



Early linkage to HIV care and antiretroviral therapy use among men who have sex with men — 20 cities, United States, 2008 and 2011

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BACKGROUND

- Over half of HIV infections in the United States occur among men who have sex with men (MSM)¹
- Among MSM, blacks are disproportionately affected by HIV²
- Antiretroviral therapy lowers HIV viral load, improves health outcomes, and reduces the likelihood of HIV transmission³
- Recommendations for antiretroviral therapy (ART) initiation in the U.S. in treatment-naïve patients have changed over time⁴
 - Pre-2009: Persons with AIDS-defining illness or CD4 count < 350 cells/mm³
 - 2009: Persons with AIDS-defining illnesses or CD4 count < 500 cells/mm³
 - 2012: Recommended for all HIV-infected individuals
- Timely linkage to care is a key step for initiation of ART
- Objectives:
 - Determine if prevalence of 1) early linkage to care and 2) current ART use among self-reported HIV-positive MSM changed between the 2008 and 2011 MSM cycles of the National HIV Behavioral Surveillance System (NHBS)
 - Examine changes in early linkage and ART use by demographic characteristics

METHODS

- Since 2006, NHBS has monitored HIV-associated behaviors and HIV prevalence in 20 cities with high AIDS prevalence among three populations at high risk for infection: MSM, injection drug users, and high-risk heterosexuals
 - Data from 2 MSM cycles used for this analysis: 2008 and 2011
- Venue-based, time-space sampling was used to recruit MSM for interviews and HIV testing
- Early linkage to care was defined as a clinic visit for HIV care within 3 months of diagnosis and current ART use was defined as reporting use at NHBS interview
- Self-reported HIV-positive MSM (ever had sex with a man) with a confirmed positive HIV test result in NHBS were included in analysis
- Early linkage models were restricted to those diagnosed with HIV ≥ 3 months prior to interview
- Linear mixed models clustered on city and accounting for interactions between covariates and cycle year were used to examine differences in the two outcomes between 2008 and 2011



Figure 1. Participating cities – NHBS, 2008 and 2011

RESULTS

Table 1. Prevalence of early linkage to care among MSM – NHBS, 2008 and 2011

Characteristic	2008		2011		Adjusted ^a PR (95% CI)	P-value
	No. in sample	n (%)	No. in sample	n (%)		
Overall	810	608 (75.1)	1,042	817 (78.4)	1.04 (0.95-1.15)	.37
Race/ethnicity						
Black	197	139 (70.6)	350	263 (75.1)	1.08 (0.90-1.29)	.39
Hispanic	183	136 (74.3)	213	179 (84.0)	1.15 (1.02-1.29)	.03
White	381	295 (77.4)	408	324 (79.4)	1.04 (0.96-1.13)	.32
Other ^b	49	38 (77.6)	66	47 (71.2)	0.92 (0.69-1.22)	.57

Abbreviations: CI, confidence interval; MSM, men who have sex with men; PR, prevalence ratio
^a Reference is 2008; model includes year, race/ethnicity, income, insurance status, venue type where recruitment occurred (bar, dance club, or other) and their interactions with year as fixed effects; city is included as a random effect
^b Includes MSM reporting American Indian or Alaska Native, Asian, Native Hawaiian or Pacific Islander, other race, or multiple races

Table 2. Prevalence of current ART use among MSM – NHBS, 2008 and 2011

Characteristic	2008		2011		Adjusted ^a PR (95% CI)	P-value
	No. in sample	n (%)	No. in sample	n (%)		
Overall	857	581 (67.8)	1,111	859 (77.3)	1.22 (1.07-1.38)	.004
Race/ethnicity						
Black	219	129 (58.9)	378	264 (69.8)	1.30 (1.12-1.52)	.001
Hispanic	192	136 (70.8)	229	178 (77.7)	1.22 (1.03-1.45)	.02
White	395	283 (71.7)	430	367 (85.4)	1.34 (1.15-1.57)	.0004
Other ^b	51	33 (64.7)	68	45 (66.2)	1.03 (0.82-1.29)	.78
Current age (years)						
18-29	153	56 (36.6)	274	147 (53.7)	1.42 (1.10-1.84)	.008
30-39	237	143 (60.3)	264	205 (77.7)	1.29 (1.09-1.52)	.004
40-49	302	245 (81.1)	367	318 (86.7)	1.08 (0.93-1.26)	.28
≥50	165	137 (83.0)	206	189 (91.8)	1.11 (0.98-1.26)	.10
Insurance status						
None	216	107 (49.5)	237	139 (58.7)	1.25 (1.03-1.51)	.02
Private only	311	218 (70.1)	391	321 (82.1)	1.24 (1.07-1.44)	.005
Public only	231	179 (77.5)	341	267 (78.3)	1.13 (0.99-1.29)	.08
Other/multiple	96	76 (79.2)	139	130 (93.5)	1.26 (1.09-1.46)	.003
Sexual identity						
Gay	752	523 (69.6)	987	778 (78.8)	1.27 (1.00-1.61)	.05
Bisexual or heterosexual	103	57 (55.3)	119	77 (64.7)	1.17 (1.08-1.27)	.0007

Abbreviations: ART, antiretroviral therapy; CI, confidence interval; MSM, men who have sex with men; PR, prevalence ratio
^a Reference is 2008; model includes year, race/ethnicity, current age, income, sexual identity, venue type where recruitment occurred (bar, dance club, or other) and their interactions with year as fixed effects; city is included as a random effect
^b Includes MSM reporting American Indian or Alaska Native, Asian, Native Hawaiian or Pacific Islander, other race, or multiple races

- Prevalence of early linkage to care did not change overall (75% in 2008 and 78% in 2011)
- The largest increase in prevalence of early linkage to care was among Hispanics, from 74% in 2008 to 84% in 2011.
- In both years, the proportion linked to care early was higher among those with higher education and income, MSM who identified as gay vs. bisexual or heterosexual, and men who were older at diagnosis (≥ 30) (data not shown).
- Early linkage to care did not increase significantly overall or among most demographic sub-groups between 2008 and 2011 (data not shown for education, income, insurance status, sexual identity, or age at diagnosis).

- Prevalence of current ART use increased overall from 68% in 2008 to 77% in 2011.
- ART use also increased among most race/ethnicity groups (except those in the 'Other' group), younger age groups (<40), MSM with and without health insurance, and MSM who identified as bisexual or heterosexual vs. gay.
- In both years, higher ART use was observed among whites, older age groups, MSM with insurance, and MSM who identified as gay.
- Among those retained in care (MD visit for HIV in the 6 months prior to interview), 82% of MSM were currently receiving ART in 2011.
- Whites were 1.2 times as likely to be on ART compared to blacks in 2008 and 2011.

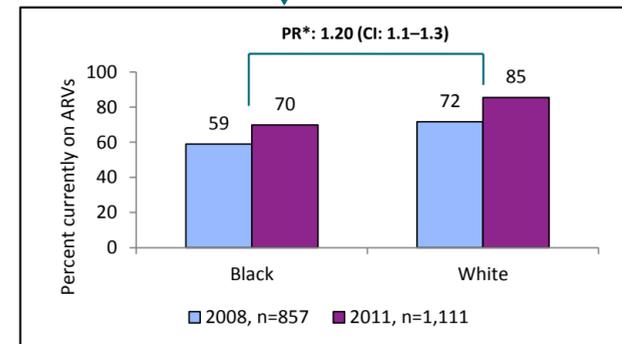


Figure 2. Prevalence of current ART use by race/ethnicity among MSM – NHBS, 2008 and 2011
*Prevalence ratio (PR) based on combined 2008, 2011 data

LIMITATIONS

- NHBS is not a nationally representative sample, so results may not be generalizable to all cities or to all MSM in participating cities.
- Our measures of early linkage to care and ART use are based on self-reported data and might be subject to social-desirability and recall bias.
- The analysis is limited to two time points and cannot be interpreted as a trend.
- Our analysis did not include data on ART adherence or viral load suppression, so we cannot say whether MSM currently on ART are at reduced risk of HIV transmission.

DISCUSSION

- While the prevalence of early linkage to care among MSM did not increase significantly between 2008 and 2011, the prevalence of ART use increased among most demographic groups.
 - Suggests that those who have linked to care are increasingly initiating ART, in accordance with the more inclusive guidelines introduced in 2009.
- There is a large disparity between black and white MSM with respect to current ART use despite similar prevalences of early linkage to care in 2011.
- Estimates of early linkage to care among NHBS MSM in 2011 are similar to those among MSM in the U.S. in 2009 reported by Hall et al⁵, while estimates of ART use are lower among NHBS MSM compared to Hall et al.
 - Early linkage to care: NHBS MSM (78%) vs. Hall et al (80%)
 - ART use among those retained in care: NHBS MSM (82%) vs. Hall et al (90%)
- While the measurable increases in antiretroviral therapy use are encouraging, greater efforts to link and retain people in care are needed, especially with the increasing evidence supporting treatment as prevention and expanded treatment guidelines released in 2012.

CONTACT INFO/REFERENCES

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