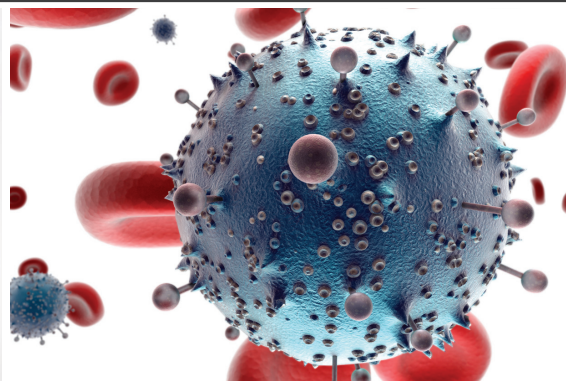


# SUMMARY: ESTIMATES OF HIV PREVALENCE AND INCIDENCE IN CANADA, 2011



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# SUMMARY: ESTIMATES OF HIV PREVALENCE AND INCIDENCE IN CANADA, 2011

SURVEILLANCE AND EPIDEMIOLOGY DIVISION | PROFESSIONAL GUIDELINES AND PUBLIC HEALTH PRACTICE DIVISION |  
CENTRE FOR COMMUNICABLE DISEASES AND INFECTION CONTROL | PUBLIC HEALTH AGENCY OF CANADA

## BACKGROUND

The Public Health Agency of Canada's (PHAC) Centre for Communicable Disease and Infection Control (CCDIC) produces national HIV and AIDS surveillance reports annually. However, HIV and AIDS surveillance data do not include individuals who are untested and undiagnosed. Therefore, modelling and additional sources of information are required to produce the estimates that describe the epidemic among all Canadians living with HIV, both diagnosed and undiagnosed.

Estimating the number of people living with HIV is a task undertaken around the world to monitor the HIV epidemic, to guide planning for disease prevention and to help assess the effectiveness of prevention programs. PHAC/CCDIC produces two types of estimates as part of its mandate to monitor HIV/AIDS trends in Canada: prevalence, the number of people living with HIV (including AIDS), and incidence, the number of new infections in a one-year period. These estimates guide the work done by PHAC and other federal departments under the Federal Initiative to Address HIV/AIDS in Canada.

PHAC/CCDIC has produced national HIV estimates for Canada every three years since 1996. Estimates published in this report replace all previous estimates that we have published concerning HIV prevalence and incidence in Canada because new data and methods have allowed an improved analysis of the epidemic and more reliable estimates.

## ESTIMATE OF THE NUMBER OF PEOPLE LIVING WITH HIV AT THE END OF 2011

HIV/AIDS remains an issue of concern for Canada. The number of people living with HIV (including AIDS) continues to rise, from an estimated 64,000 in 2008 to 71,300 in 2011 (an 11.4% increase) (Table 1, Figure 1). The increase in the number of people living with HIV is due to the fact that new infections continue at a not insignificant rate which is greater than HIV-related deaths, as new treatments have improved survival. The estimated prevalence rate in Canada in 2011 was 208.0 per 100,000 population (range: 171.0–245.1 per 100,000 population). Nearly half (46.7%) of those living with HIV were men who have sex with men (MSM). Those who acquired their infection through heterosexual contact and were not from an HIV-endemic region comprised the next largest group (17.6%), followed by those who acquired their infection through injection drug use (IDU) (16.9%) and those exposed through heterosexual contact and were also from an HIV-endemic region (14.9%).

An estimated 6,380 (5,160 to 7,600) Aboriginal people were living with HIV (including AIDS) in Canada at the end of 2011 (8.9% of all prevalent HIV infections) which represents an increase of 17.3% from the 2008 estimate of 5,440 (4,380 to 6,500; 8.5% of all prevalent infections in 2008). The estimated prevalence rate among Aboriginal people in Canada in 2011 was 544.0 per 100,000 population (range: 440.0–648.0 per 100,000 population).

At the end of 2011, there were an estimated 16,600 (13,200–20,000) women living with HIV (including AIDS) in Canada, accounting for 23.3% of the national total. This represents a 12.6% increase compared to the estimated 14,740 (11,980–17,500) for 2008, which accounted for 23.0% of the national total that year.

## ESTIMATE OF THE NUMBER OF NEW HIV INFECTIONS IN 2011

Although estimates of the number of new HIV infections are uncertain, the number of new infections in 2011 was estimated at 3,175 (range between 2,250 and 4,100) which was about the same as or slightly fewer than the estimate in 2008 (3,335; range of 2,370 to 4,300) (Table 2, Figure 2). In terms of exposure category, MSM continued to comprise the greatest proportion (46.6%) of new infections in 2011, which was slightly higher than the proportion they comprised in 2008 (44.1%). In 2011, the proportion of new infections among IDU was lower than in 2008 (13.7% compared to 16.9%). The proportion of new infections attributed to the heterosexual/non-endemic and heterosexual/endemic exposure categories were about the same in 2011 compared to 2008 (20.3% vs 20.1% and 16.9% vs 16.2%, respectively) (Figure 3).

People from countries where HIV is endemic continue to be over-represented in Canada's HIV epidemic. An estimated 535 new infections were attributed to the heterosexual/endemic exposure category in 2011 (range of 370 to 700). This category accounted for 16.9% of new infections in Canada in 2011 while approximately 2.2% of the Canadian population were born in an HIV-endemic country according to the 2006 Census. Therefore, the estimated new infection rate among people from countries where HIV is endemic was 9.0 times higher than among other Canadians.

Aboriginal people also continue to be over-represented in the HIV epidemic in Canada. An estimated 390 (280 to 500) new HIV infections occurred in Aboriginal people in 2011 (12.2% of all new infections), slightly fewer than the 420 (290 to 550) new infections in 2008 (12.6% of all new infections in 2008). However, the proportion for 2011 is still much higher than the proportion of Aboriginal people in the general Canadian population, which was 3.8% according to the 2006 Census. The overall new infection rate among Aboriginal people was 3.5 times

higher than among the non-Aboriginal population in 2011. Among Aboriginal people, the exposure category distribution for new HIV infections in 2011 was 58.1% IDU, 30.2% heterosexual, 8.5% MSM and 3.1% MSM-IDU. This compares to the following distributions for this population in 2008: 63.4% IDU, 28.3% heterosexual, 6.0% MSM and 2.4% MSM-IDU.

There were an estimated 755 (510 to 1,000) new HIV infections among women in Canada in 2011, while the corresponding figure for 2008 was 865 (630 to 1,100). The proportion of all new infections among women was also slightly lower in 2011 compared to 2008 (23.8% versus 25.9%). With respect to exposure category, a slightly lower proportion of new infections among women was attributed to IDU in 2011 compared to 2008 (23.4% versus 28.3%), whereas a slightly higher proportion was attributed to the heterosexual exposure category (endemic and non-endemic combined) (76.6% in 2011 compared to 71.7% in 2008).

## UNDIAGNOSED HIV INFECTIONS IN CANADA

A total of 74,174 positive HIV tests have been reported to CCDIC since testing began in November 1985 through December 31, 2011. After adjusting for underreporting and duplicates, we estimated that there were a cumulative total of 77,620 persons diagnosed with HIV in Canada by the end of 2011. Of these, we further estimated that approximately 24,300 individuals have died. Thus, there were an estimated 53,320 (77,620 minus 24,300) Canadians living with HIV infection in 2011 who have been diagnosed with HIV (i.e. tested HIV-positive) and were therefore aware of their HIV status. Since there was an estimated total of 71,300 persons living with HIV in Canada in 2011, the remaining 17,980 (range of 14,500–21,500) persons, or 25% of prevalent cases, were unaware of their HIV infection (compared with an estimated 16,900 in 2008). This proportion is slightly lower than the estimate of 26% who were unaware of their HIV status in 2008.

The estimated proportion of people living with HIV who were unaware of their HIV status varied by exposure category: approximately 20% and 24% of people living with HIV infection in the MSM and IDU exposure

categories, respectively, were unaware of their HIV infection, whereas there was a much higher proportion of people who were unaware of their HIV infection (34%) in the heterosexual exposure category (endemic and non-endemic combined).

## CONCLUSION

The 2011 estimates provide new insight into the evolving HIV/AIDS trends in Canada, and as such will be of great interest to the scientific community, the media and the general public. The estimates comprise a key part of the evidence used to monitor the epidemic in Canada and to guide prevention and care programs.

Since new HIV treatments have reduced HIV mortality and new infections continue at a rate greater than the number of HIV-related deaths, the overall number of Canadians living with HIV infection will likely continue to increase in the years to come. This will mean increased care requirements.

HIV incidence in Canada in 2011 is relatively stable. The estimated overall number of new HIV infections in Canada in 2011 was in the range of 2,250 to 4,100, which was slightly lower than in 2008. The main difference from 2008 was a decrease in the estimated number of new infections attributed to IDU, while there were similar numbers of new infections occurring in the MSM and heterosexual exposure categories.

Aboriginal people and people from countries where HIV is endemic continue to be over-represented in Canada's HIV epidemic, highlighting the need for specific measures to address the unique aspects of certain populations and communities. There were about the same proportions of women and Aboriginal people living with HIV/AIDS as of 2011 compared to 2008; however, there were estimated to be slightly fewer new infections occurring among both women and Aboriginal people in 2011 compared to 2008.

At the end of 2011, an estimated 25% of the 71,300 individuals living with HIV in Canada were unaware of their infection which is less than the previous estimate of 26%. However, there were 1,080 more persons with undiagnosed HIV infection in 2011 compared to 2008. This group is hidden to the health care and disease monitoring systems, and thus these people cannot take advantage of appropriate care and treatment services, nor can they receive counselling to prevent further spread of HIV, until they are tested and diagnosed.



**TABLE 1.** Estimated number of prevalent HIV infections and associated ranges of uncertainty in Canada at the end of 2011 and 2008 by exposure category, sex and ethnicity (point estimates and ranges are rounded)

CLASSIFICATION	2011			2008		
	POINT	RANGE	PERCENTAGE	POINT	RANGE	PERCENTAGE
<b>Exposure category</b>						
MSM	33,330	28,160–38,500	46.7%	30,000	25,000–35,000	46.9%
MSM-IDU	2,160	1,520–2,800	3.0%	2,030	1,460–2,600	3.2%
IDU	12,040	9,580–14,500	16.9%	11,150	9,000–13,300	17.4%
Heterosexual/non-endemic	12,530	10,260–14,800	17.6%	10,900	8,900–12,900	17.0%
Heterosexual/endemic	10,640	8,780–12,500	14.9%	9,320	7,640–11,000	14.6%
Others	600	400–800	0.8%	600	400–800	0.9%
<b>Sex</b>						
Female	16,600	13,200–20,000	23.3%	14,740	11,980–17,500	23.0%
Male	54,700	44,400–65,000	76.7%	49,260	40,520–58,000	77.0%
<b>Ethnicity</b>						
Aboriginal	6,380	5,160–7,600	8.9%	5,440	4,380–6,500	8.5%
Non-Aboriginal	64,920	52,840–77,000	91.1%	58,560	47,120–70,000	91.5%
<b>Total</b>	<b>71,300</b>	<b>58,600–84,000</b>	<b>100%</b>	<b>64,000</b>	<b>53,000–75,000</b>	<b>100%</b>

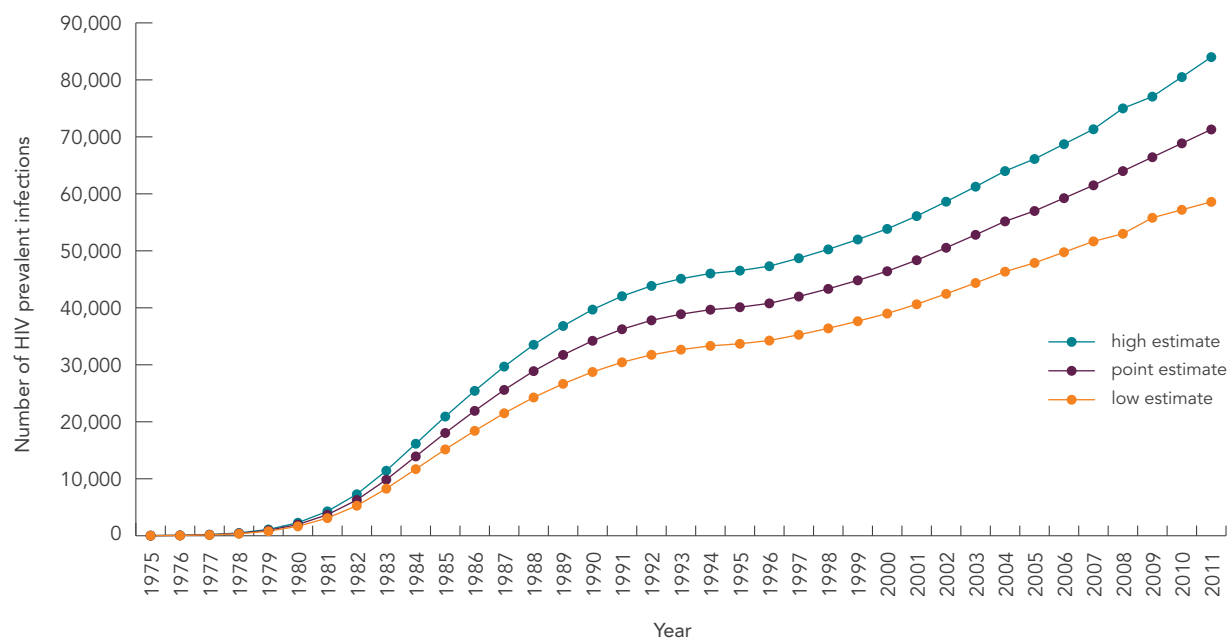
MSM: men who have sex with men; MSM-IDU: men who have sex with men and inject drugs; IDU: people who inject drugs; Heterosexual/non-endemic: heterosexual contact with a person who is either HIV-infected or at risk for HIV or heterosexual contact as the only identified risk; Heterosexual/endemic: origin in a country where HIV is endemic; Other: recipients of blood transfusion or clotting factor, perinatal and occupational transmission

**TABLE 2.** Estimated number of incident HIV infections and associated ranges of uncertainty in Canada in 2011 and 2008 by exposure category, sex and ethnicity (ranges are rounded)

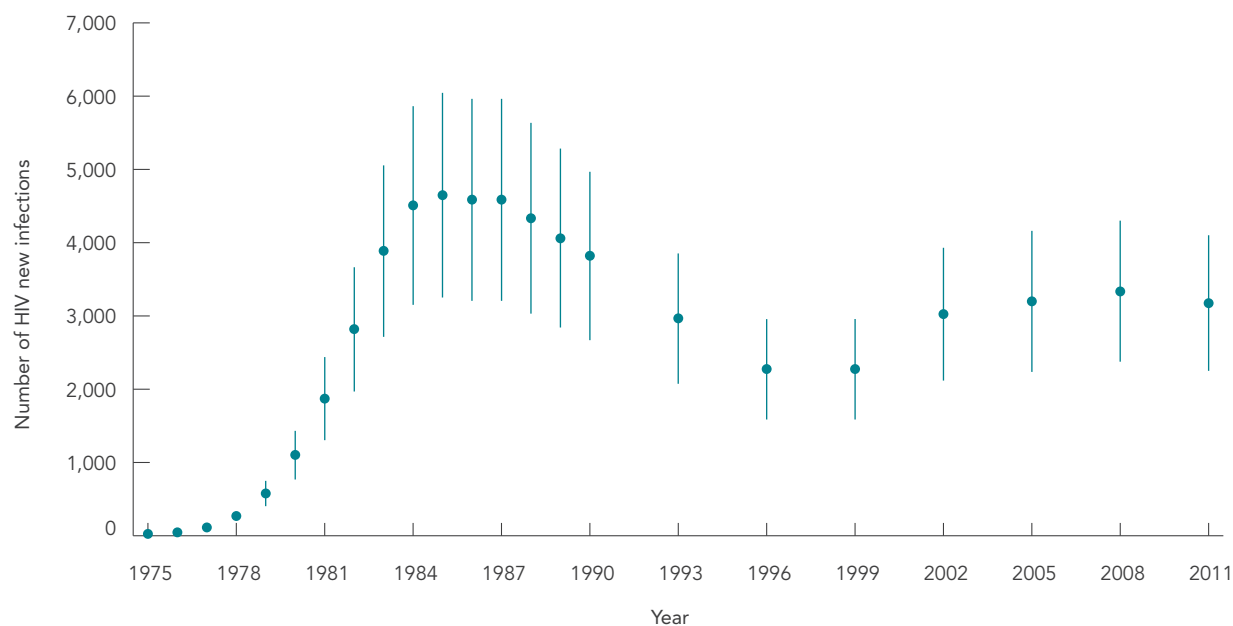
CLASSIFICATION	2011			2008		
	POINT	RANGE	PERCENTAGE	POINT	RANGE	PERCENTAGE
<b>Exposure category</b>						
MSM	1,480	1,060–1,900	46.6%	1,470	1,040–1,900	44.1%
MSM-IDU	80	50–110	2.5%	90	50–130	2.7%
IDU	435	300–570	13.7%	565	400–730	16.9%
Heterosexual/non-endemic	645	450–840	20.3%	670	470–870	20.1%
Heterosexual/endemic	535	370–700	16.9%	540	380–700	16.2%
Others	<20			<20		
<b>Sex</b>						
Female	755	510–1,000	23.8%	865	630–1,100	25.9%
Male	2,420	1,740–3,100	76.2%	2,470	1,740–3,200	74.1%
<b>Ethnicity</b>						
Aboriginal	390	280–500	12.2%	420	290–550	12.6%
Non-Aboriginal	2,785	1,970–3,600	87.8%	2,915	2,030–3,800	87.4%
<b>Total</b>	<b>3,175</b>	<b>2,250–4,100</b>	<b>100%</b>	<b>3,335</b>	<b>2,370–4,300</b>	<b>100%</b>

See footnote to Table 1

**FIGURE 1.** Estimated number of prevalent HIV infections in Canada by year.



**FIGURE 2.** Estimated number of incident HIV infections in Canada for selected years (bars indicate range of uncertainty).





**FIGURE 3.** Estimated number of incident HIV infections per year over time period in Canada by exposure category (range of uncertainty omitted).

