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**Session:** 148. HIV: General Epidemiology  
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**Background.** In Peru, where the HIV epidemic is concentrated among men who have sex with men (MSM), incidence has not changed appreciably over the last decade despite the rapid scale-up of free antiretroviral treatment (ART). New strategies for delivering effective HIV testing and prevention services to at-risk populations are greatly needed. Because most adult MSM in Peru live at home with family where it may be difficult to bring new sex partners, sex-on-premise venues (SOPVs)—such as saunas, sex clubs, and hourly hotels—might represent opportune sites at which to offer targeted HIV testing and prevention interventions.

**Methods.** From November 26, 2018 through April 15, 2019 we conducted a cross-sectional web-based survey using REDCap to assess the prevalence of SOPV attendance and associated sexual risk behaviors among MSM in Lima, Peru. SOPVs were defined as saunas, sex clubs, adult movie theaters, hotels, or bars/discos known to permit sex. We recruited participants by disseminating an anonymous survey link through local gay social media networks, with no monetary incentive to complete the survey. We asked participants how/where they met any sex partners from the prior 3 months, where they went for sex, and about HIV-associated sexual risk factors, including self-reported HIV status. We used the Pearson chi-squared test and Student's t-test to assess whether the frequency of sexual risk behaviors differed based on SOPV attendance.

**Results.** Among  $n = 324$  cis-gender MSM completing the survey, 16% identified as bisexual. Median age was 30 years, 62% lived at home with family, 50% had a university education or higher, and 29% reported being HIV+. 65% of respondents reported attending an SOPV to meet a partner and/or have sex in the prior 3 months. SOPV attendees were significantly more likely to report transactional sex, group sex, sex under the influence of alcohol, popper use, and have a higher number of sex partners (table).

**Conclusion.** SOPV attendance is common among MSM in Lima and associated with higher levels of several sexual behavioral risk factors. In light of this, SOPVs warrant further consideration as potential sites of outreach to offer HIV testing and prevention interventions designed to reach MSM at high risk for HIV infection.

Variable	Attended an SOPV to meet a partner and/or have sex in the last 3 months?		
	YES (n=210)	NO (n=114)	p-value
Age, mean (SD)	32.2 (8.7)	30.4 (9.5)	0.099
Bisexual, N (%)	30 (14%)	22 (19%)	0.240
Lives with family, N (%)	136 (65%)	64 (56%)	0.127
University education or higher, N (%)	113 (54%)	49 (43%)	0.063
HIV+, self-reported, N (%)	58 (28%)	35 (31%)	0.558
Total number of sex partners in last 3 months, mean (SD)	6.0 (6.0)	2.5 (3.6)	<0.0001
Transactional sex in last 3 months, N (%)	69 (33%)	19 (17%)	0.002
Group sex in last 3 months, N (%)	88 (42%)	26 (23%)	0.001
Condomless receptive anal sex in last 3 months, N (%)	72 (34%)	36 (32%)	0.622
Sex under the influence of alcohol in last 3 months, N (%)	99 (47%)	19 (17%)	<0.001
Used poppers during sex in last 3 months, N (%)	37 (18%)	6 (5%)	0.002

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#### 1254. Association of Structural Stigma Due to Sexual Orientation and HIV Diagnosis/PrEP Use in the United States: An Ecological Analysis

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**Background.** Structural stigma has the potential to reduce engagement in HIV prevention and care, particularly for sexual and gender minorities (SGM) who account for the highest proportion of new HIV diagnosis in the United States. We considered if structural stigma related to sexual orientation, that is the social/cultural norms and institutional policies/practices that constrain the lives of the stigmatized, is associated with state-level HIV diagnosis and use of pre-exposure prophylaxis (PrEP).

**Methods.** We used a composite measure of structural stigma that was previously developed; components included proportion of same-sex couples, gay-straight alliances in public schools, policies related to discrimination of sexual orientation, and public perception toward homosexuality. Proportion of HIV diagnosis from 2008 to 2017 and PrEP use from 2012 to 2017 per 100,000 population were extracted from AIDSvu. To account for overdispersion and the hierarchical structure of our data, we used a Poisson model with robust standard errors using generalized estimating equations.

**Results.** States with higher (vs. lower) levels of structural stigma related to sexual orientation had lower rates of HIV diagnosis ( $\beta = -0.550$ ; 95% CI:  $-0.628, -0.472$ ) and PrEP use ( $\beta = -0.165$ ; 95% CI:  $-0.203, -0.119$ ), after adjusting for state-level covariates such as median age, percentage black race, and legislative majority party in 2013.

**Conclusion.** State-level stigma has been shown to reduce SGM visibility, therefore, restricting access to prevention services. These findings suggest that states with higher levels of structural stigma toward same-sex sexuality may also have lower rates of engagement in HIV prevention services.

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#### 1255. Comparison in AIDS-Related Mortality Between African Americans and Whites with Human Immunodeficiency Virus During the HAART Era

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**Background.** Higher death rates have been reported in African American (AA) compared with non-Hispanic whites with HIV infection. However, there are no published studies of attributable mortality by racial and ethnic groups. We evaluated differences in attributable mortality between AA and whites.

**Methods.** We conducted a retrospective review of all persons with HIV infection who received care at the University of Cincinnati Medical Center whose deaths were between 1996 and 2017. We abstracted chart data using a standard data tool and identified all deaths reported to the social security national database. Probable cause of death was assigned using the EuroSida CoDe methodology. Primary endpoint was to compare AIDS vs. non-AIDS-related deaths between AA and whites.

**Results.** Initial analysis of 588 deaths are reported through 2007 (44% AA and 53% white). The median age at the time of HIV diagnosis was 37 years for AA patients and 36 years for white patients, while median age at the time of death was 43 years for AA and 42 years for whites ( $P = ns$ ). 16.9% of AA were women, 2.6% were transgender; 10.3% of whites were women and 1% were transgender ( $P < 0.02$ ). Risk factors for HIV acquisition included: MSM, 61.3% of whites vs. 46.0% AA; heterosexual contact, 11.7% of whites vs. 13.4% for AA; and injection drug use 16.9% white vs. 18.3% AA ( $P < 0.0001$ ). African Americans had both lower median CD4 counts at the time of diagnosis and within 3–6 months prior to death (167 and 68 cells/mm<sup>3</sup>, respectively) as compared with whites (214 and 103 cells/mm<sup>3</sup>, respectively) ( $P < 0.0001$  for both). There was no statistical significance of having AIDS at entry into the practice between AA and whites ( $P = 0.79$ ). AIDS-related deaths accounted for a larger percentage of overall deaths within white patients (51%) compared with AA patients (40%) ( $P = 0.03$ ).

**Conclusion.** Our data show that while a greater percent of AIDS-related deaths were found in whites vs. AA in the early HAART era, AA patients typically have lower CD4 counts at the time of diagnosis and within 3–6 months prior to death. Future analyses will examine specific attributable mortality, HIV viremia and changes in causes of death over later HAART era. Understanding factors associated with mortality may inform care models to prevent or delay future deaths.

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#### 1256. Contemporary Evaluation of Racial/Ethnic Disparities in Survival and Disease Progression among People with HIV in the US Midwest

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**Background.** Combating HIV-related disparities is a major goal of the 2020 National HIV/AIDS Strategy. However, research on HIV disparities has primarily been conducted in urban settings. A 1997–2007 study of people with HIV (PWH) at our clinic noted significantly increased mortality among high-risk non-Hispanic (NH) Black PWH (73%) compared with NH Whites (88%). This study evaluated demographic disparities in survival and disease progression in a large Midwest clinical cohort.

**Methods.** We retrospectively reviewed records of 1,396 PWH receiving treatment at an HIV Clinic in Omaha, Nebraska from 2012 through 2017. We included patients over 19 years old with diagnosed HIV, a minimum of two visits, and no lapse in care >2 years. Patients were stratified into low-risk (CD4 >100 cells/mm<sup>3</sup> and HIV viral load <250,000 copies/mL) and high-risk (all others) groups. Cox proportional hazard models and Kaplan–Meier curves with log-rank tests compared patient demographics and mortality. Generalized estimating equations modeled change in CD4 count over time.

**Results.** No significant difference in mortality was noted across race/ethnicity categories ( $P = 0.286$ ). Several clinical and demographic characteristics, including CD4 counts <500 cells/mm<sup>3</sup>, were significantly associated with increased mortality (Figure 1). Compared with NH Whites, mean CD4 counts (Figure 2) were significantly lower for NH Blacks ( $P = 0.001$ ), Hispanics ( $P = 0.006$ ), and Others ( $P = 0.013$ ). High-risk status was associated with mortality ( $P < 0.001$ ), but no significant differences in mortality were noted across race/ethnicity categories after stratifying for patient risk status (Figures 3 and 4).

**Conclusion.** Significant racial/ethnic disparities in HIV disease progression among PWH at a Midwest HIV Clinic persist. However, in contrast to the 1997–2007 study, disparities in survival were not observed among high-risk PWH. As our patient demographics are essentially the same, the reduction of this disparity suggests needed investigation of whether these changes are the result of better antiretroviral efficacy or if social determinants of health in the region have improved. Systems-level interventions are needed to ensure all PWH benefit from continuing advances in HIV research and care.

Figure 1. Independent clinical and demographic predictors of mortality

Clinical/Demographic Characteristic	Number (%)	Hazard Ratio	p-value
CD4 count			
< 100	112 (9%)	24.02	<0.001
100-299	232 (18%)	4.45	0.001
300-499	346 (27%)	2.56	0.037
≥ 500	578 (46%)	Ref.	Ref.
HIV viral load			
< 50 or undetectable	727 (52%)	Ref.	Ref.
50-14,999	292 (21%)	3.45	<0.001
15,000-74,999	165 (12%)	6.20	<0.001
75,000-249,999	137 (10%)	1.34	0.775
≥ 250,000	66 (5%)	14.96	<0.001
Age		1.05	<0.001
< 30	223 (16%)		
30-34	178 (13%)		
35-39	177 (13%)		
≥ 40	818 (59%)		
Sex Assigned at Birth		1.04	0.903
Male	1052 (75%)		
Female	344 (25%)		
Race/Ethnicity			
Non-Hispanic White	746 (54%)	Ref.	Ref.
Non-Hispanic Black	419 (30%)	1.07	0.811
Hispanic	178 (13%)	0.35	0.077
Other		0.89	0.873
Native American	16 (1%)		
Asian	31 (2%)		
Other	11 (1%)		
Income ≤ 138% of Federal Poverty Level	640 (42%)	4.83	0.004

Figure 2. Mean CD4+ cell count over time by race/ethnicity

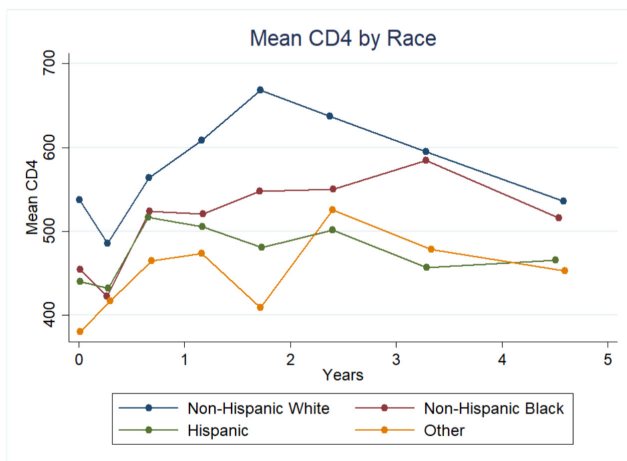


Figure 3. Kaplan-Meier survival curve over time by race/ethnicity among high-risk patients

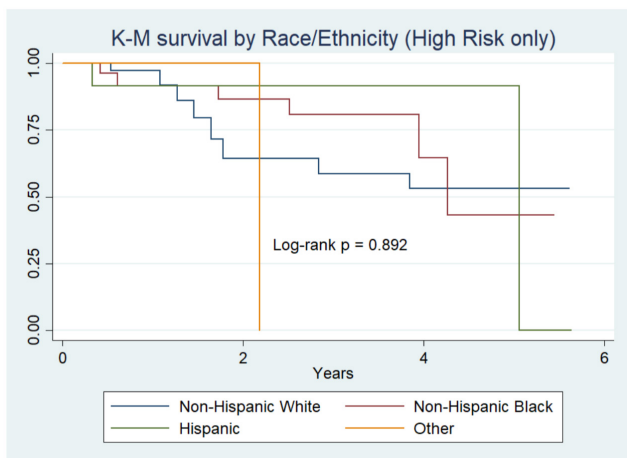
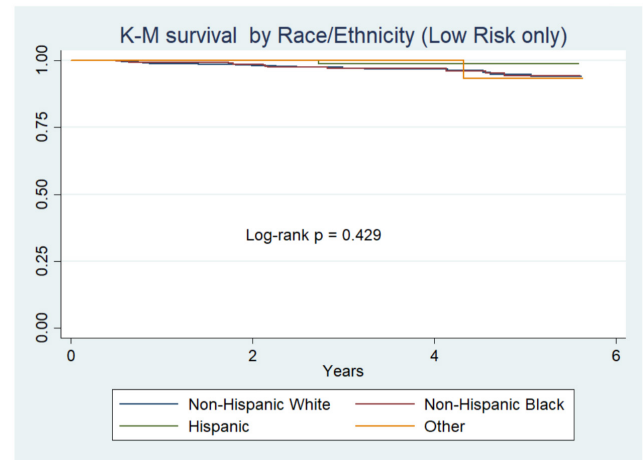


Figure 4. Kaplan-Meier survival curve over time by race/ethnicity among low-risk patients



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1257. Mental Health, Quality of Life, and Accessibility to Care Among Virally Suppressed People Living with HIV in the United States

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**Background.** Life expectancy of people living with HIV (PLHIV) in the United States has improved dramatically in the last 25 years, and more than ever are virally suppressed (VS). However, HIV is a complex chronic condition associated with a myriad of concurrent conditions. The “Real-world Insights of PLHIV Shared through Electronic devices” (RISE) study was a cross-sectional survey designed to obtain an up-to-date understanding of the unmet needs in virally suppressed PLHIV.

**Methods.** Participants completed the survey on a mobile application downloaded directly to their device. The survey included a sociodemographic and clinical section, and seven validated patient-reported outcome measures. The current analysis was limited to Functional Assessment of HIV Infection (FAHI) total and domain scores as well as the Patient Satisfaction Questionnaire (PSQ-18) accessibility and convenience domain. A two-point difference in the FAHI domain scores and a five-point difference in the total score are generally considered clinically meaningful and were used as benchmarks for comparisons.

**Results.** Most of the sample ( $n = 1,226$ ) were virally suppressed (VS) (92%), male (81%), White (53%), homosexual (77%), and reported some type of mental health condition (90%). On average participants were  $46 \pm 11$  years old and had been diagnosed with HIV  $14.3 \pm 9.6$  years ago. VS participants with a mental health condition reported significantly lower quality of life (QoL) than participants without a mental health condition, except on the FAHI social well-being and cognitive functioning scores (Table 1). VS participants with depression reported lower QoL even when controlling for key demographic variables ( $F = 278.3$ ;  $P < 0.0001$ ;  $R^2 = .77$ ).

**Conclusion.** While treatment and care for PLHIV has improved in recent years, there remain significant unmet needs. Although achieving VS significantly improves the QoL of PLHIV, additional attention should be placed on the role of mental health and well-being, especially as individuals age while living with HIV. These results highlight the need to understand factors contributing to decreased HRQoL in PLHIV, and the importance of addressing these factors in clinical care.

Table 1. FAHI Scores by Presence of Mental Health Condition

FAHI Score	Comorbidity: Mental Disorder <sup>1</sup> (N=1116)		Change in Score	p-value <sup>2</sup>	Effect Size
	Yes (n=999)	No (n=117)			
<b>Total Score</b>					
Mean (SE)	112.2 (1.02)	123.8 (2.60)	-11.6	0.0002	-0.37
95% CI	(110.2, 114.2)	(118.7, 129.0)			
<b>Physical Well-Being Score</b>					
Mean (SE)	28.82 (0.27)	31.54 (0.65)	-2.72	0.0002	-0.32
95% CI	(28.28, 29.36)	(30.24, 32.83)			
<b>Emotional Well-Being Score</b>					
Mean (SE)	35.65 (0.29)	28.72 (0.79)	-6.93	0.0006	-0.34
95% CI	(25.08, 26.22)	(27.16, 30.30)			
<b>Functional and Global Well-being Score</b>					
Mean (SE)	32.34 (0.34)	35.56 (0.95)	-3.22	0.0022	-0.30
95% CI	(31.66, 33.01)	(33.69, 37.44)			
<b>Social Well-Being Score</b>					
Mean (SE)	17.96 (0.25)	19.33 (0.77)	-1.37	0.0778	-0.17
95% CI	(17.47, 18.45)	(17.80, 20.86)			
<b>Cognitive Functioning Score</b>					
Mean (SE)	7.41 (0.09)	8.68 (0.23)	-1.27	<0.0001	-0.43
95% CI	(7.23, 7.60)	(8.24, 9.13)			

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