SEXUAL HEALTH SERVICES

Differences in demographics and risk factors among men attending public v non-public STD clinics in Baltimore, Maryland

C A Porter, D Thompson, E J Erbeling

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See end of article for authors' affiliations

Correspondence to:
Dr E J Erbeling, Division
of Infectious Diseases,
Department of Medicine,
Johns Hopkins University
School of Medicine,
Baltimore, MD, USA;
eerbeli@jhmi.edu

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Objective: To compare the demographics and risk factors of men who utilise the services of a municipal public sexually transmitted disease (STD) clinic with those who utilise the services provided by a non-public men's STD clinic operated by a not for profit primary care clinic.

Methods: A record based review of the characteristics and STD prevalence of men who visited a non-public STD clinic in Baltimore, Maryland, compared with those of a random sample of male attendees of a public STD clinic. Data abstracted from the records included information on age, race/ethnicity, self reported risk behaviours, and STD tests and results. We used χ^2 analysis as well as bivariate and multivariate modelling to compare differences in categorical factors between clinics groups.

Results: Men who utilised the services at the non-public STD clinic were more often white (71% v 3%, $p < 0.001$), MSM (65% v 2%, $p < 0.001$), and presented for general screening (52% v 15%, $p < 0.001$) compared to those at the public clinic. In addition, they more frequently reported ≥ 3 partners (22% v 11%, $p = 0.005$), and having an HIV positive partner (10% v 3%, $p = 0.005$). Factors independently associated with attendance at non-public clinic in multivariate analysis were general screening as reason for visit (OR = 11.0, $p < 0.001$), having 3+ partners in past month (OR = 10.5, $p = 0.002$), and "sometimes" using condoms (OR = 3.6, $p = 0.033$).

Conclusions: Non-public STD clinics can reach a distinct segment of the male population with high risk sexual behaviours that might not attend public STD clinics.

The greater portion of federal resources designated for the control and prevention of sexually transmitted diseases (STD) is allocated to local and state health departments for the provision of such services as disease surveillance, screening of at-risk individuals, partner contact tracing, and STD clinic operations.¹ STD clinics serve populations that have been described as primarily young, minority, and poor.² Men who attend these clinics are most likely seeking care for symptom relief.³ Little is known regarding screening services to and its possible benefits to asymptomatic men, especially outside the public sector.

Currently, the Centers for Disease Control and Prevention report a rise in both syphilis and gonorrhoea infections among men, in particular men who have sex with men (MSM).⁴ Enhanced screening for these infections based on risk behaviours in addition to presence of symptoms has been recommended, particularly among HIV infected individuals.⁵ However, a large proportion of STD care is delivered in the private sector, and in these settings, screening levels fall well below established practice guidelines for both women and men.^{1 6 7} Developing and expanding STD services in the private sector is critical to interrupting disease transmission in the community.

It has been suggested that promoting partnerships between community based clinics, managed care organisations, and physicians practising in the community with public STD control programmes is necessary to effect community-wide control over these infections,⁸ particularly if those served by public STD clinics differ from those seeking services from the private, not public, sector. Few studies, however, have focused specifically on the general characteristics of men seeking STD care in non-public clinics. Understanding such characteristics as risk behaviours, demographics, and STD prevalences among men presenting at venues other than public STD clinics may create opportunities to target

screening programmes in a risk behaviour based manner in addition to a traditionally symptom oriented approach, thereby increasing the likelihood of diagnosing asymptomatic infections.

In order to determine and compare characteristics of men presenting for STD services at different venues, we evaluated behavioural and clinical characteristics of, as well as diagnostic services received by, men attending a public STD clinic and a non-public walk-in clinic. The setting was Baltimore, Maryland, where the reported rates of gonorrhoea (748.4 per 100 000) and syphilis (18.6 per 100 000) are considerably higher than the US national average (125 and 2.4 per 100 000, respectively).⁴

METHODS

This was a record based cross sectional survey conducted at two separate clinics. The analysis was based on men who sought clinical services, excluding follow up visits for previously diagnosed conditions, at either the non-public or public STD clinic during a 1 year period from September 2002 to August 2003. Each clinic utilises a similar standardised clinical encounter form, generated when patients sought services, that includes medical history, physical examination, and results of STD testing. Practices at both clinic sites were comparable with regard to clinician training, behavioural risk assessment, and clinical testing, with the exception of chlamydia testing, as described below. Demographics, risk factors, and positive STD testing results were abstracted from the records of 171 non-public clinic attendees and 202 public clinic attendees. This study was determined exempt by the institutional review boards of the affiliated agencies.

Abbreviations: MSM, men who have sex with men; NGU, non-gonococcal urethritis; STD, sexually transmitted diseases

Table 1 Comparison of characteristics of clients attending a non-public clinic compared with a public clinic in Baltimore, Maryland, September 2002 through August 2003

Characteristic	Non-public clinic	Public clinic	χ^2 p value
	No (%)	No (%)	
Number	171	202	
Ethnicity			
White	122 (71.3)	5 (2.5)	<0.001
Black	42 (24.6)	194 (96.0)	
Other	7 (4.1)	3 (1.5)	
Age			
<30 years	74	95	0.468
≥30 years	97	107	
Sexual preference			
Opposite sex	58 (34.9)	185 (97.9)	<0.001
Same sex	87 (52.4)	1 (0.5)	
Both sexes	21 (12.7)	3 (1.6)	
Reason for clinic visit			
Symptoms	74 (45.4)	110 (57.0)	0.029
General screening	82 (52.3)	29 (15.0)	<0.001
HIV testing	2 (1.2)	18 (9.3)	0.001
Contact STD	41 (24.4)	36 (17.9)	0.126
Time from last sexual encounter to clinic visit			
<7 days	52 (30.4)	108 (53.5)	<0.001
≥7 days	119 (69.6)	94 (46.5)	
Risk factors*			
≥3 partners in past month	37 (21.6)	22 (10.9)	0.005
Injection drug use	5 (3.0)	15 (7.5)	0.058
Sex for money/drugs	3 (1.8)	4 (2.0)	0.89
Shares needles	2 (1.2)	5 (2.5)	0.363
Non-injection drug use†	66 (39.3)	148 (74.0)	<0.001
Partner is IDU	10 (6.0)	12 (6.0)	0.99
Partner is HIV+	17 (10.1)	6 (3.0)	0.005
Partner has exchanged sex for money or drugs	18 (10.7)	28 (13.9)	0.352
Condom use			
Never	36 (22.2)	66 (41.3)	<0.001
Sometimes	116 (71.6)	73 (45.6)	
Always	10 (6.2)	21 (13.1)	
STD testing			
Tested for syphilis	147 (86)	190 (95.0)	0.005
Tested for gonorrhoea	155 (90.6)	179 (89.1)	0.614
STD prevalences			
Gonorrhoea	3 (2.0)	24 (13.5)	0.001
P and S syphilis‡	5 (3.5)	3 (1.5)	0.074

*Risk factors were self reported.

†Marijuana, alcohol, sniffed or snorted cocaine, ecstasy, LSD, and other street and club drugs.

‡Primary and secondary.

Non-public clinic

The non-public clinic used in these analyses is operated by a non-profit, community based healthcare centre that was originally established to provide HIV care and services to the gay community, and has since expanded to offer a wide range of healthcare services. The clinic is located in an urban area of Baltimore, and services include a men's STD clinic, open one evening a week for 3 hours. STD clinic attendees are not required to be enrolled in primary care practice and are served on a walk-in basis. On average, the clinic serves 8–10 individuals per session. There was a nominal fee for service (\$40). Data were abstracted for all unduplicated individuals during the specified timeframe.

Public clinic

The Baltimore City Health Department (BCHD) operates two public STD clinics within Baltimore, open weekdays from 9 am to 5 pm and serving both male and female patients. The clinic included in this study was selected for record review for its higher proportion of male patients and its geographic proximity to the non-public clinic. The public STD clinic provides services to a high volume of patients, serving 35–100 patients per day. There is no fee for service. Owing to the high volume, a random sample of male encounters was selected from this clinic using a random digit table applied to the daily

registry of clinic attendees. If random sampling selected a follow up visit, the initiating visit was used in its place, provided it occurred within the appropriate time frame.

Standard clinical practices

Standard clinical evaluation at both clinic sites was as follows: directed physical examination with inspection of oropharynx, skin, lymph node survey, inspection of genitals and perianal region. Specimen collection included gonorrhoea culture from the urethra, as well as oropharynx and rectum if exposure of these sites was indicated in the risk assessment. The public STD clinic performed Gram stain of urethral secretions for evidence of non-gonococcal urethritis (NGU) as previously described.⁹ The non-public STD clinic performed urethral chlamydia and gonorrhoea diagnostic testing (ProbeTec, Becton-Dickinson) on urine from all patients. Swab specimens drawn from rectal and oropharyngeal sites were cultured at the state laboratory in liquid media for chlamydia. Modified Thayer-Martin media was used for gonorrhoea culture at both sites. Both clinics screened for syphilis, and in some instances tested for hepatitis and/or herpes if clinical symptoms suggested the need for those tests. Because of the low levels of testing for hepatitis and herpes, these data were not included in the analyses.

Table 2 Unadjusted and adjusted odds ratios of characteristics of non-public clinic attendees compared with public clinic attendees in Baltimore, Maryland from September 2002 through August 2003

Variable	Unadjusted OR	p Value	Adjusted OR	95% CI	p Value
Age					
<30 years			Reference		
≥30 years	1.16	0.468	3.98	(1.2 to 12.7)	0.020
Ethnicity					
Black			Reference		
White	112.7	<0.001	311.9	(55.7 to 1746.6)	<0.001
Other	10.8	0.001			
Reason for clinic visit					
Symptoms			Reference		
General screening	5.26	<0.001	11.2	(3.2 to 38.9)	<0.001
Time from last sexual encounter to clinic visit					
<7 days			Reference		
≥7 days	2.63	<0.001	7.36	(2.2 to 25.0)	0.001
Risk factors					
<3 partners in past month			Reference		
≥3 partners in past month	2.25	0.005	9.9	(2.2 to 44.5)	0.003
Non-injection drug use*	0.23	<0.001	0.092	(0.03 to 0.30)	<0.001
Injection drug use	0.38	0.067	0.011	(0.0003 to 0.55)	0.023
History of STD					
Any previous history of STD	0.36	<0.001	0.17	(0.05 to 0.58)	0.005
Condom use					
Never			Reference		
Sometimes	2.91	<0.001	3.16	(0.95 to 10.5)	0.060
Always	0.87	0.756	0.078	(0.006 to 0.98)	0.049
STD testing					
HIV test at visit	0.76	0.202	0.32	(0.10 to 1.03)	0.057

*Marijuana, alcohol, sniffed or snorted cocaine, ecstasy, LSD, and other street and club drugs.

Data analyses

Statistical analyses were conducted on Intercooled Stata 8.0 (Stata Corporation, College Station, TX, USA). Direct comparisons of demographics, risk factors, and STD prevalence rates between the two clinics were made using χ^2 analyses. Bivariate and multivariate analyses were also used to determine if patients seen at each clinic differed in demographics and risk factors. A backward stepwise logistic regression was used to determine the multivariate model with a significance level of 0.05. All variables listed in table 1 were included in the model, along with clinical diagnosis. Variables with a p value >0.100 were removed from the model.

RESULTS

Bivariate analysis

Baseline demographic and behavioural characteristics of men served at the public and non-public STD clinics are shown in table 1. Although the age distributions of both clinic populations are similar, the non-public clinic serves a predominantly white population (71%), compared with only 3% of clients seen at the public clinic ($p<0.001$). In addition, the overwhelming majority of men (98%) at the public STD clinic reported only heterosexual contact, whereas only 35% of men served by the non-public clinic reported heterosexual contact only ($p<0.001$).

Bivariate analyses also indicated a difference in the reported reason for visiting an STD clinic. Among the men attending the public clinic, the highest percentage (57%) reported having symptoms as the reason for the visit, compared with 45% in the non-public clinic ($p=0.029$). Conversely, in the non-public clinic 52% of men reported general screening as the reason for visit, whereas only 15% did so in the public clinic ($p<0.001$). Furthermore, the public clinic had a greater proportion of men reporting a prior history of STD (68% v 43%, $p<0.001$).

The non-public clinic served a higher proportion of men reporting three or more partners in the past month (22% v 11%, $p<0.001$) and having an HIV positive sex partner compared to the public clinic (10% v 3%, $p=0.005$), but served clients who less frequently reported non-injection

drug use (74% v 39%, $p<0.001$). Reported use of condoms (always, sometimes, never) also differed; the majority of non-public clinic attendees reported "sometimes" use (72%) whereas public clinic attendees most often reported either "never" (41%) or "sometimes" (46%, $p<0.001$).

Testing rates for gonorrhoea and for HIV were similar in both public and non-public clinics, though testing for syphilis occurred more frequently in the public clinic (95% v 86%, $p=0.005$). Gonorrhoea was diagnosed in 13.5% of men in the public clinic v 2% in the non-public clinic ($p=0.001$); primary or secondary syphilis was diagnosed in 1.5% (public) and 3.5% (non-public) of men, which was not significantly different. These results are shown in table 1.

Multivariate analysis

Non-public clinic clients were much more likely to be white (OR = 311.9, $p<0.001$), to seek care for general screening (OR = 11.2, $p<0.001$), to wait 7 or more days after the last sexual encounter to visit the clinic (OR = 7.36, $p=0.001$), and to have reported three or more partners in the past month (OR = 9.9, $p=0.003$). "Sometimes" condom use was significantly associated with the non-public clinic (OR = 3.16, $p=0.060$) where "never" use was the reference category. Clients seen at the public clinic were more likely to report injection and non-injection drug use (OR = 0.011, $p=0.023$ and OR = 0.09, $p<0.001$, respectively). These results are shown in table 2.

DISCUSSION

We sought to define characteristics of men seeking STD care outside of the public sector to better inform strategies for improving community based STD prevention services. In a city of high STD prevalence, men presenting to a non-public STD clinic differed from those presenting to the public STD clinic and may represent a population at very high risk for STDs and HIV. Although there was no difference in age distribution between the two groups, men who attended the non-public clinic were more often white, MSM, seeking STD screening rather than relief from symptoms, and more frequently reported multiple partners and HIV positive

partners. In addition, they were less likely to be screened for syphilis. Public clinic clients were more often black, and more frequently reported illicit drug use.

Enhancement of STD screening criteria for men who seek services outside of the public STD clinics is important for the success of STD prevention and control programmes. Developing robust screening criteria for gonorrhoea and chlamydia among men, however, has largely been ignored. Although screening for bacterial STDs such as chlamydia and gonorrhoea has been successful among at-risk females in clinical settings,¹⁰ less attention has been paid to adopting a policy for screening and identifying males with asymptomatic infections. Some studies have shown that screening males for chlamydia is cost effective, particularly with respect to the prevention of pelvic inflammatory disease in their partners.¹¹ In fact, it may be essential to initiate chlamydia screening in males in order to detect and treat asymptomatic infections, thereby reducing the morbidity and reproductive health impacts of infection among women.¹² In addition, detection and treatment of chlamydia and gonorrhoea may decrease risk of HIV transmission and acquisition.^{13, 14}

Of significance in this study is the modest, though not insignificant, disparity between clinics with regard to syphilis testing levels. Currently, the CDC report a 12.4% increase in syphilis rates in the United States, primarily the result of outbreaks of syphilis among MSM in many cities and regions.^{15–17} This observed risk illustrates the need to enhance syphilis screening among MSM. The public clinic tested 95% of the clients for syphilis, whereas the non-public clinic tested only 86%. This comparatively lower rate of screening may represent a missed opportunity to detect syphilis cases and interrupt disease transmission, particularly in the venues which service men engaged in high risk behaviours with known HIV infected partners. In light of the current epidemiology of syphilis in the United States, developing partnerships between the public and non-public clinics may prove beneficial by expanding and enhancing syphilis testing services to a known high risk population.

Our methods have limitations. Firstly, there may be variability in risk assessment given by multiple clinician interviewers. Secondly, most of the risk factors described are self reported and subject to social desirability biases that may exist at different levels between the two clinics, as may be the case with frequency of condom use. Recall bias may have an effect on reporting the date of last sexual encounter or previous history of sexually transmitted diseases. For example, men with clinical symptoms of an STD may be more inclined to recall previous infections. Since most public clinic patients reported having symptoms, this may explain why there appears to be a greater level of previous history of STD. Though we reviewed all available records at the non-public clinic, there may be insufficient power to detect differences in the risk factors reported less frequently, such as needle sharing and the exchange of sex for money or drugs. Finally, this study, conducted in Baltimore, may not be readily generalisable to other regions; it cannot be inferred that all non-public STD clinics will have demographics similar to the non-public clinic examined here. It is likely, however, that non-public STD clinics in other urban areas will serve specialised population that are different from those seen in the larger local public STD clinic depending on location, hours of availability, and the history of the clinic among other factors. The degree of the differences between clinics in different cities and regions must be analysed individually.

Our results demonstrate that although the demographics and risk factors differ between men presenting to public and private STD clinics, both clinics have the opportunity to provide services to individuals at very high risk for STD/HIV.

Broadening screening services in non-public STD clinics may assist in more frequent and prompt treatment of STDs. Identification of demographic and risk profiles among men and women presenting for STD or reproductive health services may improve our ability to detect both symptomatic and asymptomatic infections. Furthermore, expanding and enhancing screening programmes conducted in the private sector will advance public health goals of controlling the spread of preventable sexually transmitted diseases including HIV.

CONTRIBUTORS

CAP originated the objective of the study, assisted with study design, creation of the chart abstraction tool, collected data, conducted statistical analyses, and wrote the first draft of the manuscript; DT assisted with study design and selection of the study measurements; EJE assisted with study design, selection of study measurements, assisted interpretation and presentation of data analysis, and provided critical review and revision of manuscript.

Authors' affiliations

C A Porter, Johns Hopkins University, Bloomberg School of Public Health, Baltimore, MD, USA

E J Erbeling, Division of Infectious Diseases, Department of Medicine, Johns Hopkins University School of Medicine, and Baltimore City Health Department, Baltimore, MD, USA

D Thompson, Chase Brexton Health Services, Baltimore, MD, USA

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