

AIDS – New Zealand

AIDS AND HIV INFECTION IN NEW ZEALAND TO END OF DECEMBER 2001

In the second half of 2001, there were 14 notifications of AIDS (9 males and 5 females) and 47 people (32 males and 15 females) were found to be infected with HIV. To the end of December 2001, a total of 755 people (705 males and 50 females) have been notified with AIDS, and 1,742 people (1,486 males, 237 females, and 19 sex not stated) have been found to be infected with HIV. This total includes 184 persons whose infections were reported through viral load testing.

Improved surveillance of HIV/AIDS infection in New Zealand

Surveillance is a basic public health function in which the occurrence and spread of serious diseases such as HIV infection and AIDS are carefully monitored in the population. Data obtained from ongoing surveillance systems provide the scientific underpinning for disease control activities and prevention efforts at both local and national levels.

The AIDS Epidemiology Group is charged with monitoring trends in AIDS and HIV infection in New Zealand. AIDS is a notifiable disease, reportable under the law to the local Medical Officer of Health using a special form. On that form the confidentiality of the patient is maintained using an anonymous code. The code is constructed in a way that allows most duplicate records to be recognized.

Surveillance of HIV infection is laboratory-based. Until now, the Group has relied exclusively on HIV antibody tests performed in New Zealand to identify populations exposed to the virus. This system has failed to count some people living here with HIV whose infections were diagnosed overseas. In this article we describe a new approach to HIV surveillance

using viral load tests. This approach, when combined with the monitoring of antibody tests, will provide a more complete picture of the magnitude and distribution of HIV infection in New Zealand.

The HIV antibody test

People who suspect they may have been exposed to HIV can request an HIV antibody test to see if they are infected. The test has two parts: a screening test (known as an ELISA) and a confirmatory test (known as a Western Blot). The ELISA is highly sensitive in detecting HIV antibodies present in the blood. Occasionally it gives a positive result in blood that is not actually infected with HIV. For this reason, all specimens positive for HIV on the ELISA test are tested again with the highly specific Western blot test, in order to confirm the presence of HIV antibodies and to exclude any “false positive” results.

The ELISA test is readily available in most hospitals and private laboratories in New Zealand. Specimens requiring Western blot confirmation must be sent to one of two reference laboratories: the Auckland Hospital Department of Virology and Immunology, or the Institute of Environmental Science and Research Ltd Kenepuru Science Centre in Porirua.

Since the start of HIV antibody testing in New Zealand in 1985, both reference laboratories have provided the Ministry of Health, and later the AIDS Epidemiology Group, with listings of cases confirmed to be infected with HIV. As with AIDS, these people have been identified only with anonymous codes. Prior to 1993, these codes were often incomplete. Since 1996, the Group has contacted clinicians who had requested the testing of people found to be infected with HIV in order to obtain more detailed information about the patients and the circumstances of their infections. Data obtained from this enhanced surveillance of newly diagnosed HIV infections have been invaluable in describing the demographic and geographic characteristics of the HIV-positive population in New Zealand, as well as the exposure categories of greatest risk.

(See Paul C., Wilson M., Dickson N., et al. Enhanced surveillance of HIV infections in New Zealand, 1996-1998. *NZ Med J* 2000; 113: 390-4).

Of course the monitoring of antibody tests could not account for HIV infections in persons never tested, or in those who had only been tested elsewhere. While it is not possible to know the size and characteristics of the group living in New Zealand with undiagnosed HIV infection, viral load testing has provided a way to obtain anonymous information about people living here who were diagnosed with HIV outside New Zealand or were otherwise missed by the monitoring of positive antibody tests.

The viral load test

Viral load tests determine the number of viral particles circulating in the blood of infected persons. These tests, available in New Zealand since 1996, have important prognostic value, as people with high viral loads are more likely to progress to AIDS than those with low viral loads. The tests are also widely used to determine when to start antiretroviral treatment and to evaluate the effectiveness of such treatment over time. Clinicians who are assuming the care of people with known HIV infections diagnosed overseas may not repeat the HIV antibody test, but will typically order a viral

load test. These tests are obtained from one of four laboratories in New Zealand.

Last year the AIDS Epidemiology Group received from those laboratories anonymous codes for all those who had ever obtained a viral load test in New Zealand. These codes, which were like those used for positive HIV antibody results, were matched against codes already in the Group's HIV database. Clinicians who had ordered viral load testing for people whose codes were not on the database were then contacted to provide the same kind of detailed information about these patients as the Group obtains for people diagnosed with antibody tests here.

Results obtained from viral load data

A total of 912 people had undergone viral load testing in New Zealand to the end of 2001. Of those, 619 were known to the Group, because of a previous positive HIV antibody test in New Zealand. Of the remainder, further information has been obtained about 184 people who were previously not included in the Group's HIV database. Additional information is being sought on the other 109 individuals.

Of the 184 people having viral load tests who were not already in the Group's HIV database, 105 people definitely had been diagnosed with HIV overseas, and 12 others may have been diagnosed overseas. The remaining 67 people appear to have been diagnosed in New Zealand. Of those, 29 were diagnosed with HIV before 1993, when codes obtained on confirmed cases were often incomplete. For this reason, an unknown number of these 29 people may already be in the Group's database but cannot be identified as duplicates.

By adding the monitoring of viral load tests to the routine surveillance of HIV antibody testing, the Group is better able to characterise the total population that has ever lived in New Zealand with HIV infection. The large number of infections first diagnosed overseas that were detected through viral load tests demonstrates a high degree of international mobility among

HIV-positive people. Assuming that this mobility flows both ways, it is likely that large numbers of those previously diagnosed with HIV infection in New Zealand by way of antibody tests are now living overseas.

The monitoring of viral load tests also serves as a helpful back-up to the reporting of positive HIV antibody tests in New Zealand, enabling the Group to acquire information about additional people with HIV diagnosed here. However, the review of viral load data so far suggests that only a small number of cases have been missed through the monitoring of positive antibody tests performed in New Zealand.

From the beginning of 2002 the Group will follow up all new patients reported through viral load testing in the same manner that we follow up on those newly diagnosed with HIV by way of antibody tests. The addition of the 184 cases identified through viral load testing to date results in a sudden increase in the numbers of infected people reported in AIDS—New Zealand. In this issue, information about the 184 people whose infections became known through viral load testing is provided separately in the HIV tables. In subsequent reports, information about these people and others whose infections become known through ongoing monitoring of viral load tests will be combined with the information obtained about people who have been reported to the Group following a positive HIV antibody test.

AIDS and HIV infection in New Zealand

The AIDS Epidemiology Group received 14 notifications of people (nine males and five females) with AIDS during the second half of 2001. Four of the men were reported to have been infected through sex with other men, two were thought to have been infected through heterosexual contact, one was reported to have been infected through a blood transfusion received in Southeast Asia, and two male children were infected perinatally. All five females were thought to have been infected heterosexually. All but one of these were believed to be infected overseas.

The Group has been informed of 47 people (32 males and 15 females) found to be infected with HIV through antibody testing during the second half of 2001. So far information on the likely mode of infection has been obtained for 45 of these people. Of the 45, 20 were men who were reported to have had sex with other men, and 21 (seven men and 14 women) were reported to have been infected heterosexually. One man was reported to have received a blood transfusion while living in Africa, one man was infected through injecting drug use in Southeast Asia, and one man was possibly infected through use of contaminated needles in Africa. One child was infected perinatally in New Zealand. Of those 21 reported to have been infected heterosexually, 11 (five men and six women) were infected overseas. Of the nine persons known to have been infected heterosexually in New Zealand, five had partners from high-prevalence countries, one had a partner with high-risk behaviour, and three were infected by a partner with unknown risk factors. For one woman the place of infection remains unknown.

Of the 184 people added to the Group's HIV database because of viral load tests, 130 were men reported to be infected with HIV by having sex with other men, 30 (13 males and 17 females) were infected heterosexually, and six people (three males and three females) were infected through injecting drug use. In addition, one person was infected through a blood transfusion, five others received contaminated blood products, one child was infected perinatally, and three people were infected through some other exposure. In eight cases the mode of infection remains unknown.

EXPOSURE CATEGORIES AND ETHNICITY OF PEOPLE NOTIFIED WITH AIDS AND FOUND TO BE INFECTED WITH HIV

Information on the categories of risk, sex and ethnicity, of the 755 people notified as having AIDS and of the 1,742 people ever found to be infected with HIV in New Zealand to the end of December 2001 is shown in Tables 1 and 2 (overleaf).

Table 1. Exposure category by time of notification for people with AIDS, and by time of diagnosis for those found to be infected with HIV. A small number of transsexuals are included with the males.

| Exposure category | Sex | AIDS | | | | HIV Infection reported by Western Blot * | | | | HIV Infection reported by Viral Load | |
|-----------------------------------|--------|-----------------------|-------|-------------------|-------|--|-------|-------------------|-------|--------------------------------------|-------|
| | | 12 months to 31/12/01 | | Total to 31/12/01 | | 12 months to 31/12/01 | | Total to 31/12/01 | | Total to 31/12/01 | |
| | | No. | % | No. | % | No. | % | No. | % | No. | % |
| Homosexual contact | Male | 8 | 30.8 | 587 | 77.7 | 38 | 40.0 | 816 | 52.4 | 123 | 66.8 |
| Homosexual & IDU | Male | 0 | 0.0 | 10 | 1.3 | 0 | 0.0 | 16 | 1.0 | 7 | 3.8 |
| Heterosexual contact | Male | 4 | 15.4 | 44 | 5.8 | 16 | 16.8 | 136 | 8.7 | 13 | 7.1 |
| | Female | 10 | 38.5 | 38 | 5.0 | 26 | 27.4 | 163 | 10.5 | 17 | 9.2 |
| Injecting drug use (IDU) | Male | 0 | 0.0 | 13 | 1.7 | 2 | 2.1 | 33 | 2.1 | 3 | 1.6 |
| | Female | 0 | 0.0 | 5 | 0.7 | 0 | 0.0 | 8 | 0.5 | 3 | 1.6 |
| Blood product recipient | Male | 0 | 0.0 | 16 | 2.1 | 0 | 0.0 | 29 | 1.9 | 5 | 2.7 |
| Transfusion recipient | Male | 1† | 3.8 | 2† | 0.3 | 2 | 2.1 | 8 | 0.5 | 1 | 0.5 |
| | Female | 0 | 0.0 | 1† | 0.1 | 0 | 0.0 | 6 | 0.4 | 0 | 0.0 |
| | NS | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 5 | 0.3 | 0 | 0.0 |
| Perinatal | Male | 2 | 7.7 | 3 | 0.4 | 2 | 2.1 | 8 | 0.5 | 1 | 0.5 |
| | Female | 0 | 0.0 | 3 | 0.4 | 1 | 1.1 | 7 | 0.4 | 0 | 0.0 |
| Awaiting information/undetermined | Male | 1 | 3.8 | 30 | 4.0 | 3 | 3.1 | 276 | 17.7 | 7 | 3.8 |
| | Female | 0 | 0.0 | 2 | 0.3 | 3 | 3.1 | 25 | 1.6 | 1 | 0.5 |
| | NS | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 14 | 0.9 | 0 | 0.0 |
| Other | Male | 0 | 0.0 | 0 | 0.0 | 1 | 1.1 | 2 | 0.1 | 2 | 1.1 |
| | Female | 0 | 0.0 | 1 | 0.1 | 1 | 1.1 | 6 | 0.4 | 1 | 0.5 |
| TOTAL | | 26 | 100.0 | 755 | 100.0 | 95 | 100.0 | 1558 | 100.0 | 184 | 100.0 |

NS = Not stated

*Includes people who have developed AIDS

†Acquired overseas

Table 2. Ethnicity by time of notification for people with AIDS, and by time of diagnosis for those found to be infected with HIV. A small number of transsexuals are included with the males.

| Ethnicity | Sex | AIDS | | | | HIV Infection reported by Western Blot * 01/01/96 – 31/12/01 | | | | HIV Infection reported by Viral Load | |
|-----------------------------------|--------|-----------------------|-------|-------------------|-------|---|-------|-------------------|-------|--------------------------------------|-------|
| | | 12 months to 31/12/01 | | Total to 31/12/01 | | 12 months to 31/12/01 | | Total to 31/12/01 | | Total to 31/12/01 | |
| | | No. | % | No. | % | No. | % | No. | % | No. | % |
| European/Pakeha | Male | 8 | 30.8 | 557 | 73.8 | 34 | 35.8 | 215 | 42.0 | 126 | 68.5 |
| | Female | 2 | 7.7 | 25 | 3.3 | 5 | 5.3 | 24 | 4.7 | 18 | 9.8 |
| Maori† | Male | 0 | 0.0 | 78 | 10.3 | 4 | 4.2 | 24 | 4.7 | 14 | 7.7 |
| | Female | 2 | 7.7 | 3 | 0.4 | 2 | 2.1 | 5 | 1.0 | 1 | 0.5 |
| Pacific Island | Male | 0 | 0.0 | 17 | 2.2 | 0 | 0.0 | 6 | 1.2 | 2 | 1.1 |
| | Female | 0 | 0.0 | 4 | 0.5 | 3 | 3.1 | 10 | 2.0 | 1 | 0.5 |
| Other | Male | 8 | 30.8 | 46 | 6.1 | 25 | 26.3 | 121 | 23.7 | 15 | 8.2 |
| | Female | 6 | 23.0 | 18 | 2.4 | 21 | 22.1 | 86 | 16.8 | 2 | 1.1 |
| Awaiting information/undetermined | Male | 0 | 0.0 | 7 | 0.9 | 1 | 1.0 | 19 | 3.7 | 5 | 2.7 |
| | Female | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 |
| TOTAL | | 26 | 100.0 | 755 | 100.0 | 95 | 100.0 | 511 | 100.0 | 184 | 100.0 |

NS = Not stated

* Includes people who have developed AIDS

† Includes people who belong to Maori and another ethnic group

For further information about the occurrence of AIDS in New Zealand contact
 Dr Jason Eberhart-Phillips, AIDS Epidemiology Group, Department of Preventive and Social
 Medicine, University of Otago Medical School, PO Box 913, Dunedin, New Zealand
 Phone: (03) 479 7201, Fax: (03) 479 7298, or Email jeberhart@gandalf.otago.ac.nz