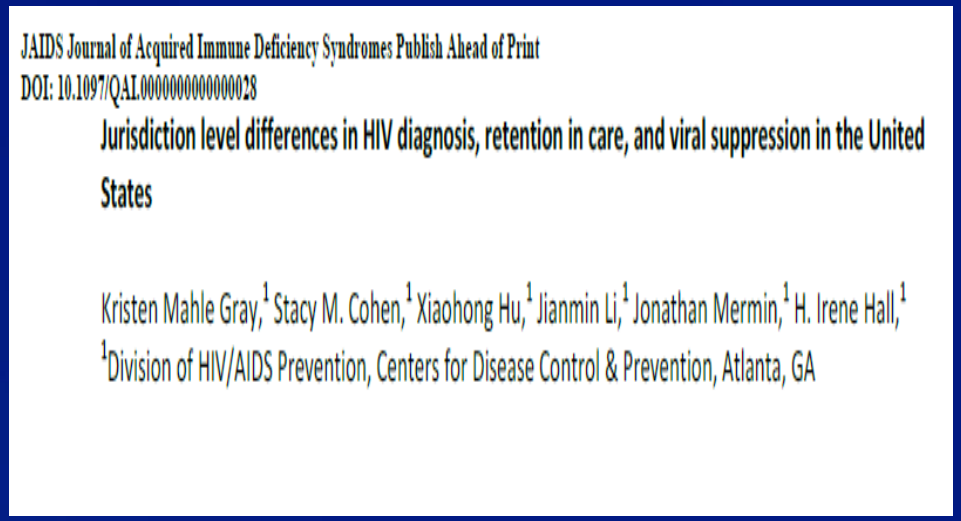
Hall, et al. Continuum of HIV care: Differences in care and treatment by sex and race/ethnicity in the United States. AIDS 2012; Abstract # FRLBX05 Washington, DC

New Reports
Continuum of HIV Care in the United States

- NHSS data
- Diagnosed based on 2010 prevalence estimate
- Linkage, retention, and viral suppression based on data from 19 jurisdictions
  - Denominator - persons diagnosed through 2009, alive through 2010



CDC. HIV Surveillance Supplemental Report 2013;18(No. 5.)



Gray KM, Cohen SM, Hu X, Li J, Mermin J, Hall HI. Juris-diction level differences in HIV diagnosis, retention in care, and viral suppression in the United States [pub-lished online October 10, 2013]. *J Acquir Immune Defic Syndr*.

The Denominator

- **Undiagnosed—among all people living with HIV**
- **Linkage to care—among people newly diagnosed in a particular year**
- **In care—**
  - Among all people living with HIV
  - Among people living with diagnosed HIV
- **On ART—**
  - Among all people living with HIV
  - Among people living with diagnosed HIV
  - Among people in care
- **Viral suppression—**
  - Among all people living with HIV
  - Among people living with diagnosed HIV
  - Among people in care
  - Among people on ART

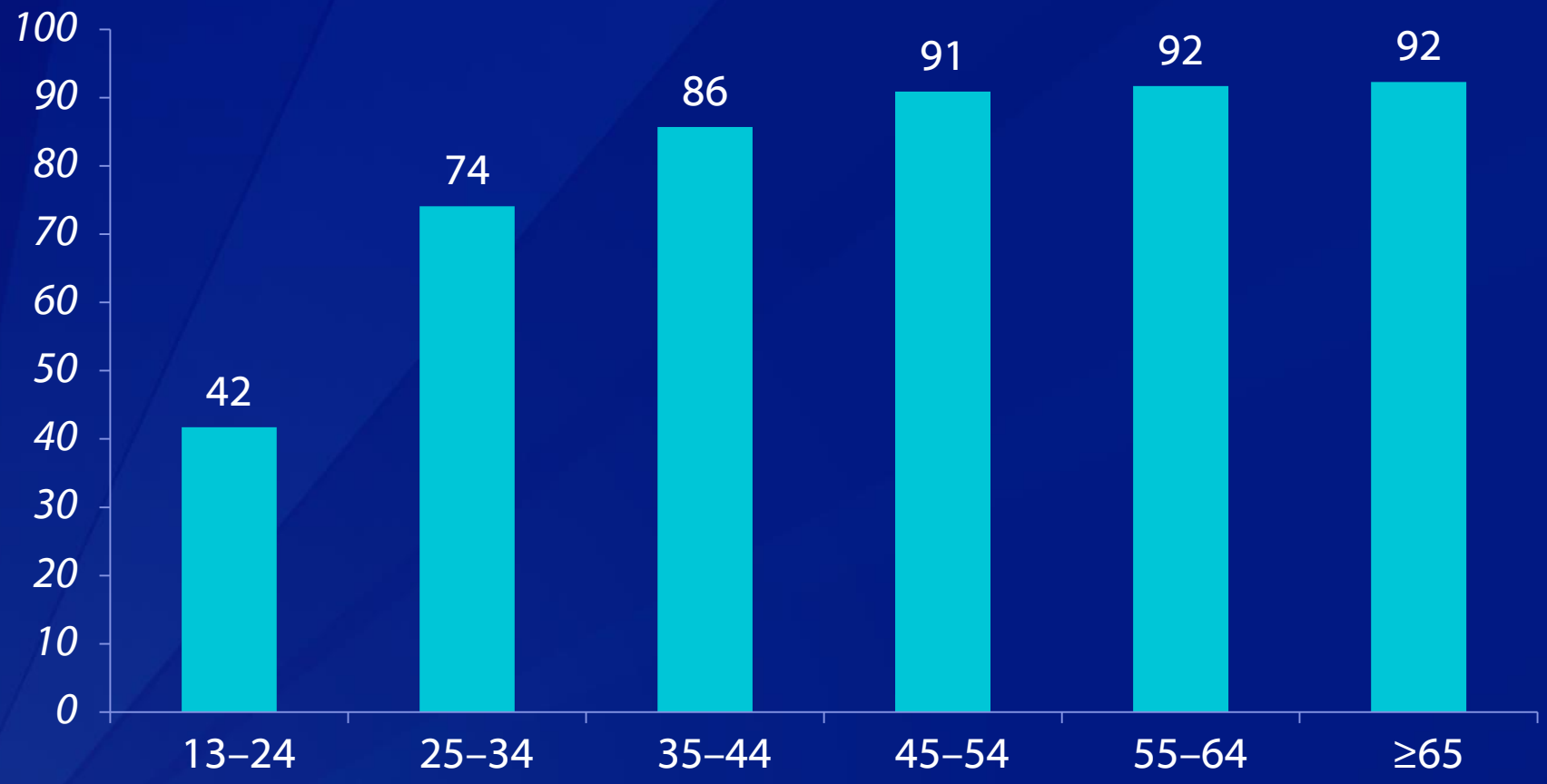
Diagnosed and Undiagnosed HIV

- **Goal:**
  - Increase from 79 percent to 90 percent the percentage of people living with HIV who know their serostatus.

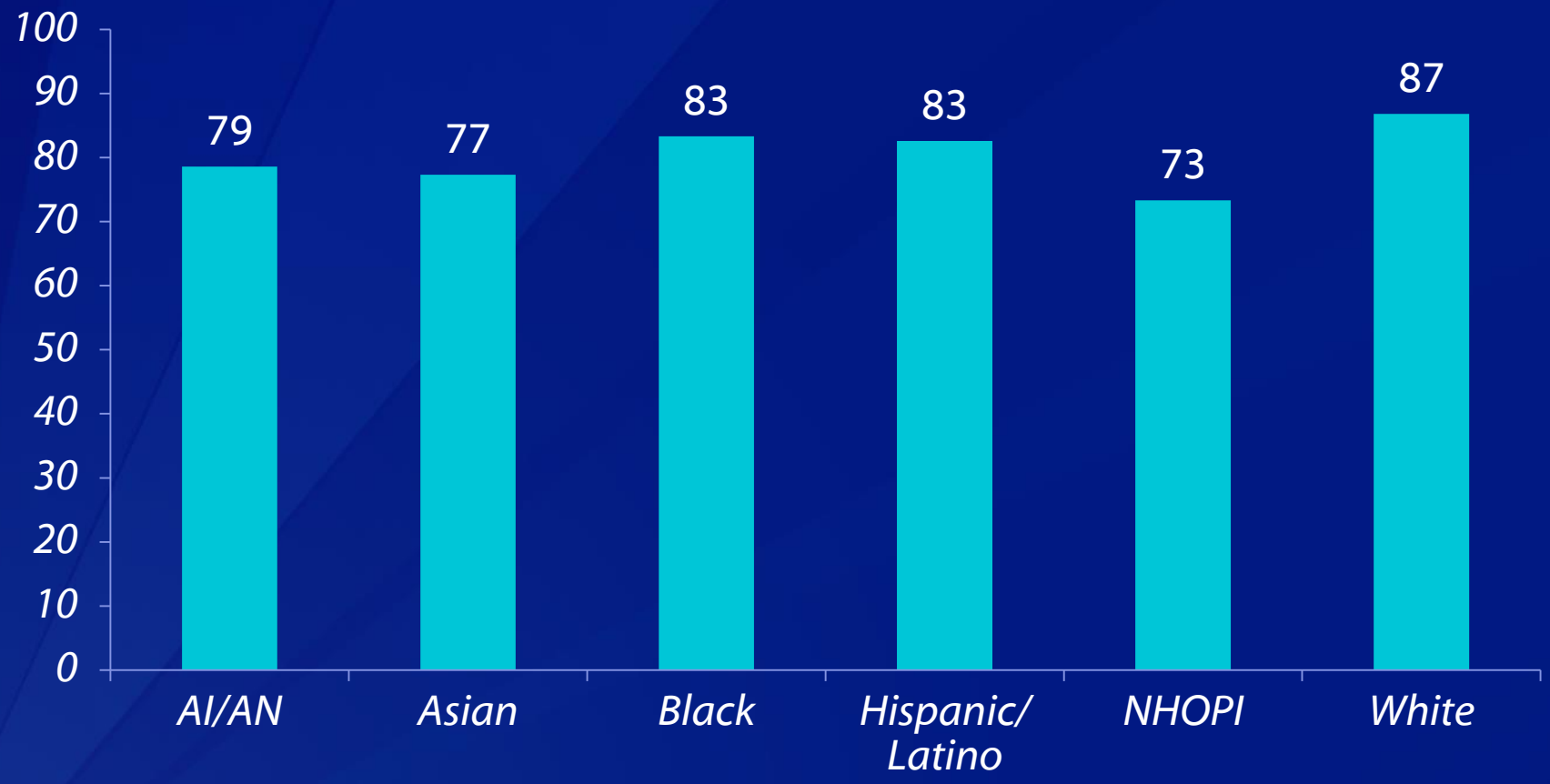
- **2010:**
  - 1,144,500 persons living with HIV infection
  - 180,900 (15.8%) with undiagnosed HIV infection

National HIV/AI AI DS Stratetegy
CDC. HIV Surveillance Supplemental Report 2013;18(No. 5.)

Percentage of People Living with Diagnosed HIV, by Age, 2010

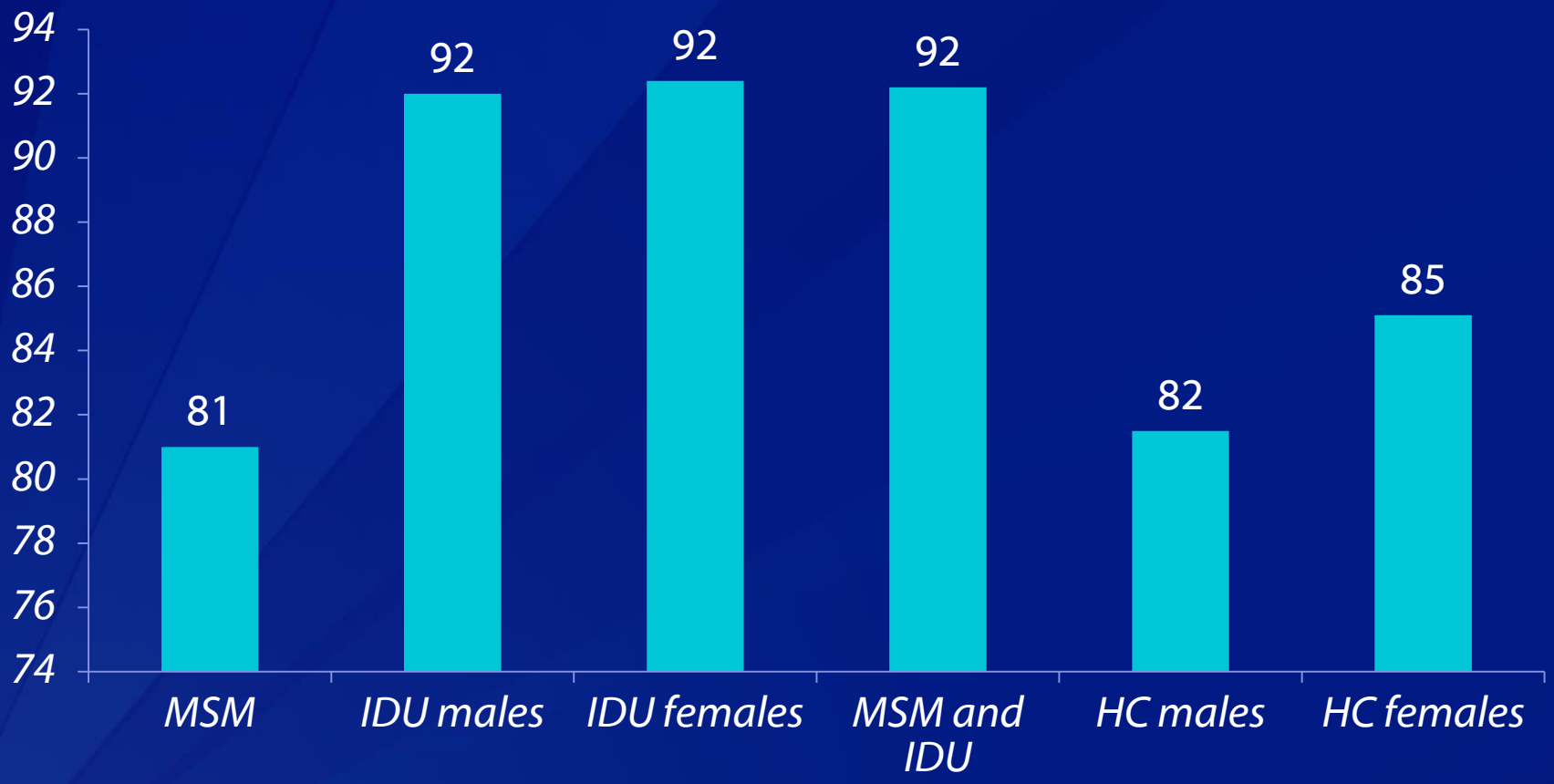


Percentage of People Living with Diagnosed HIV, by Race/ethnicity, 2010



AI/AN, American Indian/Alaska Native
Black or African American
NHOPI, Native Hawaiian/Other Pacific Islander

Percentage of People Living with Diagnosed HIV, by Transmission Category, 2010

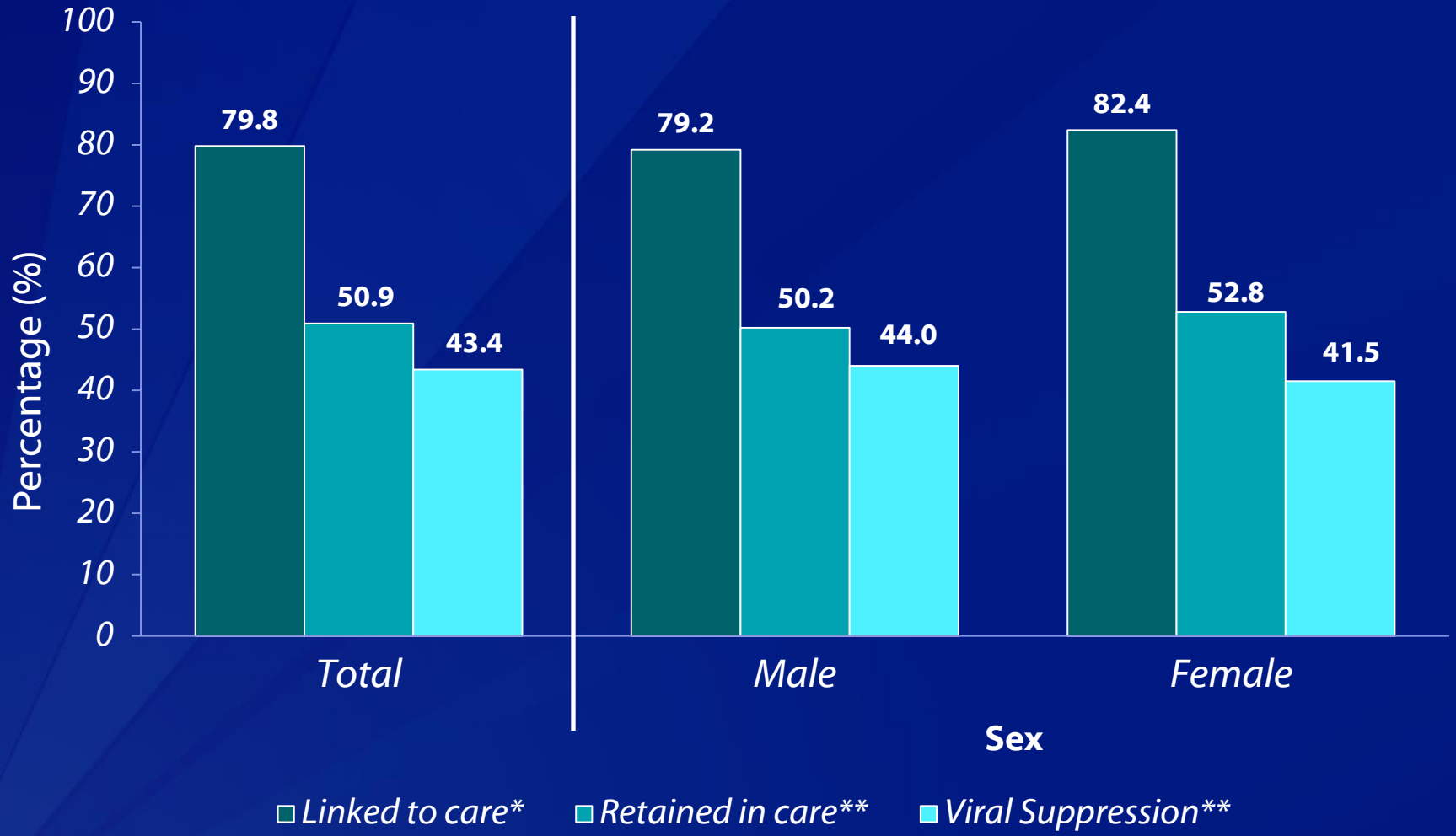


MSM, men who have sex with men
IDU, injection drug use
HC, heterosexual contact

Care and Viral Suppression

- Increase the proportion of newly diagnosed patients linked to clinical care within three months of their HIV diagnosis from 65 percent to 85 percent.
- Increase the proportion of Ryan White HIV/AIDS Program clients who are in continuous care (at least 2 visits for routine HIV medical care in 12 months at least 3 months apart) from 73 percent to 80 percent.
- Increase the proportion of HIV diagnosed gay and bisexual men, blacks, and Latinos with undetectable viral load by 20 percent.

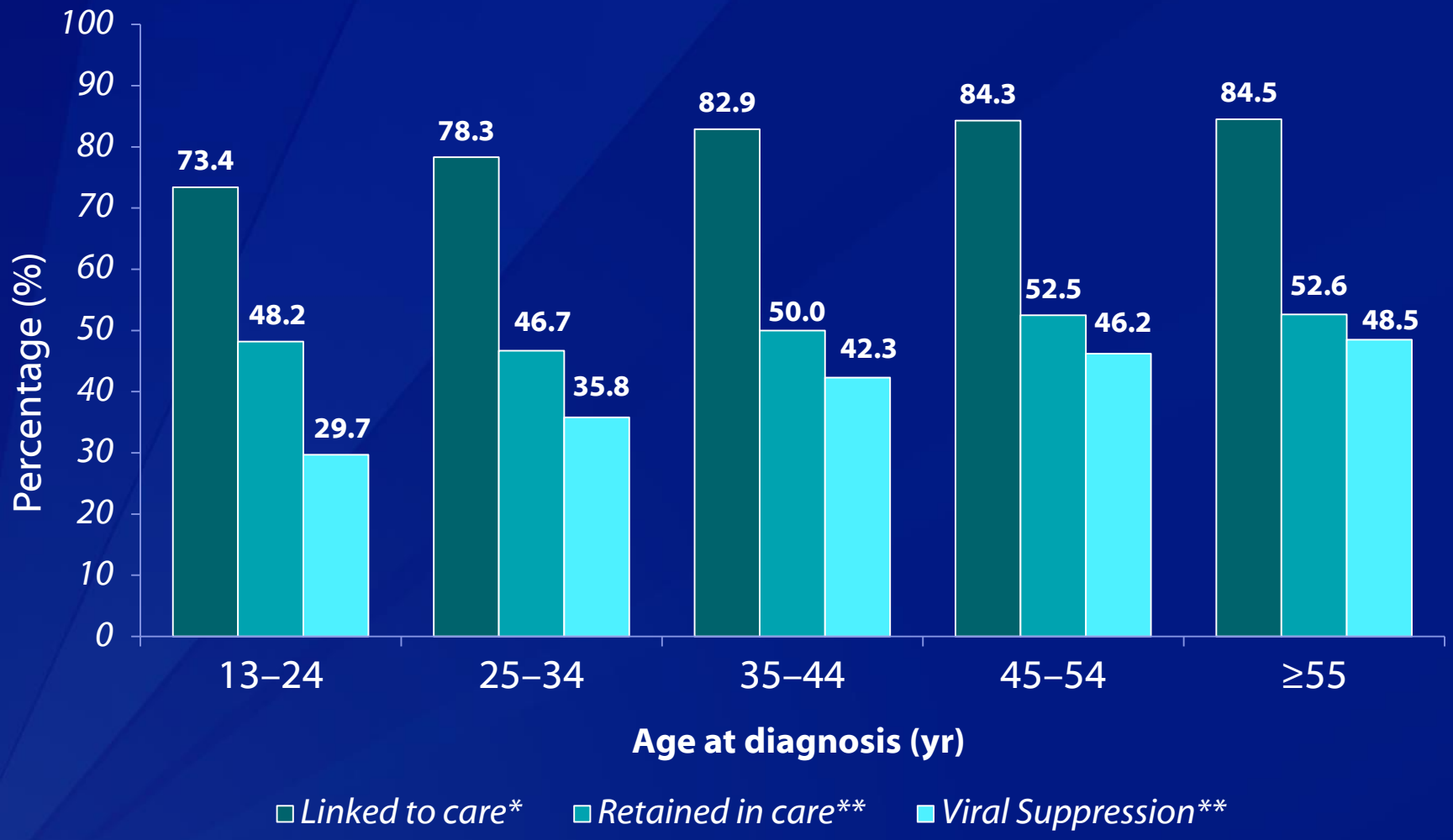
Linkage to Care, Retention in Care, and Viral Suppression Total and by Sex



* Among persons aged ≥13 years who were diagnosed with HIV infection during 2011, 19 areas

** Among persons aged ≥13 years who were diagnosed with HIV infection by year-end 2009 and were alive at year-end 2010, 19 areas

Linkage to Care, Retention in Care, and Viral Suppression by Age Group



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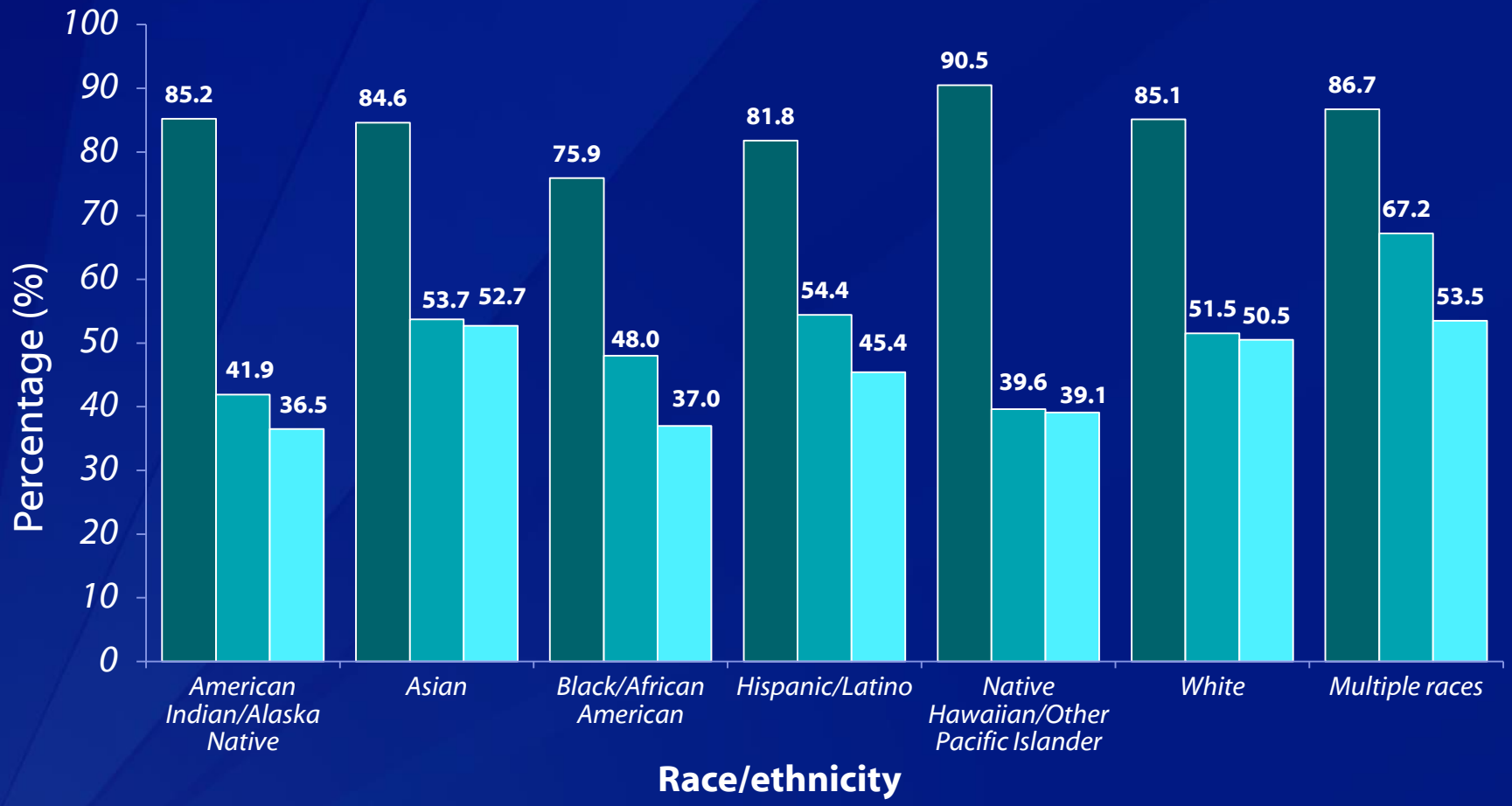
Linkage to Care, Retention in Care, and Viral Suppression by Race/Ethnicity



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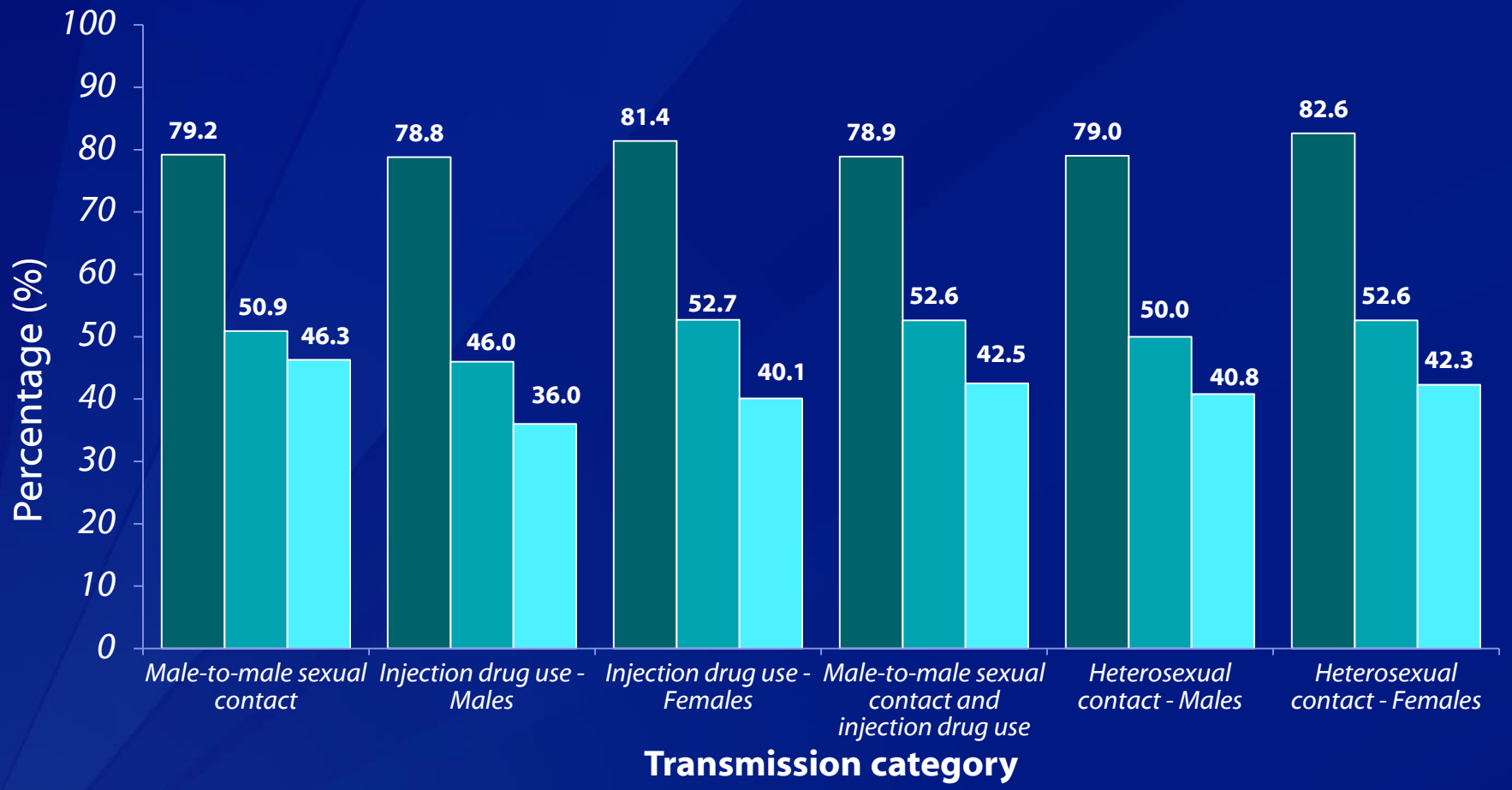
Linkage to Care, Retention in Care, and Viral Suppression by Transmission Category



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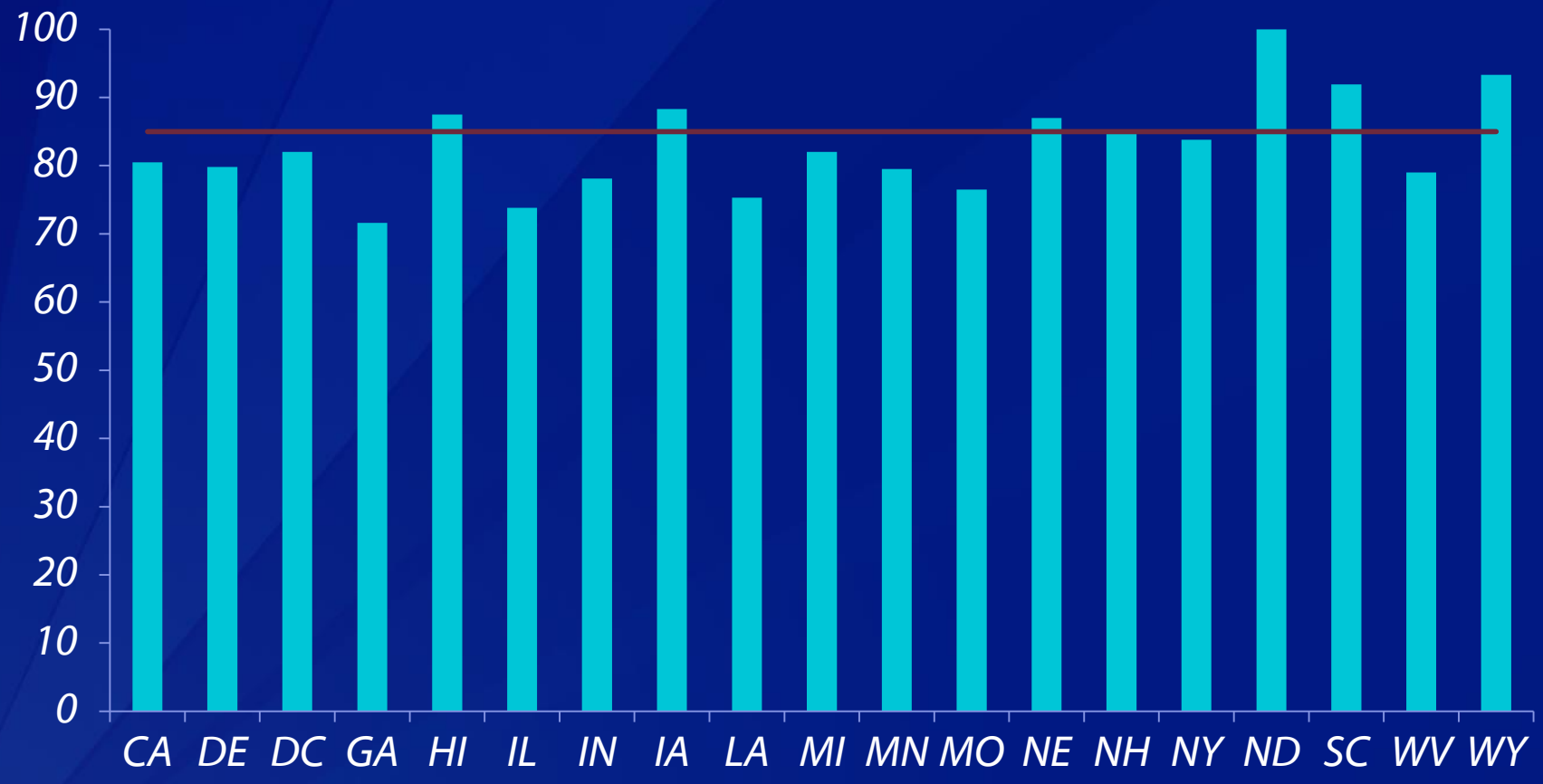
Linkage to Care, by Area of Residence, 19 U.S. Jurisdictions



Persons with a CD4 or VL test within 3 months after diagnosis among persons aged ≥13 years who were diagnosed with HIV infection during 2009, and alive at the end of 2010, 19 areas

-- National HIV/AIDS Strategy: increase the percentage of patients linked to care within three months of diagnosis to 85%

Retention in Continuous HIV Care, by Area of Residence, 19 U.S. Jurisdictions

Persons with 2 or more CD4 or VL tests performed at least 3 months apart during 2010 among persons aged ≥13 years who were diagnosed with HIV infection year-end 2009 and alive year-end 2010 ,19 areas.

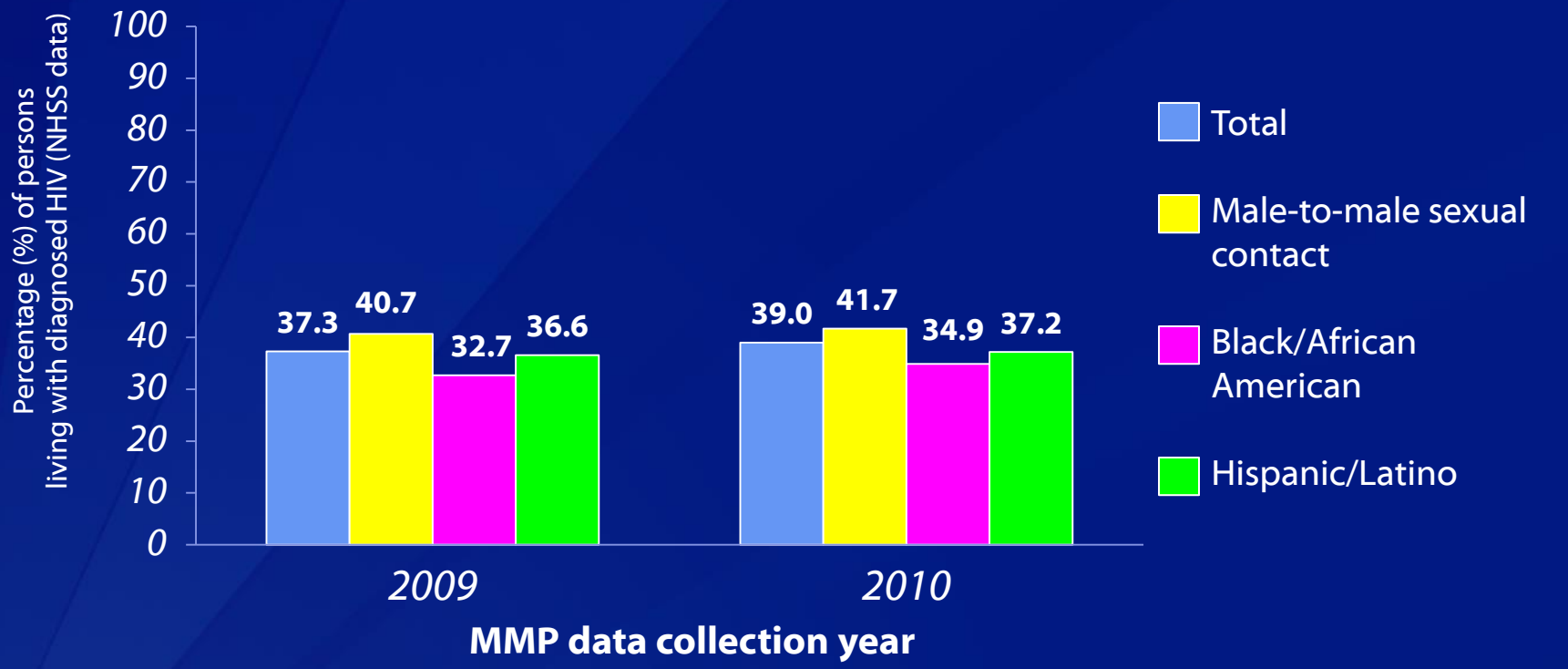
--- National HIV/AIDS Strategy: increase the percentage of Ryan White HIV/AIDS program clients in continuous HIV care to 80%

Viral Suppression, by Area of Residence, 19 U.S. Jurisdictions

Persons with VL ≤200 among persons aged ≥13 years who were diagnosed with HIV infection year-end 2009 and alive year-end 2010,19 areas.

-- National HIV/AIDS Strategy: increase the proportion of HIV diagnosed gay and bisexual men, blacks, and Latinos with undetectable viral load by 20 percent.

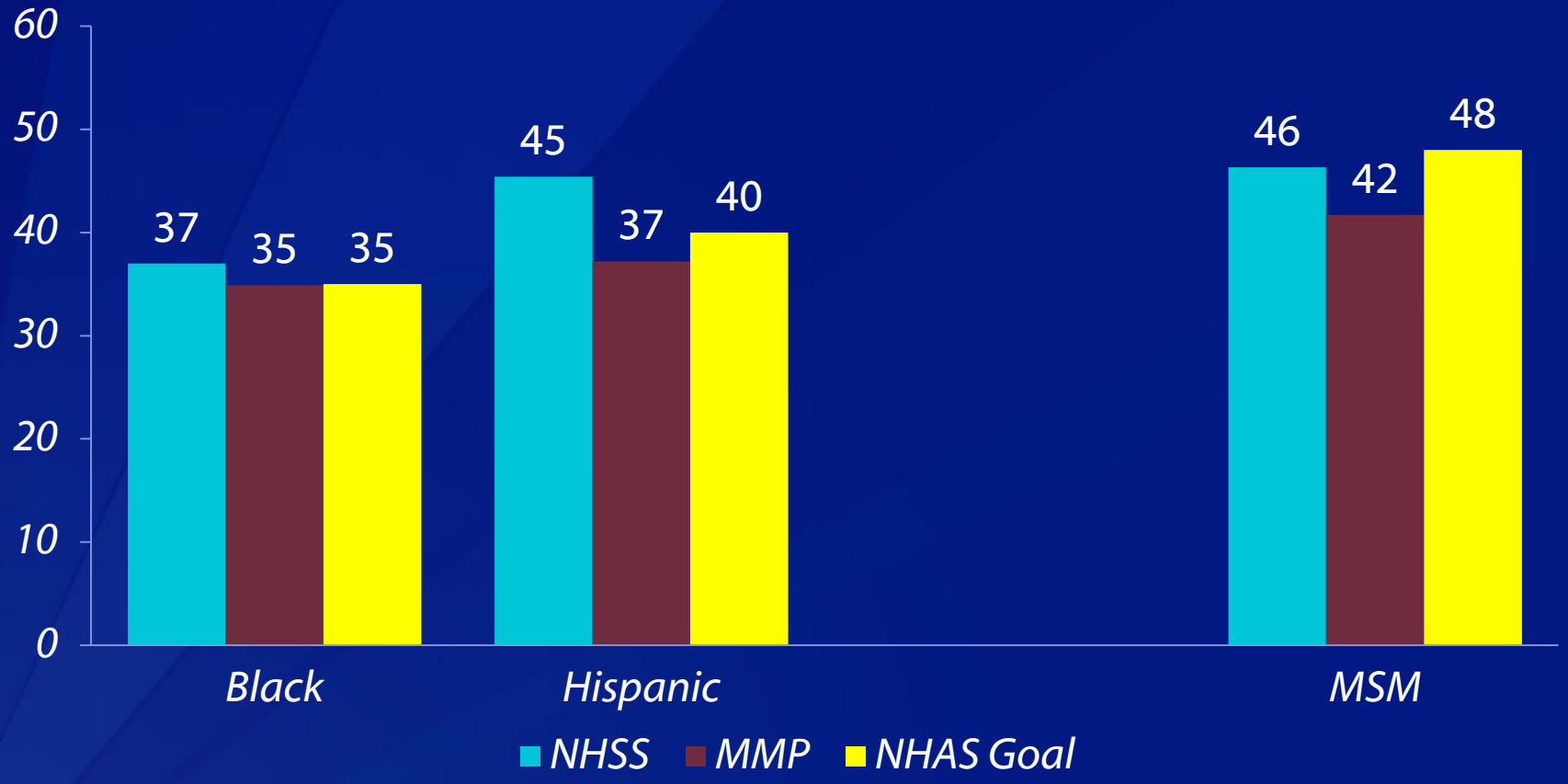
Persons Aged ≥18 years with Viral Suppression (MMP) among Persons Living with Diagnosed HIV Infection (NHSS) 2009 and 2010—United States and Puerto Rico



Numerator: Data source = MMP
Estimated number of persons aged 18 years or older who received medical care in January to April 2009 (or 2010) whose most recent VL was undetectable or ≤200 copies/mL—United States and Puerto Rico.

Denominator: Data source = NHSS
Estimated number of persons aged ≥18 years diagnosed with HIV infection by year-end 2008 (or 2009) and alive at year-end 2009 (or 2010)—United States and Puerto Rico.

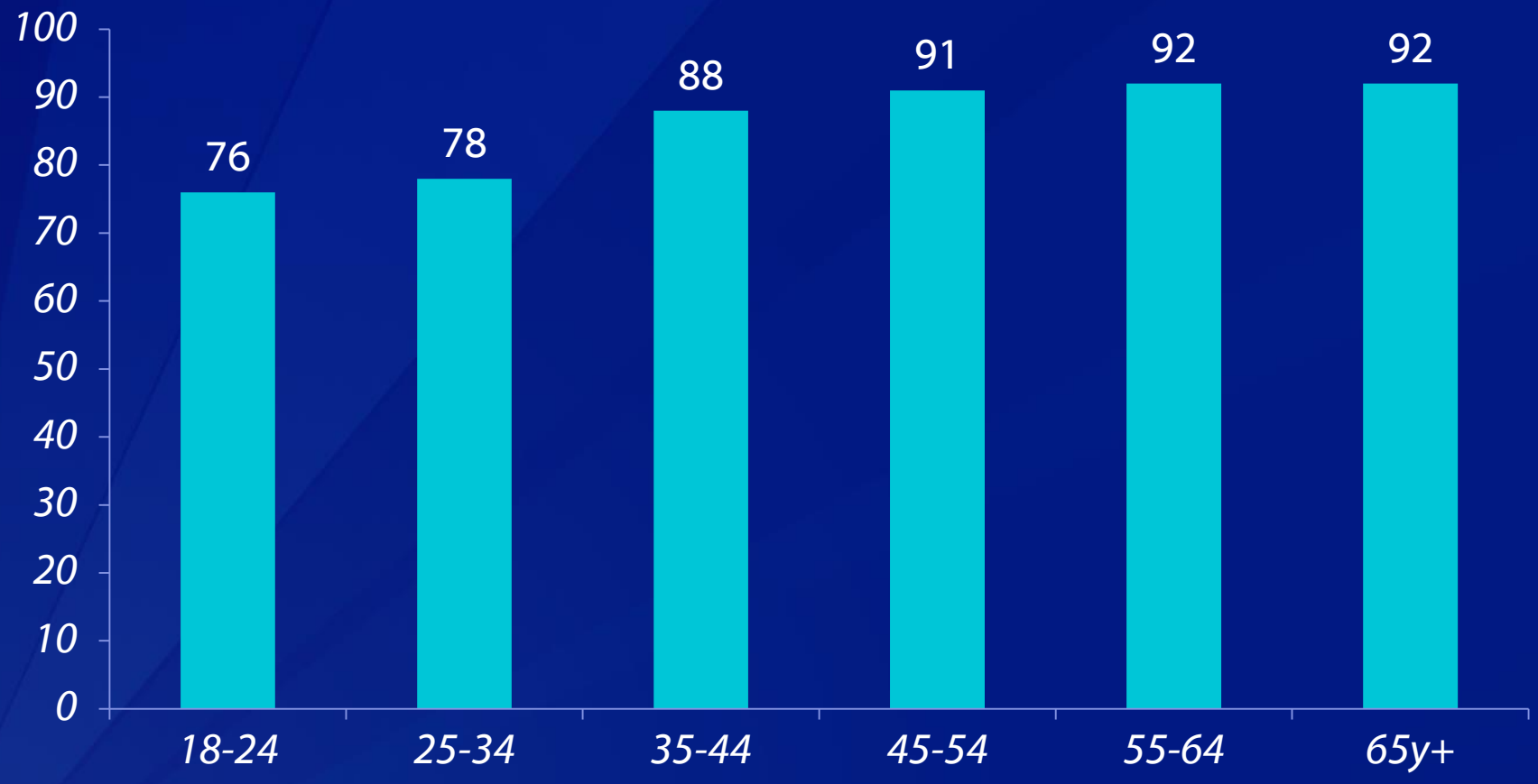
Viral Suppression, 19 U.S. Jurisdictions, 2010, and Goals of the National HIV/AIDS Strategy



CDC. HIV Surveillance Supplemental Report 2013;18(No. 5,.

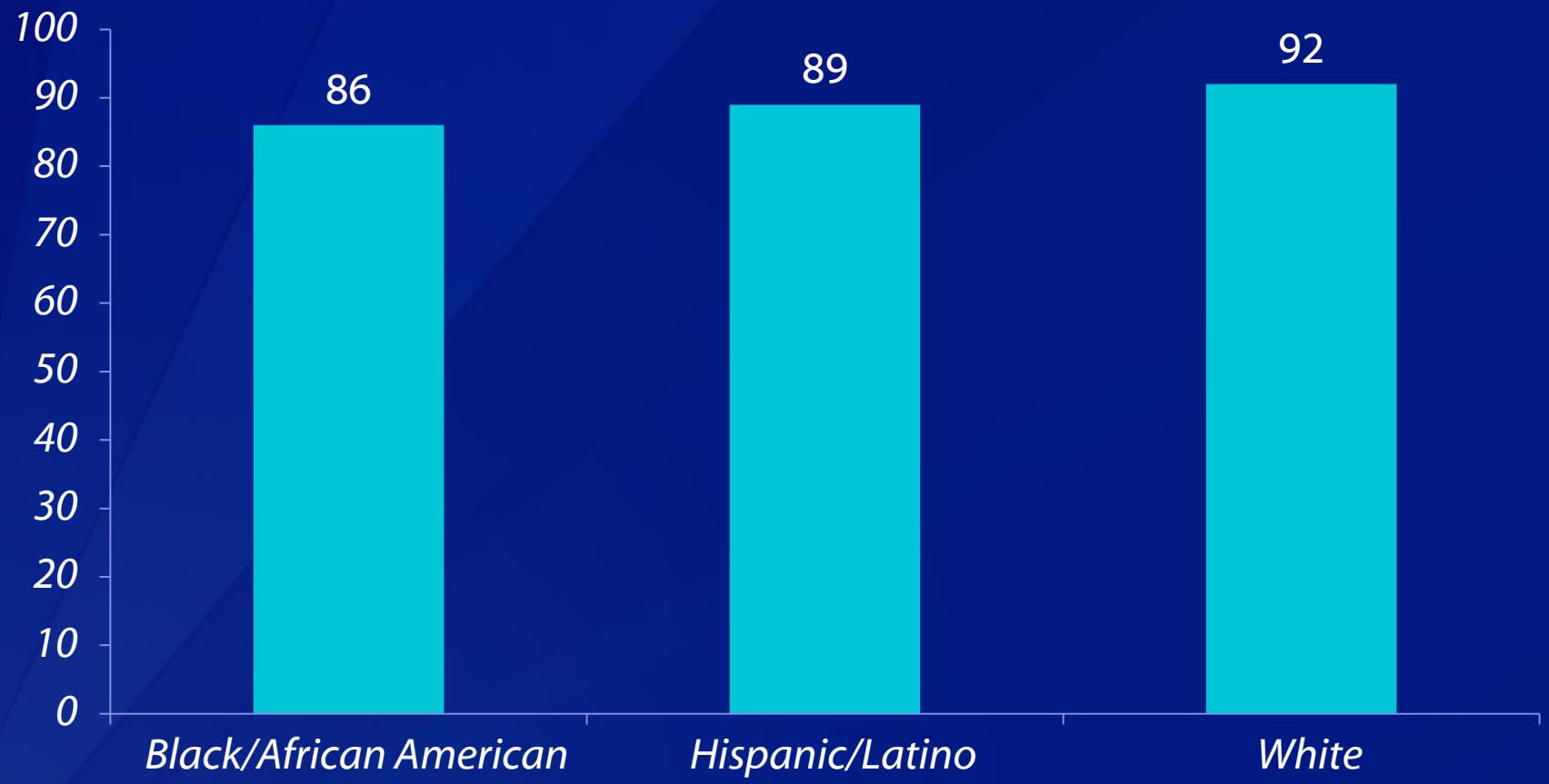
ANTIRETROVIRAL THERAPY

Percentage of People in HIV Care who are Prescribed ART, by Age – United States



Hall et al. JAMA Intern Med. Doi:10.1001/jamainternmed.2013.6841.

Percentage of People in HIV Care who are Prescribed ART, by Race/ethnicity – United States



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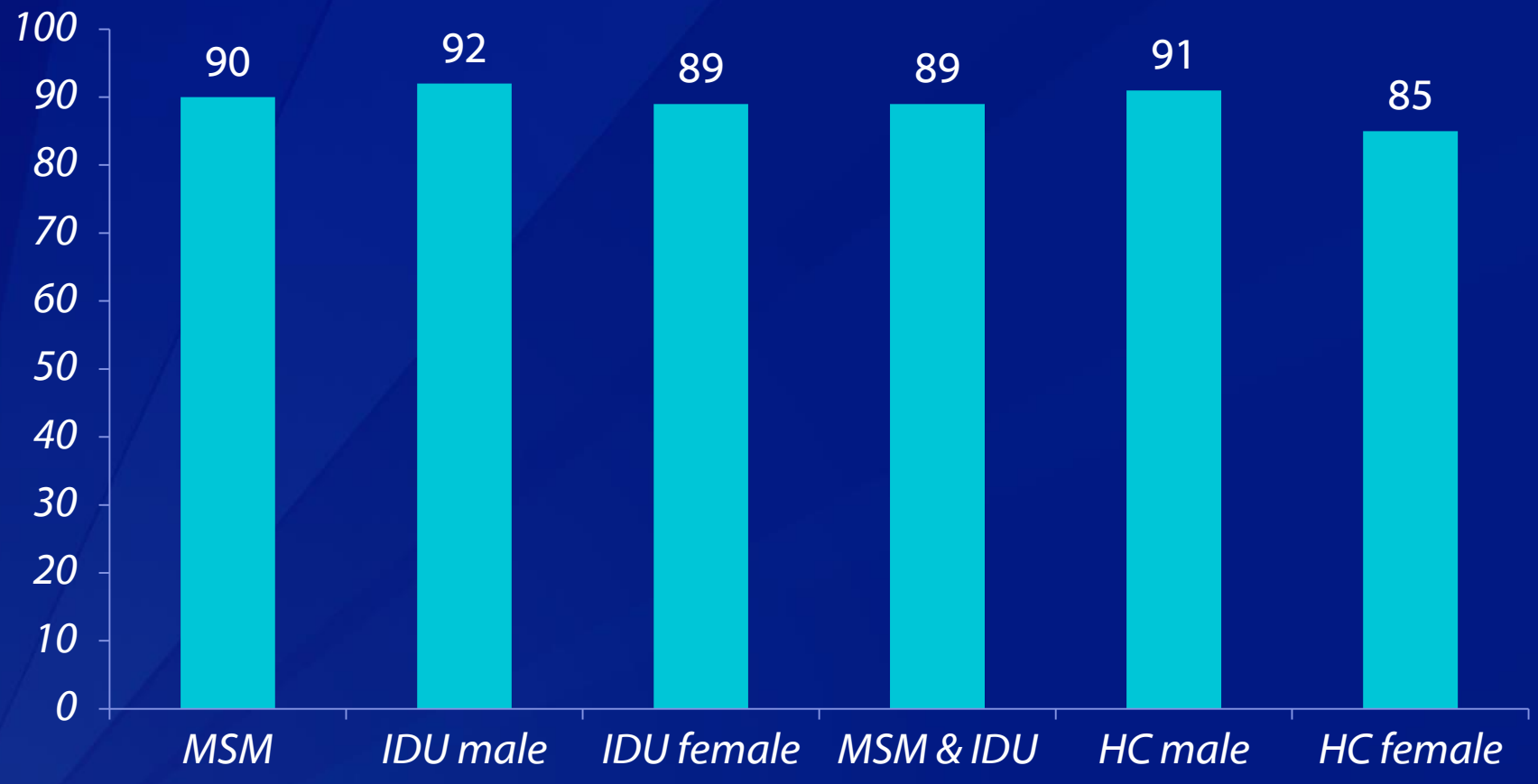
Percentage of People in HIV Care who are Prescribed ART, by Transmission Category United States



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Continuum of HIV Care: Challenges for National Analyses (1)

- **Data from limited number of areas**
  - Unable to obtain nationally representative estimates
  - Unable to examine trends
- **Incomplete data**
  - Additional data available to local surveillance programs may not be entered into eHARS and submitted for national analysis (ex: ADAP, Ryan White data)
- **Time must be allowed for delays in reporting**
  - 18 months for prevalence denominator
  - Limits number of areas that can be included in national analyses

Continuum of HIV Care: Challenges for National Analyses (2)

- **Estimates based on residence at diagnosis**
- **Changes to indicator definitions**
- **Changes in treatment guidelines**
- **MMP data**
  - Retention in care may be underestimated (visit in January-April)
  - Youth
    - Care may differ for persons younger than 18 years
  - Numbers are too small to present for other races

Continuum of HIV Care: Indicators Monitored Locally

- **Persons living with diagnosed infection (all stages)**
- **Potential to monitor**
  - Linkage to care
  - Retention in care
  - Re-engagement in care
  - ART use (MMP-funded sites only)
  - Viral suppression
  - HIV incidence (Incidence-funded sites only)

Continuum of HIV Care: Challenges for Local Analyses (1)

- **The ability to create the continuum of care at the state/local level depends on data quality and availability**
- **Complete reporting of all CD4 and viral load test results is necessary to monitor key indicators of NHAS**
  - State laws must require the reporting of all values of CD4 and viral load test results
    - Nucleotide sequences also indicator of care
  - Health Department must receive data from all laboratories that conduct HIV testing
  - Laboratory data received must be complete and of high quality
    - Must have all CD4 and VL values for the analysis years

Continuum of HIV Care: Challenges for Local Analyses (2)

- **Evaluation periods for analyses cannot be the immediate-past**
  - Time must be allowed for delays in reporting (recommend 12 months)
    - Provider reporting
    - Death reporting
    - Chart reviews for cases reported by lab only
  - Routine Interstate de-duplication
  - Time must be allowed for assessing completeness of lab reporting
    - Identify and correct issues

Continuum of HIV Care: Challenges for Local Analyses (3)

- Need for standard definitions
- Lack of incidence data (only available from areas funded for incidence)
- Lack of treatment data (only available from areas with MMP)
- Migration (in and out)

Summary

- Many people with HIV are not in regular care or have a suppressed viral load
- Disparities exist in diagnosis, care, treatment, and viral suppression by age and race/ethnicity
- Challenges exists on the national and state level for accurately calculating measures of the continuum of care
- Progress is needed in establishing complete lab reporting at the state/local level in order to improve representativeness of national continuum estimates
- Assessment of migration should be prioritized to improve the accuracy of local continuum estimates

Thank you

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National Center for HIV/AIDS, Viral Hepatitis, STD & TB Prevention
Division of HIV/AIDS Prevention