SYPHILIS

Screening for syphilis among men who have sex with men in various clinical settings

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Objectives: To assess the prevalence of syphilis infections among men who have sex with men (MSM) accessing the Brisbane Sexual Health Clinic during the period 1997 up to May 2003, data were collated through three clinical programmes conducted by the service—a large inner city mainstream sexual health clinic and two small outreach sessional clinics conducted on the site of male sex on premises venues (SOPV). Data analysis also provided the opportunity to evaluate the effectiveness of the smaller outreach clinics to access populations of MSM less likely to attend or identify at the larger mainstream clinic, and therefore enhance the detection of previously undiagnosed sexually transmissible infections.

Methods: Computerised records from 1997–2003 were collated for a statistical analysis of syphilis and other STI pathology results for all MSM accessing the mainstream clinic, and two outreach clinics.

Results: A review of client charts showed that 16 new syphilis diagnoses were made over the previous 5 years, but only two of these infections (both through the mainstream clinic) were early syphilis and therefore transmissible. All other cases were latent infections. A higher proportion of bisexual men was identified with positive syphilis serology but this was just below significance ($p=0.06$). Significantly, almost a third of syphilis diagnoses (all latent) were made at SOPV outreach clinics, despite the much lower proportion of clients seen overall through the SOPV clinics. For other sexually transmissible infections, the mainstream clinic demonstrated greater efficiency at case detection.

Conclusion: Outreach clinics located in male saunas may serve an effective function in syphilis screening by facilitating access for a particular subpopulation of MSM (bisexual, married men). These outreach clinics may provide important outlets for education and opportunistic screening of asymptomatic MSM and foster a greater willingness for men to honestly self identify. However, larger, mainstream clinics serve a more anonymous venue for the testing of symptomatic men.

Syphilis rates among men who have sex with men (MSM), relatively high before the 1980s, had significantly dropped during that decade and into the early 1990s as a result of the adoption of safe sex behaviours in response to the HIV epidemic.¹ It had become a rare infection, more identified within those populations characterised by poverty and social disadvantage^{2–4} and in Australia, among indigenous communities.⁵ Recently, however, there have been significant increases among gay communities in several large European and American cities—Dublin,⁶ Stockholm,⁷ London,⁸ New York,⁹ Los Angeles,¹⁰ Paris,¹¹ Oslo,¹² and Amsterdam.¹³ More significantly, this rise has also occurred within HIV affected populations.^{6, 8, 9, 14, 15}

Over the previous 2 years, this international pattern has been repeated in Australia.¹⁶ Because of the low incidence and public profile of syphilis, little awareness and culturally specific information have been available to assist homosexual men in identifying the symptoms of acute infection, or alerting them to the potentially serious consequences of untreated infection, particularly co-infection with HIV. The significance of resurgent syphilis within an HIV context is great,^{4, 13, 14} given that syphilis infection can predispose an individual to more readily acquiring or transmitting HIV, and that syphilis progression can be more rapid in those with a concurrent HIV infection.

Given the increasing importance of sex on premises venues (SOPV) as meeting points for a wide cross section of MSM populations, the increasing use of the internet¹⁷ and travel^{16, 18} to form sexual liaisons across national and international borders, and a recent large scale community event in Australia, the “gay games,” which had facilitated rapid and wide mixing of various social-sexual networks, it was decided

to analyse and compare diagnostic data for syphilis and other sexually transmissible infections identified through outreach sessional clinics operating at two city SOPV with notifications obtained through a large mainstream sexual health clinic (Brisbane Sexual Health Clinic). The value of outreach clinics for opportunistic screening was demonstrated by previously reported screening programmes conducted in these and other SOPV sites.^{19–21} These earlier studies, in which patrons were approached and offered testing for chlamydia and gonorrhoea as part of a health promotion campaign, identified a number of asymptomatic chlamydia infections among venue attenders. It was hoped that the present syphilis analysis would assist in evaluating the effectiveness of small, population targeted outreach services to detect new infections and access client populations invisible to larger, more conventional clinics.

METHODS

Data were obtained for the period 1997–2003 for 1653 MSM clients who recorded a syphilis test while attending a large inner city mainstream clinic (Brisbane Sexual Health Clinic) and smaller outreach sessional clinics located at two private male saunas and operated by staff from the city clinic. All records pertaining to MSM who tested positive for syphilis, either as a new, latent or past treated infections, were analysed and demographic details recorded. Data were also collected for the remaining MSM who tested negative to provide comparisons with syphilis positive clients, those who attended the mainstream clinic and the two outreach clinics.

Abbreviations: MSM, men who have sex with men; SOPV, sex on premises venues

Table 1 Characteristics of SOPV MSM attenders compared with clinic MSM attenders

	SOPV clients (n = 224)	Clinic clients (n = 1429)
Age	40	33
Marital status	Married: 12.5% (28) Divorced: 6.25% (14)	Married: 9.0% (186) Divorced: 6.0% (123)
Sexual identity (p<0.0001)	Homosexual: 89.3% (200) Bisexual: 7.6% (17) Heterosexual: 3.1% (7)	Homosexual: 61.8% (883) Bisexual: 19.9% (284) Heterosexual: 16.7% (238)
Injecting drug use history	7.1% (16)	12% (171)
Syphilis status	Primary: 0% (0) Early latent: 0% (0) Late latent: 2.2% (5) Past treated: 3.6% (8)	Primary: 0.1% (1) Early latent: 0.1% (1) Late latent: 0.6% (9) Past treated: 0.3% (7)

The two outreach clinics are operated weekly during the evening for 2 hours each on a drop-in basis. They are located on-site at two inner city sex on premises venues. Analysis for comparison of clinics was by a χ^2 test, or if cell count were low, a Fisher's exact test. This was able to state statistically whether there was an association among variables.

RESULTS

During the period of 1997 to 2003, a total of 224 MSM individuals had accessed the two SOPV clinics conducted one evening per week, and 1429 MSM individuals had been seen at the mainstream sexual health clinic. These individuals had accessed the clinics many times. Characteristics and syphilis infection histories for both populations are given in table 1.

A significantly higher proportion of MSM who identify as homosexual accessed the outreach clinics based at SOPV compared with men attending the static clinic (p<0.0001). Consequently, fewer MSM who attend the SOPV clinics identified as bisexual or heterosexual. None the less, similar numbers of married men attended both clinic types. However, of the 28 married men (12.5%) attending SOPV clinics, a quarter identified as heterosexual, a seventh, as homosexual and the majority (17) considered themselves bisexual.

Though the percentage of new and previous diagnosed cases of syphilis detected were greater within the outreach venues compared to the static clinic, there was no statistical significance between the prevalence identified across the various testing facilities.

Of the five and 11 new diagnoses of syphilis made at SOPV outreach clinics and the static clinic respectively, only two were early potentially transmissible infections, both reported through the static clinic. The remainder were late latent infections.

A further analysis of the client populations attending the clinics at the two SOPV saunas (B and W) is given in table 2.

Significantly higher rates of married men (39% v 7.3%; p=0.026) and bisexual men (33% v 9.7%; p<0.0001) were

identified at one venue (W) compared with the other (B). Of the 12 married men accessing B, a quarter identified as heterosexual and the remainder (eight) as bisexual. Similarly, a quarter of the 16 married men accessing W identified as heterosexual, and the majority (nine) as bisexual. Of the four new syphilis diagnoses (all latent infections) recorded at B, one was a bisexual identified male currently married. The one single syphilis infection diagnosed at W was also married but, again, it was an asymptomatic latent infection.

Comparisons between the total number of MSM presenting with positive syphilis serology without a history of treatment (n=16) and those with negative serology are presented in table 3.

While MSM clients accessing the SOPV clinics comprised only 9.5% of the total number of MSM tested at all sites over the 5 year period, this group accounted for 31.25% of the total number of newly identified syphilis infections. All were latent. This was significantly greater (p=0.015) than the proportion of cases identified at the mainstream clinic. A quarter of the men with positive syphilis serology were in current married relationships, though none identified as heterosexual.

Of the 16 untreated cases of syphilis, only two were considered potentially infectious. A comparison of those men who had tested positive for syphilis with those who had not, indicated a higher proportion of married and bisexual men and a lower proportion of homosexual identified men were diagnosed with syphilis, though this was not significantly greater.

Despite the significantly higher proportion of latent syphilis infections detected in SOPV clinics, this pattern of detection was not repeated for other sexually transmissible infections. Diagnoses of gonorrhoea, chlamydia, HIV, and genital warts were significantly more prevalent and likely to occur at the large, mainstream clinic (p=0.005).

Despite the high proportion of MSM diagnosed with gonorrhoea and chlamydia through the large, mainstream

Table 2 Characteristics of B attenders compared with W attenders

	B (n = 165)	W (n = 59)
Age	37	41
Marital status (p=0.028)	Age range: 17–80 Married: 7.3% (12) Divorced: 6.7% (11)	Age range: 18–77 Married: 39% (16) Divorced: 7.5% (3)
Sexual identity (p<0.0001)	Homosexual: 88.5% (146) Bisexual: 9.7% (16) Heterosexual: 1.8% (3)	Homosexual: 67% (39) Bisexual: 33% (20) Heterosexual: 0% (0)
Injecting drug use history	8.5% (14)	3.4% (2)
Syphilis status	Latent infection: 1.8% (4) Past treated: 2.7% (6)	Latent infection: 1.7% (1) Past treated: 3.4% (2)

Table 3 Characteristics of syphilis positive compared with syphilis negative clients

	Positive syphilis serology (n = 16)	Negative syphilis serology (n = 1637)
Age	43.98	37.5
Marital status	25% (4)	9.2% (208)
Sexual identity (p = 0.06)	Homosexual: 56% (9) Bisexual: 44% (7) Heterosexual: 0% (0)	Homosexual: 66.7% (1074) Bisexual: 18.8% (294) Heterosexual: 14.5% (245)
Injecting drug use history	18.75% (3)	8% (185)
Test site (p = 0.015)	Clinic: 68.75% (11) SOPV: 31.25% (5)	Clinic: 90.5% (1418) SOPV: 9.5% (219)

clinic (10.4% and 7.9% respectively), very few cases were detected among presenters at the SOPV outreach clinic (table 4). This was similar for HIV and genital warts. Latent syphilis was the only exception, with a significantly high proportion of cases identified through outreach clinics.

DISCUSSION

In response to recent reports of increases in early syphilis infections among men who have sex with men, the Brisbane Sexual Health Clinic conducted a review of patient records for the period 1997 to May 2003 for all men who identified sexual contact with other men. Data obtained from patients accessing the mainstream, inner city clinic were compared with data collected through two outreach clinics operating on a weekly basis at two sex on premises venues.

Retrospective clinic data did show differences in sexual identification among those clients accessing outreach venue clinics compared with those attending the mainstream clinic. A significantly larger proportion of MSM attending the SOPV clinic identified as homosexual (89.3% v 64%) and less identified as either bisexual or heterosexual (7.6% v 20.1% and 3.1% v 12.4% respectively). This greater tendency to identify as homosexual within the setting of an outreach clinic is not surprising, given that the nature of a male SOPV is likely to provide a more comfortable, safe environment for individuals to honestly self identify as homosexual. This readiness for honest self identification is further supported by client reports of marital status. Despite the significantly higher proportion of homosexual identification at the SOPV clinics, self reporting of married relationships (12.5% v 9.0%) or divorce (6.25% v 6.0%) were similar across the SOPV and mainstream clinic respectively. Alternatively, the larger mainstream clinic may provide a more comfortable setting for non-homosexual identified MSM, given its greater anonymity.

For both newly diagnosed and previously treated cases of syphilis, SOPV clinics reported higher prevalences (2.2% v 0.5% and 3.6% v 0.3% respectively) but this was not significantly different. However, in spite of the number of new syphilis diagnoses made (n = 16), only two of these infections (both through the mainstream clinic) were early stage syphilis and therefore potentially transmissible. All other cases of undiagnosed syphilis were latent.

A comparison of those clients newly diagnosed with syphilis (n = 16), regardless of the test site, and those without the infection, suggested a higher proportion of bisexual men had been exposed to syphilis but this was just below significance (p = 0.06). A quarter of the 16 cases were found in married men. While there may be little that can be interpreted from such a finding, particularly given that the great majority of cases were old, latent infections, this does raise the possibility of MSM in heterosexual relationships (and those who are not homosexual identified) being less inclined to access sexual health services at an earlier time, either through a reluctance to identify other sexual behaviours external to a socially visible relationship, or self denial of that aspect of their sexuality.

Significantly, almost a third of syphilis diagnoses were made at SOPV outreach clinics, despite the much lower number of clients seen overall (only 9.5% of the total MSM clients reviewed were seen through the SOPV clinics).

Dedicated outreach clinics such as these, located in gay saunas, may serve a particularly effective function in syphilis screening by facilitating access for a particular subpopulation of MSM (bisexual, married men). The observation of greater detection of syphilis through the SOPV outreach clinics was not repeated for other acute sexually transmissible infections. Chlamydia and gonorrhoea showed a much lower or negligible detection rate in SOPV clinics. This may reflect the nature of client consultations within the SOPV setting. Many of the clients who access the SOPV clinics may do so for general health check ups or to receive health information, rather than seeking testing and treatment for acute conditions. Symptomatic clients may prefer to access a mainstream health service such as the sexual health clinic. Therefore, health consultations at SOPV outreach clinics may be more opportunistic than the result of intentional treatment seeking behaviours.

With regard to cost effectiveness of outreach clinics, the cost of reviewing 224 MSM at outreach clinics (5 hours per week) by a nurse practitioner (employed at \$28.00 (€16)/hour) over the 6.5 years of this data analysis, would approximate to \$203 (€110) per person compared with the \$265 (€151) per person for reviewing the 1429 MSM seen through the mainstream clinic. The five diagnoses of syphilis identified through outreach venues would equate to \$9100 (€5203) per case, compared with \$34 414 (€19 677) for each

Table 4 Cases of sexually transmissible infections diagnosed among clinic MSM attenders (n = 1429) and SOPV MSM attenders (n = 224) and proportion of total cases diagnosed at each site

	Syphilis p = 0.005	Gonorrhoea	Chlamydia	HIV	Warts
Cases (clinic)	0.8% (11)	10.4% (148)	7.9% (113)	1.9% (27)	19.5% (279)
Cases (SOPV)	2.2% (5)	0.4% (1)	1.8% (4)	0.4% (1)	4.5% (10)
% Total cases (clinic)	68.75%	99.3%	96.6%	96.4%	96.5%
% Total cases (SOPV)	31.25%	0.7%	3.4%	3.6%	3.5%

Key messages

- Outreach clinics based within safe, homosexual friendly environments may encourage greater self identification of homosexual men and may assist in more accurately assessing and managing the sexual health of MSM
- Outreach clinics located within recreational venues may provide important opportunities for health promotion and opportunistic screening, but may prove less attractive as sites for specific acute clinical consultations
- MSM in heterosexual relationships (and those who are not homosexually identified) may pose a particular syphilis risk for women, given that they may be less inclined to access sexual health services at an earlier time, either through a reluctance to identify other sexual behaviours external to a socially visible relationship, or self denial of that aspect of their sexuality.

of the 11 cases notified through the mainstream clinic. However, if one considers the total of sexually transmissible infections diagnosed through each clinic, then the 578 infections detected through the mainstream clinic bring the cost per diagnosis down to \$655 (€374) compared with \$2167 (€1239) for the 21 outreach diagnoses.

The low numbers of acute infections identified through outreach clinics located in SOPV should not be viewed as a failure of such outreach. Aside from the clinical benefits of case identification, community outreach programmes such as these can serve as significant vehicles for health promotion, education, identifying knowledge deficits, and the fostering of collaboration between government and non-government services and key community stakeholders (including business). During the course of an outreach session, the clinic nurse is afforded a number of opportunities for contact with patrons, and during these brief interactions is able to raise awareness of sexual health, safe sex, and STIs. Onsite outreach in recreational environments can serve as a valuable sexual health awareness programme.

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CONTRIBUTORS

JDe prepared manuscript and JDW was the senior nurse responsible for majority of MSM screening conducted at outreach (until 2002)

and mainstream clinics; JDe collected and compiled data; RA was the outreach nurse responsible for screening conducted at outreach clinics (in 2003) and critically reviewed manuscript; DR was the clinician responsible for the syphilis register and assisted with data compilation and critically reviewed manuscript; JP had overall responsibility for outreach and mainstream clinics; MM undertook statistical analysis of data.

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