

Diagnosing HIV in Men Who Have Sex with Men: An Emergency Department's Experience

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Abstract

In the United States, men who have sex with men (MSM) constitute the risk group in which the prevalence of new HIV infection is increasing. The percentage of undiagnosed HIV infection and HIV risk behaviors in MSM and non-MSM participating in an emergency department-based rapid HIV screening program were compared. Medical records of all male patients participating in the program from May 2008 to October 2010 were reviewed. MSM were identified as male or male-to-female patients reporting oral and/or anal sex with a male. Males eligible for testing were aged 18 or older, English-speaking, not known to be HIV infected, and able to decline testing. A total of 6672 males were approached for testing; 5610 (84.1%) accepted, 366 (6.5%) were MSM, and 5244 (93.5%) were non-MSM. A total of 90.7% were black. Median age was 41. Fifty-nine MSM (16.1%) were diagnosed with HIV compared to 81 (1.5%) non-MSM. MSM were 10 times more likely than non-MSM to have undiagnosed HIV infection (odds ratio [OR] 10.4, 95% confidence interval [CI] 7.3, 14.0). HIV-infected MSM (median age, 26) were younger than non-MSM (median age, 41). HIV-infected non-MSM were 2 times more likely than MSM to have CD4 counts less than 200 cells per microliter. MSM were more likely to report previous HIV testing (OR 1.9, 95% CI 1.4, 2.5) and risk behaviors, including sex without a condom (OR 2.0, 95% CI 1.5, 2.6), sex with an HIV-infected partner (OR 14.6, 95% CI 8.3, 25.6) and sex with a known injection drug user (OR 4.1, 95% CI 2.0, 8.4). Further investigation of emergency department-based HIV testing and risk reduction programs targeting MSM is warranted.

Introduction

HIV IS A SIGNIFICANT PROBLEM affecting over 1.2 million people in the United States¹ with approximately 50,000 new HIV infections occur annually.² Compounding this issue is the fact that an estimated 230,000 infected individuals are unaware of their HIV-positive status.¹ Men who have sex with men (MSM) continue to be the risk group most affected by HIV. MSM account for 49% of people living with HIV and 61% of the new HIV infections occurring each year.³ Between 2006–2009 young MSM, aged 13–29, were the only risk group in which there was a significant increase in HIV incidence driven, in large part by a 48% increase in new HIV infections among young black MSM.⁴ The Centers for Disease Control and Prevention (CDC) attributes this increase in HIV incidence to several factors including lack of access to health care.³

Regardless of sexual orientation, the impoverished, uninsured, and underinsured are increasingly turning to emer-

gency departments for basic health care services and treatment of nonurgent conditions.^{5–7} In an effort to improve detection of HIV infection, the CDC now recommends that all health care facilities, including emergency departments, with an undiagnosed HIV prevalence rate greater than 0.1% routinely provide voluntary, nontargeted HIV screening to all patients aged 13–64 regardless of chief complaint or risk profile.⁸

Since the CDC released these recommendations in September 2006, the number of emergency departments conducting HIV testing has increased substantially.^{9–11} A National HIV Testing Consortium was formed and a comprehensive set of terms developed to describe emergency department-based HIV testing.¹² The *Annals of Emergency Medicine* created a special supplement dedicated to the topic of HIV screening in emergency department.¹³ Numerous peer-reviewed publications have addressed emergency department-based HIV screening issues including ethical, financial, and legal considerations,¹⁴ cost effectiveness,¹⁵

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patient perceptions,^{16,17} prevalence estimates,^{18,19} and linkage to care.²⁰ Yet the impact of routine HIV screening on emergency department patients belonging to the MSM community has not been well documented.

Venue-based testing, offering HIV testing at public venues frequented by MSM such as bars, restaurants, and clubs, has been well researched and proven to be an effective method for identifying HIV-infected MSM.²¹⁻²³ Research suggests that, at least in urban settings, gay and bisexual men may utilize the emergency department at a higher rate than the general population.²⁴ Clinical venues, such as emergency departments, may also provide MSM with increased access to HIV testing. It is important to assess if a routine, nontargeted HIV screening program implemented in an urban emergency department is able to effectively test and identify HIV infection in MSM.

This study retrospectively reviewed the data collected on all male patients participating in a routine, rapid HIV screening program being implemented in an urban emergency department with the goal of: (1) determining the proportion of MSM unaware of their HIV infection; (2) comparing demographic and behavioral characteristics of MSM to that of non-MSM males; (3) evaluating if newly diagnosed HIV-positive MSM differed from positive non-MSM males in regards to risk behaviors, past year HIV testing, disease stage at diagnosis, and linkage to medical and support services.

Methods

Study and medical records of all male patients participating in a rapid HIV screening program conducted in Grady Memorial Hospital's emergency department from May 2008 through October 2010 were reviewed. Grady Memorial Hospital is a university-affiliated, high-volume urban emergency department that sees approximately 115,000 adult patients each year. Approximately 65% of patients are self-pay and 85% are black. The program was funded through a grant from the Georgia Department of Community Health and the CDC. The chart review was approved by Emory University's Institutional Review Board and Grady Memorial Hospital research oversight committee.

Routine HIV screening program procedures

The nontargeted rapid HIV screening program operated Monday through Friday from 10:00 AM to 10:00 PM. During these hours, trained HIV counselors spoke to patients about HIV testing in a semiprivate area of the emergency department waiting room as well as in examination rooms. Patients eligible for testing were 18 years or older, English-speaking, not known to be HIV positive by self-report, medically stable, and/or able to decline testing. Patients ineligible for testing were incarcerated, mentally altered, and/or unable to fully understand the testing processes due to illness or intoxication.

Counselors used opt-out language to notify patients that a free, rapid HIV test would be performed unless they declined. Patients accepting testing received scripted HIV prevention counseling and were asked detailed questions about their risk behaviors within the past 12 months, including questions about anal and/or oral sex with a man. Patients were then given information about the OraQuick ADVANCE[®] Rapid HIV-1/2 Antibody Test (OraSure Technologies, Inc.,

Bethlehem, PA) and instructed on how to self-administer the test. Patients testing HIV negative were given a result card stating they were "uninfected as of 3 months ago" as it can take up to 3 months for the body to develop HIV antibodies. Prior to the administration of the HIV test, all patients were asked about their HIV status and only tested if they reported being HIV negative. Electronic hospital and laboratory records were accessed on all patients with a preliminarily positive or invalid test results to determine if they were known to be HIV positive (previously documented positive Western blot). Patients with previously documented HIV infection were referred to care as appropriate. All other patients with preliminarily positive or invalid test results were consented for confirmatory Western blot and CD4 T-cell count testing and asked to return in 7-10 days for results. At the return visit, patients received their confirmatory test result and, if confirmed positive, were referred to HIV-related medical services. Further details regarding program related processes have been previously published.²⁵

Selection of participants

MSM were identified as any male or male-to-female (MTF) transgender patient who reported having oral and/or anal sex with a male in the past 12 months. Males who reported having oral and/or anal sex with only females or no sexual activity over the past 12 months were considered to be non-MSM. Eight male patients (0.14%), all of whom tested HIV negative, were excluded because they declined to discuss their sexual behaviors and could not be classified as either MSM or non-MSM.

Data collection procedures

Patient demographic and risk behavior data were obtained by HIV counselors as part of the HIV screening program. A trained research assistant entered this information into a secure database, which was then verified by the program coordinator. CD4 T-cell counts and Western blot data were abstracted from the electronic laboratory records. Linkage to care and hospital admissions were determined by electronic records as well as patient self-report. A patient was considered successfully linked-to-care if he/she attended the first appointment at either the health department or local infectious disease clinic. This information was obtained by the program coordinator during patient follow-up and appended to the database. Illegible writing on the data collection form and/or incomplete data collection resulted in the following missing data: age for 31 patients (0.6%), answer to the question regarding sex without a condom for 13 patients (0.2%), and answers to questions about high risk sexual behavior and drug use for 2 patients.

Statistical analysis

Data were analyzed using SPSS Version 18.0 (SPSS, Inc., Chicago, IL). Comparisons between MSM and non-MSM were made using univariate statistics, Student's *t* test for continuous factors, binary logistic regression, age- race-adjusted odds ratios, and χ^2 Fisher's exact tests for categorical factors. Ages and CD4 counts were presented as medians with interquartile ranges (IQR) and 95% confidence intervals (CI) were calculated around proportions and odds ratios (OR).

TABLE 1. DEMOGRAPHIC CHARACTERISTICS OF MSM AND NON-MSM

	All MSM (n=366)			HIV-infected MSM (n=59)			All non-MSM (n=5244)			HIV-infected non-MSM (n=81)		
	N	%	95% CI	N	%	95% CI	N ^a	%	95% CI	N	%	95% CI
Age group												
18–19	12	3.3	1.5, 5.1	4	6.8	0.4, 13.2	85	1.6	1.3, 2.0	1	1.2	–1.2, 3.6
20–24	69	18.9	14.8, 22.7	20	33.9	21.8, 46.0	653	12.5	11.6, 13.4	8	9.9	3.4, 16.4
25–29	85	23.2	18.9, 27.6	15	25.4	14.3, 36.5	584	11.2	10.3, 12.1	9	11.1	4.3, 18.0
30–39	93	25.4	21.0, 29.9	11	18.6	8.7, 28.6	982	18.8	17.8, 20.0	13	16.1	8.1, 24.0
40–49	65	17.8	13.9, 21.7	7	11.9	3.6, 20.1	1383	26.5	25.3, 27.3	28	34.6	24.2, 45.0
≥50	42	11.5	8.2, 14.8	2	3.4	–1.2, 8.0	1526	29.3	28.0, 30.5	22	27.2	17.5, 36.9
Total	366	100.0		59	100.0		5213^a	100.0		81	100.0	
Race/ethnicity												
Black, non-Hispanic	317	86.6	83.1, 90.1	55	93.2	86.8, 99.6	4772	91.0	90.2, 91.8	80	98.8	96.3, 101.2
White, non-Hispanic	38	10.4	7.3, 13.5	2	3.4	–1.2, 8.0	369	7.0	6.4, 7.7	1	1.2	–1.2, 3.6
Hispanic	6	1.6	0.3, 2.9	2	3.4	–1.2, 8.0	50	1.0	0.69, 1.2	0	0.0	
Other	5	1.4	0.18, 2.6	0	0.0		53	1.0	0.74, 1.3	0	0.0	
Total	366	100.0		59	100.0		5244	100.0		81	100.0	

^aThirty-one Non-MSM males had missing data for age, totals may not add due to missing data. MSM, men who have sex with men; CI, confidence interval.

Results

Characteristics of patients tested for HIV

During the study period, approximately 8% of all male patients presenting to the ED were offered HIV testing. In all, 6672 male patients were approached and 5610 (84.1%, 95% CI 83.2, 85.0) accepted HIV testing. Of the male patients tested for HIV, 5244 (93.5%, 95% CI 92.8, 94.1) were classified as non-MSM and 366 (6.5%, 95% CI 5.9, 7.2) as MSM. Two patients classified as MSM were MTF. The median age for all males tested was 41 (IQR, 28–50) and 90.7% were black.

HIV test results

Of the 5610 male patients accepting rapid HIV testing, 100% were tested. One hundred fifty-five patients (2.8%, 95% CI 2.3, 3.2) were preliminarily positive and 140 (2.5%, 95% CI 2.1, 2.9) were confirmed to be HIV infected and previously unaware of that infection, resulting in an overall new HIV diagnosis prevalence of 2.5%. Of the 155 patients testing preliminarily positive, 3 (1.9%, 95% CI –0.2, 4.1) were false-positives, 2 (1.3%, 95% CI –0.5, 3.1) refused Western blot confirmation, and 10 (6.5%, 95% CI 2.6, 10.3) were already aware of their HIV diagnosis. When conducting analysis on patients newly diagnosed with HIV, we excluded data on patients with false-positive results, patients refusing Western blot confirmation, and patients who were previously aware of their HIV diagnosis ($n=15$).

Sexual orientation and HIV infection

Of the 366 MSM tested for HIV, 59 (16.1%, 95% CI 12.4, 19.9) were newly diagnosed with HIV infection compared to 81 (1.5%, 95% CI 1.2, 1.9) of the 5244 non-MSM. MSM were 10 times more likely than non-MSM to have undiagnosed HIV infection (OR 10.4, 95% CI 7.3, 14.0). MSM (median age, 31; IQR 24–41) were significantly younger than non-MSM (median age, 42; IQR 29–51). Almost half (45.4%, 95% CI 40.3, 50.5) of MSM were aged 18–29 versus only one fourth (25.4%, 95% CI 24.2, 26.5) of non-MSM. There were no statistical dif-

ferences between MSM and non-MSM in regards to race or ethnicity (Table 1). However, after adjusting for age and race, MSM were more likely to report high-risk behaviors, including sex without a condom, sex with an HIV-infected partner, and sex with a known injection drug user. MSM were also more likely to report previous HIV testing (Table 2). HIV-infected MSM (median age, 26; IQR 22–35) were also significantly younger than HIV infected non-MSM (median age, 41; IQR, 30–49). Two thirds (66.1%, 95% CI 54.0, 78.2) of HIV-infected MSM were between the ages of 18 and 29 versus less than one fourth (22.2%, 95% CI 13.2, 31.3) of positive non-MSM. There were no differences between newly diagnosed HIV-infected MSM and non-MSM in regards to race or ethnicity (Table 1). After adjusting for age and race, HIV-infected MSM were more likely than non-MSM to report sex without a condom and sex with an HIV-infected partner. HIV-infected MSM were also more likely to report previous HIV testing and to report receiving a negative test in the past 12 months (Table 2).

While there was no difference in median CD4 T-cell count between newly diagnosed HIV-infected MSM (264 cells per microliter, IQR, 5–406) and non-MSM (159 cells per microliter, IQR, 6–337), non-MSM were two times more likely than MSM to have CD4 counts less than 200 cells per microliter (age-race adjusted OR=2.04, CI 0.9, 4.6). Over half of MSM (66.1%, 95% CI 54.0, 78.2) and non-MSM (77.8%, 95% CI 68.7, 86.8) were newly diagnosed with a CD4 T cell count below 350 cells per microliter. There was no difference in the rate of hospital admissions from the emergency department for HIV-infected MSM (25.4%, 95% CI 14.3, 36.5) and non-MSM (38.3%, 95% CI 27.7, 48.9). Over 80% of HIV-infected MSM (82.8%, 95% CI 73.0, 92.5) and non-MSM (87.5%, 95% CI 80.3, 94.8%) attended their first follow-up visit at either the health department or infectious disease clinic.

Discussion

Our study provides evidence that routine, non-targeted emergency department-based HIV testing is an effective

TABLE 2. SELF-REPORTED RISK AND PREVIOUS HIV TESTING BEHAVIORS FOR ALL MALES TESTED AND FOR THOSE CONFIRMED TO BE HIV INFECTED

Risk behaviors	All male patients tested				HIV-infected patients					
	MSM (n = 366)		Non-MSM (n = 5244)		MSM (n = 59)		Non-MSM (n = 81)			
	MSM, No (%)	Non-MSM, No (%)	Odds ratio ^a	95% CI	p Value	MSM, No (%)	Non-MSM, No (%)	Odds ratio ^a	95% CI	p Value
Sex without using a condom	303 (83.0)	3546 (67.8)	2.0	1.5, 2.6	<0.001	48 (81.4)	45 (55.6)	3.5	1.4, 8.9	0.009
Sex with a person known to be HIV positive	24 (6.6)	31 (0.4)	14.6	8.3, 25.6	<0.001	5 (8.5)	1 (1.2)	2.6	0.3, 25.0	0.396
Sex with a person known to inject drugs	11 (3.0)	39 (0.7)	4.1	2.0, 8.4	<0.001	0 (0.0)	0 (0.0)	0.0	—	—
Personal injection drug use	2 (0.6)	23 (0.4)	1.3	0.3, 5.6	0.754	1 (1.7)	20 (24.7)	1.2	0.1, 19.3	0.879
Previous HIV test	300 (82.0)	3852 (73.5)	1.9	1.4, 2.5	<0.001	46 (78.0)	42 (52.0)	3.1	1.3, 7.4	0.013
HIV test in the past 12 months ^b	—	—	—	—	—	17 (28.8)	12 (14.8)	2.2	0.9, 5.1	0.06

^aOdds ratios adjusted for age and race.

^bData regarding patients receiving an HIV test in the past 12 months is only available for patients testing HIV positive. MSM, men who have sex with men; CI, confidence interval.

method for identifying HIV-infected MSM. Over 16% of MSM tested in our program were unaware of their HIV infection. This proportion is almost double the average reported by the CDC for MSM newly diagnosed with HIV in the 21 U.S. cities with the highest AIDS prevalence (9.4%, range by city 2.2–30.8%) and more than 5 times that reported for Atlanta, Georgia (3.6%) where our study was conducted.²³ (Data provided in Table 1 of the CDC’s report titled “Prevalence and Awareness of HIV Infection among Men Who have Sex with Men—21 Cities” was used to calculate the percent of patients newly diagnosed with HIV by using the following formula: No. unaware of HIV infection/[Total No. Tested – (No. HIV Prevalence – No. Unaware of HIV Infection)]).

Differing recruitment strategies and racial differences among study participants may provide explanations for this difference in prevalence. The CDC, through their National HIV Behavioral Surveillance system (NHBS), recruited over 8000 MSM from public venues, such as bars and restaurants, known to be frequented by gay and bisexual men. In our program, nontargeted HIV testing was offered in a clinical venue, presented as being a routine part of medical care, and MSM were not targeted for HIV testing.

Our program had a test acceptance rate of 84%. This NHBS did not report their test acceptance rate, however, 84% is comparable to other similar ED-based programs.^{26,27} This high rate of test acceptance could be a result of using the opt-out approach, dedicated HIV counselors, or a combination of both. Also, research indicates that inner-city black men prefer HIV testing to be conducted in the medical settings.²⁸ In our study, over 80% of MSM were black as compared to 23% in the NHBS study. It is possible that black MSM may be more likely to accept testing in the emergency setting, yielding higher rates of newly diagnosed HIV as compared to community venues. Further research to validate this hypothesis is necessary.

In our study, MSM were more likely than non-MSM to report high-risk sexual behaviors, such as unprotected sex, sex with a partner known to be HIV positive, and sex with an injection drug user. Programs addressing other high-risk behaviors, such as alcohol and substance abuse²⁹ and intimate partner violence³⁰ have been successfully implemented in the emergency department setting and may provide guidance for development of similar emergency department-based HIV risk reduction programs that reach the MSM community, specifically young MSM.

MSM newly diagnosed with HIV through our program were significantly younger than non-MSM. MSM had a median age of 26 as compared to 41 for non-MSM. Young MSM have grown up in the era in which medical treatments have led to a decrease in HIV-related morbidity and mortality. These young men did not personally experience the severity of the early HIV epidemic; therefore, they may be more complacent and less motivated to practice safe-sex behaviors and be tested annually for HIV.³¹

Our data also supports the CDC’s position that more frequent HIV testing should be considered for all sexually active MSM.²³ Almost 30% of HIV positive MSM reported receiving a negative HIV test within the past 12 months. The majority of MSM and non-MSM were newly diagnosed with a CD4 T-cell count below 350 cells per microliter, which is the current recommendation for initiating antiretroviral therapy (ART).³² In addition, 35.6% of MSM and 58.0% of non-MSM had CD4

T-cell counts less than 200 at the time of testing, which is consistent with the CDC definition of AIDS.³³ MSM newly diagnosed with HIV were significantly more likely to report having a previous HIV test, which could provide one explanation as to why MSM were less likely to have AIDS at the time of initial diagnosis. Over time, routine HIV testing conducted in multiple acute-care settings may prove to be an effective means for diagnosing HIV before immunosuppression occurs.

It is important to note that patients were not presenting to the emergency department for HIV testing, but rather to address other medical complaints. Without this emergency department-based HIV screening program, the 75% of MSM patients who were newly diagnosed as HIV-positive, but ultimately discharged from the emergency department, would not have been tested for HIV during their emergency department stay. Prior to implementation of the screening program, HIV testing was not conducted in the emergency department due to barriers such as inability to obtain timely results, provide appropriate posttest counseling for positive patients and/or easily link newly diagnosed HIV-positive patients to necessary medical care and support services. There is a need to further explore models for developing and expanding emergency department-based HIV testing programs, especially in areas with high HIV prevalence.

CDC recommendations for HIV testing in clinical care settings, including emergency departments, propose a non-targeted, opt-out approach. In our setting, this approach was able to benefit multiple patient populations. Our data suggest that urban emergency departments may provide a unique opportunity to test at-risk populations who may not otherwise have access to primary health care and do not seek HIV testing in other community-based settings. With both the CDC and the White House calling for an expansion of testing programs reaching MSM, it is imperative to further explore the role of the emergency department in providing HIV testing and prevention education to this patient population.

This study has several limitations that should be discussed. First, the study was conducted as part of a larger emergency department-based HIV screening program with limited staffing hours due to financial constraints. Given this program limitation, we only approached approximately 8% of male patients presenting to the emergency department during the study period. Undoubtedly, a program with a larger testing capacity that operated 24 h a day, 7 days per week would have yielded a higher number of patients with unrecognized HIV infection. Second, risk assessment was based on patient self-report over the previous 12 months, potentially introducing both recall and social desirability bias. Prior studies have suggested that many MSM, especially young black MSM, fail to report their sexual behaviors out of fear of social discrimination, stigmatization, and/or maltreatment.³⁴ In addition, all risk behaviors, including oral and/or anal sex with a man were assessed "over the past 12 months," not over the course of the lifetime. Therefore, some MSM patients may have been categorized as non-MSM, resulting in an underreporting of both risk behaviors and the percentage of newly diagnosed HIV in the MSM patient population. Third, these data were collected prospectively as part of a larger HIV screening program and used retrospectively for research purposes. While the HIV screening program in our emergency department is nontargeted, patients were not approached for testing

sequentially; therefore, it is possible that an element of selection bias occurred. However, selection bias would have been minimal as HIV counselors approached patients listed on an emergency department triage report and assessed risk behaviors only after the patient consented to HIV testing. Finally our study setting and population, an emergency department located in an inner city in the southern United States serving primarily adult black patients, is unique and thus findings presented here may not be applicable to other settings.

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References

- Centers for Disease Control and Prevention (CDC). HIV surveillance—United States, 1981–2008. *MMWR Morb Mortal Wkly Rep* 2011;60:689–693.
- Centers for Disease Control and Prevention (CDC). Estimates of new HIV Infections in the United States, 2006–2009. *CDC Fact Sheet*. August 2011:1–6. www.cdc.gov/nchhstp/newsroom/docs/HIV-Infections-2006–2009.pdf (Last accessed October 10, 2011).
- Centers for Disease Control and Prevention (CDC). HIV and AIDS among gay and bisexual men. *CDC Fact Sheet*. September 2011:1–3. www.cdc.gov/nchhstp/newsroom/docs/fastfacts-msm-final508comp.pdf (Last accessed October 10, 2011).
- Prejean J, Song R, et al. 2011 Estimated HIV incidence in the United States, 2006–2009. *PLoS ONE* 2011;6:1–13.
- Kellerman, AL. Nonurgent emergency department visits: Meeting an unmet need. *JAMA* 1994;271:1953–1954.
- Kaiser Family Foundation. Emergency departments under growing pressures. *Policy Brief*. August 2009:1–4. www.kff.org/uninsured/upload/7960.pdf (Last accessed October 10, 2011).
- Center for Disease Control and Prevention National Center for Health Statistics. National hospital ambulatory medical care survey: 2006 Emergency Department Summary. *Natl Health Stat Rep* 2008;7:1–37.
- Branson BM, Handsfield HH, Lampe MA, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Morb Mortal Wkly Rep* 2006;55:1–17.
- Ehrenkranz PD, Ahn C, Metlay J, et al. Availability of rapid human immunodeficiency virus testing in academic emergency departments. *Acad Emerg Med* 2008;15:144–150.
- Haukoos JS, Hopkins E, Hull A, et al. HIV testing in emergency departments in the United States: A national survey. *Ann Emerg Med* 2011;58:S10–S16.
- Rothman RE, Hsieh Y, Harvey, L et al. 2009 US Emergency department HIV testing practices. *Ann Emerg Med* 2011;58: S3–S9.
- Lyons MS, Lindsell CJ, Haukoos J, et al. Nomenclature and definitions for emergency department human immunodeficiency virus (HIV) testing: Report from the 2007 conference

- of the national HIV testing consortium. *Acad Emerg Med* 2009;16:168–177.
13. Rothman RE, Branson BM, Lyons MS, et al. HIV screening in emergency departments. *Ann Emerg Med* 2011;58:S1–S175.
 14. Waxman MJ, Popick RS, Merchant RC, et al. Ethical, financial and legal considerations to implementing emergency department HIV screening: A report from the 2007 conference of the national HIV testing consortium. *Ann Emerg Med* 2011;58:S33–S43.
 15. Hsu H, Walensky PR. Cost-effectiveness analysis and HIV screening: The emergency medicine perspective. *Ann Emerg Med* 2011;58:S145–S150.
 16. Haukoos JS, Hopkins E, Byyny RL, et al. Patient acceptance of rapid HIV testing practices in an urban emergency department: Assessment of the 2006 CDC recommendations for HIV screening in health care settings. *Ann Emerg Med* 2008;51:303–309.
 17. Donnell-Fink L, Reichmann WM, Arbelaez C, et al. Patient satisfaction with rapid HIV testing in the emergency department. *Ann Emerg Med* 2011;58:S49–S52.
 18. Clauss H, Collins JM, Eldakar-Hein S, et al. Prevalence and characteristics of patients with undiagnosed HIV infection in an urban emergency department. *AIDS Patient Care STDs* 2011; 25: 207–211.
 19. Czarnogorski M, Brown J, Lee V, et al. The prevalence of undiagnosed HIV infection in those who decline HIV screening in an urban emergency department. *AIDS Res Treat* 2011; 2011:1–6.
 20. Christopoulos KA, Kaplan B, Dowdy D, et al. Testing and linkage to care outcomes for a clinician-initiated rapid HIV testing program in an urban emergency department. *AIDS Patient Care STDs* 2011;25:439–444.
 21. Valleroy LA, MacKellar DA, Karon JM, et al. Young men's survey study group. HIV prevalence and associated risks in young men. *JAMA* 2000;284:198–204.
 22. Barnes W, D'Angelo L, Yamazaki M, et al. Identification of HIV-infected 12-to-24-year-old men and women in 15 US cities through venue-based testing. *Arch Pediatr Adolesc Med* 2010;164:273–276.
 23. Centers for Disease Control and Prevention (CDC). Prevalence and awareness of HIV infection among men who have sex with men—21 cities, United States, 2008. *MMWR Morb Mortal Wkly Rep* 2010;59:1201–1207.
 24. Sanchez JP, Hailpern S, Lowe C, et al. Factors associated with emergency department utilization by urban lesbian, gay, and bisexual individuals. *J Commun Health* 2007;32: 149–156.
 25. Wheatley MA, Copeland B, Shah B, et al. Efficacy of an emergency department-based HIV screening program in the Deep South. *J Urban Health* 2011;88:1015–1019.
 26. Sattin RW, Wilde JA, Freeman AE, et al. Rapid HIV testing in a southern emergency department serving a semiurban-semirural adolescent and adult population. *Ann Emerg Med* 2011;58:S60–S64.
 27. White D, Sadoun T, Tran T, et al. Increased acceptance rates of HIV screening using opt-out consent methods in an urban emergency department. *J Acquir Immune Defic Syndr* 2011;58:277–282.
 28. Petroll AE, DiFranceisco W, McAuliffe TL, et al. HIV testing rates, testing locations, and healthcare utilization among urban black men. *J Urban Health* 2008;86:119–131.
 29. Vaca FE, Winn D. The basics of alcohol screening, brief intervention and referral to treatment in the emergency department. *West J Emerg Med* 2007;8:88–92.
 30. Houry D, Kaslow N, Kembal RS, et al. Does screening in the emergency department hurt or help victims of intimate partner violence? *Ann Emerg Med* 2008;51:433–442.
 31. MacKellar DA, Valleroy LA, Secura GM, et al. Perceptions of lifetime risk and actual risk for acquiring HIV among young men who have sex with men. *AIDS Behav* 2007;11:263–270.
 32. Centers for Disease Control and Prevention (CDC). Guidelines for using antiretroviral agents among HIV-infected adults and adolescents. *MMWR Morb Mortal Wkly Rep* 2001;51:1.
 33. Centers for Disease Control and Prevention (CDC). 1993 revised classification system for HIV infection and expanded surveillance case definition for AIDS among adolescents and adults. *MMWR Morb Mortal Wkly Rep* 1992;41(RR-17).
 34. Kenamer JD, Honnold J, Bradford J, et al. Differences in disclosure of sexuality among African American and white gay/bisexual men: Implications for HIV/AIDS prevention. *AIDS Educ Prev* 2000;12:519–531.

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