

HIV/AIDS EPI UPDATES

CHAPTER 8: HIV/AIDS AMONG ABORIGINAL PEOPLE IN CANADA

December 2014



PROTECTING CANADIANS FROM ILLNESS



Public Health
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AT A GLANCE

- In Canada, Aboriginal people remain disproportionately affected by HIV. It is estimated that in 2011, Aboriginal people made up 12.2% of new HIV infections and 8.9% of those living with HIV in Canada.
- Injection drug use remains the main route of HIV transmission among Aboriginal people. The estimated proportion of new HIV infections in 2011 attributed to injection drug use exposure was much higher among Aboriginal people (58.1%) than among all Canadians (13.7%).
- HIV has a significant impact on Aboriginal females. Between 1998 and 2012, nearly half (47.3%) of all positive HIV test reports among Aboriginal people were females, compared with 20.1% of reports for people of other ethnicities.
- Age at the time of HIV diagnosis for Aboriginal people tends to be younger than for people of other ethnicities. Almost one-third (31.6%) of the positive HIV test reports from 1998 to 2012 among Aboriginal people were youth aged 15 to 29 years old, compared with 22.2% among those of other ethnicities.
- HIV risk among Aboriginal people is closely linked to a variety of determinants of health that influence vulnerability to infection, including poverty, unstable housing and homelessness, mental health and addictions, traumatic childhood experiences, racism and the multi-generational effects of colonialism and the residential school system.

INTRODUCTION

This chapter summarizes recent epidemiological information and findings from Canadian research on HIV in Canada's Aboriginal Peoples (First Nations, Inuit and Métis). It begins with a demographic overview of the Aboriginal population using information from the 2011 National Household Survey and is followed by estimates and surveillance data on HIV prevalence and incidence among Aboriginal people. The final section describes the factors, including determinants of health that affect the vulnerability of Aboriginal people to HIV and the experience of diagnosis, care, treatment and support for Aboriginal people living with HIV.

Aboriginal people are disproportionately affected by HIV in Canada. Although Aboriginal people make up just 4.3% of the Canadian population, it was estimated that they accounted for 8.9% of all people living with HIV infection in Canada at the end of 2011 and 12.2% of all new HIV infections in that year. Furthermore, after adjustment for differences in age, HIV diagnosis rates were higher among Aboriginal people in Canada than among indigenous populations in other countries, for example, the Māori in New Zealand, and the Aboriginal and Torres Strait Islanders in Australia.¹

Key determinants of health, such as income, education, early childhood development, physical and social environments, and access to health services, affect the vulnerability of Aboriginal people to HIV infection. Cultural connection, access to culturally relevant care and services, and supportive networks and communities can also contribute to the resilience of Aboriginal people who are living with HIV or are vulnerable to infection.

DEMOGRAPHIC PROFILE

The Aboriginal population in Canada is diverse, with unique historical backgrounds, languages and cultural traditions among and between First Nations, Inuit and Métis Peoples across the country. According to the 2011 National Household Survey,² 1.4 million people self-identified as Aboriginal, accounting for 4.3% of the total Canadian population.ⁱ

The Aboriginal population is growing more quickly than that of other ethnicities. The Aboriginal population grew by 20.1% between 2006 and 2011, whereas the non-Aboriginal population grew by 5.2%. The Aboriginal population is also younger than populations of other ethnic backgrounds. In 2011, almost half of the Aboriginal population (46.2%) was 24 years of age or less, compared with about one-third (29.5%) of people of other ethnicities.³

Nearly 61% of the Aboriginal population identified themselves as First Nations (60.8%), 32.3% identified as Métis and 4.2% as Inuit.ⁱⁱ Proportionally, Aboriginal people make up a larger portion of the population of each of the three northern territories. The majority of the populations of Nunavut and the Northwest Territories are Aboriginal people, and nearly one-quarter of the Yukon population is Aboriginal. By contrast, Aboriginal people represented just 2.4% and 1.8% of the total populations in the provinces of Ontario and Québec respectively. However, the Aboriginal population in these two provinces accounted for 21.5% and 10.1% respectively of the Aboriginal population nationally.⁴

NATIONAL ESTIMATES OF HIV/AIDS PREVALENCE AND INCIDENCE

The Public Health Agency of Canada (the Agency) uses multiple methods to provide an overall picture of the HIV epidemic in Canada. The Agency produces two types of estimates:

- Prevalence: the number of people living with HIV (including AIDS) (both diagnosed and undiagnosed) and
- Incidence: the number of new HIV infections in a one-year period.

The Agency produces national HIV prevalence and incidence estimates every three years. A summary of these estimates for 2011 is provided below. For a full description of national HIV prevalence and incidence estimates for 2011 please refer to Chapter 1 of the HIV/AIDS Epi Updates published by the Agency.

ⁱ Note that these data are from the 2011 National Household Survey (NHS). Several factors should be considered when comparing data on the Aboriginal population from previous censuses, including changes in the wording of questions, methodology changes in the 2011 NHS, legislative changes that affect conceptions of Aboriginal identity and registered Indian status, changes made to the definition of reserves, differences in the list of incompletely enumerated reserves, and changes in individual reporting of Aboriginal identity and/or ancestry.

ⁱⁱ An additional 0.8% of the Aboriginal population reported multiple Aboriginal identities, and another 1.9% reflected the census category "not included elsewhere", which includes people who self-identified as Registered Indians and/or members of an Indian band but who did not identify as First Nations, Métis or Inuit in the census Aboriginal identity question.

- An estimated 6,380 Aboriginal people were living with HIV (including AIDS) at the end of 2011 (Table 1), representing 8.9% of all prevalent HIV infections in Canada. This is an increase of 17.3% from the 2008 estimate of 5,440, which represented 8.5% of all prevalent infections in Canada at the end of 2008.
- The estimated HIV prevalence rate among Aboriginal people in 2011 was 544.0 per 100,000 population (range: 440.0 to 648.0 per 100,000 population), and the corresponding rate among all Canadians in 2011 was 208.0 per 100,000 population (range: 171.0 to 245.1 per 100,000 population).
- An estimated 390 new HIV infections in 2011 were among Aboriginal people (Table 1), accounting for 12.2% of all new infections in Canada. This was slightly lower than the corresponding estimate for 2008, of 420 new infections, representing 12.6% of all estimated new infections during that year.
- The estimated HIV incidence rate for Aboriginal people was 35.8 per 100,000 in 2011, which is 3.5 times higher than the HIV incidence rate for those of other ethnicities.

Exposure category distributions for estimated prevalent and incident HIV infections in 2011, broken down by general population and Aboriginal people, are provided in Table 1. The proportion of estimated new HIV infections in 2011 attributed to injection drug use exposure among Aboriginal people (58.1%) was higher than among all Canadians (13.7%). This highlights the uniqueness of the HIV epidemic among Aboriginal people and underscores the complexity of Canada's HIV epidemic.

TABLE 1. EXPOSURE CATEGORY DISTRIBUTION FOR INCIDENT AND PREVALENT HIV INFECTIONS IN 2011, COMPARING ESTIMATES FOR ABORIGINAL PEOPLE WITH ALL OF CANADA

Exposure category	Estimated new HIV infections in 2011		Estimated prevalent HIV infections in 2011	
	Aboriginal people 390 (280–500)	Canadian population 3,175 (2,250–4,100)	Aboriginal people 6,380 (5,160–7,600)	Canadian population 71,300 (58,600–84,000)
MSM	8.5%	46.6%	9.1%	46.7%
MSM/IDU	3.1%	2.5%	3.0%	3.0%
IDU	58.1%	13.7%	58.2%	16.9%
Heterosexual contact	30.2%	37.2%	28.5%	32.5%

MSM: men who have sex with men; IDU: injection drug use; MSM/IDU: individuals who reported both MSM and IDU exposure; Heterosexual contact: people born in a country where HIV is endemic, people who report heterosexual contact with a person who is either HIV-infected or at increased risk of HIV infection, and people who report heterosexual contact as the only risk factor.

Routine Surveillance

In Canada, HIV is a notifiable infection in all provinces and territories, although the requirements and definitions that prompt reporting may differ.⁵ In general, when a person is tested for HIV or receives a diagnosis of AIDS, health care providers and/or laboratories forward this information to provincial and territorial public health authorities, which, in turn, submit data to the Agency on a voluntary basis for national level surveillance. The non-nominal surveillance data requested by the Agency include age, sex, race/ethnicity, country of birth and self-reported risks/exposures that could have facilitated acquisition of HIV infection. Submitted data are collated and analyzed at the national level, resulting in the production of annual reports.⁶

DATA LIMITATIONS

Surveillance data have several limitations that should be considered in the interpretation of the data and possible trends, including reporting delays, under-reporting and duplicate reports.⁷

It is important to note that surveillance data include information only on people who have been tested and have a diagnosis of HIV or AIDS (called “cases” in this report). HIV surveillance data do not include individuals with HIV infection who have not been tested for HIV. This is important because HIV is a chronic infection with a long latency period, and people newly infected in a given year may not be tested until several years later.

An important limitation in the context of this report relates to missing information in general and particularly for exposure category and race/ethnicity (explained in more detail below).

Finally, different HIV and AIDS reporting requirements and practices exist across the country, sometimes making comparisons difficult at a national level.⁸ In more recent years, there has been a decrease in AIDS case reporting, as certain provinces have ceased AIDS reporting for various reasons. Please refer to Chapter 3 for a full description of HIV and AIDS surveillance in Canada.

HIV SURVEILLANCE DATA

Race/ethnicity data have been submitted to the Agency since 1998. Between 1998 and the end of December 2012, 35,319 positive HIV tests were reported to the Agency. However, data on race/ethnicity were available for only 38% of cases, and reporting completeness varied by province/territory. Specifically, Québec does not report race/ethnicity data to the Agency and, for Ontario, data on race/ethnicity cover the period from 2009 to 2012. Of the 13,435 reports for which race/ethnicity data were available, 3,124 (23.3%) were identified as Aboriginal people. All analyses described in this section relate only to cases for which data on race/ethnicity were available.

Time trend, 1998 to 2012

Table 2 describes race/ethnicity composition over time for reported positive HIV tests. Aboriginal people represented 24.5% of HIV cases reported from 1998 to 2008 for which data were available on race/ethnicity. This proportion was relatively stable during the period of 1999 to 2004 and then increased during the period of 2005 to 2008 (Cochran-Armitage trend test; $p < 0.0001$). This trend likely reflected the increase in the number and rate of HIV positive tests reported from Saskatchewan starting in 2005, in which Aboriginal people represented the majority of cases.⁹ The proportion was stable during the period 2009 to 2012 (Figure 1), during which period Aboriginal people represented 20.2% of reported cases.

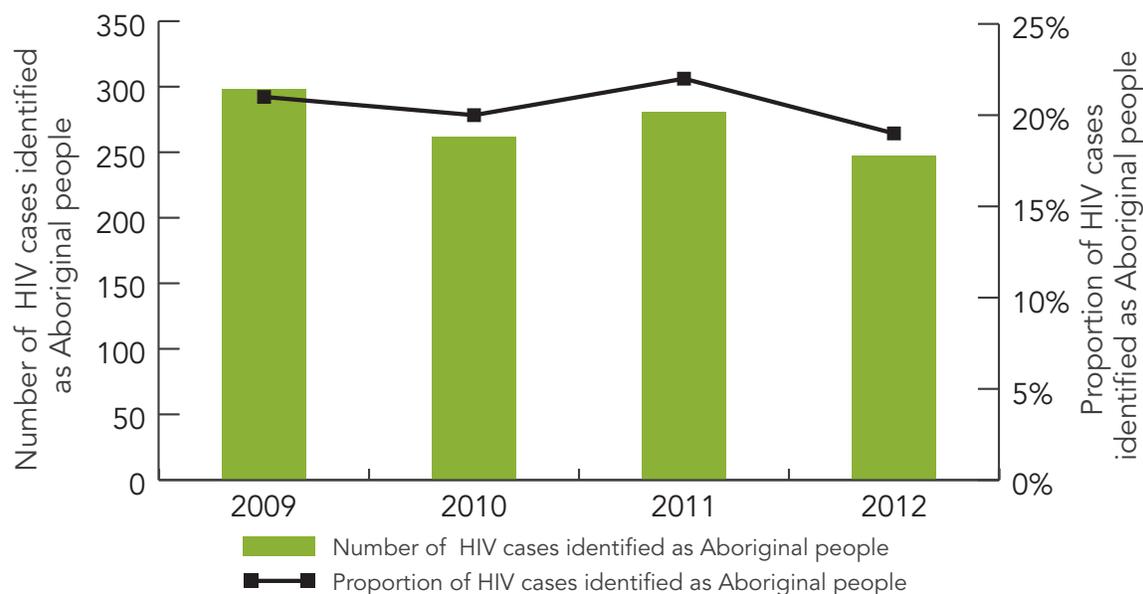
TABLE 2. DESCRIPTION OF POSITIVE HIV TEST REPORTS BY TIME PERIOD AND ETHNICITY

Time period	Race/ethnicity				
	Aboriginal people		People of other ethnicities		Unknown
	Number	%	Number	%	Number
1998–2008*	2,334	24.5	7,187	75.5	19,171
2009–2012**	790	20.2	3,124	79.8	2,713

* Provinces and territories where race/ethnicity information was reported are BC, AB, SK, MB, NS, NB, PEI, NL, NU, NT and YT.

** Provinces and territories where race/ethnicity information was reported are BC, AB, SK, MB, NS, NB, ON, PEI, NL, NU, NT and YT.

FIGURE 1. NUMBER AND PROPORTION OF REPORTED HIV CASES IDENTIFIED AS ABORIGINAL PEOPLE*, 2009 TO 2012



*Data from: BC, AB, SK, MB, NS, NB, ON, PEI, NL, NU, NT and YT.

Exposure category

Table 3 presents data on the exposure category of HIV cases and compares Aboriginal people with people of other ethnicities. For the majority of Aboriginal people (58.9%), HIV acquisition was attributed to injection drug use exposure, as compared with 17.7% of people of other ethnicities. By contrast, male-to-male sexual contact accounted for a lower proportion of cases (6.6%) that were Aboriginal, compared with people of other ethnicities (45.7%).

TABLE 3. DISTRIBUTION OF REPORTED HIV CASES IN CANADA, BY EXPOSURE CATEGORY AND ETHNICITY*, 1998 TO 2012

Exposure category	Aboriginal people (n = 2,990)	People of other ethnicities (n = 9,963)
MSM	6.6%	45.7%
MSM/IDU	3.2%	2.8%
IDU	58.9%	17.7%
Heterosexual contact	29.7%	32.2%
Perinatal transmission	0.5%	0.3%
Other	1.1%	1.4%

MSM: men who have sex with men; IDU: injection drug use; MSM/IDU: individuals who reported both MSM and IDU exposure; Heterosexual contact: people born in a country where HIV is endemic, people who report heterosexual contact with a person who is either HIV-infected or at increased risk of HIV infection, and people who report heterosexual contact as the only risk factor; Perinatal transmission: mother-to-child transmission; Other: recipient of blood/clotting factor, occupational exposure and other.

*Data are from BC, AB, SK, MB, NS, NB, PEI, NL, NU, NT and YT for the period 1998 to 2012 and included ON for the period 2009 to 2012. n: number of cases with available information.

SEX AND EXPOSURE CATEGORY

During the period 1998 to 2012, among HIV cases that were Aboriginal people (n = 3,121), females represented 47.3%, ranging from a low of 40.2% in 2002 to a high of 54.9% in 2007. By contrast, among people of other ethnicities (n = 10,299), females represented 20.1% of cases.

During the same period, 2,928 reported cases that were Aboriginal people had data on exposure category and sex: 1,539 males and 1,389 females.

Figure 2a displays the exposure category distributions for Aboriginal males: 12.4% of HIV infections were attributed to male-to-male sexual contact, 54.6% to injection drug use and 21.5% to heterosexual contact. For males of other ethnicities, 57.2% of HIV infections were attributed to male-to-male sexual contact, 15.9% to injection drug use and 22.1% to heterosexual contact.

Among Aboriginal females (Figure 2b), 63.6% of HIV infections were attributed to injection drug use and 34.8% to heterosexual contact. The corresponding figures for females of other ethnicities were 24.4% for injection drug use and 72.1% for heterosexual contact.

FIGURE 2A. EXPOSURE CATEGORY DISTRIBUTION OF REPORTED HIV CASES IN CANADA, COMPARING ABORIGINAL MALES (N = 1,539) WITH MALES OF OTHER ETHNICITIES (N = 6,245), 1998 TO 2012

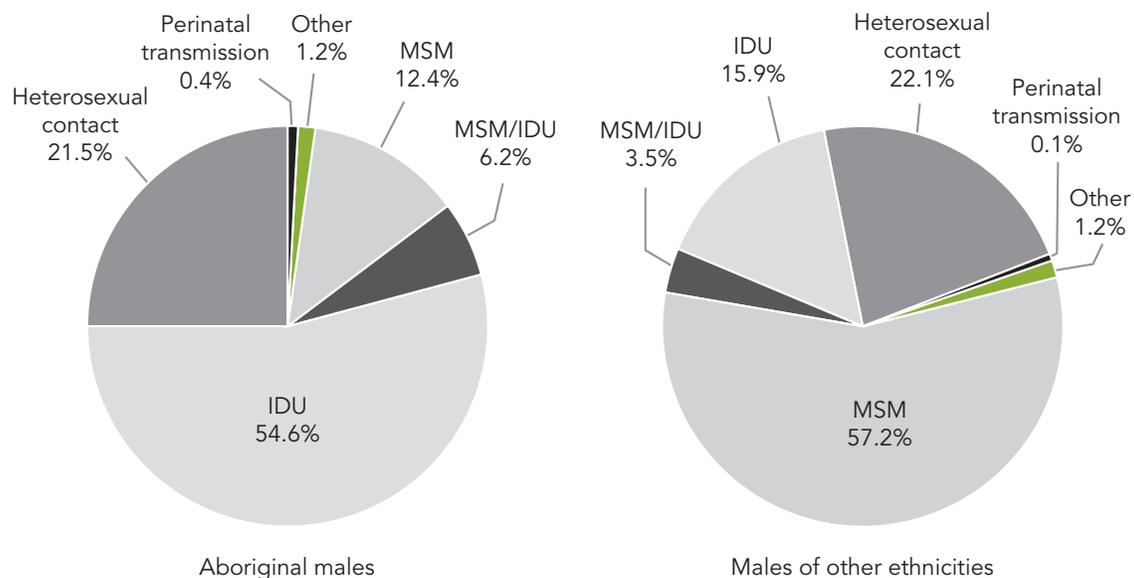
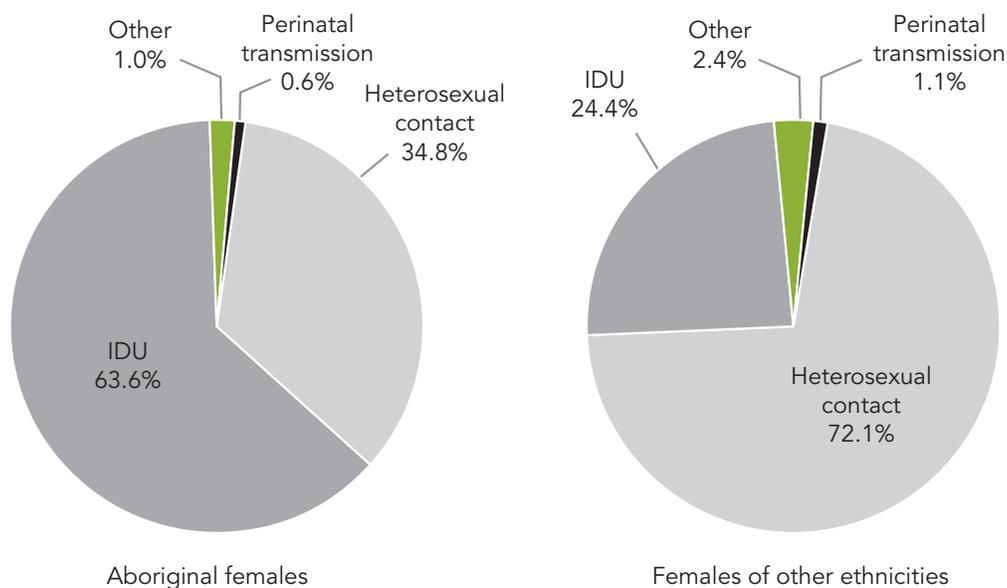


FIGURE 2B. EXPOSURE CATEGORY DISTRIBUTION OF REPORTED HIV CASES IN CANADA, COMPARING ABORIGINAL FEMALES (N = 1,389) WITH FEMALES OF OTHER ETHNICITIES (N = 1,579), 1998 TO 2012



AGE AND EXPOSURE CATEGORY

During the period 1998 to 2012, of HIV cases that were Aboriginal people almost one-third (31.6%) were youth aged 15 to 29 years old, and more than two-thirds (67.4%) of cases were less than 40 years old (Table 4). By contrast, among HIV cases of other ethnicities, the proportions in the younger age groups were lower.

TABLE 4. DISTRIBUTION OF REPORTED HIV CASES IN CANADA, BY AGE GROUP AND ETHNICITY*, 1998 TO 2012

Age group	Aboriginal people (n = 3,124)	People of other ethnicities (n = 10,310)
< 15 years	0.7%	0.4%
15–19 years	4.3%	1.1%
20–29 years	27.3%	21.1%
30–39 years	35.1%	33.4%
40–49 years	24.2%	28.0%
50+ years	8.4%	16.0%

* Data are from BC, AB, SK, MB, NS, NB, PEI, NL, NU, NT and YT for the period 1998 to 2012 and include ON for the period 2009 to 2012. n: number of cases with available information

Injection drug use exposure accounted for the greatest proportion of HIV cases that were Aboriginal people aged 15 to 29 years (63.0%), 30 to 39 years (62.6%) and 40 to 49 years (56.7%) (Table 5). However, for those aged 50 years and older infection was attributed to heterosexual contact in almost half of cases (48.4%), followed by injection drug use exposure (40.9%).

TABLE 5. EXPOSURE CATEGORY DISTRIBUTION OF REPORTED HIV CASES THAT WERE ABORIGINAL PEOPLE, BY AGE GROUP, 1998 TO 2012

Age group	Exposure category, n (row %)					Total
	MSM	MSM/IDU	IDU	Heterosexual contact	Other	
15–29 years	64 (6.7%)	34 (3.6%)	598 (63.0%)	251 (26.4%)	3 (0.3%)	950
30–39 years	67 (6.4%)	46 (4.3%)	664 (62.6%)	277 (26.1%)	7 (0.7%)	1061
40–49 years	49 (6.8%)	14 (2.0%)	399 (56.7%)	239 (33.3%)	16 (2.2%)	717
50+ years	16 (6.6%)	3 (1.2%)	99 (40.9%)	117 (48.4%)	7 (2.9%)	242

MSM: men who have sex with men; IDU: injection drug use; MSM/IDU: individuals who reported both MSM and IDU exposure; Heterosexual contact: people born in a country where HIV is endemic, people who report heterosexual contact with a person who is either HIV-infected or at increased risk of HIV infection, and people who report heterosexual contact as the only risk factor; Other: recipient of blood/clotting factor, occupational exposure and other.

*Data are from BC, AB, SK, MB, NS, NB, PEI, NL, NU, NT and YT for the period 1998 to 2012 and included ON for the period 2009 to 2012. n: number of cases with available information.

First Nations, Métis and Inuit populationsⁱⁱⁱ

During the period 1998 to 2012, of the 3,124 HIV cases that were Aboriginal people 2,256 (72.2%) were identified as being First Nations people, 272 (8.7%) as Métis people and 22 (0.7%) as Inuit. For 127 cases (18.4%), Aboriginal group information was not reported, and these are recorded as “Aboriginal Unspecified”. Table 6 shows available HIV surveillance data on sex, age group and exposure category, by Aboriginal group, for the period 1998 to 2012.

First Nations

HIV acquisition for the majority (63.8%) of cases identified as First Nations people was attributed to injection drug use exposure, 25.9% to heterosexual contact and 5.8% to male-to-male sexual contact. Females represented almost half of all reported cases (48.6%), and youth (aged 15 to 29 years old) accounted for 31.9% of all reported cases.

Métis

Of HIV cases identified as Métis people, HIV acquisition for the majority (64.2%) was attributed to injection drug use exposure, 20.9% to heterosexual contact and 7.5% to male-to-male sexual contact. Females represented 42.7% of all reported cases, and just over one-quarter (27.3%) of all reported cases were youth (aged 15 to 29 years old).

Inuit

Just over half of HIV acquisition among cases identified as Inuit was attributed to heterosexual contact (54.6%), followed by injection drug use exposure (22.7%) and male-to-male sexual contact (13.6%). Just over one-quarter (27.3%) of all reported cases were female, and youth (aged 15 to 29 years old) represented almost one-quarter of all reported cases (22.7%).

Aboriginal unspecified

Of HIV cases for which an Aboriginal group was not specified, almost half were attributed to heterosexual contact (48.6%), followed by injection drug use exposure (37.9%) and male-to-male sexual contact (9.0%). Females accounted for 45.5% of positive tests, and youth (aged 15 to 29 years old) accounted for almost one-third of all reported cases (32.9%).

ⁱⁱⁱ When compared with people of other ethnicities, the numbers of HIV cases in some Aboriginal groups are small and should be viewed with caution, as proportions can change considerably over time with small increases in the number of cases.

TABLE 6. SEX, AGE GROUP AND EXPOSURE CATEGORY DISTRIBUTION OF REPORTED HIV CASES, BY ABORIGINAL GROUPS, 1998 TO 2012

Demographic characteristics	First Nations	Métis	Inuit	Aboriginal, unspecified	People of other ethnicities
Sex	n = 2,253	n = 272	n = 22	n = 574	n = 10,299
Female	48.6%	42.7%	27.3%	45.5%	20.1%
Age (years)	n = 2,256	n = 272	n = 22	n = 574	n = 10,310
< 15 years	0.8%	0.4%	0.0%	0.7%	0.4%
15-19 years	4.1%	5.2%	0.0%	4.5%	1.1%
20-29 years	27.8%	22.1%	22.7%	28.4%	21.1%
30-39 years	35.6%	32.7%	45.5%	33.8%	33.4%
40-49 years	23.9%	30.2%	27.3%	22.7%	28.0%
50+ years	7.9%	9.6%	4.6%	9.9%	16.0%
Exposure category	n = 2,169	n = 268	n = 22	n = 531	n = 9,963
MSM	5.8%	7.5%	13.6%	9.0%	45.7%
MSM/ IDU	2.9%	5.2%	4.6%	3.8%	2.8%
IDU	63.8%	64.2%	22.7%	37.9%	17.7%
Heterosexual contact	25.9%	20.9%	54.6%	48.6%	32.2%
Perinatal transmission	0.6%	0.4%	0.0%	0.2%	0.3%
Other	1.1%	1.9%	4.6%	0.6%	1.4%

MSM: men who have sex with men; IDU: injection drug use; MSM/IDU: individuals who reported both MSM and IDU exposure; Heterosexual contact: people born in a country where HIV is endemic, people who report heterosexual contact with a person who is either HIV-infected or at increased risk of HIV infection, and people who report heterosexual contact as the only risk factor; Perinatal transmission: mother-to-child transmission; Other: recipient of blood/clotting factor, occupational exposure and other.

*Data are from BC, AB, SK, MB, NS, NB, PEI, NL, NU, NT and YT for the period 1998 to 2012 and included ON for the period 2009 to 2012. n: number of cases with available information.

AIDS SURVEILLANCE DATA

In the period before the widespread use of antiretroviral medications, the occurrence of an AIDS-defining illness was significant and usually an indicator of severe disease progression. In 1996, however, the profile of the disease changed dramatically with the introduction of antiretroviral medications. For many, HIV was no longer a death sentence. The onset of an AIDS-defining illness has become less likely except in particular circumstances. For many, HIV is now a complex chronic disease that can be managed over time. Given the changes described above, not all doctors continue to report AIDS-defining illnesses in patients already living with HIV. Furthermore, while AIDS is still a nationally notifiable disease, it is not reportable in all provinces and territories, and so not all of these jurisdictions collect and submit data on AIDS cases to the Agency. It is understood, therefore, that AIDS cases are under-reported at the national level, making it difficult to form a national picture of the AIDS

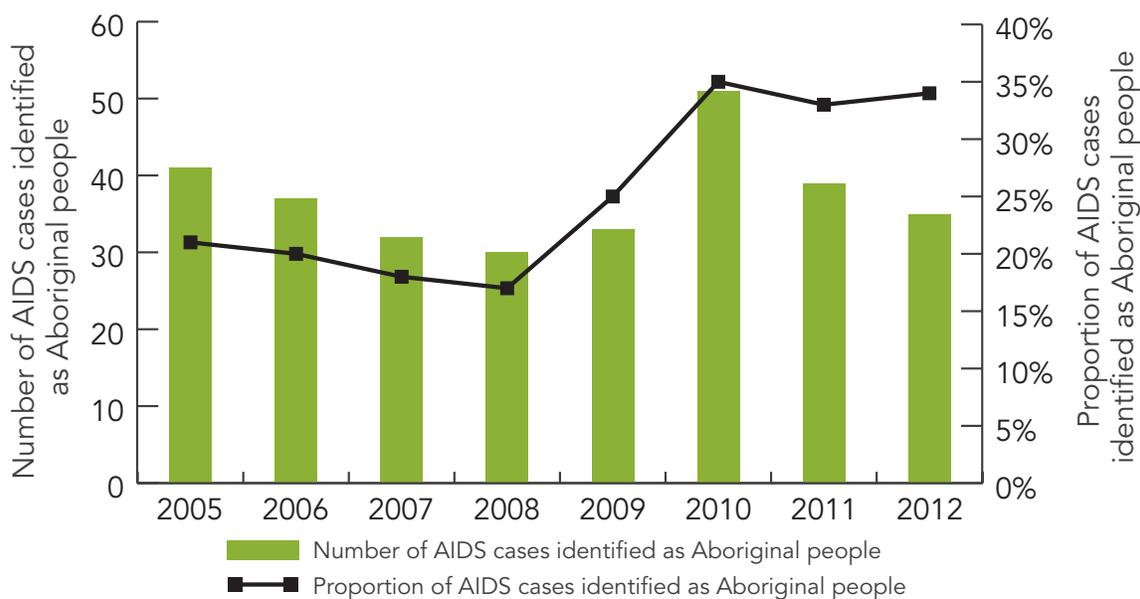
epidemic in Canada.¹⁰

A total of 22,702 AIDS cases had been reported to the Agency up to December 31, 2012, the first case having been identified retrospectively as occurring in 1979. Of these cases, 17,466 (76.9%) included information on ethnicity, of which 888 (5.1%) were identified as Aboriginal people.

Time trend, 1979 to 2012

At the beginning of the epidemic (1979 to 1985), no AIDS cases were identified as being Aboriginal people. The proportion of cases identified as Aboriginal people increased slightly during the period 1985 to 1995 and continued to increase moderately from 1997 to 2005. Figure 3 shows the trend over time for this proportion during the period 2005 to 2012. The numbers in this time period reflect cases reported from the provinces/territories excluding the provinces of Québec, Ontario and Newfoundland and Labrador, because these three provinces no longer reported their cases or race/ethnicity information to the Agency. The Aboriginal proportion of AIDS cases decreased slightly from 2005 to 2008, increased from 2008 to 2010 and has been stable since 2010.

FIGURE 3. NUMBER AND PROPORTION OF REPORTED AIDS CASES IDENTIFIED AS ABORIGINAL PEOPLE IN CANADA*, 2005 TO 2012



*Data from BC, AB, SK, MB, NS, NB, PEI, NU, NT and YT

Exposure category

As Table 7 indicates, there are notable differences in exposure category distribution between Aboriginal cases and cases of other ethnicities. Although the proportion attributed to heterosexual contact is similar between the two groups, Aboriginal cases have a greater proportion attributed to injection drug use exposure (48.2%) and a smaller proportion to male-to-male sexual contact (22.7%). Of Aboriginal cases, the proportion attributed to injection drug use increased over time, from 17.9% during the period 1979 to 1994, to 68.6% during the period 2007 to 2012.

TABLE 7. COMPARISON OF EXPOSURE CATEGORIES FOR REPORTED AIDS CASES, BY ETHNICITY, 1979 TO 2012

Exposure category	Aboriginal people (n = 846)	People of other ethnicities (n = 16,124)
MSM	22.7%	67.5%
MSM/IDU	6.7%	4.6%
IDU	48.2%	7.8%
Heterosexual contact	20.3%	16.1%
Perinatal transmission	0.7%	0.9%
Other	1.3%	3.1%

MSM: men who have sex with men; IDU: injection drug use; MSM/IDU: individuals who reported both MSM and IDU exposure; Heterosexual contact: people born in a country where HIV is endemic, people who report heterosexual contact with a person who is either HIV-infected or at increased risk of HIV infection, and people who report heterosexual contact as the only risk factor; Perinatal transmission: mother-to-child transmission; Other: recipient of blood/clotting factor, occupational exposure and other.

Information on ethnicity and exposure category was not available for AIDS cases reported since 2005 in Ontario. Québec stopped reporting AIDS cases to the Agency from the fourth quarter of 2003. Newfoundland and Labrador stopped reporting their cases to the Agency from 2005.

n: number of cases with available information.

SEX AND EXPOSURE CATEGORY

For the period 1979 to 2012, 30.0% of reported AIDS cases among Aboriginal people (n = 887) were females; by comparison, 9.3% of cases of other ethnicities (n = 16,576) were females. The sex distribution among Aboriginal cases has changed over time: before 1998, females represented 19.6% of cases, but this percentage increased to 35.1% for the period 1998 to 2012.

From 1979 to 2012, exposure category and sex information was available for 846 Aboriginal cases, 589 males and 257 females. Figures 4a and 4b display the exposure category distributions for males and females respectively, relative to cases of other ethnicities.

For AIDS cases identified as Aboriginal males, HIV infection was attributed to male-to-male sexual contact for 32.6% (compared with 74.4% for males of other ethnicities) and to injection drug use for 39.2% (compared with 6.5% for males of other ethnicities).

For AIDS cases identified as Aboriginal females, HIV infection was attributed to injection drug use for 68.9% (compared with 20.4% for females of other ethnicities) and to heterosexual contact for 29.2% (compared with 67.0% for females of other ethnicities).

FIGURE 4A. EXPOSURE CATEGORY DISTRIBUTION OF REPORTED AIDS CASES IDENTIFIED AS ABORIGINAL MALES (N = 589) VERSUS MALES OF OTHER ETHNICITIES (N = 14,629), 1979–2012

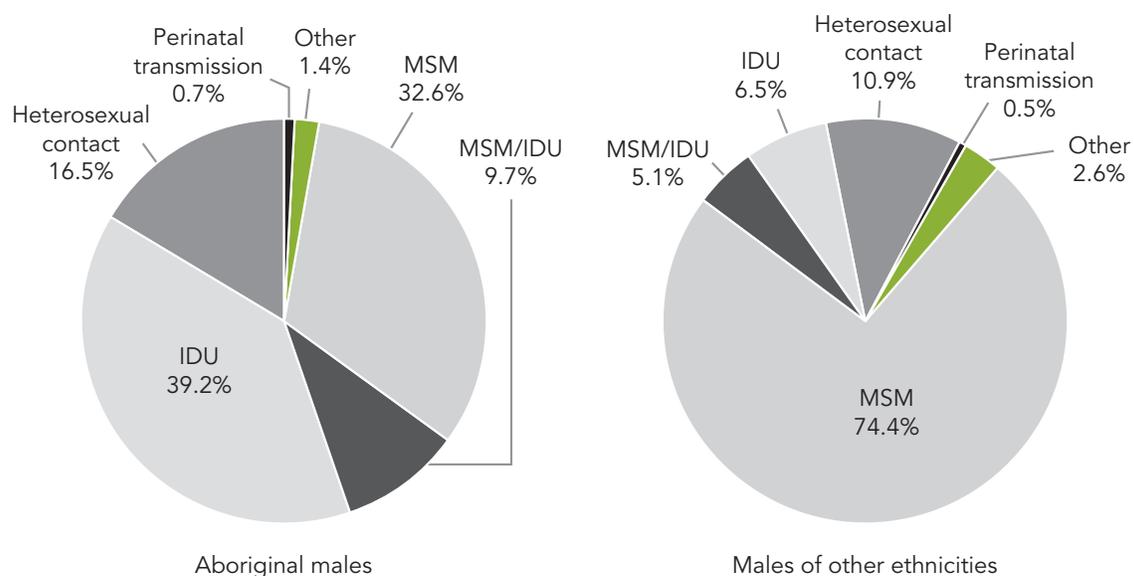
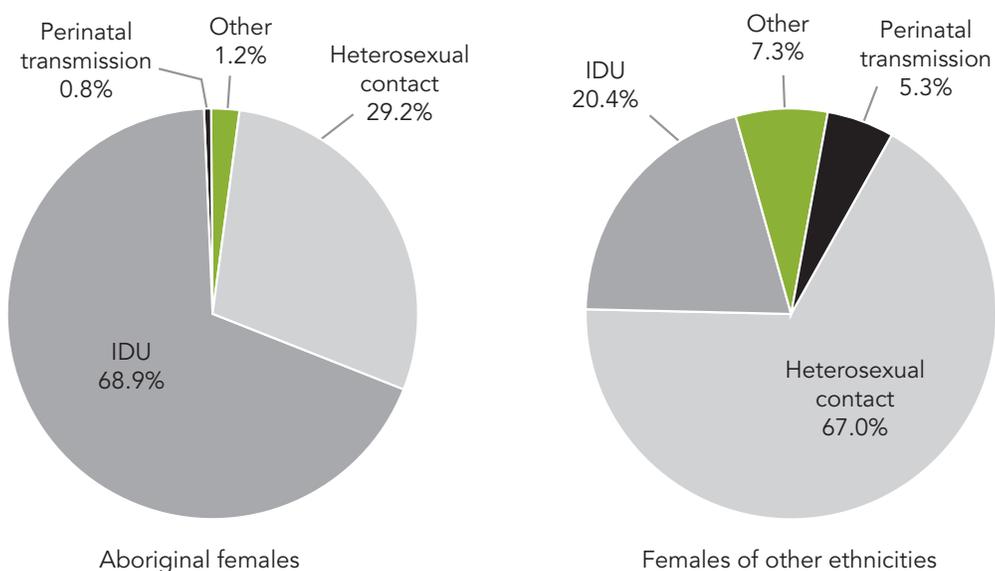


FIGURE 4B. EXPOSURE CATEGORY DISTRIBUTIONS OF REPORTED AIDS CASES IDENTIFIED AS ABORIGINAL FEMALES (N = 257) VERSUS FEMALES OF OTHER ETHNICITIES (N = 1,494), 1979–2012



AGE AND EXPOSURE CATEGORY

As indicated in Table 8, reported AIDS cases identified as Aboriginal people tended to be younger at the time of diagnosis relative to cases of other ethnicities. For the period 1979 to 2012, almost one-fifth (19.8%) of Aboriginal cases were between the ages of 15 and 29, compared with 14.7% of cases of other ethnicities.

For the same period, injection drug use exposure was documented for half of AIDS cases among Aboriginal people aged 15 to 29 years (50.3%), 30 to 39 years (50.3%) and 40 to 49 years (49.1%) (Table 9). By contrast, for AIDS cases aged 50 years and over, heterosexual contact was documented for the largest proportion (43.9%).

TABLE 8. COMPARISON OF AGE AT THE TIME OF DIAGNOSIS FOR REPORTED AIDS CASES, BY ETHNICITY, 1979 TO 2012

Age group	Aboriginal people (n = 888)	People of other ethnicities (n = 16,577)
< 15 years	0.8%	1.1%
15–19 years	0.8%	0.3%
20–29 years	19.0%	14.4%
30–39 years	42.3%	42.9%
40–49 years	26.9%	28.7%
50–59 years	8.0%	9.3%
60+ years	2.1%	3.4%

Information on ethnicity and exposure category was not been available for AIDS cases reported since 2005 in Ontario. Québec stopped reporting AIDS cases to PHAC since the fourth quarter of 2003. Newfoundland and Labrador stopped reporting their cases to PHAC since 2005. n: number of cases with available information.

TABLE 9. EXPOSURE CATEGORY DISTRIBUTIONS FOR REPORTED AIDS CASES AMONG ABORIGINAL PEOPLE BY AGE GROUP: 1979–2012

Age group	Exposure category, n (row %)					Total
	MSM	MSM/IDU	IDU	Heterosexual contact	Others	
15–29 years	39 (22.5%)	21 (12.1%)	87 (50.3%)	25 (14.5%)	1 (0.6%)	173
30–39 years	100 (27.8%)	28 (7.8%)	181 (50.3%)	47 (13.1%)	4 (1.1%)	360
40–49 years	38 (17.0%)	7 (3.1%)	110 (49.1%)	64 (28.6%)	5 (2.2%)	224
50+ years	14 (17.1%)	1 (1.2%)	30 (36.6%)	36 (43.9%)	1 (1.2%)	82

MSM: men who have sex with men; IDU: injection drug use; MSM/IDU: individuals who reported both MSM and IDU exposure; Heterosexual contact: people born in a country where HIV is endemic, people who report heterosexual contact with a person who is either HIV-infected or at increased risk of HIV infection, and people who report heterosexual contact as the only risk factor; Other: recipient of blood/clotting factor, occupational exposure and other.

Information on ethnicity and exposure category has not been available for AIDS cases reported since 2005 in Ontario. Québec stopped reporting AIDS cases to PHAC since the fourth quarter of 2003. Newfoundland and Labrador stopped reporting their cases to PHAC since 2005. n: number of cases with available information.

First Nations, Métis and Inuit populations^{iv}

Of the 888 Aboriginal AIDS cases reported for the period 1979 to 2012, 678 (76.4%) were identified as being First Nations people, 60 (6.8%) as Métis, and 23 (2.6%) as Inuit. For 127 (14.3%) reported cases, Aboriginal group information was not reported and these are recorded as “Aboriginal Unspecified”. Table 10 shows available AIDS surveillance data by sex, age group and exposure category, by Aboriginal group for the period 1979 to 2012.

First Nations

Among the reported AIDS cases identified as First Nations people, HIV infection was attributed to the injection drug use exposure for just over half (53.6%) of cases; for 19.3%, infection was attributed to male-to-male sexual contact and for 18.7%, infection was attributed to heterosexual contact. Females represented 30.2% of all reported cases, while youth (aged 15 to 29 years old) accounted for 19.3% of all reported cases.

Métis

Among reported AIDS cases identified as Métis people, HIV infection was attributed to male-to-male sexual contact for over one-third (39.7%) of cases and a similar percentage to inject drug use exposure (37.9%) while only 10.3% of cases were attributed to heterosexual contact. Females represented 26.7% of all reported cases, while youth (aged 15 to 29 years old) accounted for 36.7% of all reported cases.

Inuit

Among reported AIDS cases identified as Inuit, exposure category distribution was as follows: heterosexual contact (34.8%) was slightly higher than injection drug use exposure (30.4%) and male-to-male sexual contact (26.1%). Over one-third of cases were female (39.1%), while youth (aged 15 to 29 years old) represented 30.4% of all reported cases.

Aboriginal unspecified

Among reported AIDS cases for whom Aboriginal group ethnicity was not specified, three exposure categories were almost evenly distributed: male-to-male sexual contact (31.7%), heterosexual contact (30.9%) and injection drug use exposure (28.5%). Females made up 28.4% of cases, while youth (aged 15 to 29 years old) accounted for 12.6% of all reported cases.

^{iv} When compared with other ethnic communities, the number of reported AIDS cases in Aboriginal groups may appear small; however, caution is advised when reviewing group proportions, as they can change considerably with small increases in the number of cases, particularly when total numbers are small.

TABLE 10. SEX, AGE GROUP AND EXPOSURE CATEGORY DISTRIBUTION FOR REPORTED AIDS CASES BY ABORIGINAL GROUP, 1979 TO 2012

Demographics	First Nations	Métis	Inuit	Aboriginal, unspecified	People of other ethnicities
Sex	n = 678	n = 60	n = 23	n = 127	n = 16,578
Female	30.2%	26.7%	39.1%	28.4%	9.3%
Age (years)	n = 678	n = 60	n = 23	n = 127	n = 16,577
< 15 years	0.4%	3.3%	0.0%	1.6%	1.1%
15-19 years	0.9%	1.7%	0.0%	0.0%	0.3%
20-29 years	18.4%	35.0%	30.4%	12.6%	14.4%
30-39 years	42.5%	30.0%	52.2%	45.7%	42.9%
40-49 years	26.7%	26.7%	8.7%	31.5%	28.7%
50-59 years	9.0%	1.7%	4.4%	6.3%	9.3%
60+ years	2.1%	1.7%	4.4%	2.4%	3.4%
Exposure category	n = 642	n = 58	n = 23	n = 123	n = 16,124
MSM	19.3%	39.7%	26.1%	31.7%	67.5%
MSM/ IDU	6.9%	8.6%	4.4%	5.7%	4.6%
IDU	53.6%	37.9%	30.4%	28.5%	7.8%
Heterosexual contact	18.7%	10.3%	34.8%	30.9%	16.1%
Perinatal transmission	0.5%	1.7%	0.0%	1.6%	0.9%
Other	1.1%	1.7%	4.4%	1.6%	3.1%

MSM: men who have sex with men; IDU: injection drug use; MSM/IDU: individuals who reported both MSM and IDU exposure; Heterosexual contact: people born in a country where HIV is endemic, people who report heterosexual contact with a person who is either HIV-infected or at increased risk of HIV infection, and people who report heterosexual contact as the only risk factor; Perinatal transmission: mother-to-child transmission; Other: recipient of blood/clotting factor, occupational exposure and other.

Information on ethnicity and exposure category has not been available for AIDS cases reported since 2005 in Ontario. Québec stopped reporting their AIDS cases to PHAC since the fourth quarter of 2003. Newfoundland and Labrador stopped reporting their cases to PHAC since 2005.

n: number of cases with available information.

ENHANCED POPULATION-SPECIFIC SURVEILLANCE DATA

As part of the *Federal Initiative to Address HIV/AIDS in Canada*, the Agency monitors trends in HIV prevalence and associated risk behaviours through enhanced (behavioural and biological) HIV surveillance systems in priority populations in Canada. The overall objectives of these systems (known as the “Track” systems) are to describe the changing patterns in the prevalence and incidence of HIV infections, risk behaviours and testing patterns for HIV, hepatitis C virus (HCV) and other sexually transmitted and blood borne infections (STBBI) in each population. For a more detailed description of the Track systems, please refer to Chapter 3 of the HIV/AIDS Epi Updates, focused on HIV testing and surveillance systems in Canada.

Selected descriptive results from A-Track Pilot (2011–2012)

A-Track is a national enhanced (behavioural and biological) surveillance system designed to monitor HIV and other STBBI, behaviours and socio-demographic factors in Aboriginal populations in Canada. The A-Track surveillance system was piloted in Regina, Saskatchewan, from 2011 to 2012 among people who self-identified as Aboriginal or claimed Aboriginal ancestry and were 16 to 60 years old.

Overview and socio-demographic characteristics of A-Track Pilot participants

- 1,064 people participated in the A-Track Pilot. Of these, just over half (50.7%) were male.
- The majority of participants self-identified as Aboriginal, and two participants claimed Aboriginal ancestry only. Of those who self-identified as Aboriginal, the majority (90.1%) identified themselves as First Nations and 9.7% as Métis. Less than 1% self-identified as Inuit.
- The highest proportion of participants (44.8%) was between the ages of 30 and 49 years with slightly fewer participants under the age of 29 years (42.2%) and over the age of 50 (13.0%).
- Overall, the majority of participants (95.5%) reported their sexual orientation as heterosexual and a small proportion (4.5%) identifying as gay, lesbian, bisexual or other (including two-spirit).
 - A higher proportion of females (6.9%) than males (2.2%) identified as gay, lesbian, bisexual or other.
- Over half of the participants (60.2%) reported having less than a high school education, 19.5% had finished high school, and 20.3% had some post-secondary education.
- Overall, 738 participants provided responses when asked about their household income. Just over half of these participants (51.1%) reported their total household income to be between \$10,000 and \$39,999; fewer participants reported incomes under \$9,999 (27.1%) or incomes over \$40,000 (21.8%).

- Three in ten (29.9%) participants reported having ever attended or lived in a residential or boarding school while under the age of 18 years, and 43.4% of participants reported being placed in foster care at some time in their lives.
 - Almost one-third of males (32.1%) had lived in a residential or boarding school while younger than 18 years; for females this proportion was slightly smaller (27.6%).
 - Similar proportions of males (41.7%) and females (45.1%) had ever been placed in foster care at some time in their lives.

Injecting practices and sexual risk behaviours of A-Track Pilot participants

- Of the 1,064 participants, half (50.0%) indicated that they had ever injected drugs for non-medical purposes. Of these, most (80.6%) indicated that they first injected drugs when they were 16 years of age or older.
- Almost a third of all participants (30.3%) had injected drugs in the six months prior to interview.
 - A slightly higher proportion of males (32.5%) than females (28.0%) reported injecting drugs in the six months prior to interview.
- Responses from the participants who had injected drugs in the six months before the interview revealed the following:
 - Almost one in 10 (9.1%) reported injecting with used needles and/or syringes during that period.
 - The majority (98.8%) had used a sterile needle and/or syringe the last time they had injected.
 - All females (100.0%) who had injected drugs during that period had used a sterile needle and/or syringe at the last injection. For males, the proportion was slightly lower (97.7%).
- Of the 266 participants between the ages of 16 and 24 who had had sexual intercourse, for just under half (41.0%) this occurred before the age of 15.
 - A higher proportion of males (50.0%) than females (34.0%) reported having had sexual intercourse before the age of 15.
- Of the 393 participants between the ages of 16 and 49 who had had more than one sexual partner in the 12 months before the interview, just over half (52.7%) reported using a condom at the last sexual intercourse.
 - A higher proportion of males (57.7%) than females (47.0%) reported using a condom at the last sexual intercourse.

HIV prevalence^v, awareness and testing history among A-Track Pilot participants

- Among the 1,049 participants who provided a biological sample of sufficient quantity for testing, the prevalence of HIV was 5.2%.
 - The HIV prevalence was 6.0% among males and 4.3% among females.
- Of the participants whose biological specimen tested positive for HIV, almost half (44.2%) were unaware of their HIV-positive status.
 - A higher proportion of males (50.0%) than females (36.4%) were unaware of their HIV-positive status.
- Almost three out of four participants (71.5%) reported having ever been tested for HIV.
 - This proportion was slightly higher among females (75.4%) than males (67.7%).
- Of those who had ever been tested for HIV, just over two-thirds (67.6%) reported receiving an HIV test in the 12 months before the interview.
 - Similar proportions of females (66.4%) and males (68.9%) had been tested for HIV during this period.

Lifetime exposure to hepatitis C infection^{vi} among A-Track Pilot participants

A positive result from the laboratory test used for hepatitis C indicated past or present infection and did not differentiate acute from chronic or resolved infections; that is, the laboratory testing determined lifetime exposure to hepatitis C infection but did not determine whether the individual was currently infected with hepatitis C.

Among participants who provided a biological specimen of sufficient quantity for testing, the lifetime exposure to hepatitis C was 41.6%.

- The lifetime exposure to hepatitis C was 46.1% among males and 36.9% among females.

^v HIV screening of dried blood spot (DBS) specimens was performed using the Bio-Rad GS rLAV HIV-1 EIA assay. Confirmatory testing was subsequently performed using the Bio-Rad GS HIV-1 Western Blot assay. A positive result indicated a current HIV infection. Both the EIA and Western Blot assays used are approved by Health Canada as diagnostic assays for use with DBS specimens.

^{vi} Hepatitis C virus testing of DBS specimens was performed using the Ortho HCV version 3.0 EIA. Confirmatory testing was not performed for samples that tested positive. A positive result (i.e., hepatitis C antibody seropositive) indicated past or present hepatitis C infection and did not discriminate acute from chronic or resolved infections.

SELECTED DESCRIPTIVE RESULTS FROM I-TRACK PHASE 3 (2010–2012)

I-Track is the national enhanced (behavioural and biological) surveillance system that monitors HIV and hepatitis C prevalence and associated risk behaviours among people who inject drugs in Canada. I-Track Phase 3 data collection was conducted between 2010 and 2012 in 11 sentinel sites across Canada.

Overview of I-Track Phase 3 participants

- 2,690 people participated in Phase 3 of I-Track across Canada (2010–2012).
- The majority of participants (2,681 out of 2,690) provided information on their ethnicity:
 - 36.2% self-identified as being Aboriginal (First Nations, Métis or Inuit).
 - 63.8% self-identified as being of another ethnicity.

I-Track Phase 3 participants who self-identified as Aboriginal Socio-demographic characteristics

- Of the 970 participants who self-identified as Aboriginal, just over half (55.4%) were male.
- Most participants (63.9%) were between the ages of 30 and 49 years, and fewer were under the age of 29 years (21.9%) or over the age of 50 (14.2%).
 - A higher proportion of females (28.5%) than males (16.4%) were under the age of 29 years.
- Overall, the majority of participants (88.1%) reported their sexual orientation as heterosexual, a small proportion identifying as bisexual (8.8%) and smaller proportions identifying as either gay or lesbian (1.6%) or two-spirit (1.6%).
 - A higher proportion of females (16.1%) than males (2.6%) identified themselves as bisexual.
- Over half of the participants (67.0%) reported having less than a high school education, 17.8% had finished high school, and 15.1% had some post-secondary education.
 - A higher proportion of females (71.7%) than males (63.3%) had not completed high school.
- Over one-third of participants (36.0%) reported their usual monthly income to be between \$500 and \$999, fewer participants reporting incomes under \$500 (22.9%), between \$1,000 and \$1,999 (26.4%) or over \$2,000 (14.6%).

Injecting practices and sexual risk behaviours of I-Track Phase 3 participants

- Almost one-fifth (18.4%) of participants who self-identified as Aboriginal reported first injecting drugs before the age of 16.
 - A higher proportion of females (20.3%) than males (16.9%) reported first injecting drugs before this age.
- Approximately one in 10 participants (12.1%) reported injecting with a used needle or syringe in the six months before the interview.
 - A higher proportion of females (14.3%) than males (10.1%) reported injecting with a used needle or syringe during this period.
- Among participants who reported injecting drugs in the month before the interview, the majority (95.7%) reported using sterile needles or syringes the last time they had injected.
 - Equal proportions were observed among both females (95.5%) and males (95.7%).
- Just over one-third of participants (35.9%) reported injecting drugs every day in the month before the interview.
 - Similar proportions were observed among females (36.4%) and males (35.5%).
- Just over two-fifths of participants between the ages of 15 and 49 (41.3%) reported having had multiple sex partners in the six months before the interview.
 - A higher proportion of females (45.7%) than males (37.8%) reported multiple sex partners in this period.
- Of the 592 participants who reported having injected drugs and having had sex in the month before the interview, just over one-third (36.1%) reported using a condom the last time they had sex.
 - Similar proportions were observed among both females (35.6%) and males (36.4%).

HIV prevalence^{vii}, awareness and testing history of I-Track Phase 3 participants

- Among the 938 participants who provided a biological sample of sufficient quantity for testing, the prevalence of HIV was 11.5%.
 - The HIV prevalence was similar among male (11.4%) and female participants (11.8%).
- Of the participants whose biological specimen tested positive for HIV, almost one-quarter (23.3%) were unaware of their HIV-positive status.
 - Similar proportions of males and females were unaware of their HIV positive status (22.9% and 23.6% respectively).

^{vii} HIV screening of DBS specimens was performed using the Bio-Rad GS rLAV HIV-1 EIA assay. Confirmatory testing was subsequently performed using the Bio-Rad GS HIV-1 Western Blot assay. A positive result indicated a current HIV infection. Both the EIA and Western Blot assays used are approved by Health Canada as diagnostic assays for use with DBS specimens.

- The majority of participants (92.3%) reported ever having been tested for HIV.
 - A higher proportion of female (94.7%) than male (90.5%) participants reported ever having been tested for HIV.
- Of those who had ever been tested for HIV, just over two-thirds (70.2%) reported testing in the 12 months before the interview.
 - A higher proportion of females (74.5%) than males (66.4%) had been tested for HIV during this period.

Lifetime exposure to hepatitis C infection^{viii} among I-Track Phase 3 participants

- Among participants who provided a biological specimen of sufficient quantity for testing, the lifetime exposure to hepatitis C infection was 68.6%.
 - Similar proportions were observed among both females and males (68.3% and 68.8% respectively).

SUMMARY OF RECENT RESEARCH ON HIV PREVALENCE, INCIDENCE, HIV RISK BEHAVIOURS AND RELATED DETERMINANTS OF HEALTH AMONG ABORIGINAL PEOPLE

This section provides updated information on HIV prevalence, incidence, HIV risk behaviours and determinants of health that builds on the literature review presented in the *Population-Specific HIV/AIDS Status Report: Aboriginal Peoples (2011)* and the previous *Aboriginal HIV/AIDS Epi Update (2010)*. Data are drawn from Canadian quantitative and qualitative research published in peer-reviewed journals and/or presented at scientific meetings between 2010 and 2012. More information about the methodology can be found in the Overview of Epi Updates 2010 Development and Methodology section of the HIV/AIDS Epi Updates series.¹¹

As discussed in depth in the *Population-Specific HIV/AIDS Status Report: Aboriginal Peoples*, Aboriginal people are affected by a range of determinants of health that impact their vulnerability to, and resilience against, HIV infection. The report identifies a number of determinants of health (including poverty, unstable housing and homelessness, traumatic early childhood experiences, incarceration and mental health issues, including addictions) that negatively affect the overall health status and vulnerability of Aboriginal people to HIV infection. In contrast, cultural connection and access to culturally relevant services were identified as key sources of resilience for Aboriginal people vulnerable to, and living with, HIV/AIDS.

^{viii} Hepatitis C virus testing of DBS specimens was performed using the Ortho HCV version 3.0 EIA. Confirmatory testing was not performed for samples that tested positive. A positive result (i.e., hepatitis C antibody seropositive) indicated past or present hepatitis C infection and did not discriminate acute from chronic or resolved infections.

Although this document focuses on the burden of HIV/AIDS among Aboriginal people, evidence suggests that this population is also disproportionately affected by other STBBI, including hepatitis C, chlamydia and gonorrhoea. These infections share common transmission routes (i.e., exposure to infected body fluids), common risk behaviours (such as unprotected sexual activity and sharing of drug use equipment) and common social and structural risk factors (such as poverty, stigma and discrimination, and addictions).

The following studies are discussed multiple times in this section of the HIV/AIDS Epi Update. For ease of reference, study details are provided here in alphabetical order:

- At-Risk Youth Study (ARYS): A prospective cohort study of street-involved youth aged 14–26 in Vancouver who had used drugs other than marijuana in the previous 30 days.
- The Cedar Project: A prospective cohort study of young people (aged 14–30) in Vancouver and Prince George, British Columbia, who self-identified as Aboriginal and who had smoked or injected illicit drugs other than marijuana in the month before enrollment in the study.
- Longitudinal Investigations into Supportive and Ancillary health services (LISA): A cohort of people living with HIV/AIDS (PHA) who have ever accessed antiretroviral therapy in British Columbia.
- Positive Spaces, Healthy Places (PSHP): An observational cohort study of PHA in Ontario who are 18 years of age and older and are affiliated with or receive services from community-based AIDS service organizations.
- Trans PULSE Project: A respondent-driven survey of 433 transgender people in Ontario aged 16 years and older.
- Vancouver Injection Drug Users Study (VIDUS): A prospective cohort study of people who inject drugs recruited from Vancouver's Downtown Eastside.

Aboriginal people experience disproportionately high HIV incidence and prevalence

Several studies have examined HIV incidence and prevalence in Aboriginal populations in regions across Canada. These studies support the information presented in previous sections of this Epi Update, namely, that Aboriginal people have a higher HIV incidence and prevalence than non-Aboriginal people.

HIV incidence

- Among people in Ontario diagnosed with HIV between 2009 and 2011, 2.3% were of First Nations ethnicity. Of these, 67% were reported from outside the Toronto area; 40% of diagnoses among First Nations people were attributed to heterosexual contact, 33% to IDU, 13% to MSM and 10% to MSM-IDU.¹²

- A study that examined clinical records data for 222 new HIV patients in Manitoba, Saskatchewan, and southern Alberta in 2007 found that approximately 36% were among people who self-reported Aboriginal ethnicity. Nearly one-quarter (23.7%) of male cases and over half (56.6%) of female cases self-reported Aboriginal ethnicity.¹³ A previous analysis of data on 2,263 HIV-positive patients for the years 2003-2007 found that Saskatchewan had the highest proportion of new HIV cases among Aboriginal people (72%), compared with 7% in southern Alberta.¹⁴
- An analysis of data from the Canadian HIV Strain and Drug Resistance Surveillance Program on 1,417 recent HIV infections (defined as having been infected within 170 days prior to sample collection) among people with newly diagnosed HIV in British Columbia, Alberta, Saskatchewan and Manitoba from 2000 to 2008 found that a substantial proportion (40.4%) were among Aboriginal people. In multivariate analysis adjusted for province and year, recent HIV infection was more likely in females (adjusted odds ratio [AOR] 1.46, confidence interval [CI]: 1.22, 1.74), Aboriginal people (AOR 1.25, 95% CI: 1.04, 1.51), IDU (AOR 1.45, 95% CI: 1.20, 1.75) and MSM (AOR 1.51, 95% CI: 1.23, 1.86).¹⁵
- Based on national Canadian surveillance data (1999–2008) for all provinces and territories except Ontario and Quebec, HIV diagnosis rates among Aboriginal people and Caucasians were calculated. The HIV diagnosis rate among Aboriginal men and women was 3.6 and 19.7 times higher respectively than among Caucasian men and women during 2004–2008. This disparity was greater among young people: the HIV diagnosis rate among young Aboriginal men and women aged 15–19 years was 5.38 and 21.6 per 100,000 respectively compared with 0.38 and 0.7 per 100,000 among Caucasian men and women.¹⁶
- The Know Your Status program was introduced in a Saskatchewan First Nations community to increase HIV testing. In 2011, 190 blood specimens were tested and 10 new HIV cases were diagnosed, resulting in an incidence rate of 5.3%.¹⁷
- An examination of factors associated with HIV incidence among 547 Cedar Project participants identified a crude HIV incidence of 5.7% (95% CI: 2.2, 3.6) among all participants and a crude incidence of 7.9% among those who injected drugs (95% CI: 3.2, 4.8). HIV incidence was associated with frequent opiate injection (relative risk [RR]: 2.6, 95% CI: 1.12, 6.02).¹⁸

HIV prevalence

- An analysis of data from the LISA cohort study was used to develop a demographic profile of people who had ever accessed antiretroviral therapy in British Columbia between the years 2007 and 2010. Of the 917 eligible participants, about one-third (32%) were of Aboriginal ancestry.¹⁹
- In general, higher proportions of HIV and AIDS cases in Canada have occurred among Canadians aged 50 years and older. In AIDS cases reported in older Canadians between 1989 and 2008, the proportion attributed to Aboriginal people increased by 7.3%.²⁰

Aboriginal people are at increased risk of HIV and hepatitis C co-infection

Aboriginal ethnicity was associated with HIV and hepatitis C virus (HCV) co-infection in three studies:

- In a study of 3,219 people living with HIV who had also been tested for HCV in British Columbia, diagnosis with HCV infection after HIV infection was independently associated with Aboriginal ethnicity among females (hazard ratio = 2.09, 95% CI: 1.34, 3.27).²¹
- An analysis of data from the Enhanced Street Youth Surveillance Study, a repeated cross-sectional study of street-involved youth aged 15 to 24 years (n = 4,174), found that HIV/HCV co-infection was strongly associated with Aboriginal origin (OR 10.8, 95% CI: 2.4, 48.6).²²
- An analysis of data from 266 Aboriginal IDU examined associations between solvent use and HCV prevalence. The data were drawn from a larger cross-sectional survey of people who inject drugs. Among the 266 Aboriginal participants, 44 reported recent solvent use. Recent solvent users were more likely to be infected with HCV (81% vs. 55%, OR: 3.5, 95% CI: 1.3, 14.7) and to have shared needles in the previous six months (OR: 2.6, 95% CI: 1.0, 6.8). HIV prevalence was also higher among those who reported solvent use, although this finding was not statistically significant (OR 2.3, 95% CI: 0.9, 6.2).²³

Injection drug use is a key source of HIV vulnerability for Aboriginal people

As discussed in previous sections of this HIV/AIDS Epi Update, injection drug use is the main mode of HIV transmission among Aboriginal people.

- A systematic review and meta-analysis of Canadian articles on HIV incidence and prevalence published between 1980 and 2010 found that HIV incidence and prevalence were higher among Aboriginal people who use drugs than non-Aboriginal people who use drugs. Correlates of HIV infection among Aboriginal people who use drugs included sharing syringes and frequent drug injection.²⁴

Specific drug use behaviours that increase the risk of HIV transmission were examined in several studies:

- Data from participants in VIDUS, an open prospective cohort study of IDU recruited from Vancouver's Downtown Eastside, were analyzed for factors associated with assisted outdoor injection, a risk factor for HIV infection. Of the 620 eligible participants, one-third (32.7%) self-identified as Aboriginal. In multivariate analyses, Aboriginal ethnicity was the only variable negatively associated with assisted outdoor injection (AOR 0.58, 95% CI: 0.41, 0.82). Female sex, daily cocaine injection and involvement in sex work were positively associated with assisted outdoor injection.²⁵

- Another analysis of VIDUS data considered factors associated with the following risky injection practices: rushed injection, syringe borrowing, injecting with a previously used water capsule and injecting alone. Aboriginal ethnicity was negatively associated with two risky injecting practices: frequent syringe borrowing (AOR 0.58, 95% CI: 0.34, 0.98) and frequent injection with a used water capsule (AOR 0.56, 95% CI: 0.42, 0.74).²⁶
- In an analysis of Cedar Project data, frequent opiate injection was associated with HIV seroconversion.²⁷
- An examination of non-injection drug use during pregnancy among Aboriginal mothers in northwestern Ontario (n = 482) found that oxycodone abuse during pregnancy increased from 8.4% in January 2009 to 17.2% by June 2010 ($p = 0.05$). No HIV or HCV infections were found, which the authors attribute to the primary method of oxycodone use in this population (intranasal and oral ingestion rather than by injection).²⁸

Several articles also examined determinants of health associated with injection drug use among Aboriginal people:

- Factors associated with injection drug use among Aboriginal people were examined in a cross-sectional study of people living in Saskatoon who, at the time of the study, were currently injecting drugs, engaging in sex work or using the services of sex workers, or were MSM (data collected September 2009–April 2010). Of the 1,000 participants, 603 had engaged in injection drug use in the previous four weeks. Overall, participants who were injecting drugs at the time of the study were more likely to be male (55.2%), aged 30–39 (35.2%), heterosexual (88.7%) and Aboriginal (88.1%). Compared with participants from other ethnic groups, Aboriginal participants were more likely to be female, younger (aged 18–29) and less likely to be in paid employment. After residential school attendance had been controlled for, there was an association between injection drug use among Aboriginal participants and sex work, and the permanent separation from or death of a parent during youth.²⁹
- In an analysis of data from the Cedar Project (n = 605), a transition from non-injection to injection drug use occurred among 14.4% of previously non-IDU participants. Factors associated with transitioning to injection drug use among young Aboriginal people were female sex, sex work involvement, a history of sexually transmitted infections and use of drugs with sex work clients.³⁰

ABORIGINAL WOMEN AND VULNERABILITY TO HIV INFECTION

Sex work

Research suggests that sex workers face a number of risks to their health, including violence and abuse, stigma, inability to access social and health services, and risk of infection with HIV and other STBIs. Social and cultural factors may affect the ability of sex workers to reduce their risk of HIV and other STBIs. For example, these factors can impede their ability to work in groups or in public places, or to screen clients and negotiate condom use. In addition, stigma associated with sex work and the marginalization of sex workers are barriers to reporting violence and abuse to authorities and to access other critical health and social supports.³¹ As noted in the *Population-Specific HIV/AIDS Status Report: Aboriginal Peoples*, the available research suggests that Aboriginal women are overrepresented among women engaged in street-level sex work in Canada. However, research focused on sex work in the context of vulnerability to HIV infection among Aboriginal people continues to be concentrated in British Columbia and therefore may not be generalizable to the rest of Canada.³²

- Data on 560 participants in the ARYS in Vancouver found that Aboriginal ethnicity was independently associated with engagement in survival sex work (AOR 2.35, 95% CI: 1.28, 4.29).³³
- A survey of 1,000 Saskatoon residents who were current users of injection drugs, sex workers, sex work clients or MSM looked at factors related to injection drug use among Aboriginal participants. Compared with participants of other ethnicities, Aboriginal IDU were more likely to be involved in sex work.³⁴

Analyses of Cedar Project data highlight links between involvement in sex work and other HIV vulnerabilities and risk behaviours:

- Younger Cedar Project participants (those 19 years of age or younger) had a marginally significant greater likelihood of sex work involvement in the previous six months than participants over the age of 19 (AOR 1.35, 95% CI: 0.99, 1.85).³⁵
- Cedar Project participants who were involved in sex work were significantly more likely to experience sexual assault over the study period (AOR 1.38, 95% CI: 1.11, 1.65).³⁶
- Daily or more frequent crack cocaine smoking among Cedar Project participants was associated with sex work involvement in the previous six months (AOR 2.04, 95% CI: 1.56, 2.67).³⁷
- Among female Cedar Project participants, sex work involvement was associated with younger age, bisexual sexual identity, recent homelessness, requiring help injecting drugs, daily crack smoking and daily cocaine injection.³⁸

- Of 605 Cedar Project participants, 264 (43.6%) had experienced sexual abuse during childhood. In multivariable analysis, childhood sexual abuse among women was associated with recent sexual assault (AOR 6.17, 95% CI: 2.4, 15.84), whereas in men it was associated with sex work involvement (AOR 2.40, 95% CI: 0.98, 5.91) and having had a sexually transmitted infection (AOR 2.96, 95% CI: 1.36, 6.44).³⁹
- Ever having had an HIV test was associated with sex work involvement (AOR 1.9, 95% CI: 1.1, 3.3).⁴⁰

Aboriginal women experience unique vulnerabilities to HIV infection

The *Population-Specific HIV/AIDS Status Report: Women* notes that Aboriginal women are subject to discrimination both through gender inequalities and gendered social norms, as well as racial inequalities. The impacts of sexism and racism increase the vulnerability of Aboriginal women to HIV infection as a result of factors such as unequal power dynamics in intimate relationships and lower socio-economic status and poverty, all of which contribute to HIV risk behaviours.⁴¹

- A study by Hwang et al. describing the population presenting for HIV care in southern Alberta from 1982 to 2006 found that a significantly higher proportion of women than men were Aboriginal (21.5% vs 8.7%, $p < 0.001$).⁴²
- A survey of 1,000 people living in Saskatoon who were current IDU, sex workers, sex work clients or MSM looked at factors related to injection drug use among participants. Compared with non-Aboriginal IDU, Aboriginal IDUs were more likely to be younger and female.⁴³
- An analysis of the Maka Project, a Vancouver-based prospective cohort study of women involved in street-based sex work who use drugs, examined factors associated with younger versus older age (14-24 years versus > 24 years). Younger age was associated with being of Aboriginal ancestry (59% vs 44%, $p = 0.052$), as well as being homeless and having fewer years of involvement in sex work. Younger participants were also less likely to be HCV positive (43% vs 70%, $p = 0.001$).⁴⁴
- Data from the Cedar Project were used to examine a range of factors associated with HIV vulnerability among young Aboriginal women:
 - Unstable housing is associated with HIV vulnerability because of the increased likelihood of Aboriginal women engaging in HIV risk behaviours, such as sex work and injection drug use.⁴⁵ A history of living in foster care, recent injection drug use and crack cocaine smoking were associated with unstable housing among young Aboriginal women participating in the Cedar Project.⁴⁶

- Needing help injecting drugs is associated with HIV infection among Aboriginal women.⁴⁷ Women participants of the Cedar Project were more likely to require help injecting drugs than were men (AOR 2.12, 95% CI: 1.68, 2.44). Among women, factors associated with needing help injecting drugs included injecting cocaine on a daily or less than daily basis, injecting heroin on a less than daily basis, having difficulties finding new injecting equipment, being involved in sex work and having a sexual partner who injects drugs.⁴⁸
- Female Cedar Project participants who had experienced sexual assault in the previous six months were twice as likely to use condoms inconsistently than those who had not (AOR 2.02, 95% CI: 1.16, 3.49).⁴⁹
- Sex work involvement was associated with younger age, bisexual sexual identity, recent homelessness, requiring help injecting drugs, daily crack smoking and daily cocaine injection among female Cedar Project participants.⁵⁰

The *Population-Specific HIV/AIDS Status Report: Women* notes that women living with HIV/AIDS experience stigma and discrimination as a result of their HIV-positive status; this stigma and discrimination is compounded by gender inequalities and racism.⁵¹ Two qualitative studies and a national consultation examined the experiences of Aboriginal women living with HIV:

- A qualitative study involving Aboriginal women living with HIV/AIDS investigated the impact of sexual violence on HIV vulnerability. Women experienced multiple forms of discrimination as a result of sexism, racism and HIV stigma, resulting in social marginalization and challenges in managing their HIV infection. Lifetime experiences of violence were often linked to HIV vulnerability, and being HIV positive increased the risk of further violence.⁵²
- A participatory-action research project involving 13 Aboriginal women living with HIV/AIDS examined the meaning of health for participants. Study participants considered health to be holistic, encompassing multiple factors (mental, physical, spiritual, emotional, social and environmental) and making life-affirming connections to culture, family, friends and community.⁵³
- During a consultative process to develop a strategy to address barriers to service delivery for Aboriginal women living with HIV/AIDS, which involved 300 Aboriginal women from across Canada, participants identified a lack of specific services for HIV-positive Aboriginal women that provide culturally relevant support and connections with others in the community.⁵⁴

Impact of HIV on Aboriginal women and mother-to-child transmission

Pregnant women who are living with HIV are at risk of transmitting the virus to their unborn child. Widespread prenatal HIV testing and increased uptake of antiretroviral therapies among HIV-positive women has greatly reduced mother-to-child transmission in Canada. Data from the Canadian Perinatal HIV Surveillance Program (CPHSP) provides information on demographic factors and access to treatment among HIV-positive women who have given birth in Canada since 1990. These data indicate that Aboriginal women account for a large proportion of all HIV-positive mothers in Canada.

- The proportion of HIV-positive women who reported their race/ethnicity as Aboriginal increased significantly during the period 1990 to 2010, from 14% to 20%. In comparison, the proportion of HIV-positive Black women also increased significantly during this period (from 35% to 48%) and the proportion of White women declined from 47% to 25%. The largest proportions of Aboriginal mother-infant pairs were in the Prairie Provinces: Alberta (46%), Saskatchewan (86%) and Manitoba (59%). The majority (63%) of the cases among pregnant Aboriginal women were attributed to the IDU exposure category.⁵⁵
- CPHSP data from 2009 show that although the majority of mothers (86.2%) received antiretroviral therapy, Aboriginal women accounted for 23.5% (8/34) of the 8.8% of mothers who did not receive treatment, even though Aboriginal women made up 19% of all HIV-positive women who gave birth that year.⁵⁶
- CPHSP data for the years 1997 to 2008 indicate that the vertical transmission rate for women overall during this period was 3.5% (n = 1,857), compared with 0.7% among women treated with highly active antiretroviral therapy (HAART). Among Aboriginal mothers, HAART uptake was 55% and the rate of mother-to-child transmission was 5.6%. Among non-Aboriginal mothers, HAART uptake was 71% and the rate of mother-to-child transmission was 3.1%.⁵⁷

GAY, LESBIAN, BISEXUAL, TRANSGENDER AND TWO-SPIRIT ABORIGINAL PEOPLE

Gay, lesbian, bisexual, transgender and two-spirit Aboriginal people are vulnerable to homophobic discrimination. The *Population-Specific HIV/AIDS Status Report: Gay, Bisexual, Two-Spirit and other Men Who Have Sex With Men* notes that homophobia is linked to negative mental health outcomes, increased social exclusion and decreased access to social support and health services, all of which may increase an individual's likelihood of engaging in HIV risk behaviours.⁵⁸ As discussed in the *Population-Specific HIV/AIDS Status Report: Aboriginal Peoples*, gay, lesbian, bisexual, transgender and two-spirit Aboriginal people can face homophobia from within Aboriginal communities as well as racist and homophobic discrimination from the broader Canadian society.⁵⁹ Recent research highlights the burden of HIV infection and the particular HIV-related vulnerabilities experienced by this population:

- The M-Track Lambda Study in Ontario showed that Aboriginal MSM were almost 10 times more likely to be HIV positive than non-Aboriginal MSM (OR 9.81, 95% CI: 1.30, 72.48, $p = 0.02$). Analysis of HIV surveillance data for Ontario from 1985 to 2004 also indicated that among HIV-positive MSM, Aboriginal people were almost five times more likely to have injected drugs than those of non-Aboriginal origin ($p < 0.001$, OR 4.83, 95% CI: 2.34, 9.98).⁶⁰
- Data from the Trans PULSE project ($n = 433$, 7% Aboriginal) examined sexual risk behaviours among trans people in Ontario. The study found no significant differences in high-risk sexual behaviours between ethno-racial groups (Aboriginal, non-Aboriginal White, non-Aboriginal racialized). However, self-reported HIV prevalence was higher among Aboriginal trans people (17%) than among the overall female-to-male (0.6%) and male-to-female (3%) trans populations surveyed.⁶¹
- An analysis of Cedar Project participants who self-identified as lesbian, gay, bisexual, transgendered, queer or two-spirit (LGBTQ) (67 out of 605 participants) found that this population was more likely to experience several HIV-related risk factors than their straight-identified counterparts. LGBTQ women were more likely to ever have injected drugs (AOR 2.87, 95% CI: 1.32, 6.83), ever shared a rig (AOR 4.22, 95% CI: 1.91, 9.78) and to ever have participated in sex work (AOR 2.66, 95% CI: 1.14, 7.33).⁶² In other analyses of Cedar Project data, young Aboriginal women involved in sex work were more likely to be bisexual (AOR 2.55, 95% CI: 1.46, 4.46) than those not involved in sex work.⁶³ Among young Aboriginal men, living in unstable housing was associated with being gay or bisexual (AOR 1.68, 95% CI: 1.04, 2.72).⁶⁴
- Data on self-identified sexual minority participants from three open prospective cohort studies of people who use drugs in Vancouver (At Risk Youth Study–ARYS, Vancouver Injection Drug Users Study–VIDUS and AIDS Care Cohort to Evaluate Access to Survival Services–ACCESS) were analyzed to identify correlates of methamphetamine use. Overall, sexual minority participants were more likely to report methamphetamine use. This was associated with Aboriginal ancestry in sexual minority males but not females.⁶⁵
- Data on lesbian, gay, bisexual and two-spirit (LGBT) Aboriginal people living with HIV/AIDS (APHA) in Ontario ($n = 43$), collected as part of the Positive Spaces, Healthy Places study, showed that the majority (62.8%) were First Nations, lived in the Greater Toronto Area (65.1%) and had at least a high school diploma (79.1%). Most of the participants (67.4%) were currently receiving HIV treatment, and about half (51.2%) reported an AIDS-defining illness. Participants had started treatment an average of 3.3 years after diagnosis. The majority of Aboriginal LGBT participants (58.8%) at baseline rated their quality of life as “pretty good” or better.⁶⁶
- A study that examined intimate partner violence among 687 gay and bisexual men living with HIV/AIDS in southern Alberta found that 41.9% of Aboriginal patients reported experiencing intimate partner violence, compared with 21.4% of Caucasians in the study (adjusted prevalence ratio 2.48, 95% CI: 1.18-5.20).⁶⁷
- One-third ($n = 116$, 32%) of participants in a study examining real and perceived alcohol use among APHA and how this affected access to care reported not accessing needed services because of fear that they would not receive them. Transgendered, two-spirit and intersex participants were more vulnerable to being marginalized in access to care than heterosexual men and women.⁶⁸

ABORIGINAL YOUTH AND VULNERABILITY TO HIV INFECTION

As described in previous sections of this report, the Aboriginal population is younger than the non-Aboriginal population, and HIV is diagnosed in Aboriginal people at a younger age than in non-Aboriginal people.

HIV-related knowledge among Aboriginal youth

- An analysis of data from 589 youth who participated in the ARYS in Vancouver found that youth who had more knowledge of HIV (as measured by the 18-question HIV Knowledge Questionnaire) were less likely to be Aboriginal (AOR 0.69, 95% CI: 0.47, 1.02, $p = 0.063$).⁶⁹
- A community-based research project examined the views of Aboriginal youth about the connection between structural inequalities and HIV risk at the individual level. The project included six Aboriginal communities and over 100 youth. Individual interviews, conducted one month after arts-based workshops had been held with Aboriginal youth that focused on HIV, sexual health and culture, allowed participants to reflect on their key learnings. Some participants described the issue of HIV within Aboriginal communities in a broad context that included social exclusion, isolation, inequality and racism. In addition, some youth linked colonialism, including the ongoing effects of residential schools, substance abuse and sexual abuse to HIV in their communities. The geographic isolation of some reserve communities and the social exclusion felt by some youth who moved to urban centres were also cited as sources of HIV vulnerability by the youth participants.⁷⁰

HIV risk behaviours among Aboriginal youth

Condom use

The *Population-Specific Status Report: HIV/AIDS and Other Sexually Transmitted and Blood Borne Infections among Youth in Canada* notes that certain sexual behaviours, including inconsistent condom use, increase the risk of HIV and other sexually transmitted infections among youth. Condom use among youth is influenced by a range of factors, including gender norms about sexual behaviour, masculinity and femininity.⁷¹

- In a qualitative study of 30 young Aboriginal people aged 15 to 19 years living in urban Vancouver and two rural reserves on Vancouver Island, differing social expectations of appropriate behaviour for young men and women in sexual relationships were identified. Young men were expected to be sexually persistent and to pursue multiple partners, whereas young women were viewed as the gatekeepers for sexual encounters. However, participants frequently described individual behaviours and experiences that deviated from these social norms, though gendered expectations were often upheld despite evidence of contradictory behaviours. For example, although many participants reported believing that women should not initiate sexual encounters, it was acknowledged that young women have sexual needs. In addition, in contrast to reported beliefs about male assertiveness in sexual relationships, male participants reported experiences of coercion by female partners in their sexual relationships.⁷² Another analysis of data from this qualitative study, focusing only on those 22 participants who reported ever having sex, identified three types

of sexual relationships between young men and women: serious, “on-off” relationships and single encounters (“one-night stands”). The authors found that condom use was not common in serious relationships, where pregnancy was often neither actively avoided nor explicitly chosen. In “on-off” relationships, condom use was less likely in relationships with serious emotional involvement, although these relationships varied in length and were not necessarily continuously monogamous. In contrast, most participants reported using condoms during single sexual encounters.⁷³

Drug use

The following findings are derived from analyses of data from the Cedar Project.

- An analysis of seroconversion rates among Cedar Project participants who were HIV negative at baseline (547/595) identified a crude incidence of 5.7%. Incidence was higher (7.9%) among participants who injected drugs, and frequent opiate injection was associated with HIV seroconversion (RR: 2.6, 95% CI: 1.12, 6.02).⁷⁴
- The types of drugs injected and injection frequency were examined in an analysis of 605 Cedar Project participants (2003–2007 data). A large proportion (40%) of participants reported daily or more frequent injection of cocaine, heroin or methamphetamine. More women reported injecting more frequently than men for all types of drugs except methamphetamine, which was used more often by men.⁷⁵ During the study period 2003–2009, high-intensity crack smoking declined from 54.5% in 2003 to 35.1% in 2009. Factors associated with high intensity crack smoking included being female; having a parent who had attended residential school; unstable housing, incarceration and sex work involvement in the previous six months; heroin smoking; and having a regular sexual partner who had used injection drugs in the previous six months.⁷⁶
- Of 133 Cedar Project participants living in Vancouver who reported injecting drugs between 2003 and 2007, the majority (71%) had used the city’s supervised injection site. These people were more likely to report a range of HIV risk factors, including daily drug injection and a history of incarceration and sex work, and were more likely to be HCV positive.⁷⁷
- Compared with older Cedar Project participants, those who were less than 19 years old were significantly more likely to report having a sexually transmitted infection (AOR: 1.58, 95% CI: 1.01, 2.68) and to have smoked methamphetamine daily (AOR: 2.22, 95% CI: 1.55, 3.18) in the previous six months.⁷⁸
- Cedar Project data from 2003 to 2010 for participants who reported injecting drugs was analyzed to identify the effect of police enforcement activities on drug use behaviours associated with HIV risk. A police presence that affected the location where drugs were purchased or used was associated with rushed drug injection and reuse of syringes, and being stopped by police was associated with syringe sharing. Four percent of participants reported having drug use equipment confiscated by police.⁷⁹

- Cedar Project data from 2003 to 2010 showed that 137 incidents of sexual assault were reported by 94 of 498 participants. About one-quarter (26%) of the assaults were committed by a male partner or another known male. The risk of sexual assault increased significantly for those involved in sex work, those who injected drugs, who had experienced childhood sexual abuse and who smoked crack cocaine on a daily basis or more.⁸⁰ Another analysis of earlier Cedar Project data (2003–2005) among young female participants found that those who had experienced sexual abuse in the previous six months were twice as likely to use condoms inconsistently (AOR 2.02, 95% CI: 1.16, 3.49) than those who had not.⁸¹

HIV TESTING PRACTICES AMONG ABORIGINAL PEOPLE

According to data from the 2012 HIV/AIDS Attitudinal Tracking Survey, which surveyed 2,000 Canadians across the country, 37% reported having been tested for HIV (excluding those who had been tested for insurance reasons, to donate blood and as part of research participation).⁸² HIV testing is critical to reducing the number of PHA who are unaware of their infection, allowing people to access HIV treatment to reduce morbidity and mortality and to take steps to prevent the onward transmission of HIV to others. The Agency recommends that HIV testing be considered and discussed as part of periodic routine medical care.⁸³

- The First Nations Regional Health Survey Phase 2 involved 11,043 adults from 216 First Nations communities in every province and territory except Nunavut. Four in ten (40.5%) First Nations adults who participated in this survey (2008–2010) reported having been tested for HIV. More women (49.9%) than men (32.5%) reported being tested. The proportion of those who reported having been tested for HIV or another sexually transmitted infection was higher among those who reported using substances without a prescription^{ix} than among those who did not.⁸⁴
- Data from the Trans PULSE Project found that nearly half of the participants (46.4%) had never been tested for HIV. Lifetime HIV testing was highest among Aboriginal trans people.⁸⁵
- An analysis of data from the Cedar Project examined correlates of HIV testing. At baseline, 73% of participants reported ever having had an HIV test, and 42% reported being tested on a yearly basis. Those who reported ever having had an HIV test were more likely to be from Vancouver (AOR 2.25, 95% CI: 1.4, 3.6), to be female (AOR 2.6, 95% CI: 1.4, 4.7) and to have a number of HIV risk factors, including injecting drugs (AOR 1.6, 95% CI: 1.0, 2.6), incarceration (AOR 2.5, 95% CI: 1.5, 4.1), lifetime involvement in sex work (AOR 1.9, 95% CI: 1.1, 3.3) and ever having had a sexually transmitted infection (AOR 4.1, 95% CI: 1.3, 12.4).⁸⁶

^{ix} Participants were asked whether in the past year they had used any of the following substances without a prescription: cannabis; hallucinogens; amphetamines; sedatives or sleeping pills; illicit or prescription opioids; non-prescription use of codeine, methadone, morphine; and inhalants.

- A survey of 210 Aboriginal youth aged 15 to 30 years recruited from community-based organizations, health centres and AIDS service organizations across Canada examined their experiences of HIV testing. The majority of participants reported that their last HIV test experience was a good one, indicating that they had been treated with care (80%), respect (77%) or kindness (76%) by health professionals. However, some reported experiencing hostility (19%), boredom on the part of health care staff (15%), fear (12%), discrimination (11%) and avoidance (10%). When asked about the information they had received at their most recent test, many youth (28%) could not remember it or stated that they were not given any (23%); one-fifth of respondents or less could recall specific information on prevention, treatment or support for HIV.⁸⁷

EXPERIENCES OF ABORIGINAL PEOPLE LIVING WITH HIV/AIDS

The *Population-Specific HIV/AIDS Status Report: People Living with HIV/AIDS* discusses the experiences of PHA in Canada in depth, including challenges related to coping with diagnosis and illness, dealing with when and how to disclose one's HIV-positive status to others, and issues around access to health care. The following section summarizes new Canadian research on some of the experiences of APHA:

- A qualitative study involving in-depth interviews with 72 participants examined the experiences of Aboriginal people living with HIV/AIDS who reported depression or profound sadness. The length of time participants had been living with HIV averaged nine years (range: < 1 year to 22 years). Half of the participants had thought about or attempted suicide. Many participants described their depression in terms of social isolation, experiences of unhappy relationships and lack of connectedness, rather than in terms of internal emotion. For most participants, depression began before their HIV diagnosis and was tied to other life experiences, such as abuse during childhood, social exclusion, cultural loss, racism, homophobia, alcohol and drug use, and poverty. Though some participants connected these factors to broader social and structural forces affecting the Aboriginal population at large, most spoke about the roots of their depression in terms of individual negative life experiences. Reconnecting with Aboriginal culture and communities was seen by participants as a key source of resilience and healing.⁸⁸
- A separate analysis of this cohort focused on the experience of receiving an HIV diagnosis among Aboriginal people who had reported experiencing depression. Initial HIV diagnosis was seen by participants as a life-changing experience accompanied by feelings such as disbelief and anger. The stigma and social isolation already experienced by some participants prior to diagnosis was increased. Some participants used substances to cope with their diagnosis.⁸⁹

- The role of alcohol in the lives of APHA was explored in a mixed-methods study. Surveys were conducted with 217 participants and service providers, followed by 97 in-depth interviews. The authors describe alcohol as “a significant substance of choice in the context of daily life and addiction experiences.” Some participants linked alcohol use with their HIV infection.⁹⁰
- A study involving 853 patients receiving care for HIV at a clinic in Calgary, Alberta, examined the incidence of domestic violence (including abuse experienced as an adult, either currently or in the past, and childhood abuse) and its association with HIV infection. More than half of Aboriginal participants (61%) reported experiencing abuse, compared with 43% of women participants and 34% of participants overall. Having a history of domestic violence was associated with delayed access to care ($p < 0.05$) and missed clinic appointments ($p < 0.001$).⁹¹ An analysis of data on intimate partner violence among gay and bisexual male patients from the same clinic found that it was associated with Aboriginal ethnicity ($p = 0.02$). Victims of intimate partner violence were more likely to have engaged in risky sexual behaviours since their last clinic visit.⁹²
- Participants in the Positive Spaces, Healthy Places study ($n = 438$) were asked for their views about the disclosure of HIV status by sexual partners. Overall, nearly half of participants (48.6%) expected their casual sexual partners to disclose if they were HIV positive, and 18.3% did not. However, this finding varied significantly by ethnicity; 8.9% of Aboriginal participants did not expect their sexual partners to disclose their HIV-positive status, compared with 20.3% of White and 11.1% of African/Caribbean participants.⁹³

The *Population-Specific HIV/AIDS Status Report: People Living with HIV/AIDS* notes that many PHA in Canada experience barriers to HIV health services and supports, with HIV-related stigma and discrimination being identified as a key obstacle to access.⁹⁴ In general, Aboriginal people experience barriers to health care that prevent equitable access, including shortages of health human resources, the geographic isolation or remoteness of some communities, lack of culturally and/or linguistically appropriate care, socio-economic status (such as lower levels of education and income), and experiences of racism and discrimination within the health care system.⁹⁵ For these people, barriers to health care can result in delayed HIV diagnosis, reduced access to specialized HIV services, and HIV-related stigma and discrimination compounded by racism.⁹⁶

Access to care

- An ethnographic study of primary health care services provided to APHA by two urban Aboriginal health centres involved participant observation, and interviews with 72 Aboriginal people receiving care and 44 caregivers. Several factors that contribute to high-quality health care were identified: acknowledging the individual needs, realities and personal histories of patients; and creating teams of professionals that work collaboratively to address health needs and social determinants of health affecting the client population.⁹⁷ An earlier analysis of data from this study identified additional factors that address barriers to care for this population, such as an awareness of power imbalances between the patient and care provider, and self-reflection by care providers about their practice.⁹⁸

- An analysis of data from the Ontario HIV Treatment Network Cohort Study compared access to continuous HIV care among Aboriginal and non-Aboriginal PHA in Ontario. Continuous HIV care was defined as having two or more tests of viral load and/or CD4 cell count three or more months apart in one year. Aboriginal people were less likely to be engaged in continuous care than other PHA in the study ($p < 0.05$), although the difference was small: 90% of Aboriginal HIV-positive patients were in continuous care compared with 93% of non-Aboriginal patients. The authors note that the Aboriginal participants in this study may not be representative of the general APHA population, as all study participants were engaged in HIV care of some kind.⁹⁹
- Service provision in the context of alcohol use, or perceived use, was examined in a national survey of 110 APHA and 96 service providers. A substantial proportion (20%–30%) of Aboriginal respondents reported that they had been refused services because of perceived or actual alcohol use, and 11% of service providers reported denying services to Aboriginal clients for this reason. In contrast, the majority of Aboriginal respondents also indicated that they had received care from respectful and trusted providers.¹⁰⁰ A more recent analysis of data from this study found that 22% of Aboriginal participants had been denied primary health care services because of perceived alcohol use when they were sober. In general, most service providers were not aware of organizational policies about service provision for clients who are perceived to have been drinking.¹⁰¹

HIV diagnosis and treatment

- APHA who participated in the Ontario HIV Treatment Network Cohort Study were more likely to have a CD4 count below 200 cells/ μ L when HIV was diagnosed than non-Aboriginal PHA (OR 1.56, $p = 0.04$), indicating a later stage of infection at time of diagnosis. Aboriginal participants also had lower levels of income, education and employment than non-Aboriginal study participants.¹⁰²
- Of the 1,983 people who began receiving antiretroviral therapy in British Columbia between 2006 and 2010, 63% began treatment when their CD4 count was at or below 200 cells/ μ L (defined as late initiation). People of Aboriginal ancestry were more likely to have later diagnosis and antiretroviral therapy initiation ($p < 0.001$).¹⁰³

Adherence to HIV treatment

- A survey of 65 HIV-positive patients who had been receiving antiretroviral therapy for three or more months investigated participants' beliefs about HIV treatment, illness and HIV medication adherence. The majority of participants were Caucasian (52.3%), and just over one-third (35.3%) were Aboriginal. There were no differences between ethnicities ($p > 0.05$) in terms of beliefs about HIV treatment, illness or adherence.¹⁰⁴
- A retrospective chart review (2007–2011) of 543 HIV patients in care at a Winnipeg clinic examined HIV treatment uptake. Overall, 87.25% of patients were receiving antiretroviral treatment. Aboriginal patients, as well as patients with addictions and those who had very low household incomes, were all overrepresented among those who were not compliant with treatment.¹⁰⁵

- A qualitative study examined barriers and facilitators to HIV treatment adherence among nine APHA living in Prince George, BC, who injected drugs. Being actively under the influence of drugs (being “high”) was identified as the main impediment to HIV treatment adherence by participants; having positive relationships with staff, receiving social support from a variety of sources, incorporating administration of methadone with HIV treatment, and being aware of the health impacts of non-adherence were identified as facilitators to HIV treatment adherence.¹⁰⁶
- Increases in HIV treatment uptake, adherence and viral load suppression increased from baseline to post-intervention according to an interim analysis of the results of a 12-week HIV self-management support program administered by an urban Aboriginal health centre in Vancouver’s Downtown Eastside. Program participation was also associated with decreased drug use, depression and anxiety.¹⁰⁷

HIV disease progression

- Two studies in Saskatoon examined factors associated with HIV disease progression among HIV-positive Aboriginal and non-Aboriginal patients:
 - A retrospective cohort study of 453 patients with HIV diagnosed between 2003 and 2011 who attended two clinics in Saskatoon assessed changes in CD4 count and associated factors over time. The majority of participants (71.9%) were of First Nations or Métis ethnicity. The rate of CD4 count decline was more rapid for Aboriginal versus non-Aboriginal patients ($p < 0.047$). Other factors that affected the rate of change of CD4 count were hepatitis C antibody status ($p = 0.031$) and a history of injection drug use ($p = 0.0003$).¹⁰⁸
 - Another study in Saskatoon, of 343 patients with HIV diagnosed between 2005 and 2010, examined time to and factors associated with progression to AIDS. It was found that after baseline CD4 counts had been controlled for, treatment, age at diagnosis and year of diagnosis, hepatitis C co-infection and injection drug use were significant predictors of progression to AIDS; however, ethnicity was not.¹⁰⁹ A different analysis of data from this cohort involving 218 patients who were HIV and HCV co-infected and who injected drugs found that Aboriginal patients were younger than non-Aboriginal patients (32 vs 41 years of age, $p = 0.0004$). Mean CD4 count at the time of HIV diagnosis and the time between diagnosis and progression to AIDS were not significantly different between Aboriginal and non-Aboriginal patients.¹¹⁰
- In Manitoba, a retrospective study examined viral load suppression in 801 HIV patients receiving antiretroviral therapy through the Manitoba HIV Program. One-third of participants (32%) were Aboriginal. Aboriginal patients had a lower rate of viral load suppression (62%) than African (82%), Caucasian (80%) and other patients (82%).¹¹¹
- Data on 400 participants in the LISA cohort found that Aboriginal ethnicity was not significantly associated with HIV viral load suppression or rebound, indicating that Aboriginal people receiving treatment for HIV responded similarly to other HIV patients.¹¹²

- A small case series describing five cases of neurological manifestations of primary HIV infection (such as meningitis) among self-reported Aboriginal patients in Manitoba and Saskatchewan found that the patients experienced a rapid decline in CD4 count, from a mean of 489/ μL at initial presentation to 214/ μL six months later. The authors suggest that HIV testing should be conducted for any patient presenting with an unexplained neurological condition and that those who test HIV positive should be considered for early HIV treatment to prevent disease progression.¹¹³

DETERMINANTS OF HEALTH

The *Population-Specific HIV/AIDS Status Report: Aboriginal Peoples* provides an in-depth review of Canadian research on the determinants of health as they affect Aboriginal people's vulnerability to, and resilience against, HIV. This section provides an update on specific determinants of health on which new research has since been published.

Biology and genetic endowment

Three studies suggest that there may be biological factors that increase Aboriginal people's vulnerability to HIV infection:

- The rate of CD4 decline among PHA is affected in part by a person's genetic makeup. Specifically, certain HLA-B genes are associated with more and fewer rapid declines in CD4 count. An analysis of 861 tests for these genes among HIV-positive patients in Manitoba found that the presence of a gene that is associated with rapid CD4 count decline was overrepresented among Aboriginal patients, and a gene associated with slower CD4 decline was underrepresented. The authors suggest that for Aboriginal patients in this cohort less time is needed before they reach a CD4 count that is below 200 cells/ μL .¹¹⁴
- Another study investigating one of the genes associated with slower CD4 count decline, which involved 1,467 genetic tests of PHA in Manitoba, also found that this gene was uncommon among Aboriginal patients in the cohort. The authors suggest that the lack of this gene could contribute to Aboriginal patients presenting for care with more advanced HIV disease.¹¹⁵
- It is easier for HIV to infect and replicate in activated immune cells. An international study that included 49 HIV-positive people living in Winnipeg who injected drugs investigated whether marginalized populations are more vulnerable to HIV infection as a result of higher rates of immune activation. In the study, Aboriginal ethnicity was associated with a higher state of immune activation, while other factors (drug use, sex, hepatitis C co-infection) were not.¹¹⁶

Early childhood development

The *Population-Specific HIV/AIDS Status Report: Aboriginal Peoples* notes that experiences of abuse in childhood are associated with HIV risk behaviours later in life.¹¹⁷ Analyses of data from the Cedar Project outline some of the connections between early childhood trauma and HIV vulnerability among Aboriginal youth:

- Cedar Project participants were significantly more likely to have experienced a recent sexual assault if they had been the victims of sexual abuse during childhood (AOR 3.25, 95% CI: 2.59, 3.91).¹¹⁸
- In another univariable analysis, both male and female Cedar Project participants who had experienced childhood sexual abuse were more likely to be HIV positive (females – unadjusted odds ratio [UOR] 1.15, 95% CI: 1.08, 1.22; males – UOR 1.10, 95% CI: 1.04, 1.17). Male participants who had experienced childhood sexual abuse were also more likely to have hepatitis C (UOR 1.78, 95% CI: 1.06, 3.00).¹¹⁹

Social environments

A key concern for PHA remains HIV-related stigma and discrimination, which affect other determinants of health, including access to health services and supports, employment and income, and personal health practices and coping skills. For APHA, HIV-related stigma and discrimination can be compounded by racism and related discrimination.

- Experiences of stigma, as measured by the Revised HIV-Related Stigma Scale, were analyzed for 1,000 participants in the Ontario HIV Treatment Network Cohort Study in Ontario. Overall, women had significantly higher stigma scores than men. Women of unspecified ethnicity had the highest stigma scores on the scale (59.0); Black and Aboriginal women had intermediate stigma scores (57.0 and 55.3 respectively); and White women had the lowest scores (52.0). Among male participants, Black men had the highest stigma scores (54.0), followed by Aboriginal and Asian/Latin-American men and men of unspecified ethnicity (51.0), and White men had the lowest (46.0) ($p < 0.0001$).¹²⁰
- For some APHA, the stigma and social isolation they experienced as members of marginalized populations prior to diagnosis could be exacerbated by their HIV-positive status, according to a qualitative study involving 72 participants.¹²¹

Physical environments

As discussed in the *Population-Specific HIV/AIDS Status Report: Aboriginal Peoples*, the physical environment is a key determinant of health that can affect the vulnerability of people to HIV infection. Aboriginal people are overrepresented in prison populations and among the homeless and unstably housed, both physical environments contributing to HIV vulnerability.¹²²

The 2007 National Inmate Infectious Diseases and Risk-Behaviours Survey involved 3,370 people incarcerated in federal prisons. Among participants who reported having ever been tested for HIV, self-reported rates of HIV infection were highest among Aboriginal women (11.7%), compared with 5.5% of non-Aboriginal women who reported being HIV positive. In contrast, a smaller proportion of Aboriginal men reported being HIV positive (2.5%) compared with 4.8% of non-Aboriginal men. Aboriginal women also reported the highest rate of hepatitis C infection (49.1%), compared with Aboriginal men (34.3%) and non-Aboriginal women and men (30.3% and 29.4% respectively).¹²³

- Analyses of Cedar Project data have identified a range of factors associated with unstable housing among young Aboriginal people. In various analyses, unstable housing was associated with recent injection drug use,^{124,125} smoking crack on a daily or more frequent basis,¹²⁶ recent incarceration¹²⁷ and ever having been removed from one's biological parents and put into foster care.¹²⁸ Among male Cedar Project participants, housing instability was associated with being gay or bisexual and with smoking crystal methamphetamine daily; among female participants, unstable housing was associated with having lived in foster care and with smoking crack daily.¹²⁹

The *Population-Specific HIV/AIDS Status Report: Aboriginal Peoples* notes that a misperception that HIV is an issue only in urban environments can contribute to a belief that rural and remote Aboriginal communities are protected from HIV risk because of their geographic location.

- A retrospective cohort study comparing the demographic characteristics of 185 HIV patients who attended a clinic in Saskatoon between 2005 and 2010 found that more Aboriginal people came to the clinic from rural than urban areas of the province ($p = 0.002$).¹³⁰

COMMENT/CONCLUSION

Aboriginal people continue to be disproportionately affected by HIV/AIDS in Canada. Injection drug use remains the main route of HIV infection, followed by heterosexual transmission. Unlike the general population of people living with HIV in Canada, about three-quarters of whom are male, women make up nearly half of all HIV infections among Aboriginal people. Data suggest that Aboriginal people are also infected with HIV at a younger age than those of other ethnicities. Aboriginal people make up a unique segment of Canada's concentrated HIV epidemic, highlighting the need for culturally specific and relevant interventions to prevent HIV infection and provide care, treatment and support to those living with HIV. There is a continuing need for research that identifies and evaluates interventions and programs that support prevention and promote resilience, particularly for specific populations that are particularly affected by and vulnerable to HIV infection, such as Aboriginal women and youth.

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