

Ontario Public Health Standards:  
Requirements for Programs, Services and Accountability

Infectious Disease Protocol

# **Appendix 1:**

## **Case Definitions and Disease-Specific Information**

### **Disease: Acquired Immunodeficiency Syndrome (AIDS)**

Effective: May 2022

# Acquired Immunodeficiency Syndrome (AIDS)

Communicable

Virulent

[Health Protection and Promotion Act \(HPPA\)](#)

[Ontario Regulation \(O. Reg.\) 135/18 \(Designation of Diseases\)](#)

## Provincial Reporting Requirements

Confirmed case

Probable case

As per Requirement #3 of the "Reporting of Infectious Diseases" section of the *Infectious Diseases Protocol, 2018* (or as current), the minimum data elements to be reported for each case are specified in the following:

- [O. Reg. 569](#) (Reports) under the HPPA;<sup>8</sup>
- The iPHIS User Guides published by Public Health Ontario (PHO); and
- Bulletins and directives issued by PHO.

## Type of Surveillance

Case-by-case

## Case Definition

### Confirmed Case of Human Immunodeficiency Virus (HIV) Infection

Children < 18 months:

- Detection of proviral deoxyribonucleic acid (DNA) by polymerase chain reaction (PCR) or p24 antigen (p24 Ag) in two separate samples collected one month and four months after delivery

**OR**

- Isolation of HIV in culture

Adults, Adolescents and Children >18 months:

- Detection of HIV antibody with confirmation

**OR**

- Detection of p24 antigen

**OR**

- Isolation of HIV in culture

## **Confirmed Case of Acquired Immunodeficiency Syndrome (AIDS)**

- A positive test for HIV infection with confirmation

**AND**

- Definitive diagnosis of one or more AIDS indicative diseases (See Clinical Evidence section)

## **Clinical Information**

### **Clinical Evidence**

#### **HIV**

**Primary Acute infection-** may develop within a few weeks after exposure to the virus and last up to two weeks. If present, symptoms generally appear 2 to 6 weeks after exposure and include: fever, arthralgia, myalgia, rash, sore throat, fatigue, headache, oral ulcers and/or genital ulcers, weight loss, nausea, vomiting or diarrhea.

**Chronic Asymptomatic infection-** may be free of clinical signs or symptoms, though generalized lymphadenopathy and/or thrombocytopenia may be present. Viral replication and plasma viremia are more controlled by the immune response represented by the level of CD4+ T cells. Disease progression varies but can last years.

**Chronic Symptomatic infection**- the disease is characterized by high levels of viral replication, plasma viremia, a depressed CD4+ T cell count, and shedding from mucosal sites. Symptoms include oral hairy leukoplakia, unexplained fever, fatigue or lethargy, unexplained weight loss, chronic diarrhea, unexplained lymphadenopathy, cervical dysplasia, dyspnea and dry cough, loss of vision, recurrent or chronic candida (oral, vaginal), dysphagia, red/purple nodular or mucosal lesions, herpes zoster (especially if severe, multidermatomal or disseminated), unexplained "anemia of chronic disease", increased frequency or severity of mucocutaneous herpes simplex infection.

## AIDS

AIDS Indicative Diseases for Adult and Pediatric Cases:

- Bacterial pneumonia (recurrent)<sup>†</sup>
- Candidiasis (bronchi, trachea or lungs)
- Candidiasis (esophageal)<sup>\*</sup>
- Cervical cancer (invasive)
- Coccidioidomycosis (disseminated or extrapulmonary)<sup>†</sup>
- Cryptococcosis (extrapulmonary)
- Cryptosporidiosis chronic intestinal (> 1 month duration)
- Cytomegalovirus diseases (other than in liver, spleen or nodes)
- Cytomegalovirus retinitis (with loss of vision)<sup>†</sup>
- Encephalopathy, HIV-related (dementia)
- *Herpes simplex*: chronic ulcer(s) (> 1 month duration) or bronchitis, pneumonitis or esophagitis

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<sup>†</sup> These conditions may be diagnosed presumptively; otherwise, definitive diagnosis is required.

- 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* pneumonia\* (formerly known as *Pneumocystis carinii*)
- Progressive multifocal leukoencephalopathy
- *Salmonella* septicemia (recurrent)
- Toxoplasmosis of brain\*
- Wasting syndrome due to HIV

AIDS Indicative Diseases that only apply to Pediatric Cases (<15 years old):

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

## Clinical Presentation

### HIV

As the virus that causes AIDS, early testing, diagnosis and treatment for HIV are important factors in reducing morbidity and mortality associated with HIV infection and disease progression to AIDS. Depending on the stage of infection, an individual infected with HIV may be asymptomatic or may present with non-specific

symptoms. Due to the high risk of transmission of HIV during the primary acute infection stage, clinicians should maintain a high index of awareness in individuals with a non-specific febrile illness and/or a history of high-risk behaviour.<sup>2,3</sup>

As listed under Clinical Evidence, HIV infection can generally be broken down into three distinct stages: primary acute infection, chronic asymptomatic stage, and chronic symptomatic infection, before progression from HIV to AIDS.<sup>3</sup>

## **AIDS**

AIDS is a severe, life threatening clinical condition and an 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 opportunistic infections and cancers of which bacterial pneumonia is one of the common presentations.<sup>1</sup>

Indicator diseases for AIDS are listed under Clinical Evidence.

## **Laboratory Evidence**

### **Laboratory Confirmation**

Any of the following will constitute a confirmed case of HIV:

Children < 18 months (on 2 separate samples):

- Positive for proviral DNA by PCR
- Positive for HIV p24 Ag (>1 months)
- Positive HIV culture

Adults, Adolescents and Children >18 months:

- Positive for HIV-1, HIV-2 antibody with confirmation for HIV antibody or virus (e.g., immunochromatographic test, immunofluorescent technique, or a ribonucleic acid [RNA] assay)
- Positive for HIV p24 Ag
- Positive HIV culture

## Approved/Validated Tests

- Antibody detection: Tests for anti-HIV-1, anti-HIV-2 antibodies (chemiluminescent microparticle immunoassay [CMIA], enzyme immunoassay [EIA], line immunoassay [LIA], immunochromatographic test, radioimmunoprecipitation assay [RIPA], point-of-care [POC]/rapid tests)
- Antigen detection: HIV p24 Ag test
- Proviral DNA polymerase chain reaction (PCR) assay
- Standard HIV culture

## Indications and Limitations

In children <18 months of age born to HIV positive mothers, all positive results should be repeated with a second specimen for confirmation. All negative tests should be repeated at 6-12 months to verify negative status.

For further information about human diagnostic testing, contact the [Public Health Ontario Laboratories](#).

## Case Management

In addition to the requirements set out in the Requirement #2 of the “Management of Infectious Diseases – Sporadic Cases” and “Investigation and Management of Infectious Disease Outbreaks” sections of the *Infectious Diseases Protocol, 2018* (or as current), the board of health shall primarily focus on:

- Active engagement to initiate highly active antiretroviral therapy (HAART), Pre-exposure prophylaxis (PrEP), or Post-exposure prophylaxis (PEP) following recent exposure
- Active engagement to ensure people living with HIV/AIDS are retained in care
- Referrals to testing, treatment and, community and mental health services
- Management of co-morbidities
- Ensure individuals engaging in high-risk behaviours have the support they need to change those behaviours, maintain their health and avoid criminal sanctions

- Carry out partner notification; and
- Developing an individualized care pathway

Provide education and counselling as above to the client including information about community support agencies and a reminder not to donate blood or blood products.

For case management refer to the following documents:

- [PIDAC Sexually Transmitted Infections Case Management and Contact Tracing Best Practice Recommendations](#) (2009, or as current);<sup>12</sup>
- [Sexual Health and Sexually Transmitted/Blood-Borne Infections Prevention and Control Protocol, 2018](#) (or as current);<sup>10</sup>
- Complementary resources and professional development - HIV;<sup>15</sup> and
- [Canadian Guidelines on Sexually Transmitted Infections](#) (2018, or as current).<sup>11</sup>

## Contact Management

For contact management and the development of partner notification strategies with individuals, refer to the following documents:

- PIDAC Sexually Transmitted Infections Case Management and Contact Tracing Best Practice Recommendations (2009, or as current);<sup>12</sup>
- [Sexual Health and Sexually Transmitted/Blood-Borne Infections Prevention and Control Protocol, 2018](#) (or as current);<sup>10</sup>
- Canadian Guidelines on Sexually Transmitted Infections (2018, or as current);<sup>11</sup> and
- [Human Immunodeficiency Virus - HIV Screening and Testing Guide](#) (2014, or as current).<sup>5</sup>

## Outbreak Management

Not applicable.



# Prevention and Control Measures

## Personal Prevention Measures

Measures include:<sup>5,9</sup>

- Provide education and communicate positive messaging to persons, especially those presenting with concerns about HIV infections, about HIV transmission, the benefits of early diagnosis, including available treatments and improved disease prognosis, and safer sex/drug practices, including proper use of barrier methods and risk reduction with injection drug use.
- Persons with known risk behaviors and clinical indications should be offered HIV screening, with appropriate pre and post-test counselling, and referral if necessary. High risk clients should be counselled to test more frequently.<sup>9</sup> Counselling should be age appropriate and individualized to the person being tested.
- All pregnant women should be offered confidential HIV testing and counselling as part of a routine prenatal care for each pregnancy.

For recommendations on testing and contact management refer to the following documents:

- Sexual Health and Sexually Transmitted/Blood-Borne Infections Prevention and Control Protocol, 2018 (or as current);<sup>10</sup>
- Canadian Guidelines on Sexually Transmitted Infections (2018, or as current);<sup>11</sup> and
- Human Immunodeficiency Virus - HIV Screening and Testing Guide (2014, or as current).<sup>5</sup>

For more information on counselling and education refer to the following documents:

- [Ontario HIV Testing Frequency Guidelines: Guidance for Counselors and Health Professionals](#) (2012, or as current);<sup>9</sup>
- PIDAC Sexually Transmitted Infections Case Management and Contact Tracing Best Practice Recommendations (2009, or as current);

- *Sexual Health and Sexually Transmitted/Blood-Borne Infections Prevention and Control Protocol, 2018* (or as current);<sup>10</sup>
- Canadian Guidelines on Sexually Transmitted Infections (2018, or as current);<sup>11</sup> and
- [Substance Use Prevention and Harm Reduction Guideline, 2018](#) (or as current).<sup>13</sup>

## Infection Prevention and Control Strategies

Strategies include:

- At the time of diagnostic testing for HIV, the health care practitioners should review prevention practices;
- Health care practitioners should work with clients to identify barriers to prevention practices and the means to overcome them; and
- Routine practices are recommended for contact with bodily fluids.<sup>14</sup>

## Disease Characteristics

**Aetiologic Agent** - Human immunodeficiency virus (HIV) - a retrovirus of which two types have been identified: type 1 (HIV-1) and type 2 (HIV-2). They are serologically and geographically distinct but have similar epidemiological characteristics.<sup>1</sup>

**Modes of Transmission** - Person to person transmission through: unprotected sexual intercourse; contact with infected body fluids such as sexual fluids (vaginal, seminal and anal), blood, and breast milk; cerebral spinal fluid (CSF); the use of HIV-contaminated needles and syringes and some drug paraphernalia, including sharing by injection drug users; transfusion of infected blood or its components; organ and tissue transplants; mother to child transmission; and contact of abraded skin or mucosa with body secretions such as blood, CSF or semen.<sup>1</sup>

A more detailed description of HIV transmission is available in the Canadian AIDS Society publication, "HIV Transmission: Guidelines for Assessing Risk – A Resource Guide for Educators, Counsellors and Health Care Providers".<sup>8</sup> Updated information with a focus on biological risk and transmission through sexual activity is available in the Canadian AIDS Society publication, "HIV Transmission: Factors that Affect Biological Risk"; as well as in the other resources and references listed below.<sup>7</sup>

**Incubation Period** - HIV and AIDS, Variable; time from initial infection to detectable antibodies varies depending on the test that is used. Of the two main types of tests:<sup>3</sup>

- Third-generation HIV enzyme immunoassay (EIA) antibody tests are able to detect the antibody as early as 20 to 30 days and in 99% of people 3 months after exposure.
- Fourth-generation combination tests reduce the detection window period to between 15 and 20 days.

The time from HIV infection to diagnosis of AIDS has an observed range of less than one year to 15 years or longer.<sup>1</sup>

**Period of Communicability** - HIV, begins early after onset of HIV infection, highlighting the importance of treatment to reduce communicability. Infectivity during the early stages is considered to be high; it increases with viral load, with worsening clinical status and with the presence of other sexually transmitted infections (STIs).<sup>1</sup> Advances in HIV treatment have slowed disease progression to the degree that HIV infection is now understood to be a chronic, manageable condition, in which people can live healthy, long and active lives. Early diagnosis and initiation of treatment can lead to reduced communicability associated with HIV infection and disease progression.<sup>3</sup>

**Reservoir** - Humans

**Host Susceptibility and Resistance** - Presumed to be general; race, sex and pregnancy status do not appear to affect susceptibility to HIV infection or AIDS. The presence of other STIs especially if ulcerative increases susceptibility.<sup>1</sup>

Please refer to [PHO's Reportable Disease Trends in Ontario reporting tool](#) for the most up-to-date information on infectious disease trends in Ontario.

For additional national and international epidemiological information, please refer to the Public Health Agency of Canada and the World Health Organization.

## References

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2. Government of Canada. Symptoms of HIV and AIDS [Internet]. Ottawa, ON: Her Majesty the Queen in Right of Canada; 2015 [updated November 30, 2015; cited June 4, 2018]. Available from: <https://www.canada.ca/en/public-health/services/diseases/hiv-aids/symptoms-hiv-aids.html>
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# Document History

<b>Revision Date</b>	<b>Document Section</b>	<b>Description of Revisions</b>
April 2022	Entire Document	New template. Appendix A and B merged. No material content changes.
April 2022	Epidemiology: Occurrence section	Removed.
April 2022	ICD Codes	Removed.