

# Acquired Immunodeficiency Syndrome (AIDS)

## Case Definition

### Confirmed Case

One or more of the specified indicator diseases<sup>[1]</sup>

### AND

Meeting the case definition for HIV infection.

<sup>[1]</sup> Indicator Diseases for Adult and Pediatric Acquired Immunodeficiency Syndrome (AIDS) cases:

- Bacterial pneumonia (recurrent)\*
- Candidiasis (bronchi, trachea or lungs)
- Candidiasis (esophageal) \*
- Cervical cancer (invasive)
- Coccidioidomycosis (disseminated or extrapulmonary)\*
- Cryptococcosis (extrapulmonary)
- Cryptosporidiosis chronic intestinal (> 1 month duration)
- Cytomegalovirus diseases (other than in liver, spleen or nodes)
- Cytomegalovirus retinitis (with loss of vision)\*
- Encephalopathy, HIV related (dementia)
- *Herpes simplex*: chronic ulcer(s) (> 1 month duration) or bronchitis, pneumonitis or esophagitis
- Histoplasmosis (disseminated or extrapulmonary)
- Isosporiasis, chronic intestinal (> 1 month duration)
- Kaposi's sarcoma\*
- Lymphoma, Burkitt's (or equivalent term)
- Lymphoma, immunoblastic (or equivalent term)
- Lymphoma (primary in brain)
- *Mycobacterium avium complex* or *M. kansasii* (disseminated or extrapulmonary)\*
- *Mycobacterium* of other species or unidentified species\*
- *M. tuberculosis* (disseminated or extrapulmonary)
- *M. tuberculosis* (pulmonary)\*
- *Pneumocystis jirovecii* (formally *Pneumocystis carinii* [PCP]) pneumonia\*
- Progressive multifocal leukoencephalopathy
- *Salmonella* septicemia (recurrent)\*
- Toxoplasmosis of brain\*
- Wasting syndrome due to HIV

Indicator diseases that apply to only pediatric cases (less than 15 years old):

- Bacterial infections (multiple or recurrent, excluding recurrent bacterial pneumonia)
- Lymphoid interstitial pneumonia and/or pulmonary lymphoid hyperplasia\*

\* These conditions may be diagnosed presumptively; otherwise, definitive diagnosis is required. Criteria for presumptive and definitive diagnoses are provided in the current [HIV/AIDS Case Report Manual](#), Alberta Health and Wellness (1), Part 4: Diseases Indicative of AIDS.

## Reporting Requirements

### 1. Physicians/Health Practitioner and others

Physicians, health practitioners and others listed in Section 22 of the *Public Health Act* shall notify the Medical Officer of Health (MOH) (or designate) in the prescribed form by mail, fax or electronic transfer within 48 hours (two days) about the following:

- All confirmed cases of HIV who develop an AIDS defining illness.

### 2. Alberta Health Services

The MOH (or designate) shall forward the preliminary *HIV/AIDS Case Report Form (AHW)* of all confirmed cases to the Chief Medical Officer of Health (CMOH) (or designate) within six weeks of notification and the final amendments within ten weeks of notification.

The *HIV/AIDS Case Report* form should be labeled “Medical Confidential” and submitted as per the following provincial procedures:

- Case reports should be sent via provincial courier service or Canada Post,
- Send email notification to the Alberta Health and Wellness, Nurse Consultant-CD indicating that case reports are being sent;
- If more than one form is being sent, include a packing slip listing the enclosed forms, in a sealed envelope marked “Medical Confidential” to:

Alberta Health and Wellness  
Attention: Nurse Consultant-CD  
Surveillance & Assessment  
23rd Floor, Telus Plaza North  
10025 Jasper Avenue NW  
Edmonton, Alberta  
T5J 2N3

- Place the envelope inside a second envelope which is labelled to the same address indicated above.
- When packages are received at AHW, an email confirming receipt will be forwarded to the sender.
- For out-of-zone reports, the MOH (or designate) first notified shall notify the MOH (or designate) where the case resides by mail, fax or electronic transfer within 48 hours (two business days).
- For out-of-zone contacts, the MOH (or designate) first notified shall notify the MOH (or designate) where the contact resides by mail, fax or electronic transfer within 48 hours (two business days) including:
  - name,
  - date of birth,
  - personal health number and
  - contact information i.e., address and phone number.
- For out-of-province and out-of-country reports, the following information should be forwarded to the CMOH (or designate) by phone, fax or electronic transfer within 48 hours (two business days) including:
  - name,
  - date of birth,
  - out-of-province health care number,
  - out-of-province address and phone number and,
  - attending physician (locally and out-of-province) .

- For out-of-province and out-of-country contacts, the following information should be forwarded to the CMOH (or designate) by phone, fax or electronic transfer including:
  - name,
  - date of birth,
  - personal health number and
  - contact information i.e., address and phone number.

### 3. Additional Reporting Requirements

- Canadian Blood Services (CBS): All newly reported confirmed AIDS cases must be reported by the MOH (or designate) to CBS within two working days if they have ever had a history of donating or receiving blood in Canada. (as per CBS policy, November 23, 2007)
  - A copy of the positive test result must accompany all reports and all information should be sent to Lookback/Traceback Coordinator, CBS:
    - for Red Deer north via confidential fax number 780-433-1907 or phone 780-431-8712.
    - for south of Red Deer via confidential fax number 403-410-2797 or phone 403-410-2711 (as per CBS policy, September 09, 2009).
  - For donors the following information is required:
    - where and when donated blood,
    - all names (first and surnames) used and
    - date of birth.
  - For blood recipients (when blood transfusion is one of the risk factors identified), the following additional information is required:
    - year of transfusion,
    - hospital of transfusion and
    - additional risk factors if applicable.

## Etiology

HIV is a retrovirus of which two types have been identified: type 1 (HIV-1) and type 2 (HIV-2). These viruses are serologically, geographically, and epidemiologically distinct.(1) In Alberta, HIV-1 is the predominant virus, with HIV-2 being extremely uncommon (Provincial Laboratory of Public Health, personal communication, September 03, 2009).

## Clinical Presentation

Acquired immune deficiency syndrome (AIDS) was first recognized as a distinct syndrome in 1981. AIDS is advanced HIV-related disease. This syndrome represents the late clinical stage of HIV infection resulting from progressive damage to the immune system, leading to one or more of the many opportunistic infections and cancers listed in the case definition.(1)

Studies of HIV infected adults, carried out before specific antiretroviral therapy was available, indicated that about 15–20% developed AIDS within five years, approximately 50% within seven to 10 years and approximately 70% within 15 years.(2)

Prior to the availability of highly active antiretroviral therapy (HAART), the case-fatality rate of AIDS was felt to be 100%, and most individuals died within three to five years after the diagnosis of AIDS was made. However, the use of HAART and prophylactic drugs for the prevention of *P. jirovecii* pneumonia (PJP) and other opportunistic infections may significantly delay the development of AIDS(1), prolonging survival for years.(3)

## Diagnosis

Diseases indicative of AIDS: see section IV of the current [HIV/AIDS Case Report Manual](#), AHW in conjunction with a positive HIV test.

## Epidemiology

### Reservoir

Humans.

### Transmission

AIDS is a syndrome, and is not transferable, but the HIV virus, which leads to AIDS, is transmitted from person to person.(1) Common modes include sexual contact and sharing HIV contaminated needles, syringes, and other drug equipment. Less common modes of transmission include the transfusion of blood or blood products and through organ or tissue transplants.(4) These latter modes of transmission are rare in Canada due to very sensitive screening tests for HIV. The HIV virus is most commonly found in and transmitted through blood, body fluids containing blood and other body fluids (e.g., semen) with a high viral titre.(5) It has been isolated from urine, saliva, tears, and bronchial washings, however, transmission from these fluids has not been reported.(2) Concurrent sexually transmitted infection (STI), especially ulcerative STI, greatly facilitates the transmission of HIV.(6) Infection may be transmitted vertically from mother to child during pregnancy, delivery, or through breastfeeding.(7)

### Incubation Period

The time from HIV infection to the diagnosis of AIDS has a range from less than one year to 18 years or longer. Treatment appears to lengthen the clinical latency period (i.e., time without symptoms). Appropriate therapy will delay progression to AIDS.(6) The mean incubation period in infected infants may be shorter than in adults (7), often less than 12 months.(6)

### **Period of Communicability**

Epidemiological evidence suggests that transmissibility begins early after the onset of HIV infection and extends throughout life. Infectiousness is highest during the initial infection, and rises with increasing immune deficiency. The presence of other STIs, especially ulcerative STIs, increases the likelihood of transmission.(7)

### **Host Susceptibility**

Susceptibility is presumed to be general. Absence of male circumcision (8) and the presence of STI, especially those with ulcerations may increase susceptibility to HIV.(9) Adolescent and adult males and females who acquire HIV at an early age progress to AIDS more slowly than those infected at an older age.(1)

### **Occurrence**

#### **General**

AIDS was first recognized in 1981 as a distinct syndrome.(1) It has now been documented in virtually all countries of the world, among all races, ages, and social classes. In 2007 it was estimated that globally, 33.2 million people were living with HIV, 2.5 million became newly infected, and 2.1 million people died of AIDS. Globally, more than 25 million people have died of AIDS since 1981.(10)

#### **Canada**

Overall, the number of AIDS cases reported annually has declined substantially since the beginning of the epidemic, and the number has steadily declined in the last 10 years. Effective antiretroviral treatments have extended the time period between HIV infection and AIDS. Since the beginning of the epidemic in the early 1980s to December 31, 2009, there have been approximately 21,681 cases reported to the Centre for Communicable Diseases and Infection Control, Public Health Agency of Canada (PHAC).(11)

It is important to note the limitations associated with AIDS diagnosis reported nationally. Since June 30, 2003, AIDS data has not been available from the province of Quebec. Since mid year 2005, exposure category and ethnicity data have not been available for Ontario cases.(11)

Risk data is currently available for just under 40% of reported AIDS cases, and as a result, it is difficult to present an updated national picture of the risks associated with the transmission of HIV for AIDS cases. Despite these limitations, it should be noted that the distribution of risks associated with transmission of HIV in AIDS cases has shifted in the last decade from predominantly men who have sex with men (MSM) to increasing proportions of heterosexual and injecting drug use transmission.(11)

Females represent an increasing proportion of AIDS diagnoses in Canada. Prior to 1997, 7% of AIDS diagnoses were females. In 2009, females accounted for 19.2% of total AIDS diagnoses. The proportion of reported AIDS cases attributed to IDU and the HIV-endemic country subcategory of heterosexual contact are notably higher among females than males.(11)

Over time, there has been a notable increase in the number of reported AIDS cases among Aboriginal persons (Inuit, Métis and First Nations). Before 1998, 2.4% of reported AIDS cases were in Aboriginal persons. This proportion steadily increased to 9.1% in 1999 and to 12.2% in 2002. In 2009, Aboriginal persons accounted for 33.3% of the total reported AIDS cases (where ethnicity was known).(11)

The number of reported AIDS deaths peaked in 1995. In 1995, there were 1,501 reported AIDS deaths, and in 2009 there were 25.(11) Deaths began to decline in 1996, most notably because of advances in HIV treatment.(12)

### Alberta

AIDS has been a reportable condition in Alberta since 1983. Between January 1, 1983 and December 31, 2009, a total of 1463 cases of AIDS were reported in Alberta. Males outnumber females by 9:1. Between 1998 and 2009, more than 49% of all newly diagnosed AIDS cases occurred in males 30 to 59 years of age. For females, the most common risk factors are heterosexual contact (35% of total AIDS cases). The most common risk factor for males is MSM (70%).(13)

The number of deaths in Alberta among people living with AIDS has declined markedly in recent years. The number of deaths peaked in 1994 at 93. In 2009, there were 4 reported deaths in Alberta caused by AIDS.(13)

Refer to the current [Annual Report on HIV and AIDS in Alberta](#) for more data.

## Key Investigation

### Single Case/Household Cluster

- If the Key Investigation was not completed at the time of the first HIV positive diagnosis, the history and risk assessment should be done as per the current [Public Health Notifiable Disease Management Guidelines for HIV](#), AHW.

## Control

### Management of a Case

- Regular follow-up with a physician experienced in treating HIV/AIDS is recommended.
- If this is a new diagnosis of HIV/AIDS, the management should include HIV investigation as described in the Public Health Notifiable Disease Management Guidelines for HIV.
- If the client's positive HIV status has been reported previously and appropriate follow-up was done at that time, confirm that potential partners have been informed by the case of his/her HIV status and that appropriate protective measures continue to be used.
- Offer vaccination as recommended in the current Alberta Immunization Manual as this group is at higher risk of either acquiring disease or of invasive disease, including pneumococcal, hepatitis B series (if non-immune), and an annual influenza vaccination.
- Screen for concurrent STIs (e.g., chlamydia, gonorrhea and syphilis).
- Screen for TB based on the [Alberta TB Prevention and Control Manual](#) and [Recommendations for screening and prevention of tuberculosis in patients with HIV and for screening for HIV in patients with tuberculosis and their contacts](#).

### Treatment of a Case

- This is an increasingly complex area with rapid changes in optimal therapy as new research becomes available.
- Recommendations should be made in collaboration with a physician experienced in HIV/AIDS care and treatment.
- Encourage and support people with AIDS to take the medications prescribed for them. A Directly Observed Treatment (DOT) program may be considered for populations with unstable social situations and where such programs are available.

### Management of Contacts

- Refer to the current [Public Health Notifiable Disease Management Guidelines for HIV](#), AHW and [Alberta TB Prevention and Control Manual](#) if appropriate.

### Preventive Measures

- Refer to [Public Health Notifiable Disease Management Guidelines for HIV](#), AHW to prevent the spread of HIV.
- Educate about healthy lifestyle choices (i.e., diet, exercise).
- Family physicians should be targeted for education to increase testing and to increase awareness about the changing epidemiology of HIV/AIDS.
- Recalcitrant people:
  - Educate the individual about the modes of transmission and reducing the risk of transmission to others, and their public health and legal responsibility (duty to disclose to sexual and/or IDU partners).
  - People who are unwilling or unable to take appropriate precautions to prevent the spread of HIV are to be reported to the MOH for the zone. This requires assessment by the HIV designate nurse.
  - Specific individuals are listed in the [Public Health Act, Section 39\(1\)](#).
  - Refer to the *2009 Guideline for the Management of Recalcitrant HIV Positive Individuals Unwilling and/or Unable to Prevent the Spread of HIV*, AHW for more detailed information.

### Health Care Workers

- In any situation in which a worker who is HIV positive, is uncertain about the potential transmission risks of HIV or proper practices to minimize the risk to clients, he or she should consult with employee health or an infection control practitioner or patient safety group responsible for the quality of care for the clients.
- In addition, HCWs who are HIV positive should contact the Zone MOH or designate to discuss the potential risks of transmission to clients. Upon assessment by the Zone MOH, a worker may or may not be referred to the Alberta Expert Review Panel for Blood Borne Viral Infections in Health Care Workers for further assessment services, if indicated.
- The Panel is established to review circumstances of HCWs who are found to have a blood borne viral infectious disease. The panel may receive referrals from MOHs regarding HCWs who perform exposure-prone procedures when there is uncertainty as to whether continued or modified professional practice is indicated.

## References

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