

# HIV/AIDS

## Epi Updates

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July 2010



## **Mission**

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

—Public Health Agency of Canada

This document is available:

### **By mail**

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### **By Internet**

HIV/AIDS Epi Updates can be assessed electronically in either official language via the Internet at <http://www.phac-aspc.gc.ca/publicat/>.

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## **Information to the readers of *HIV/AIDS Epi Updates***

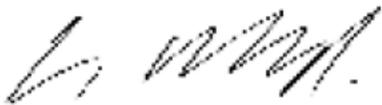
The Surveillance and Risk Assessment Division of the Centre for Communicable Diseases and Infection Control, Public Health Agency of Canada, is pleased to provide you with the July 2010 edition of *HIV/AIDS Epi Updates*.

The Centre conducts national surveillance and research on the epidemiology of HIV/AIDS and other blood-borne and sexually transmitted infections. As part of this mandate, *HIV/AIDS Epi Updates* are produced to summarize recent trends and developments related to the HIV situation in Canada.

Note that previous editions of *HIV/AIDS Epi Updates* were published in a single bound volume. Starting with this 2010 edition, the *HIV/AIDS Epi Updates* will be published in a booklet format so that each individual *Epi Updates* can be revised and updated separately as new data become available. Each *Epi Updates* will have a date noted on the first page to indicate when it was most recently revised.

All *Epi Updates* are available at the address noted above and also at our website: <http://www.phac-aspc.gc.ca/>. The *HIV/AIDS Epi Updates* are complementary to other Centre materials which are also available at the website.

Sincerely,



Chris Archibald MDCM, MHSc, FRCPC  
Director

## Acknowledgements

National level HIV and AIDS surveillance is possible as a result of all provinces and territories participating in, and setting directions for, HIV and AIDS surveillance. Accordingly, the Centre for Communicable Diseases and Infection Control acknowledges the provincial/territorial HIV/AIDS coordinators, public health units, laboratories, health care providers and reporting physicians for providing the non nominal confidential data that enable this report to be published. Without their close collaboration and participation in HIV and AIDS surveillance, the publication of this report would not have been possible. We are also thankful to the researchers across Canada who share their research findings with us in a timely manner for inclusion in the HIV/AIDS Epi Updates.

We also thank Web Site and Intranet Operations, Public Health Agency of Canada, for their contribution in helping us host the report on the Internet.

And finally, we would also like to thank the contributions made by Marion Pogson in editing the report.

**N.B.** This document must be cited as the source for any information extracted and used from it.

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## Overview of Epi Updates 2010 Development and Methodology

### Objective

The primary objective of the PHAC Epi Updates publication is to provide up-to-date information on trends and developments in the epidemiology of HIV and associated risk behaviours in Canada. Prior to 2007, the Epi Updates were published on an annual basis. A new approach has been developed, specifically, a staggered approach to publication of the chapters. Each chapter will now be published as a stand-alone document that will be updated in the future as new epidemiologic data become available. In 2010, the following chapters were updated and published as stand-alone booklets:

- Chapter 1:** National HIV Prevalence and Incidence Estimates in Canada for 2008
- Chapter 2:** Undiagnosed HIV Infections in Canada
- Chapter 3:** HIV Testing and Surveillance Systems in Canada
- Chapter 4:** HIV/AIDS Among Youth in Canada
- Chapter 5:** HIV/AIDS Among Women in Canada
- Chapter 6:** HIV/AIDS Among Older Canadians
- Chapter 7:** Perinatal HIV Transmission in Canada
- Chapter 8:** HIV/AIDS Among Aboriginal Peoples of Canada
- Chapter 9:** HIV/AIDS Among Gay, Bisexual and Other Men Who Have Sex with Men in Canada
- Chapter 10:** HIV/AIDS Among People Who Inject Drugs in Canada
- Chapter 11:** HIV Strain Surveillance in Canada
- Chapter 12:** Primary HIV Antiretroviral Drug Resistance in Canada

These chapters attempt to provide epidemiologic findings updated since the publication of the last Epi Updates in 2007; thus the searches described below focused on the period January 1, 2006, to December 31, 2009. In chapters describing populations that have not been the subject of many new research studies, publications and reports from earlier years were included in the current Epi Updates.

### Search Methodology Used

A detailed search strategy was developed by a PHAC health librarian to generate a list of relevant HIV literature citations within the context of the Canadian population. A broad search was done using the SCOPUS database. Search terms included “HIV” and “Canada”. This yielded a large number of results, as it was designed to be a comprehensive search strategy.

Articles were screened by title and/or abstract using pre-defined inclusion/exclusion criteria.

To identify other relevant documents, such as reports, news articles and exposés, a Web search was done using search engines such as Google™; this search also used the search terms “HIV” and “Canada”. RSS (Really Simple Syndication) feeds were set up through the Health Canada Library to locate any newly published media report within the parameters of the literature search objectives.

## **Inclusion criteria**

Articles meeting the following criteria were included in the Epi Updates reference materials:

- Articles that referred to the vulnerable populations as specified in the Federal Initiative to Address HIV/AIDS in Canada, which include Aboriginal Peoples, at-risk youth, women, people who inject drugs (IDU), men who have sex with men (MSM), prison inmates, people from countries where HIV is endemic, people living with HIV/AIDS.
- Independent variable: HIV-associated risk behaviours, social determinants of health.
- Dependant variable: HIV and associated outcomes.
- Study design: surveillance, epidemiologic studies, socio-behavioural, relevant randomized controlled trial (RCT), qualitative research and community-based research.
- Country/populations: Canada/populations of people who reside in Canada.
- Peer-reviewed literature.
- Grey literature, such as agency reports, conference abstracts.
- Articles are written in English or French.

## **Exclusion criteria**

Articles meeting the following criteria were excluded from the Epi Updates reference list:

- Animal RCTs.
- Drug trials.
- Program evaluation reports, discussions on surveillance methodology, articles that include HIV and populations of interest but focus on condition/topic other than HIV (e.g. cardiovascular disease in HIV populations), similar articles published with different titles/order of authors.
- Articles written in languages other than French or English.



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## Glossary

A Guide to HIV/AIDS Epidemiological and Surveillance Terms is available. The guide contains over 65 terms and over 20 frequently asked questions, and is accessible at <http://www.phac-aspc.gc.ca/publicat/haest-tesvs/index-eng.php>. Hard copies may be obtained through the Surveillance and Risk Assessment Division, from the address listed under the Information to Readers of HIV/AIDS Epi Updates section. A selected number of abbreviations/acronyms and terms that may be useful when reading HIV/AIDS Epi Updates are listed below.

### Acronyms/Abbreviations

<b>AIDS</b>	Acquired immunodeficiency syndrome
<b>CCDIC</b>	Centre for Communicable Diseases and Infection Control
<b>HAART</b>	Highly Active Anti-Retroviral Therapy
<b>HCV</b>	Hepatitis C virus
<b>HIV</b>	Human immunodeficiency virus
<b>IDU</b>	People who inject drugs
<b>MSM</b>	Men who have sex with men
<b>NEP</b>	Needle exchange program
<b>PHAC</b>	Public Health Agency of Canada
<b>STBBI</b>	Sexually transmitted and blood-borne infections
<b>UNAIDS</b>	Joint United Nations Programme on HIV/AIDS
<b>WHO</b>	World Health Organization

### Terms

**Aboriginals:** Aboriginals include the First Nations, Inuit and Métis people of Canada.

**CD4 count:** A test that indicates the strength of one's immune system and can be used to predict the risk of complications and debilitating infections. This is often used in combination with the HIV viral load test.

**Cohort Study:** The purpose of a cohort study is to investigate the development of new occurrences of a disease or to investigate how responses to treatment are related to specific factors. These factors can be recorded at the beginning of the study and/or during the course of the study. A cohort study starts with a group of people, identified as a cohort, who will be participants in the study. The cohort is followed for a specified time period, which can be weeks, months, years or decades. Follow-up data are collected at regularly defined periods either through the use of questionnaires, personal interviews, laboratory testing, medical examinations, or a combination of these methods. A cohort study is sometimes referred to as a prospective or longitudinal study.

**Co-infection:** Having two infections at the same time. For example, a person infected with both HIV and hepatitis C or HIV and tuberculosis, has a co-infection. With co-infections the progression of either disease can potentially be accelerated as a result of infection with the other disease.

**Endemic:** For the purposes of HIV surveillance, "HIV-endemic countries" are generally defined as those that have an adult prevalence (ages 15-49) of HIV that is 1.0% or greater and one of the following: 50% or more of HIV cases attributed to heterosexual transmission; a male to female ratio of 2:1 or less among prevalent infections; or HIV prevalence greater than or equal to 2% among women receiving prenatal care.

**Exposure Category:** In HIV and AIDS surveillance, exposure category refers to the most likely way a person became infected with the HIV virus, that is, the most likely route through which HIV was transmitted to that person.

**Highly Active Anti-Retroviral Therapy:** A therapy that involves multiple anti-HIV drugs and is prescribed, before AIDS symptoms are developed, to HIV positive people.

**Incidence:** Incidence is the number of new events of a specific disease during a specified period of time in a specified population. HIV incidence is the number of new HIV infections occurring in a specified period of time in a specified population.

**Methodology:** The methodology section of a report or research study describes how the study was conducted (the methods) and the principles used by study investigators. These methods include how participants were recruited and how the data were collected, organized and analyzed.

**Notifiable Disease:** A disease that is considered to be of such importance to public health that its occurrence is required to be reported to public health authorities.

**Perinatal Transmission:** The transmission of HIV from an HIV-infected mother to her child either in utero, during childbirth, or through breastfeeding.

**Person Years:** Person years describes the length of time of experience or exposure of a group of people who have been observed for varying periods of time. It is the sum total of the length of time each person has been exposed, observed or at risk. You will sometimes see person years reported as PY or py. Person years are often used as the denominator in expressing incidence rate.

**Pilot phase:** Activity that has been organized as a trial or test period.

**Population at Risk:** The population at risk represents those persons at risk of contracting a disease.

**Prevalence:** Prevalence is the total number of people with a specific disease or health condition living in a defined population at a particular time. HIV prevalence among Canadians is the total number of people living with HIV infection (including those with AIDS) in Canada at a particular time.

**Rate:** A rate is an expression of the frequency with which an event occurs in a defined population in a specified period of time. In HIV/AIDS research, a rate can be the proportion of a population with a particular “event”, such as HIV infection, occurring during a specified time period.

**Risk Factor:** An aspect of someone’s behaviour or lifestyle, a characteristic that a person was born with, or an event that he or she has been exposed to that is known to be associated with a health-related condition. A behavioural risk factor describes a specific behaviour that carries a proven risk of a particular outcome. In HIV/AIDS research, you will often see the term “HIV-related risk behaviour” to describe a behaviour that, when practised, carries a proven risk of HIV infection.

**Second-generation surveillance:** Second generation surveillance for HIV/AIDS is the regular, systematic collection, analysis and interpretation of information for use in tracking and describing changes in the HIV/AIDS epidemic over time. Second generation surveillance for HIV/AIDS also gathers information on risk behaviours, using them to warn of or explain changes in levels of infection.

**Self-Reported Data:** In research studies, self-reported data is a term applied to information that is directly reported by the study participants.

**Sentinel Surveillance:** A type of surveillance activity in which specific facilities, such as offices of certain health care providers, hospitals or clinics across a geographic region, are designated to collect data about a disease, such as HIV infection. These data are reported to a central database for analysis and interpretation.

**Seroconversion:** The root “sero” means the serum of the watery portion of blood. In HIV/AIDS research, seroconversion refers to the development of detectable antibodies to HIV in the blood as a result of HIV infection. A person who goes from being HIV negative to HIV positive is said to have seroconverted or is a seroconverter.

**Serodiscordant:** Relationships where one partner is infected with HIV and the other is not.

**Seroprevalence:** The term refers to the prevalence or prevalence rate of a disease as determined by testing blood rather than saliva, urine or sputum.

**Street-involved:** People who are engaged in street activities (such as illicit drug use, sex work, etc) that may increase their risk for HIV and STI transmission.

**Surveillance:** The ongoing collection, analysis and interpretation of data about a disease such as HIV or about a health condition. The objective of surveillance is to assess the health status of populations, detect changes in disease trends or changes in how the disease is distributed, define priorities, assist in the prevention and control of the disease, and monitor and evaluate related treatment and prevention programs.

**Viral load:** The viral load test is a quantitative measurement of HIV nucleic acid (RNA) that provides important information that is used (in conjunction with the CD4 cell count) to monitor the status of HIV disease, guide recommendations for therapy and predict the future course of the HIV infection/disease.