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Sex Transm Dis. Author manuscript; available in PMC 2015 December 17.

Published in final edited form as:

Sex Transm Dis. 2013 February ; 40(2): 154–157. doi:10.1097/OLQ.0b013e31827b9e89.

Health Care Use and Opportunities for Human Papillomavirus Vaccination Among Young Men Who Have Sex With Men

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Abstract

We studied 2941 young gay, bisexual, and other men who have sex with men using National HIV Behavioral Surveillance System data. Within the past 12 months, 88.9% used health care, suggesting many opportunities for recommended care including human papillomavirus vaccination. However, only 61.3% disclosed male-male sexual attraction/behavior to a provider, which may result in some opportunities being missed.

Young gay, bisexual, and other men who have sex with men (MSM) are at high risk for HIV and other sexually transmitted infections.[1,2] Among MSM, increases in HIV, syphilis, and antibiotic-resistant gonorrhea have been reported in the past decade.[2,3] Also common is human papillomavirus (HPV) infection, with a prevalence of approximately 63.9% among HIV-uninfected MSM and 92.6% among HIV-infected MSM.[4] Human papillomavirus–associated diseases such as anal cancer are also more common among MSM than heterosexual men.[5]

For this reason, in 2011, vaccination against HPV was recommended routinely in the United States for all boys at age 11 or 12 years and through age 26 years for MSM not vaccinated previously.[6] Other health care services recommended for all sexually active MSM include vaccination against hepatitis A and B and screening for HIV, syphilis, gonorrhea, and chlamydia at least annually.[7] Although some preventive services are available in other contexts, sexual health services are offered mainly by health care providers. Therefore, opportunities for recommended sexual health care rely on adequate health care use, as well as disclosure of male-male attraction or sexual behavior.

Few national data on sexual health care use among young MSM exist. We aimed to describe health care use among young MSM in the recommended age range to determine opportunities for HPV vaccination among this at-risk population in the United States.

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Conflicts of interest: None declared.

Disclaimer: The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the CDC.

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We analyzed data from the 2008 National HIV Behavioral Surveillance System, an anonymous cross-sectional survey conducted among MSM in 21 cities in the United States.[8,9] Briefly, participants were recruited using venue-based, time-space sampling at locations where MSM congregate, such as bars, clubs, and social organizations. For consenting participants aged 18 years or older living in the metropolitan statistical area, trained interviewers used a handheld computer to administer a standardized, anonymous questionnaire about demographics, health insurance status, sexual identity and behavior, HIV testing history, and other health care use. Participants were interviewed in English or Spanish. Activities were approved by the Centers for Disease Control and Prevention institutional review board and local institutional review boards for each participating metropolitan statistical area.

This analysis included all participating men aged 18 to 26 years who reported ever having a male sex partner, identifying as homosexual/gay or bisexual, or both. Because receipt of any recommended sexual health care is a proxy measure for HPV vaccination opportunities, health care use was defined as at least one visit to a health care provider, HIV test, or syphilis test within the most recent 12 months. Disclosure (also called “coming out” or “being out”) was defined as ever having disclosed male-male attraction or sexual behavior to another person or specifically to a health care provider. Poverty was based on annual income and number of household members.[10]

We calculated descriptive frequencies and used bivariate analysis with Wald χ^2 tests to calculate odds ratios (ORs) and 95% confidence intervals (CIs) to assess the association between health care use and disclosure to a health care provider with demographics, health insurance status, HIV test results, and sexual behavior. To identify factors associated with health care use, we conducted multivariate logistic regression using a backward stepwise elimination model after also screening out variables that were not significant on bivariate analysis at $\alpha = 0.05$. We then calculated adjusted ORs (aORs). Goodness-of-fit and variance inflation factors for collinearity were assessed. Statistical analyses were conducted using SAS software, version 9.2 (SAS Institute, Cary, NC).

Our sample included 2941 young men. Nearly all, 2898 (98.5%), reported having 1 or more male sex partners during the past 12 months. Overall, 2245 (76.3%) identified as gay/homosexual, 643 (21.9%) identified as bisexual, and 49 (1.7%) identified as heterosexual/straight. Regarding disclosure of male-male attraction or sexual behavior, 2716 (92.3%) had disclosed to at least one other person and 1802 (61.3%) had disclosed to a health care provider. There were 133 (4.5%) men who reported previously testing positive for HIV infection (Table 1).

A total of 2614 (88.9%) reported any health care use within the past 12 months. Of these, 2200 (84.2%) visited a health care provider, 1944 (74.4%) received an HIV test, and 1134 (43.4%) received a syphilis test. Only 826 (31.6%) reported visiting a health care provider and being tested for both HIV and syphilis. Not all men were tested in a clinical setting; 367 (14.0%) had not visited a health care provider but had been tested for HIV.

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Health care use was higher (97.0%) among men who reported testing positive for HIV infection compared with men who reported a negative or unknown HIV status (78.5%). Additional factors significantly associated with health care use in bivariate analysis included having disclosed to a health care provider, having any health insurance, having a high school diploma or equivalent or some college or higher education, and having an annual household income above poverty. Men who identified as heterosexual/straight and Hispanic men were less likely to use health care. Age and number of sexual partners in the past 12 months were not significantly associated with health care use (Table 1).

In multivariate analysis, the strongest predictor of health care use was a self-reported positive HIV test result (aOR, 4.6; CI, 1.7–12.5). Other factors significantly associated with health care use were having any health insurance (aOR, 2.5; CI, 1.9–3.2) and having at least a high school education (aOR, 1.9 [CI, 1.3–2.8] for a high school diploma or equivalent; aOR, 2.6 [CI, 1.8–3.7] for some college or higher). Men who identified as heterosexual/straight were significantly less likely to use health care (aOR, 0.26; CI, 0.14–0.48; Table 1). Goodness-of-fit for this multivariate model was suitable at 0.66, and the variance inflation factor was 1.0 for all 4 variables, suggesting little collinearity.

Among 2614 men reporting health care use within 12 months, 1692 (64.7%) had ever disclosed male-male sexual attraction or behavior to a health care provider. Men with a self-reported positive HIV test result were more likely to disclose (92.2%), compared with other men using health care (67.0%). Other factors significantly associated with disclosure among men using health care included older age, higher income, and college-level education. Men using health care were less likely to have disclosed if they were Hispanic or black or if they did not identify as homosexual/gay (Table 2).

Sexual minorities, including MSM, may face a number of important barriers to accessing health care because of stigma and its consequences.[11–14] However, in this large sample of young gay, bisexual, and other MSM in the United States, most (88.9%) had used health care within 12 months. Given this high percentage, we anticipate many opportunities for HPV vaccination and other recommended care among MSM within the target age range.

Men whose health care providers know their sexual histories stand to receive more services recommended for MSM.[15] In a study of more than 10,000 MSM, odds of being tested for gonorrhea and syphilis doubled among men who disclosed sexual activity with another man to a health care provider.[16] In another study, 72% of MSM stated that their physicians were aware of their sexual orientation, and this knowledge was associated with a higher likelihood of recommending relevant preventive health measures.[17] In our study, most young men had disclosed (92.3%), and many had disclosed to a health care provider (61.3% of all men and 64.8% of those reporting health care use within 12 months), comparable with other published reports. Although most young men had used health care recently and most were out, not everyone received all preventive care recommended for MSM: overall, less than a third had visited a health care provider and been tested for both HIV and syphilis in the past year, although such testing is recommended annually for MSM. Among other efforts to improve recommended preventive care, health care providers should create health

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care environments where men are comfortable disclosing, so that appropriate health care services can be offered.

There are limitations to this analysis. First, data were collected at venues in 21 cities and do not represent all MSM, particularly those in rural areas of the United States, who may face unique barriers. Also, we were unable to distinguish whether young men had disclosed to types of health care providers offering vaccines or to assess the time frame of disclosure. In addition, we did not collect data on boys younger than 18 years, the primary target population for adolescent vaccinations.

Human papillomavirus vaccine should be offered to all MSM through age 26 years. Our findings suggest that because of high health care use among young MSM, health care providers have opportunities to reach many sexually active MSM to recommend HPV vaccine and other sexual health care. Although this study could not assess barriers to HPV vaccine uptake such as local availability or cost, nationally recommended vaccines are covered by most health insurance plans and the Vaccines for Children program. However, gaps in disclosure to health care providers also suggest potential missed opportunities. Future data from the National HIV Behavioral Surveillance System will assess initial rates of HPV vaccine uptake among young MSM. In the meantime, research is needed to clarify how to create and maintain supportive health care environments where gay, bisexual, and other MSM can feel safe and comfortable disclosing their identities and behaviors to their health care providers, so that appropriate care can be delivered in accordance with national clinical guidelines and recommendations.

Acknowledgments

We thank Binh C. Le, MD, for his assistance with data analysis, all National HIV Behavioral Surveillance System participants for their key contributions, and the National HIV Behavioral Surveillance System investigators for their important work: Atlanta, GA: Jennifer Taussig, Robert Gern, Tamika Hoyte, and Laura Salazar; Baltimore, MD: Colin Flynn and Frangiscos Sifakis; Boston, MA: Debbie Isenberg, Maura Driscoll, and Elizabeth Hurwitz; Chicago, IL: Nikhil Prachand and Nanette Benbow; Dallas, TX: Sharon Melville, Praveen Pannala, Richard Yeager, Aaron Sayegh, Jim Dyer, and Alicia Novoa; Denver, CO: Mark Thrun, Alia Al-Tayyib, and Ralph Wilmoth; Detroit, MI: Emily Higgins, Vivian Griffin, and Eve Mokotoff; Houston, TX: Marcia Wolverton, Jan Risser, and Hafeez Rehman; Los Angeles, CA: Trista Bingham and Ekow Sey; Miami, FL: Marlene LaLota, Lisa Metsch, Dano Beck, and David Forrest; Nassau-Suffolk, NY: Chris Nemeth and Carol-Ann Watson; New Orleans, LA: Billy Robinson and Deann Gruber; New York City, NY: Chris Murrill, Alan Neaigus, Samuel Jenness, Holly Hagan, and Travis Wendel; Newark, NJ: Helene Cross, Barbara Bolden, and Sally D'Errico; Philadelphia, PA: Kathleen Brady and Althea Kirkland; San Diego, CA: Vanessa Miguelino and Al Velasco; San Francisco, CA: Henry Raymond and Willi McFarland; San Juan, PR: Sandra Miranda De León and Yadira Rolón-Colón; Seattle, WA: Maria Courogen, Hanne Thiede, Nadine Snyder, and Richard Burt; St Louis, MO: Michael Herbert, Yelena Friedberg, Dale Wrigley, and Jacob Fisher; Washington, DC: Paul Cunningham, Marie Sansone, Tiffany West-Ojo, Manya Magnus, and Irene Kuo; and the Behavioral Surveillance Team, Division of HIV/AIDS Prevention, Centers for Disease Control and Prevention (CDC).

Supported by the CDC.

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TABLE 1

Bivariate and Multivariate Analyses of Factors Associated With Health Care Use Among Young MSM, by Demographic Characteristics and Sexual Behavior—21 Cities, United States, 2008

Characteristic	All Men*, N (%)	Men Reporting Health Care Use*, n (%)	OR (95% CI)	*P*	aOR (95% CI)	*P*
Total	2941 (100)	2614 (88.9)				
Age, y						
18–20	711 (24.2)	631 (88.7)	Reference			
21–26	2230 (75.8)	1983 (88.9)	1.0 (0.8–1.3)	0.90		
Race and ethnicity						
Asian/Pacific Islander	88 (2.3)	76 (86.4)	0.6 (0.3–1.2)	0.17		
Black	994 (33.8)	881 (88.6)	0.8 (0.6–1.1)	0.12		
Hispanic	839 (28.5)	731 (87.1)	0.7 (0.5–0.9)	0.01		
Other†	173 (5.9)	156 (90.2)	0.9 (0.5–1.6)	0.77		
White	844 (28.7)	767 (90.9)	Reference			
Education completed						
Some college or higher	1716 (58.3)	1571 (91.6)	3.2 (2.3–4.5)	<0.001	2.6 (1.8–3.7)	<0.001
High school diploma	954 (32.4)	834 (87.4)	2.1 (1.5–2.9)	<0.001	1.9 (1.3–2.8)	<0.001
Less than high school	271 (9.2)	209 (77.1)	Reference		Reference	
Poverty						
At or below	1076 (36.6)	921 (85.6)	Reference			
Above	1772 (60.3)	1607 (90.7)	1.6 (1.3–2.1)	<0.001		
Health insurance status						
Any health insurance	1755 (59.7)	1632 (93.0)	2.8 (2.2–3.5)	<0.001	2.5 (1.9–3.2)	<0.001
None or unknown	1186 (40.3)	951 (80.2)	Reference		Reference	
Sexual identity						
Gay or homosexual	2245 (76.3)	2016 (89.8)	Reference		Reference	
Bisexual	643 (21.9)	563 (87.6)	0.8 (0.6–1.0)	0.11	0.97 (0.73–1.3)	0.85
Heterosexual or straight	49 (1.7)	31 (63.2)	0.2 (0.1–0.4)	<0.001	0.26 (0.14–0.48)	<0.001
Ever disclosed to a health care provider						
Yes	1802 (61.3)	1692 (93.9)	3.7 (2.9–4.7)	<0.001		
No	1124 (38.2)	907 (80.7)	Reference			

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Characteristic	All Men*, N (%)	Men Reporting Health Care Use*, n (%)	OR (95% CI)	*P*	aOR (95% CI)	*P*
HIV status, self-reported						
Positive	133 (4.5)	129 (97.0)	4.2 (1.5–11.4)	0.005	4.6 (1.7–12.5)	0.003
Negative or unknown	2808 (95.5)	2207 (78.5)	Reference		Reference	
Sexual partners within 1 y						
None	61 (2.1)	51 (83.6)	Reference			
1	620 (21.1)	548 (88.4)	1.5 (0.7–3.1)	0.28		
2–3	986 (33.5)	879 (89.1)	1.6 (0.8–3.3)	0.19		
4–5	485 (16.5)	434 (89.5)	1.7 (0.8–3.5)	0.17		
6–10	417 (14.2)	374 (89.7)	1.7 (0.8–3.6)	0.16		
>10	346 (11.8)	304 (87.8)	1.4 (0.7–3.0)	0.36		

*Numbers may not add to total due to missing data.

†Includes American Indian/Alaska Native, multiple races, and other race.

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TABLE 2

Bivariate Analysis of Factors Associated With Disclosure to a Health Care Provider of Male-Male Attraction or Sexual Behavior, Among Men Who Used Any Health Care in the Past 12 Months—21 Cities, United States, 2008

Characteristic	Men Reporting Disclosure*, n (%)	OR (95% CI)	*P*
Total	1692 (64.7)		
Age, y			
18–20	341 (54.0)	Reference	
21–26	1351 (68.1)	1.8 (1.5–2.2)	<0.001
Race and ethnicity			
Asian/Pacific Islander	52 (68.4)	0.9 (0.6–1.6)	0.83
Black	558 (63.3)	0.8 (0.6–0.9)	0.01
Hispanic	441 (60.3)	0.7 (0.5–0.8)	<0.001
Other†	107 (68.6)	0.9 (0.7–1.4)	0.80
White	531 (69.2)	Reference	
Education completed			
Some college or higher	1082 (68.9)	1.4 (1.0–1.8)	0.05
High school diploma	480 (57.6)	0.8 (0.6–1.1)	0.23
Less than high school	130 (62.2)	Reference	
Poverty			
At or below	543 (59.0)	Reference	
Above	1101 (68.5)	1.5 (1.3–1.8)	<0.001
Health insurance status			
Any health insurance	1070 (65.6)	1.1 (0.9–1.3)	0.36
None or unknown	622 (65.4)	Reference	
Sexual identity			
Gay or homosexual	1406 (69.7)	Reference	
Bisexual	286 (50.8)	0.4 (0.4–0.5)	<0.001
Heterosexual or straight	7 (22.6)	0.1 (0.05–0.3)	<0.001
HIV status, self-reported			
Positive	119 (92.2)	6.8 (3.6–13.1)	<0.001
Negative or unknown	1479 (67.0)	Reference	
Sexual partners within 1 y			
None	33 (64.7)	Reference	
1	346 (63.1)	0.9 (0.5–1.7)	0.85
2–3	543 (61.8)	0.9 (0.5–1.6)	0.72
4–5	289 (66.6)	1.1 (0.6–2.0)	0.74
6–10	256 (68.4)	1.2 (0.6–2.2)	0.57
>10	219 (72.0)	1.5 (0.8–2.7)	0.24

*Row percentages are calculated using a denominator of men reporting health care use (see Table 1). Numbers may not add to total due to missing data.

†Includes American Indian/Alaska Native, multiple races, and other race.