

# HIV AND HEPATITIS B SURVEILLANCE IN FIRST NATIONS ALCOHOL AND DRUG TREATMENT CENTRES IN BRITISH COLUMBIA, CANADA, 1992-2000

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## ABSTRACT

We provide ongoing HIV and Hepatitis B surveillance in residential First Nations alcohol and drug treatment centres in British Columbia, Canada. All clients entering the centres are offered confidential viral testing as part of an education program on sexually transmitted diseases. Participation is voluntary and approximately two thirds of clients choose to be tested. Information about risk factors for communicable disease and immunization status is not recorded. The testing program began in January 1992. As of September 2000, 2,345 people have been tested for HIV. Nine tested positive, giving a prevalence of 3.8 per 1,000 (95% confidence interval: 1.3 to 6.3 per 1,000), lower than among all British Columbians who choose to be tested (8.5 per 1,000). Also, 2,166 people were tested for hepatitis B surface antibody, 23% of these were positive, 10% were positive for hepatitis B core antibody (indicating prior infection with hepatitis B). Seven clients (3.2 per 1,000; 95% CI: 0.8 to 5.6 per 1,000) were positive for hepatitis B surface antigen and are therefore presumed to be chronically infected. The prevalence of hepatitis B markers was intermediate between what has previously been found in high risk groups and that found in the general population. (*Int J Circumpolar Health* 2002; 61; 2: 104-109)

**Keywords:** Aboriginal and North American Indian, British Columbia, Canada, Hepatitis B, HIV, First Nations, Hepatitis B surface antibody, Hepatitis B surface antigen, Hepatitis B core antibody

**T**his study was designed to determine the prevalence of HIV and hepatitis B infection in First Nations people entering alcohol and drug treatment centres in British Columbia, Canada.

HIV in First Nations: The British Columbia Centre for Disease Control reported 168 cumulative cases of AIDS among Aboriginal people in the province as of the end of 1999 (9). Between 1995 and the end of 1999, the Provin-

cial Laboratory reported 431 new positive cases of HIV in Aboriginal people, out of a total for the province of 2,874 new positives (9). Studies in the provincial corrections system revealed HIV seropositive prevalence rates of 9 per 1,000 tested in the Aboriginal inmate population compared with 11 per 1,000 in the general inmate population [16]. The authors have previously reported a seroprevalence of 3.5 per 1,000 among clients of residential alcohol and drug treatment centres (10).

Recent publications have stressed the importance of ensuring an Aboriginal context for HIV surveillance activities and called for focus of public health efforts on the specific needs of First Nations (4,12,14). The 1998 Health Canada document *The Canadian Strategy on HIV/AIDS* targets funds towards Aboriginal Health and Community Development in an effort to meet this need.

Research has shown that First Nations communities should not be considered isolated from outside sources of infection, due to significant contact between on and off reserve populations (3). As the total number of positive cases of HIV continues to grow in the province overall, it is essential to have accurate epidemiological data to monitor virus spread on reserve.

Between 1991 and 1998 there were 108 deaths from HIV/AIDS among First Nations people in British Columbia, for an average standardized mortality rate of 1.2 per 10,000 person-years, compared to 0.6 per 10,000 for the total population of British Columbia (2). There has been a gradual rise in the annual number of HIV/AIDS deaths among First Nations people in the past ten years. In the same time period, the total annual number of deaths from HIV/AIDS in the province has been slowly declining.

Hepatitis B in First Nations: While evidence exists for high rates of hepatitis B infection in the Canadian Inuit in Labrador (1) and the Northwest Territories (11), this has not been found consistently in non-Inuit First Nations in Canada, though little published data is available. It is likely that universal immunization of infants and a policy of immunization of high risk individuals will reduce the burden of this illness in British Columbia First Nations in the future.

## METHODS

Beginning in January 1992, the directors of two native alco-

hol and drug treatment centres in the province agreed to the introduction of a program consisting of an information workshop on sexually transmitted diseases, including HIV, to be given to all new incoming clients, along with the opportunity to participate in an HIV and hepatitis B seroprevalence study. Two centres were involved in the initial study. Since that time additional centres have entered and left the program.

Part-time nurses are hired and trained to coordinate the program. All clients are offered the education workshop within two weeks of entering a centre. Those choosing to participate in the serologic testing program are given pre-test counseling by the nurse, and post-test counseling is carried out if at all possible prior to discharge from the centre. It is estimated that approximately two-thirds of clients choose to participate.

Blood specimens are submitted to the Provincial Laboratory at the British Columbia Centre for Disease Control in Vancouver, where they are tested for antibodies to HIV (by ELISA with confirmation of positives by Western Blot), hepatitis B surface antigen ("HBsAg"), hepatitis B core antibody ("anti-HBc"), and hepatitis B surface antibody ("anti-HBs"). Testing for Hepatitis C and A was introduced in 1998. An additional component of the program is screening for HTLV-I and II (results reported separately).

The staff at the provincial laboratory and the researchers at the University of British Columbia provide, receive, and enter the test results in such a way that individuals cannot be identified except by the study nurses, in order to preserve confidentiality. The data are collected and reported by one of the investigators (RGM) at the Department of Health Care and Epidemiology, Faculty of Medicine, University of British Columbia.

## RESULT

Approximately two thirds of new clients choose to participate in the seroprevalence study. The total yearly number of clients tested has remained fairly steady despite changes in the centres involved in the program. A total of 2,454 individuals, with approximately equal numbers of males and females, have been enrolled.

HIV: HIV testing results were available for 2,345 clients. The overall prevalence of positive HIV antibody results was

3.8 per 1000 tested (95% confidence interval 1.3 to 6.3 per 1000). For males, the rate was 5.3/1000 (95% CI 1.1 to 9.5 per 1000) for females, and 2.5/1,000 (95% CI 0.0 to 5.4 per 1000) overall.

The frequency of HIV detection has not appeared to change over the 9 years of surveillance, although the numbers are too low to demonstrate a significant trend. There was 1 positive in 1993, 2 in 1994, 1 in 1995, 2 in 1996, 2 in 99, and 1 in the year 2000.

Hepatitis B: Of 2,166 clients tested for hepatitis B *surface antibody* (anti-HBs), 503 were positive. The overall prevalence of hepatitis B reactivity, defined as a positive test for anti-HBs (with or without a positive test for anti-HBc) was thus 23% (95% confidence interval: 21% to 25%). There has been an increase in the prevalence of positive tests for anti-HBs over the period of this study, from 7% in 1992 to 42% in the year 2000.

Testing for hepatitis B *core antibody* (anti-HBc) was not consistently performed. The presence of anti-HBc is taken as evidence of prior infection (whereas the presence of anti-HBs without anti-HBc may indicate prior vaccination without infection). The overall anti-HBc seroprevalence was 196 out of 1,920 tests, or 10.2% (95% CI 8.9% to 11.6%).

Hepatitis B *surface antigen* (HbsAg) was tested in 2,173 clients. The presence of HBsAg is taken as evidence of chronic infection (whereas the presence of anti-HBc without HBsAg may indicate prior infection from which the person has since recovered). There were 7 positive tests for HbsAg, giving an overall prevalence of chronic infection of 3.2 per 1,000 tested (95% CI: 0.8 to 5.6 per 1,000).

## DISCUSSION

The surveillance program to date has shown a surprisingly low prevalence of HIV infection (considering that we are testing the clients of alcohol and drug treatment centres) with some evidence that the prevalence is not increasing, at least not dramatically, in this population. The prevalence of 3.8 per 1,000 people tested is much less than the prevalence (37.6 per 1,000) among injection drug users in British Columbia who chose to be tested during the period 1994 through 1999, and less than the prevalence (8.5 per 1,000) among all British Columbians who were tested during the period 1985 through 1999. The 9 HIV diagnoses in our

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population represent a tiny fraction of the 9,848 newly HIV-positive persons (out of 1,156,969 tested) in the province of British Columbia from 1985 through 1999 (9).

The prevalence of prior hepatitis B infection (10.2%) and of chronic hepatitis B infection (3.2 per 1,000 tested) are lower than has previously been found in seroprevalence studies of high-risk groups in Canada such as foreign-born inner-city women (6), street youth (17,21), clients of sexually transmitted disease clinics (18) and general hospital patients (8). As one might expect, the prevalences are higher than has previously been found among low risk groups in Canada such as residents of a small town in Northern Ontario (5), pregnant women in the general population (13,20), and geriatric residents of long term care facilities (19). The prevalence of prior infection, i.e., anti-HBc seropositivity (10.2%) is similar to the prevalence (14.7%) found among residents of northern Labrador (a mixed Inuit, Innu and European-ancestry population) [1]. The prevalence of chronic infection, i.e., HBsAg (3.2 per 1,000) is similar to the prevalence (2.5 per 1,000) found among dentists in British Columbia (15).

The increasing prevalence of positive tests for anti-HBs is coincident with the implementation of policies for the immunization of higher risk adults. In addition, only 10.2% of those tested were anti-HBc positive. These facts support the opinion that the increase in anti-HBs has been due to immunization, rather than an increase in infection. The proportion of immune individuals should continue to increase as immunization continues. Hepatitis B immunization is becoming more common. As risky behaviours are an indication for vaccine, it is encouraging that more of the people attending the drug and alcohol treatment centres appear to have been immunized.

Caution must be exercised in interpreting these results, particularly in view of the voluntary design of this study. Preventive programming must continue and health workers must be adequately trained to promote harm reduction strategies. Associates and counselors at the centres have indicated that the program is a positive factor in encouraging testing. The surveillance program will continue.

*A c k n o w l e d g e m e n t s*

The cooperation of the treatment centres that have partic-

ipated over the years and the nurses who have done the counseling and taken the samples is gratefully acknowledged. Without the participation of the field staff, no results would be possible. The authors would like to thank the following nurses for their support of the program: Bruce Self, Dana Fetherstonhaugh, Debbie Miller, Sarah Day, Debbie Sullivan, Marg Horvath, and Sharon Cullen. No information would be gathered without the participation of the persons who come for the treatment programs.

This surveillance program is funded by First Nations and Inuit Health Branch of Health Canada and supervised by Dr. J. David Martin.

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