# Human Immunodeficiency Virus (HIV)

Manitoba
Public Health Branch

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## Abbreviations

| | |
|---|---|
| AIDS | Acquired Immunodeficiency Syndrome |
| ART | Antiretroviral therapy |
| CBS | Canadian Blood Services |
| CPL | Cadham Provincial Laboratory |
| EIA | Enzyme-linked immunosorbent assay |
| HCP | Health care provider |
| HIV | Human immunodeficiency virus |
| IRCC | Immigration, Refugees and Citizenship Canada |
| MBHIVP | Manitoba HIV Program |
| MH | Manitoba Health |
| MHSU | Manitoba Health Surveillance Unit |
| MOH | Medical Officer of Health |
| NAT | Nucleic acid testing |
| PEP | Post-exposure prophylaxis |
| PH | Public Health |
| PHIMS | Public Health Information Management System |
| PHO | Public health office |
| PedsID | Pediatric Infectious Diseases |
| POC | Point-of-care |
| PrEP | Pre-exposure prophylaxis |
| STBBI | Sexually-transmitted and blood-borne infection |
| STI | Sexually-transmitted infection |
| TB | Tuberculosis |
| TE | Transmission event |
| U=U | Undetectable equals untransmittable |

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## Summary of Updates

### January 2024

The January 2024 update incorporates the following amendments that may result in a change in practice:

- Section 2.1: Added perinatal staging guidance to lab-confirmed case definition. Referencing section 6.4 and 6.5 of the protocol.
- Section 8: A new section under Key Investigations for Public Health has been added to the protocol titled "Guidance for HIV Classification and Staging".
- Section 9: Updated Public Health Information Management System (PHIMS) documentation guidance to align with the recent changes to MHSU Form 6780.

### December 2022

The 2022 update of the HIV Protocol resulted in significant changes from the previous version (2010). All sections have been revised to align with current practice and now reflect the current goals and expectations for HIV management.

Amendments that may result in a change in practice:

- Section 2: Created confirmed and probable HIV case definitions that align with current practice in Manitoba as well as case definitions in other jurisdictions.
- Section 3: Clarified the reporting requirements for each testing modality, including the requirements for reporting anonymous and/or point-of-care tests. Clarified the specific requirements for reporting to/from Canadian Blood Services.
- Section 4: Removed outdated epidemiology, and included links to external HIV epidemiology resources that are expected to remain up-to-date. Incorporated information about the 'undetectable equals untransmittable' (U=U) principle when considering HIV transmission risk.
- Section 5: Consolidated clinical history information into one section. Removed details of indicator diseases for AIDS and referenced external resources for more detailed clinical data.
- Section 6: Available HIV testing options have been updated to reflect current practice. Non-nominal testing has been de-emphasized as it is no longer routinely used. Significant changes to laboratory testing modalities have occurred since the previous protocol version, resulting in changes to window periods and repeat testing recommendations.
- Section 7: Case and contact management have evolved and changes are reflected in this section. HIV-specific pre-test counselling is no longer emphasized, and revisions reflect the goal of destigmatizing HIV case/contact management. Details on pre- and post-exposure prophylaxis have been included.
- Section 8: A new section on Key Investigations for Public Health Response has been included in this protocol update.

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- Section 9: An all-new section for documenting in the Public Health Information Management System (PHIMS) has been added.
- Section 10: The list of additional resources has been updated.
- Section 11: The references list has been updated.
- Section 12 (Appendices): Removed several old appendices which no longer apply to current practice.
- Addendum letters to the previous version of the Protocol are found in the Manitoba Health website.

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# 1. Etiology and Background

Human Immunodeficiency Virus (HIV) infection is caused by a human retrovirus, usually HIV-1, rarely HIV-2. HIV infects a wide array of cells, but its principal target is the mononuclear white blood cell — specifically macrophages and helper T-lymphocytes. Because retroviruses integrate into the target cell genome as proviruses, with the viral genome copied during cell replication, the virus persists for life in persons living with HIV. Untreated HIV results in the progressive destruction of CD4+ T lymphocytes making patients more vulnerable to opportunistic pathogens. When the helper T-lymphocyte population is sufficiently depleted by HIV infection so the body cannot control common subclinical infections and infectious exposures, the person is said to have Acquired Immunodeficiency Syndrome (AIDS).

# 2. Case Definitions

## 2.1 Human Immunodeficiency Virus Infection

Lab Confirmed Case—HIV[1,2]

Serological detection of HIV-1 and/or HIV-2 antibodies (IgM, IgA, IgG), and/or HIV p24 antigen, AND a reactive immunochromatographic confirmatory test

OR

Detection of HIV nucleic acid by polymerase chain reaction

OR

Isolation of HIV in culture

**Note:** For more information, see Section 8.2. Also, refer to the testing sections 6.4 and 6.5. If suspected mode of acquisition is perinatal, then stage as perinatal.

Probable Case—HIV

Positive result from an approved HIV point-of-care (POC) test administered by a health care provider (HCP)

[1] Passively acquired antibodies from mothers/birthing parents living with HIV may persist in their infants up to 18 months, limiting the utility of serology to confirm a diagnosis in this specific pediatric group. HIV serology may still be used in children up to 18 months when an in utero or perinatal exposure has been excluded.
[2] Includes dried blood spot specimens.

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**Note:** If suspected mode of acquisition is perinatal, then stage as perinatal. Refer to Section 5.3.

### 2.2 Acquired Immunodeficiency Syndrome

Lab Confirmed Case—AIDS

Meets the laboratory confirmed case definition for HIV infection

AND

Diagnosed with at least one of the indicator diseases included in the national AIDS case definition.

## 3. Reporting and Other Requirements

### 3.1 Reporting to Manitoba Health

#### *3.1.1 Laboratory HIV Test Results (Nominal and Non-Nominal)*

**Laboratory:** All positive laboratory results for HIV are reportable to the Manitoba Health Surveillance Unit (MHSU) by secure fax as required under the Reporting of Diseases and Conditions Regulation of *The Public Health Act*.(1)

Where specimens are appropriately procured and testing completed by a laboratory other than Cadham Provincial Laboratory (CPL), sera from clients with reactive or indeterminate HIV antibody or antigen are to be forwarded by clinical operators in Manitoba to CPL.

**Health Care Professional:** The attending health professional must complete the *Provider Report Form for Sexually Transmitted and Blood-Borne Infections (STBBI) and STI Treatment (MHSU-6781)* (found in MHSU's Surveillance Forms webpage) for cases and contacts and submit it to Manitoba Health (MH) by secure fax. "Staging" of the case is required for surveillance purposes to indicate whether the result represents a new infection, or represents an infection previously diagnosed in Manitoba or diagnosed in another jurisdiction but new to Manitoba.

**Note:** Non-nominal testing is no longer routinely performed. If a non-nominal test is completed, positive results must be reported to MHSU as above.

#### *3.1.2 Anonymous HIV Test Results*

Anonymous HIV testing is only available at designated anonymous testing sites (see Section 6.3.4). Test sites are required to report positive HIV laboratory test results to MHSU by secure fax, if a follow-up nominal laboratory test is not completed.

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The *HIV Case Report Form for Anonymous Testing (MHSU-4482)* (found in MHSU's Surveillance Forms webpage), along with the positive lab confirmation report, must be completed and faxed to MHSU.

For surveillance purposes, epidemiological data are collected and documented on the Anonymous HIV Antibody Testing Requisition and submitted to MH by CPL.

For contacts identified by the anonymous case, the attending health professional must complete the *Provider Report Form for STBBI and STI Treatment (MHSU-6781)* (found in MHSU's Surveillance Forms webpage) and submit it to MH by secure fax.

### 3.1.3 Point-of-Care Test Results

Both nominal and anonymous POC testing options are currently available in Manitoba (see Point-of-Care HIV Testing under Section 6.3.2). All reactive test results obtained from clinical or POC testing sites are reportable to MHSU when a confirmatory standard test is not performed by CPL (i.e., person refuses to have a confirmatory standard HIV test following a reactive or indeterminate POC HIV test result). In these situations, the attending health professional must complete the *HIV Case Report Form for Rapid HIV Testing (MHSU-4487)* (found in MHSU's Surveillance Forms webpage) and submit it to MH. This form does NOT need to be completed for individuals having standard confirmatory HIV testing at CPL.

Self-administered HIV test results should not be reported to Manitoba Public Health (PH). However, clients should be encouraged to inform their HCP if they receive a positive result on an HIV self-test. The client should be encouraged to have confirmatory testing performed.

See Section 6.3.2 for POC testing recommendations.

### 3.1.4 Reporting Acquired Immunodeficiency Syndrome

The diagnosis of AIDS is reportable by health professional to MHSU by confidential fax using the federal *HIV/AIDS Case Report (MHSU-2437)* form (found in MHSU's Surveillance Forms webpage).

### 3.1.5 Reporting from Canadian Blood Services

Canadian Blood Services (CBS) reports HIV-positive test results of potential blood donors to MHSU by secure fax.

Positive test results received from CBS that meet the laboratory-confirmed HIV case definition will be processed accordingly (see Section 7.1).

It is the responsibility of any organ, tissue, and/or bodily fluid donation site to report positive HIV laboratory results to the MHSU by confidential fax.

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#### *3.1.6 Reporting from Other Sources*

Various other organizations, such as the Immigration, Refugees and Citizenship Canada (IRCC), insurance companies, plasma and/or tissue donors other than CBS, etc., may test clients for HIV.

As HIV is a reportable disease, positive laboratory test results from outside organizations must be reported to the MHSU. Reports may be made via confidential fax on the prescribed form.

As of June 2005, the IRCC refers the names of those individuals identified as having an HIV-positive test result (i.e., tested outside of Canada) to MH.

### 3.2 Reporting to Canadian Blood Services

All newly diagnosed HIV positive persons must be reported by the Regional PH Unit completing the investigation (PH Nurse/Investigator, Communicable Disease Coordinator, or Medical Officer of Health) to CBS within two working days of interview if the case reveals a history of donating blood during a potentially infectious period, or receiving blood in Canada as a potential HIV acquisition source. However, CBS notification is not required in the following situations:

- The person donated blood in Canada more than three months prior to a confirmed HIV-negative laboratory test; or
- The person received blood in Canada and had a subsequent HIV negative laboratory test three months or more after receipt.

Report submissions should include the donor name, date of birth, where and when they donated blood (for donors), and the date/location of transfusion and other risk factors (for blood recipients where transfusion is one of the identified risk factors).

When notifying CBS, a copy of the positive test result must accompany all reports, and all information should be sent to CBS Transmissible Disease Notification via confidential fax. Inquiries can be sent via email.

For scenarios not described above (including donations of other tissues not involving CBS), the Medical Officer of Health (MOH) should be consulted.

## 4. Epidemiology

### 4.1 Reservoir

Humans, similar viruses are found in non-human primates.

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## 4.2 Transmission

HIV is transmitted through direct contact with infected blood or bodily fluids. This includes, but is not limited to, the following:

- Sexual contact: anal, oral, and vaginal sex and the sharing of sex toys with a person living with HIV. Individuals with an existing sexually transmitted infection (STI), particularly those with ulcerative lesions (e.g., syphilis, herpes), are at increased risk of transmitting or acquiring HIV.
- Injection drug use: influenced by injection practices and social context. Injecting with used needles, syringes or other equipment constitutes a high risk of transmission.
- Activities involving skin punctures: including tattooing, body piercing, or other invasive personal services that involve contact with blood/bodily fluids (particularly if using non-sterile equipment). Exposing open wounds to contaminated body fluids can also result in transmission of infection.
- Occupational Exposure: The risk of acquiring HIV infection after percutaneous exposure to HIV-infected blood is less than 0.5%.(2) For guidance and recommendations following an exposure, see MH's Integrated Post-Exposure Protocol for HIV, HBV and HCV: Guidelines for Managing Exposures to Blood/Body Fluids.(3)
- Refer to Section 12.1 for more details on HIV transmission risk.

There is a higher risk of transmission during the acute seroconversion illness than during the early phase of established HIV infection. A high viral load in a person living with HIV increases the potential for transmission. The publication "HIV Transmission Risk, A Summary of the Evidence (2012)"(4) contains more information on the relative risks of HIV transmission.

Exposures to urine, saliva, sweat and tears do not pose a risk for HIV infection unless the fluid contains visible blood. The risk of HIV transmission is very low when human biting that causes bleeding occurs.

Routine social or community contact with a person living with HIV carries no risk of transmission. Intact skin protects against infection.

The term 'undetectable equals untransmittable' (U=U) is used to recognize that people living with HIV who take antiretroviral therapy (ART) and maintain an undetectable viral load have effectively no risk of transmitting HIV through sexual contact.(5) While data supports the U=U principle for sexual transmission, data is less clear for other modes of HIV transmission.

### *4.2.1 Blood Transfusion, Tissue or Organ Transplantation*

In Canada, the risk of HIV transmission from the receipt of donated blood, blood products, tissues or organs is extremely low, as all donors are screened for HIV. However, it is possible for a donor to be in a window period of infection at the time of donation, and HIV could be transmitted. The estimated risk is less than one per million transfusions.

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People who have engaged in activities that place them at increased risk for HIV infection should not donate plasma, blood, organs for transplantation, tissue or cells (including semen for artificial insemination). CBS may exclude a blood donation based on information obtained in a donor questionnaire. When a blood sample tests positive for HIV by nucleic acid testing (NAT) and/or antibody testing, CBS will notify the donor, provide appropriate counselling to the individual and discard all the donation products.

Receipt of blood, blood products, tissue or organs between 1978 and1985, or in countries where screening is unreliable or not carried out, poses a risk for transmission.

#### *4.2.2 Perinatal Vertical Transmission (Mother/Birthing Parent to Child)*

Transmission can occur in utero, intrapartum or postnatally through breastfeeding/chestfeeding. In the absence of any preventive intervention, for example, ART, perinatal vertical transmission ranges from about 15% to 45% depending on whether breastfeeding/chestfeeding alternatives are available.(4) Current measures for the pregnant person (i.e. ART) and infant (i.e. avoidance of breastfeeding/chestfeeding and antiretroviral therapy) reduce transmission risk to less than 1%.

Viral load is the most significant factor affecting HIV transmission rates. Other factors include mode of delivery, viral phenotype, and frequency of breastfeeding/chestfeeding. Antiretroviral therapy should be provided to every pregnant person living with HIV.

Principal factors associated with perinatal transmission among infected persons include:

- Increased mother/birthing parent viral load
- Recent infection, development of AIDS, co-infection with other sexually transmitted and blood-borne infection (STBBI)
- Low mother/birthing parent CD4+ counts
- Discontinuation of or poor adherence to antiretroviral treatment
- Vaginal delivery and obstetrical factors including length of rupture of membranes, invasive monitoring, and instrumented delivery (in cases where viral load is detectable)
- Dual infection with HIV-1 and 2 increases HIV-1 transmission likelihood.
- Breastfeeding/chestfeeding, as HIV has been detected in the breast milk even when mother/birthing parent viral load is undetectable.

### 4.3 Occurrence

Changes in HIV case numbers, reported exposure categories, and the observed trends of both should be interpreted with caution. A number of factors may contribute to fluctuations including changes in testing practices resulting in the potential under-diagnosis or delayed diagnosis of cases, and the possibility of dual reporting. In addition, the proportion of individuals from particular exposure categories that come forward for testing may differ and their report of risk factors may be affected by stigma.

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### 4.4 Epidemiological Information on HIV Infection

#### *4.4.1 World*

Current global HIV epidemiology is available at the World Health Organizations' Global Health Observatory website.

#### *4.4.2 Canada*

Current national epidemiology is available from the Government of Canada's Diseases and Conditions Publications webpage.

#### *4.4.3 Manitoba*

Provincial HIV epidemiology reports are available at MH's STBBI dashboard and Statistical Update on HIV/AIDS webpages.

## 5. Clinical Presentation and Natural History

### 5.1 Window Period

The period between initial HIV acquisition (infection) and seroconversion (laboratory detection of HIV) is known as the window period. In general, the window period is 15-45 days for laboratory-based tests.(6, 7) The length of this period depends on the testing modality. The window period for fourth generation combination antibody/antigen test (currently used in Manitoba) is approximately 10-14 days.

### 5.2 Adults with HIV Infection

Without treatment, infection with HIV will progress through the three stages(8) described below. However, with ART, the second and third stages are preventable and reversible.

#### *5.2.1 First Stage: Acute HIV Infection*

The first stage of HIV infection occurs several weeks to months after infection with HIV(9) and is associated with high viral titers and widespread dissemination. Although some individuals in this stage are asymptomatic, many people (estimated 30-70%) develop an acute self-limited flu-like or mononucleosis-like illness lasting for one to two weeks. If these symptoms occur, it is typically within several weeks to months after the initial infection with HIV and is known as the seroconversion illness.

Symptoms and signs during the primary HIV infection may include fever, myalgia, sore throat, headache, rash, nausea, diarrhea and vomiting. This presentation is can be nonspecific and may not be recognised at initial presentation. Undiagnosed HIV infections in Canada represent a significant public health challenge.(10)

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### *5.2.2 Second Stage: Chronic HIV Infection*

In the second stage of illness, individuals are free of clinical signs and symptoms, usually for years. A viral load test of over 5,000 copies/mL obtained during the asymptomatic period is correlated with an increased risk of more rapid disease progression.

Current ART can prevent HIV infection from progressing to AIDS. HIV infection is now considered a chronic disease for persons who have access and adhere to therapy.

### *5.2.3 Third Stage: AIDS*

The third stage of HIV infection is characterized by the development of opportunistic infections and cancers attributable to immune system dysfunction. Eventually, AIDS almost invariably develops in untreated persons. Progression to AIDS is highly variable taking an average between eight to 15 years.

Onset of clinical illness is usually insidious with non-specific symptoms such as lymphadenopathy, anorexia, chronic diarrhea, weight loss, fever and fatigue. However, this constellation of non-specific symptoms is usually not sufficient, by itself, for a diagnosis of AIDS (see Section 2.2).

People with AIDS/advanced HIV disease are at increased risk of morbidity and mortality. While there is currently no cure for AIDS, AIDS is both preventable and reversible with HIV ART.

## 5.3 Infants and Children with HIV Infection

Ten to 20 percent of perinatally-infected children who are untreated will present with moderate to severely symptomatic disease in the first year of life. The median time to disease progression of the remaining 80 to 90 percent of perinatally-infected children is unknown but is likely similar to adults.

Diagnosis of HIV infection among children less than 18 months of age can be complex and requires detection of the infection by NAT. Management of infants suspected to have HIV infection should be done in consultation with a specialist in HIV care of children.

Untreated children may present with failure to thrive, poor growth, diarrhea, enlarged lymph nodes, developmental delay, pneumonia, oral thrush and other recurring bacterial infections. Symptoms of HIV in teens may be the same as in children, and may also be more similar to the symptoms commonly seen in adults with HIV.

Current ART can also prevent HIV infection from progressing to AIDS in children.

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### 5.4 Period of Communicability

While the period of communicability is not known precisely, it begins early after onset of HIV infection and presumably extends throughout life. Transmissibility may increase at the onset of infection (with or without symptoms), during periods of high viral load, worsening clinical status and in the presence of other STIs.(9)

Research shows that consistent and correct use of HIV treatment to maintain an undetectable viral load (< 200 copies/ml) is a highly effective strategy to prevent sexual transmission of HIV for both heterosexual and same-sex male couples.(11) This is referred to as U=U,(5) where effective HIV treatment is considered preventive for sexual transmission.

### 5.5 Susceptibility and Resistance

Susceptibility to HIV infection is presumed to be universal. While the impacts of gender discrimination/ oppression, structural racism and colonization do impact the risk of exposure to HIV, biological factors of race, sex and pregnancy status themselves do not appear to differentially affect susceptibility to HIV infection.

The presence of other STIs, especially genital ulcers, increases susceptibility.(9)

HIV drug resistance remains a concern, as all antiretroviral drugs are at risk of becoming partly or fully inactive because of the emergence of drug-resistant virus. HIV drug resistance is caused by one or more changes (mutations) in the genetic structure of HIV that affect the ability of a specific drug or combination of drugs to block replication of HIV. Acquired HIV drug resistance develops when HIV mutations emerge because of viral replication among individuals receiving ART. Transmitted HIV drug resistance occurs when individuals are infected with HIV that has drug resistance mutations. Pretreatment HIV drug resistance refers to drug-resistant virus detected in antiretroviral drug–naive individuals initiating ART or individuals with previous ART exposure initiating or reinitiating first-line ART. Pre-treatment HIV antiviral drug resistance is approximately 10% globally, and may be higher in some populations.(12) In Canada, 13.9% of HIV specimens analyzed in 2012-2013 were resistant to at least one drug class.(13)

## 6. Testing and Diagnosis

### 6.1 Who to Test for HIV

Normalize HIV testing in the general population by offering HIV testing to everyone as part of routine care. Health care providers should know the HIV status of all individuals in their care. HIV testing should be offered to the following:

- Patients as per the HIV Testing Guidelines of the Manitoba HIV Program (MBHIVP)
- All individuals requesting a test

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- All pregnant people at their first prenatal visit, in the third trimester, and at delivery if HIV status is unknown (see section 6.3.2 on urgent POC testing if HIV status unknown at delivery)
- Any contact of an HIV case, particularly if they present with an acute HIV-like illness

Upon ordering an HIV test, HCPs should inform the client that HIV is a reportable disease, and all positive test results are forwarded to Manitoba PH.

## 6.2 Testing Pursuant to an Order

If testing is being conducted pursuant to an order issued under The Testing of Bodily Fluids and Disclosures Act,(14) it is acknowledged that there may be no opportunity to discuss the details of HIV testing prior to the blood being drawn. The Source client[3] will be encouraged to seek medical advice as soon as reasonably possible after receiving the order and before attending to having the blood drawn. If that is not possible, the Source client will be encouraged to seek medical advice after having the blood drawn for testing. The test results of the Source client will be disclosed to the physician identified by the applicant who obtained the order and will be communicated by that physician to the Exposed client[4]. The test results of the Source client will also be disclosed to the physician identified by the Source client and will be communicated by that physician to the Source client. If there is no physician identified by the Source client and/or the Exposed client, the test results will be disclosed to the MOH for the region in which the Exposed client resides. The MOH will then be responsible for ensuring appropriate communication of the test results of the Source client to the Source and/or Exposed clients. Post-test counselling will be done; however, no other personal health information will be disclosed.

## 6.3 Testing Options

### *6.3.1 Laboratory HIV Testing*

Requisitions for laboratory HIV blood sample testing (i.e., serology and/or NAT) are available online:

- Routine requisitions include client names and identifiers. Non-nominal testing should no longer routinely be offered. Contact CPL if non-nominal testing is required, or refer clients to an anonymous HIV testing site.
- Ordering HCPs are responsible for communicating test results to their clients.
- There may be other types of laboratory-based HIV tests utilized, including for research purposes. Positive HIV tests using a non-routine test modality should be confirmed using routine laboratory testing (see Section 2.1 for laboratory confirmed case definition). Cases can be classified as “probable” pending confirmatory testing.

[3] The individual served with an order to submit to testing
[4] The individual who comes into contact with the potentially infected blood/body fluid

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### 6.3.2 Point-of-Care HIV Testing

Point-of-Care HIV testing refers to when an HIV test is performed outside a designated testing laboratory (e.g., in a physician's office). It is available at select sites in Manitoba and involves using a rapid test kit (using fingerstick blood) that can provide a result in about 5 minutes.

These tests are highly sensitive and highly specific for HIV detection(15), but their results are considered preliminary. All preliminary reactive results obtained by POC testing require confirmatory testing at CPL by standard HIV laboratory testing methods (i.e., venous blood sample sent to CPL).

**Note:** Urgent HIV testing must be performed on the mother/birthing parent with unknown HIV status who are at higher risk of HIV exposure. If available, POC HIV test should be done in addition to sending serum for HIV testing. If POC testing is not performed on the mother/birthing parent, a POC test is strongly recommended for the newborn infant, ensuring processes for obtaining consent are followed. A rapid result is required to determine whether the newborn should receive antiretroviral drugs to reduce the risk of perinatal transmission, which must be given within six hours of delivery.

### 6.3.3 Self-Administered HIV Testing

HIV self-test kits are available in Manitoba. These kits use the same technology as POC tests. Self-testing has been shown to increase testing frequency and uptake, and may be a preferred option for those who otherwise may not seek testing.(16)

Self-testing kit availability is evolving. They may be available for pickup at certain clinics, directly from the manufacturer, and/or in the context of research studies.

All individuals who report a positive HIV self-test should be offered confirmatory testing at CPL by standard HIV laboratory testing methods (i.e., venous blood sample sent to CPL).

### 6.3.4 Anonymous HIV Testing

Anonymous testing is available at a limited number of locations in Manitoba. Facilities wanting to provide anonymous HIV antibody testing should connect with CPL.

Clients requesting anonymous testing will receive a unique identifier and are responsible for returning to the site to receive their test results. No names or contact information will be collected.

Anonymous testing sites may use laboratory and/or POC HIV testing methods, based on clinical recommendations and client preference.

Anonymous HIV testing is not recommended for prenatal testing as it does not allow for linkage to care, which is essential to prevent vertical transmission. The current prenatal serology test panel in Manitoba includes hepatitis B, HIV, rubella and syphilis testing.

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Other situations where anonymous HIV testing is not recommended include occupational exposures, refugee/immigration applications, testing for insurance purposes, starting HIV treatment, etc.

The only epidemiological information collected for anonymous testing is the information provided on the lab requisition, since the client is not identified and cannot be contacted.

## 6.4 Laboratory Results for Adults and Children Over 18 Months of Age

### *6.4.1 Positive Serologic Test Results*

All positive fourth generation combined antibody/antigen enzyme-linked immunosorbent assay (EIA) screening test results are confirmed via immunochromatographic assay. A positive confirmatory assay after a positive fourth generation EIA result is consistent with HIV infection. Only the confirmatory test is capable of differentiating between HIV-1 and HIV-2 infection.

### *6.4.2 Negative Serologic Test Results*

A negative screening EIA test is reported as HIV negative. Confirmatory testing is not required. However, repeat testing should be considered if there is clinical suspicion for HIV.

A positive screening EIA test is repeated twice. If both repeat tests are negative, it is reported as HIV negative.

False-negative test results will occur during the window period of an acute HIV infection.

### *6.4.3 Indeterminate Serologic Test Results*

A positive screening EIA test followed by a negative confirmatory immunochromatographic assay is reported as indeterminate.

Indeterminate test results are most commonly due to a non-specific reaction in a person who does not have HIV. However, HIV infection cannot be ruled out, particularly if the client is seroconverting, and further testing is required.

- Repeat testing in 2-3 weeks is recommended for most clients, particularly if they have not previously had an HIV test.
- If a client is noted to have had previous and/or repeated indeterminate HIV test results, repeat testing should be considered based on individual risk factors and/or with routine screening. Consult CPL if there is ongoing diagnostic uncertainty relating to HIV test results.
- HIV provirus testing may be utilized in some cases where there is diagnostic uncertainty. Consultation with CPL is required.

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**Note:** Although most individuals living with HIV develop detectable antibodies within 10-14 days after infection when using combined p24 & IgM/IgA/IgG testing, there may be a more prolonged window period in some persons. If there is clinical suspicion for an HIV seroconverting illness despite negative or indeterminate test results, repeat testing is recommended.

## 6.5 Laboratory Test Results for Children 18 Months of Age and Under

### *6.5.1 Positive Serologic Test Results*

All positive EIA test results are confirmed by immunochromatographic assay. The diagnosis of HIV infection in children 18 months of age and under differs from that in adults and older children because serologic tests will detect trans-placentally transferred maternal HIV antibodies that persist for many months. A positive confirmatory test with an initial positive screening test may mean that the child's mother/birthing parent was infected and may or may not have transmitted the infection to her/their child OR that the child's infection was acquired postnatally. Therefore ANY child with a positive antibody test requires further investigation to determine whether the child is infected, which may include HIV viral load and provirus.

Consultations with CPL and a pediatric HIV specialist are recommended.

### *6.5.2 Negative Serologic Test Results*

A negative confirmatory test is interpreted as no HIV infection even if the initial EIA was reactive.

### *6.5.3 Indeterminate Serologic Test Results*

An indeterminate combined antibody/antigen test result cannot be interpreted as either positive or negative and requires further evaluation. Children lose transferred mother/birthing parent antibody over a variable period of time. This typically occurs between six to 12 months of age, but can be up to 18 months old. An indeterminate test at 12 months old is often indicative of lingering transferred mother/birthing parent antibody, and serology should be repeated at 18 months of age for confirmation. However, if there are any concerns that the infant is infected, early evaluation is important.

Consultation with CPL and a pediatric HIV specialist are recommended if the diagnosis of HIV infection in infancy is suspected.

### *6.5.4 Nucleic Acid Testing Results*

Due to the challenges of interpreting positive and indeterminate HIV serology results in infants <12 months old, NAT is preferred in this age group.

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Infants exposed at birth who acquire HIV may have no HIV DNA or RNA detected by NAT within the first few weeks of life or while on post-exposure prophylaxis (PEP). Therefore, HIV DNA or RNA NAT is performed for infants born to HIV-positive mothers/birthing parents using a series of three tests, with the first test conducted at approximately two weeks of age, and the series of tests completed prior to six months of age. In infants at higher risk of HIV infection, the first NAT is performed shortly after birth.

The purpose of NAT is to identify infected infants as soon as possible and reliably determine if an infant is uninfected. Infants found to be uninfected by this method should also have antibody testing between 12 and 18 months of age to confirm seroconversion.

Due to the special circumstances and rare nature of infection, investigation in Manitoba is best conducted through the Children's Hospital Infectious Diseases Clinic, which is best positioned to perform follow-up.

### 6.6 Point-of-Care Test Results

A positive result on a POC test is considered a probable case (see Section 2.1). Confirmatory laboratory HIV testing should be offered to all clients who test positive on a POC test (see Section 3.1 for reporting requirements).

A negative result on a POC test is interpreted as HIV negative. False-negative test results will occur during the window period of an acute HIV infection. Repeat testing should be considered if there is clinical suspicion for HIV.

An invalid result on a POC test cannot be interpreted, and repeat testing is required.

## 7. Control

Public Health's primary objective in HIV case management is to prevent ongoing disease transmission. This is achieved through case identification and notification, contact tracing, and by ensuring newly identified cases are connected to initial and ongoing HIV treatment. This is accomplished through collaboration among HCPs, MBHIVP and community partners.

Collection of epidemiologic data by PH is also important to monitor trends, including risk factors for transmission, and manage clusters and outbreaks when identified.

### 7.1 Management of Cases

#### *7.1.1 Public Health Roles*

All positive HIV test results are reported by CPL to the MHSU. The MHSU then forwards the positive result to the local public health office (PHO) in the region in which the case resides for follow-up.

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Public Health will attempt to contact the testing HCP prior to contacting the case. Public Health follows-up with all newly identified cases of HIV in the province.

Key case investigation components completed by PH can be found in Section 8.

Public Health will ask the person living with HIV if they have been referred to and/or seen by the MBHIVP or Pediatric Infectious Diseases (PedsID). If not, PH will offer to refer the person living with HIV to the appropriate program.

**Note:** Public Health will only close the investigation of a new HIV case once it has been confirmed that the person living with HIV is linked to HIV care (e.g., through the MBHIVP or other HCP) according to MBHIVP's Client Engagement Status Definitions.

### *7.1.2 Health Care Provider Roles*

Close collaboration between PH and Primary Care is an essential part of case and contact management. Health care providers can contact their regional PHO directly if they have any case management questions.

Ordering HCPs must inform persons living with HIV of a positive HIV test result. All persons who test positive for HIV should be referred to the MBHIVP with consent of the person. Referral form can be found in the MBHIVP website.

Pediatric clients should be referred via fax to PedsID.

For more details on the process following testing, see Section 12.2.

Some people living with HIV may be experiencing other medical conditions or social barriers. Health care providers should offer assistance where necessary to link the client with resources and social supports such as financial and housing assistance, home care, mental health supports, and addictions services. Public Health and/or the MBHIVP can also offer additional supports and resources.

All newly diagnosed HIV cases should be assessed to determine whether the individual has symptoms of or meets the definition of living with AIDS (See Section 2.2).

### *7.1.3 HIV Disclosure*

Inform the person living with HIV of their obligation to notify current and future sexual and/or injection equipment-sharing partners of their HIV status. Persons living with HIV should disclose their HIV-positive status before activities that pose a "realistic possibility of transmission." Non-disclosure may in certain circumstances result in criminal charges.

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HIV-positive individuals who fail to disclose their HIV status and/or take appropriate precautions to prevent HIV transmission should be supported through collaborative efforts between their HCP and other social supports. Concerns regarding HIV exposure and non-disclosure can be referred to PH for coordinated follow-up.

The state of HIV and the law is evolving. Additional information regarding HIV disclosure requirements is available online (see the Department of Justice Canada and HIV Legal Network websites).

### 7.1.4 Sexually Transmitted and Blood Borne Infections and Tuberculosis Screening

Any person who tests positive for HIV should be tested for syphilis, chlamydia, gonorrhea and hepatitis B and C (and other infections as clinically indicated).

Any person who tests positive for HIV should be screened for tuberculosis (TB). Refer to recommendations in the Canadian Tuberculosis Standards (8th ed.).(17)

### 7.1.5 Immunizations

Immunization should be recommended according to current guidelines, which includes expanded recommendations for persons living with HIV compared to the general population. Generally, there is no contraindication to the use of inactivated or component vaccines in HIV-positive persons.(18)

When possible, vaccines should be given early in the course of HIV infection, although there is no contraindication to the use of inactivated vaccines at any time. If immune suppression is severe in an untreated or newly-treated person living with HIV and likelihood of exposure to the vaccine-preventable disease is low, vaccination may be deferred pending immune recovery after effective ART.

While most inactivated vaccines should be administered to people living with HIV according to routine immunization schedules, there are specific recommendation for people living with HIV. Additionally, with respect to live vaccines, the risks and benefits of a live vaccine need to be carefully considered. For more information, see the Canadian Immunization Guide.(18)

Information on Manitoba's eligibility criteria for publicly-funded vaccines is available in MH's website.

### 7.1.6 Travel Considerations

Pre-travel planning is recommended for persons living with HIV. Individuals should consult with their HCP and/or a travel medicine specialist at least four to six weeks prior to departure, including review of risks for opportunistic infections, and recommended medications or vaccines.

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Travelers should be aware of country-specific policies that restrict entry of people living with HIV. Updated information for all international travelers is available the Government of Canada's Travel and Tourism website.

## 7.2 Treatment

HIV treatment typically consists of antiretroviral medications and management of co-occurring infections (as applicable). Adult treatment initiation and guidance for health care providers is also available through consultation with the MBHIVP, or for pediatric clients, through PedsID.

### *7.2.1 HIV Medication Coverage*

HIV medication coverage is available in Manitoba through various programs. Eligibility criteria is subject to change, and should be reviewed with clients. Details are available on the HIV Medication Program Eligibility Form.

See Section 7.6.5 for details on pre and post-exposure prophylaxis.

## 7.3 Public Health Case Follow-up

Public Health will follow-up with all people who newly tested positive for HIV. Public Health will only close an HIV case investigation after confirming that the case has been linked to HIV care.

HIV is a chronic, lifelong condition. Consistent adherence to treatment is required to prevent disease progression and prevent the risk of HIV transmission to others. Care providers and PH have a shared responsibility to support people living with HIV.

HIV medication non-adherence increases the risk of disease progression and HIV transmission. Public Health and HCPs must take a collaborative approach to address medication non-adherence, and work together with the case to develop an appropriate management plan.

The local PHO should be informed when instances of treatment non-adherence coupled with transmission risks pose an ongoing health risk to others. If strategies to mitigate those risks are unsuccessful, the Chief Provincial Public Health Officer should be involved for further consultation and guidance. Orders under the provincial Public Health Act may be utilized in exceptional circumstances. A list of PHOs in the province can be found in MH's website.

Follow-up of reported cases of STIs in persons living with HIV:

- A review of viral load results is important for routine bacterial STI case investigations, and informs the overall risk assessment for HIV sexual transmission risk. Other factors that affect the overall transmission risk include condom use, the presence of other (non-reportable) genital infections, and sexual and/or drug use practices.

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- Based on the review of treatment history and viral load, concerns about HIV non-disclosure can be referred to PH for follow-up.
- Contacts should be notified of potential exposure and encouraged to be tested for all STBBIs, including HIV.

## 7.4 Management of Contacts

A "contact" is defined as someone who has been exposed to blood or certain other body fluids, including breast milk, semen or vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, amniotic fluid and peritoneal fluid, of a person living with HIV. This definition includes sexual and injection drug use equipment sharing partners, transfusion or transplant recipients, potential vertical transmission (in utero, intra-partum, postnatally and through breastfeeding/chestfeeding) from pregnant person to child/fetus and occupational exposures/accidental exposure.

Early identification of contacts and early initiation of treatment or prophylaxis (when applicable) is an important method for preventing further HIV transmission.

### *7.4.1 Contact Notification*

Notification of contacts regarding their HIV exposure may be PH-, practitioner/physician- or case-initiated. If HCP- or case-initiated notification is planned, PH will follow up to ensure notification has taken place.

Contact notification should be prioritized for potential high-risk exposures in order to review eligibility for pre-exposure prophylaxis (PrEP) and PEP, if applicable. Eligible clients should be referred to an HCP.

All HCPs have a legal and ethical responsibility to ensure the confidentiality of cases and contacts to the extent possible; to ensure that there is a plan in place to advise the contacts of their risk for infection; and to assist contacts in accessing medical attention if they desire.

Contacts should generally include sexual and/or injection equipment-sharing partners with whom the client has had exposure to in the 12 months prior to the client's first HIV-positive test. If the exposure occurred within three months of the client's first positive HIV serology, and the contact has an initial negative serology test, repeat testing should occur. Although the recommended interview period is generally not more than one year, there may be situations where more distant contact identification and notification may be required depending on the period of infectivity, the significance of the exposure, the feasibility of notification and a prioritization of contacts at risk.

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'Undetectable equals untransmittable' applies to sexual contacts of cases with viral suppression (i.e., viral load of less than 200 copies of HIV per milliliter of blood, for two consecutive results over a six-month period) at the time of sexual exposure; notification of potential exposure is not required. 'Undetectable equals untransmittable' does not extend to contacts of injection equipment sharing.

Use the contact notification interaction as an opportunity to educate contacts regarding activities that place them at risk for HIV infection and to identify strategies for reducing those risks. The following topics should be discussed with contacts:

- Signs and symptoms of HIV infection
- Transmission of HIV
- Prevention and harm reduction
- Pregnancy-related issues
- Other STIs
- Availability of testing services (including testing options)

Assess eligibility for HIV PrEP or PEP (see Section 7.6.5).

Public Health-Initiated Contact Notification

- With this option of contact notification, the HIV-positive client will provide contacts' names and their locating/contact information to a health professional, who forwards this information to MH. Regional PH will attempt to notify the contact(s) of their potential exposure to HIV within three business days of receipt of the referral from MH. The identity of the HIV-positive client will not be disclosed to their contacts, nor specific details or dates of exposure that may reveal the source.

Health Care Provider-Initiated Contact Notification

- The HIV-positive client will provide contact names/identifiers and location information to their HCP, who submits the information to MH.
- The HCP may attempt to notify contacts regarding their exposure to HIV. This would be applicable if there is existing therapeutic relationship with the contact.

Case-Initiated Contact Notification

- This is a strategy by which the HIV-positive client commits to notify their contacts regarding their possible exposure to HIV. Public Health will work with the client to agree on a process to confirm that the contact(s) are notified by the case and to discuss any additional follow-up requirements.
- Public Health should negotiate a period of time within which the HIV-positive client will inform their contacts. If the contacts have not been notified of their exposure to HIV after the agreed upon period, PH will work with the client and ensure notification occurs.

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Regardless of which contact notification process is chosen, HCP's should advise the person living with HIV that pertinent information about their contacts will be forwarded confidentially to MH. Submit all of the information for each contact to MH as soon as possible for surveillance and public health referral purposes. Manitoba Health will refer all of the information for each contact to the health jurisdiction in which the contact resides.

Testing of contacts should be performed as soon as possible.

### *7.4.2 Pregnancy, Perinatal, and Infant Contacts*

Pregnant Person

HIV-positive pregnant persons should be referred to the MBHIVP and PedsID as early as possible in pregnancy or in labour if not yet being treated.

Pregnant persons who are HIV-positive should receive antiretroviral therapy prenatally and during labour and delivery. Infants should receive post-partum antiretroviral therapy, which should be initiated as soon as possible after birth (preferably within 6 hours of delivery).

Pregnant persons who are HIV-positive should be counselled that in selected people (i.e., viral load >1,000 copies/mL), Caesarian section will reduce risk of transmission to infants if performed pre-labour or within 4 hours of rupture of membranes.

Infants and Children Less than 18 Months of Age

Children born to a pregnant person known to be HIV-positive at time of delivery require an HIV NAT (see Section 6.5.4), and urgent consultation with a pediatric HIV specialist should occur to determine appropriate antiretroviral prophylaxis and follow-up testing. Parents should be informed that the lack of signs and symptoms suggestive of HIV infection in older children does not exclude the possibility of HIV infection. Some perinatally infected children can remain asymptomatic for several years.

For infants born to HIV-positive persons who have not been provided with antiretroviral prophylaxis, perinatal transmission can still be significantly reduced by starting ART as soon as possible after birth, preferably within six hours (maximum 48–72 hours) after birth. All ART should be under the direction of a physician specializing in HIV care.

To ensure that infants at risk receive appropriate care, MH will refer all infants with positive HIV serology to regional PH, even though this result may be due to antibody transfer during pregnancy and not because of infant infection.

Regional PH will follow up with the attending HCP.

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Urgent HIV testing must be performed on mothers/birthing parents with unknown HIV status who are at higher risk of HIV exposure. Point-of-care HIV test should be done, if available, in addition to sending serum for HIV testing. If POC testing is not performed on the mother/birthing parent, a POC test is strongly recommended for the newborn infant, ensuring processes for obtaining consent are followed. A rapid result is required to determine whether the newborn should receive antiretroviral drugs to reduce the risk of perinatal transmission, which must be given within six hours of delivery.

Breastfeeding/chestfeeding is contraindicated for infants born to HIV-positive persons in Canada. Transmission to the infant through breastmilk is well documented. Ensure that safe, accessible, and culturally accepted replacement feeding is available.(19)

## 7.5 Cluster and Outbreak Management

A cluster or outbreak may be declared if there is an increase in observed HIV transmission amongst a defined group of people or population. If an outbreak or cluster is identified, PH will initiate an outbreak investigation and form an outbreak response team.

Genomic surveillance, if available, may help to identify HIV clusters and outbreaks by using genetic sequences to identify groups, or clusters of similar HIV sequences.(20) Because HIV mutates quickly in each person's body, similar genetic sequences in the virus indicate rapid transmission.

## 7.6 Preventive Measures

There are a number of factors at individual, community, and societal levels that contribute to the risk of HIV acquisition and transmission. HIV transmission risk is situated within histories and ongoing impacts of colonialism, racism, gender discrimination, homophobia, and other systems of oppression. Understanding and mitigating the impact of these factors on access and use of prevention and care services are needed to effectively prevent HIV acquisition and transmission. Supporting upstream basic needs such as income, housing, and mental health and wellness resources, can contribute to HIV transmission prevention.

HIV prevention strategies for client care can also be found in the MBHIVP's HIV Prevention Guidelines.

### *7.6.1 Testing and Early Detection*

Early case identification and initiation of treatment are key components of HIV prevention.

Health care providers should know the HIV status of all persons in their care and offer HIV testing to all persons as part of routine preventive health care. See Section 6.1 for HIV testing recommendations.

Public messaging about HIV testing and treatment should be adapted for populations at greatest risk for HIV transmission. General population-based prevention messaging should also occur.

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### 7.6.2 Vertical Transmission

Prenatal HIV antibody screening is recommended for all pregnant people to prevent vertical transmission (pregnant person to child) of HIV.

- Screening recommendations for pregnant persons are available in Section 6.1.
- Urgently refer pregnant persons who test positive for HIV to the MBHIVP and PedsID.
- Pregnant persons who test positive for HIV should receive HIV treatment and monitoring based on current clinical best practice.
- Transmission of HIV from mother/birthing parent to child is less than 1% with interventions that include antiretroviral prophylaxis during pregnancy, delivery, and to infants after birth. Infants born to a person living with HIV should not be breastfed/chestfed.
- See Section 6.5 for guidance on HIV testing for infants born to a person living with HIV

### 7.6.3 Sexual Transmission Prevention

Consistent and proper use of internal or external condoms for anal, vaginal and oral sex significantly reduces the risk of sexual transmission of HIV. Only water-based lubricants should be used.

Consider client eligibility for PrEP and PEP (see Section 7.6.5)

### 7.6.4 Bloodborne Transmission Prevention

People who actively use injection drugs and persons who share drug-using equipment should be offered access to appropriate harm reduction, counselling, and substance treatment options.

The effectiveness of publicly funded needle/syringe distribution programs for reducing HIV and unsafe injection practices among people who inject drugs has been established by systematic reviews, including evidence of cost-effectiveness.(21, 22) Opioid agonist treatment and supervised consumption services have been found to additionally prevent HIV transmission by reducing risk related to shared injection equipment.(23) Other harm reduction approaches can increase opportunities for engagement with health and other services, and early detection through low barrier STBBI testing.

Canadian Blood Services screens potential donors and tests donated blood for HIV and will exclude those testing positive. In addition, individuals who are known to be positive for HIV are excluded from donating blood in the future. Organ and tissue donors are also screened for HIV. Donors are notified of the positive test results, and positive results are also reported to MH.

Routine infection prevention and control practices should be followed for the handling, use and disposal of needles or other sharp instruments, cleaning of blood, body fluids or spills, and for direct patient care activities.

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### *7.6.5 Treatment as Prevention, Pre-Exposure and Post-Exposure Prophylaxis*

Adherence to ART is an effective way to prevent onward HIV transmission (U=U).

Efforts to engage and retain people living with HIV in care and treatment are essential components of an HIV prevention strategy.

**HIV pre-exposure prophylaxis** is a daily HIV prevention medication that can reduce the risk of contracting HIV by up to 99%. It is for people who are HIV negative and at high, ongoing risk of contracting HIV. Eligibility criteria in Manitoba can be found in MH's Eligibility Criteria and Clinical Guidance for Manitoba HIV Pre-Exposure Prophylaxis,(24) and information about coverage, etc. is available in the MBHIVP's PrEP website.

**HIV post-exposure prophylaxis** is available for persons who have experienced an exposure of concern to blood or body fluids. The process for determining eligibility for PEP is contained in MH's Integrated Post-Exposure Protocol for HIV, HBV and HCV: Guidelines for Managing Exposures to Blood and Body Fluids.(3)

## 8. Key Investigation Components for Public Health Response

Contact the testing HCP prior to connecting with the client. All cases will be followed up by PH.

### 8.1 Key Components of the Case Investigation

- Determine reason for testing, possible exposures (sexual, percutaneous, medical/occupational); appropriate follow up with CBS for blood recipients/donors
- Confirm pregnancy status for childbearing people and sexual partners
- Classification and staging of the case, including classification and staging dates
  - Staging is required for surveillance purposes(8) to indicate whether the result represents a new infection, or represents an infection previously diagnosed in Manitoba or diagnosed in another jurisdiction but new to Manitoba. See Section 8.2 for staging guidance.
- Follow-up testing for co-infections, including other STBBIs and TB.
- For newly diagnosed HIV cases (excluding perinatally acquired cases), check eChart for absolute CD4 count if available. See Table 2 under Section 9 for further information on PHIMS documentation.
- Ensure referral is made to the MBHIVP and link to HIV care is confirmed as per their Client Engagement Status Definitions. See Table 2 in Section 9 for how to document in PHIMS.
- Immunization for hepatitis A/hepatitis B/human papilloma virus, if indicated

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- Identification of sexual, blood and infant exposures (infants born to HIV-positive person or breastfeeding/chestfeeding infants) and all contacts that require follow-up.
  - Contact elicitation and notification should also be viewed as an ongoing program of care, extending beyond initial diagnosis. Keeping in mind the initial trauma often felt after a diagnosis, engaging and reengaging with clients who are initially reluctant to participate in contact notification is an effective strategy.
  - A client's reluctance to notify or disclose contacts should not limit their access to health services, whether clinical or psychosocial. Assistance with contact notification should be offered to all newly diagnosed HIV clients, at or around the time of their initial diagnosis, regardless of whether they chose nominal or anonymous reporting. If contact notification was incomplete at or around the time of diagnosis, provide opportunities to complete the process in the weeks and months following diagnosis.
- Harm reduction education/supplies as indicated.
- Education on preventive measures and/or connection to resources to support health outcomes, specifically, equitable access to HIV ART.
- Provide general information about the legal duty to disclose HIV status to contacts if engaging in sex or other activity that poses a realistic possibility of HIV transmission.
  - Refrain from interpreting the law, attempting to offer legal advice, or analyzing the client's specific situation from a legal standpoint. Offer the client materials from reliable sources of information (e.g., see the Department of Justice Canada and HIV Legal Network websites), as the law is evolving.
  - Inform client that PH may also follow up with individuals about HIV transmission concerns. Public Health is not focused on criminal law, but rather on preventing HIV transmission and supporting people living with HIV.
- Completion of case report form/documentation in Public Health Information Management System (PHIMS).

Subsequent PH follow-up with people living with HIV may also be required for the below circumstances:

- When diagnosed with another STBBI, or if identified as a contact
- When HIV transmission and non-disclosure concerns are identified from service providers or community members, they may be referred to PH for follow up according to the guideline for *Public Health Management of HIV Exposure and Non-Disclosure*.
- When clients living in Manitoba who become lost to HIV care per MBHIVP's Client Engagement Status Definitions
  - These clients may be referred to PH, who can assist to locate, assess readiness to connect with HIV care, and/or address barriers to their access to care. Efforts to re-engage a client in HIV care is documented in the PHIMS HIV Case Investigation, and outcomes will be communicated to requesting HCP at the MBHIVP. Other referrals to PH for clients not connected to care will be followed up on a case by case basis (e.g., if pregnant and not receiving treatment). See Section 9, Table 2 for PHIMS documentation guidance.

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### 8.2 Guidance for HIV Case Classification and Staging

Staging should be consistent with the client's condition at the time of the initial test and should be documented by four weeks from report date.

Table 1 – Staging and Classification Guidance

| Stage | Classification | Scenario Description |
|---|---|---|
| New diagnosis | Lab confirmed | Follow protocol – new diagnosis |
| Old case -previously Diagnosed/ known in MB | Not a case | Previously reported in Manitoba |
| Previous diagnosis - new to MB | Lab confirmed | Follow protocol – new diagnosis |
| Perinatal | Lab confirmed | Includes new laboratory confirmed cases in children whose suspected mode of acquisition was from a mother/birth parent with HIV infection. Acquisition may have occurred during pregnancy, childbirth, or from breastfeeding. Exact mode of acquisition does not need to be confirmed. See section 5.3 and 6.5 of the MB HIV Protocol for further guidance. |
| Blank | Lab confirmed or PUI | Requires update to stage |

### 8.3 Key Components of the Contact Investigation

- Notification of possible HIV exposure and testing, including testing of other STBBIs
- Immunization for HAV/HBV/HPV, if indicated
- Harm reduction education/supplies as indicated
- Education on preventive measures, including HIV PrEP and/or PEP, if indicated
- If the contact is known to be living with HIV, connecting with the individual to inform that they were identified as a contact, review of prevention measures and disclosure issues or barriers; discussion of responsibility to prevent transmission

It is PH's responsibility to ensure that contact notification and follow-up takes place, regardless of whether contact notification is performed by the person living with HIV, HCP or PH.

## 9. Documentation Guidelines and Resources

Critical data elements to collect on all cases are listed with a star (*) on the *Hepatitis B and C, HIV, and Syphilis Investigation Form (MHSU-6780)* (found in MHSU's Surveillance Forms webpage). Form instructions with additional PHIMS entry guidance are found in the User Guide.

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PHIMS Quick Reference and User Guides are available at the PHIMS website.

Table 2 provides broad guidance and timelines for the majority of HIV case investigations, but may not align with the chronology or flow of some investigations.

Table 2 – Timelines for Documenting HIV Cases in PHIMS

| Investigation Component | PHIMS Data Entry | Timeline from PH Report Date* |
|---|---|---|
| Region receives new Investigation from MHSU or other source. Responsible Org and Workgroup assigned by MHSU | Region to Assign Primary Investigator or CD Coordinator<br>Connect with MHSU if investigation referred from other source. Investigation created. | 1 day |
| Primary investigator/CD Coordinators review investigation and lab results | Update Classification and classification date<br>Update Disposition from Pending (e.g., Follow up in Progress).<br>If an AIDS indicator disease is communicated with PH at the time of diagnosis, it should be documented in PHIMS. Public Health is not required to pursue information related to AIDS indicators for new cases.<br>Note special considerations for classification, staging, and follow up of infants born to HIV-positive birth parents, or children under 18 months of age with reactive serology (see 6.5 and Case Definitions).<br>If other new STBBI Investigations in PHIMS should be combined (e.g., if same contacts were exposed to more than one STBBI), see PHIMS process for Co-Infections in User Guide of Completion of Surveillance Forms for Reportable Diseases and PHIMS QRCs. Add an Additional Disease to an Investigation. | 3 days |

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Table 2 – Timelines for Documenting HIV Cases in PHIMS

| Investigation Component | PHIMS Data Entry | Timeline from PH Report Date* |
|---|---|---|
| Contact testing practitioner for necessary information (or enter information received on STBBI Provider Form).<br><br>Includes the following:<br>• Confirmation that client has been notified of results or is planned to be notified<br>• Pregnancy or recent child birth<br>• Risk Factors<br>• Plan for referral to MBHIVP | Update PHIMS data with information available:<br>• Cases new to Manitoba – ensure connection to care and that education/prevention counselling has occurred.<br>• Contact interview and creation of Transmission Event (TE) and Contacts in PHIMS. If case plans to notify contacts, PH to hold case investigation open until notification confirmed.<br>• Author note<br>• Upload relevant context documents as required (e.g., personal health information/correspondence sent to PH from an outside HCP, personalized letters).<br>• Non-critical fields (method of detection, symptoms, risk factor information) should be documented whenever possible. | 1–2 weeks<br><br>(May contact testing practitioner immediately for highest priority cases, e.g., pregnant client or client in short-term stay facility) |
| Attempt to contact case directly unless HCP wishes to assume all aspects of investigation (e.g., for additional surveillance information, contact interview, facilitate referral to MBHIVP and education) | After contact/attempt with testing practitioner:<br><br>When referral to Manitoba HIV Program (or other HIV care provider) is confirmed, document Intervention – Referral to Manitoba HIV Program. Document Start date: Date the referral to Manitoba HIV Program (or other HIV treatment provider) was sent or confirmed sent.<br><br>Use “pending” outcome. When attendance has been confirmed (required for all), update outcome to “attended” and add End Date.<br><br>If additional support is required by public health to link client with HIV care, add Intervention: Public health support to engage with care. Use outcome as appropriate (pending, completed). | 1–3 weeks |

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Table 2 – Timelines for Documenting HIV Cases in PHIMS

| Investigation Component | PHIMS Data Entry | Timeline from PH Report Date* |
|---|---|---|
| Follow up to complete critical data elements listed on Case Form | Complete PHIMS documentation<br>• Includes classification and staging—all cases should be staged by 4 weeks.<br>• Interventions relevant to key investigations<br>Risk Factors – document a response for all required risk factors identified on the STBBI Case Form 6780.<br>If unable to locate client and/or unable to meet basic care criteria (client not notified of result, not interviewed), continue to pursue indefinitely with periodic attempts to locate (e.g., check locating sources every 1-6 months).<br>Disposition: Follow up in Progress, OR Unable to Locate, OR Lost to Follow up. | 4 weeks for staging and classification |
| | Status open (indefinite).<br>Hold case investigation open until case has attended intake appointment with HIV HCP.<br>For newly diagnosed HIV cases (excluding perinatally acquired cases), document the first absolute CD4 Count (if available in eChart) prior to investigation completion/closure. Document under Symptoms. Refer to MHSU 6780 Case Form Instructions<br>New HIV-positive pregnant persons are kept open until delivery. Once infant born create a TE and link the infant(s) as a contact. | Indefinite |
| Quality Assurance | Each region employs a Quality Assurance process (Classification, Staging, Disposition, Critical Fields)<br>Consider use of PHIMS Quality Assurance report if PH nurse working in specialized STBBI Role | Quarterly |

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| Table 2 – Timelines for Documenting HIV Cases in PHIMS | | |
|---|---|---|
| Investigation Component | PHIMS Data Entry | Timeline from PH Report Date* |
| Subsequent Follow Up of Previously Completed Case Investigations<br><br>**Note:** Do not create a new HIV Case Investigation. Connect with MHSU if no existing investigation. | A previously completed HIV Case investigation may be re-opened for the following reasons:<br>• Referral from MBHIVP for Lost to HIV Care<br>• Investigation re-opened due to HIV exposure and non-disclosure concerns (see Public Health Management of HIV Exposure and Non-Disclosure guideline)<br>• Case named as a contact to an STBBI or diagnosed with a subsequent STBBI<br><br>If a referral is received by public health requesting public health support to engage client with care (e.g., HIV lost to care referral from Manitoba HIV Program), add Intervention: Public health support to engage with care. Document the date the referral was received as the start date. Use outcome as appropriate (pending, attended)<br><br>For known HIV-positive people who subsequently become pregnant, check in with MBHIVP to see if PH follow up is recommended (based on engagement in care and treatment). Document consultation. If PH involvement recommended by MBHIVP, create TE and contact. Keep investigation open until pregnancy concluded.<br><br>If PH involvement during pregnancy is *not* recommended by MBHIVP (i.e., client connected to care with suppressed VL), document assessment and consultation in Notes. If infant already delivered or imminent delivery, create TE and link contact.<br><br>Change status from closed to open<br><br>Update/assign new investigator<br><br>Disposition: Pending OR Follow up in Progress OR Unable to Locate, OR Lost to Follow up<br><br>Attach referral form through document management<br><br>Author note | |

*Days refer to working days

Broad guidance and timelines for HIV contact investigations is shown in Table 3.

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Unknown contacts (those whose identity cannot be confirmed) documented in PHIMS (TE Disposition Details) do not have the same options for data entry as PHIMS contact investigations. Follow the same basic investigation steps until two unique identifiers are confirmed.

Table 3 – Timelines for Documenting HIV Contacts in PHIMS

| Investigation Component | PHIMS Data Entry | Timeline from PH Report Date* |
|---|---|---|
| Region receives or creates a new Investigation | Assign Primary Investigator, Responsible Organization, and Workgroup | 1 day |
| Primary investigator attempts to locate and contact client for notification of exposure | Update Disposition: Follow up in Progress | 3 days |
| Document testing | Update PHIMS data<br>Author note | 1–2 weeks |
| Critical data elements listed on form | Complete PHIMS documentation as soon as available<br>If contact tests positive, close contact investigation with Disposition: Contact Turned Case. Continue documentation in Case Investigation.<br>If unable to locate client and/or unable to meet basic care criteria (client not notified of exposure, no testing after last suspected exposure + window period) – hold open for at least 6 months with periodic attempts to locate, reconnect with testing practitioner.<br>Disposition: Unable to Locate, OR Lost to Follow up, OR Follow up in Progress. Status open for 6 months or more.<br>High priority contacts may be pursued for up to a year (e.g., pregnant, child or youth). | 2 weeks up to 1 year to notify and support/confirm testing and treatment as indicated |
| Close investigation when investigation complete (contact notified, tested). Close if unable to complete (e.g., lost to follow up).<br>See Section 7.4. | Disposition: Follow up in Progress, OR Follow up Complete, OR Lost to Follow Up/Unable to Locate. Status Closed. | 2 weeks to 1 year |
| Quality Assurance | CD Coordinator Review by Quality Assurance Report level for minimal data elements only (Disposition, Treatment) | 6 weeks post closure of investigation |

*Days refer to working days

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## 10. Additional Resources

**Cadham Provincial Laboratory**
***Forms and Requisitions***
https://www.gov.mb.ca/health/publichealth/cpl/general.html
***Guide to Services 2020***
https://www.gov.mb.ca/health/publichealth/cpl/docs/guide_to_services.pdf

**Canadian Blood Service Transmissible Disease Notification**
Confidential fax: 844-836-6843
Email: lookback_traceback@blood.ca

Children's Hospital Infectious Diseases Clinic
Phone: 204-789-3619

Department of Justice Canada

Website: https://www.canada.ca/en/department-justice/news/2017/12/fact_sheet_hiv_non-disclosureandthecriminallaw.html

**Global Health Observatory**
Website: https://www.who.int/data/gho/data/themes/hiv-aids

**Health Links-Info Santé**
In Winnipeg, phone: 204-788-8200
Outside Winnipeg: 1-888-315-9257

HIV in Canada, Surveillance Report to December 31, 2020

Website: https://www.canada.ca/en/public-health/services/publications/diseases-conditions/hiv-canada-surveillance-report-december-31-2020.html

**HIV Intake Referral Line**
Phone: 204-940-6089 or 866-449-0165

**HIV Legal Network**
Website: https://www.hivlegalnetwork.ca/site/?lang=en

**Manitoba Health**
***Eligibility Criteria for Publicly-Funded Vaccines***
Website: https://www.gov.mb.ca/health/publichealth/cdc/vaccineeligibility.html
***Infection Prevention and Control***

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Website: https://www.gov.mb.ca/health/publichealth/cdc/ipc.html
***Surveillance Unit***
Secure fax: 204-948-3044

Website:
STBBI Surveillance Forms: https://www.gov.mb.ca/health/publichealth/surveillance/forms.html#stbbi
STBBI Surveillance Report: https://www.gov.mb.ca/health/publichealth/surveillance/stbbi/index.html

**Manitoba HIV Program**
***HIV Client Engagement Status Definitions***
https://mbhiv.ca/wp-content/uploads/2022/06/HIV-Client-Status-Definitions-FINAL.pdf
***HIV Prevention Guidelines***
https://mbhiv.ca/wp-content/uploads/2021/11/MB-HIV-Pgm-Prevention-Guidelines-FINAL.pdf
***HIV Testing Guidelines***
https://mbhiv.ca/wp-content/uploads/2021/11/MB-HIV-Pgm-Testing-Guidelines-FINAL-1.pdf
***Pre-exposure Prophylaxis (PrEP)***
https://mbhiv.ca/prep/
***Referring a Client***
https://mbhiv.ca/healthcare-providers/

**Nine Circles Community Health Centre (NCCHC)**
In Winnipeg, phone: 945-2437, fax: 940-6027
Outside Winnipeg: 1-800-782-2437

Pediatric Infectious Diseases
Fax: 204-272-3095

**Public Health Information Management System (PHIMS)**
Website: https://phimsmb.ca/

**Sexuality Education Resource Centre (SERC)**
In Winnipeg, phone: 947-9222 or 982-7800, fax: 982-7819, e-mail: info@serc.mb.ca
In Brandon, phone: 204-727-0417, fax: 204-729-8364, e-mail: brandon@serc.mb.ca
Website: www.serc.mb.ca

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# 12. Appendices

## 12.1 Appendix A: HIV Transmission Risk

Table 4 provides a synthesis of the current scientific evidence on the risk of transmission of HIV associated with sexual activities, injection and other drug use, and mother-to-child (vertical) transmission.(4)

Table 4 – HIV Transmission Risk

| Type of Exposure | Risk (%) |
|---|---|
| **Sexual** | |
| Receptive Anal Intercourse | 0.50 to 3.38 |
| Insertive Anal Intercourse | 0.06 to 0.16 |
| Receptive Penile-Vaginal Intercourse | 0.08 to 0.19 |
| Insertive Penile-Vaginal Intercourse | 0.05 to 0.10 |
| Receptive Oral Intercourse | Low |
| Insertive Oral Intercourse | Low |
| **Parenteral** | |
| Needle-Sharing During Injection Drug Use | 0.7 to 0.8 |
| **Vertical** | |
| Mother-to-child | 15 to 45 |

## 12.2 Appendix B: HIV Post-test Process

The purpose of the HIV post-test process is to provide and explain test results, use a client-centered approach to supporting the client's needs, and offer referrals for any additional assistance that may be needed.

### *12.2.1 Negative or Indeterminate Result*

Share the Test Result:

- Describe what a negative or indeterminate result means.
- Recommend follow up testing and/or routine testing as required.

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- Interpret meaning of result in relation to personal history (i.e., ongoing transmission risks, window period, regular testing).
- Review harm/risk reduction strategies including eligibility for PrEP and PEP.
- Provide client with resources, prevention material and referral(s) as appropriate.

### *12.2.2 Positive Result*

This process may require more than one visit. Each person will react differently to a positive HIV test result and it may take months for a client to adapt to the diagnosis. Offer choice and collaboration and start with any questions that are most important with the client. Encourage the client to return for follow-up sessions and bring a support person if they wish.

Key Principles to Sharing a Positive HIV Test Result

- Have time available to spend with the client to provide support, and be familiar with the resources and referrals available for clients living with HIV.
- Be compassionate, clear, direct, and provide time for the client to consider the result.
- Emphasize the benefits of care and ART, including U=U and living well with HIV.
- Assess sources of emotional and social support, including basic needs like income, and housing.
- Discuss the nature of acute HIV infection and the increased transmissibility the virus during this phase of HIV infection.
- Discuss ways to prevent forward transmission of HIV (e.g., ART, safer sex, harm reduction, possibility of PrEP for regular sexual partners).
- Confirm pregnancy status for childbearing people and their sexual partners.
- Inform that PH will follow up to provide support and work with them on a plan to identify and notify contacts.
- Provide general information about the legal duty to disclose HIV status to contacts if engaging in sex or other activity that poses a realistic possibility of HIV transmission.

Refrain from interpreting the law, attempting to offer legal advice, or analyzing the client's specific situation from a legal standpoint. Offer the client materials from reliable sources of information. Ensure a follow-up plan that includes the following:

- Referral to an HIV HCP. *Note that implied consent is required for referral to a care provider.* For adults, referrals should be sent to MBHIVP and for pediatric persons to PedsID.
- Follow up with client for any questions they may have.
- Offer client resources (e.g., MBHIVP's "If you just found out…" flyer).