

AIDS – New Zealand

HIV & AIDS IN NEW ZEALAND - JANUARY TO JUNE 2009

HIV INFECTION

-  Seventy eight people were diagnosed with HIV through antibody testing in New Zealand in the first half of 2009.
-  Thirty six were men infected through sex with other men, 29 (11 men and 18 women) through heterosexual contact, four through injecting drug use, and for nine people the means of infection was unknown or unreported.
-  A further 19 people with HIV infection, who had not had an antibody test in New Zealand, had a first viral load test in the first half of 2009. These were mostly people who had been previously diagnosed overseas. Nine were men infected through sex with other men, four through heterosexual contact, two were children infected through perinatal transmission overseas, and for four people the means of infection was unknown or unreported.

AIDS

-  15 people were notified with AIDS in the first half of 2009. Eight were men infected through sex with other men, six through heterosexual contact (2 men and 4 women) and one through injecting drug use overseas.

THE SPREAD OF SEXUALLY TRANSMITTED INFECTIONS THROUGH POPULATIONS

Spread of sexually transmitted infections, including HIV

To understand the extent and rate of spread of sexually transmitted infections (STIs) such as HIV through a population it is helpful to consider four factors:

- (a) the probability of transmission during sexual contact (infectivity),
- (b) how long a person with that particular STI is infectious,
- (c) the pattern of sexual contact between infected and uninfected people, and
- (d) the proportion of sexually active people in the population with that particular STI.

We will consider these four areas as they apply to HIV and how this knowledge can inform prevention and control strategies.

a) Infectivity

The risk of sexual transmission of HIV depends on the type of sexual contact, the use of physical barriers such as condoms, the presence of other STIs, and the stage of HIV infection and antiretroviral treatment. Male circumcision is also important for the risk of men acquiring HIV through heterosexual contact.

- People are many times more likely to become infected with HIV through receptive anal intercourse than insertive anal intercourse and all forms of vaginal intercourse. HIV can be spread by oral sex but the risk is very low.
- Soon after acquiring HIV, when the level of circulating virus in the blood is high, people are particularly infectious. Following this, there is often a prolonged period when their immunity is only moderately impaired when they are less infectious. Infectivity rises again as the individual develops more severe

immune impairment and circulating virus levels again increase.

- A person infected with HIV is more likely to pass on HIV if he or she (or his or her partners) is infected with another STI. This appears to be true for both STIs that cause genital ulcer disease – most commonly genital herpes and syphilis – and also STIs that result in inflammation without ulcers – such as gonococcal and chlamydial infections.
- There is strong evidence from trials in Africa that male circumcision reduces the risk of men acquiring HIV heterosexually. For men who have sex with men (MSM) it is only likely – if at all - to have an impact on the risk of acquisition through insertive anal sex.

b) Duration of infectiousness

In general, the longer people have an infection the greater the likelihood of it being transmitted. With HIV this is complicated not only because infectivity varies by stage of disease, but also because antiretroviral treatment both prolongs survival and reduces infectivity.

c) Pattern of sexual contact

A consistent finding is that the risk for an individual acquiring an STI through particular risk behaviours increases with more sexual partners. However, the pattern of sexual relationships is also important.

For a person with several sexual partnerships in a year but not at the same time (“serial monogamy”) the longer the gap between partnerships the less likely he or she is to transmit to their next partner. Therefore when there tends to be shorter gaps between relationships there is more spread of STIs. When concurrent partnerships are common, that is people have sexual partnerships with more than one person at a time, even faster and more extensive spread of an STI is likely to occur.

As a person is particularly infectious soon after they acquire HIV, concurrency and short gaps between monogamous relationships are particularly relevant to HIV spread.

Within a regular sexual relationship three scenarios are possible. Either both could be monogamous, one monogamous and the other has a concurrent partner or partners, or both have concurrent partnerships. When both are monogamous - neither are at risk so long as neither are HIV positive. In the second scenario, the non-monogamous partner can acquire HIV from outside this partnership and may

transmit to his or her regular partner, who will not transmit further. In the third scenario where both have concurrent partnerships, HIV can be acquired, transmitted to the other partner, who in turn can transmit on to other partners. These mutually non-monogamous partnerships are the pattern of sexual behaviour most conducive to extensive transmission of HIV through a population. This has been put forward as one factor in explaining the explosive epidemic of HIV in some parts of Africa.* Surveys have found that while on average African men do not have more sexual partners than in many other parts of the world not ravaged by HIV, both men and women there are more likely to have more than one – typically two or three – concurrent partnerships.

* Halperin, D. Epstein H. *Concurrent sexual partnerships help to explain Africa's high HIV prevalence: implications for prevention. Lancet 2004;364: 4-6*

d) “Prevalence drives incidence”

As already discussed, infectivity, duration of infection and pattern of contact between infected and susceptible people will determine the rate the infection can spread. Also important in determining the actual number of new cases - the incidence - will be the number of already infected people known as the prevalence, or pool of people in the community with the infection.

Strategies for HIV control

The factors known to directly influence HIV spread provide a valuable framework for designing control measures. Successful public health interventions must impact on one or more of the above mentioned determinants.

The main strategy to reduce infectivity of HIV is the encouragement of regular condom use. The consistent and correct use of condoms can have a major impact on the risk of transmission of HIV through anal and vaginal sex. While condom use will help reduce the spread of all STIs, they are especially effective against HIV which is transmitted in semen and vaginal fluid.

Another way of reducing infectivity is through encouraging testing to diagnose HIV infection at an early stage. This will allow people to be offered antiretroviral treatment that while primarily aimed at improving their health, will also reduce their infectivity. However, it is important to remember that HIV is particularly infectious soon after acquisition when an individual is less likely to have been diagnosed so even regular testing should not be used as a reason not to use condoms.

As treatments prolong life this will lengthen the duration of infectiveness and potentially increase the overall risk of further transmission, however this will be counteracted by the decrease in infectivity resulting from the treatment. There is no guarantee that transmission will never occur from a person on treatment, so infected people who now are living longer and healthier need to maintain safer sex life-long.

The control of other STIs in people with and without HIV infection has a role in containing HIV spread.

Because of the importance of the pattern of sexual partnerships and sexual networks on HIV and other STI spread these must be considered when devising a control strategy. They do of course have strong

and often deep seated roots and challenging them has major implications. However where this has been done, as in parts of Africa such as Uganda, it has been shown that fundamental changes in sexual norms can occur when motivation exists.

While the understanding of actual patterns of sexual behaviour in New Zealand is still rudimentary, current knowledge suggests that established methods of HIV control such as condom use, HIV testing and treatment of other STIs, should be particularly promoted among groups and communities in which high risk behaviours and multiple concurrent partnerships are common.

SURVEILLANCE DATA HIV AND AIDS IN NEW ZEALAND JANUARY - JUNE 2009

HIV

For the first six months of 2009, 78 people (59 males and 19 females) have been found to be infected with HIV through antibody testing. A further 19 (15 males and 4 females), mostly diagnosed overseas and who had not had an antibody test in New Zealand, had their first viral load test in New Zealand in this period.

Of the 78 people diagnosed with HIV through antibody testing in New Zealand, 36 were men reported to have been infected through sex with other men of whom 26 (72.2%) were infected in New Zealand, nine (25.0%) infected overseas and for one (2.8%) person the place of infection was unknown.

Twenty nine people were reported to have been infected heterosexually (11 men and 18 women). Of the 29, 14 (48.3%) people were infected in New Zealand, 14 (48.3%) were infected overseas and for one (3.4%) person the place of infection was unknown.

Of the four people infected through injecting drug use, two were reported to have been infected in New Zealand and two overseas.

AIDS

Fifteen people (11 males and 4 females) were notified with AIDS in the first half of 2009. Eight were men infected through sex with other men, 2 men were infected through heterosexual contact and 1 man was infected through injecting drug use. All of the women were infected through heterosexual contact.

The total number of people notified with AIDS to the end of June 2009 is 1012 (902 males, 107 females and 3 transgender). Overall 711 (70.2%) were men infected through sex with men, 195 (19.3%) were men and women infected through heterosexual contact, 23 (2.3%) through injecting drug use, 21 (2.1%) as a result of a blood product or blood transfusion, 16 (1.6%) through mother-to-child transmission, and for 46 (4.5%) the mode of transmission remains unknown.

Of all the 1012 people notified with AIDS, 700 (69.2%) were European, 112 (11.1%) Māori, 34 (3.3%) Pacific people, 72 (7.1%) African, 61 (6.0%) Asian, 26 (2.6%) of other ethnicity and for 7 (0.7%) information on their ethnicity was not provided.

Table 1. Exposure category by time of diagnosis for those found to be infected with HIV by antibody test and first viral load test.

		HIV Infection*							
		1985-2003		2004-2008		2009 (to end of June)		Total	
Sex	Exposure category	No	%	No	%	No	%	No	%
Male	Homosexual contact	1162	56.1	487	47.7	44	45.4	1693	53.0
	Homosexual & IDU	26	1.3	15	1.5	1	1.0	42	1.3
	Heterosexual contact	212	10.2	199	19.5	11	11.3	422	13.2
	Injecting drug use	53	2.6	6	0.6	4	4.1	63	2.0
	Blood product recipient	34	1.6	0	0.0	0	0.0	34	1.1
	Transfusion recipient [§]	9	0.4	4	0.4	0	0.0	13	0.4
	Perinatal	13	0.6	17	1.7	2	2.1	32	1.0
	Other	4	0.2	5	0.5	0	0.0	9	0.3
	Unknown	239	11.5	65	6.4	12	12.4	316	10.0
Female	Heterosexual contact	234	11.3	187	18.3	22	22.7	443	13.8
	Injecting drug use	11	0.5	0	0.0	0	0.0	11	0.3
	Transfusion recipient [§]	8	0.4	2	0.2	0	0.0	10	0.3
	Perinatal	11	0.5	9	0.9	0	0.0	20	0.6
	Other	7	0.3	5	0.5	0	0.0	12	0.4
	Unknown	24	1.2	20	2.0	1	1.0	45	1.4
Transgender	Total	8	0.4	1	0.1	0	0.0	9	0.3
NS	Transfusion recipient	5	0.2	0	0.0	0	0.0	5	0.2
	Unknown	13	0.6	0	0.0	0	0.0	13	0.4
TOTAL		2073	100.0	1022	100.0	97	100.0	3192	100.0

* Includes people who have developed AIDS. HIV numbers are recorded by time of diagnosis for those reported through antibody testing and by time of first viral load for those reported through viral load testing. The latter include many who have initially been diagnosed overseas and not had an antibody test here. The date of initial diagnosis may have preceded the viral load date by months or years.

NS = Not stated § All people in this category, diagnosed since 1996, infection was acquired overseas

Table 2. Ethnicity[‡] by time of diagnosis in New Zealand for those found to be infected with HIV by antibody test and first viral load test.

		HIV Infection*							
		1996-2003		2004-2008		2009 (to end of June)		Total	
Sex	Ethnicity	No	%	No	%	No	%	No	%
Male	European/Pakeha	513	50.0	430	42.1	39	40.2	982	45.7
	Maori [†]	60	5.8	75	7.3	2	2.1	137	6.4
	Pacific Island	18	1.8	25	2.4	2	2.1	45	2.1
	African	96	9.3	127	12.4	5	5.1	228	10.6
	Asian	91	8.9	81	7.9	6	6.2	178	8.3
	Other	19	1.9	35	3.4	11	11.3	65	3.0
	Unknown	22	2.1	25	2.4	9	9.3	56	2.6
Female	European/Pakeha	53	5.2	30	2.9	4	4.1	87	4.0
	Maori [†]	7	0.7	8	0.8	3	3.1	18	0.8
	Pacific Island	13	1.3	11	1.1	1	1.0	25	1.2
	African	88	8.6	130	12.7	11	11.3	229	10.7
	Asian	44	4.3	28	2.7	2	2.1	74	3.4
	Other	1	0.1	8	0.8	2	2.1	11	0.5
	Unknown	1	0.1	8	0.8	0	0.0	9	0.4
Transgender	Total	1	0.1	1	0.1	0	0.0	2	0.1
TOTAL		1027	100.0	1022	100.0	97	100.0	2146	100.0

[‡] Information on ethnicity of people diagnosed with HIV only collected since 1996

* Includes people who have developed AIDS. HIV numbers are recorded by time of diagnosis for those reported through antibody testing and by time of first viral load for those reported through viral load testing. The latter include many who have initially been diagnosed overseas and not had an antibody test here. The date of initial diagnosis may have preceded the viral load date by months or years.

[†] Includes people who belong to Maori and another ethnic group

For further information about the occurrence of HIV/AIDS in New Zealand, contact:
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