



## HIV/AIDS Among Youth in Canada

### At a Glance

- Since reporting began, youth between the ages of 15 and 29 years have accounted for 26.5% of all positive HIV test reports.
- Behavioural data on young Canadians demonstrate risk of HIV transmission in terms of risky sexual behaviours and knowledge gaps.
- Data from targeted studies show that street-involved youth, youth who inject drugs and young men who have sex with men are particularly vulnerable to HIV infection.
- A wide range of prevention activities need to be implemented to help minimize the risk of HIV transmission among youth.

### Introduction

In general, youth (defined here as between 15 and 29 years of age) are vulnerable to HIV infection as a result of many factors, including risky sexual behaviour, substance use (including injection drug use) and lack of information or misinformation regarding HIV transmission. To adequately profile HIV and AIDS in the youth population, it is necessary to supplement current Canadian HIV/AIDS surveillance data with other relevant data sources, such as health surveys, incidence/prevalence studies and data on sexually transmitted infections (STIs). This chapter provides an overview of the most recent HIV/AIDS surveillance data (both routine and enhanced) on Canadian youth as well as a summary of recent research on factors associated with HIV risk behaviour and HIV transmission.

### Routine Surveillance

The Public Health Agency of Canada's Centre for Communicable Diseases and Infection Control (CCDIC) collects surveillance data on positive HIV test reports and reported AIDS cases in Canada. Epidemiologic information includes (but is not limited to) age, sex, risks associated with the transmission of HIV and self-reported ethnicity. For AIDS cases, death data are also collected.

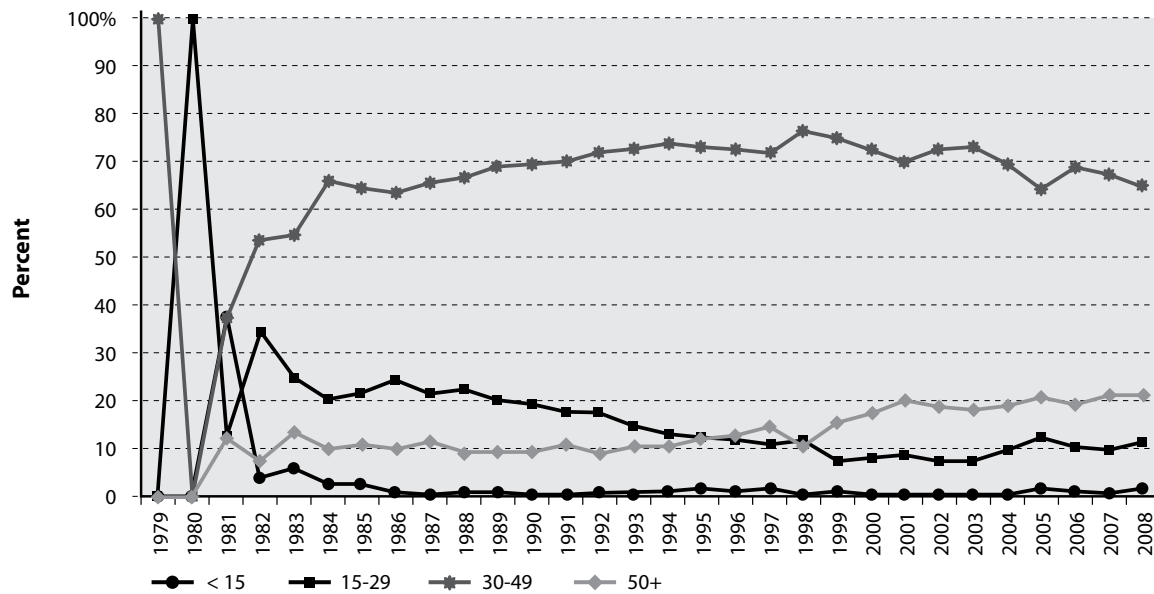
Health care providers and/or laboratories forward this information to provincial and territorial public health officials, who, in turn, voluntarily submit positive HIV test reports and AIDS diagnoses to the Centre, where the data are synthesized and analyzed at the national level. There are several limitations regarding surveillance data, including reporting delays, underreporting, missing information and undiagnosed infections. (Please refer to Chapter 3 for a full description of HIV/AIDS surveillance in Canada.)

### AIDS surveillance data

The total number of AIDS cases reported to the Public Health Agency of Canada (PHAC) from 1979 to December 31, 2008, was 21,300.<sup>1</sup>

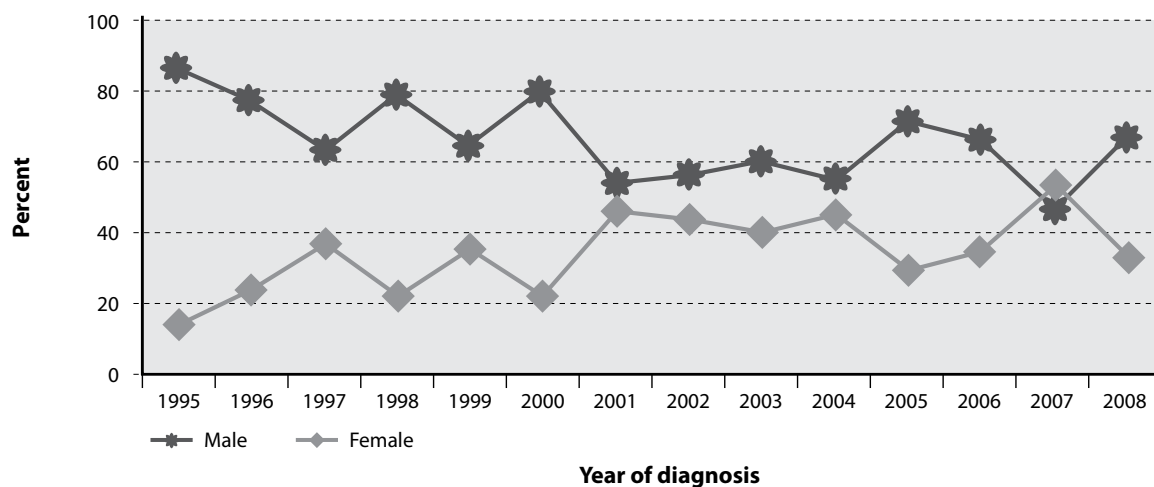
### Trends among youth aged 15 to 29

- The proportion of AIDS cases attributed to the 15-29 year age group decreased steadily from 34.6% in 1982 to a low of 7.5% in 1999 and since then increased slightly to 11.8% of all cases in 2008 (Figure 1).

**Figure 1. Proportion of diagnosed AIDS cases by age group, 1979-2008****Sex**

- From 1983 to 1995, males accounted for over 85% of annual AIDS cases among youth aged 15-29. This gap has been shrinking steadily, and in 2007 the proportion of AIDS cases among female youth exceeded the proportion among male youth for the first

time since reporting began in 1979 (Figure 2). In 2008, among youth, males accounted for 66.7% of AIDS cases and females accounted for 33.3% of AIDS cases reported to PHAC.

**Figure 2. Proportion of diagnosed AIDS cases among youth aged 15-19, by sex, 1995-2008****Exposure category**

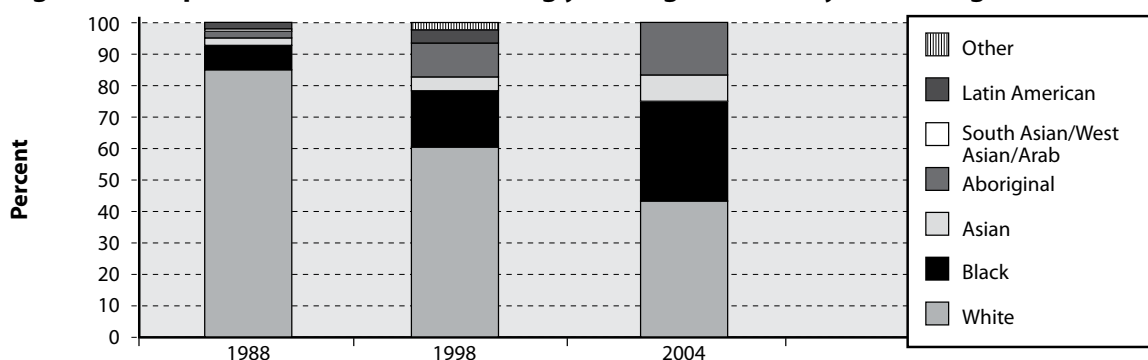
- Since 2000, among youth the proportion of AIDS cases attributed to the exposure category men who have sex with men (MSM) has increased from 26.3% to 42.9%.
- Similarly, since 2000, the proportion of AIDS cases attributed to people who inject drugs (IDU) has increased from 31.6% to 42.9%.
- Meanwhile, since 2000, among youth the proportion of AIDS cases attributed to heterosexual contact has decreased from 34.2% to 14.3%.

### Ethnicity/race

As shown in Figure 3, the proportion of AIDS cases among Black and Aboriginal youth increased between 1988 and 2004 by 24.5 percentage points and 15.9 percentage points, respectively. The proportion of AIDS cases among

people who identified themselves as White has decreased steadily, and cases among other ethnicities/races have remained relatively constant.

**Figure 3. Proportion of AIDS cases among youth aged 15-29, by ethnic origin**



Note: Because of changes in the reporting of AIDS cases in Ontario, ethnicity/race was not available for cases reported after the second half of 2005.

**Table 1. Cumulative AIDS cases among youth (ages 15-29) from 1979 to December 31, 2008**

	15-19 years old, %	20-29 years old, %
<b>Sex</b>	<b>n = 74</b>	<b>n = 3,287</b>
% female	25.7	14.9
<b>Exposure category</b>	<b>n = 65</b>	<b>n = 3,087</b>
MSM	15.4	62.0
MSM/IDU	6.2	7.5
IDU	12.3	9.5
Heterosexual contact	10.8	17.3
Blood/blood products	53.8	3.6
Perinatal	0.0	0.0
Other*	1.5	0.0
<b>Ethnic status</b>	<b>n = 51</b>	<b>n = 2,475</b>
Aboriginal	2.0	5.3
South Asian/West Asian/Arab	2.0	0.6
Asian	0.0	1.8
Black	7.8	11.9
Latin American	0.0	1.9
White	88.2	77.9
Other	0.0	0.6

\*Other includes occupational exposure, perinatal and other.

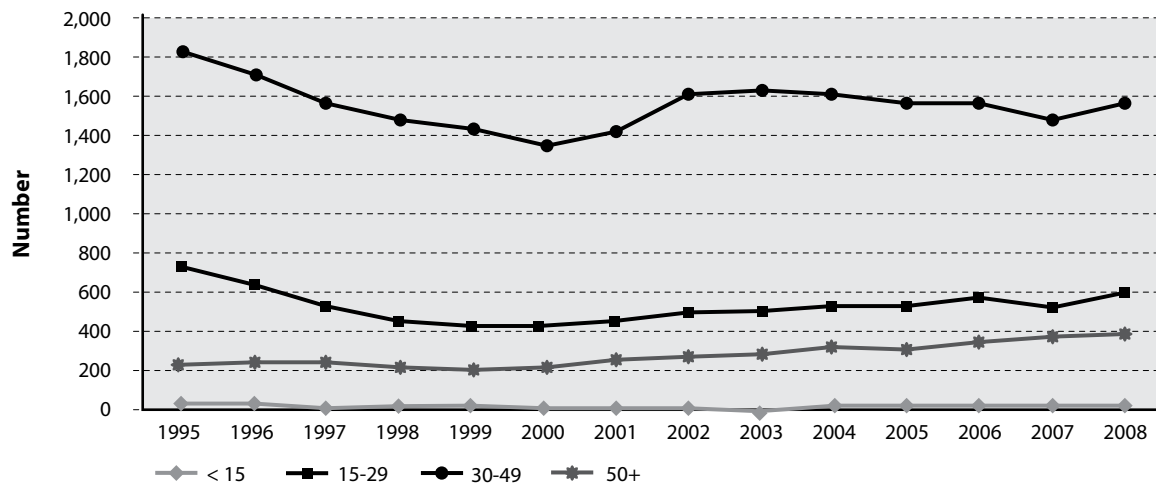
## HIV surveillance data

Since HIV reporting began in 1985 to December 31, 2008, there have been a cumulative number of 67,442 positive HIV test reports in Canada.

## Trends among youth aged 15 to 29

- In 1985, the proportion of positive HIV test reports attributed to the 15-29 year age group was 39.5%, after which the proportion among youth decreased steadily to a low of 20.8% in 1999. Between 1998 and 2008, youth accounted for approximately 21%-23% of annual HIV test reports (Figure 4).

**Figure 4. Number of positive HIV test reports, by age group, 1995-2008**

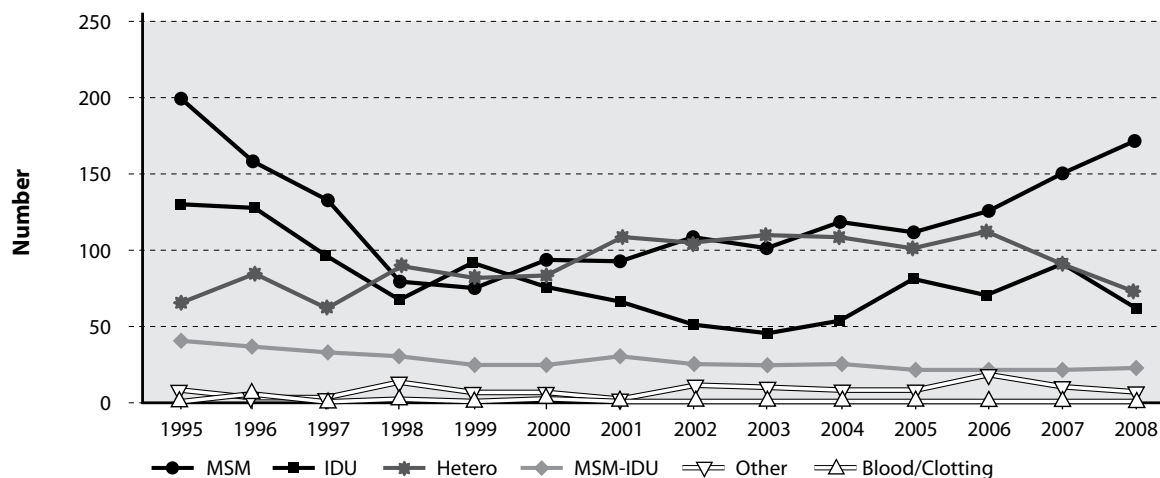


## Exposure category

- In the early years of the epidemic (1985-1990), over 70% of annual positive HIV test reports among youth were attributed to the MSM exposure category, with smaller proportions attributed to the IDU and heterosexual contact exposure categories. By 1999, the proportion of positive HIV test reports attributed to these three exposure categories was nearly equal (IDU 35.1%, MSM 28.7%, heterosexual 30.9%).

- In 2008, the highest proportion of positive HIV tests reports among youth was attributed to the MSM exposure category, at 53.9% ( $n = 172$ ), followed by heterosexual contact at 22.9% ( $n = 73$ ) and IDU at 19.4% ( $n = 62$ ) (Figure 5).

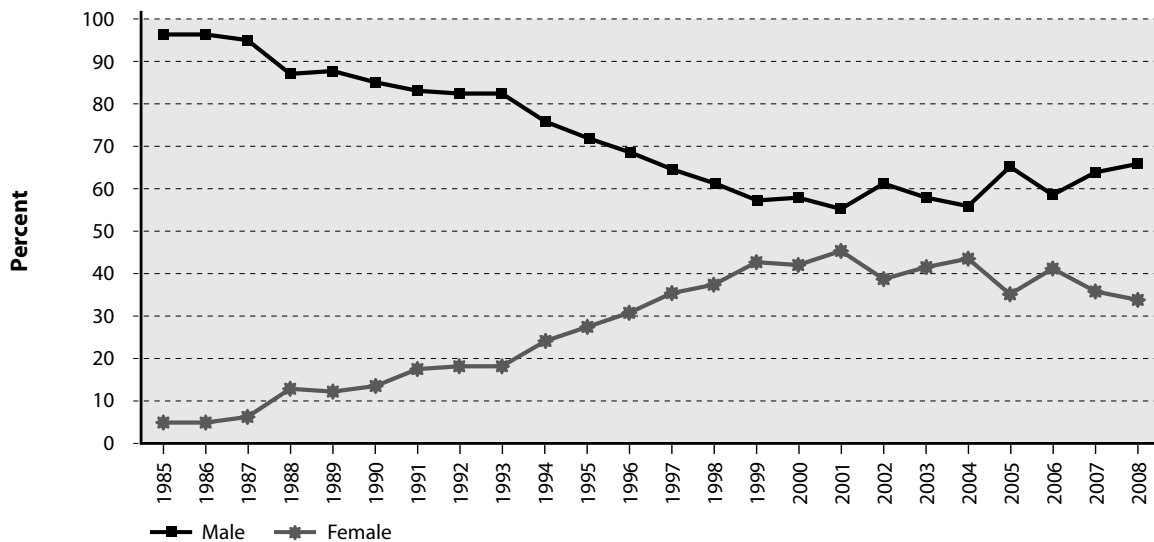
**Figure 5. Number of positive HIV test reports among youth aged 15-29, by exposure category, 1995-2008**



## Sex

- When reporting began in 1985, the male:female ratio of positive HIV test reports among youth was nearly 20:1, 95.8% of positive HIV test reports occurring among males (Figure 6). By 2001, the proportions of positive HIV test reports among males and females in this age group were nearly equal (54.8% and 45.2% respectively). Since then, the proportion among males has ranged from 57% to 67%.
- In 2008, the proportion of positive HIV test reports among all females was highest in the 15-29 year age group and represented 33.5% of all positive HIV test reports among youth. The proportion among females decreased for all successive age groups: 30.9% in the 30-39 year age group, 21.5% in the 40-49 year age group and 15.1% in the 50 years and over age group.
- In 2008 the only age group in which there was a higher number of positive HIV test reports among females than males was in the 15-19 year age group; the male-to-female ratio was 0.7:1.

**Figure 6. Proportion of positive HIV test reports among youth aged 15-29, by sex, 1985-2008**



## Race/ethnicity

There are several limitations associated with reported race/ethnicity status, and thus caution is recommended in interpreting these data. Information on race/ethnicity is not available for all provinces and territories, most notably Ontario and Quebec. As a result of the variation in reporting, the race/ethnicity status reflected in positive HIV test reports should not be viewed as representative of Canada. Other caveats are the limited choices for identification of race/ethnicity on case report forms, possible misclassification and underreporting.

- Since race/ethnicity reporting for HIV began in 1998 the majority of annual positive HIV reports have been among people who identified themselves as White, except in 2005 and 2008 when this group was surpassed by people identified as Aboriginal.
- The proportion of positive HIV test reports among youth identified as White has shown a generally decreasing trend, from 51.0% in 1998 to 33.5% in 2008.
- The proportion of positive HIV test reports among youth identified as Aboriginal has shown a generally increasing trend, from 28.8% of positive HIV test reports in 1998 to 40.9% in 2008.
- In 2008, the majority of positive HIV test reports were among people who identified themselves as Aboriginal (40.9%), followed by White (33.5%), then Latin American and Black (both at 7.9%).

**Table 2. HIV-positive test reports among youth (ages 15-29) from 1985 through December 31, 2008**

	15-19 years old, %	20-29 years old, %
<b>Sex</b>	<b>n = 957</b>	<b>n = 15,624</b>
% female	44.7	22.7
<b>Exposure category</b>	<b>n = 603</b>	<b>n = 9,020</b>
MSM	35.0	59.5
MSM/IDU	2.7	3.2
IDU	24.9	16.3
Heterosexual contact	25.5	16.9
Blood/blood products	10.1	2.0
Other*	1.8	2.0
<b>Ethnic status (from 1998-2008)</b>	<b>n = 209</b>	<b>n = 1,698</b>
Aboriginal	48.3	31.0
South Asian/West Asian/Arab	0.5	2.7
Asian	1.4	4.3
Black	6.7	12.7
Latin American	1.9	3.8
White	40.2	44.9
Other	1.0	0.5

\*Other includes occupational exposure, perinatal and other.

## Enhanced Surveillance/Population-Specific Surveillance Data

### Overall description of “Tracks”

As part of the *Federal Initiative to Address HIV/AIDS in Canada*, PHAC monitors trends in HIV prevalence and associated risk behaviors in key populations identified in Canada through second-generation HIV surveillance systems. 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 behaviour practices and testing patterns for HIV, hepatitis C and other sexually transmitted and blood borne infections (STBBIs) in each respective population. For a more detailed description of the Track systems, please refer to Chapter 3.

### I-Track

I-Track is the national, second-generation HIV surveillance system of people who inject drugs (IDU). This system builds on previous research studies conducted in Canada and was developed in response to the need for a consistent approach in the collection of risk behaviour information across Canada. People who have injected drugs in the previous 6 months and who meet the age limit of consent for the given province/territory (age varies by site according to provincial/territorial ethical considerations) are eligible to participate in I-Track.

Summary of descriptive data from I-Track Phase 2 (2005-2008):<sup>2</sup>

- The proportion of youth (participants less than 29 years old) who reported borrowing used needles in the previous 6 months was 26%, compared with 21% among participants aged 30-49 and 17% among participants aged 50 and older.
- Youth I-Track participants reported the lowest rate of consistent condom use during anal (42%) and vaginal (55%) sex.
- Over 90% ( $n = 2,972$ ) of I-Track participants reported ever having been tested for HIV; of youth participants ( $n = 690$ ), 88.7% had ever been tested for HIV. Among youth who reported that their most recent HIV test was negative, 69% reported having been tested for HIV in the previous 2 years.
- Among participants who provided a biological sample of sufficient quantity for testing and who completed a questionnaire, the prevalence of HIV among youth was 6%, compared with 16% and 15% among participants aged 30-49 and 50 and older respectively. Of youth participants whose biological sample tested positive for HIV, 33% were unaware of their HIV positive status, compared with 19% of unaware respondents over 30 years of age.

## M-Track

M-Track is the national, second-generation HIV surveillance system built on earlier local efforts and focused on gay, bisexual and other MSM in Canada. Men who have ever had sex with another man and who meet the age limit of consent for the given province/territory (age varies by site according to provincial/territorial ethical considerations) are eligible to participate in M-Track.

Summary of descriptive data from M-Track Phase 1 (2005-2007):<sup>3</sup>

- Across five sentinel sites 4,838 men participated in Phase 1 of M-Track, of whom 26% were 29 years of age or less.
- The majority of all men who participated in M-Track reported multiple male sex partners (i.e. more than one male partner), including oral and/or anal sex, in the 6 months preceding survey administration (64%). Similarly, among youth MSM who participated in M-Track, 66% reported multiple male partners.
- Among youth MSM who reported having anal sex with a casual male partner\* in the previous 6 months, nearly half (48%) reported consistent (“Always”) condom use during anal sex (insertive and/or receptive) compared with 45% among M-Track participants over the age of 30.
- Most men (86%) who participated in M-Track reported ever having been tested for HIV; among youth MSM this proportion was 75%. Further, among youth MSM who reported that their most recent HIV test was negative, 80% had been tested for HIV in the 2 years preceding survey participation.
- Among youth participants who provided a biological sample of sufficient quantity for testing and who completed a questionnaire, the prevalence of HIV was 4%. The overall prevalence of HIV in M-Track Phase 1 was 15%.
- Of all M-Track participants whose biological sample tested positive for HIV, 19% were unaware of their HIV-positive status.<sup>†</sup> Of youth participants, the proportion unaware of their HIV-positive status was 34%.

\* A casual partner is a man with whom the respondent had sex only once (a “one night stand” or an encounter in a bathhouse, for example). Casual partners do not include men who received from or gave to the respondent any money, drugs or other goods or services in exchange for sex.

<sup>†</sup> Excludes respondents who did not provide answers to questions regarding HIV testing history.

## Summary of Recent Research

In addition to the data gathered through routine and enhanced HIV surveillance, several studies have explored and documented HIV and associated risk factors among youth in Canada. Recent research among youth has provided insight and documented trends in the areas of HIV/AIDS knowledge and sexual health, patterns in condom use and sexual partners, as well as testing behaviors and other STIs.

### Knowledge of HIV/AIDS and sexual health

Research shows that knowledge gaps exist among youth regarding what constitutes risky sexual behaviour.

#### For example:

- Between December 2006 and August 2007, the Toronto Teen Survey<sup>4</sup> interviewed 1,216 Toronto teens aged 13 to 18 and found that only 62% of youth received sexual health education in school. While almost 92% of youth surveyed had received some form of sexual health education, 8% had had none at all. The survey found that 18% of youth new to Canada reported never having received any sex education. In terms of where youth obtain their sexual health information, 31% of females and 23% of males reported accessing sex information on line. When asked about HIV/AIDS, 78% reported learning about HIV/AIDS in school, but HIV/AIDS remained one of the top three areas they would have liked to learn more about. Youth reported that their questions related to sex were most frequently answered by friends (53%), professionals (43%), mass media (33%), parents (28%), siblings, info lines and semi-professionals.
- The 2006 HIV/AIDS Attitudinal Tracking Survey of 303 Canadian youth aged 16-24<sup>5</sup> found that in response to the question: “How is HIV passed on to another person?”, 69% correctly identified intercourse between men, 78% correctly identified unsafe intercourse between a man and a woman, and 30% were aware that sharing needles was a factor associated with the transmission of HIV.
- Based on survey data from 64 countries<sup>‡</sup>, the 2008 UNAIDS *Report on the Global AIDS Epidemic* reported that 40% of males and 38% of females aged 15-24 had accurate and comprehensive knowledge about HIV and about how to avoid transmission.<sup>6</sup> This percentage is based on the number of young

<sup>‡</sup> The 64 countries are not specified. These figures come from the UNAIDS 2008 *Report on the Global AIDS epidemic*; please refer to this report for further information.

men and women aged 15-24 who both correctly identified ways of preventing the sexual transmission of HIV and who rejected major misconceptions about HIV transmission. This is an improvement over 2005 knowledge levels but is still well below the global goal of ensuring that 95% of young people have comprehensive HIV knowledge by 2010.

- A 2006 survey of 112 Canadian university students aged 17 to 28 who were participating in the Canadian International Model United Nations Conference (CAN-IMUN) in Ottawa found that one-third of the respondents (32.7%) were not concerned about HIV/AIDS when engaging in sexual activity.<sup>7</sup> Also of note was that almost one-third (31.4%) incorrectly identified the pill as protecting against HIV exposure. Moreover, other strategies incorrectly identified as being able to prevent HIV infection/transmission included pre-ejaculation withdrawal (16.2%), use of spermicides or contraceptive jellies (9.5%) and use of a diaphragm (6.7%).

### Inconsistent condom use and sexual partners

Recent research in Canada has also documented low levels of, or inconsistent, condom use among youth, as well as high levels of casual sex and/or multiple sex partners. Certain subgroups of youth (e.g. street-involved or homeless youth) experience greater risk of exposure to HIV.

#### For example:

- *Sexual Health in Toronto 2007*<sup>8</sup> found that individuals who became sexually active at a younger age were more likely to have multiple partners relative to those who had their first experience at an older age. Although 78% of youth reported condoms as their usual method of birth control, many do not use condoms for every act of intercourse, leaving them vulnerable to pregnancy and STIs.
- In the 2006 HIV/AIDS Attitudinal Tracking Survey,<sup>5</sup> Canadian youth (aged 16 to 24) rated their personal risk of contracting HIV. Most participants (77%) perceived themselves to be at low risk of contracting HIV and 20% at moderate risk. Perceived risk of contracting HIV was higher among youth compared with respondents in other age groups. This is not altogether surprising given that youth in this survey reported the highest number of casual and multiple sex partners. While youth in this study reported the second-lowest rates of being sexually active in the previous 12 months (second only to those aged 65+), they reported the highest rates of having more than one partner. When asked if they had used a condom the last time they had sex, 50% reported that they had not.
- Among participants in the 2005-2006 At Risk Youth Study ( $n = 529$ ), sexual activity in the previous 6 months was reported by 78.4%; 47.8% reported multiple sex partners and 24.0% reported consistent condom use in the previous 6 months.<sup>9</sup> Housing status was a strong and independent correlate of both greater numbers of sex partners and inconsistent condom use; living in a shelter or hostel was positively associated with an elevated number of recent sex partners.
- A 2009 study of condom use among Canadian youth ( $n = 2,145$ ) found that youth perceived significant peer pressure that might influence their use of condoms.<sup>10</sup> Young women may not push for condom use if they feel that doing so might convey sexual knowledge and/or significant sexual experience. Young men (aged 15 to 23) were less likely than young women to discuss sex openly for fear of appearing “foolish, stupid or unmanly”. It has been shown that communication with sexual partners about condom use was among the strongest predictors of condom use.<sup>11</sup>

### Testing behaviors/access to care

Research in Canada reveals that youth are not consistently seeking information or services from health care professionals.

#### For example:

- The Toronto Teen Survey found that 83% of youth surveyed reported that they had never visited a health care provider for any sexual-health-related reason.<sup>4</sup>
- In a 2006 survey of 112 Canadian university students aged 17 to 28, 46% of the respondents indicated they had never seen a health care professional for treatment or information about sexual health.<sup>7</sup>
- A 2007 Vancouver and Prince George study involving 543 Aboriginal youth (aged 14-30) who used drugs found that 74% of participants reported having had an HIV test during their lifetime, of whom 46% were tested regularly (i.e. at least once per year).<sup>12</sup> Overall, 8% of participants were HIV positive.
- In a 2004 community-based mixed methods study, a sample of 413 Aboriginal youth (mean age 21.5) from nine Canadian cities completed a survey.<sup>13</sup> The data were collected through 11 community-based organizations, including urban Aboriginal AIDS service organizations and health and friendship centres. The testing rates may not be representative of Aboriginal youth, since some of the recruitment was done in settings that provided HIV testing services. Of the youth surveyed, 50.8% of participants had been tested for HIV ( $n = 210$ ) and, of these, 12.4% were HIV positive. The most common reasons for testing were having sex without a condom (43.6%) and being or thinking



that they were pregnant (35.4%). The most commonly reported reasons for not getting tested were self-perception of being at low risk of HIV (45.3%) and of not having had sex with an infected person (34.5%). Youth who had been tested for HIV were more likely than those who had not to report a previous STI, a history of injecting drug use or having had anal sex with any partner. The largest percentage of youth (34.1%) had gone to a physician for their most recent HIV test, another 17.1% had gone to a hospital, 14.6% had gone to a community or public health centre and 13.7% had attended a walk-in clinic.

### Youth and sexually transmitted infections other than HIV

STIs continue to be a significant and increasing public health concern in Canada. Reported rates of chlamydia, gonorrhea and syphilis have been rising since 1997. As HIV and other sexually transmitted infections have common routes of transmission (e.g. blood, semen and other bodily fluids), risk behaviours (e.g. unsafe sexual and drug use practices) and risk factors (e.g. poverty, homelessness and overcrowding), increases in rates of STIs such as chlamydia, gonorrhoea and syphilis are indicators of potential HIV transmission or infection.

In PHAC's 2007 Report on Sexually Transmitted Infections in Canada, the reported rate of chlamydia among females was almost twice as high as that of their male counterparts, and 82.8% of reports were among those under the age of 30.<sup>14</sup> The overall reported rate of gonorrhoea increased by 124.2% between 1998 and 2007. The majority of reported cases occurred in those under 30 years of age. Females between the ages of 15 and 24 and males between the ages of 20 and 24 accounted for the highest reported rates of gonorrhoea. The overall reported rate of infectious syphilis increased by 516.7% between 1998 and 2007. Reported rates of infection were highest among males aged 30 to 39; among females, highest rates were reported among those 25 to 29 years old. During this period, outbreaks were reported in Vancouver, Edmonton, Calgary, Winnipeg, Toronto, Ottawa, Montreal and the Yukon among MSM and in heterosexual populations. In 2007, those under 30 years of age accounted for 22.1% of syphilis cases.

## Comments

HIV/AIDS is affecting certain higher-risk subgroups of the Canadian population, including at-risk youth. Sexual risk behaviour and STI data indicate that the potential for HIV transmission remains significant among young Canadians.

The research findings show that a large proportion of youth are not aware of all HIV modes of transmission. Such knowledge gaps need to be addressed by public health education and prevention programs.

More incidence and prevalence information, as well as trend data on HIV-related risk behaviours, are needed in order to guide and evaluate prevention programs for young Canadians. Further epidemiologic and behavioural data for high-risk youth, such as street youth, are also needed to fully assess the risk of HIV transmission in Canada's youth population.

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### Mission

To promote and protect the health of Canadians through leadership, partnership, innovation and action in public health.

*Public Health Agency of Canada*

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