Increases in HIV Testing among Men Who Have Sex with Men — National HIV Behavioral Surveillance System, 20 U.S. Metropolitan Statistical Areas, 2008 and 2011

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BACKGROUND

- MSM represent an estimated 4% of the male population in the United States, and approximately 13% of the U.S. population is black/African American
- 62% of estimated new HIV diagnoses in the United States in 2011 were attributed to male-to-male sexual contact
  - 39% of these MSM were black/African American
  - 58% of the MSM aged 13–24 years were black/African American
- HIV testing is key to increasing awareness of HIV status and linking HIV-positive individuals to care and prevention services
- CDC recommends that sexually active MSM test for HIV at least annually
- Testing initiatives, including CDC's Expanded Testing Initiative (ETI), have been developed to facilitate HIV diagnosis and linkage to medical care, focusing on populations disproportionately affected by HIV
- Objective: Describe recent HIV testing behavior (during the previous 12 months) among MSM in the United States participating in the National HIV Behavioral Surveillance System (NHBS) in 2008 and 2011

METHODS

- NHBS, conducted in 20 metropolitan statistical areas (MSAs) with high HIV prevalence (map below), is a recurring cross-sectional survey that monitors HIV-associated behaviors among 3 populations at increased risk for HIV, including MSM
- Men were recruited using venue-based, time-space sampling
- Eligibility Criteria:
  - Male ≥ 18 years of age, resident of participating MSA
  - Able to complete the survey in English or Spanish
  - Reported ever having had oral or anal sex with a man (2011 only)
- Analysis Criteria:
  - Reported at least 1 male oral or anal sex partner in the previous 12 months
  - Provided answers to questions regarding history of HIV testing
  - Not HIV-positive as of 1 year before survey
- Analyses:
  - Compared percentages of MSM in 2008 and 2011 who reported recent HIV testing (during the previous 12 months), overall and by race/ethnicity and age
  - Performed multivariable analysis to determine whether interview year was associated with recent HIV testing
    - Estimated adjusted prevalence ratios [aPRs] and 95% confidence intervals [CIs] from a Poisson model with robust standard error (using the GENMOD procedure in SAS 9.3)
    - Adjusted the model for race/ethnicity, age, education, income, and MSA, and included interaction terms for race/ethnicity by interview year and age by interview year
    - Used a separate model, including a 3-way interaction of race/ethnicity by age by interview year, to understand HIV testing among young MSM when stratified by race/ethnicity
  - Used the self-reported number of HIV tests in a 2-year period to measure HIV testing frequency for men interviewed in 2008 and 2011
    - Percentage of men who tested twice in a 2-year period was used as a proxy for annual testing



20 U.S. MSAs participating in NHBS, 2008 and 2011

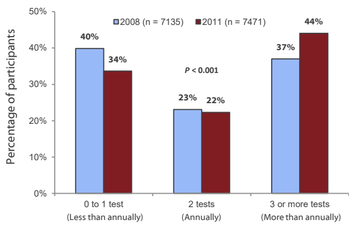
RESULTS

Table 1:
Characteristics of MSM — NHBS, 2008 and 2011

	2008 No.	2008 (%)	2011 No.	2011 (%)
Race/Ethnicity*				
American Indian/Alaska Native	42	(1)	63	(1)
Asian/Native Hawaiian/Other Pacific Islanders	257	(3)	255	(3)
Black/African American	1926	(24)	2130	(26)
Hispanic/Latino	2037	(26)	2171	(27)
White	3361	(42)	3198	(39)
Multiple Races	314	(4)	289	(4)
Age group (years)				
18-19	445	(6)	357	(4)
20-24	1509	(19)	1894	(23)
25-29	1561	(20)	1612	(20)
30-39	2194	(28)	1901	(23)
≥ 40	2234	(28)	2362	(29)
Education				
< High school	509	(6)	434	(5)
High school diploma or GED	1839	(23)	1961	(24)
Some college or technical degree	2537	(32)	2729	(34)
College degree or postgraduate education	3057	(38)	3002	(37)
Annual Household Income				
≤ $19,999	2288	(29)	2484	(31)
$20,000-$39,999	2018	(25)	1983	(24)
$40,000-$74,999	1949	(25)	1958	(24)
≥ $75,000	1563	(20)	1565	(19)
Total	**7943**		**8126**	

Percentages may not add to 100, due to rounding or missing values
*Hispanics/Latinos can be of any race; categories are mutually exclusive

Figure:
Number of HIV tests in the previous 2 years, MSM — NHBS, 2008 and 2011



The percentage of men who tested 3 or more times in 2 years (more than annually) increased

Table 2:
Recent HIV testing among MSM — NHBS, 2008 and 2011

	2008 No. Tested	2008 Total	2008 (%)	2011 No. Tested	2011 Total	2011 (%)	2011 vs 2008 aPR	(95% CI)	*P*-value Adjusted*
Total	5026	7943	(63)	5478	8126	(67)	**1.09**	(1.06,1.12)	<0.001
Race/Ethnicity**									
Black/African American	1213	1926	(63)	1510	2130	(71)	**1.12**	(1.07,1.17)	<0.001
Hispanic/Latino	1275	2037	(63)	1402	2171	(65)	1.02	(0.98,1.08)	0.3
White	2146	3361	(64)	2096	3198	(66)	1.03	(0.98,1.07)	0.2
Other/Multiple Races	387	613	(63)	456	607	(75)	**1.20**	(1.11,1.30)	<0.001
Age group (years)									
18-19	288	445	(65)	238	357	(67)	1.05	(0.95,1.17)	0.3
20-24	1045	1509	(69)	1364	1894	(72)	**1.06**	(1.02,1.11)	0.008
25-29	1066	1561	(68)	1180	1612	(73)	**1.10**	(1.05,1.15)	<0.001
30-39	1425	2194	(65)	1322	1901	(70)	**1.10**	(1.05,1.15)	<0.001
≥ 40	1202	2234	(54)	1374	2362	(58)	**1.14**	(1.08,1.20)	<0.001

aPR = Adjusted Prevalence Ratio and CI = Confidence Interval
*Table 2 model is adjusted for race/ethnicity by interview year, age by interview year, race/ethnicity, age, education, income, and MSA
**Hispanics/Latinos can be of any race; categories are mutually exclusive

Recent HIV testing increased overall

The increase varied by race/ethnicity (*P* < 0.001 for the interaction term, not shown)

Increases were significant among black/African American MSM and MSM of other/multiple races

Table 3:
Adjusted recent HIV testing, stratified by race/ethnicity and age among young MSM — NHBS, 2008 and 2011

	2011 vs 2008 aPR	(95% CI)	*P*-value Adjusted*
Race/Ethnicity by Age Group (years)**			
Black/African American			
18-19	**1.20**	(1.05,1.38)	0.007
Hispanic/Latino			
18-19	0.87	(0.72,1.06)	0.2
White			
18-19	0.87	(0.62,1.21)	0.4
Other/Multiple Races			
18-19	1.21	(0.78,1.88)	0.4

aPR = Adjusted Prevalence Ratio and CI = Confidence Interval
*Table 3 model is adjusted for race/ethnicity by age by interview year, race/ethnicity by interview year, age by interview year, race/ethnicity, age, education, income, MSA
**Hispanics/Latinos can be of any race; categories are mutually exclusive

Recent HIV testing increased among young black/African American MSM

DISCUSSION

- Recent HIV testing increased among MSM from 2008 to 2011
- Increases were more substantial among black/African American MSM and MSM of other or multiple races
  - Black/African American MSM aged 18-19 years experienced significant adjusted increases in recent HIV testing, while MSM aged 18-19 years of other racial/ethnic groups did not
  - These increases might reflect an effect of testing initiatives focused on populations disproportionately affected by HIV
- The percentage of MSM who tested at least 3 times during the previous 2 years increased, suggesting that some MSM are undergoing HIV testing more frequently
- Although increases in recent HIV testing were observed, there is more work to be done
  - Only 67% of the MSM participating in NHBS in 2011 had been tested for HIV during the previous 12 months

LIMITATIONS

- These findings may not be representative of all MSM, because data were collected in 20 large MSAs with high HIV burden and most men were recruited from bars or dance clubs
- The data are not weighted to account for the sampling design
- Social desirability and recall biases may affect estimates
- This study is cross-sectional and the outcome cannot be linked to any particular testing initiative, including CDC's ETI
  - 17 of the 20 NHBS sites were among the original 25 ETI jurisdictions, but despite the considerable overlap, NHBS was not designed to evaluate ETI

CONCLUSIONS

- Achieving increased awareness of HIV infection through HIV testing is an important step towards reducing new HIV infections
  - Can lead to linkage to and engagement in HIV care, viral suppression, and behavioral change
- HIV testing initiatives focused on populations most affected by HIV may be having a positive effect
- While these findings are encouraging, our analysis demonstrates that improved HIV testing coverage is needed to meet CDC recommendations

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