

Re-emerging syphilis in the North West: lessons from the Manchester outbreak

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Published by
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70 Great Crosshall Street
Liverpool L3 2AB
Tel: 0151 231 4301
Fax: 0151 231 4320
www.phslive.com

© January 2001
ISBN 0-902051-23-8
British Library Cataloguing in Publication Data
A Catalogue record for this book is available from the British Library

Executive Summary

Background

There has been a recent rapid increase in the number of syphilis cases in Manchester, primarily among men who have sex with men. Between January 1999 and August 2000, a total of 71 cases of syphilis were seen in Greater Manchester (Figure 2), when in the previous few years only two or three cases would have been seen over the same period. Such an increase is a cause for concern, not only because of the obvious reduction in health experienced by those infected, but also because syphilis and other sexually transmitted infections (STIs) serve as a marker for high risk sexual behaviour in the population and facilitate the transmission of HIV (see Section 1.3).

Syphilis is highly infectious during its early stages (Section 1.2). However, initial symptoms may not be apparent or may be too mild to arouse discomfort, causing time to elapse between infection and diagnosis during which an infected individual has opportunity to infect others (see Section 1.4). The presence of increasing levels of syphilis suggests changes in sexual risk behaviour in the population and a failure of preventative measures. Consequently, it is important to investigate behaviour, attitudes and awareness of sexual risks in those infected to determine where health promoting measures could be improved. Here we present results of in-depth interviews with 27 individuals recently infected with syphilis who presented at genitourinary medicine (GUM) clinics at each of three city hospitals in Manchester between May 1999 and August 2000.

Aims

The study aimed to:

1. assess levels of risk taking behaviour among those infected with syphilis
2. identify the level of co-infection with HIV, and investigate the effect of HIV status on behaviour
3. evaluate the feasibility of contact tracing
4. investigate perceptions and awareness of syphilis; identifying which behaviours are considered safe and whether there is any relationship between these perceptions and behaviour
5. assess the accessibility of sexual health information; identifying preferred sources of information and examining the relationship between service contact and receipt of information.

Key findings and recommendations

Most (23 out of 27) individuals interviewed were gay men, and seven of these were HIV positive (Section 4.1). All four heterosexuals (three men, one woman) had been infected abroad, or had a partner who had been infected abroad. In contrast, there was no evidence that the homosexual men had been infected abroad.

- *In view of the increased levels of alcohol, drugs and sexual risks that take place on holiday, and the high prevalence of STIs in some other countries, the travel industry and airports (with the health service) should provide more sexual health information.*

Out of the 27 diagnosed with syphilis, the 70% who experienced symptoms prior to diagnosis attended services between 2 weeks and 2 years after their first symptoms (with 60% attending within 8 weeks) (Section 4.2). The average waiting time for an appointment in some GUM clinics in Manchester is in excess of 10 days. Since the initial symptoms of syphilis are short lived and usually too mild to arouse discomfort, these long waiting times may dissuade individuals from attending services. Six (22%) were unaware that they had any STI, and were diagnosed because they attended for a general sexual health check up, or 'MOT'.

- *There is a clear need for waiting times at sexual health clinics to be reduced to 2 to 3 days to allow early identification and treatment of STIs and thereby reduce transmission of STIs including HIV.*
- *The sexual health MOT should be strongly promoted in order to detect asymptomatic individuals.*

The biggest source of risk behaviour for syphilis identified in this study was unprotected oral sex, which accounted for 1488 sexual contacts by 24 individuals in the 12 months prior to their being aware of having an STI (Table 1). Amongst the 22 participants who experienced symptoms, a further 501 unprotected oral sex contacts occurred between the onset of symptoms and diagnosis. Participants expressed a reluctance to use condoms for oral sex (Section 5.2). There was a low awareness about syphilis in general, but particularly around the risk of unprotected oral sex, with only 37% rating it as a high-risk activity for catching syphilis. In contrast, over 70% perceived the risk of syphilis (and HIV) through anal sex to be high (Figure 7).

- *A more imaginative approach to the marketing of condoms for gay men is required to attempt to make condom use acceptable for both anal and oral sex.*
- *Information campaigns should seek to increase awareness of syphilis, particularly the risk around oral sex.*

There were high levels of anonymous sex, most of which took place in two cruising areas in Manchester, Canal Street and Piccadilly Gardens. In the twelve months prior to being aware of having an STI, the 27 participants had sexual contact with a total of 1504 individuals, of whom only 10% could be named (Section 4.3). Those with higher numbers of partners were less likely to be able to name them (Figure 3). Consequently, contact tracing of infected individuals, seen to be an important aspect of syphilis control, will have limited impact as a measure to reduce levels of infection in those indulging in this level of risk behaviour.

- *Future development of city centre areas should consider the design and lighting so as not to inadvertently promote areas for anonymous sex.*
- *Efforts to reduce syphilis should focus on promoting the MOT and reducing waiting times at GUM clinics to 2 to 3 days, since contact tracing may have only a limited impact.*

Alcohol and other drugs were widely used (Figure 6), and five individuals had used alcohol as an excuse for risky sex. In particular, this study revealed a high level of GHB use (52% of respondents), a drug associated with gay sex for its disinhibiting and aphrodisiac effects. This is a cause for concern for a number of reasons. Much GHB is home produced and of unpredictable strength, and high doses can lead to heavy sedation leaving users open to accidents or attack. Mixing with alcohol exacerbates these unpredictable effects. Furthermore, there may be potentially severe interactions with the anti-viral drugs used to treat HIV. More importantly, some individuals were using the drug specifically to reduce their worries about unsafe sexual practices. It is difficult to see how safer sex messages can work effectively if individuals use GHB, alcohol and other drugs to reduce inhibition.

- *Information around alcohol and other drugs needs to incorporate sexual health issues to address the fact that alcohol and other drugs are used intentionally as a disinhibiting process prior to and during sex. Such information should be available in STI clinics.*

Having had a diagnosis of syphilis appeared to have some effect on risk behaviour. In the 12 months prior to awareness of an STI, 26% of individuals either abstained from anal sex or always used a condom for anal sex. This figure rose to 62% between symptoms and diagnosis and 67% after attending for treatment (Table 2). After a diagnosis of syphilis, there was a tendency for respondents to have fewer new sexual partners (Figure 8). However, whether this decrease in risk behaviour can be sustained is unknown, particularly in view of the fact that two thirds of the gay men had already had at least one previous STI (Figure 5).

- *More work is required to identify how sustained changes towards safer sexual behaviour after an STI diagnosis are, and whether interventions at this stage could influence longer term behaviour change.*

Significant concerns about the sexual health of HIV positive people were raised. Three of the seven interviewed for this study claimed that having HIV had not changed their sexual behaviour (Section 4.10). Three disclosed attending sex parties for HIV positive people where unprotected anal sex with multiple partners took place. There was little concern over co-infection with resistant forms of the virus or other STIs (Section 5.5). The five individuals who received their HIV treatment from infectious disease units all claimed not to have received any information on sexual health. By contrast, the two who received their HIV treatment from a GUM clinic both stated they had received sexual health information (Section 4.11).

- *The sexual health MOT should be strongly promoted among the gay community, and HIV positive individuals should be routinely offered screening for STIs.*
- *More work is necessary to encourage safer sex for HIV positive individuals. Information should stress issues around co-infection with different, potentially drug resistant, strains of HIV, and should point out that even treatable STIs such as syphilis may result in a more severe disease.*
- *HIV positive people in this study did not appear to receive sexual health information routinely. HIV treatment and access to GUM and other sexual health services should occur together in order to provide a holistic service.*

The GUM clinics were seen as a good source of information, as were the leaflets and posters available in the bars in the gay village (Figure 9). However, information targeted at gay men was perceived to be non-existent outside the gay village. General practitioners were not seen as a good source of sexual health information (with the exception of the gay-friendly GP in Manchester's gay village), and 63% stated they would not attend their GP for sexual health matters because of concerns over confidentiality and attitudes towards gay men.

- *Health promotion campaigns need to ensure that information is available for gay men who do not access a focal community such as Manchester's gay village.*

This study highlights several significant areas of concern that lead to recommendations for improving sexual health. However, extrapolating from this population is difficult since the high levels of risk behaviour revealed in this study are unlikely to be representative of the gay population in Manchester as a whole. It is important to assess levels of risk behaviour in the broader population in order to assess the extent of the problem and the likelihood of further transmission of syphilis and other STIs including HIV. A case control study will follow this investigation to address these concerns.

Acknowledgements

We would like to thank staff from the GUM departments of North Manchester General Hospital, Manchester Royal Infirmary and Withington Hospital for their assistance in recruiting clients, and the clients for taking part in this survey. The consultants from the three hospitals, Steve Higgins (North Manchester General), Ashish Sukthankar and Debashis Mandel (Manchester Royal Infirmary) and Penny Chandiook (Withington Hospital) provided guidance on the project and useful comments on the manuscript. We would also like to acknowledge the support of Rod Thomson (Sefton Health Authority), Ann Hoskins, Alan Jones, David McKelvey and Bridget Hughes (from Manchester Health Authority) and Paul Martin (Lesbian and Gay Foundation). We would like to thank all the staff at the Public Health Sector, and particularly Diana Leighton for her helpful comments on the manuscript. This study was funded by Manchester Health Authority.

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1 Introduction

1.1 Background

Once a common disease, syphilis was largely brought under control with the advent of penicillin. Figure 1 shows the peak in the number of syphilis cases in England and Wales near the end of the Second World War and the increases among men in the 1960s and 1970s associated with an increase in homosexually acquired infections. Following awareness of HIV and adoption of safer sex practices, the level among men dropped in the 1980s (Communicable Disease Surveillance Centre 2000a). Since then, a genitorinary medicine (GUM) department in the UK might only expect to see one or two cases per year (Public Health Laboratory Service 1999). This low prevalence has led to suggestions that antenatal screening for syphilis (Connor et al. 2000) or screening of blood supplies (Wincelhaus 1999) may no longer be necessary. However, the sharp increases elsewhere in Europe (for example in Russia: Tichonova et al. 1997) and recent outbreaks in Bristol (Battu et al. 1997) and Brighton (Communicable Disease Surveillance Centre 2000b) have suggested that such complacency may not be warranted. In January 2000, an increase in the number of cases of syphilis was reported in Manchester. Between January 1999 and January 2000 a total of 34 cases of early infectious syphilis were diagnosed at the three GUM clinics in Manchester (Higgins et al. 2000). Since then, new cases have continued to be identified at a constant rate, bringing the total number of cases in hospitals in Greater Manchester to 71 at the end of August 2000. Of that number, 61 were seen at one of the three city centre hospitals. Figure 2 shows the distribution of syphilis cases in Manchester by month of diagnosis. The majority of the cases (73%) are gay men. Since the gay community in Manchester has been a particular target for safer sex messages, the occurrence of an increase in sexually transmitted diseases is a particular cause for concern. The first aim of this study is to assess the levels of risk behaviour in a sample of people infected with syphilis in the Manchester area.

1.2 Transmission of syphilis

The vast majority of syphilis infections are acquired sexually (Tramont 1995). Syphilis is transmitted via vaginal, anal and oral sex. The infection can also be passed on to the foetus of an infected mother, known as congenital syphilis, and can cause abnormalities or foetal death. Antenatal screening in the UK detects at least 40 pregnant women who need treatment for syphilis every year (Connor et al. 2000). Syphilis can also be transmitted in fresh blood, and thus blood supplies are routinely screened. Rarely, syphilis occurs as a result of needlestick injuries in health care workers, with the site of infection typically being on the fingers (Tramont 1995).

The probability of transmission occurring depends on the stage of disease of the individual. Infected individuals are more infectious in the early stages of the disease (see Section 1.4). Estimates of the probability of transmission of syphilis suggest that anywhere between 9% and 88% of sexual partners become infected, with the best designed study yielding an estimate of 63% (Garnett et al. 1997). Because of this high transmission rate, preventing the spread of syphilis depends on early identification of infected individuals.

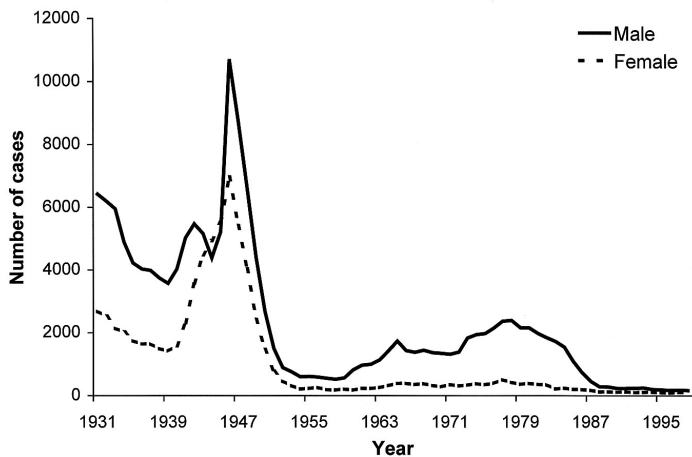


Figure 1. Cases of syphilis in England and Wales by year of diagnosis, 1931-1998
 Source: Communicable Disease Surveillance Centre (HIV & STI Division)

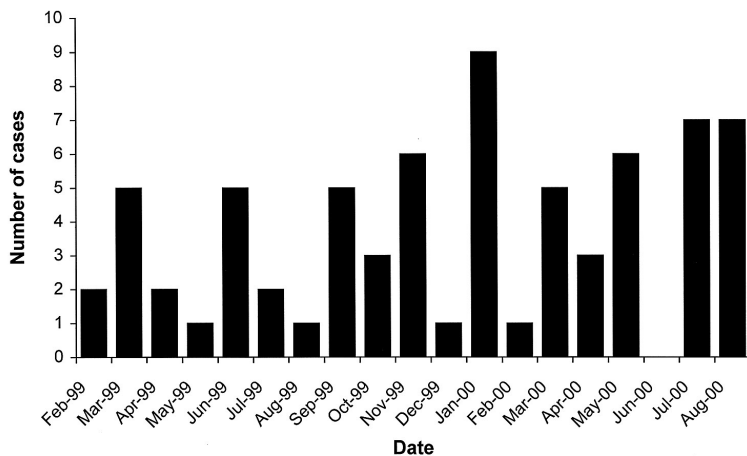


Figure 2. Cases of syphilis in Manchester by month of diagnosis
 Source: PHLS Communicable Disease Surveillance Centre North West

1.3 Syphilis and HIV

There is substantial epidemiological evidence to indicate the importance of syphilis as a co-factor for sexual transmission of HIV. Syphilis appears to be more likely to facilitate HIV transmission than any other sexually transmitted infection (STI) (Chesson & Pinkerton 2000). Being infected with syphilis makes it more likely that an individual exposed to HIV will become infected, and HIV positive people with syphilis are two to five times more likely to transmit HIV to others (Fleming & Wasserheit 1999). This increase in probability of HIV transmission is probably due to the weakening or breaching of genital mucosal membranes caused by syphilis and other STIs (Royce et al. 1997). One objective of this study is to measure the overlap between HIV and syphilis in the syphilis infected Manchester group (aim 2).

1.4 Disease course and symptoms

Syphilis is caused by the spirochete *Treponema pallidum*. After infection, there is a 9 to 90 day incubation period followed by a primary infection phase, which is associated with the development of a chancre (ulcer) at the site of infection. Classically, the chancre is painless and may be absent or not apparent enough to be noticed (Clinical Effectiveness Group 1999a), and in any case heals spontaneously after two to eight weeks (Tramont 1995). Following this an infected individual enters the secondary phase, the most recognisable symptoms of which are lesions of the skin which can appear on any part of the body. Secondary stage syphilis is very variable in its clinical manifestations at presentation, affecting any organ or system in the body, and the current relatively low prevalence of syphilis may have led to modern-day physicians being less experienced at its diagnosis (Tramont 1995). Some individuals do not show any symptoms. The patient is most infectious during these first two phases of syphilis disease, and is particularly infectious if a chancre is present (Tramont 1995).

If untreated, the disease progresses into latent and tertiary stages, where, although not contagious, it can lead to serious physical and neurological disorders in the infected individual (Clinical Effectiveness Group 1999b). Treatment for early syphilis consists of 10 to 14 days of penicillin injections (Clinical Effectiveness Group 1999a) and a longer course is required for late syphilis (Clinical Effectiveness Group 1999b). Some patients experience an initial flu-like reaction as the disease organism dies. Follow-up blood tests are taken at 3 month intervals for the 12 months post treatment, following which the patient is considered cured (Clinical Effectiveness Group 1999a).

1.5 Control of syphilis

Contact tracing is considered an important aspect of syphilis control (Tramont 1995), particularly since initial symptoms of infection usually do not arouse discomfort and may pass unnoticed. However, a recent outbreak of syphilis in San Francisco among users of an Internet chat room challenged such traditional methods, because of the anonymity of the sexual partners (Klausner et al. 2000). Contact tracing is only possible if the infected individual can supply names and addresses of their sexual partners. It is therefore important to assess the extent of anonymous

sexual contact in the population (aim 3 of this study). Many infected individuals do not present with primary syphilis, either because symptoms are mild or absent. Hence, routine general sexual health tests (known as MOT check-ups) may be an important tool for identifying infected individuals.

Preventing uninfected individuals from getting the disease in the first place is of primary importance in the control of syphilis. Educating individuals at risk as to how to avoid syphilis infection seems to be an obvious first step. However, because of its previously low prevalence, awareness of the risks of transmission and the signs and symptoms of infection may be low. One aim of this study was to investigate perceptions of syphilis risks amongst the infected population (aim 4). Information on sexually transmitted infections is available at sexual health clinics, and, in rapid response to the increase in syphilis cases, the Lesbian and Gay Foundation supplied information to venues in the gay village in Manchester. However, it is important to assess whether such sources are used, whether the information is understood and if so whether behaviour is modified (aim 5 of this study).

2 Aims

This unprecedented increase in the number of syphilis cases in Manchester necessitates an urgent attempt to revisit prevention efforts. This preliminary study of the behaviour and perceptions of individuals infected with syphilis aimed to:

1. assess levels of risk taking behaviour among those infected with syphilis
2. identify the level of co-infection with HIV, and investigate the effect of HIV status on behaviour
3. evaluate the feasibility of contact tracing
4. investigate perceptions and awareness of syphilis; identifying which behaviours are considered safe and whether there is any relationship between these perceptions and behaviour.
5. assess the accessibility of sexual health information; identifying preferred sources of information and examining the relationship between service contact and receipt of information.

3 Methods

All patients who received treatment for primary, secondary or early latent syphilis, diagnosed between May 1999 and August 2000 at each of the three genitourinary medicine departments in Manchester (North Manchester General Hospital, Manchester Royal Infirmary and Withington Hospital) were invited to take part in the survey. A total of 58 cases were diagnosed within the study period. A health adviser approached those who were still in treatment on their next visit to the clinic. Those no longer in treatment were contacted by telephone, and if a telephone number was not available, a letter was sent. For those agreeing to take part, a meeting with the researcher was then arranged at the patient's convenience. The total number of individuals contacted was 38, of which eight refused to take part, and three made arrangements for an interview but did not attend. The 27 who agreed to take part were interviewed between June and September 2000. Nineteen interviews were conducted in a private room at the hospital, seven at the patients' home and one in a doctor's surgery.

Information was gathered from the subjects by interview using a semi-structured questionnaire that included a combination of closed and open questions. The same researcher carried out all the interviews. Questions elicited sex, age, ethnicity and sexual orientation of the subject. The reasons why the participant had presented to the clinic (for example whether as a result of symptoms or for a general sexual health check) were explored. Previous history of sexually transmitted infections and HIV status were determined. Subjects' perceptions of the prevalence and the risks of transmission of HIV and syphilis via anal, vaginal and oral sex were elicited. Sexual risk behaviour over three periods of time (12 months prior to awareness of an STI, between symptoms and diagnosis and post diagnosis) was ascertained. Risk questions included the number of sexual partners during each period, the type of sex that took place, frequency of condom use and where individuals preferred to meet sexual partners. Also, participants were asked whether they had access to condoms and sexual health information during each of the three time periods. Finally, subjects' perceptions of the availability and usefulness of sexual health information were explored.

Quantitative analysis was carried out on SPSS (version 9). Comparisons between groups used non-parametric paired tests (Wilcoxon's) and unpaired tests (Mann-Whitney U). For open questions, common responses and themes were identified and summarised.

4 Results

4.1 Characteristics of the respondents

The participants comprised 27 individuals, 26 of whom were male and one was female. The age range was 20-47 years, with a mean age of 32.4 years. Twelve attended North Manchester General Hospital, ten Manchester Royal Infirmary and a further six attended Withington Hospital. Of the respondents, 24 (88.9%) classified themselves as white, one as black Caribbean, one as Indian and one as being of mixed race.

Sexuality

Twenty three (85%) of the participants described themselves as exclusively homosexual, and the remaining four as exclusively heterosexual. This percentage of homosexual cases is similar to that of the cluster as a whole (73%; source, clinical records). None of the respondents claimed to be bisexual, although two homosexual men had had sex with women in the past. None of the heterosexual men disclosed ever having had sexual contact with a man.

Contact abroad

All three heterosexual men interviewed claimed that they had become infected with syphilis abroad. The only woman interviewed had a male partner who had contracted syphilis abroad. Nine of the homosexual men had also had sexual contacts abroad in the 12 months prior to infection, the most frequent countries mentioned being Spain, USA and Holland. None of the participants mentioned having had sexual contact with anyone from Bristol or Brighton (the other areas in the UK with syphilis clusters), although four of the gay men had met sexual partners in London.

Relationship status

Over two fifths (43.5%) of the gay men considered themselves to be in a long-term relationship. Of these, 87% had other sexual partners outside their main relationship. Four men had paid for sex and two had been paid for sex in the 12 months prior to believing they had an STI. Three of the four heterosexuals claimed to be in a long-term relationship, of whom one was in an exclusive relationship.

HIV status

Of the whole sample, seven (25.9%) knew themselves to be HIV positive, 18 (67%) had taken an HIV test and had been found to be negative and the remaining two individuals did not know their HIV status. All seven HIV positive patients were gay men.

4.2 Reasons for attending the GUM clinic

There were a total of 19 (70.4%) patients who attended the GUM clinic associated with an STI. At that time only one patient thought that syphilis was a possible cause, having arrived at that diagnosis following an Internet search. Six (22.2%) patients showed no symptoms and had visited the clinic for a general sexual health MOT. None of the individuals interviewed had attended the clinic as a result of contact tracing, although two of the patients' primary sexual partners were found to be infected at a later date. Two patients were referred from other services, one being a general practice.

Eight respondents did not show any symptoms prior to diagnosis. The mean time between symptoms and diagnosis for the 19 patients who presented to a GUM clinic with symptoms was 20 weeks (with 60% attending after 8 weeks), ranging from one week to two years. Of the patients who presented with symptoms, the majority of patients presented with one or more of the following: syphilitic lesions on the penis, lesions on the upper body, a prominent rash which covered all areas of the body, pronounced rash on hands and feet, ulcers in the mouth, spots on the penis and a general feeling of not being well. Of the eight who did not present with symptoms, three said that in hindsight they had suffered one or more symptoms over the past years.

4.3 Number of sexual contacts

Sexual contacts over three time periods

Table 1 shows the number of sexual contacts that occurred during each time period. The most common activity was oral sex, accounting for 1493 sexual contacts in the 12 months preceding symptoms or diagnosis (n=27) and 502 between symptoms and diagnosis (n=17). Table 1 also shows the number of contacts at which condoms were not used. After the onset of symptoms and before diagnosis, a total of 501 contacts for oral sex and 3 anal sex contacts occurred without the use of condoms. It is likely that many of these occasions of unprotected sex will have occurred during the period that the subject was highly infectious.

Table 1. The number of people with whom infected individuals had sexual contact and condom use during the three time periods.

	Prior to symptoms*		Symptoms-diagnosis		After diagnosis	
	Contacts	n	Contacts	n	Contacts	n
All sexual acts						
Anal	429	23	70	13	40	15
Oral	1493	27	502	17	128	21
Vaginal	10	4	1	1	5	4
Total	1504	27	503	18	128	21
Condom never used						
Anal	10	5	3	3	3	3
Oral	1488	24	501	16	121	18
Vaginal	7	2			3	3
Total**	1505		504		127	
Condom sometimes used						
Anal	384	13	57	5	22	4
Oral	5	3	1	1	1	1
Vaginal	3	2	1	1	3	2
Total**	356		59		26	

* 12 months prior to symptoms or prior to diagnosis for those who showed no symptoms

** includes double counting (i.e. contacts with whom oral and anal/vaginal sex occurred are counted more than once).

Extent of anonymous sex

The respondents who had ten or fewer partners were more likely to have sex with people who had already been their sexual partner. The more sexual partners a subject had in the 12 months prior to symptoms or diagnosis, the higher the likelihood that the partners would be new (Figure 3). For the purpose of contact tracing it is necessary to ascertain the names and addresses of previous sexual contacts of infected individuals. Respondents were asked for how many of their sexual partners they could have supplied a name or address. From the total of 1504 sexual contacts taking place prior to the 27 participants being aware of having an STI, only 148 (10%) could be named and the address of 86 (6%) was known. Figure 3 illustrates that those with more partners were able to name a much lower proportion of them at the time of contact. From the total of 503 sexual contacts taking place between symptoms and diagnosis, respondents could name 47 (9%) contacts and could give the address of only 29 (6%) of those. Additionally, patients were aware of the HIV status of only 16 (3%) of the sexual contacts. Those who had fewer partners were more likely to have known their partners' full name at the time of the contact. Thus, 83% of those who had one partner between symptoms and diagnosis had known the name of their partner at the time of contact. Individuals who had between two and five partners during that period could name an average of 28% of their partners, and those with six or more partners could only name an average of 15%.

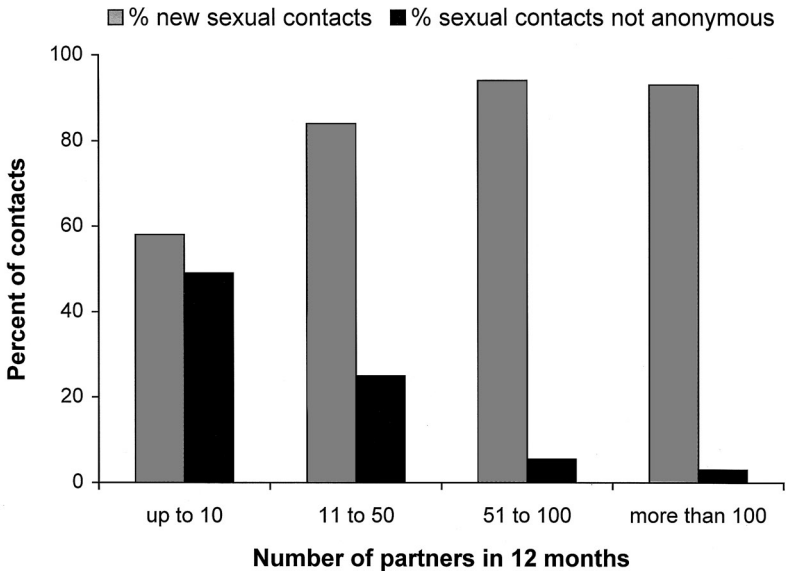


Figure 3. Proportion of sexual partners that were new and proportion of partners whose name was known at the time of contact against total number of partners in the twelve months before symptoms / diagnosis

4.4 Previous sexually transmitted infections and clinic attendance

The majority (85%) had attended a GUM clinic previously (Figure 4). Amongst the participants who had never previously attended there was some trepidation as to the reception they would receive at the clinic. The nine patients who had attended once or twice before reported having no hesitation in returning to the clinic, as they knew what to expect in terms of service and reception. The group who had attended over eight times consisted of seven gay men who had accessed the sexual health MOT service at the clinic previously. Of these men, five attend a sexual health MOT every 12 months.

Of the four heterosexual respondents, none claimed to have had any previous STIs. Nine gay men, one of who was HIV positive, claimed to have had no previous STIs excluding HIV (Figure 5).

4.5 Receiving a syphilis diagnosis

All respondents were told of their diagnosis at the clinic by either a consultant or health advisor. Six (22.2%) said they would have liked more information on syphilis prior to the test being taken. Following the test, four (14.8%) said they received a letter asking them to return to the clinic following the initial blood test. One (3.7%) respondent was unhappy with the manner he was informed of his diagnosis.

When asked how they felt when informed of their syphilis diagnosis, responses ranged from 'devastated' to 'it's just another STI'. Seven (25.9%) of respondents stated they were immediately relieved to hear it was treatable and put at ease by the health advisor.

4.6 Use of alcohol and other drugs

Respondents were asked what drugs they had ever used, had used while looking for sex and had used during sex. The use of alcohol was almost ubiquitous. Alcohol intoxication was used as an excuse for unprotected sex by five (18.5%) respondents. Others said using alcohol in a pub or club setting gave them confidence to talk to strangers with the intention of sex.

A high proportion of the participants (52%) had used gamma hydroxybutyrate (GHB) either while looking for or during sex (Figure 6). Of the gay men, 61% had used GHB. In this study, the euphoric effects of the drug GHB were being used as a sex aid in various settings including Canal Street and in cruising areas. Several participants claimed the drug helped them lose all their inhibitions with regard to having sex with strangers, while others claimed the drug has very strong aphrodisiac properties.

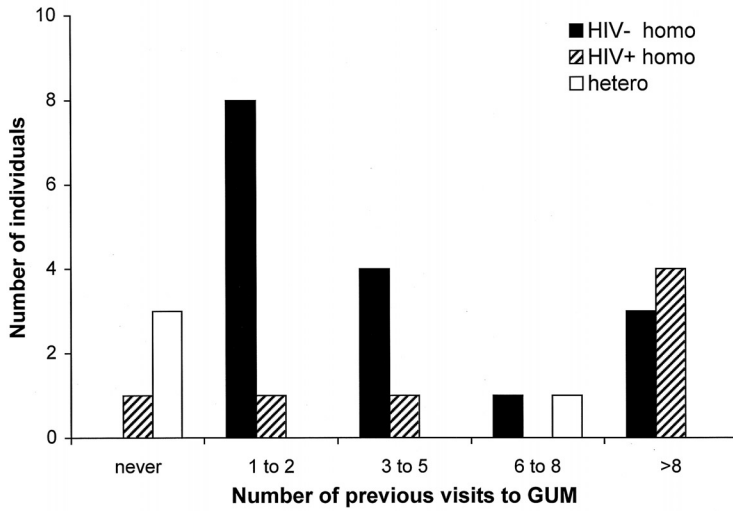


Figure 4. Sexuality, HIV status and number of previous visits to a GUM clinic.

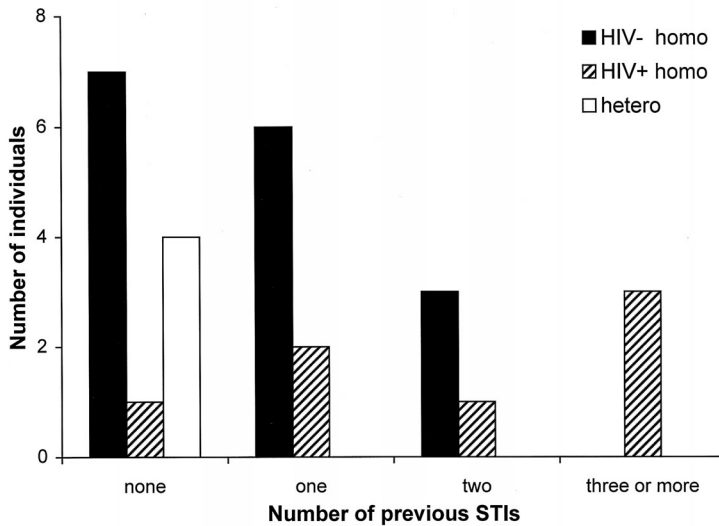


Figure 5. Sexuality, HIV status and number of previous sexually transmitted infections.

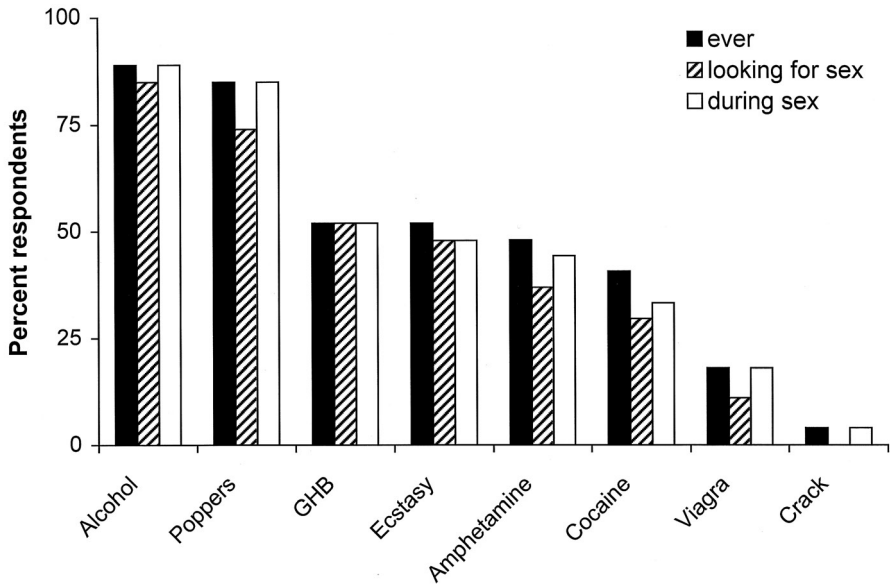


Figure 6. Percentage of respondents ever using selected drugs*, using drugs while looking for sex and using drugs during sex

**Includes use of more than one drug*

Five (18.5%) respondents had injected drugs in the past. None of these claimed to be currently injecting and none had ever been in contact with drug services. Although there were several requests for further information on drug use, none of the respondents thought their drug use was problematic. Those asking for information on drug use were referred back to their health advisor.

In general, drugs were generally seen as an accompaniment to a good night out rather than the reason for a night out. The majority (67%) of subjects agreed that drugs and alcohol affected their judgements about safer sex, and all of these were aware prior to taking the drug that drug use may affect their sexual behaviour.

4.7 Meeting sexual partners

The majority of respondents used nightclubs as the primary meeting place for sexual partners. However, dancing and listening to dance music was stated by seven (25.9%) as their primary reason for going to clubs, with meeting a sexual partner at the venue being seen as a bonus. Nineteen (70.4%) said that they liked to meet people in a social setting before having sex with them. This was stated as an alternative to 'meeting a weirdo' in a cruising area. Pubs were seen as a place to easily meet strangers. Cruising areas were seen as the primary place for anonymous sex. Of the cruising areas named, the Canal Street area in the city centre was the most frequently used. Dark rooms, cottages (public lavatories) and saunas were also used for anonymous sex, although less frequently.

4.8 Knowledge and attitudes

Most of the respondents (92.6%) had received an HIV antibody test. All knew that there is no cure for HIV, and all but one thought that it was not possible to tell if someone has HIV by looking at them. When asked about syphilis, all but one thought it could be cured, and that individual claimed not to know. Prior to their infection, the majority (24, 88.9%) said they had little or no information on syphilis and were unaware of the symptoms and treatment.

All but two of the participants thought the chance of catching HIV through unprotected anal sex was high, and most (18, 67%) believed the risk from unprotected oral sex was low (Figure 7a). Participants were less aware of the risks of syphilis. While the majority of subjects (20, 74%) thought the chances of catching syphilis through unprotected anal sex was high, there was confusion over the risk of unprotected oral sex (Figure 7b). Responses ranged from low risk (26% of respondents), medium risk (22.2%) to high risk (37%). Four (14.8%) did not know how risky oral sex was for syphilis transmission.

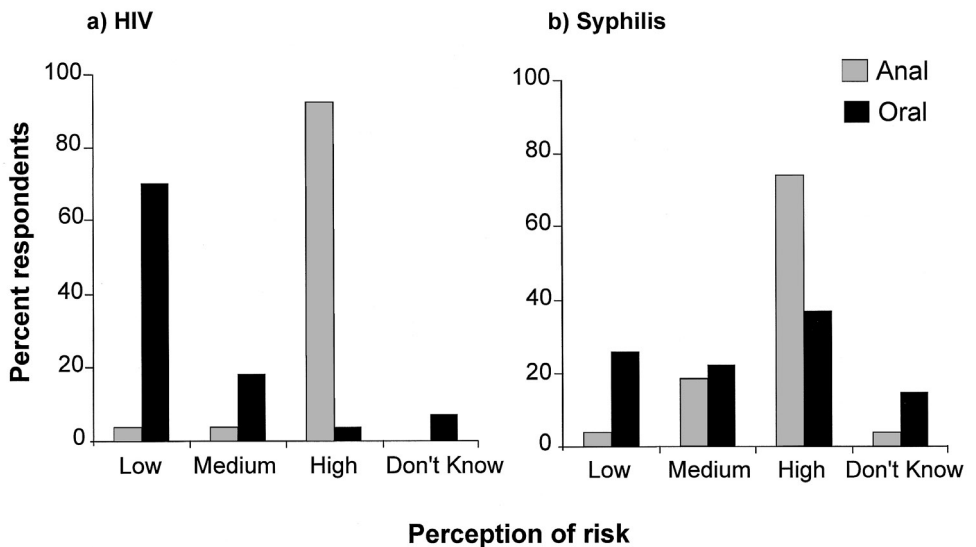


Figure 7. Perceptions of the risk of a) HIV and b) syphilis by unprotected anal and unprotected oral sex

Respondents were asked how many people in the Manchester area they thought had HIV and syphilis. Although individuals varied widely in their estimation of risk (for example, estimates of the number of adults with HIV ranged from 1 in 5 to 1 in 100,000), individuals were significantly more likely to think that STIs were more prevalent in the gay community. Thus, 22 out of 27 estimated the prevalence of HIV to be higher in homosexuals (median = 1 in 500) than the adult population as a whole (median = 1 in 1000; Wilcoxon paired test $p < 0.0005$). For syphilis, 20 out of 27 estimated prevalence to be higher in the gay community (median = 1 in 1000) than adults in general (median = 1 in 5000; paired $p = 0.001$). There was a tendency for syphilis to be considered more rare than HIV in both the gay and the general adult population, although this was not statistically significant (paired $p > 0.05$).

4.9 The effect of a syphilis diagnosis on risk behaviour

Condom use

Receiving a syphilis diagnosis appeared to have some effect on sexual risk taking behaviour. Thirty eight percent abstained from anal intercourse after the onset of symptoms, and 28% had not had anal sex between finishing treatment and being interviewed. Out of those who had anal sex, the proportion who always used condoms rose from 23% in the 12 months prior to awareness of an STI, to 38% after the onset of symptoms and 54% after completing the course of treatment. Table 2 shows that people who perceived the risk of syphilis infection through anal sex to be high were more likely to sometimes or always use a condom. Before infection, all of those who thought unprotected anal sex was a high risk activity wore condoms at least some of the time, compared to 50% of those who rated the risk as low or medium. After symptoms, all those who perceived the risk to be high used condoms at least some of the time or abstained from anal sex, whereas 75% of those perceiving the risk to be low or medium never wore condoms. Several respondents could not give a reason for having unprotected anal intercourse.

Table 2. Condom use for anal sex during the three periods of time (12 months prior to symptoms or diagnosis, between symptoms and diagnosis, after diagnosis) and perception of the risk of syphilis transmission through unprotected anal sex (homosexual men only)

Condom use for anal sex	Perception of risk of syphilis through anal sex				Total
	Low	Medium	High	Don't know	
12 months prior					
Always		1(20%)	4(25%)		5(21.7%)
Sometimes	1(100%)	1(20%)	11(68.8%)		13(56.5%)
Never		3(60%)		1(100%)	4(17.4%)
N/A			1(6.3%)		1(4.3%)
Total	1(100%)	5(100%)	16(100%)	1(100%)	23(100%)
Symptoms to diagnosis					
Always			5(31.3%)		5(23.8%)
Sometimes			5(31.3%)		5(23.8%)
Never	1(100%)	2(66.7%)			3(14.3%)
N/A		1(33.3%)	6(37.5%)	1(100%)	8(38.1%)
Total *	1(100%)	3(100%)	16(100%)	1(100%)	21(100%)
After diagnosis					
Always			7(50.0%)		7(38.9%)
Sometimes		1(50%)	3(21.4%)		4(22.2%)
Never	1(100%)	1(50%)			2(11.1%)
N/A			4(28.6%)	1(100%)	5(27.8%)
Total **	1(100%)	2(100%)	14(100%)	1(100%)	18(100%)

* not including two individuals who showed no symptoms

** not including five individuals who were abstaining from sex because they were still being treated

For all three periods of time there was considerably more oral sex taking place than anal sex. Eight (29.6%) of the respondents stated categorically that the only way they could have contracted syphilis infection was through oral sex, including one man who had abstained from anal sex for over three years. None of the respondents always used condoms for oral sex prior to diagnosis, even after the onset of symptoms. Even after diagnosis, only two (9%) individuals always used condoms for oral sex (Table 3). All the respondents claimed they had access to condoms, and eight said they always carried them but would not use them for oral sex.

Table 3. Condom use for oral sex during the three periods of time (12 months prior to symptoms or diagnosis, between symptoms and diagnosis, after diagnosis) and perception of the risk of syphilis transmission through unprotected oral sex

Condom use for oral sex	Perception of risk of syphilis through oral sex				Total
	Low	Medium	High	Don't know	
12 months prior					
Always					0(0%)
Sometimes			2(20%)	1(25%)	3(11.1%)
Never	7(100%)	6(100%)	8(80%)	3(75%)	24(88.9%)
Total	7(100%)	6(100%)	10(100%)	4(100%)	27(100%)
Symptoms to diagnosis					
Always					0(0%)
Sometimes			1(11.1%)		1(4.5%)
Never	3(60%)	5(100%)	6(66.7%)	2(66.7%)	16(72.7%)
N/A	2(40%)		2(22.2%)	1(33.3%)	5(22.7%)
Total	5(100%)	5(100%)	9(100%)	3(100%)	22(100%)
After diagnosis					
Always	1(14.3%)		1(12.5%)		2(8.7%)
Sometimes			1(12.5%)		1(4.3%)
Never	6(85.7%)	4(100%)	5(62.5%)	3(75%)	18(78.3%)
N/A			1(12.5%)	1(25%)	2(8.7%)
Total	7(100%)	4(100%)	8(100%)	4(100%)	23(100%)

Number of partners

In order to identify any effect of having symptoms or receiving a diagnosis of syphilis on the number of sexual partners, the average number of new individuals with whom the subject had sexual contact with was calculated. In order to compare the number of new partners over the different time periods, which varied in length, a rate of new partners per week was calculated for each individual. Figure 8 shows that the number of partners per week increased from 0.95 to 1.31 after the onset of symptoms. However, after diagnosis and treatment, the average number of new sexual partners decreased to 0.47 per week, although this decline was not quite statistically significant (Wilcoxon paired test $p=0.055$). Thirteen of the 27 patients stated that having had syphilis had changed their behaviour, and their statements were supported by the fact that they reported relatively few new partners following treatment (on average 0.04 new partners per week). By comparison, those who stated syphilis had not changed their behaviour had a greater number of new partners following treatment (0.95 new partners per week; Mann-Whitney U test $p = 0.022$).

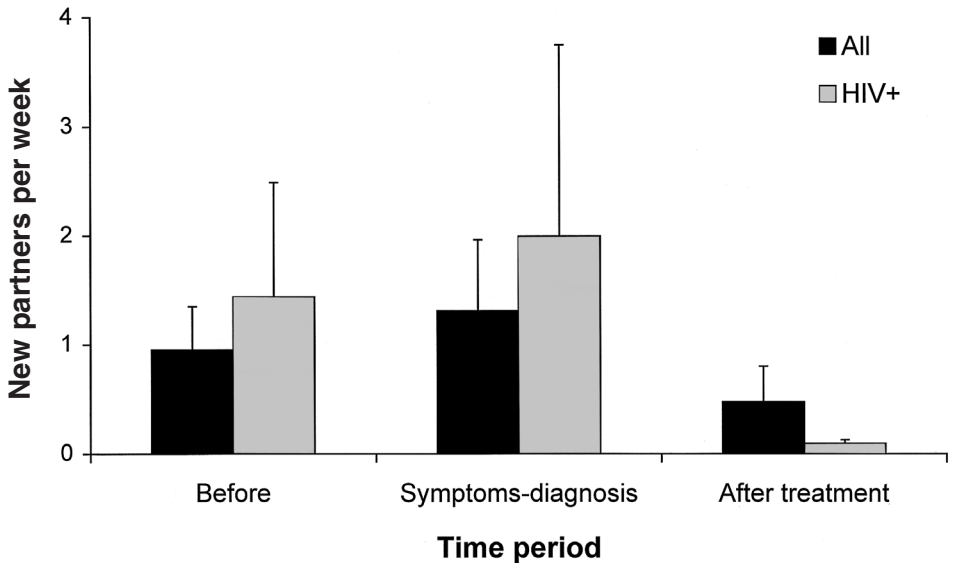


Figure 8. The number of new partners per week before symptoms/diagnosis, between symptoms and diagnosis and after treatment.

4.10 Risk behaviour among HIV positive gay men

Condom use

Although six of the seven HIV positive gay men thought that the risk of transmitting HIV through unprotected anal intercourse was high, only one always used condoms for anal sex and one abstained from anal sex altogether. The remaining five said they sometimes used a condom for anal sex.

Effect of HIV status on behaviour

Three of the HIV positive individuals considered that having HIV had not changed their sexual behaviour, three said it had and one thought it was too early to tell. One respondent stated that syphilis had a more immediate affect on him than HIV because of its visibility. Five (71.4%) of the HIV positive gay men said they would have unprotected anal sex with other HIV positive men following negotiation and once their status had been confirmed. Three said they regularly attended organised sex parties attended by other HIV positive men. In contrast, only one of the HIV negative gay men claimed to have attended a sex party. The interview process also uncovered evidence of organised sex parties exclusively for HIV positive men. Details of these events were promoted over the Internet and took place in venues throughout the country. Respondents showed little knowledge or concern of re-infection / co-infection issues in terms of HIV infection.

Previous STI history

Figure 5 illustrates the distribution of previous STIs. Four HIV positive individuals stated they had contracted gonorrhoea on at least one occasion since their HIV diagnosis. All three HIV positive patients who had not changed their sexual behaviour had contracted a sexually transmitted disease on more than two occasions.

Effect of syphilis diagnosis on behaviour

All the HIV positive individuals had symptoms of syphilis, and five of these had attended the GUM clinic because of their symptoms. Alongside the data for all individuals in the study, Figure 8 also shows the mean number of new sexual partners per week for HIV positive individuals. The development of symptoms did not appear to affect the mean number of new sexual partners, which was 1.45 per week before symptoms and 2.0 per week after onset of symptoms. However, after treatment, the number of new partners per week dropped to 0.09 (due to the small sample size this decline was not statistically significant at $p=0.075$; Wilcoxon paired test).

Drug use

Five of the HIV positive men claimed to have used three or more illegal or illicit drugs. These five men had all used GHB, with one claiming to have used it a lot when looking for sex and during sex.

4.11 Sources of information about sexual health

The majority of respondents (85.2%) received a lot of their sexual health information from the GUM clinic that they attend (Figure 9). Information leaflets placed around the gay village in Manchester closely followed this as the second most popular source of information. Twelve (44.4%) individuals said they would not pick up a new information leaflet on sexually transmitted infections if it was prominently displayed in a bar. The main reason was fear that people might see them picking it up and think they might have an STI. Four participants stated that they would be more likely to pick up and read a new leaflet in the daytime, but not during a night out. When asked if they preferred to see information on a poster or in a leaflet, half had a preference for leaflets, while the other half expressed a preference for posters. Seventeen (74%) of the homosexual men thought the sexual health information displayed on posters and leaflets around the village was well presented and used appropriate language and styles of information. There was a general consensus that compared to other areas, information was readily available in the gay village. However, two respondents claimed not to see information on STIs as a result of no longer visiting the village. The gay press (included under the magazine section of Figure 9) was seen as a useful source for new information on sexual health. Newspapers were less likely to be used as a source of information, with six respondents stating that the information could not be trusted.

General practitioners came last in the list of sources of information. However, the two respondents who gained a lot of information from their GP attended a gay friendly surgery in the village. Seventeen (63%) stated they would not visit their GP with any matters regarding their sexual health. This reluctance to attend GPs included fears over confidentiality and the attitude of the GP towards gay men.

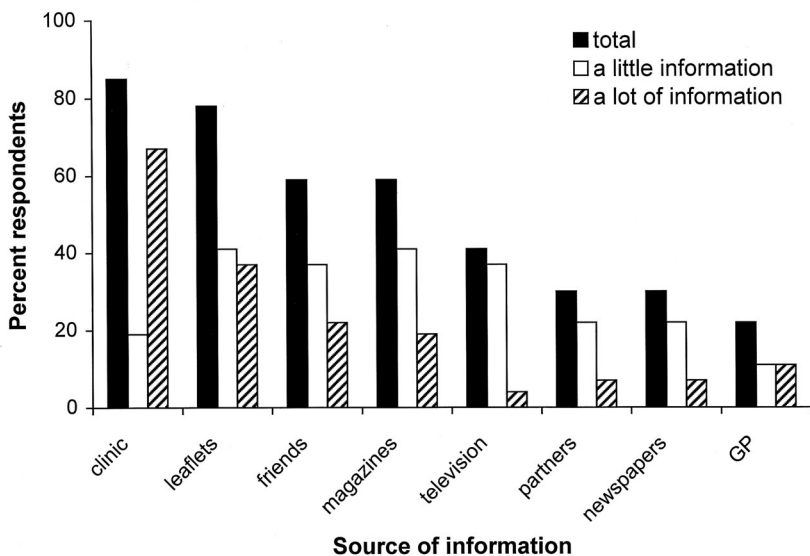


Figure 9. Sources of information for sexual health and relative levels of use

Information for HIV positive individuals

Only two of the seven HIV positive individuals (29%) stated that they had received information on sexual health and other STIs from their HIV clinic. Both of these attended GUM clinics for their HIV care. The remaining five attended an infectious disease department for their HIV treatment, and all claimed not to have received any information on other STIs. In contrast, half (nine) of the HIV negative individuals recalled obtaining information on other STIs from their current STI clinic.

4.12 Attitudes to safer sexual behaviour

Participants were asked what constituted safer sexual behaviour. Seventeen (63%) stated that using condoms for oral and anal sex was safer sex. However, none of the respondents could envisage always using condoms for oral and anal sex. Ten (37%) of the respondents said that safer sex was something more than just using condoms. These responses included being aware of the surroundings, being in control of alcohol or drugs used prior to sex and having oral sex rather than anal sex and not swallowing semen.

Subjects were asked what would encourage them to practice safer sex. Five (18.5%) respondents wanted an alternative barrier form of protection to condoms. Three (11.1%) patients wanted more information from the clinic that they attended, while four (14.8%) thought a mass media campaign covering all STIs including local and national radio stations would foster a change in sexual behaviour. Six (22.2%) people wanted to see more outreach workers around the village and four (14.8%) people interviewed wanted to see harder hitting leaflets made available. Finally, two (7.4%) respondents said everything that could be done is already being done.

5 Discussion

5.1 Perceptions and risk behaviour

The biggest source of syphilis risk behaviour identified in this study was unprotected oral sex. Eight respondents stated categorically that the only way they could have contracted syphilis infection was through oral sex, including one man who had abstained from anal sex for over three years. Of the 27 people interviewed, 24 reported never using a condom for oral sex, and between them, these 24 individuals accounted for 1488 contacts with different people that involved unprotected oral sex in the 12 months prior to their awareness of having an STI. Of the 24, 16 experienced symptoms and, during the period between symptoms and diagnosis, had a further 501 unprotected oral sex contacts with different people (Table 1).

In general, there was a lack of awareness about syphilis, with reactions to the diagnosis ranging from 'devastation' to relief that the diagnosis was not one of HIV.

'...absolutely devastated at the thought I could have passed it on to someone else'

'...very surprised, thought it had been eradicated many years ago'

'...never heard of it don't know how I caught it or what it does'

'I know a few friends who have got it and they are OK after treatment'

'...glad it was syphilis and not HIV'

While three quarters of the respondents stated that the risk of contracting syphilis through unprotected anal sex was high, there was less certainty around the risk of unprotected oral sex, with only 37% rating it as a high risk activity (Figure 7). Measures to increase the awareness of the risk of oral sex would at least allow individuals to make informed decisions as to the risks that they take. There was some suggestion that an increased perception of oral sex as risky was related to condom use: the three individuals who reported ever using a condom for oral sex were more likely to perceive unprotected oral sex to be a high risk activity (Table 3). However, the relationship between knowledge and perception of health risk and risk-taking behaviour is not well understood (Cook & Bellis 2001). In this study, the majority of those who perceived the risk of oral sex to be high still never used condoms for oral sex.

The 1980s saw substantial reductions in risk behaviour among gay men in response to the AIDS crisis. However, in the era of optimism over effective treatments for HIV infection, levels of risk behaviour among gay men in the USA have been increasing (Stall et al. 2000). In the UK, following several years of stable levels of risk behaviour (Hickson et al. 1996), more recent annual surveys (1996-1998) show that gay men in London also appear to be following the trend for a reduction in safer sex behaviour (Dodds et al. 2000). In this study, 93% people perceived the risk of contracting HIV through unprotected anal sex to be high, yet 78% disclosed having had unprotected anal sex in the 12 months prior to awareness of having an STI. Most of the gay men interviewed could not give a reason for having unprotected anal intercourse. Of those that did:

'...at the time I had a total lack of self esteem and low feeling of self worth'

'...the opportunity for sex arose and I took it'

Moreover, the majority of sexual contacts (97%) were with individuals whose HIV status was unknown. However, this high level of risk behaviour occurring among a syphilis-infected subset of the population is unlikely to be representative of the gay population as a whole; a case control study is underway to ascertain risk levels in uninfected men.

5.2 Barriers to condom use

All of the gay men interviewed admitted that condoms were widely available. However, requesting a partner to use a condom was not seen as socially acceptable. Participants expressed several barriers to condom use:

'I don't like the taste'

'I cannot get an erection using condoms'

'...they are too inconvenient to use'

'I would not want to offend someone by asking them to wear a condom, it's not done'

Promoting condoms in ways that make them socially acceptable is a great challenge, particularly in view of the restrictive regulations on advertising condoms (Bellis & Ashton 2000). More imaginative approaches may include marketing a condom specifically designed to be attractive to gay men. There are particular difficulties in making condoms acceptable for oral sex, as expressed by one of the respondents:

'People will not use condoms for oral sex. They should come up with an alternative and dental dams are worse than condoms'

5.3 Effect of alcohol and other drugs on risk behaviour

Five of the participants stated that they used alcohol as an excuse for risky sex, and all were aware that alcohol and other drugs can affect their judgements as to safer sex and their sexual behaviour.

'I lose all my inhibitions regarding sex'

'I can use it as an excuse for behaviour that I would not usually get away with'

'I am more likely to do strange things when I'm out of it, but I am aware of this before I take drugs'

'...oblivious to what going on around me, don't care for myself or anyone else'

Safer sex campaigns should acknowledge the fact that alcohol and other drugs are used intentionally in this manner. Sexual health information provided in GUM clinics should include information on alcohol and drugs.

Half of the participants had used gamma hydroxybutyrate (GHB), and the setting and the manner in which GHB was being used are a cause for concern. GHB causes disinhibition and is a sedative. While small doses usually result in relaxation, increased appreciation of music, and a general feeling of numbness and euphoria, a medium dose is said to have sexual effects such as increased tactile sensitivity, increased male erectile capacity and heightened orgasm. A heavy dose can result in nausea, vomiting and sedation (Dean et al. 1997). The effects of the dose depend heavily on the individual's size and body mass. Whereas one person may feel positive

effects of GHB another person taking the same dose may find themselves in a unrousable sleep which may last for several hours (sometimes referred to as a coma or carpeting). The chances of someone experiencing unfavourable effects from the drug are vastly increased if GHB is used in association with alcohol. As much GHB is home produced, there is no regulation of the strength of the drug (Dean et al. 1997).

This study has uncovered the use of GHB away from the traditional settings such as nightclubs and the dance scene. Several respondents have claimed to use the drug in cruising areas and some claimed to have no recollection of the previous night's events following even a small amount of GHB. Some subjects claimed to have had multiple sexual partners in one visit to a cruising area whilst under the influence of the drug. Because GHB has anaesthetic properties, such behaviour may result in sexual trauma going unnoticed for prolonged periods of time, with the increased risk of STI transmission if there are lacerations or breaks in the skin. As many of the cruising areas, such as the canal, are away from the public areas of the city, there is an added danger if a debilitating dose is administered accidentally in a secluded area.

'...I take a bottle [of GHB] down to the canal and see what happens'

Harm reduction information should be made available through sexual health and drugs services on all aspects of GHB, including what the drug looks like and how unpredictable the strength is from one batch to another. Information on sexual risk taking whilst under the influence of GHB should also emphasise the increased risks to sexual health and the dangers of 'carpeting' and being left in a vulnerable state. Outlets for legal drugs such as poppers and GHB could be used to provide sexual health information. However, despite their legal status, overt outlets appear to be disappearing and consequently supplies are moving underground.

HIV positive individuals who are taking anti-viral drugs may face an additional risk from use of recreational drugs such as GHB, since the interaction between these drugs and anti-viral therapy is unknown and at best 'informed guess work' (British HIV Association 2000). There have been reports of fatal interactions between protease inhibitors and poppers, GHB, ecstasy (Harrington et al. 1999) and Viagra (sildenafil) (Hall & Ahmed 1999). Individuals taking or considering combination therapy should be warned of the possibility of potentially fatal interactions between their medication and recreational drugs.

5.4 The effect of syphilis diagnosis on risk behaviour

Around half the sample stated that having had syphilis had caused them to change their sexual behaviour. Behaviour was compared during three periods of time: the 12 months prior to awareness of an STI, between symptoms and diagnosis (for those who experienced symptoms) and since their syphilis diagnosis. In the 12 months prior to awareness of an STI, 26% of individuals either abstained from anal sex or always used a condom, and this figure rose to 62% between symptoms and diagnosis and 67% after treatment (Table 2). However, there was less of an effect on oral sex (Table 3), possibly at least partly due to the lack of awareness that oral sex carries a risk of syphilis transmission. After a diagnosis of syphilis, there was a tendency for people to have fewer new sexual partners, particularly amongst those who had stated that having syphilis

had changed their behaviour. However, what is not yet known is how sustained this decrease in risk behaviour after having had syphilis will be. The facts that two thirds of the gay men had at least one previous STI (other than HIV) and 30% had two or more suggest that having an STI may have only a short-lived effect on risk behaviour. Further investigation is necessary to establish whether having an STI, or health promotion interventions at the time of diagnosis of an STI, can increase safer sex behaviour in the longer term.

5.5 Sexual health of HIV positive people

A significant proportion of the individuals who had contracted syphilis were also infected with HIV (seven out of 27). Only half of the HIV positive people interviewed for this study considered themselves to have changed their behaviour as a result of contracting HIV. This serves as a strong reminder of the sexual health needs of HIV positive individuals. Compared to the rest of the UK, the North West is unusual in that much of the care of HIV positive individuals does not take place in GUM departments. Potentially, problems can arise if HIV care is separated from general sexual health needs. The presence of HIV statistically predicts the presence of other STIs and *vice versa* because of common risk factors and the enhanced transmission of HIV in the presence of other STIs. Therefore, the treatment of HIV should routinely include addressing the general sexual health needs of those infected. The five HIV positive individuals who attended an infectious disease clinic for their HIV treatment could not recall having received any information on STIs from their clinic. By contrast, the two HIV positive individuals who attended GUM services stated they had received information from their clinic. Possibly an opportunity to protect the general health and provide interventions for HIV positive people who do not attend sexual health clinics is being missed, and this should be urgently addressed. Recent recommendations that HIV positive individuals should routinely be offered screening for STIs and given access to health promotion materials (Luddon 2000) reinforces the need for a holistic sexual health service for HIV positive individuals.

In HIV positive individuals infections are generally more serious and are harder to treat (Adler 1997; Clinical Effectiveness Group 1999). Therefore, it should be in an HIV positive individual's own self interest to guard against infections. However, five of the HIV positive individuals said they would have unprotected sex with other HIV positive men, and three regularly attended organised sex parties for HIV positive people. The HIV patients infected with syphilis interviewed in this study showed no concern about co-infections with other STIs. Moreover, none mentioned fears over co-infection with different, potentially drug resistant, strains of HIV. Rather, there was an attitude that nothing could be worse than having HIV.

'Once you have HIV there isn't much else that can happen to you'

'...everything else is treatable'

'...suppose I never really thought I could catch other STIs on top of HIV'

Efforts should be made to generate more awareness among HIV positive people about their own health and issues around co-infection. Crucially, any reduction in the levels of risk behaviour among HIV positive individuals would obviously also reduce levels of transmission of HIV.

5.6 Contact tracing

The biggest source of syphilis risk behaviour identified in this study was unprotected oral sex, and often the sex partners were anonymous. Of the 503 sexual contacts taking place after the onset of symptoms (between the 22 participants who experienced symptoms), only 9% could have been named at the time of contact and the addresses of only 6% were known. Contact tracing is seen as an essential tool in the interruption of transmission (Tramont 1995) and is widely practised in the Manchester area. None of the individuals interviewed came to the clinic as a result of contact tracing, although two patients' primary sexual partners were found to be infected at a later date. The high levels of anonymous sexual contact found in this study suggest that contact tracing is of limited use in detecting a significant proportion of the people who have been exposed to syphilis in this population.

5.7 Access to services

The relationship between rapid access to treatment and syphilis transmission cannot be underestimated. Individuals are highly infectious during the initial stages of infection and any delay in commencing treatment is likely to result in further transmission. This is particularly likely if, as is suggested by the results of this study, unprotected sexual contact continues at the same rate after the onset of symptoms (Figure 8). Up to 60% of sexual contacts of syphilis infected individuals may become infected (Garnett et al. 1997), and this high transmission rate highlights the need for early detection and treatment. Syphilis infection offers the added complication that symptoms may simply disappear after a short period of time, leaving the patient mistakenly believing the infection has been cured on its own. It is likely that this would lead to non-attendance for appointments made several weeks previously. The average waiting time for a GUM appointment in some clinics in Manchester is in excess of 10 days. Funding inequalities across the regions have led to underfunding of HIV services in the Manchester area (Cosgrove et al. 2001), and this may have contributed to these long waiting times. In Los Angeles, USA, where an outbreak of syphilis has recently occurred, clinics have managed to reduce waiting times to just 1-3 hours (Kerndt et al. 2000). Hopefully the national strategy on sexual health and HIV will support a minimum waiting time for all GU clinics.

Six (22%) of the individuals in this study were diagnosed as a result of attending for a routine sexual health check (MOT). These individuals either had not shown any symptoms, or their symptoms had not concerned them enough to attend GUM services previously; underlining the continuing need to promote regular general sexual health checks.

*'It makes sense to keep a check on myself, as so many STIs don't have any symptoms'
'If I have got something, I want to know about it'*

5.8 Levels of knowledge and sources of information

Prior to diagnosis, only one of the patients had considered the possibility that syphilis was the cause of his symptoms, following an Internet search. There is a clear lack of awareness about the signs and symptoms of syphilis, and this should be addressed by information campaigns particularly in view of the fact that the initial symptoms of syphilis may be too mild to arouse concern.

Participants used a variety of sources for sexual health information (Figure 9), suggesting that there is no single appropriate medium to promote sexual health. The sexual health clinic was seen as a good source of information. Increasing the uptake of the sexual health MOT would provide an opportunity for people to have access to such information, as well as the obvious benefit of detecting and treating STIs. Several respondents said they would have liked more information on syphilis prior to the test being taken. As a health advisor is not always available, GUM departments should ensure there is a wide selection of literature available for those patients who for whatever reason cannot spend time with the health advisor when attending the clinic. GPs came last on the list as sources of information. However, the two respondents who gained a lot of information from their GP attended a gay friendly surgery in the gay village. Sixty three percent stated that they would not visit their GP with any matters regarding their sexual health. This reluctance included fears over confidentiality and the attitude of the GPs towards gay men.

'I could not imagine any scenario where I would show my genitals to my doctor'

Pubs and bars in Manchester's gay village provide a useful focus for health promotion efforts, and the Lesbian and Gay Foundation (LGF) were prompt in distributing leaflets and posters in their information campaign to raise awareness of the increase in syphilis cases. The participants were asked their views on sexual health information available in the gay village, and three quarters felt the information to be well presented with appropriate styles and language. Individuals differed in their preference for information displayed on posters or as leaflets. Almost half of the study group said they would not pick up a leaflet on sexual health if it was prominently displayed in a bar, for fear of implying they had a sexual infection:

'You can take in the messages without anyone knowing you are looking at posters'

whereas the other half expressed a preference for leaflets. This raises the question of how information is sited in pubs and bars. Perhaps a collaborative approach with pubs and bars to find effective ways of displaying sexual health information could result in a wider access to information.

The gay village is seen as a focal point for the gay community not only for Manchester residents, but also for those throughout the North West. However, not all gay men use the village, and such individuals may find it difficult to access information specifically designed for gay men. Two men who no longer used the gay village claimed they received no information on STIs because there was virtually nothing available for the gay community elsewhere. The LGF organises highly focussed campaigns on the gay village; however, the needs of the wider population also should be considered.

Four respondents thought that mass media campaigns could be effective in raising awareness of STIs:

'If you turn on the radio first thing in the morning and they are talking about safer sex , then you pick up a paper and its there as well, it's with you all day'

while four individuals thought the information in leaflets should be harder hitting.

'Most of the leaflets show pretty, nice men. Show the damage syphilis does to people, it's not nice'

'Scare the shit out of them'

However, an opinion held by two interviewees was that everything was already being done that could be done.

'There is already tonnes of leaflets and posters out there, if people don't want to take notice of them it's up to them'

5.9 The gay scene in Manchester

The gay scene in Manchester provides a focus for gay men, providing advantages and health benefits in terms of community support and acceptance. However, inevitably the existence of such a community also provides a large supply of willing sexual partners. In particular, two areas in Manchester, Piccadilly Gardens and Canal Street, were identified by participants in this study as places where a lot of anonymous sex took place.

'...that's where it all goes on, everyone is there for the same thing and it just happens'

'...no names, no ties just sex'

Future development of city centre areas should consider the design and lighting so as not to inadvertently promote areas for anonymous sex.

5.10 Risk behaviour abroad

There was a clear link between travel abroad and syphilis infection in the heterosexuals interviewed. The three heterosexual men had all been infected abroad, and the one woman interviewed claimed that her partner had been infected abroad. Information from case notes was gathered on a further five heterosexuals who were no longer in contact with their clinic. All of these individuals had acquired syphilis abroad. Travel abroad is linked to an increase in alcohol and drug intake and sexual behaviour (Bellis et al. 2000), and many holiday companies use the suggestions of such increases in risk behaviour as a selling point in their promotional material. Given this increase in risk behaviour when abroad and the high levels of syphilis in some other countries, it seems likely that there will continue to be new cases of syphilis in the UK via this route. The travel industry should be encouraged to seek ways to promote the health of their customers, for example by providing health-related information. The possibility of using airports as a setting to promote health should be explored further.

5.11 Next steps

This study presents the preliminary findings from interviews with people infected with syphilis. In this study population, anonymous sex, unprotected sex and high numbers of sex partners were found to be common. However, such high levels of risk behaviour are unlikely to be representative of the population as a whole. A case control study is underway to identify the levels of risk behaviour in the uninfected population for comparison. This will also identify whether the low awareness of syphilis identified amongst the infected cases is representative of the population as a whole.

Access to services has been identified as a major issue, because symptoms of syphilis may be mild and short lived and thus discourage individuals from keeping appointments made weeks ahead. Clinics were seen as a preferred source of information. Encouraging the uptake of the sexual health MOT will have the dual advantages of early detection and treatment of STIs and providing an opportunity for obtaining information about sexual health. We conclude that contact tracing is likely to be of limited use in this high risk group, since only a small proportion of the contacts of the infected individuals could be named.

Finally, this study raises important concerns over the sexual health of HIV positive people. Of the seven HIV positive people interviewed, half claimed that their sexual behaviour had not changed as a result of their HIV diagnosis. Those attending an infectious disease department claimed they had received no information on sexual health. A holistic approach to the health of all HIV positive people, including offering regular screening for STIs (Luddon 2000), is urgently required.

6 Conclusions and recommendations

Most (23 out of 27) individuals interviewed were gay men, and seven of these were HIV positive (Section 4.1). All four heterosexuals (three men, one woman) had been infected abroad, or had a partner who had been infected abroad. In contrast, there was no evidence that the homosexual men had been infected abroad.

- *In view of the increased levels of alcohol, drugs and sexual risks that take place on holiday, and the high prevalence of STIs in some other countries, the travel industry and airports (with the health service) should provide more sexual health information.*

Out of the 27 diagnosed with syphilis, the 70% who experienced symptoms prior to diagnosis attended services between 2 weeks and 2 years after their first symptoms (with 60% attending within 8 weeks) (Section 4.2). The average waiting time for an appointment in some GUM clinics in Manchester is in excess of 10 days. Since the initial symptoms of syphilis are short lived and usually too mild to arouse discomfort, these long waiting times may dissuade individuals from attending services. Six (22%) were unaware that they had any STI, and were diagnosed because they attended for a general sexual health check up, or 'MOT'.

- *There is a clear need for waiting times at sexual health clinics to be reduced to 2 to 3 days to allow early identification and treatment of STIs and thereby reduce transmission of STIs including HIV.*
- *The sexual health MOT should be strongly promoted in order to detect asymptomatic individuals.*

The biggest source of risk behaviour for syphilis identified in this study was unprotected oral sex, which accounted for 1488 sexual contacts by the 27 individuals in the 12 months prior to their being aware of having an STI (Table 1). Amongst the 22 participants who experienced symptoms, a further 503 unprotected oral sex contacts occurred between the onset of symptoms and diagnosis. Participants expressed a reluctance to use condoms for oral sex (Section 5.2). There was a low awareness about syphilis in general, but particularly around the risk of unprotected oral sex, with only 37% rating it as a high-risk activity for catching syphilis. In contrast, over 70% perceived the risk of syphilis (and HIV) through anal sex to be high (Figure 7).

- *A more imaginative approach to the marketing of condoms for gay men is required to attempt to make condom use acceptable for both anal and oral sex.*
- *Information campaigns should seek to increase awareness of syphilis, particularly the risk around oral sex.*

There were high levels of anonymous sex, most of which took place in two cruising areas in Manchester, Canal Street and Piccadilly Gardens. In the twelve months prior to being aware of having an STI, the 27 participants had sexual contact with a total of 1504 individuals, of whom only 10% could be named (Section 4.3). Those with higher numbers of partners were less likely to be able to name them (Figure 3). Consequently, contact tracing of infected individuals, seen to be an important aspect of syphilis control, will have limited impact as a measure to reduce levels of infection in those indulging in this level of risk behaviour.

- *Future development of city centre areas should consider the design and lighting so as not to inadvertently promote areas for anonymous sex.*
- *Efforts to reduce syphilis should focus on promoting the MOT and reducing waiting times at GUM clinics to 2 to 3 days, since contact tracing may have only a limited impact.*

Alcohol and other drugs were widely used (Figure 6), and five individuals had used alcohol as an excuse for risky sex. In particular, this study revealed a high level of GHB use (52% of respondents), a drug associated with gay sex for its disinhibiting and aphrodisiac effects. This is a cause for concern for a number of reasons. Much GHB is home produced and of unpredictable strength, and high doses can lead to heavy sedation leaving users open to accidents or attack. Mixing with alcohol exacerbates these unpredictable effects. Furthermore, there may be potentially severe interactions with the anti-viral drugs used to treat HIV. More importantly, some individuals were using the drug specifically to reduce their worries about unsafe sexual practices. It is difficult to see how safer sex messages can work effectively if individuals use GHB, alcohol and other drugs to reduce inhibition.

- *Information around alcohol and other drugs needs to incorporate sexual health issues to address the fact that alcohol and other drugs are used intentionally as a disinhibiting process prior to and during sex. Such information should be available in STI clinics.*

Having had a diagnosis of syphilis appeared to have some effect on risk behaviour. In the 12 months prior to awareness of an STI, 26% of individuals either abstained from anal sex or always used a condom for anal sex. This figure rose to 62% between symptoms and diagnosis and 67% after attending for treatment (Table 2). After a diagnosis of syphilis, there was a tendency for respondents to have fewer new sexual partners (Figure 8). However, whether this decrease in risk behaviour can be sustained is unknown, particularly in view of the fact that two thirds of the gay men had already had at least one previous STI (Figure 5).

- *More work is required to identify how sustained changes towards safer sexual behaviour after an STI diagnosis are, and whether interventions at this stage could influence longer term behaviour change.*

Significant concerns about the sexual health of HIV positive people were raised. Three of the seven interviewed for this study claimed that having HIV had not changed their sexual behaviour (Section 4.10). Three disclosed attending sex parties for HIV positive people where unprotected anal sex with multiple partners took place. There was little concern over co-infection with resistant forms of the virus or other STIs (Section 5.5). The five individuals who received their HIV treatment from infectious disease units all claimed not to have received any information on sexual health. By contrast, the two who received their HIV treatment from a GUM clinic both stated they had received sexual health information (Section 4.11).

- *The sexual health MOT should be strongly promoted among the gay community, and HIV positive individuals should be routinely offered screening for STIs.*
- *More work is necessary to encourage safer sex for HIV positive individuals. Information should stress issues around co-infection with different, potentially drug resistant, strains of HIV, and should point out that even treatable STIs such as syphilis may result in a more severe disease.*
- *HIV positive people in this study did not appear to receive sexual health information routinely. HIV treatment and access to GUM and other sexual health services should occur together in order to provide a holistic service.*

The GUM clinics were seen as a good source of information, as were the leaflets and posters available in the bars in the gay village (Figure 9). However, information targeted at gay men was perceived to be non-existent outside the gay village. General practitioners were not seen as a good source of sexual health information (with the exception of the gay-friendly GP in Manchester's gay village), and 63% stated they would not attend their GP for sexual health matters because of concerns over confidentiality and attitudes towards gay men.

- *Health promotion campaigns need to ensure that information is available for gay men who do not access a focal community such as Manchester's gay village.*

This study highlights several significant areas of concern that lead to recommendations for improving sexual health. However, extrapolating from this population is difficult since the high levels of risk behaviour revealed in this study are unlikely to be representative of the gay population in Manchester as a whole. It is important to assess levels of risk behaviour in the broader population in order to assess the extent of the problem and the likelihood of further transmission of syphilis and other STIs including HIV. A case control study will follow this investigation to address these concerns.

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