

Original paper

VOLUNTARY OUTREACH COUNSELLING AND TESTING FOR HIV AND STI AMONG MEN WHO HAVE SEX WITH MEN IN ANTWERP

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ABSTRACT

Background: High risk settings for transmission of HIV and sexually transmitted infections (STI) offer an opportunity for screening of difficult to reach risk groups.

Methods: Free, anonymous counselling and testing for HIV, syphilis, Chlamydia and hepatitis B/C were offered to visitors in two selected gay venues in Antwerp, by a multidisciplinary team. Participants completed an anonymous questionnaire. The STI-test results were communicated by cell phone using standardised text messages.

Results: In total, 137 MSM were tested. Facilitators of risky sexual behaviour (alcohol and drug use) were reported by 34 and 21%, respectively. Four men (3%) were newly diagnosed with HIV; 25 men (18%) had an active, transmittable STI. Infected MSM were significantly less often registered with a fixed general practitioner (GP).

Conclusions: Outreach testing in gay venues is a suitable method to detect MSM at risk for HIV/STI. Although the outreach approach is very labour intensive, it shows a high yield of new STI-diagnoses that are not detected in the regular health system.

Key words: HIV; STI; Men who have sex with men; Outreach Services; Health Promotion

INTRODUCTION

According to US surveillance data, 25% of all HIV cases remain undiagnosed (1). This percentage is even higher in

some European countries (2). In the US, these undiagnosed infections account for 54% of new HIV-infections (1). Although recent estimations of undiagnosed HIV among men who have sex with men (MSM) in Australia are lower (9%), they account for an estimated 31% of newly diagnosed HIV-infections (3). These estimates indicate the importance of early detection from both a public health- and an individual perspective. Knowing one's HIV-status is a prerequisite not only for treatment itself, but also for starting prevention methods of HIV-transmission. Being ignorant of one's HIV-status may imply that an opportunity to discuss prevention and change in potentially dangerous sexual behaviour could be missed.

Recently, several studies on outreach testing in high risk settings in the USA, UK and Australia have been published (4-8). In Antwerp, known for its vivid gay-oriented night-life, however, no outreach testing was performed among men who have sex with men since the early 1980's (9).

Venues, frequented by MSM, where sex anonymously takes place in darkrooms or cabins, present a high risk setting for transmission of HIV and sexually transmitted infections (STI). Recent prevention projects were especially developed to reach these settings (10). A number of men attending these venues request anonymous HIV/STI testing and report preferring not to discuss their sexual practices with their general practitioner (GP), because they fear prejudice and discrimination (11). Studies also found that general practitioners encounter barriers in discussing their patient's sexual history (12, 13).

Delivery of test results remains an important issue in clinical settings. In recent research of a sexual health clinic in Australia, 55% of patients had not collected their HIV-test results within 4 weeks after the test (14). Recently, novel approaches for test result delivery – mobile phone and text messaging – have been piloted (15).

We hypothesised that a relatively high number of participants in local risk settings could potentially test positive for

HIV/STI, as per-contact probability of HIV transmission in the era of antiretroviral treatment for receptive unprotected anal intercourse (UAI) is estimated to be 1.43% if ejaculation occurred inside the rectum, and 0.65% if withdrawal prior to ejaculation took place (16).

Against this background, the rationale of our project was to lower the threshold for HIV/STI testing by offering voluntary, anonymous and free HIV/STI testing at places where men who have sex with men socialise. The pilot study on 'Outreach Testing' had two objectives: firstly, investigating the feasibility and yield of outreach testing among men who have sex with men at risk for HIV and STI; secondly, assessing this target group's access to and use of the regular healthcare system.

METHODS

Study site/population

To have access to a high number of MSM, two of the largest gay venues in the Antwerp area were selected for this project: a gay sauna and a fetish club. Men over 18 years of age -including foreign citizens- were eligible for testing.

Instruments

The specific STI tested for, were selected according to community and clinically relevant criteria: HIV, syphilis, hepatitis B and C and lymphogranuloma venereum (LGV) – because of their clinical complications, chronic condition, and long term transmissibility. For practical and feasibility reasons, no urethral/anal swab, nor urine samples were collected. In spite of potential difficulties in interpreting its results and based on evidence available, Chlamydia trachomatis serology (IgA and IgG for genotype L1, L2 and L3) was used to diagnose LGV (24, 25). If any abnormal result, the patient was informed to contact the sexual health centre, where the results were discussed and appropriate action was taken (Table 1). Participants were also asked to complete a brief self-reported behavioural survey, which was linked to the test results. Participation was voluntary, but filling in the questionnaire was a prerequisite to access the test. This questionnaire collected information on socio-demographic data, service provision of general practitioners (GPs), and sexual activity. The latter section included a list of sexual practices: insertive and receptive anal sex, insertive and receptive fisting, and vaginal sex. Oral sexual practices were not addressed. Protective behaviour was assessed as the proportion of sexual acts in the past 3 months during which a condom was used, and the proportion of acts during which gloves were used when fisting. 'Inconsistent protective behaviour' was defined as <100% protection. In the absence of a validated tool, we developed a brief questionnaire, including relevant covariates of sexual risk behaviour that were selected from the literature. Participants were asked to rate a list of different ways to communicate the test results using a Visual Analogue Scale (0-10): text message, telephone, letter, appointment at the organising sexual health centre, or healthcare providers revisiting the venue.

Procedure

Two weeks prior to the test sessions, flyers announcing the initiative were disseminated in the respective venues.

A multidisciplinary team, consisting of a physician, a counsellor and an outreach worker, all trained and experienced in HIV/STI service provision, visited both venues 5 times over a period of 4 months between March and July 2008. Sessions took place during the busiest moments at the venues and lasted about 3 hours. Prevention messages, including safer sex messages, were delivered by a sexual health advisor and HIV service organisation ('Sensoa'), partner in the project. Information and brief counselling on safer sex strategies were offered to all participants. In addition, on request of participants, free referral was offered for safer sex counselling by trained healthcare providers and a sexologist.

The outreach worker offered basic information on the test. The counsellor described the procedure, the tests and way of communicating the results to the participants. After giving written informed consent (IC) and filling in the survey, participants underwent a blood test. The physician collected two blood samples per participant: one for clinical results and the other for scientific analysis of the project. The processing of the samples for the clinical results was treated confidentially, as in routine clinical care. The second sample was coded, linked to the questionnaire and was treated completely anonymous.

Ten days after the test session, test results were communicated by means of a standardised text message. Participants received either of the following two messages: "All test results are normal; if you wish, you can discuss your results with a physician", or "At least one of the test results was positive. Please contact the sexual health centre to discuss your results with a physician." When the patient consulted the sexual health centre the results were interpreted and the patient was counselled and treated according to good clinical practice.

Ethical approval was obtained from the Institutional Review Board of ITM and the University Hospital of Antwerp.

Analysis

Statistical analysis was performed using SPSS 17.0. Descriptive and univariate analyses were carried out. Fisher's exact test, or Chi-Square test, were used for categorical variables and t-tests or non-parametric tests for continuous variables. A significance level of 5% was applied.

Table 1: Tests performed and clinical interpretation

Infection	Tests performed	SMS message: 'please contact the sexual health centre' when:
HIV	Combined Ag/As test Confirmation INNO-LIA HIV1	Confirmation positive
Syphilis	RPR TPPA	RPR >= 1/4
Hepatitis B	HBsAg HBcAb HBsAb	HbsAg+
Hepatitis C	HCAb Confirmation	Confirmation positive
LGV	IgG (ratio) IgA (ratio)	IgG > 3 and/or IgA > 3

RESULTS

Sample description

Overall, 137 MSM underwent testing during 10 sessions (range 4 – 24 per session). Ninety-two men (67%) were tested in the sauna, 45 (33%) in the fetish club. Table 2 gives an overview of the respondents' main characteristics.

Table 2: Main characteristics of the studied population

Characteristic		N (%)
Age (years) Mean (SD): 41 (11.9)	≤25	15/130 (11.6)
	26-35	33/130 (25.4)
	36-45	35/130 (26.9)
	46-55	33/130 (25.4)
	> 55	14/130 (10.8)
Relationship Status	Single	68/135 (50.4)
	Male partner	62/135 (45.8)
	Female partner	5/135 (3.8)
HIV-tested in past year	Yes	53/134 (39.6)
	No	78/134 (58.2)
	I don't know	3/134 (2.2)
Regular (registered with a) GP	Yes	122/134 (91)
	No	12/134 (9)
Being under influence of alcohol during sex	(almost) never	88/133 (66.2)
	Sometimes	35/133 (26.3)
	(almost) always	10/133 (7.5)
Being under influence of drugs during sex	(almost) never	101/128 (78.9)
	Sometimes	18/128 (14.1)
	(almost) always	9/128 (7.0)

Fifty-three participants (40%) reported having taken an HIV-test in the past year. Of these men, 29 men (64%) had been tested by their own GP, whereas 9% (n=4) was tested by another physician.

The vast majority of participating men had had penetrative sex in the past 3 months. Even though oral sexual practices were not addressed in the questionnaire, 37 men reported having had oral sex by using the 'Other'-category.

Table 3: Description of participants' sexual practices

Sexual activity (in past 3 months)	N (%)	Inconsistent protective behaviour (%)
Insertive anal sex	Yes 83/134 (61.9)	38/81 (46.9)
Receptive anal sex	Yes 78/134 (58.2)	42/76 (55.3)
Insertive fisting	Yes 30/134 (22.4)	15/27 (55.6)
Receptive fisting	Yes 24/134 (17.9)	13/23 (56.5)
Vaginal sex	Yes 6/134 (4.5)	4/6 (66.7)
None of the above	Yes 11/133 (8.3)	Not applicable

Facilitators of sexual risk behaviour, such as being under influence of alcohol and drugs during sexual intercourse, were reported by 34% (n=45) and 21% (n=27), respectively.

Overall, 25 participants out of the 137 volunteers (18%) tested positive for an active, transmissible STI. Four of them (2.9%) were newly diagnosed with HIV. In addition, twelve

participants (9%) showed serological signs of a known, or treated STI (HIV, syphilis, chlamydia). One HIV-positive man, diagnosed with HIV prior to the outreach testing intervention, tested also positive for hepatitis C, syphilis, and chlamydia. He also showed signs of a previous hepatitis B infection.

Thirty per cent of the participants were not immune to hepatitis B. A total of 43 (31%) participants were adequately vaccinated for hepatitis B (positive serology for HBs-Ab and negative titer for HBe-Ab).

Communication of test results

All participants, except one (due to incorrect phone number), received their test results. Twenty-two of these men received a positive test result by text message and were requested to contact the sexual health centre to discuss their results. All reached participants were informed about their test result: either in a face-to-face consultation (n=5), by phone (n=15) or by email when not owning a cell phone (n=1).

Participants evaluated the 'text message' as the best method of communication (median score 9/10; Q1 7/10, Q3 10/10), followed by 'phone' (median 8/10; Q1 6/10, Q3 9/10), 'letter' (median 7/10; Q1 4.5/10, Q3 9/10), 'consultation at sexual health centre' (median 6/10; Q1 4/10, Q3 8/10), and 'healthcare providers revisiting the venue' (median 6/10; Q1 2/10, Q3 8/10) was evaluated as the least popular method.

Satisfaction with the primary healthcare system

Most of the participants (n=122; 91%) were registered with a fixed GP. In this group, satisfaction with their GP (again measured by a visual analogue scale ranging from 0-10) was significantly higher among STI-negative MSM compared to their STI-positive counterparts (median scores 8/10 versus 6/10 respectively, $p=0.012$).

Sexual risk

An analysis of the self-reported sexual practices showed that 53 (41%) of the tested MSM were at risk for acquiring STI. This was defined as having at least one unprotected sexual encounter (vaginal or anal sex, or fisting) in the past 3 months.

Significant differences were found comparing men reporting high sexual risk behaviour – as defined above – and men reporting low risk behaviour. An overview of these differences is shown in Table 4.

Men reporting risky sexual practices in the past 3 months, were significantly younger, were more often under the influence of alcohol and drugs when having sex, and had less often a fixed GP compared to those not reporting risk behaviour.

Table 4: Significant associations with sexual risk behaviour

Outcome (% of participants)	Significant risk factor	p-value
Reported high risk (41% of participants)	Not having a GP	0,027
	Being under influence of drugs when having sex	0,008
	Being under influence of alcohol when having sex	0,044
	Being younger	0,042

DISCUSSION

Feasibility

If well prepared and certain conditions are met, developing and implementing an outreach project is feasible in Flanders. This confirms the published findings from the US and the UK, where testing in bathhouses and saunas evolved to a regular clinical service, based on the experience gained in successful pilot projects (4-6). A thorough preparation, proper announcements and a structured co-operation on site are prerequisites for successful and effective outreach test sessions in high risk venues for MSM.

The standardised text message to communicate test results was positively evaluated. Moreover, all but one of the participants received their test result. Having a cell phone number enabled us to contact the participant in case an appointment was not made. One participant, who tested HIV positive, was actively traced in this way. Modern communication techniques proved to be useful to reduce the loss to follow-up of clients who enter the health system in this way.

It should be stressed that the workload in this outreach project is high. A multidisciplinary team (3 professionals) had to work at the venue at night. Each session also had to be prepared substantially in advance.

Prevention benefits

Regular outreach testing may improve both primary and secondary HIV prevention. Twelve out of 137 participants (9%) showed signs of a previous STI, 18% had at least one result for which it was necessary to consult a sexual health clinic. Early detection of STI among HIV-infected individuals is important not only for treatment purposes, but also to prevent further spread of HIV, facilitated by concomitant infections (17). The fact that one HIV-positive man -diagnosed with HIV prior to the outreach testing intervention- tested also positive for hepatitis C, syphilis, and chlamydia is a worrying finding.

Outreach testing in MSM may reduce the incidence of new HIV diagnoses (primary prevention) in two ways. It gives the opportunity to achieve behavioural change among people diagnosed with HIV, which has been demonstrated by recent studies (18, 19). In addition, counselling of MSM that tested negative may influence their risk behaviour. Even though behavioural change is possible, research also suggests that maintaining behavioural changes remains difficult (20).

The high rate (30%) of participants, not protected against hepatitis B infection, is remarkable. As an effective vaccine is available, this is a worrisome finding and demonstrates the need for more effective vaccine promotion campaigns, targeting MSM at highest risk.

Service delivery

This outreach project enhances the detection of HIV, but it should be seen as complementary to the state-of-the-art voluntary counselling and testing, being offered in sexual health centres, primary care services and by GPs. Proper (post-test) counselling and follow-up are essential elements of any outreach testing program. Interestingly, the group at highest risk (measured by self-reported risk behaviour as well

as positive test results), was the group least covered by regular healthcare services. The reason why these participants are less likely to consult a GP is subject to further research.

The patient-GP relation should be encouraged during outreach test sessions. Participants were actively referred to their GP, to promote repeated STI-testing within the regular healthcare system to avoid the creation of a parallel circuit of STI case-finding in gay venues.

Some additional findings regarding risk behaviour are worrying: the percentage of participants, engaged in unsafe sex practices, was considerable (41%), but again not different from the percentages found in similar pilot projects by Huebner et al. in San Francisco (38%) (6) and Bailey et al. in Brighton (46%) (5). Equally the proportion of clients that engaged in sex when under the influence of alcohol (34%) and drugs (21%) was consistent with other studies among MSM and remains a difficult to tackle barrier in efforts to change sexual behaviour (17, 21).

This project also contributed to HIV/STI awareness raising in the gay scene, due to the visible presence of the testing and prevention team, even when MSM decided not to take the test.

Study limitations

We acknowledge certain limitations of our study: the sample size is small and the study is based on a convenience sample of potential participants being present in the venues and volunteering to be tested. We estimate that 5-7% of the clients of the venues underwent testing. It is not possible to extrapolate the results to the risk group at large or to estimate the prevalence of STI in this population, but this was not the objective of the study.

Practical concerns swayed the choice towards collection of blood samples only. Additional testing methods such as swabs, could have led to the detection of additional STI. Lambert et al. showed that indeed the effectiveness of community based screening increases when more STI are included (7).

Following the pilot intervention, the organising centre for sexual health integrated outreach HIV/STI testing for MSM as a routine activity – including screening for hepatitis A – during which one free vaccine for hepatitis A and B is offered to MSM who are not protected yet.

Although no cost-effectiveness analysis was done, the cost of this intervention is considered to be high: it requires thorough preparation and the presence of a team on site and it generates substantial laboratory and administration costs. To our knowledge, no cost per detected STI case by means of other screening methods is known in Belgium, to eventually compare with our method.

CONCLUSIONS

Outreach testing reaches the target group of MSM with a higher risk for acquiring STI, it detects a substantial number of clinically relevant STI, and it creates an opportunity to refer participants to the regular healthcare system. Finally, it increases visibility and awareness of HIV/STI prevention in specific gay venues.

ACKNOWLEDGEMENTS / FUNDING

We thank all healthcare providers, who volunteered: Séverine Caluwaerts, Ilse Collier, Kim Courjaret, Erika Delporte, Patrick Desmet, Jasna Loos, Chris Van Ghyseghem and Kurt Van Lent (ITM); Koen Block, Ruth Borms, Pieter Duysburgh, Thierry Franck, Patrick Reyntiens and Sandra Van den Eynde (Sensoa); Jelke Verwimp (University of Antwerp); Olivier Koole (ITM) for methodological and statistical advice.

We also thank all participants and owners of the venues; City of Antwerp for funding and support; and Gilead for their financial support to analyse the blood samples of the scientific part of the project.

CONFLICT OF INTERESTS: None

REFERENCES

- Marks G, Crepaz N, Janssen RS. Estimating sexual transmission of HIV from persons aware and unaware that they are infected with the virus in the USA. *AIDS* 2006; 20: 1447-1450.
- Hamers FF, Phillips AN. Diagnosed and undiagnosed HIV-infected populations in Europe. *HIV Med* 2008; 9 Suppl 2: S6-12.
- Wilson DP, Hoare A, Regan DG, Law, MG. Importance of promoting HIV testing for preventing secondary transmissions: modelling the Australian HIV epidemic among men who have sex with men. *Sexual Health* 2009; 6: 19-33.
- Daskalakis D, Silvera R, Bernstein K, et al. Implementation of HIV Testing at 2 New York City Bathhouses: From Pilot to Clinical Service. *Clin Infect Dis* 2009; 48: 1609-1616.
- Bailey AC, Roberts J, Weatherburn P, et al. Community HIV testing for men who have sex with men: results of a pilot project and comparison of service users with those testing in genitourinary medicine clinics. *Sex Transm Inf* 2009; 85: 145-147.
- Huebner DM, Binson D, Woods WJ, Dilworth SE, Neilands TB, Grinstead O. Bathhouse-Based Voluntary Counseling and Testing Is Feasible and Shows Preliminary Evidence of Effectiveness. *J Acquir Immune Defic Syndr* 2006; 43: 239-246.
- Lambert NL, Fisher M, Imrie J, et al. Community based syphilis screening: feasibility, acceptability, and effectiveness in case finding. *Sex Transm Infect* 2005; 81: 213-216.
- Debattista J, Dwyer J, Anderson R, Rowling D, Patten J, Mortlock M. Screening for syphilis among men who have sex with men in various clinical settings. *Sex Transm Infect* 2004; 80: 505-
- Coester CH, Avonts D, Colaert J, Desmyter J, Piot P. Syphilis, hepatitis A, hepatitis B, and cytomegalovirus in homosexual men in Antwerp. *Br J Ven Dis* 1984; 60: 48-51.
- Mullens A, Staunton S, Debattista J, Hamernik E, Gill D. Sex on premises venue (SOPV) health promotion project in response to sustained increases in HIV notifications. *Sexual Health* 2009; 6: 41-44.
- Baber J, Dayan L. Men who have sex with men: A management approach for GPs. *Aust Fam Physician* 2006; 35: 797-800.
- Khan A, Plummer D, Hussain R, Minichiello V. Sexual risk in general practice: evidence from a New South Wales survey. *Sexual Health* 2007; 4: 1-8.
- Verhoeven V, Bovijn K, Helder A, et al. Discussing STIs: doctors are from Mars, patients from Venus. *Fam Pract* 2003; 20: 11-15.
- Healey LM, O'Connor CC, Templeton DJ. HIV result giving. Is it time to change our thinking? *Sexual Health* 2010; 7: 8-10.
- Buhrer-Skinner M, Muller R, Bialasiewicz S, et al. The check is in the mail: piloting a novel approach to Chlamydia trachomatis testing using self-collected, mailed specimen. *Sexual Health* 2009; 6: 163-169.
- Jin F, Jansson J, Law M, et al. Per-contact probability of HIV transmission in homosexual men in Sydney in the era of HAART. *AIDS* 2010; 24: 907-913.
- Morineau G, Nugrahini N, Riono P, Nurhayati, Girault P, Mustikawati DE, Magnani R. Sexual Risk Taking, STI and HIV Prevalence Among Men Who Have Sex with Men in Six Indonesian Cities. *AIDS behav*. 2009 Jul 30. [Epub ahead of print]
- Camoni L, Regine V, Colucci A, et al. Changes in At-Risk Behavior for HIV Infection among HIV-Positive Persons in Italy. *Aids Patient Care ST* 2009; 23: 853-858.
- Fox J, White PJ, Macdonald N, et al. Reductions in HIV transmission risk behaviour following diagnosis of primary HIV infection: a cohort of high-risk men who have sex with men. *HIV Med* 2009; 10: 432-438.
- Williamson LM, Dodds JP, Mercey DE, Hart GJ, Johnson AM. Sexual risk behaviour and knowledge of HIV status among community samples of gay men in the UK. *AIDS* 2008; 22: 1063-1070.
- Jorm A, Korten A, Rodgers B, Jacomb PA, Christensen H. Sexual orientation and mental health: results from a community survey of young and middle aged adults. *Br J Psych* 2002; 180: 423-427.