Viral Suppression among HIV-Positive Individuals sampled through Case-Surveillance-Based-Sampling, New York City, 2012-2014

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BACKGROUND

VIRAL SUPPRESSION AMONG PERSONS LIVING WITH HIV

- HIV-diagnosed persons on antiretroviral therapy (ART) can achieve viral suppression (VS), improving life expectancy and lowering HIV transmission risk
- In 2014, 81% of PLWH in care in New York City achieved VS, going up from 76% in 2012 and 78% in 2013
- Factors affecting VS need continual assessment to tailor interventions to increase linkage to and retention in care, ART initiation and adherence

SURVEILLANCE DATA ON VIRAL SUPPRESSION AND FACTORS

- Data on VS is collected and reported through routine surveillance (the NYC surveillance registry – eHARS)
- VS data also come from the Medical Monitoring Project (MMP)
- MMP is the only nationally representative supplemental surveillance system for HIV-diagnosed persons in the US
- MMP sampling methods excluded HIV-diagnosed persons not receiving HIV care
- Excluded population identified as a group of high public health importance in the National HIV/AIDS Strategy

CASE-SURVEILLANCE-BASED-SAMPLING PROJECT (CSBS)

- CSBS demonstration project designed to address the gap in MMP sampling strategy
- Evaluates a method of sampling participants for MMP from HIV case surveillance that includes both the population receiving and not receiving HIV care
- Designed to select a representative sample of HIV-diagnosed adults, including those not receiving HIV care, from HIV surveillance registries in five state/metropolitan areas, including NYC
- Fills knowledge gaps on the out of care population

SAMPLING DESIGN: MMP VS CSBS

MMP: Three Stage

1st Stage Local Areas

- 23 Areas Selected (PPS: # of reported AIDS cases living in area as of 2002
- Includes >80% of US AIDS cases in 2002

2nd Stage HIV Care Providers

- PPS (facilities with higher patient loads more likely to be selected)

3rd Stage HIV+ Patients

- Random selection
- ≥18 years
- Had HIV care at facility, Jan 1-Apr 30 of cycle year

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CSBS: Stratified Random

Five demonstration areas selected from MMP project areas

Eligibility for inclusion

1. In HIV surveillance datasets
2. Alive and residing/most recent address in project area as of sampling date
3. Age ≥18 years as of sampling date

STRATIFIED BY:

YEARS SINCE DIAGNOSIS

OBJECTIVES

- To ascertain correlates of viral suppression among PLWH in NYC during 2012-2014, using data from Case-Surveillance-Based Sampling
- To describe PLWH in the sample who did not achieve viral suppression at any time in the past year

METHODS

DATA SOURCE

- Case-Surveillance-Based Sampling (CSBS) demonstration project: three cycles of data collection, 2012-2014
- Personal interviews (face-to-face or telephone)
- Medical record abstractions (MRAs) for the 12 months preceding the interview from participant's self-identified most recent place of HIV care in the past year

STATISTICAL ANALYSIS

- Outcome: Viral suppression defined as an HIV viral load of ≤200 copies/mL or documented undetectable VL at any time during the MRA year
- VL data obtained through MRA
- Bivariate analysis of differences in VS by:
  - Sociodemographic characteristics
  - Sexual orientation
  - Housing status
  - History of incarceration
  - Health insurance status
  - Self-reported ART status

STATISTICAL ANALYSIS

- Multivariate logistic regression of VS with theorized predictors to generate adjusted odds ratios (aOR) and 95% confidence intervals

- Descriptive statistics of participants not virally suppressed at any time in the surveillance period

RESULTS

DESCRIPTION OF THE POPULATION, NYC CSBS 2012-2014

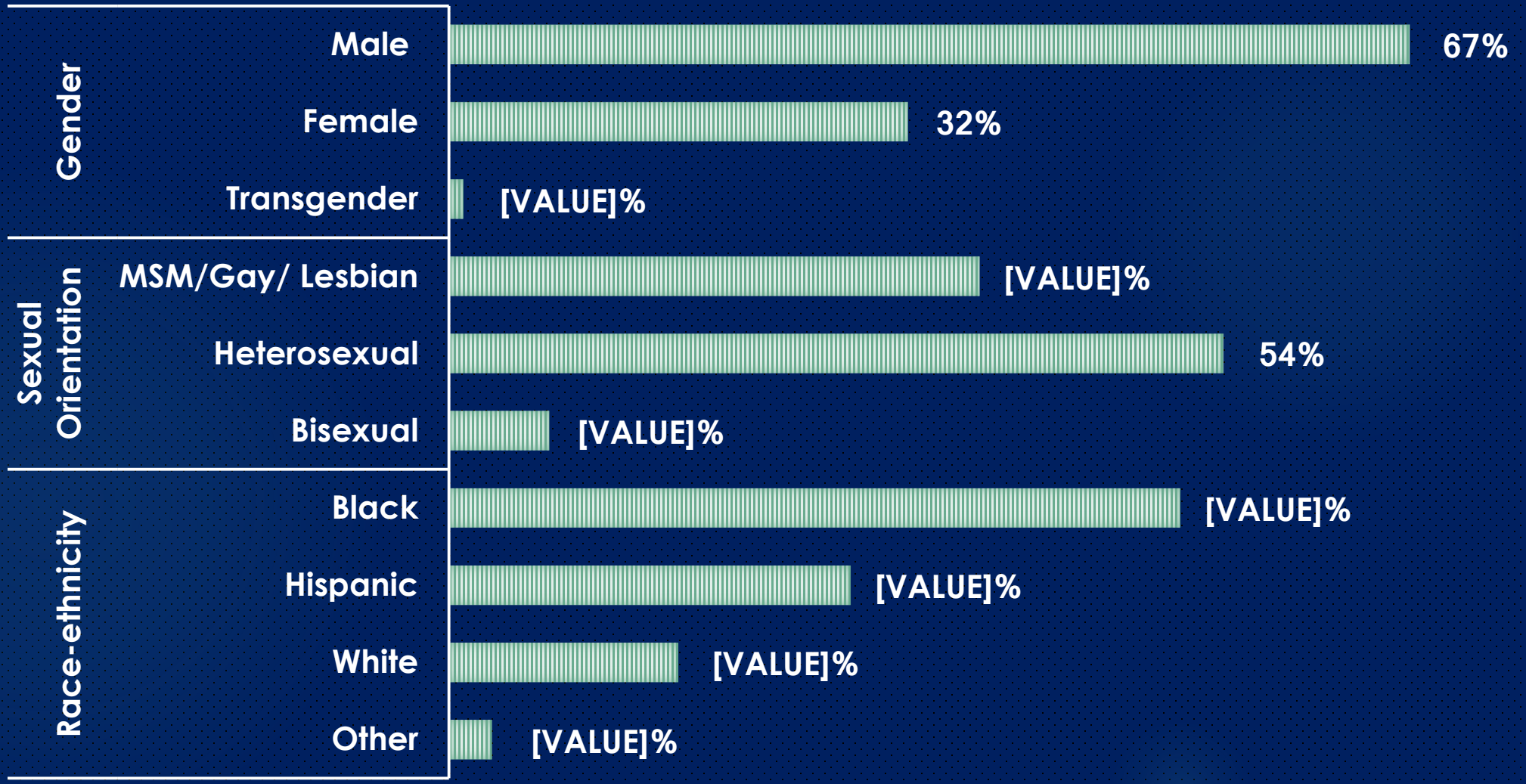
- Total of 317 PLWH interviewed
- Medical record abstractions (MRA) for 297 participants (those who had been in HIV care in NYC in the 12 months prior to interview)
- Median age: 46 years (IQR:19)
- Over two-thirds of participants were male
- Nearly 80% were non-white
- Roughly 6% of the sample (n=20) were either out of care in NYC or for whom an MRA could not be conducted

CURRENT ART USE AND VIRAL SUPPRESSION AMONG PLWH IN NYC, CSBS 2012-2014

- Current ART use was reported by 288 PWLH
  - 91% of total sample (288/317)
  - 97% of those with MRA (288/297)
- Viral suppression was achieved by 252 participants
  - 85% of those with MRA (252/297)
- VS by year:

2012	83%
2013	83%
2014	89%

DEMOGRAPHIC AND SEXUAL CHARACTERISTICS OF PERSONS LIVING WITH HIV IN NEW YORK CITY, CSBS 2012-2014 (N=317)



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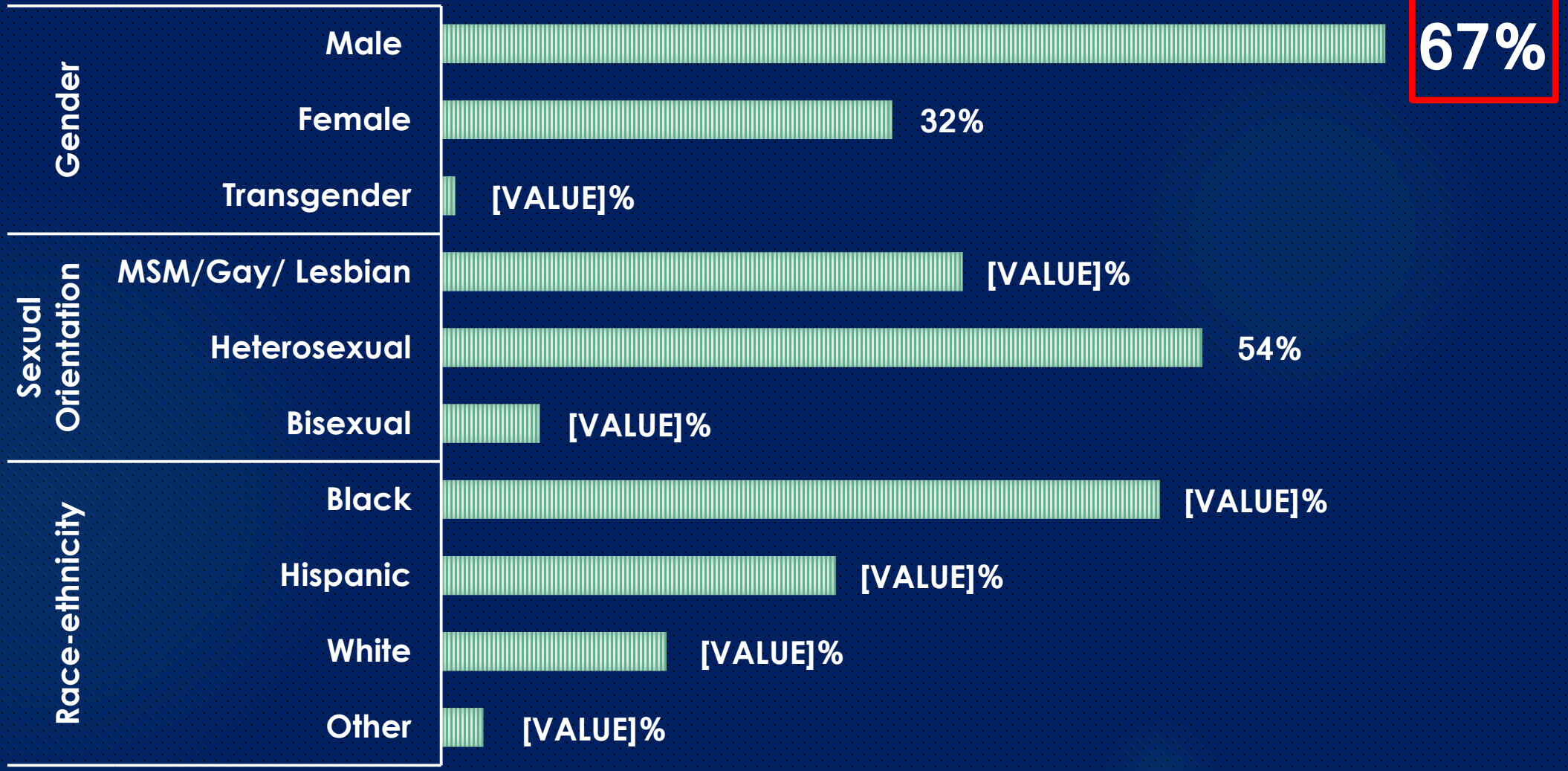

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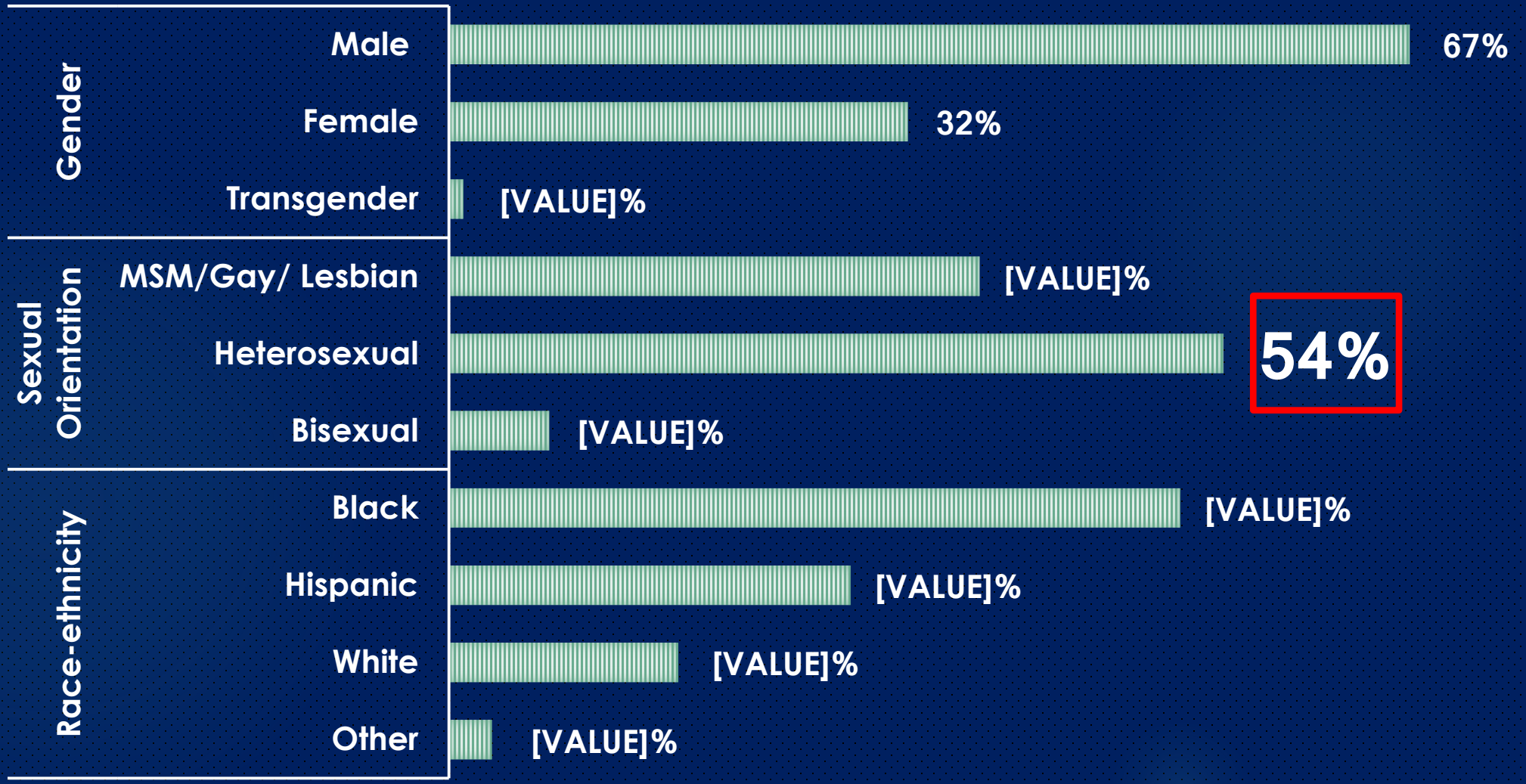

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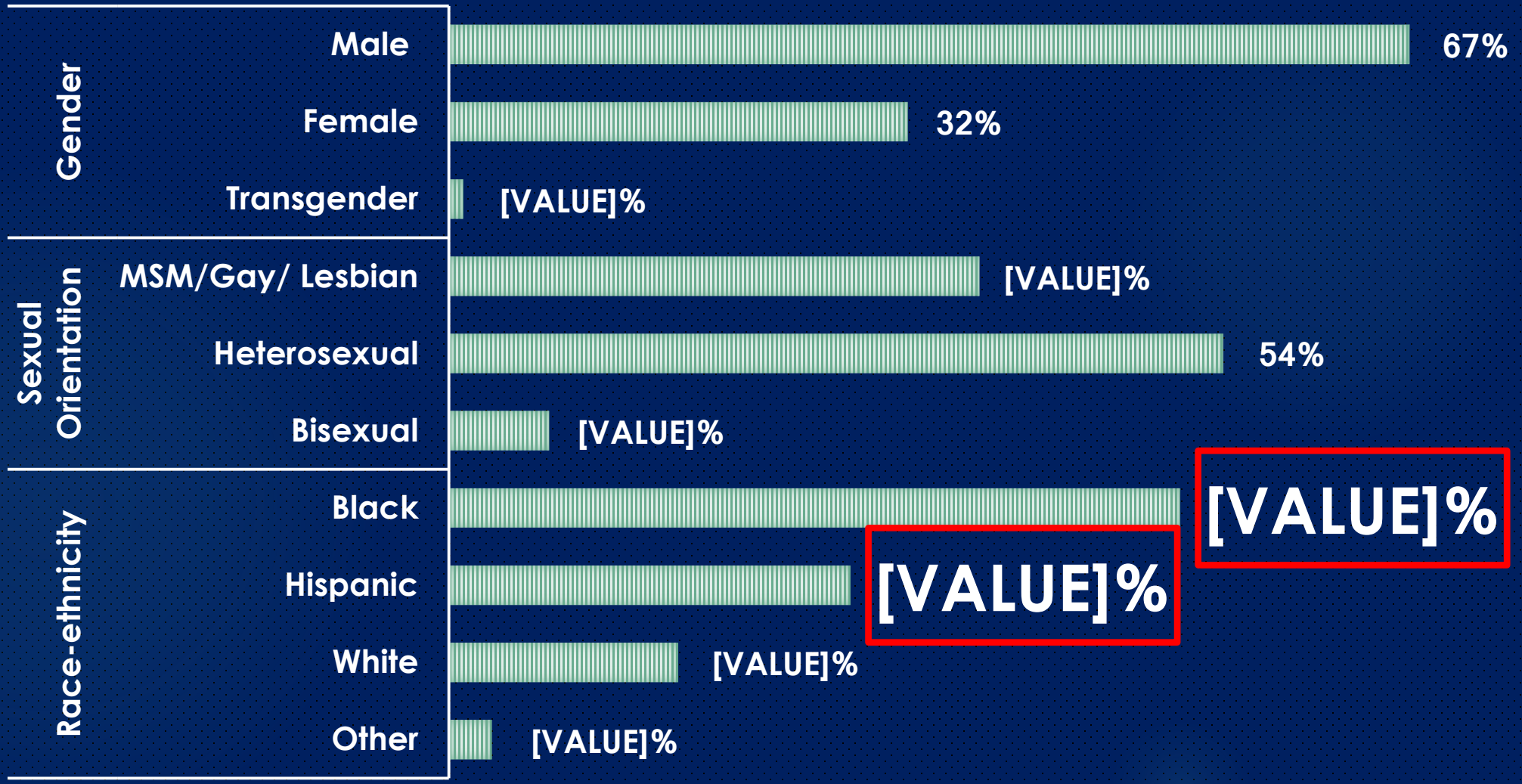

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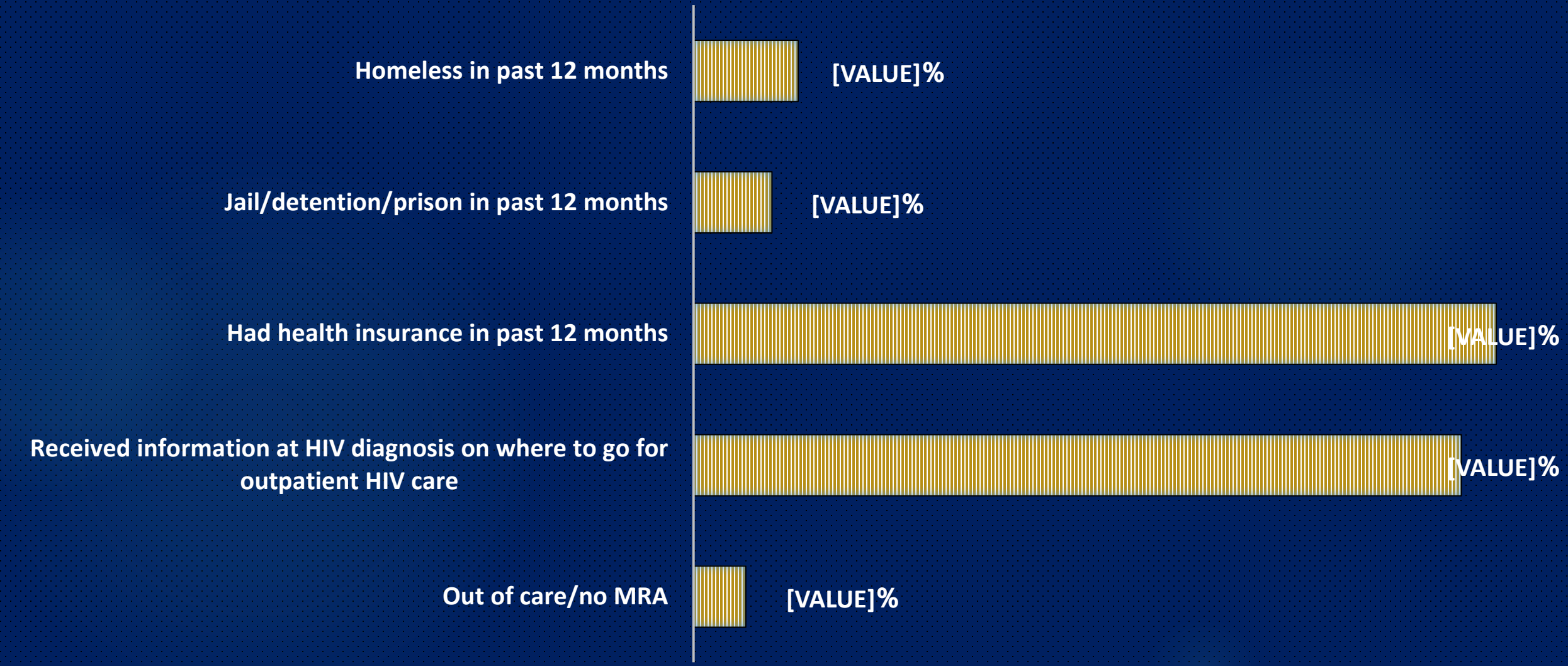

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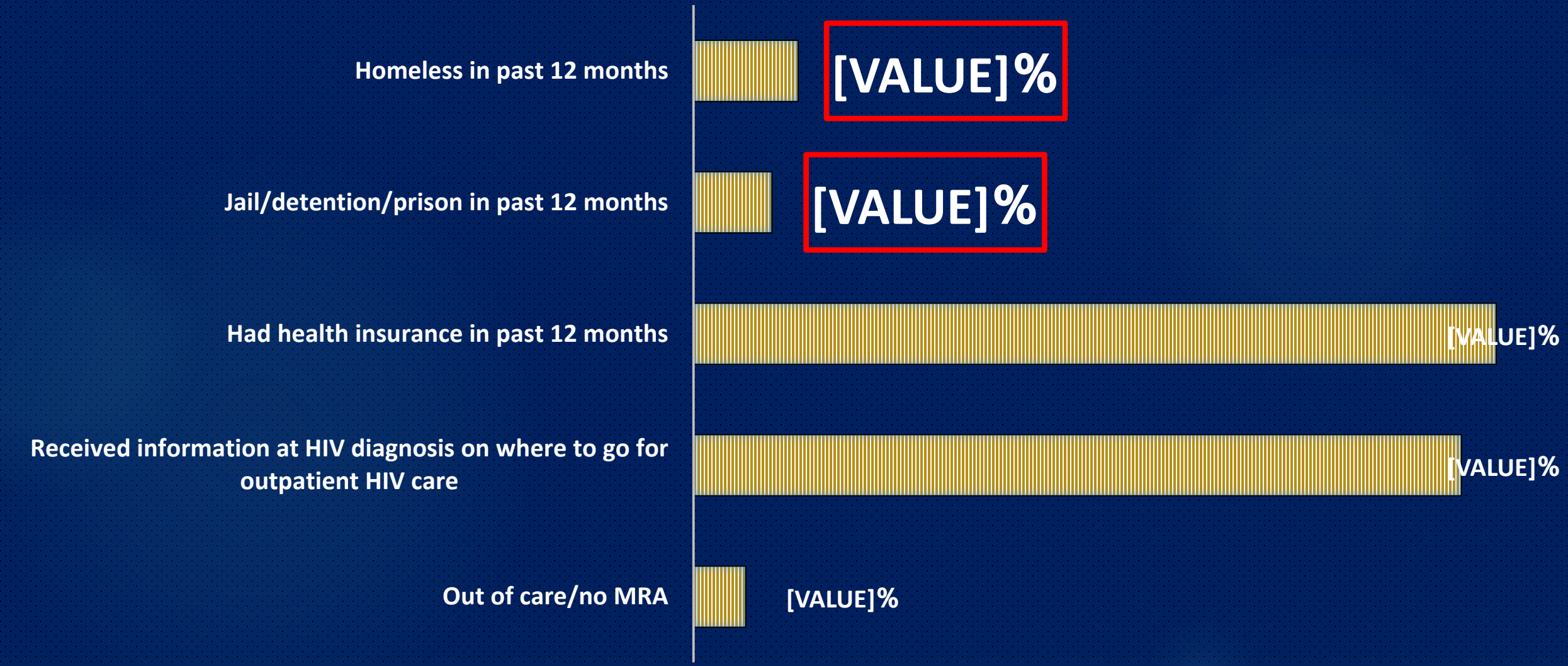

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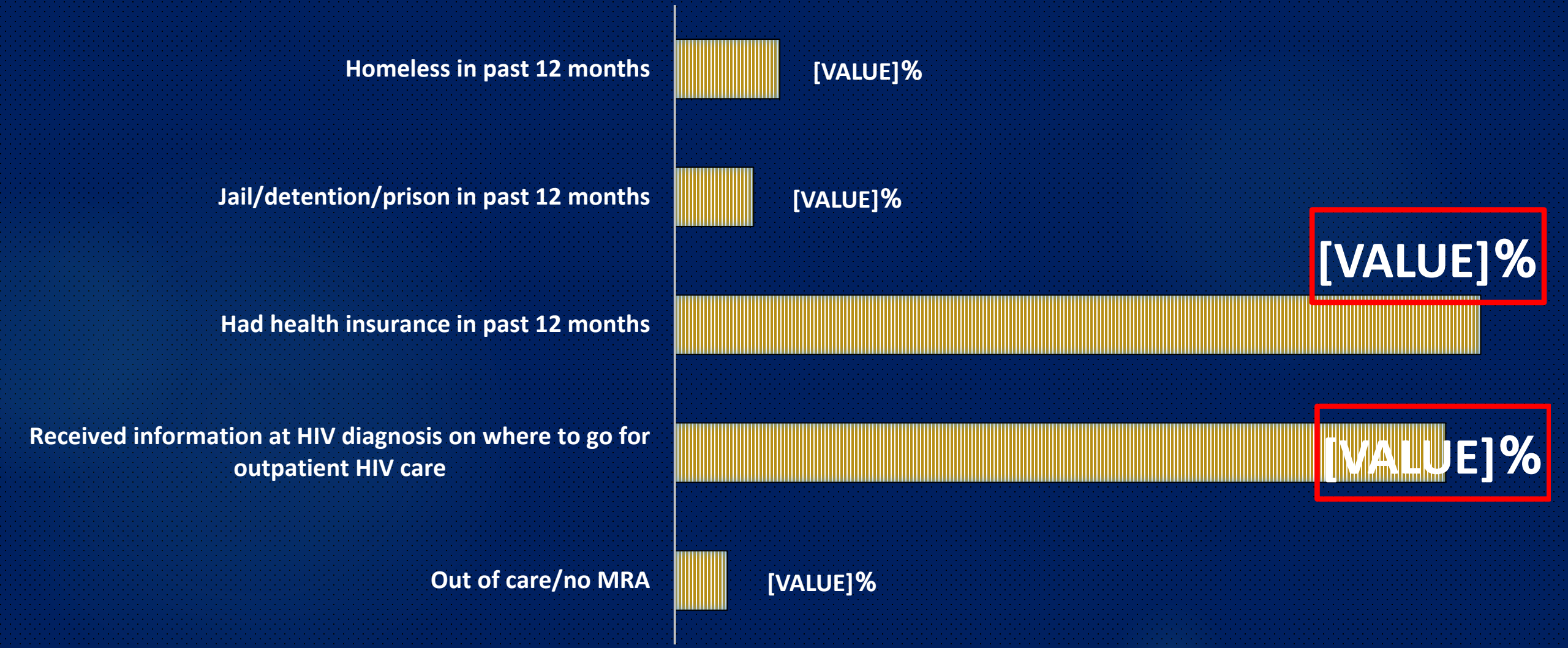
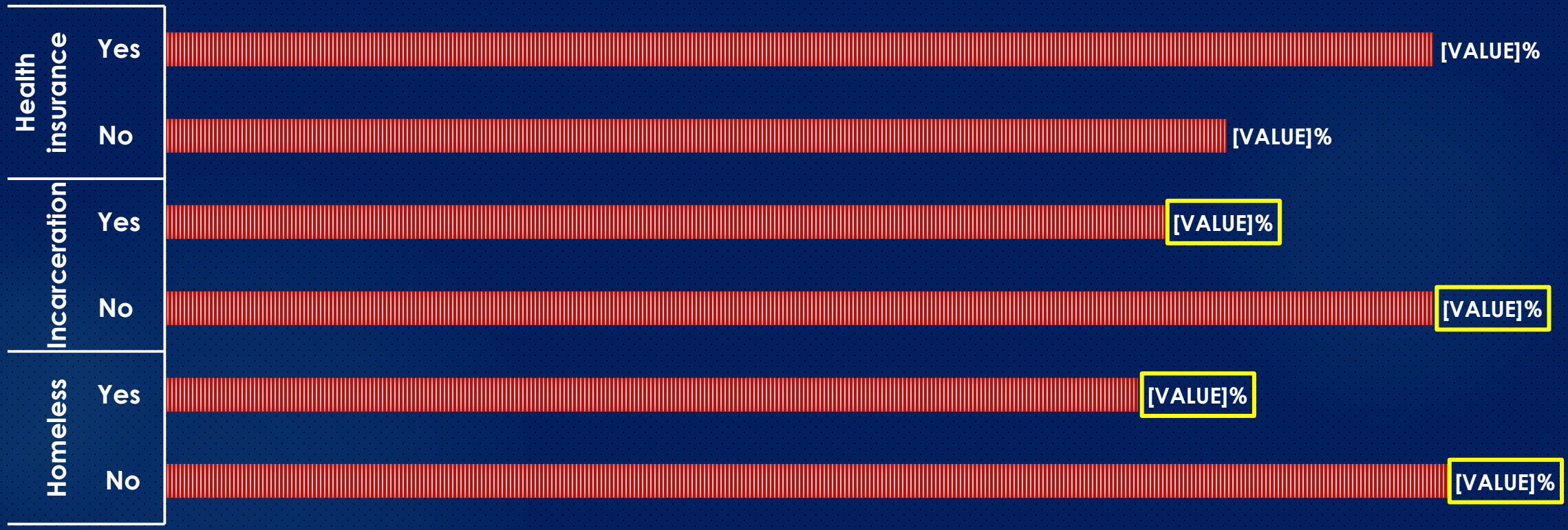


VIRAL SUPPRESSION AMONG NYC PLWH BY DEMOGRAPHIC CHARACTERISTICS, CSBS 2012-2014 (N=297)

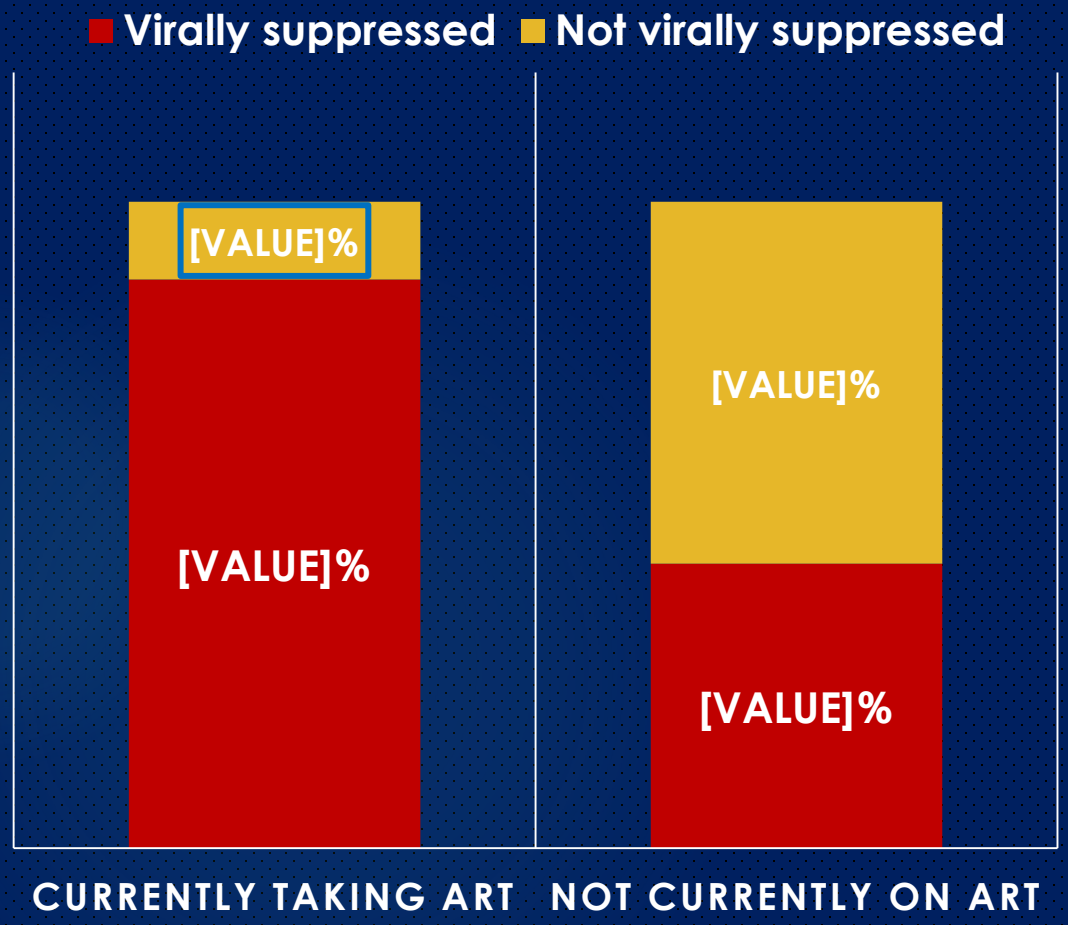
No statistically significant differences by demographic characteristics

VIRAL SUPPRESSION AMONG NYC PLWH BY SOCIOECONOMIC CHARACTERISTICS (PAST 12 MONTHS), CSBS 2012-2014 (N=297)



- PLWH who reported having been in jail/detention/prison in the past year had significantly lower rates of VS
- PLWH who reported being homeless in the past year were significantly less likely to have achieved VS

VIRAL SUPPRESSION AND SELF-REPORTED CURRENT ART USE AMONG NYC PLWH, CSBS 2012-2014



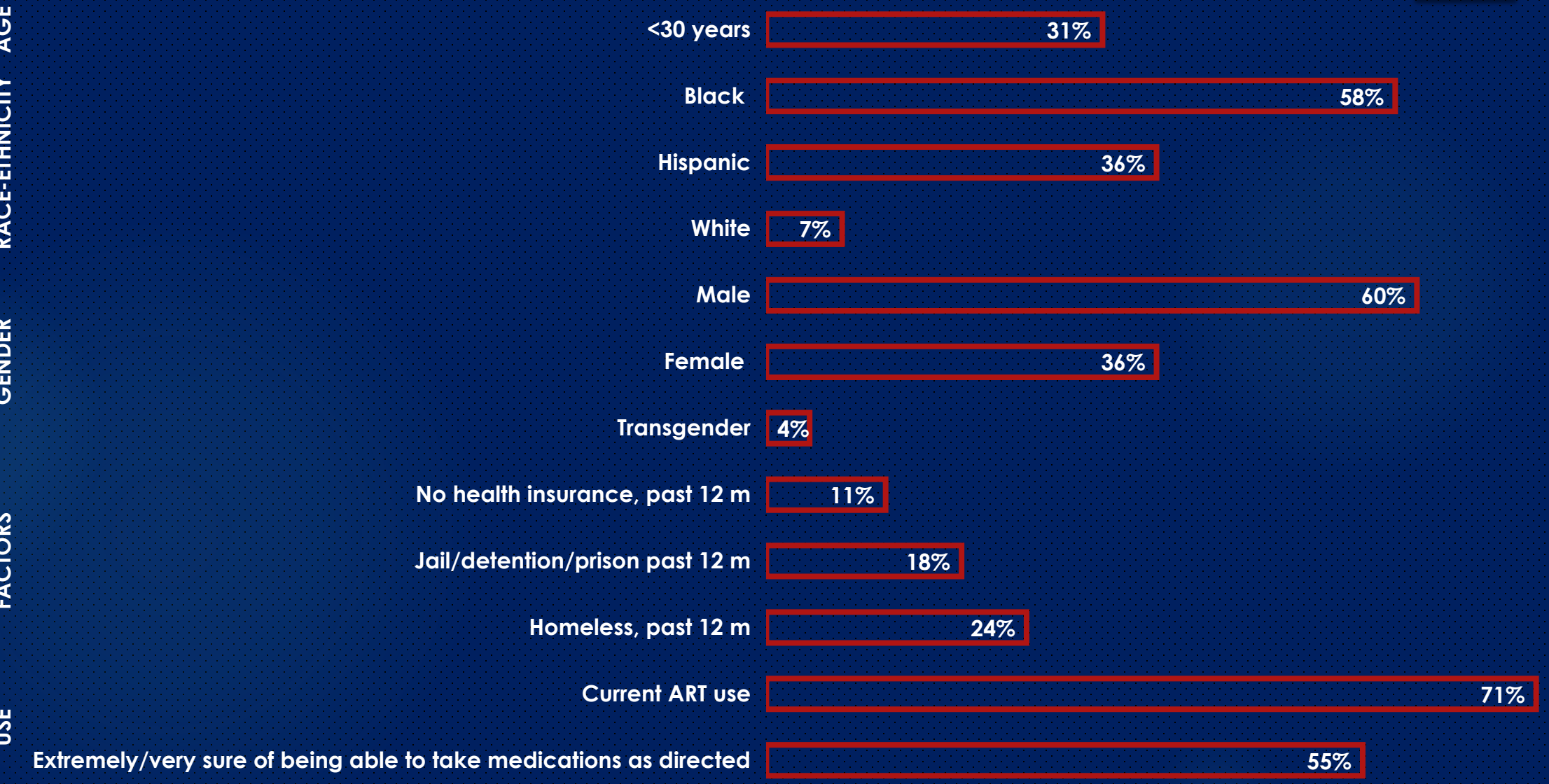
*Statistically significant

- Viral suppression was twice as high among PLWH in care who reported current ART use*
- Five times more PLWH with no self-reported current ART use were not virally suppressed
- About 1 in 10 PLWH who reported current ART use were not virally suppressed

CURRENT ART USE INDEPENDENTLY ASSOCIATED WITH VIRAL SUPPRESSION

- Current ART use was the only statistically significant predictor of VS in the adjusted model
- PWLH who reported being on ART currently were eight times more likely to be virally suppressed (aOR: 8.21; 95% CI: 1.90-35.55)

DESCRIPTION OF NYC PLWH NOT VIRALLY SUPPRESSED, CSBS 2012-2014 (N=45)



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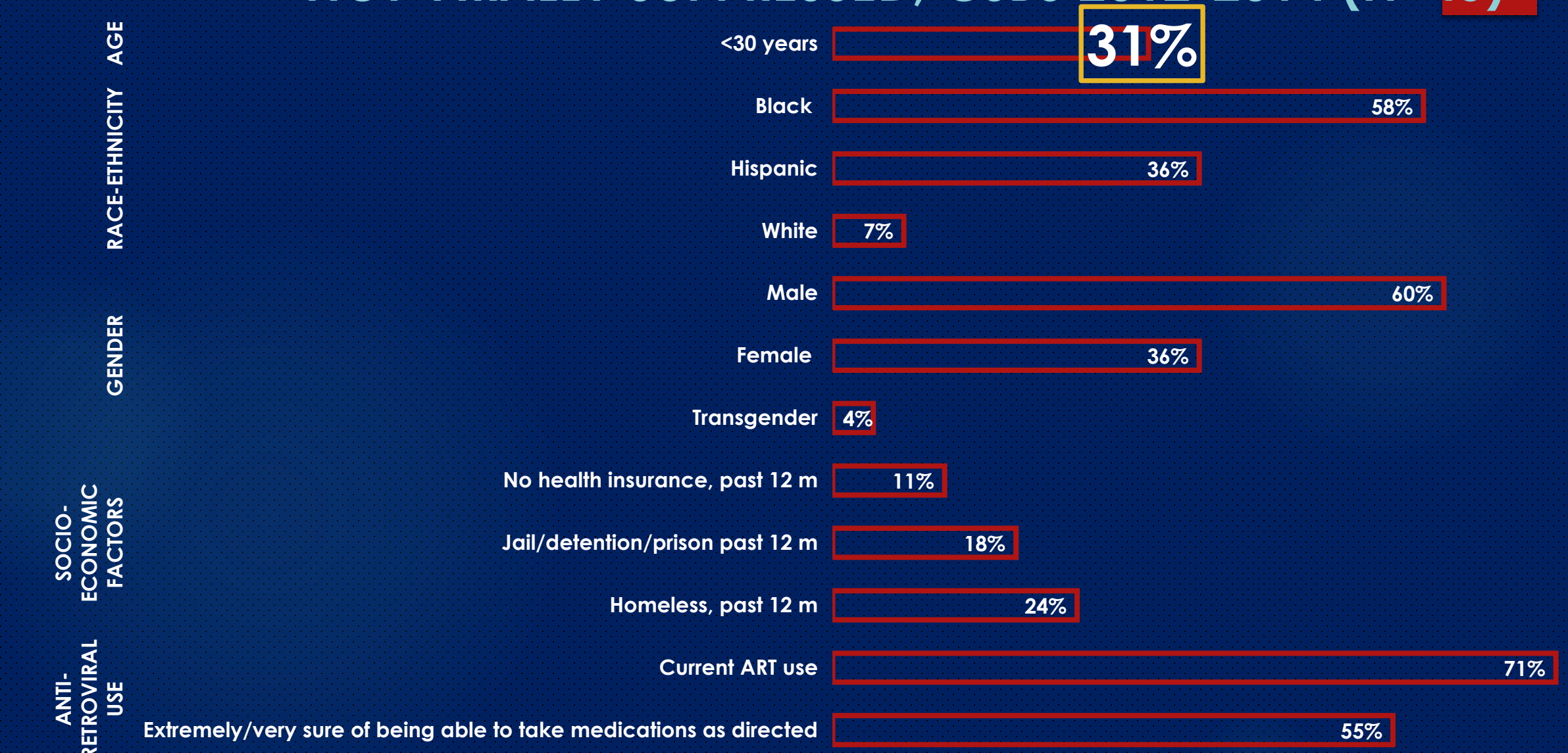

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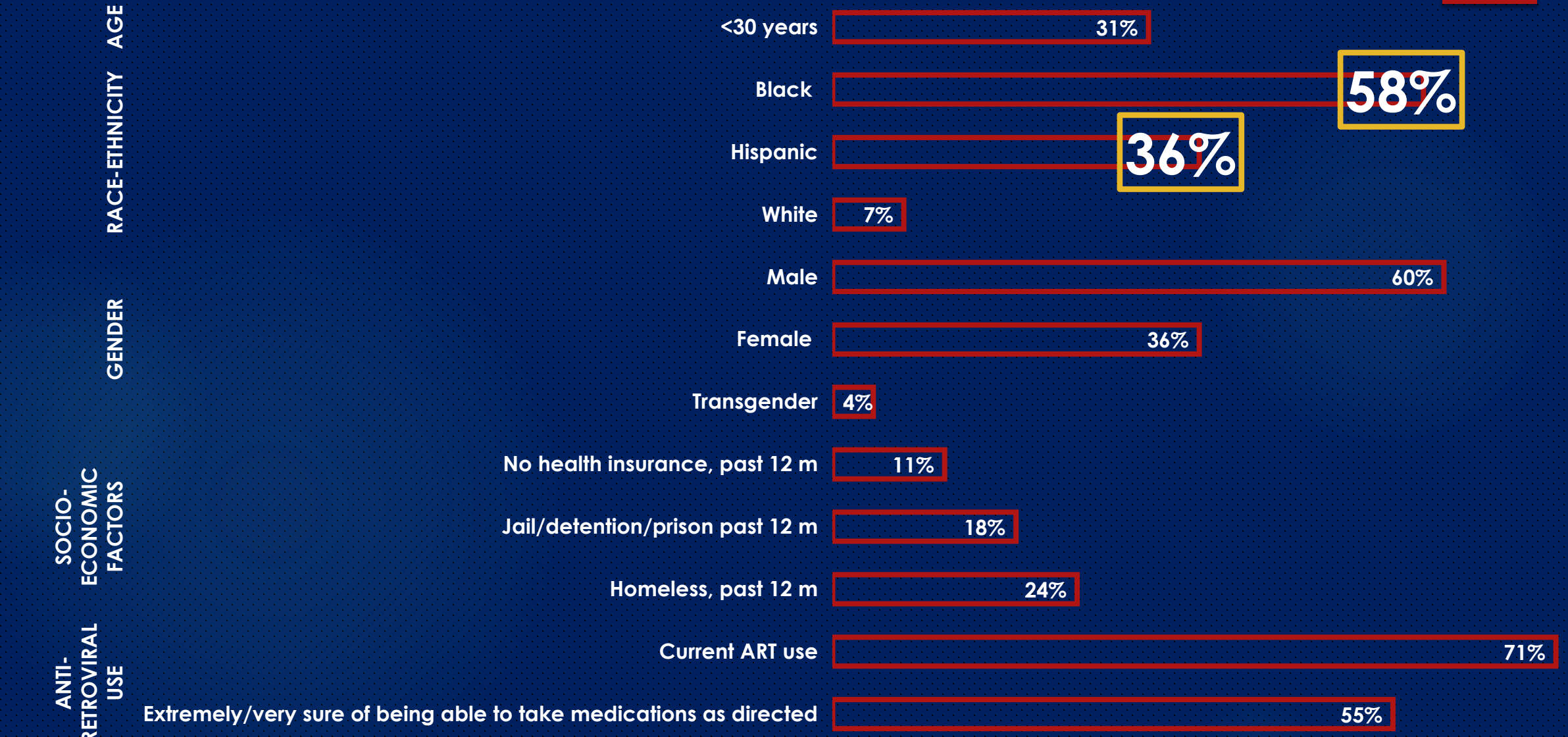

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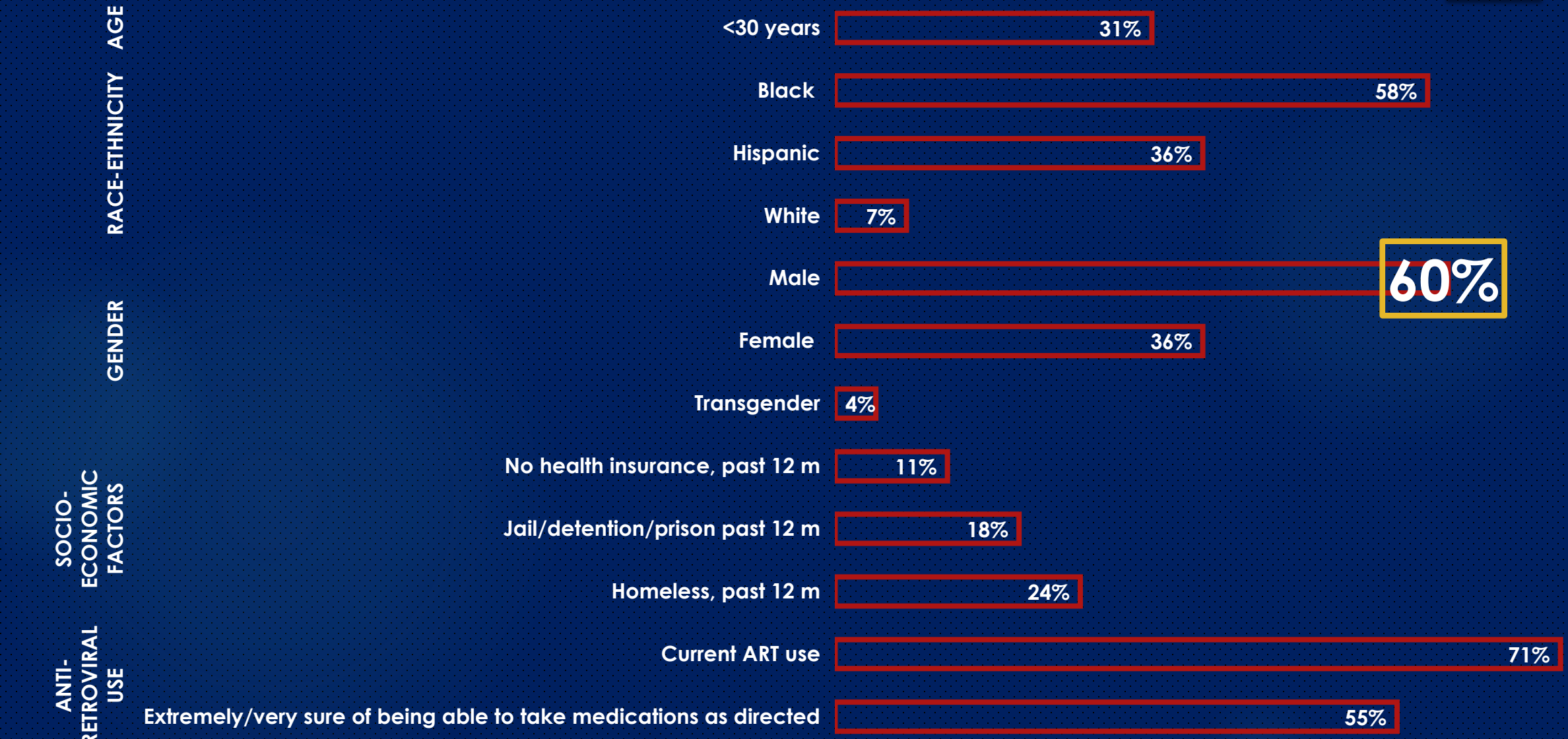

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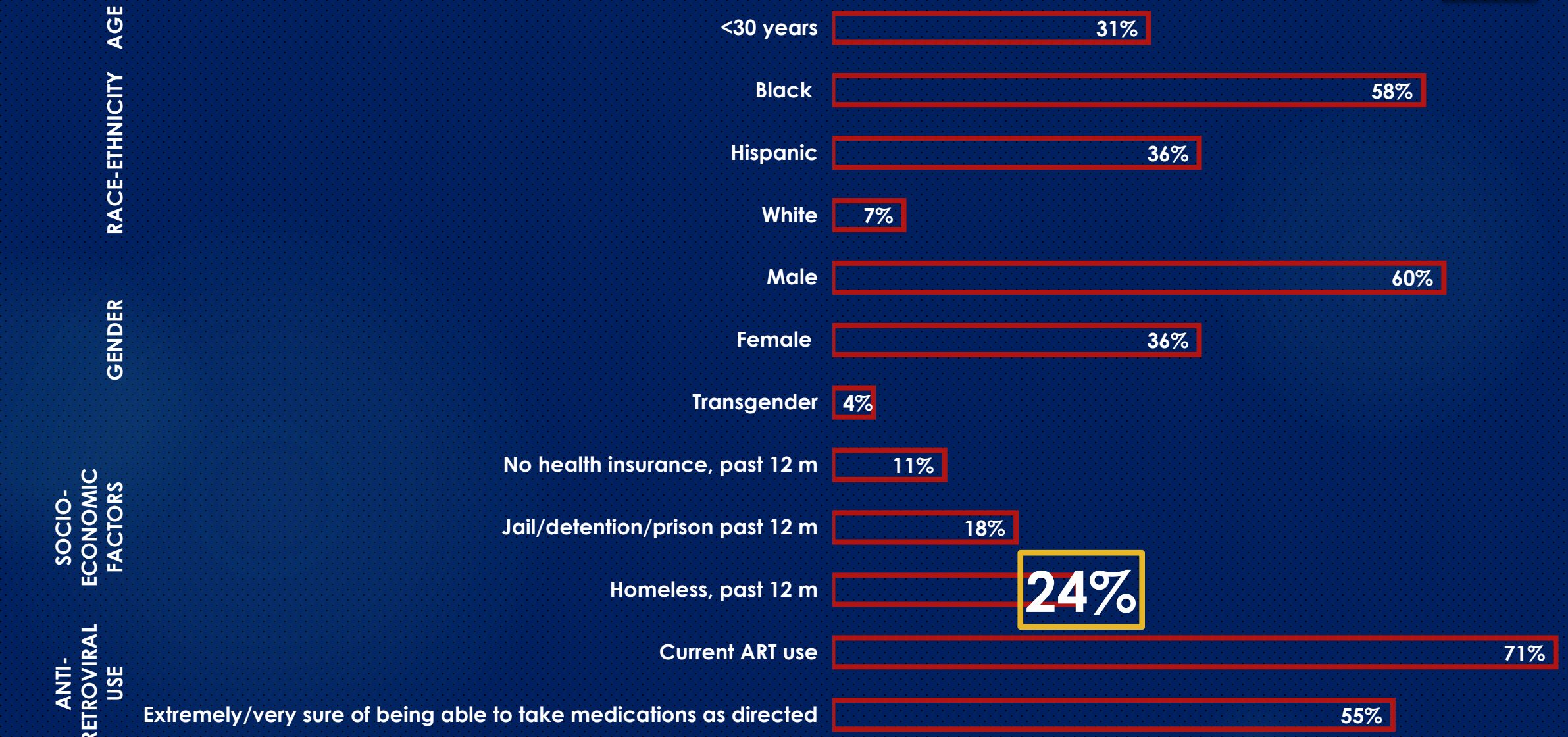

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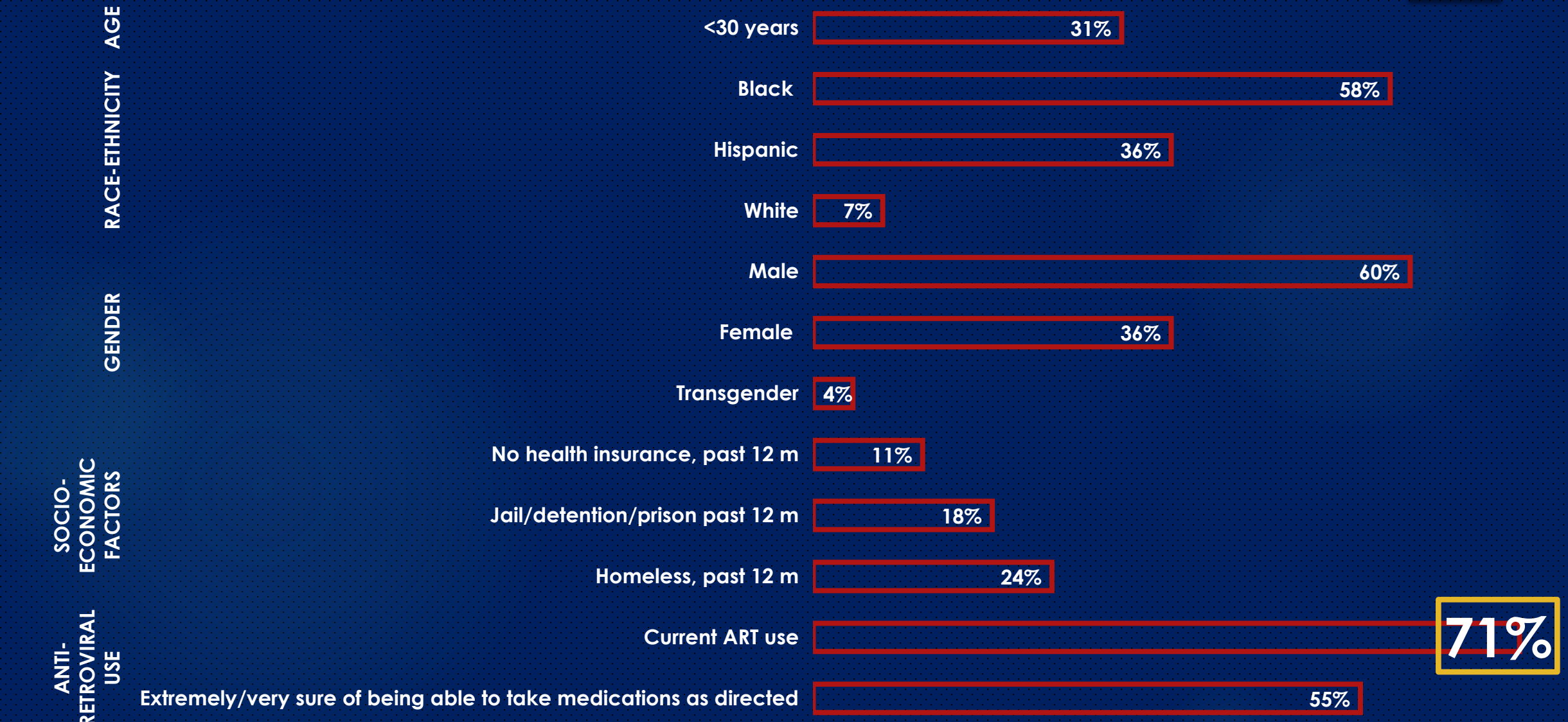

DISCUSSION

VIRAL SUPPRESSION AMONG PLWH IN NYC

- PLWH in HIV care sampled through CSBS had higher levels of any VS in the past year than those estimated through the NYC Medical Monitoring Project (83% vs 79% in 2013 and 89% vs 71% in 2014)
- VS levels were high and approach the 90-90-90* target for 2020
- Majority of PLWH not virally suppressed were non-white and male

*By 2020, 90% of all people living with HIV will know their HIV status, 90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy and 90% of all people receiving antiretroviral therapy will achieve viral suppression.

ANTIRETROVIRAL THERAPY CRITICAL TO VIRAL SUPPRESSION

- Findings confirm that ART is critical to VS, regardless of socioeconomic differences
- Substantial proportion of PLWH who reported current ART use had not achieved VS
- Possible factors:
  - Delayed linkage or ART initiation following diagnosis
  - Sub-optimal adherence to medication
  - Treatment resistance

IMPLICATIONS: INTERVENTIONS

- Timely linkage to care → vital component of pathway from diagnosis to viral suppression
- Need to enhance strategies to ensure ART uptake and adherence, including counseling and support services and directly observed therapy and incentives where appropriate
- Interventions should continue to be mindful of sociodemographic disparities in VS and focus on communities of color and other disadvantaged populations

IMPLICATIONS: ANALYTICS

- Definitions of VS across research, surveillance and evaluation need conformity
- Analysis plan for CSBS data: to examine correlates of VS using alternate definitions for comparability
  - a) Most recent VL ≤200 copies/mL in surveillance period
  - b) All VL ≤200 copies/mL in surveillance period

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