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Cutting Edge & Interventions to Promote PrEP Adherence

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HIV Seroconversion after Exposure to nPEP vs PrEP at a San Francisco STD Clinic

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Background/Significance

- 1.2 M people in US living with HIV; 1 in 8 unaware of status¹
- Pre-Exposure Prophylaxis (PrEP) is a highly efficacious HIV prevention strategy
- PrEP is a key component of the National HIV Prevention Strategy and is a core strategy in local, national, and global “Getting to Zero” campaigns^{2,3}
- Emphasis on PrEP has led to renewed interest in non-occupational post-exposure prophylaxis (nPEP)
- Data for nPEP are less robust than for PrEP – no RCTs, most data come from case control or cohort studies⁴⁻¹²
- Patients and providers may opt for nPEP if risk not perceived as ongoing, but unclear if this is optimal



Background/Significance

- Research Aim: To compare the real-world effectiveness of nPEP versus PrEP among men who have sex with men (MSM) at San Francisco City Clinic (SFCC)
- San Francisco City Clinic (SFCC)
 - San Francisco's only municipal STD clinic, in operation since 1933. Run by the Department of Public Health
 - Prominent Bay Area provider of free and low cost sexual health services, including HIV preventative pharmacotherapies
 - EMR system available for robust data analysis
 - Demographic characteristics
 - Standardized behavioral risk assessments
 - Tracking of laboratory testing over time



Background/Significance

- Study Population:
 - Adult MSM patients who were HIV negative at their initial SFCC visit during 9/1/2012 – 6/30/2016
- Primary Predictor Variable:
 - Exposure to PrEP vs nPEP vs Neither strategy
- Primary Outcome Variable:
 - Conversion to HIV seropositivity
 - Defined as positive HIV Ab test with confirmatory testing in SFCC EMR system
 - Cross matched at city & state levels through eHARS (Enhanced HIV Surveillance System), as of 4/27/2017



Methods

- EMR Review → MSM patients divided into 3 mutually exclusive groups.

PrEP Ever

- Patients who ever reported PrEP use, whether prescribed through SFCC or elsewhere (regardless of any nPEP use)

nPEP Only

- Patients prescribed ≥ 1 courses of nPEP
- No evidence of having ever been prescribed PrEP

Neither

- Never reported PrEP use, nor prescribed nPEP or PrEP through SFCC

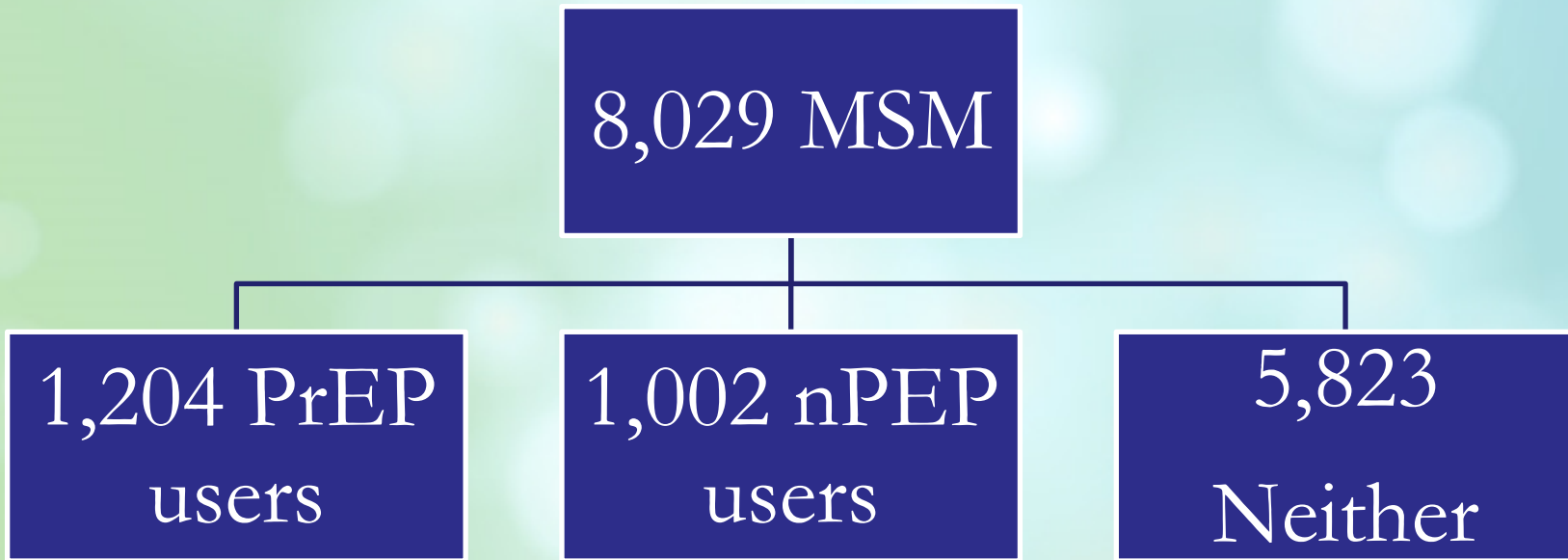


Methods

- Groups 1, 2, and 3 were then compared on the following:
 - Baseline characteristics (age, race)
 - Behavioral risk assessment
 - # Sexual partners in last 3 months (as reported at pt's 1st visit within study interval)
 - # Condom-less receptive anal sex partners in last 3 months
 - Presence of other STIs (syphilis, chlamydia, gonorrhea) prior to and during study interval
 - Seroconversion to HIV seropositivity
- Statistical testing - Chi square for proportions, t-test/ANOVA for means
 - * = $p < 0.05$; † = $p < 0.001$



Results



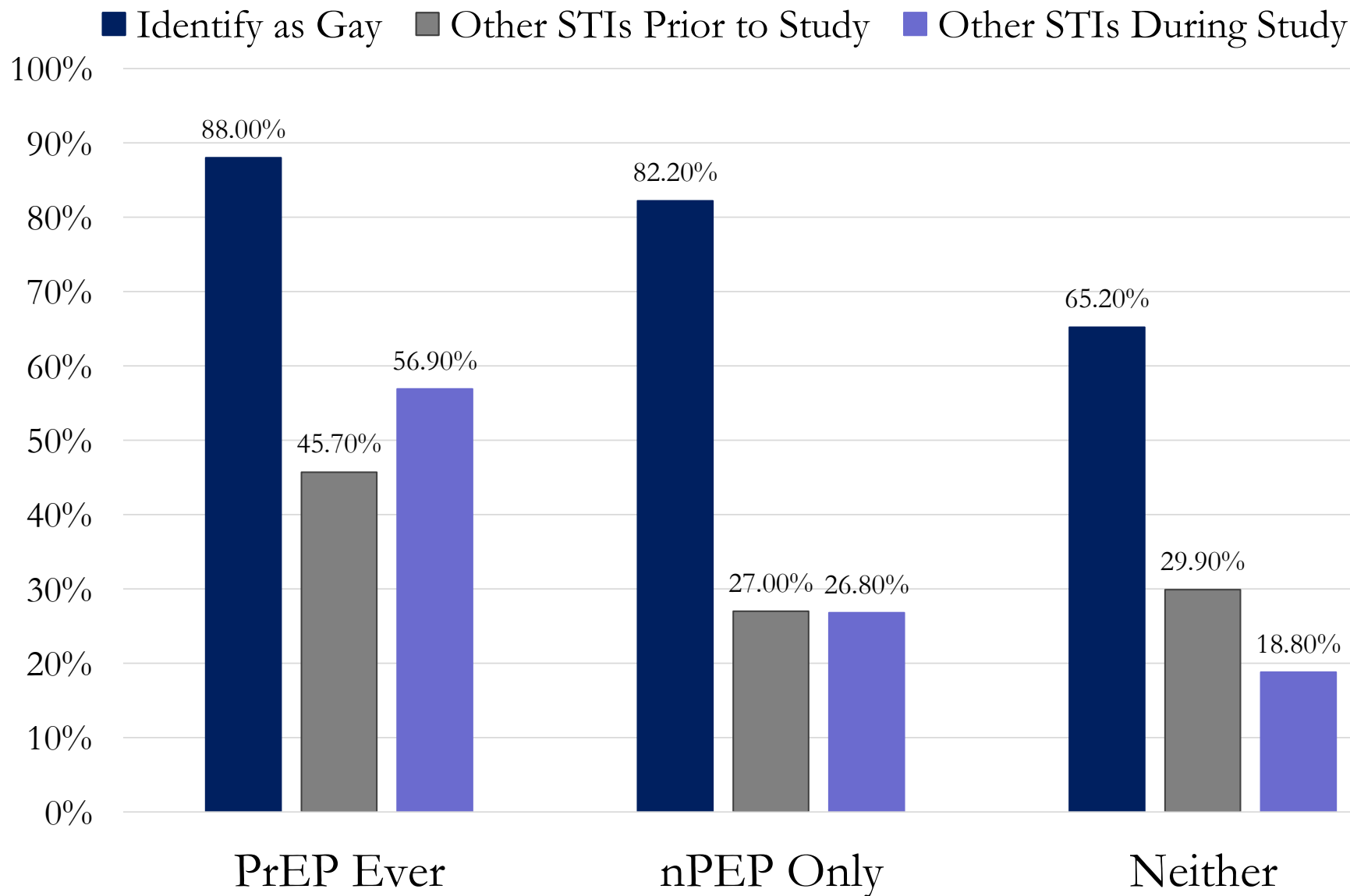
Approximately one quarter (24.4%) of PrEP users also used nPEP



Results

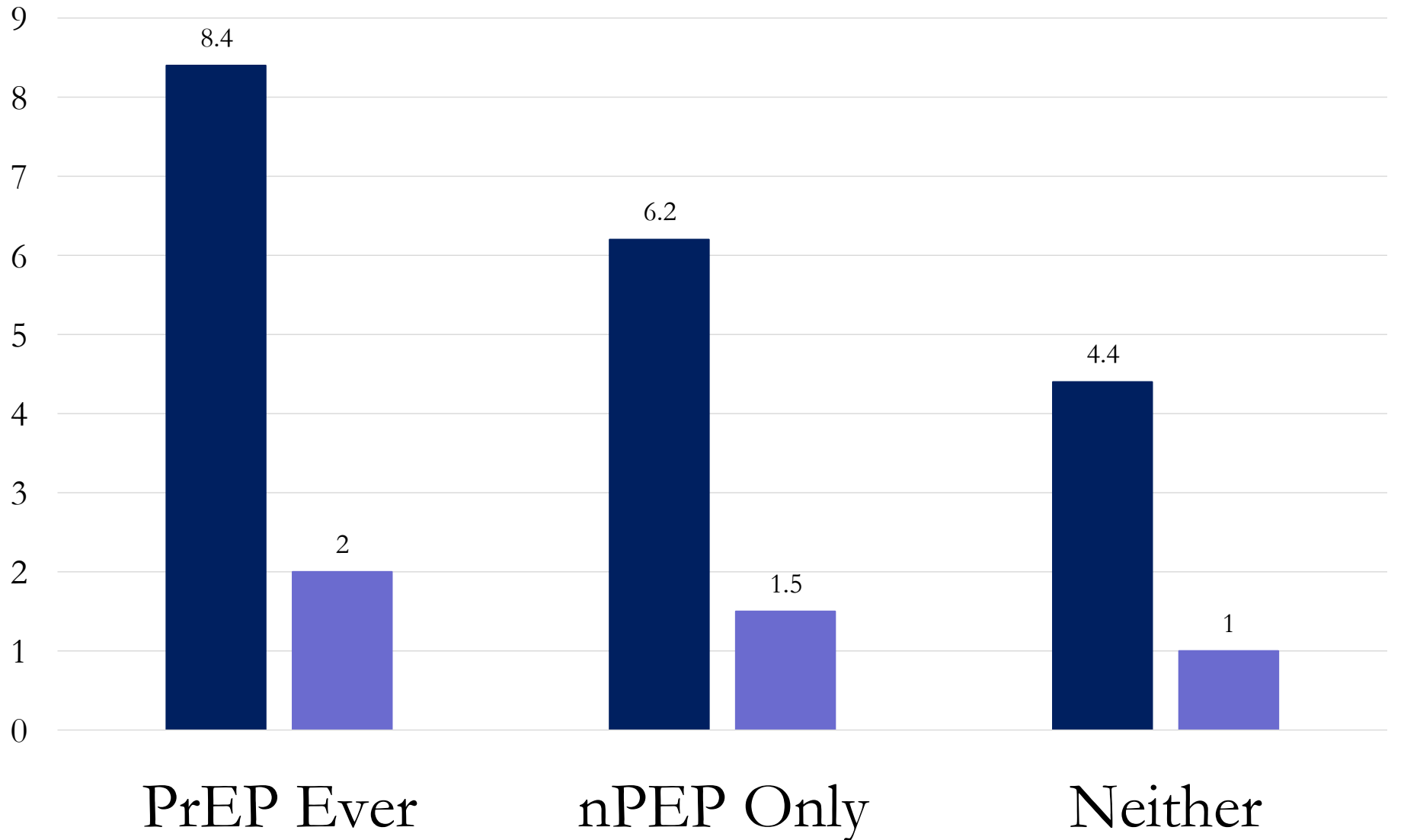
	PrEP Ever	nPEP Only	Neither
Age (years) †	32.9	33.1	<u>35.4</u>
Caucasian	52.0%	55.8%	52.7%
Hispanic	23.4%	22.7%	21.3%
African-American†	7.1%	<u>5.1%</u>	9.0%

Risk Behavior Characteristics†

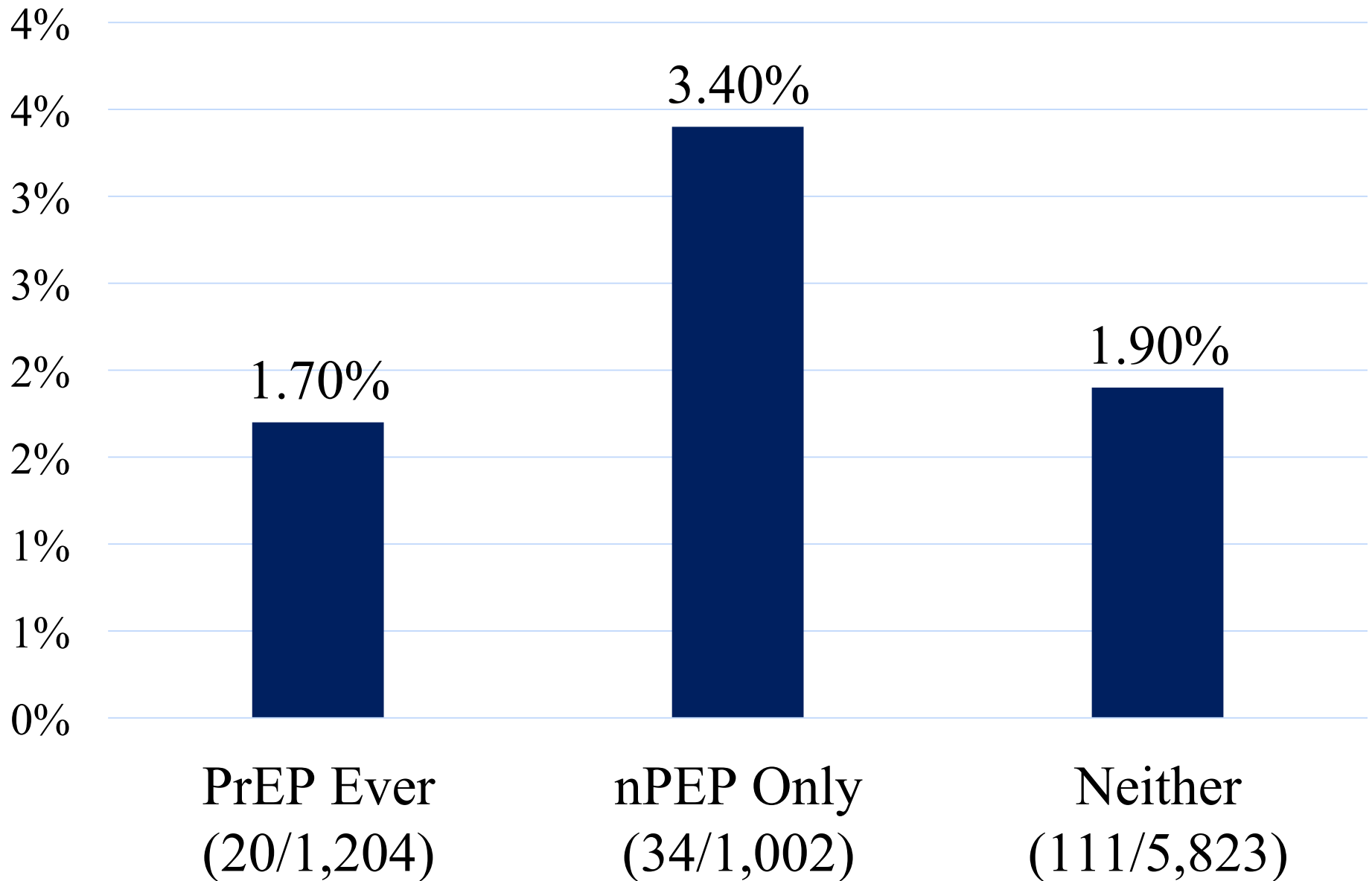


Sexual Partners Reported in Last Three Months†

■ Mean # Male Partners ■ Mean # Condomless Receptive Anal Sex Partners



HIV Seroconversion*





Discussion/Limitations

- MSM using PrEP had higher sexual risk compared with those using nPEP alone
- Despite the higher sexual risk, PrEP users were less likely to seroconvert than nPEP users
- Rates of HIV seroconversion were similar among PrEP vs neither users



Discussion/Limitations

- Limitations
 - Predictor variable misclassifications
 - nPEP users could have been rx'd PrEP elsewhere
 - Outcome variable concerns
 - Could miss HIV seroconversions among patients who left CA, or who never underwent subsequent HIV testing
 - Sample size limitations
 - Differences in follow-up time among groups



Conclusions

- MSM seen at STD clinics, particularly those at high risk for future STIs including HIV, should be offered PrEP
- Those using nPEP should be linked to PrEP after nPEP completion
- Retention in PrEP therapy remains an ongoing challenge in HIV preventative care
- Next Steps:
 - Additional characterization of risk behaviors (IVDU, HIV positive partners, etc)
 - Additional statistical modeling/stratification for factors contributing to HIV seroconversion



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Questions?