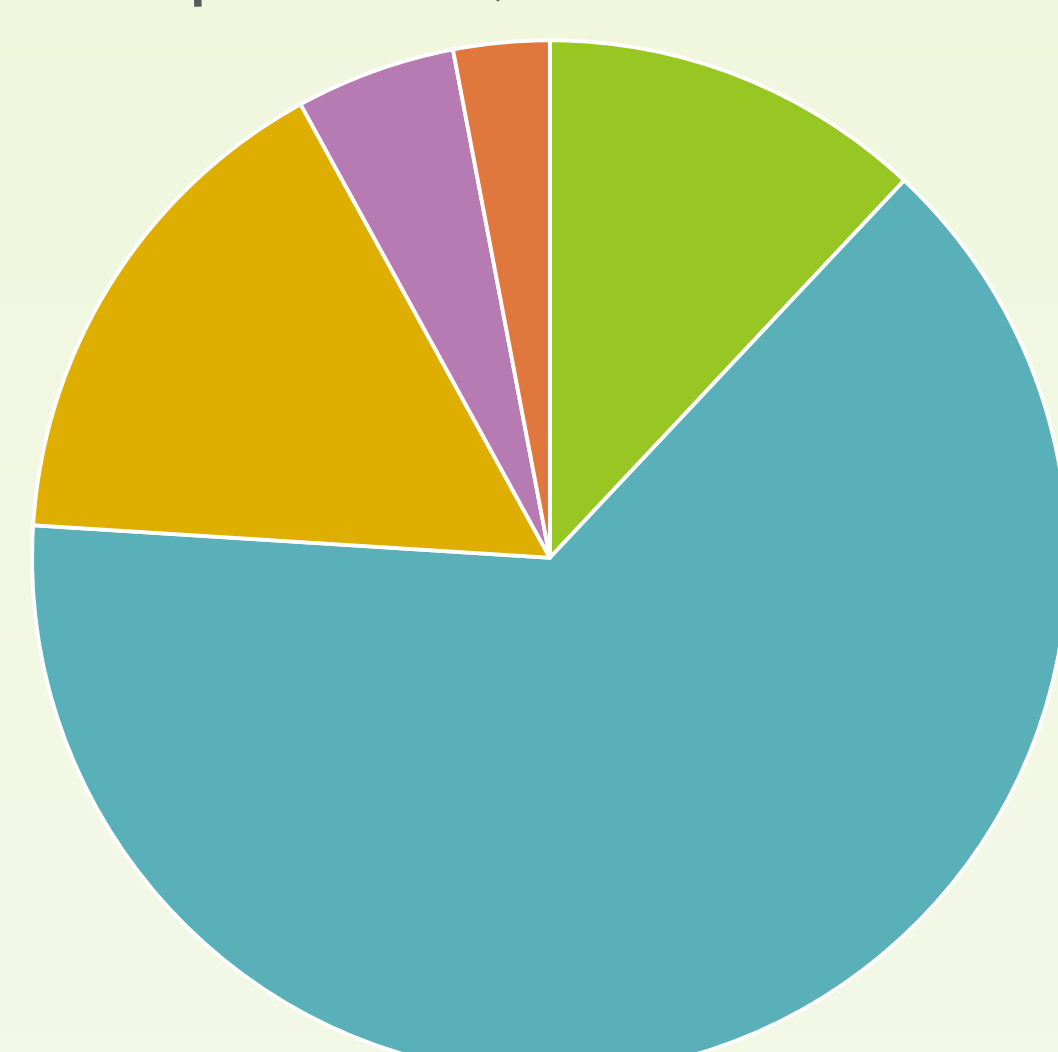


## Background

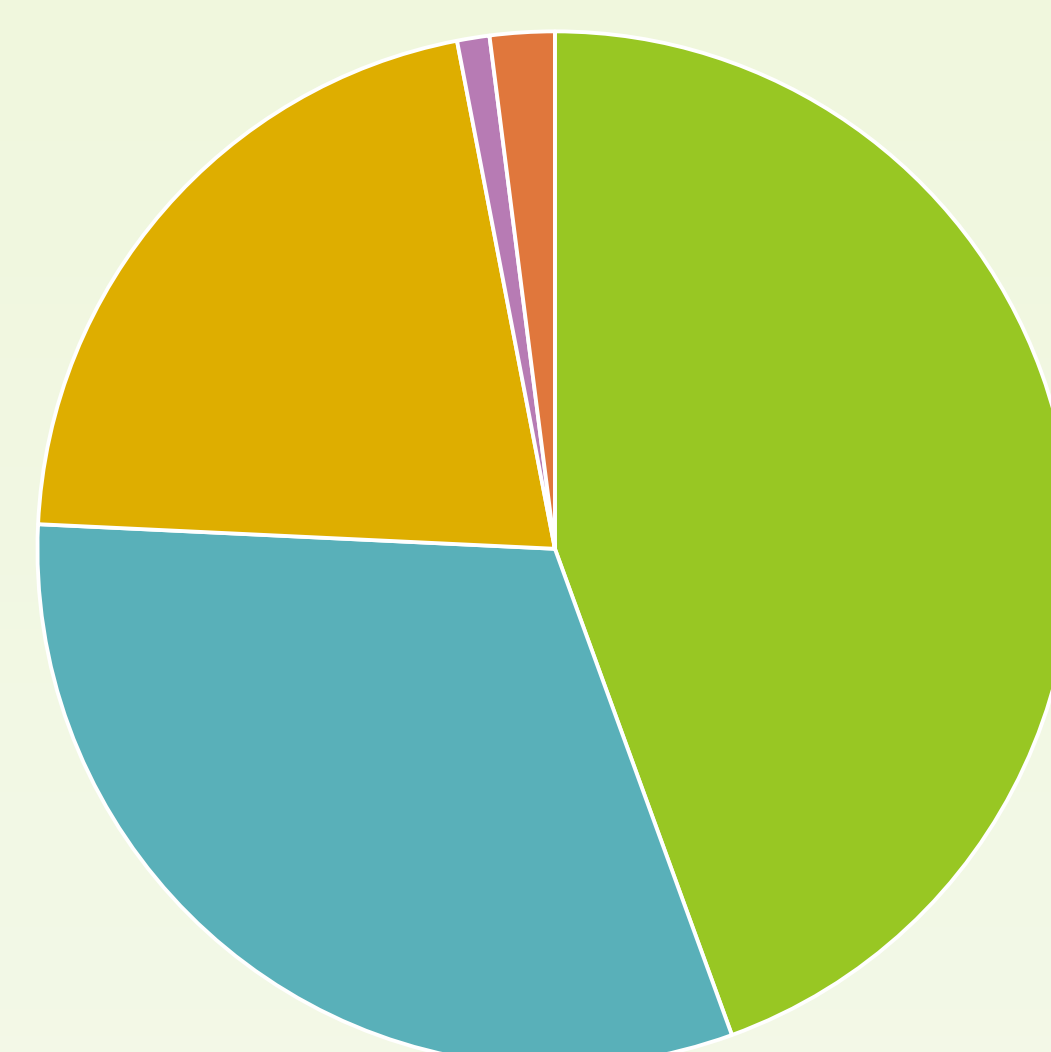
Men who have sex with men (MSM) account for only 2% of the US population but 70% of all HIV infections (CDC 2014). Furthermore, African-Americans (AAs) make up 12% of the population but 44% of all HIV infections (Figures 1 and 2; USCB, 2014). This disparity is also seen in the MSM community with AAs experiencing nearly 39% of all HIV infections.

Figure 1 – Racial/Ethnic Distribution of the U.S. Population, U.S. Census



■ African-American  
■ White  
■ Hispanic  
■ Asian/PI  
■ Other

Figure 2 – Racial/Ethnic Distribution of the U.S. Population, KFF



■ African-American  
■ White  
■ Hispanic  
■ Asian/PI  
■ Other

Reasons for these differential infection rates have been attributed to lower testing frequency, greater co-infection with STDs upon diagnosis and delayed entry into HIV care (Millett 2006). However, few previous studies have looked at disparities based on time of diagnosis.

Individuals are most infectious in the two months between initial infection and antibody detection. HIV Nucleic acid amplification tests (NAAT) are capable of detecting acute HIV infection prior to standard antibody tests. By detecting HIV during this highly infectious time period and subsequently initiating treatment for acute HIV cases, the rate of subsequent infection can be greatly suppressed. Thus, early HIV detection can greatly reduce the overall cost burden on the US health system.

## Study Objectives

1. Determine if there are disparities by HIV acute infection between different demographic groups (age, educational attainment, race/ethnicity).
2. Determine if there are differential testing intervals or frequencies between different demographic groups.

## Methods

Data were analyzed for all HIV-positive diagnoses given at the Los Angeles LGBT Center between January 2011 and February 2014 (n=850).

The proportion of acute infections were compared to non-acute infections by race, age group and educational attainment via Chi-Square Tests and a multivariate logistic regression. Acute infection was defined as a negative result for HIV antibodies and positive result for HIV NAAT at the time of HIV diagnosis.

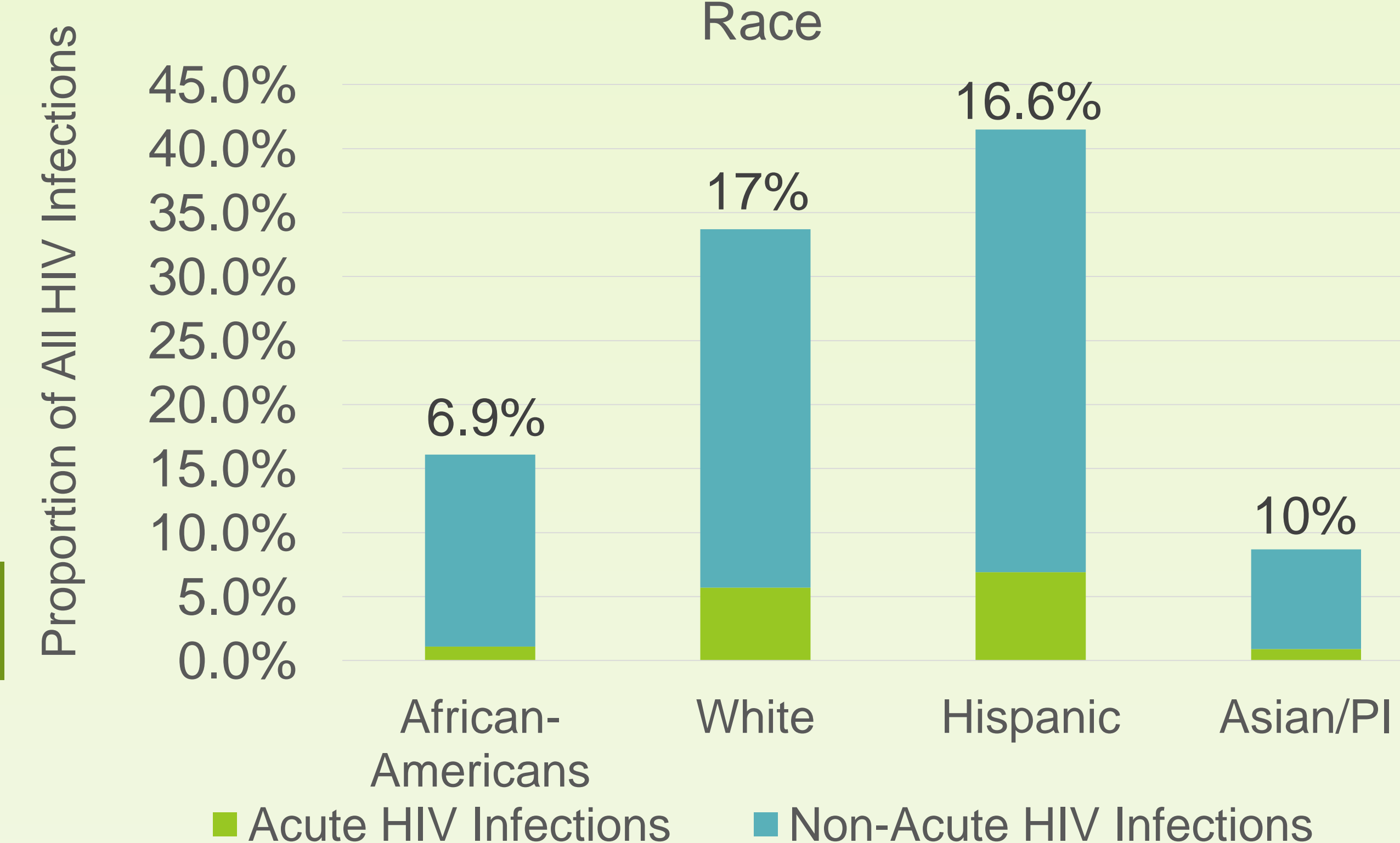
One-way analysis of variance (ANOVA) was used to determine if testing frequency or time since last test differed by race, age group or educational attainment among HIV positives. Lastly, two multivariate, factorial ANOVAs were used to analyze testing frequency and time since last test with these demographic predictors.

## Results

Proportions of acute and non-acute HIV infections did not significantly differ by either age group ( $p=0.4$ ) or educational attainment ( $p=0.54$ ). However, the proportion differed significantly by race/ethnicity ( $p=0.02$ ). The proportion of acute infections for Whites and Hispanics was 17% and 16.6%, respectively. However, the rate of acute infections among African-Americans was only 6.9% (Figure 3).

## Results (Continued)

Figure 3 – Proportion of Acute HIV Infections by Race



A multivariate logistic regression showed that African-Americans had 74% lower odds to test acute positive when compared to White MSM ( $p=0.02$ , OR: 0.27; CI: 0.11-0.66), controlling for age group and education level.

There were no differences in testing frequency by race ( $p=0.85$ ) (Table 1) or educational attainment ( $p=0.69$ ). However, there were differences by age group ( $p<0.0001$ ).

There were differences in the number of times tested by race/ethnicity ( $p=0.0006$ ) and age group ( $p<0.0001$ ), but there were no differences by educational level ( $p=0.36$ ). However, when Whites were omitted from the analysis, the difference in number of times tested was not significant between minority racial/ethnic groups ( $p=0.56$ ).

Table 1 – Analysis of Variance of the Number of Times Tested for HIV and Number of Days Since the Last HIV Test

Race/Ethnicity	Average Number of Times Tested for HIV	Average Number of Days Since Last Test
African-Americans	8 times	385 days
White	12 times	449 days
Hispanic	8.9 times	472 days
Asian/PI	7.3 times	416 days

## Discussion

African-American (AA) MSM accounted for a significantly lower proportion of acute infections than other racial groups within this time frame. Paradoxically, there was no difference in testing frequency by race. Although the number of times tested was different by race, HIV-positive AAs did not differ significantly when compared to Hispanic and Asian individuals who tested HIV-positive.

This study lends further evidence to the testing disparities between racial groups, but it calls into question previous literature that claims these disparities are due to testing frequency. These data show that testing frequency is the same, but there may be key differences in perceived susceptibility between AAs and other racial/ethnic groups.

More succinctly, AAs may test but not immediately following risky events. This phenomenon may explain the significantly lower rate of acute infection in AAs when compared to other racial/ethnic groups. Despite these findings, it is unclear why AAs are not utilizing testing (or biomedical interventions such as PEP) following sexually risk events.

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