UNLINKED ANONYMOUS STUDY OF HIV PREVALENCE AMONG ATTENDERS AT SEXUAL HEALTH CLINICS 2005/06

REPORT TO THE MINISTRY OF HEALTH

AIDS EPIDEMIOLOGY GROUP

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Background

In countries like New Zealand the prevalence of HIV infection in the general population is very low. Hence, to detect early changes in the pattern of spread it is necessary to study sentinel populations such as people attending sexual health clinics where clients are likely to have been practising sexual behaviours that might put them at risk of HIV infection.

Surveillance of HIV based on named testing can give a misleading picture as people who agree to be tested generally have a lower prevalence than those who decline. For this reason, the use of unlinked anonymous testing, in which blood collected for another purpose is anonymised and unlinked from the individual before testing, is recommended by the World Health Organization as an accurate and effective method for public health surveillance of HIV infection.

The AIDS Epidemiology Group (AEG) has previously carried out two unlinked anonymous prevalence surveys of HIV infection in sexual health clinics in 1991/92 and 1996/97. These studies confirmed the most affected group was men who have sex with men (MSM), and that prevalence amongst heterosexual men and women was low.

Since the 1996/97 survey there has been a decline in the mortality rate from AIDS - mainly due to the improved treatment available since the mid-1990s - and from 2000 to 2006 a steady increase in the annual number of people being diagnosed with HIV. These have resulted in an increase in the number of people living with diagnosed HIV infection. Most of the increase in diagnoses since 2000 among MSM has been of those infected in New Zealand, while among heterosexual men and women this has been due to an increase in infected people arriving from countries where HIV prevalence is high. The true prevalence however, is difficult to estimate because the extent of under-diagnosis is unknown.

A repeat survey was undertaken during 2005/06 to determine the prevalence of HIV among attenders at sexual health clinics in New Zealand and compare this to the previous two similar studies in 1991/92 and 1996/97.

The specific objectives were:

1. To estimate the prevalence of HIV infection among women, heterosexual men, and men who have sex with men, attending sexual health clinics in selected New Zealand cities over a 12 month period.
2. To measure changes in HIV prevalence in these groups attending sexual health clinics between 1991/92, 1996/97 and 2005/06.
3. To estimate the proportion of HIV infections not being diagnosed by voluntary named testing in these groups.

In addition to reporting on these Objectives we have made a comparison with recent findings from Unlinked Anonymous Testing (UAT) studies among sexual health clinic attenders in the United Kingdom.

Methods

New clients presenting at a clinic in Auckland, Hamilton, Wellington, Christchurch, Tauranga and Palmerston North and having blood taken for syphilis and/or hepatitis B serology between 1 March 2005 to 28 February 2006 (in one centre the study started and ended one month later) were included in the study.

Eligible clients had a portion of their blood separated from that taken for clinical purposes. The sample was anonymised in a way that it could not be linked to the person from whom it came, but could be linked to individual demographic, behavioural and diagnostic information. This was then tested for HIV antibodies. Samples were tested in a pool and individually if the pool was found to be positive.

Laboratory results and demographic data, filled in by the clinic staff, were sent to the coordination centre where data were entered and analysed after matching study numbers.

Results

Overall, of the 9439 samples tested that could be linked with demographic and behavioural information, 47 were found to be infected with HIV.

Objective 1 - To estimate the prevalence of HIV infection among women, heterosexual men, and men who have sex with men (MSM), attending sexual health clinics in selected New Zealand cities over a 12 month period

The sample is made up of people with previously diagnosed and undiagnosed HIV. The overall prevalence gives an indication of the burden of disease, and how this is distributed in this sentinel population. However, for monitoring spread of HIV the prevalence of previously undiagnosed HIV - which depends on the incidence of new infections and past clinical testing - is considered the most useful prevalence measure. These measures are shown in Table 1.

Table 1 Overall HIV prevalence, and that of previously undiagnosed HIV

	Overall prevalence			Prevalence of previously undiagnosed		
	No.	Rate per 1000	95% CI	No.	Rate per 1000	95% CI
MSM	36/817	44.1	31.0-60.5	16/797	20.1	11.5-32.4
Heterosexual women	5/3639	1.4	0.5-3.2	2/3635	0.6	0.07-2.0
Heterosexual men	6/4795	1.2	0.5-2.7	2/4791	0.4	0.05-1.5
Total	47/9251	5.1	3.7-6.8	20/9223	2.2	1.3-3.3

There was no HIV infection amongst the 343 self identifying sex workers in this study. The prevalence among those who had reported ever injecting drugs who did not report any current or past homosexual activity was 3.2 per 1000 (95%CI 0.1-17.6).

Among MSM, HIV was most common among those aged 30-49 years and those attending Auckland clinics. It was not limited to any specific ethnic group.

Among both heterosexual men and women HIV was uncommon, with previously undiagnosed HIV occurring in approximately one in 2000. It was not limited to any specific ethnic groups, but appeared to be more common in those who had had sex overseas.

The majority of people with HIV were from Auckland. The prevalence of previously undiagnosed HIV in MSM in the Auckland clinics was 28.1 per 1000, compared with 9.0 per 1000 elsewhere. All the previously undiagnosed people who had been infected through heterosexual contact were from Auckland.

Objective 2 - To measure changes in HIV prevalence in these groups attending sexual health clinics between 1991/92, 1996/97 and 2005/06

Prevalence is generally reported as the proportion of people enrolled in the study with HIV. Changes in this might not reflect what is happening in the wider population if there are changes in the relative numbers in the group being studied. For this reason, when considering how these results might reflect trends in the population, the absolute number in particular groups, as well as the proportion infected, must be considered.

The 2005/06 study is the third unlinked anonymous sexual health clinic study. Because of changes to the study protocol in 1996/97, to meet the then requirements of the Code of Health and Disability Services Consumers' Rights, that study had a lower uptake of participants compared to the 1991/92 and 2005/06 studies. While the two recent studies are generally comparable, they are not for MSM (Table 2)

There has been a marked increase, both in total number and proportions, of MSM enrolled in the 2005/06 study. This is likely to reflect either an increase in MSM in the population or an increase in sexual risk behaviour in this group, or both. The results suggest it is unlikely to be due to an increase in clinic attendance for MSM without sexually transmitted infections (STIs).

Table 2 Participating sexual health services and numbers enrolled
(Percentages do not add up to 100% as for some people this information was not available)

	1991/92	1996/97	2005/06
Auckland/Christchurch	N=8478	N=5338	N=5722
MSM	295 (3.5%)	161 (3.0%)	558 (9.6%)
Heterosexual men	4486 (52.9%)	2972 (55.7%)	3102 (54.2%)
Heterosexual women	3630 (42.8%)	2138 (40.1%)	1959 (34.2%)
Wellington/Hamilton		N=1772	N=2652
MSM		105 (5.9%)	205 (7.7%)
Heterosexual men		844 (47.6%)	1224 (46.2%)
Heterosexual women		792 (44.7%)	1160 (43.7%)
Tauranga/Palmerston North			N=1063
MSM			53 (5.0%)
Heterosexual men			469 (44.1%)
Heterosexual women			519 (48.8%)

Among MSM, the prevalence of previously undiagnosed HIV was higher in 2005/06 than 1996/97 in the four centres that were involved in both studies (Table 3), while in the Auckland and Christchurch clinics the prevalence is similar in 2005/06 to that in 1991/92. What is more striking is the increase in the number of infected MSM which is a reflection of the increase in MSM attending sexual health clinics in 2005/06.

For both heterosexual men and women, the numbers with previously undiagnosed HIV were too low to make meaningful comparisons, but they do show that undiagnosed HIV continues to be at low levels among heterosexuals attending sexual health clinics.

Table 3 Comparison of prevalence (per 1000) of previously undiagnosed HIV by sexual behaviour, centre involved and study year

	1991/92	1996/97	2005/06
MSM	**A&C ***	**A&C ***	**A&C ***
	7/289=24.2	3/139=18.9	13/539=24.1
		A,C,H&W †	**A,C,H&W †**
		3/264=11.4	15/743=20.2
Heterosexual men	**A&C ***	**A&C ***	**A&C ***
	4/4484=0.9	1/2970=0.34	2/3100=0.96
		A,C,H&W †	**A,C,H&W †**
		1/3814=0.26	2/4323=0.47
Heterosexual women	**A&C ***	**A&C ***	**A&C ***
	3/3630=0.83	1/2137=0.47	2/1956=1.0
		A,C,H&W †	**A,C,H&W †**
		1/2929=0.34	2/3116=0.64

*** Auckland and Christchurch**
† Auckland, Christchurch, Hamilton and Wellington

Objective 3 - To estimate the proportion of HIV infections not being diagnosed by voluntary named testing in these groups

Of the 47 people (42 men and 5 women), found to be infected in the study, 27 (24 men and 3 women) were known to be infected prior to attendance. Of the remaining 20, 13 (65%) (12 men and 1 woman) had a clinical HIV test at that visit. Therefore, overall, 85% of those tested HIV positive were either already known positive or tested at that clinic visit.

Of the 16 previously undiagnosed MSM, 12 (75%) were tested at that visit. Three of the four untested infected men were of European ethnicity and one Maori; two were aged 30-39 and two 40-49 years.

Neither of the two previously undiagnosed heterosexual men, and one of the two previously undiagnosed heterosexual women, were tested at that visit.

Overall, three quarters of patients attending clinics had a clinical test for HIV, 85% of MSM, 71% of heterosexual men and 75% of heterosexual women. Testing rates increased from the previous study in different demographic and behavioural groups but lower rates of testing were still seen among Pacific people and in specific clinics.

Comparison of the Unlinked Anonymous Testing (UAT) study results and HIV diagnoses with the United Kingdom (UK)

The New Zealand sexual health clinic studies were based on unlinked anonymous surveillance undertaken at such sites in the United Kingdom since the late 1980s. The epidemic also has some similarities with the UK hence the most valuable international comparison is with that country.

The findings from the New Zealand studies of an increase in MSM, both in the numbers and as a proportion of participants, between the 1996/97 and 2005/06 studies, is similar to what has been seen in the UK particularly outside London.

The prevalence of previously undiagnosed HIV among MSM in the 2005/06 New Zealand study (2.0%) is less than half that among MSM in London clinics (4.7%), but only slightly less than that in England, Wales and Northern Ireland (excluding London) (2.4%), and in Scotland (2.5%) (Table 4).

Among heterosexual men and women, the prevalence of previously undiagnosed HIV in New Zealand was lower than in all the UK areas. In England, Wales and Northern Ireland most of those people previously undiagnosed were born outside the UK, although the prevalence among UK-born still varies by region (Table 4) and is higher than the overall prevalence in New Zealand.

Table 4 Prevalence of previously undiagnosed HIV among MSM and heterosexual men and women in the UK in 2004 and the 2005/06 New Zealand study

	MSM*		Heterosexual men		Heterosexual women	
	No.	%	No.	%	No.	%
London (2004)	199/4262	4.7	125/14629	0.85	147/20383	0.72
London (UK-born)			*48/8181*	*0.59*	*42/10734*	*0.39*
Rest E,W & NI (2004)	72/2977	2.4	74/22793	0.32	85/32130	0.37
Rest E,W &NI (UK born)			*24/19824*	*0.12*	*26/20769*	*0.13*
Scotland (2004)	37/1505	2.5	11/7397	0.15	12/5810	0.12
New Zealand (2005/6)	16/797	2.0	2/4791	0.04	2/3636	0.06

*All except Scotland include MSM+IDU with MSM

The proportion of MSM attending the sexual health clinics who were tested for HIV as part of their clinical assessment, in these samples of sexual health clinic attenders, was similar in New Zealand and in England, Wales and Northern Ireland excluding London and higher than in London (Table 5). Among heterosexual men the testing rates in New Zealand are slightly lower than those in England, Wales and Northern Ireland, but similar for heterosexual women.

Table 5 HIV testing rate among all previously undiagnosed HIV infected and HIV-uninfected people (These data are not available for Scotland)

	MSM	Heterosexual men	Heterosexual women
London (2004)	**74%**	**74%**	**75%**
Rest E,W &NI (2004)	**83%**	**76%**	**76%**
New Zealand (2005/6)	**85%**	**71%**	**75%**

Overall conclusions

In this population - new attenders at a sexual health clinic in 2005/06 and having blood taken for hepatitis B and/or syphilis, HIV was more prevalent among MSM than any other group; 1 in 50 such men had previously undiagnosed HIV. A higher rate was observed in Auckland compared with elsewhere in the country and HIV was most common in men aged 30-49 years.

There has been a marked increase, both in total numbers and proportion, of MSM enrolled between the 1996/97 and 2005/06 studies. This has also occurred in similar UK studies outside London. This increase means that the prevalence, as a number not proportion, of previously undiagnosed HIV infected MSM has risen markedly.

For both heterosexual men and women the number with previously undiagnosed HIV was too low to make meaningful comparisons, but they do

show that undiagnosed HIV continues to be at low levels among heterosexuals attending sexual health clinics – occurring in approximately one in 2000. This in turn suggests that the recent increase in HIV diagnoses among people from high prevalence countries has resulted in spread only in a very limited way into the wider heterosexual community.

Overall, three quarters of patients attending clinics were tested for HIV, and 85% of those who were HIV positive were either already known positive or were tested at that clinic visit. Although this suggests that only a few clinic attenders are not being identified, those most at risk were less likely to be tested, and rates of testing were lower in Auckland clinics and among Pacific people.

When comparing the New Zealand data with that of the United Kingdom, the prevalence of previously undiagnosed HIV among MSM is similar to that seen in clinics outside London. Among heterosexual men and women the prevalence was lower than in all areas of the UK. This is true also of UK born people who had a prevalence three times as high as all heterosexuals in the New Zealand study.

Implications

The implications of the study are divided into three main groups for health promotion, clinical practice and ongoing surveillance.

(a) for health promotion
The increase in number of MSM infected with HIV reinforces the need for individuals in this group to adopt safe sex practices to prevent further spread of HIV.

For heterosexuals, while the rate of undiagnosed HIV among those attending sexual health clinics was low, it is important to maintain safe sex practices in view of the high prevalence of other STIs.

Organisations and practitioners involved in health promotion need to:

- continue to engage the wider MSM community, particularly those of older age groups.
- work towards prevention and early treatment of other STIs, especially among MSM.
- promote greater uptake of HIV testing and seek to understand the barriers to testing in certain groups such as the Pacific people.
- promote an environment in which people coming forward for HIV testing and those being diagnosed with HIV are not subjected to stigma and discrimination.

(b) for clinical practice
While the rates of clinical testing have increased since the last study in 1996/97 they remain low among Pacific people and in Auckland clinics. It was also found that those most at risk of HIV are less likely to be tested. Clinicians should consider appropriate policy and possible barriers to HIV testing in their

clinics. Testing for HIV, for all people at potential risk of sexual transmission, also needs to be encouraged in a variety of other clinical settings.

(c) for surveillance

The study showed a marked increase, both in total numbers and proportion, of MSM attending sexual health clinics. Whether this reflects an increase in MSM in the population or an increase in sexual risk behaviour, or both, is not certain and needs to be explored in further studies. Improved surveillance of other STIs in MSM would help to determine whether sexual risk behaviour is increasing.

While the prevalence of HIV among heterosexual men and women in this study was low, with the increasing number of heterosexuals being diagnosed with HIV in recent years this situation could change rapidly. Repeating this unlinked anonymous survey again in five years will be necessary not only to assess the extent of spread into the heterosexual community but for the ongoing monitoring of overall HIV prevalence in New Zealand.