

HIV/AIDS—*an Overview*

HIGHLIGHTS

- Worldwide, an estimated 39.5 million people are living with Human Immunodeficiency Virus (HIV) infection and Acquired Immunodeficiency Syndrome (AIDS).
- In Canada, approximately 58,000 people were estimated to be living with HIV/AIDS in 2005. In Ontario, there were approximately 24,900 people living with HIV/AIDS as of 2005.
- In the past, about half of those infected with HIV developed AIDS within ten years of infection, but since the introduction of powerful antiretroviral therapy (ART) in 1996, the time between HIV infection and the development of AIDS has increased.
- In the absence of any intervention, an estimated 15% to 30% of women with HIV infection will transmit the infection during pregnancy and delivery, and 10% to 20% through breast milk to their new-born child.
- Studies have repeatedly shown that people are more likely to become infected with HIV when another sexually transmitted infection (STI) is already present.



Worldwide, an estimated 39.5 million people are living with Human Immunodeficiency Virus (HIV) infection and Acquired Immunodeficiency Syndrome (AIDS). In 2006, there were 4.3 million new infections and 2.9 million people died of AIDS-related illnesses.¹

In Canada, approximately 58,000 people were estimated to be living with HIV/AIDS in 2005.² About three-quarters of cases were male and one quarter were female. In Ontario, there were approximately 24,900 people living with HIV/AIDS as of 2005.³ In 2005, an estimated 25% of those living with HIV/AIDS in Canada and 36% in Ontario had never been tested and were unaware that they are infected with HIV.^{2,3}

AIDS cases were first described in 1981 when young, previously healthy homosexual men presented with unusual opportunistic infections. At the time, nothing was known about the disease and it was not until 1983 that HIV was found to be the causative agent. Further research showed that HIV survives in the blood and body fluids of infected individuals (e.g. semen, vaginal fluids and breast milk) with transmission occurring through activities such as:

- unprotected sexual intercourse (vaginal, anal, oral)
- sharing needles or equipment for injecting drugs
- needlestick injuries
- tattooing, electrolysis, ear/body piercing and acupuncture with unsterilized equipment

- direct blood to blood contact
- receipt of donated organs, semen, blood or blood products that have not been screened for HIV*
- mother to child transmission through pregnancy, delivery and breastfeeding.^{4,5,6}

Human Immunodeficiency Virus attacks the immune system and weakens the body's ability to fight infections. The progression from HIV infection to the development of Acquired Immunodeficiency Syndrome (AIDS)** varies greatly from person to person and depends largely on the extent to which the immune system has been damaged. In the past, about half of those infected with HIV developed AIDS within ten years of infection, but since the introduction of powerful antiretroviral therapy (ART) in 1996, the time between HIV infection and the development of AIDS has increased.^{6,8}

Transmission of infection from an HIV-infected pregnant woman to her newborn child can occur during gestation (in utero), delivery (when the fetus makes contact with maternal blood and mucosa in the birth canal), and post delivery through breast milk.² In the absence of any intervention, an estimated 15% to 30% of women with HIV infection will transmit the infection during pregnancy and delivery, and 10% to 20% through breast milk to their new-born child.[†]

Studies have repeatedly shown that people are more likely to become infected with HIV when another sexually transmitted infection (STI) is already present.^{9,10} Sexually transmitted infections can cause genital lesions which act as entry points for HIV. Even without lesions, STIs increase the number of HIV target cells (CD4 cells) in cervical secretions, increasing HIV susceptibility in women. Common STIs which can occur alongside HIV include chlamydia, gonorrhea and syphilis.

* In Canada, routine HIV screening of donor blood and blood products commenced in November 1985, while routine screening of donor organs and anonymously donated semen has been in place since July 1987.

** For current HIV and AIDS case definitions, see <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/00vol26/26s3/index.html>

† In December 1998, the Ontario Ministry of Health and Long-Term Care recommended that all pregnant women be tested for HIV.¹¹ (See section about Special Populations, page 18, for additional information).

Under the *Health Protection and Promotion Act* in Ontario, HIV/AIDS cases are reportable to the local Medical Officer of Health by physicians, hospitals and laboratories (public, private, insurance companies, blood services, etc). Unlike other diseases where testing is done by name, people can be tested for HIV in three ways:

- **nominally** – a client’s name is used on the lab requisition.
- **non-nominally** – initials or numbers are used on the lab requisition. Such information is linked to a client’s medical record in the clinic.
- **anonymously** – a code is used on the lab requisition. Neither name nor address is collected during the clinical encounter and there is no way to identify this person following testing. Anonymous HIV testing can only be performed legally in Ontario at specifically designated sites.*

Human Immunodeficiency Virus (HIV) became reportable in Ontario in 2002. Prior to this, only AIDS cases were reportable. Provincial data about HIV/AIDS are collected by the Ontario Ministry of Health and Long Term Care from local health departments through the Integrated Public Health Information System (iPHIS). National surveillance is conducted by the Public Health Agency of Canada from information submitted by provinces and territories.

* Peel Public Health’s Sexual Health Clinics are designated anonymous HIV testing sites.