

Influenza Vaccination Prevalence Among Adults with and without HIV by Race/Ethnicity, Age, and Sex

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Background

- Influenza vaccination rates may differ by demographic characteristics among adults with and without HIV.
- We evaluated prevalence of influenza vaccinations during the 2013 – 2016 influenza seasons by demographic and HIV status.

Methods

- **Setting:** Kaiser Permanente Northern California, a US-based integrated healthcare system.
- **Study Population:** People with HIV (PWH, N=7,422) and without HIV (HIV-, N=152,305) who were ≥18 years of age and healthcare system members during at least one of the influenza seasons during 2013-2016 (N=159,727).
- **Outcome:** Evidence of vaccine administration during each influenza season, defined as September 1st to March 31st, in the electronic medical record.
- **Statistical analysis:** Poisson regression models with robust standard errors to account for repeated measures (people may contribute to multiple influenza seasons) were used to estimate the adjusted relative risk [RR; see covariates below] of influenza vaccinations by race/ethnicity, age, and sex within HIV status strata.
- **Covariates:** HIV Status, race/ethnicity, age, sex, unhealthy alcohol use (self-report), smoking status, calendar year of vaccination, alcohol use disorder (ICD-9/10), census-based education/income, depression (ICD-9/10 or PHQ9), insurance type, and outpatient visits with interaction terms for HIV*race /ethnicity, HIV*age group, and HIV*sex.

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Results

Table 1. Study Cohort at Baseline¹ (N=159,727)

	HIV- (n=152,305)	PWH (n=7,422)
<i>Race/ethnicity</i>	%	%
White	56	55
Black	17	15
Hispanic	17	17
Other/Unknown ²	11	13
<i>Age</i>		
18-29	7	7
30-49	39	39
50-64	40	43
65+	14	10
<i>Male</i>	90	91

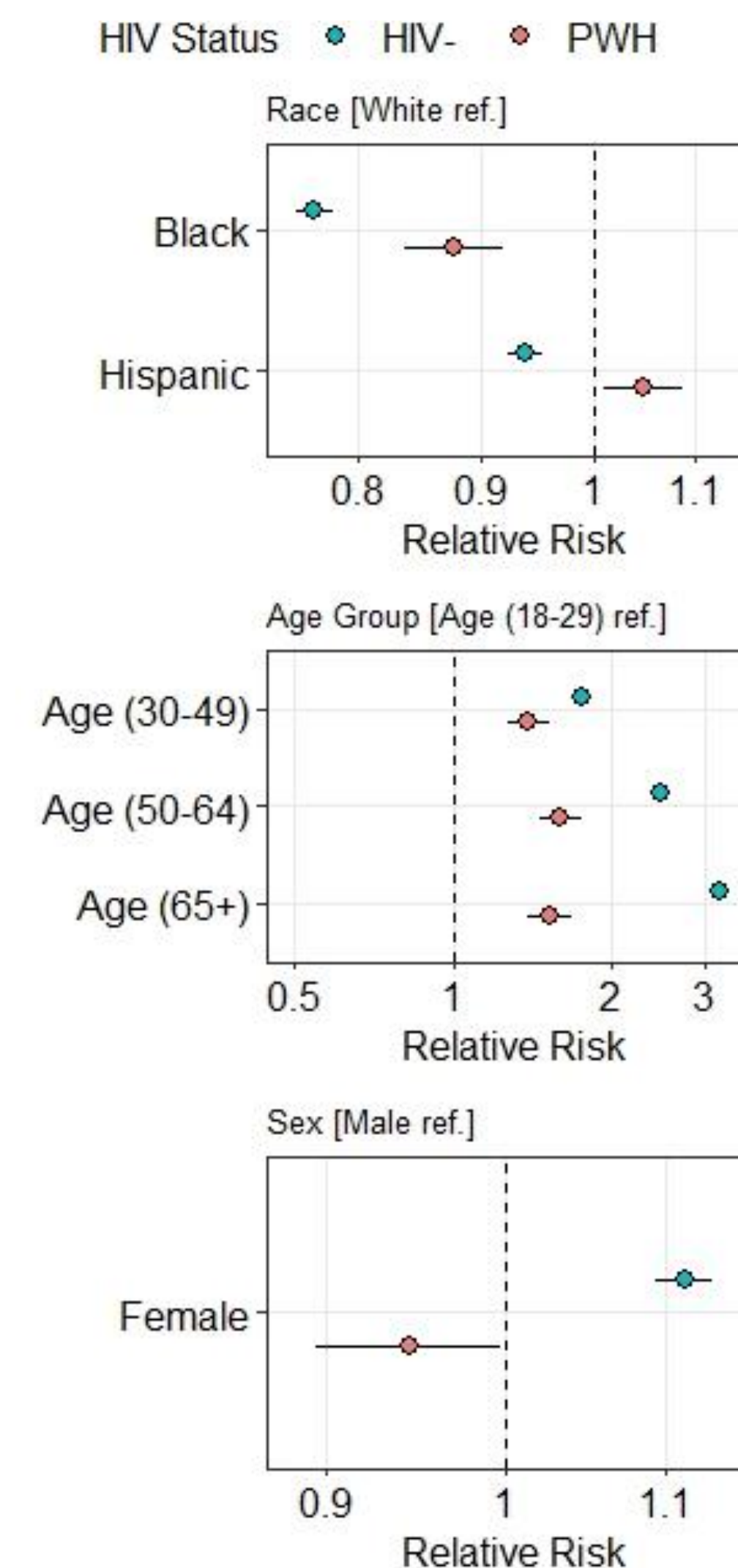
¹Baseline defined as subject's first eligible influenza season.
²Other/Unknown race/ethnicity includes Asian/Pacific Islander.

Table 2. Seasonal influenza vaccination prevalence by HIV status

<i>Influenza Season</i>	HIV-		PWH	
	# Eligible	% Vacc.	# Eligible	% Vacc.
2013	26,155	39	1,478	69
2014	100,280	36	4,882	65
2015	124,415	36	5,901	66
2016	132,960	37	6,337	66

¹PWH were more likely to receive the influenza vaccine than HIV- between 2013 – 2016 (Adj. RR 1.59; 1.56-1.61)

Figure 1. Adjusted relative risk of influenza vaccination by race/ethnicity, age, and sex



Summary

- **Influenza vaccination prevalence by HIV status:** PWH had a higher prevalence of influenza vaccinations compared with HIV- over the course of the study period. Influenza vaccination prevalence among PWH ranged between 65-69% while prevalence among HIV- ranged between 36-39%.
- **By Race/Ethnicity and HIV status:** Among HIV-, Blacks were less likely to receive the vaccine compared with Whites (RR 0.77; 0.76-0.78); this effect was attenuated in PWH (RR 0.88; 0.84-0.92).
- **By Age and HIV status :** Among HIV-, older age groups were more likely to receive the vaccine compared with the 18 – 29 age group with the effect continuing to increase with age. Among PWH, older age groups were also more likely to receive the vaccine compared with the 18 – 29 age group, however, the effect did not continue to increase with age.
- **By Sex and HIV status :** Among HIV-, females were more likely to receive the vaccine compared to males (RR 1.11; 1.09-1.13) while among PWH, females were less likely compared to males (RR 0.94; 0.89-1.00; p=0.04).

Conclusions

- Results indicate that PWH were more likely to be vaccinated against influenza than HIV- which may reflect the increased emphasis for vaccinations overall for an immunosuppressed population.
- In both PWH and HIV-, Blacks and younger age groups were less likely to be vaccinated. While differences remain, the results are more attenuated among PWH compared to HIV- across these demographic groups.
- Targeted efforts are needed to continue to close the gap in demographic disparities regarding influenza vaccination rates among PWH.

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