

Section 6

Blood and Body Fluid Pathogens



Blood and Body Fluid Pathogens

Hepatitis B

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Notification Timeline:

From Lab/Practitioner to Public Health: Within 72 hours.

From Public Health to Saskatchewan Health: Within 2 weeks.

Public Health Follow-up Timeline: Within 24-48 hours.

Information

Table 1 Case Definition (Public Health Agency of Canada 2009)

Acute Hepatitis B Confirmed Case:	Hepatitis B surface antigen (HBsAg) and immunoglobulin M antibody to hepatitis B core antigen (anti-HBcIgM) positive in the context of a compatible clinical history or probable exposure OR clearance of HBsAg in a person who was documented to be HBsAg positive within the last six months in the context of a compatible clinical history or probable exposure.
Acute Hepatitis B Probable case:	Acute clinical illness in a person who is epidemiologically linked to a confirmed case.
Chronic Hepatitis B Confirmed Case:	HbsAg positive for more than 6 months OR detection of HBsAg in the documented absence of anti-HBc-IgM OR detection of Hepatitis B virus (HBV) DNA for more than 6 months.
Unspecified Hepatitis B Confirmed Case:	Does not fit the criteria for either of the above AND HBsAg positive OR detection of HBV DNA.
Laboratory Note: Occult HBV infection is characterized by a positive HBV DNA and presence of anti-HBc alone, or anti-HBc and anti-HBs in the absence of HBsAg. Further isolate characterization is indicated.	

Causative Agent

Hepatitis B virus (HBV), a DNA containing hepadnavirus.

Symptoms

 (American Academy of Pediatrics, 2012)

Symptoms can include: malaise, anorexia, vague abdominal discomfort, nausea, vomiting, dark urine, and stool light in color. Myalgia, rash, and arthralgias can occur early in the course of illness and may precede jaundice. Fever may be absent or mild. Most will have elevated ALT/AST; a small proportion will develop acute icteric viral hepatitis (Public Health Agency of Canada, 2013).

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The range of symptoms varies and includes sub-acute illness with non-specific symptoms, clinical hepatitis with jaundice and fulminant hepatitis.

- Acute clinical illness can be characterized by discrete symptom onset and jaundice, or elevated aminotransferase levels.
- Chronic infections may present with flares of similar symptoms and signs.
- Many cases are asymptomatic; likelihood of showing symptoms is age dependent:
 - Infants and children rarely have symptoms.
 - 30-50% of adults will be symptomatic.
- Chronic hepatitis B infection varies with age of becoming infected. It occurs in 90-95% of infants, 25-50% of children infected at age 1-5 years, and only 3-10% of adults. Persons who are immunocompromised are also at more risk for becoming a chronic carrier. (Canadian Immunization Guide [CIG], 2012).

Complications

Fulminant case fatality due to hepatic necrosis is about 1% and is higher in those over 40. Fulminant infection also occurs in pregnancy and among newborns of infected women. HBV is the cause of up to 80% of all hepatocellular carcinoma worldwide. An estimated 15% - 25% of persons with chronic infection will die prematurely of liver cirrhosis or hepatocellular carcinoma (Heymann, 2008).

Incubation Period

45-180 days, with an average of 60-90 days (PHAC, 2013).

Reservoir/Source

Humans: infected blood and body fluids as outlined in [Table 2](#).

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Table 2 Fluids and tissues capable of transmitting hepatitis B

FLUID	HBV
Lab specimens containing concentrated HIV, HBV or HCV	Yes
Blood, serum, plasma or other biological fluids visibly contaminated with blood	Yes
Pleural, amniotic, pericardial, peritoneal, synovial and cerebrospinal fluids	Yes
Semen, vaginal secretions	Yes
Saliva	Yes
Breast milk	Biologically plausible, particularly if nipples are cracked or bleeding or if mother is hepatitis Be antigen (HBeAg) positive
Organ and tissue transplants	Yes
Screened donated blood & manufactured blood products	Minimal risk in Canada

Source: U.S. Centers for Disease Control and Prevention, 2001; Canadian Blood Services.

Mode of Transmission

- Routes of transmission through percutaneous and mucosal exposure to infected blood, body fluids and blood products. Includes sexual contact, percutaneous exposure (e.g. needle stick, intravenous injection or glucose monitoring using non sterile or shared equipment or devices), permucosal exposure and perinatal transmission, unfixed tissues and organs.
- Perinatal transmission is highly efficient and usually occurs from blood exposures during labor and delivery.
- Interpersonal contact with chronically infected persons within households over extended periods of time. Can include: sharing of razors/tooth brushes, contact with non-intact skin, open skin lesions and mucous membranes with bloody secretions.
- HBV is stable on environmental surfaces in blood for at least 7 days making indirect transmission from objects contaminated with infected blood possible.

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Risk Groups/Risk Factors (PHAC, 2013)

- birth in a region with intermediate or high endemicity (See map in Yellow Book¹);
- infant of HBsAg-positive mother;²
- exposure before 7 years of age (e.g., child's immediate and/or extended family immigrated from a region of intermediate/high endemicity and/or child visited such a region);²
- people on hemodialysis (CIG Evergreen);
- family history of hepatitis B or hepatoma;²
- exposure to HBsAg-positive person (e.g., percutaneous, sexual/household contact);³
- high-risk sexual activities (e.g., unprotected sex, multiple sexual partners);³
- substance use with sharing of equipment (e.g., injection/inhalation drug use);³
- exposure to blood/blood products in endemic regions without routine precautions/screening;²
- transfusion recipient/medical procedure in Canada before 1970;²
- use of shared/contaminated materials or equipment (e.g., instruments/tools used for personal services procedures such as tattooing/ piercing/body modifications, or any alternative health care that has the potential to break the skin);³
- use of shared/contaminated medical devices (e.g., glucometers);³
- occupational exposure to blood/body fluids;³
- travel to/residence in a region of intermediate/high endemicity;³
- incarceration;³
- institutionalization (particularly in institutions for the developmentally challenged).³

Period of Communicability

All persons who are HBsAg positive are potentially infectious (Heymann, 2008)

- From several weeks before first onset of symptoms until infection is resolved (HBsAg negative) (Heymann, 2008);

¹ <http://wwwnc.cdc.gov/travel/yellowbook/2012/chapter-3-infectious-diseases-related-to-travel/hepatitis-b.htm>

² Most commonly identified risk factors for chronic HBV infection.

³ Most commonly identified risk factors for acute HBV infection in susceptible individuals; consider screening for HIV and Sexual Transmitted Infections (STIs) in select cases.

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- Chronic hepatitis B carriers remain infectious, their degree of infectivity varies:
 - a hepatitis B carrier who is HBeAg positive will be more highly infectious compared to a person who is hepatitis Be antibody (anti-HBe) positive who will be moderately infectious. **(Heymann, 2008);**
 - HBV viral load and the presence or absence of anti-HbeAg (indicates lower infectivity).

Specimen Collection and Transport

Specimen: Serum

Request testing for hepatitis B surface antigen (HBsAg).

HBsAg positive samples will also be tested for HBeAg, anti-HBe, hepatitis B core total antibodies (anti-HBc) IgG & IgM, hepatitis B core IgM antibody and hepatitis B surface antibody (anti-HBsAg).

- Anti-HBc IgM positive indicates acute infection, usually disappears within 6 months but can persist in some HBV carriers (Heymann, 2008).
- Anti-HBc IgG positive indicates past infection.
- Consider the client's history and consult with the MHO as necessary.

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Table 3. Interpretation of Hepatitis B Laboratory Testing Panel

Tests	Results	Interpretations
HBsAg Anti-HBc Anti-HBs	negative negative negative	Susceptible
HBsAg Anti-HBc Anti-HBs	negative positive positive	Immune due to natural infection ⁴
HBsAg Anti-HBc Anti-HBs	negative negative positive	Immunity due to hepatitis B vaccine
HBsAg Anti-HBc IgM anti-HBc Anti-HBs	positive positive positive negative	Typical acute infection. It is recommended to repeat the tests in 6 months to rule out a carrier (a chronically infected patient ⁴).
HBsAg Anti-HBc IgM anti-HBc Anti-HBs	negative negative positive negative	An atypical acute case, the antigen had disappeared before the surface antibody appears and there is a short window where only IgM anti-core is present (this is the intended use of IgM anti-HBc test). ⁵
HBsAg Anti-HBc IgM anti-HBc Anti-HBs	positive positive negative negative	Chronically infected

(Dr. Greg Horsman, Saskatchewan Disease Control Laboratory, 2013)

Methods of Control/Role of Investigator

Refer to the [Blood and Body Fluid Pathogens Introduction and General Considerations](#) section of the manual that highlights topics for client education that should be considered.

Health education efforts should include both broad-based campaigns to raise awareness of risk, modes of transmission, and prevention measures, and reduce stigma as well as targeted programs to educate and reduce risk in at-risk populations.

⁴ Positive IgM anti-HBc results may be related to the degree of inflammatory activity in patients with chronic liver disease (it can be seen when chronic infections flare or when a person is on antiviral therapy).

⁵ A few will be unresolved infections.

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Immunization

- Immunize infants, children, and adults according to the recommended schedule in the Saskatchewan Immunization Manual Chapters 5 and 7^{6,7}.
- In Sept 1995 (birth year 1984) Saskatchewan started the hepatitis B immunization program for all grade 6 students. (SIM)

Education

Refer to the [Blood and Body Fluid Pathogens Introduction and General Considerations](#) section of the manual that highlights topics for client education that should be considered. Personal service providers should be referred to [Saskatchewan Personal Service Facility Best Management Practices](#) (under development) for infection prevention and control measures.

Education should include:

- Safer sex practices and other healthy lifestyle choices (piercings, tattooing, drug use).
- Standard precautions and routine precautions for handling blood and body fluids and biomedical waste management. Refer to the Saskatchewan Biomedical Waste Management Guidelines, 2008⁸.

Management

I. Case

History

Obtain as detailed a history as possible using the [Attachment – Hepatitis B Investigation Form](#).

- Consider past blood work for hepatitis B and identify any [signs and symptoms](#) of hepatitis B and dates of onset and duration to identify exposure period and period of communicability.
- Determine hepatitis B vaccination history.
- Discuss all potential risks that the case has been exposed to:
 - from or ever lived in an endemic region;
 - household contact with a hepatitis B case or carrier;

⁶ <http://www.ehealthsask.ca/services/manuals/Documents/sim-chapter5.pdf>

⁷ <http://www.ehealthsask.ca/services/manuals/Documents/sim-chapter7.pdf>

⁸ <http://www.environment.gov.sk.ca/adx.aspx/adxGetMedia.aspx?DocID=217,216,104,81,1,Documents&MediaID=1099&Filename=Biomedical+Waste+Management.pdf>

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- close contact with a hepatitis B case or carrier;
- sexual contact with a hepatitis B case or carrier;
- sexual contact with a person at high risk (i.e. IDU, sex trade worker, sex with person from HBV endemic country);
- needle-sharing contact with a hepatitis B case or carrier;
- injection drug use or sharing of any drug use equipment;
- tattooing/piercing;⁹
- dental/medical procedures (endoscope, acupuncture, etc);⁹
- transfusions of blood/blood products in Canada (prior to 1970);
- transfusions of blood/blood products outside of Canada.

Inquire about other factors that are associated with HBV:

- co-infection with other blood borne pathogens or STIs;
- history of multiple sexual partners;
- history of incarceration.

Obtain names and phone numbers of contacts as per [Contact Investigation](#).

Inquire about all of the following risks. Identify likely cause of exposure and potential transmission risk to others. Collect dates, identify locations/events:

- perinatal transmission;
- immunosuppression due to medications or disease;
- any other blood borne diseases;
- occupational exposure (i.e. bloodborne exposure as a healthcare worker);
- non-occupational exposure (i.e. stabbing, electrolysis, bloodborne exposure in community);
- donated blood or any other body tissue/organ;
 - Note: Case needs to be reported to Canadian Blood Services if they have a history of donating or receiving blood (See [Appendix K – Notification to Canadian Blood Services](#)).
- healthcare worker – determine if involved in invasive procedures; educate about potential exclusion/notification requirements.

⁹ It is important to obtain details regarding dates of exposures and names/locations of the facilities in which exposures may have occurred. Consideration of the need to further investigate these facilities is warranted. When personal service or medical/dental facilities are identified as a potential source for exposure, further investigation of other clientele may be warranted.

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- healthcare worker – determine if involved in invasive procedures; educate about potential exclusion/notification requirements.

Education

Cases should be educated on hepatitis B disease and its signs and symptoms. They should be informed of the complications of hepatitis B and be advised of how to reduce the risk of liver damage:

- limit alcohol intake;
- promote smoking cessation;
- maintain a healthy weight;
- avoid/limit medication use (including over-the-counter medications) that may be hepatotoxic without consulting with a physician or pharmacist.

Cases should be informed of how hepatitis B is spread and to use precautions with their own blood and body fluids to prevent spread and infection to others:

- never donate blood, organs, semen, or tissue;
- never share material used to prepare, inject, or inhale drugs;
- never share sharp instruments/personal hygiene materials with others (e.g., razors, scissors, nail clippers, toothbrush);
- consider the potential health risks of tattooing and body piercing;
- discuss HBV status with sexual and drug sharing partners;
- practice safer sex with new partners;
- dispose of items with blood on them properly (i.e. tampons, band-aids, dental floss);
- properly managing open wounds;
- planning or managing a pregnancy and reducing the risk to the infant;
- breastfeeding by a HBV positive mother is not a risk unless nipples are cracked or bleeding. Breastfeeding should be discontinued until nipples are healed;
- informing health care providers.

Cases should be informed of the importance of identifying, notifying and immunizing contacts that may have been exposed; any future contacts will be eligible for immunization.

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Immunization

- Chronic carriers of hepatitis B are eligible for additional vaccinations as outlined in Chapter 7 of the Saskatchewan Immunization Manual¹⁰.
- Infants born to women who are hepatitis B positive should be initiated on hepatitis B immunoprophylaxis at birth.

Treatment/Supportive Therapy

- There is no treatment for acute hepatitis B.
- Antiviral treatment is indicated for some chronic hepatitis B carriers but this would be determined in consultation with an Infectious Disease Specialist.

Exclusion

- Not applicable. Standard precautions/routine practices measures apply.
- Physicians are required to report infection to College of Physicians and Surgeons.
- There is a general consensus that HBsAg positive carriers and/or those with high viremia should not perform exposure prone surgery or similar treatments unless they have been reviewed by an expert panel and advised. (Heymann, 2008). These professionals should speak with their governing body for advice.

Referrals

Cases should be referred to:

- infectious diseases (ID) specialist or treating practitioner.
- other social programs as agreed to by client (e.g., community agencies that provide support to HBV positive people) or harm reduction programs for needle exchange services and related health services.
- Canadian Blood Services (CBS) should be notified of cases that have a history of donation or receipt of blood or blood products. See [Appendix K – Notification to Canadian Blood Services](#).
- Saskatchewan Transplant Program should be notified of cases that have a history of donation or receipt of tissues. See [Appendix M – Notification to the Saskatchewan Transplant Program](#).

¹⁰ <http://www.ehealthsask.ca/services/manuals/Documents/sim-chapter7.pdf>

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II. Contacts/Contact Investigation

Contacts should be traced back to 6 months prior to onset of acute symptoms or time of diagnosis (Australasian Society for HIV Medicine, 2010).

Contact Definition

Contacts are defined as:

- Household - individuals living in the same household or share living quarters;
- Sexual contacts;
- Close contacts:
 - Individuals who share personal items (e.g, razors, toothbrushes, etc);
 - Individuals who share drug equipment (injection or non-injection);
 - Children <12 months of age who have close contact with primary caregivers with acute or chronic HBV (Red Book p 389).
- Other individuals who may have had a permucosal or percutaneous exposure to the case's blood or body fluids (See Guidelines for the Management of Exposures to Blood or Body Fluids Appendix 1 definition of Exposure¹¹);
- Infants born to women infected with HBV;
- Exposures to blood and body fluids should be managed as per Saskatchewan Guidelines for the Management of Exposures to Blood and Body Fluids¹².

Testing

- All contacts of hepatitis B disease should be tested for hepatitis B as per Table 4. Monitoring for Infection. Refer to [Table 2](#) for interpreting laboratory results.
- Any contacts who are HBV-positive should be followed as a case.
- Contacts who are anti-HBs negative should undergo repeat testing at 3 months following their latest exposure. They should be sure to follow precautions to reduce the risk of spreading the virus to others until infection can be ruled out. See Saskatchewan Guidelines for the Management of Exposures to Blood and Body Fluids.¹³

¹¹ <http://www.ehealthsask.ca/services/manuals/Documents/hiv-guidelines-appendix1.pdf>

¹² <http://www.ehealthsask.ca/services/manuals/Pages/hiv-guidelines.aspx>

¹³ <http://www.ehealthsask.ca/services/manuals/Pages/hiv-guidelines.aspx>

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Table 4. Monitoring for Infection

	Baseline Testing (at time of identification)	Month 3 Testing (following last exposure)
Hep B Surface Antigen (HBsAg)	√	√
Hep B Antibody ¹⁴ (anti-HBs)	√	
Hep B Core Antibody (anti-HBc)	√	

Immunoprophylaxis

Immunoprophylaxis is recommended based on results of serology and previous immunization history as outlined in the [Guidelines for the Management of Exposures to Blood and Body Fluids \(Appendix 8\)](#)¹⁵. Table 5 outlines the agents that contacts are eligible for based on the results of their serology and their immunization history.

Table 5. Immunoprophylaxis Agents for Susceptible Contacts

Type of Contact	HBIg ¹⁶	Provide Vaccine
Household	No	Yes
Sexual	Yes - (0.06ml/kg IM) should be provided ideally within 48 hours but can be provided up to 14 days following last sexual contact	Yes
Close Contacts	Yes – ideally given within 48 hours but can be given up to 7 days after last exposure	Yes
Other individuals who may have had a percutaneous or mucosal exposure to the case's blood or body fluids	Yes – as per the Guidelines for the Management of Exposures to Blood and Body Fluids ¹⁷	Yes

¹⁴ Antibody testing is recommended at 1-5 months after completion of a vaccine series.

¹⁵ <http://www.ehealthsask.ca/services/manuals/Documents/hiv-guidelines-appendix8.pdf>

¹⁶ Refer to Appendix D for how to access HBIg.

¹⁷ <http://www.ehealthsask.ca/services/manuals/Pages/hiv-guidelines.aspx>

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Children <12 months of age who have close contact with primary caregivers with acute or chronic HBV (American Academy of Pediatrics, 2012, p 389)		
Number of doses of Vaccine received to date	HBIG	Vaccine
At least 2 doses	HBIG is not required	Not required
One dose previously provided	HBIG should be administered if immunization is not yet due.	The second dose should be administered if the interval is appropriate
Not previously vaccinated	HBIG (0.5 mL)	Hepatitis B vaccine 3 dose schedule.

Postnatal Management of Infants Born to Women with HBV

- Refer to the Saskatchewan Immunization Manual, Chapter 7 for recommendations for infants at high-risk for hepatitis B¹⁸.

Education

- Signs and symptoms of hepatitis B;
- To seek medical evaluation if they develop signs and symptoms during the follow-up period.

The following precautions should be taken to prevent potential transmission of HBV to others until infection with hepatitis B can be ruled out:

- Routine precautions and safe sex;
- Do not share personal items including razors, toothbrushes, needles or other implements which may be contaminated with blood or body fluids;
- Refrain from donating blood, plasma, organs, tissue or semen until they are certain they have not been infected (negative test at 12 weeks following exposure).

The precautions indicated below should be followed on a regular basis as safe handling and disposal of sharps and items soiled with blood:

- dispose of articles with blood (e.g., tampons, pads, Kleenex) appropriately;
- dispose of sharp items (e.g., razors) in hard-sided containers, taped shut. Refer to Saskatchewan Biomedical Waste Management Guidelines (2008)¹⁹.

¹⁸ <http://www.ehealthsask.ca/services/manuals/Documents/sim-chapter7.pdf>

¹⁹ <http://www.environment.gov.sk.ca/adx/adxGetMedia.aspx?DocID=217,216,104,81,1,Documents&MediaID=1099&Filename=Biomedical+Waste+Management.pdf>

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Immunization

The recommendations set out in the Saskatchewan Immunization Manual Chapters 7²⁰ and 10²¹, should be followed for dosages and schedules.

- In addition to the individuals outlined in Chapter 10 of the Saskatchewan Immunization Manual the following individuals should have post-immunization serology completed within 1 to 5 months of completing the vaccine series (no later than 6 months):
 - Sexual partners and household contacts of acute cases and chronic carriers of hepatitis B.
 - Infants born to infected mothers (should be tested for HBsAg and anti-HBs one month after completion of the vaccine series).
 - Persons who have had a blood borne exposure.

Exclusion

Not applicable

III.Environment

Child Care Centre Control Measures

All childcare centre staff should use Standard/Routine Precautions when handling all blood and body fluids. Refer to Infection Control Manual for Childcare Facilities.²² Children known to have hepatitis B do not need to be excluded from childcare. If the child is known to bite, this should be discussed with the medical health officer (MHO).

Institutional Control Measures

Standard precautions/routine practices to prevent exposures to blood and body fluids. Refer to the Saskatchewan Immunization Manual²¹ for types of facilities for which residents are eligible for hepatitis B vaccine. Susceptible people in juvenile and adult correctional facilities should be immunized.

²⁰ <http://www.ehealthsask.ca/services/manuals/Documents/sim-chapter7.pdf>

²¹ <http://www.ehealthsask.ca/services/manuals/Documents/sim-chapter10.pdf>

²² <http://www.saskatchewan.ca/live/births-deaths-marriages-and-divorces/starting-a-family/early-learning-and-child-care/child-care>

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Other Facilities with Alternate Caregivers and Other Residents (eg. group homes, foster homes, etc)

Residents of certain facilities may be eligible for additional immunizations. Refer to the Saskatchewan Immunization Manual²³ for eligibility criteria. Standard precautions should be followed by all individuals working in these settings. All settings should have policies and procedures in place for managing employees with occupational risk due to exposure to blood or body fluids. As well, there should be policies and procedures in place to manage occupational exposures to blood and body fluids.

For more information on occupational exposure see the Saskatchewan Guidelines for the Management of Exposures to Blood and Body Fluids.²⁴

Epidemic Measures

- When two or more cases occur in association with a common exposure, additional cases should be sought.
- Outbreaks of hepatitis B should be reported to the Ministry using the [Outbreak Notification Report and Summary Form](#).

²³ <http://www.ehealthsask.ca/services/manuals/Documents/sim-chapter7.pdf>

²⁴ <http://www.ehealthsask.ca/services/manuals/Pages/hiv-guidelines.aspx>

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Panorama QA complete: Yes No
Initials:

A) PERSON REPORTING – HEALTH CARE PROVIDER INFORMATION

Clinic Name: Location: Attending Physician or Nurse: Address: Phone number:	FOR PUBLIC HEALTH OFFICE USE ONLY: Service Area: Date Received: Panorama Client ID: Panorama Investigation ID:
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B) CLIENT INFORMATION

Last Name:	First Name: and Middle Name:	Alternate Name:
DOB: YYYY / MM / DD Age: _____	Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unknown <input type="checkbox"/> Other	Phone : <input type="checkbox"/> Primary Home: <input type="checkbox"/> Mobile contact: <input type="checkbox"/> Workplace: <input type="checkbox"/> Alt Contact: Name: _____ Relationship: _____
Health Card Province: _____ Health Card Number (PHN):	<u>Gender Identity:</u> <input type="checkbox"/> Transgender Male-to-female <input type="checkbox"/> Transgender Female-to-male <input type="checkbox"/> Undifferentiated <input type="checkbox"/> Other (specify)	Preferred Communication Method: <input type="checkbox"/> Home <input type="checkbox"/> Work <input type="checkbox"/> E-mail <input type="checkbox"/> Text
Place of Employment/School:	Email Address:	
Address Type: <input type="checkbox"/> No fixed <input type="checkbox"/> Postal Address <input type="checkbox"/> Primary Home <input type="checkbox"/> Temporary <input type="checkbox"/> Legal Land Description		
Mailing (Postal address):		
Street Address or FN Community (Primary Home):		

C) IMMIGRATION INFORMATION

Country Born In: _____
Country Emigrated from: _____ Arrival Date: YYYY / MM / DD OR Arrival Year YYYY

D) DISEASE EVENT HISTORY

Staging: <input type="checkbox"/> Acute <input type="checkbox"/> Chronic <input type="checkbox"/> Unknown
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E) SIGNS & SYMPTOMS

Description	No	Yes Date of onset	Description	No	Yes Date of onset
Arthralgia			Nausea		
Asymptomatic			Pain - Abdominal		
Fever			Rash		
Jaundice			Stool – light		
Lethargy (fatigue, drowsiness, weakness, etc)			Urine – dark		
Loss of appetite (anorexia)			Vomiting		
Malaise			Weight loss		
Myalgia (muscle pain)			Other – specify		

Hepatitis B Notification Form

Panorama Client ID: _____
Panorama Investigation ID: _____

F) RISK FACTORS (Please complete *all* Risk Factors –specify dates as needed) – Legend: N – No, NA – Not asked, U – Unknown

DESCRIPTION	Yes Start Date	N, NA, U	Add'l Info
Contact – Hepatitis B	YYYY / MM/DD		
Exposure – Blood and body fluids (not otherwise listed) (Add'l Info)	YYYY / MM/DD		
Exposure - Invasive body art (e.g. tattoo, body piercing, scarification)	YYYY / MM/DD		
Occupation – Health Care Worker – IOM Risk Factor			
Risk Behavior – Sharing injection drug equipment	TE		
Risk Behavior – Sharing non-injection drug equipment	TE		
Sexual Behaviour – More than 2 sexual partners in past 3 months	TE		
Sexual Behaviour – MSM	TE		
Sexual Behaviour – Sex with a known case (Add'l Info)	YYYY / MM/DD		
Sexual Behaviour – Sex with person from endemic country (Add'l Info)			
Sexual Behaviour – Sex with person who injects drugs	TE		
Special Populations – Correctional Facility resident			
Special Population – From or residence in an endemic country			
Special Population – Infant born to infected mom			
Special Population – Pregnancy			
Special Population – Self-reported indigenous			
Substance Use – Alcohol			
Substance Use – Injection Drug Use (including Steroids)			
Substance Use – Illicit non-injection drug use			
Travel – Outside of Canada (Add'l Info)	YYYY / MM/DD		
Other risk factor (Add'l Info)			
Medical Treatment - Blood, blood product or tissue recipient (Add'l Info)	YYYY / MM/DD INTERVENTION		
Medical Treatment Other (transplant, surgery, dental, oscopy, artificial insemination etc.) (Add'l Info)	YYYY / MM/DD INTERVENTION		
<i>Blood, blood product, tissue or transplant donor</i>	<i>Document referral in interventions and complete Appendix K – Referral to CBS, and upload into Document Management</i>		

G) UNKNOWN/ANONYMOUS CONTACTS

Anonymous contacts: _____ (number of contacts that the individual cannot name)

Include known contacts on the following pages

Hepatitis B – Contacts

Please complete all sections.

Please include information on additional contacts on a separate sheet

A) CONTACTS

Last Name:	First Name: and Middle Name:	Alternate Name:
DOB: YYYY / MMM / DD Age: _____ HSN: _____	Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unknown <input type="checkbox"/> Other	
Phone #: <input type="checkbox"/> Primary Home: <input type="checkbox"/> Workplace: <input type="checkbox"/> Mobile contact: <input type="checkbox"/> alternate phone: Relationship:	e-mail Address:	
Place of Employment/School:	Is contact pregnant? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown Is contact Hep B positive? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Address Type: <input type="checkbox"/> No fixed <input type="checkbox"/> Postal Address <input type="checkbox"/> Primary Home <input type="checkbox"/> Temporary <input type="checkbox"/> Legal Land Description Mailing (Postal address): Street Address or FN Community (Primary Home):		
Exposure Dates: 1st YYYY / MM / DD to YYYY / MM / DD Exposure Type: <input type="checkbox"/> Sexual <input type="checkbox"/> Household <input type="checkbox"/> Sharing Injection/ Non-injection Drug Equipment		
Will the testing Physician/Nurse follow-up this contact? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, date contact notified: YYYY / MMM / DD Has the contact been vaccinated for Hep B in the past? <input type="checkbox"/> Yes <input type="checkbox"/> No		Comments:

B) CONTACTS

Last Name:	First Name: and Middle Name:	Alternate Name:
DOB: YYYY / MMM / DD Age: _____ HSN: _____	Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unknown <input type="checkbox"/> Other	
Phone #: <input type="checkbox"/> Primary Home: <input type="checkbox"/> Workplace: <input type="checkbox"/> Mobile contact: <input type="checkbox"/> alternate phone: Relationship:	e-mail Address:	
Place of Employment/School:	Is contact pregnant? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown Is contact Hep B positive? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Address Type: <input type="checkbox"/> No fixed <input type="checkbox"/> Postal Address <input type="checkbox"/> Primary Home <input type="checkbox"/> Temporary <input type="checkbox"/> Legal Land Description Mailing (Postal address): Street Address or FN Community (Primary Home):		
Exposure Dates: 1st YYYY / MM / DD to YYYY / MM / DD Exposure Type: <input type="checkbox"/> Sexual <input type="checkbox"/> Household <input type="checkbox"/> Sharing Injection/ Non-injection Drug Equipment		
Will the testing Physician/Nurse follow-up this contact? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, date contact notified: YYYY / MMM / DD Has the contact been vaccinated for Hep B in the past? <input type="checkbox"/> Yes <input type="checkbox"/> No		Comments:

Hepatitis B – Public Health Follow-Up

Panorama QA complete: Yes No
 Initials: _____

Panorama Client ID: _____
 Panorama Investigation ID: _____

A) CLIENT INFORMATION

LHN -> SUBJECT -> CLIENT DETAILS -> PERSONAL INFORMATION

Last Name:	First Name: and Middle Name:	Alternate Name:
DOB: YYYY / MM / DD Age: _____	Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unknown <input type="checkbox"/> Other	PHN:

B) INVESTIGATION INFORMATION

LHN -> SUBJECT SUMMARY -> STBBI ENCOUNTER GROUP -> CREATE INVESTIGATION

Disease Summary Classification: CASE:	Date	Classification: CONTACT:	Date	LAB TEST INFORMATION:
<input type="checkbox"/> Lab Confirmed	YYYY / MM / DD	<input type="checkbox"/> Contact	YYYY / MM / DD	Date specimen collected: YYYY / MM / DD
<input type="checkbox"/> Suspect	YYYY / MM / DD	<input type="checkbox"/> Not a Contact	YYYY / MM / DD	
<input type="checkbox"/> Person Under Investigation	YYYY / MM / DD	<input type="checkbox"/> Person Under Investigation	YYYY / MM / DD	

Disposition: FOLLOW UP:

<input type="checkbox"/> In progress	YYYY / MM / DD	<input type="checkbox"/> Complete	YYYY / MM / DD
<input type="checkbox"/> Incomplete - Declined	YYYY / MM / DD	<input type="checkbox"/> Not required	YYYY / MM / DD
<input type="checkbox"/> Incomplete – Lost contact	YYYY / MM / DD	<input type="checkbox"/> Referred – Out of province	YYYY / MM / DD
<input type="checkbox"/> Incomplete – Unable to locate	YYYY / MM / DD	(Specify where)	YYYY / MM / DD

C) IMMUNIZATION HISTORY INTERPRETATION SUMMARY

LHN -> INVESTIGATION -> IMMUNIZATION HISTORY INTERPRETATION SUMMARY

Interpretation Date: YYYY / MM / DD

Interpretation of Disease Immunity: IOM - Fully immunized (for age) IOM - Partially immunized

IOM – Unimmunized IOM - Unclear immunization history **Valid doses received:** _____ **Doses needed:** _____

Reason: IOM - Interpretation of history by investigator Previous responder/Previous history of immunity Date Of Birth

D) INTERVENTION

LHN -> INVESTIGATION -> TREATMENT & INTERVENTIONS -> INTERVENTION SUMMARY

Intervention Type and Sub Type:				
Assessment:		Immunization: Investigator name		
<input type="checkbox"/> Assessed for contacts	Investigator name YYYY/ MM /DD	<input type="checkbox"/> Eligible Immunization recommended	YYYY/ MM /DD	
<input type="checkbox"/> Client aware of diagnosis	Investigator name YYYY/ MM /DD	<input type="checkbox"/> Disease-specific immunization recommended	YYYY/ MM /DD	
		<input type="checkbox"/> Disease-specific immunization given	YYYY/ MM /DD	
		<input type="checkbox"/> Immunization nurse notified	YYYY/ MM /DD	
Communication:		Environmental health:		
<input type="checkbox"/> Phone call (morning)	Investigator name YYYY/ MM /DD	<input type="checkbox"/> Personal Service Facility inspection	YYYY/ MM /DD	
<input type="checkbox"/> Phone call (afternoon)	Investigator name YYYY/ MM /DD	Investigator name		
<input type="checkbox"/> Phone call (evening)	Investigator name YYYY/ MM /DD	Referral:		
<input type="checkbox"/> Text Message sent	Investigator name YYYY/ MM /DD	<input type="checkbox"/> Canadian Blood Services	YYYY/ MM /DD	
<input type="checkbox"/> E-mail	Investigator name YYYY/ MM /DD	<input type="checkbox"/> Child Protective Services	YYYY/ MM /DD	
<input type="checkbox"/> Home visit	Investigator name YYYY/ MM /DD	<input type="checkbox"/> Harm Reduction Services	YYYY/ MM /DD	
<input type="checkbox"/> Letter Sent	Investigator name YYYY/ MM /DD	<input type="checkbox"/> Infectious Disease Specialist	YYYY/ MM /DD	
<input type="checkbox"/> Ordering practitioner contacted	Investigator name YYYY/ MM /DD	<input type="checkbox"/> Primary Care Provider	YYYY/ MM /DD	
<input type="checkbox"/> Letter (See Document Management)	YYYY/ MM /DD	<input type="checkbox"/> Saskatchewan Transplant Program	YYYY/ MM /DD	
<input type="checkbox"/> Other communication (See Investigator Notes)	YYYY/ MM /DD	<input type="checkbox"/> Consultation with MHO	YYYY/ MM /DD	
		Investigator name		
General: Investigator name		Testing: Investigator name		
<input type="checkbox"/> Disease-Info/Prev-Control	YYYY/ MM / DD	<input type="checkbox"/> Post-immunization testing recommended	YYYY/ MM /DD	
<input type="checkbox"/> Disease-Info/Prev-Cont/Assess'd for Contacts	YYYY/ MM / DD	<input type="checkbox"/> Pre-immunization testing recommended	YYYY/ MM /DD	
		<input type="checkbox"/> Laboratory testing recommended	YYYY/ MM /DD	
		<input type="checkbox"/> STBBI Testing recommended (specify)	YYYY/ MM /DD	
Education/counselling:		Other Investigation Findings		
<input type="checkbox"/> Prevention/Control measures	Investigator name YYYY/ MM /DD	<input type="checkbox"/> Investigator Notes	YYYY/ MM /DD	
<input type="checkbox"/> Disease information provided	Investigator name YYYY/ MM /DD	<input type="checkbox"/> See Document Management	YYYY/ MM /DD	
<input type="checkbox"/> Other (See Investigator Notes)	Investigator name YYYY/ MM /DD			

Date	Intervention subtype	Comments	Next follow-up Date	Initials
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	

Hepatitis B – Public Health Follow-Up

Panorama Client ID: _____
Panorama Investigation ID: _____

YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	

E) OUTCOMES (optional , except for severe influenza) LHN -> INVESTIGATION-> OUTCOMES

<input type="checkbox"/> Not yet recovered/recovering YYYY / MM / DD	<input type="checkbox"/> ICU/intensive medical care YYYY / MM / DD	<input type="checkbox"/> Hospitalization YYYY / MM / DD
<input type="checkbox"/> Recovered YYYY / MM / DD	<input type="checkbox"/> Intubation /ventilation YYYY / MM / DD	<input type="checkbox"/> Unknown YYYY / MM / DD
<input type="checkbox"/> Fatal YYYY / MM / DD	<input type="checkbox"/> Other _____ YYYY / MM / DD	

Cause of Death: (if Fatal was selected)

F) Transmission Event LHN -> INVESTIGATION-> EXPOSURE SUMMARY -> TRANSMISSION EVENT SUMMARY -> QUICK ENTRY

Transmission Event ID <small>(system-generated can be documented below)</small>	Exposure Name	Setting type <small>Important: (Select the most appropriate setting for the TE; if >1 select multiple settings)</small>	Date/Time(include the earliest transmission date to the latest date)	# of contacts
	Hep B Contacts-Inv ID #__	<input type="checkbox"/> Sexual Exposure <input type="checkbox"/> Public facilities <input type="checkbox"/> Multiple settings <input type="checkbox"/> Household <input type="checkbox"/> Type of community contact (includes IDU)		

G) Total number of contacts LHN -> INVESTIGATION-> EXPOSURE SUMMARY -> TRANSMISSION EVENT SUMMARY -> TE HYPERLINK -> UNKNOWN/ANONYMOUS CONTACTS

_____ (total number of *unknown* and *known* contacts)

Initial Report completed by:		Date initial report completed: YYYY / MMM / DD
-------------------------------------	--	--

H) CONTACTS

Last Name:	First Name: and Middle Name:	Alternate Name:
DOB: YYYY / MMM / DD Age: _____	Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unknown <input type="checkbox"/> Other	
HSN: _____		
Phone #: <input type="checkbox"/> Primary Home: <input type="checkbox"/> Workplace: <input type="checkbox"/> Mobile contact: <input type="checkbox"/> alternate phone: Relationship:	e-mail Address:	
Place of Employment/School:	Is contact pregnant? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown Is contact Hep B positive? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Address Type: <input type="checkbox"/> No fixed <input type="checkbox"/> Postal Address <input type="checkbox"/> Primary Home <input type="checkbox"/> Temporary <input type="checkbox"/> Legal Land Description		
Mailing (Postal address):		
Street Address or FN Community (Primary Home):		
Exposure Dates: 1st YYYY / MM / DD to YYYY / MM / DD		
Exposure Type: <input type="checkbox"/> Sexual <input type="checkbox"/> Household <input type="checkbox"/> Sharing Injection/ Non-injection Drug Equipment		
Will the testing Physician/Nurse follow-up this contact? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, date contact notified: YYYY / MMM / DD Has the contact been vaccinated for Hep B in the past? <input type="checkbox"/> Yes <input type="checkbox"/> No		Comments:

Complete more contact sheets if needed

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Notification Timeline:

From Lab/Practitioner to Public Health: Within 72 hours.

From Public Health to Saskatchewan Health: Within 2 weeks.

Public Health Follow-up Timeline: Within 72 hours.

Information

Table 1: Case Definition (Public Health Agency of Canada, 2011)

Confirmed Case: Acute or Recent Infection	Detection of hepatitis C virus antibodies (anti-HCV) or hepatitis C virus RNA (HCV RNA) in a person with discrete onset of any symptom or sign of acute viral hepatitis (see Section 5) within 6 months preceding the first positive HCV test AND <ul style="list-style-type: none">negative anti-HAV IgM, and negative anti-HBc IgM or HBsAg tests AND <ul style="list-style-type: none">serum alanine aminotransferase (ALT) greater than 2.5 times the upper normal limit OR <p>detection of hepatitis C virus antibodies (anti-HCV) in a person with a documented anti-HCV negative test within the preceding 12 months</p> OR <p>detection of hepatitis C virus RNA (HCV RNA) in a person with a documented HCV RNA negative test within the preceding 12 months.</p>
Confirmed Case: Unspecified (including chronic and resolved infections)	Detection of hepatitis C virus antibodies (anti-HCV) OR <p>detection of hepatitis C virus RNA (HCV RNA).</p>
Confirmed Case: Infants < 18 months**	PCR positive for HCV-RNA.^
HCV PCR is important as individuals who are viremic will be considered for antiviral treatment and is a useful diagnostic tool in immuno-compromised individuals who might not mount an antibody response.	
** In infants < 18 months of age, anti-HCV testing should not be performed as the presence of anti-HCV may represent passive maternal antibody. Cord blood should not be used because of potential cross-contamination with maternal antibody.	
^ If testing for HCV-RNA is done, it should be delayed beyond 4-12 weeks in order to avoid false negative HCV-RNA test results (Public Health Agency of Canada, 2009).	

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Causative Agent

The hepatitis C virus (HCV) is a small, single stranded, enveloped RNA virus that is classified as a separate genus (*Hepacivirus*) in the Flaviviridae family. Six major genotypes of hepatitis C virus have been identified which are further differentiated into approximately 100 subtypes (Heymann, 2008). HCV is able to evade the body's immune system because it is constantly mutating.

Symptoms

- Onset is insidious. Majority of cases are asymptomatic (more than 90%) or only having mild symptoms which may include anorexia, vague abdominal discomfort, nausea and vomiting (Heymann, 2008).
- Initial signs and symptoms of HCV infection are indistinguishable from signs and symptoms of hepatitis A or hepatitis B virus infections.
- Jaundice occurs in fewer than 20% of patients; progression to jaundice occurs less frequently than with hepatitis B.
- Abnormalities in liver transaminase concentration. Generally these are less pronounced than in those in patients with hepatitis B virus infection.
- Most definable symptoms may begin to appear 20-30 years after the initial infection and can lead to severe complications like liver cirrhosis or cancer.
- The course of chronic hepatitis C is slow and insidious with most patients showing few physical signs of the disease during the first 20 years of infection; people may experience a progression from mild to moderate to severe hepatitis (U.S. Centers for Disease Control and Prevention, 2008).

Complications

- A high percentage of cases (50-80%) develop chronic infection; of chronically infected persons about half will eventually develop cirrhosis or hepatocellular cancer (HCC) (Heymann, 2008).
- Approximately 25% (range 15-25%) of HCV infections will resolve spontaneously; these individuals will typically demonstrate anti-HCV without detectable HCV-RNA (U.S. Centers for Disease Control and Prevention, 2008).
- HCV is the leading cause of liver transplantation in adults in the United States (American Academy of Pediatrics, 2012).

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Incubation Period

Ranges from 2 weeks to 6 months with an average 6 to 9 weeks (Heymann, 2008). The time of exposure to the development of viremia is generally 1-2 weeks (American Academy of Pediatrics, 2012).

Reservoir/Source

Humans. Blood, blood products and any body fluid containing blood can be a source of infection. See [Table 2](#).

Table 2: Fluids and tissues capable of transmitting hepatitis C

FLUID	HCV
Lab specimens containing concentrated HBV, HCV or HIV	Yes
Blood, serum, plasma or other biological fluids visibly contaminated with blood	Yes
Pleural, amniotic, pericardial, peritoneal, synovial and cerebrospinal fluids	Yes
Semen, vaginal secretions	Yes
Saliva	No, unless contaminated with blood
Breastfeeding	Biologically plausible, particularly if nipples are cracked or bleeding
Organ and tissue transplants	Yes
Screened donated blood & manufactured blood products	Minimal risk in Canada

(U.S. Centers for Disease Control and Prevention, 2001)

Mode of Transmission

- HCV is primarily transmitted through parenteral exposure to HCV infected blood (Heymann, 2008; American Academy of Pediatrics, 2012).
- Transmission is most efficient through large or repeated percutaneous exposures to blood such as transfusion of blood from unscreened donors or through injection drug use.
- The risk of vertical transmission has been estimated to be between 1 to 6% and only from women who are HCV RNA positive at the time of delivery.
- Although less efficient, occupational and sexual exposures can also result in transmission of HCV.

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Risk Groups/Risk Factors

The most common risk factors for acquiring HCV are (American Academy of Pediatrics, 2012):

- injection drug use;
- having multiple sexual partners;
- having received blood products before 1992 (prior to screening and processing of blood products was implemented).

The risk factors for transmission of HCV include:

- sharing of drug use equipment;
- co-infection with HIV increases the risk of sexual transmission of HCV;
- maternal risk factors that increase the risk of transmission include HIV co-infection, history of IDU and high maternal viremia.

Period of Communicability

From one or more weeks before onset of the first symptoms; may persist in most persons indefinitely (Heymann, 2008).

Specimen Collection and Transport

Specimen: serum 2 ml.

Anti-HCV

- Initial test to determine whether a person has ever been exposed to HCV.
- Tested for antibodies to hepatitis C virus.
- May take up to 3 months before these antibodies appear.
- Negative antibody test with no history of exposure in the last 3-4 months means that the person has never been exposed to the hepatitis C virus; no further testing is required for this person unless risk factors change or an exposure occurs.
- Positive antibody screening tests are confirmed using immunoblot tests; positive reports go to the clinician and a copy goes to the Medical Health Officer (MHO).

HCV PCR

- HCV RNA testing should be performed using a sensitive quantitative assay with a low limit of detection (10-15 IU/ml or less) and a broad dynamic range.

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- It is recommended that all ELISA hepatitis C positive tests have a second blood sample (plasma) sent to be tested for HCV by PCR to rule out active disease (College of Family Physicians of Canada, Public Health Agency of Canada, 2009):
 - Negative PCR: it is recommended that the test be repeated in 2-4 weeks. If positive, repeat again in 12 weeks.
 - Repeat negative PCR: is consistent with a patient with inactive disease.
 - Positive PCR: means the patient has active HCV disease and should be evaluated further by an individual experienced in hepatitis C management (e.g., infectious diseases specialist).
- Immunocompromised individuals may not develop anti-HCV; therefore these individuals may need to undergo HCV-RNA testing.

Post-natal

- After birth, babies born to mothers positive for hepatitis C antibodies will have passive antibodies; therefore anti-HCV testing should not be performed in infants < 18 months of age, as the presence of anti-HCV may represent passive maternal antibody.
- Cord blood should not be used because of potential cross-contamination with maternal antibody.
- Uninfected infants should usually have cleared these antibodies by 12 to 15 months of age. The higher the level in the mother, the longer they will take to clear (Boucher, 2000).
- Test newborns of HCV-RNA positive mothers at 1 year using HCV-RNA test (College of Family Physicians of Canada, Public Health Agency of Canada, 2009).

Methods of Control/Role of Investigator

Prevention and Education

Refer to the [Blood and Body Fluid Pathogens Introduction and General Considerations](#) section of the manual that highlights topics for client education that should be considered.

Health education efforts should include both broad-based campaigns to raise awareness of risk, modes of transmission, and prevention measures, and reduce stigma as well as targeted programs to educate and reduce risk in at-risk populations.

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Immunization

There is no vaccine available for the prevention of hepatitis C.

Education

Refer to the [Blood and Body Fluid Pathogens Introduction and General Considerations](#) section of the manual that highlights topics for client education that should be considered. Personal service providers should be referred to Saskatchewan Personal Service Facility Best Management Practices (under development) for infection prevention and control measures.

Management

I. Case

History

Obtain as detailed a history as possible using the [Attachment – Hepatitis C Investigation Form](#). Inquire about history of sexual or needle-sharing contact with someone who has or had HCV. Discuss all potential risks that the case has been exposed to with particular focus on parenteral exposures such as:

- injection drug use;
- tattooing/piercing;*
- medical/dental procedures;*
- transfusions of blood/blood products in Canada (prior to 1992);
- transfusions of blood/blood products outside of Canada.

*It is important to obtain details regarding dates of exposures and names/locations of the facilities in which exposures may have occurred. Consideration of the need to further investigate these facilities is warranted.

Inquire about other factors that are associated with HCV:

- co-infection with other blood borne pathogens or STIs;
- history of multiple sexual partners;
- history of incarceration.

Obtain names and phone numbers of contacts as per [Contact Investigation](#).

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Education (College of Family Physicians of Canada, Public Health Agency of Canada, 2009)

Cases should be educated on hepatitis C disease and its signs and symptoms. They should be informed of the complications of hepatitis C and be advised of how to reduce the risk of liver damage:

- limit alcohol intake;
- promote smoking cessation;
- maintain a healthy weight;
- avoid/limit medication use (including over-the-counter medications) that may be hepatotoxic without consulting with a physician or pharmacist;
- ensure immunity to hepatitis A and B.

Cases should be informed of how hepatitis C is spread and to use precautions with their own blood and body fluids to prevent spread and infection to others:

- never donate blood, organs, semen, or tissue;
- never share material used to prepare, inject, or inhale drugs;
- never share sharp instruments/personal hygiene materials with others (e.g., razors, scissors, nail clippers, toothbrush);
- consider the potential health risks of tattooing and body piercing;
- discuss HCV status with drug sharing partners;
- sexual activity is safe unless it involves trauma or higher risk sexual behaviours;
- practice safer sex with new partners;
- breastfeeding by a HCV positive mother is not a risk unless nipples are cracked or bleeding. Breastfeeding should be discontinued until nipples are healed.

Cases should be advised that they should also be tested for HIV and hepatitis B.

Treatment/Supportive Therapy

The treatment of hepatitis C infections is to be prescribed by or in consultation with a specialist with expertise in HCV treatment.

Immunization

Offer immunizations as per Saskatchewan Immunization Manual, Chapter 7.¹

¹ <http://www.ehealthsask.ca/services/manuals/Documents/sim-chapter7.pdf>

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Exclusion

Not applicable. Standard/Routine Infection Prevention and Control measures apply.

Referrals

Cases should be referred to:

- infectious diseases (ID) specialist or treating practitioner.
- other social programs as agreed to by client (e.g., community agencies that provide support to HCV positive people) or harm reduction programs for needle exchange services and related health services;
- Canadian Blood Services (CBS) should be notified of cases that have a history of donation or receipt of blood or blood products. See [Appendix K – Notification to Canadian Blood Services](#).
- Saskatchewan Transplant Program should be notified of cases that have a history of donation or receipt of tissues. See [Appendix M – Notification to the Saskatchewan Transplant Program](#).

II. Contacts/Contact Investigation

Contact Definition

- High risk contacts are defined as:
 - those who have shared injection drug use and non injection drug use equipment with the case;
 - children born to an infected mother;
 - individuals who have been exposed to blood or body fluids contaminated with blood (sharing razors, toothbrushes, or via bites or needlestick injuries).
- Lower risk contacts are defined as:
 - household contacts;
 - sexual contacts.
- Contacts should be traced back to 6 months prior to onset of symptoms or to onset of risk behaviour for cases who are asymptomatic.
- Children born to women previously identified to be HCV infected should be tested for HCV infection; the duration of presence of passive maternal antibody in infants can be as long as 18 months.
- Exposures to blood and body fluids should be managed as per Saskatchewan Guidelines for the Management of Exposures to Blood and Body Fluids.²

² <http://www.ehealthsask.ca/services/manuals/Pages/hiv-guidelines.aspx>

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- When personal service or medical/dental facilities are identified as a potential source for exposure, further investigation of other clientele may be warranted.

Education

Contacts should be educated on hepatitis C disease and its signs and symptoms. They should be informed of how hepatitis C is spread and to use precautions with their own blood and body fluids until testing is complete and shows they have not been infected. This may be as long as 6 months due to the long incubation of hepatitis C.

Contacts should also be educated on how to protect themselves from further exposure to hepatitis C by following certain preventive measures. Refer to the [Blood and Body Fluid Pathogens Introduction and General Considerations](#) section of the manual that highlights topics for client education that should be considered.

Testing/Prophylaxis

- All contacts of hepatitis C disease should be tested for hepatitis B and C and HIV.
- Any contacts who are HCV-positive should be followed as a case.
- Contacts who are anti-HCV negative should undergo repeat testing at 4 weeks, 3 months and 6 months following their latest exposure. They should be sure to follow precautions to reduce the risk of spreading the virus to others until infection can be ruled out. See Saskatchewan Guidelines for the Management of Exposures to Blood and Body Fluids.³

Infants born to HCV positive mothers:

- Refer to [Specimen Collection and Transport – Postnatal](#).

Prophylaxis

None available.

Immunization

There is no vaccine for hepatitis C. Contacts should be provided immunizations as per the Saskatchewan Immunization Manual, Chapter 5⁴ and 7.⁵

³ <http://www.ehealthsask.ca/services/manuals/Pages/hiv-guidelines.aspx>

⁴ <http://www.ehealthsask.ca/services/manuals/Documents/sim-chapter5.pdf>

⁵ <http://www.ehealthsask.ca/services/manuals/Documents/sim-chapter7.pdf>

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Exclusion

Exclusion is not indicated.

III. Environment

Removal of visible blood/body fluid followed by application of a solution of 1 part bleach and 9 parts water which is then allowed to sit for 10 minutes should be sufficient to deactivate the virus.

Child Care Centre Control Measures

All childcare centre staff should use Standard/Routine Precautions when handling all blood and body fluids. Refer to Infection Control Manual for Childcare Facilities.⁶ Children known to have hepatitis C do not need to be excluded from childcare. If the child is known to bite, this should be discussed with the medical health officer (MHO).

Institutional Control Measures

Standard/Routine Precautions should be the standard for all staff working in health care settings. Refer to Regional Infection Control Manual.

Personal Service Facilities

Refer to Saskatchewan Personal Service Facility Best Management Practices (under development).

Epidemic Measures

When two or more cases occur in association with some common exposure, search for additional cases. Screen susceptible contacts and implement measures to interrupt further transmission as appropriate to the situation.

⁶ <http://www.saskatchewan.ca/live/births-deaths-marriages-and-divorces/starting-a-family/early-learning-and-child-care/child-care>.

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Blood and Body Fluid Pathogens

Hepatitis C

Date Reviewed: June, 2014

Section: 6-30

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Panorama QA complete: Yes No
Initials:

A) PERSON REPORTING – HEALTH CARE PROVIDER INFORMATION

Clinic Name: Location: Attending Physician or Nurse: Address: Phone number:	FOR PUBLIC HEALTH OFFICE USE ONLY: Service Area: Date Received: Panorama Client ID: Panorama Investigation ID:
---	---

B) CLIENT INFORMATION

Last Name:	First Name: and Middle Name:	Alternate Name:
DOB: YYYY / MM / DD Age: _____	Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unknown <input type="checkbox"/> Other	Phone : <input type="checkbox"/> Primary Home: <input type="checkbox"/> Mobile contact: <input type="checkbox"/> Workplace: <input type="checkbox"/> Alt Contact: Name: _____ Relationship: _____
Health Card Province: _____ Health Card Number (PHN): _____	<u>Gender Identity:</u> <input type="checkbox"/> Transgender Male-to-female <input type="checkbox"/> Transgender Female-to-male <input type="checkbox"/> Undifferentiated <input type="checkbox"/> Other (specify)	Preferred Communication Method: <input type="checkbox"/> Home <input type="checkbox"/> Work <input type="checkbox"/> E-mail <input type="checkbox"/> Text
Place of Employment/School:	Email Address:	
Address Type: <input type="checkbox"/> No fixed <input type="checkbox"/> Postal Address <input type="checkbox"/> Primary Home <input type="checkbox"/> Temporary <input type="checkbox"/> Legal Land Description		
Mailing (Postal address):		
Street Address or FN Community (Primary Home):		

C) IMMIGRATION INFORMATION

Country Born In: _____
Country Emigrated from: _____ Arrival Date: YYYY / MM / DD OR Arrival Year YYYY

D) DISEASE EVENT HISTORY

Staging: <input type="checkbox"/> Acute (19 months of age and older) <input type="checkbox"/> Chronic (19 months of age and older) <input type="checkbox"/> Unstaged (less than 19 months of age) <input type="checkbox"/> Resolved (19 months of age and older) <input type="checkbox"/> Unstaged (19 months of age and older)

E) SIGNS & SYMPTOMS (NOTE: For Public Health - Do not select "ONSET" symptom)

Description	No	Yes Date of onset	Add'l Info
Asymptomatic			
Jaundice			
Lab – aminotransferase levels - elevated			
Lethargy (fatigue, drowsiness, weakness, etc.)			
Loss of appetite (anorexia)			
Nausea			
Pain - Abdominal			
Urine – dark			
Vomiting			
Weight loss			
Other – specify			

Hepatitis C Notification Form

Panorama QA complete: Yes No
Initials:

F) RISK FACTORS Please complete *all* Risk Factors from **LAST KNOWN NEGATIVE result** –specify dates as needed) N—No, NA—Not asked, U—Unknown

DESCRIPTION	Yes Start date	N, NA, U	Add'l Info
Contact – Hepatitis C	YYYY / MM/DD		
Exposure – Invasive body art (e.g. tattoo, body piercing, scarification)	YYYY / MM/DD		
Exposure – Blood and body fluids (not otherwise listed) (Add'l Info)	YYYY / MM/DD		
Occupation – Health Care Worker – IOM Risk Factor			
Risk Behavior – Sharing injection drug equipment	TE		
Risk Behavior – Sharing non-injection drug equipment	TE		
Sexual Behaviour – More than 2 sexual partners in past 3 months	TE		
Sexual Behaviour – MSM	TE		
Sexual Behaviour – Sex with a known case (Add'l Info)	YYYY / MM/DD		
Sexual Behaviour – Sex with person from endemic country (Add'l Info)	YYYY / MM/DD		
Sexual Behaviour – Sex with person who injects drugs	TE		
Special Populations – Correctional Facility resident			
Special Population – From or residence in an endemic country			
Special Population – Infant born to infected mom	TE		
Special Population – Pregnancy			
Special Population – Self-reported indigenous			
Substance Use – Alcohol			
Substance Use – Injection Drug Use (including Steroids)			
Substance Use – Illicit non-injection drug use	AE		
Travel – Outside of Canada (Add'l Info)	YYYY / MM/DD		
Other risk factor (Add'l Info)	TE		
Medical Treatment – Blood, blood product or tissue recipient (Add'l Info)	YYYY / MM/DD INTERVENTION		
Medical Treatment – Other (transplant, surgery, dental, oscopy, artificial insemination etc.) (Add'l Info)	YYYY / MM/DD INTERVENTION		
Blood, blood product, tissue or transplant donor	<i>Document referral in Interventions and complete Appendix K – Referral to CBS, and upload into Document Management</i>		

G) UNKNOWN/ANONYMOUS CONTACTS

Anonymous contacts: _____ (number of contacts that the individual cannot name)

Include known contacts on the following pages

Hepatitis C – Public Health Follow-Up

Panorama QA complete: Yes No
 Initials: _____

Panorama Client ID: _____
 Panorama Investigation ID: _____

A) CLIENT INFORMATION

LHN -> SUBJECT -> CLIENT DETAILS -> PERSONAL INFORMATION

Last Name:	First Name: and Middle Name:	Alternate Name:
DOB: YYYY / MM / DD Age: _____	Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unknown <input type="checkbox"/> Other	PHN:

B) INVESTIGATION INFORMATION

LHN -> SUBJECT SUMMARY -> STBBI ENCOUNTER GROUP -> CREATE INVESTIGATION

Disease Summary Classification: CASE:	Date	Classification: CONTACT:	Date	LAB TEST INFORMATION:
<input type="checkbox"/> Lab Confirmed	YYYY / MM / DD	<input type="checkbox"/> Contact	YYYY / MM / DD	Date specimen collected: YYYY / MM / DD
<input type="checkbox"/> Suspect	YYYY / MM / DD	<input type="checkbox"/> Not a Contact	YYYY / MM / DD	
<input type="checkbox"/> Person Under Investigation	YYYY / MM / DD	<input type="checkbox"/> Person Under Investigation	YYYY / MM / DD	

Disposition: FOLLOW UP:

<input type="checkbox"/> In progress	YYYY / MM / DD	<input type="checkbox"/> Complete	YYYY / MM / DD
<input type="checkbox"/> Incomplete - Declined	YYYY / MM / DD	<input type="checkbox"/> Not required	YYYY / MM / DD
<input type="checkbox"/> Incomplete – Lost contact	YYYY / MM / DD	<input type="checkbox"/> Referred – Out of province	YYYY / MM / DD
<input type="checkbox"/> Incomplete – Unable to locate	YYYY / MM / DD	(Specify where)	YYYY / MM / DD

C) INTERVENTION

LHN -> INVESTIGATION -> TREATMENT & INTERVENTIONS -> INTERVENTION SUMMARY

Intervention Type and Sub Type:				
Assessment: <input type="checkbox"/> Assessed for contacts Investigator name YYYY/ MM /DD <input type="checkbox"/> Client aware of diagnosis Investigator name YYYY/ MM /DD	Immunization: <input type="checkbox"/> Eligible Immunization recommended YYYY/ MM /DD <input type="checkbox"/> Immunization nurse notified YYYY/ MM /DD Investigator name			
Communication: <input type="checkbox"/> Phone call (morning) Investigator name YYYY/ MM/ DD <input type="checkbox"/> Phone call (afternoon) Investigator name YYYY/ MM/ DD <input type="checkbox"/> Phone call (evening) Investigator name YYYY/ MM/ DD <input type="checkbox"/> Text Message sent Investigator name YYYY/ MM/ DD <input type="checkbox"/> E-mail Investigator name YYYY/ MM/ DD <input type="checkbox"/> Home visit Investigator name YYYY/ MM/ DD <input type="checkbox"/> Letter Sent Investigator name YYYY/ MM/ DD <input type="checkbox"/> Letter (See Document Management) Investigator name <input type="checkbox"/> Ordering practitioner contacted YYYY/ MM/ DD Investigator name <input type="checkbox"/> Other communication (See Investigator Notes) YYYY/ MM/ DD Investigator name	Environmental health: <input type="checkbox"/> Personal Service Facility inspection YYYY/ MM /DD Investigator name Referral: Investigator name <input type="checkbox"/> Canadian Blood Services YYYY/ MM /DD <input type="checkbox"/> Child Protective Services YYYY/ MM /DD <input type="checkbox"/> Harm Reduction Services YYYY/ MM /DD <input type="checkbox"/> Infectious Disease Specialist YYYY/ MM /DD <input type="checkbox"/> Primary Care Provider YYYY/ MM /DD <input type="checkbox"/> Saskatchewan Transplant Program YYYY/ MM /DD <input type="checkbox"/> Consultation with MHO YYYY/ MM /DD Other: <input type="checkbox"/> Other (specify) YYYY/ MM /DD Investigator name Other Investigation Findings <input type="checkbox"/> Investigator Notes YYYY/ MM /DD <input type="checkbox"/> See Document Management YYYY/ MM /DD			
General: Investigator name <input type="checkbox"/> Disease-Info/Prev-Control YYYY/ MM / DD <input type="checkbox"/> Disease-Info/Prev-Cont/Assess'd for Contacts YYYY/ MM / DD	Testing: <input type="checkbox"/> Laboratory testing recommended YYYY/ MM /DD <input type="checkbox"/> STBBI Testing recommended (specify) YYYY/ MM /DD Investigator name			
Date	Intervention subtype	Comments	Next follow-up Date	Initials
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	

Notification Timeline:

From Lab/Practitioner to Public Health: Within 48 hours.

From Public Health to Saskatchewan Health: Within 2 weeks.

Public Health Follow-up Timeline: Within 72 hours.

Public Health Purpose for Notification of HIV

- To support positive outcomes for individuals and the community through:
 - Engagement in care, education about prevention and control measures, referrals to harm reduction services, and other communicable disease services including TB screening and immunizations;
- To identify cases of HIV through contact tracing in order to prevent further transmission;
- To offer testing and referral to supportive services to at risk individuals through contact tracing;
- To track epidemiology trends of HIV in Saskatchewan including risk factors and distribution;
- To identify locations where increased transmission of HIV may be occurring in order to inform other interventions;
- To monitor the effectiveness of prevention and control measures;
- To make timely and evidence informed actions on outbreaks; and
- To inform the public and medical community about HIV.

Surveillance Case Definition¹ (Adapted from Public Health Agency of Canada, May 2008)

<p>Confirmed Case: Adults, Adolescents and Children ≥ 18 months</p>	<p>Detection of HIV antibody with confirmation (e.g., EIA screening with confirmation by Western blot or other confirmatory test) OR detection of HIV nucleic acid (e.g., DNA PCR or plasma RNA) OR HIV p24 antigen with confirmation by neutralization assay OR</p>
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¹ Surveillance case definitions ensure uniform reporting to allow comparability of surveillance data. The definition is not intended to be used for clinical or laboratory diagnosis or management of cases.

	isolation of HIV in culture.
Confirmed Case: Children < 18 months (on two separate samples collected at different times)	Detection of HIV nucleic acid (e.g., DNA PCR or plasma RNA) OR HIV p24 antigen with confirmation by neutralization assay OR isolation of HIV in culture.
Probable Case: Adults	Positive screening test that cannot be confirmed OR indeterminate confirmatory test (HIV 1/2 Confirmatory assay or Western blot)* OR reactive point of care test.
Probable Case: < 18 months	One positive confirmatory test without a second confirmatory test result available for the individual.
<p>In children < 18 months of age born to HIV-positive women, nucleic acid testing should be done within two weeks after birth and, if negative, repeated at 1 to 2 months and at 3 to 4 months of age. Any positive results should be repeated with a second specimen for confirmation.</p> <p>For children who are born to HIV-positive women and who have negative nucleic acid results, antibody testing should be done at 12 and 18 months of age to ensure that they have lost maternally derived antibodies. (This is not used to determine uninfected status but rather to eliminate the possibility of a positive antibody result being misinterpreted.) These children should continue to be monitored until they have a negative HIV antibody test.</p>	

*Indeterminate Western blot tests results on a repeat basis (3) are considered to be negative (U.S. Centers for Disease Control and Prevention, 1989).

Table 1: Stage of HIV Infection at Diagnosis for individuals > 5 years of age (adapted from BC Center of Excellence in HIV [2018] and Vajpayee [2005])

Stage	Criteria	CD4 at Diagnosis	AIDS-defining Illness
0	Laboratory criteria met for acute HIV infection, or previous negative or indeterminate HIV test within 180 days of first confirmed positive		
1	Stage 0 not met AND	CD4 ≥500	AND No AIDS case report
2		CD4 200-499	
3		CD4 <200	OR AIDS case report
Unknown		No CD4 available	AND No AIDS case report

One of the objectives is to identify individuals early in the course of infection to reduce further transmission to others. The CD4 count can be a marker to reflect stage of HIV infection at diagnosis.

Epidemiology and Occurrence

Under development

Additional Background Information

Causative Agent

Human immunodeficiency virus. A retrovirus. Type 1 predominant in Canada, but Type 2 is present.

Reservoir/Source

Table 2: Fluids and tissues capable of transmitting blood borne pathogens (U.S. Centers for Disease Control, 2001)

Fluid	HIV
Blood and fluids visibly contaminated with blood	Yes
Semen	Yes
Vaginal secretions	Yes
Pleural, amniotic, pericardial, peritoneal, synovial and cerebrospinal fluids and inflammatory exudates	Yes
Saliva, faeces, nasal secretions, sputum, sweat, tears, urine, vomitus	No, unless contaminated with blood
Transplanted tissue or organs	Yes
Breast milk	Yes

Symptoms

Individuals infected with HIV may experience several stages (Public Health Agency of Canada, 2013). The stage based on CD4 count (**Table 1**) is considered a more objective way to document stage. Below is a description of clinical presentation HIV based on stage of infection:

- **HIV Primary/Acute infection**

Up to 90% of individuals experience symptoms within 2-4 weeks after infection (acute retroviral syndrome). Symptoms typically last 1-2 weeks but may last up to several months. These signs and symptoms include:

- fever (mean temperature 39.4°C [102.9°F] > 80%);
- arthralgia or myalgia, rash, lymphadenopathy, sore throat, fatigue, headache (40-80%);
- oral ulcers and/or genital ulcers, > 5 kg weight loss, nausea, vomiting, or diarrhea (10-40%).

- ***Chronic Asymptomatic HIV infection***

Many persons with HIV fall into this stage. It is the stage where the immune response is able to control viral replication and plasma viremia. In this stage of infection, people can experience the following signs and symptoms:

- generalized lymphadenopathy;
- thrombocytopenia.

- ***Chronic Symptomatic HIV infection***

This is the stage of profound immunosuppression. Signs and symptoms include:

- oral hairy leukoplakia;
- unexplained fever (> 2 weeks);
- fatigue or lethargy;
- unexplained weight loss (> 10% body weight);
- chronic diarrhea (> 3 weeks);
- unexplained lymphadenopathy (usually generalized);
- cervical dysplasia;
- dyspnea and dry cough;
- loss of vision;
- recurrent or chronic mucocutaneous candidiasis (oral, esophageal, vaginal);
- dysphagia (esophageal candidiasis);
- red/purple nodular skin or mucosal lesions (Kaposi sarcoma);
- encephalopathy;
- herpes zoster, especially if severe, multidermatomal or disseminated;
- increased frequency or severity of mucocutaneous herpes simplex virus infection;
- unexplained “anemia of chronic disease.”

Complications

Acquired immunodeficiency syndrome (AIDS). See Section 6-15.

Incubation Period

The incubation period varies on each individual’s ability to develop antibodies to HIV. Up to 90% of individuals experience symptoms within 2-4 weeks after infection. See [Symptoms](#).

In HIV/AIDS research, the seroconversion period refers to the period of time it usually takes to develop detectable antibodies to HIV following infection with HIV. In 75% of persons, antibodies are produced in 4 to 8 weeks; in almost all persons, antibodies are produced within 14 weeks.

The seroconversion period is frequently described as the “window period.” It is very significant in relation to the timing of HIV tests. In HIV testing, the window period refers to the time between a person becoming infected and when laboratory tests can detect HIV infection. The window period varies based on the test that is completed; progress in HIV testing technologies continues to result in tests with shorter window periods (British Columbia Centre for Disease Control, October, 2016).

Persons who are tested during the window period may receive a negative HIV test result although they may be infected with HIV. Persons disclosing HIV-related risk factors in the 14 weeks before testing negative for HIV are encouraged to be retested at the end of the window period.

In addition to test results, the risks that the individual has engaged in during the window period should be considered. Statistically it is very unlikely that a person with HIV would be tested during the 3 month window period (and test negative) however that possibility should be considered in persons with ongoing risk factors.

A summary of window periods based on the test used provides context to the reliability of the test results:

- antibody/antigen (4th generation test) has window period of approximately 2-3 weeks;
- antibody test (3rd generation) has a window period of approximately 3-4 weeks;
- POCT has a window period of approximately 3-4 weeks;
- the Western blot or other confirmatory tests have a window period of approximately 4-6 weeks though it may take up to 8 weeks for a positive result.

Because window periods vary with the test, a negative test result at 3 months in an individual with no ongoing risk factors is deemed to be negative and no further testing is required.

Period of Communicability

Communicability begins early after infection and extends throughout the individual's lifespan. Infectiousness is related to an individual's HIV viral load (i.e., high viral load increases potential for transmission). Generally, people are most infectious early and late in the course of infection. If the viral load is suppressed (<200 copies/mL), the risk of transmission is decreased. The presence of an STI does not increase the possibility of transmission if the HIV positive person is on effective ARVs (Barré-Sinoussi, 2018).

Mode of Transmission (Public Health Agency of Canada, 2010)

Transmission of HIV infection occurs essentially through specific exposure to blood or body fluids from an HIV-infected person. The risk of transmission decreases when the infected person is effectively responding to treatment.

In order to be infected, the virus must have an entry point, most directly through a person's bloodstream or mucous membranes (HIV cannot survive outside the body). HIV is transmitted from one person to another through:

- unprotected sexual intercourse (vaginal, anal or oral);
- shared needles, syringes or other equipment used for injecting drugs;
- unsterilized needles or equipment for tattooing, skin piercing or acupuncture;
- pregnancy, delivery and breast feeding (i.e., from an HIV-infected mother to her infant);
- occupational exposures in health care or other high risk settings.

Table 4 Estimated Per-Act Probability of Acquiring HIV from a Known HIV-Infected Source by Exposure Act

Type of Exposure	Estimated Risk	Reference
Parenteral		
Blood Transfusion	90% (9 in 10)	Patel, et al (2014)
Needle-sharing during injection drug use	0.63% (63 in 10000)	
Percutaneous (needlestick)	0.23% (23 in 10 000)	
Sexual		
Receptive anal intercourse	1.4% (7 in 5000)	Patel, et al (2014)
Receptive penile-vaginal intercourse	0.08% (8 in 10000)	Patel, et al (2014)
Insertive anal intercourse	0.11% (11 in 10000)	Patel, et al (2014)
Insertive penile-vaginal intercourse	0.04% (4 in 10000)	Patel, et al (2014)
Receptive oral intercourse	Low ^a	Varghese, et al. (2002); Page-Shafer, et al. (2002)
Insertive oral intercourse	Low ^a	Varghese, et al. (2002)
Other^b		
Biting	Negligible	Pretty, et al. (1999)
Spitting	Negligible	

Throwing body fluids (including semen or saliva)	Negligible	
Sharing sex toys	Negligible	
<p>^a HIV transmission through oral sex has been documented, but rare. Accurate estimates of risk are not available. It is prudent to recommend HIV post-exposure prophylaxis (PEP) for receptive oral sex with ejaculation, although discussion about the low risk should occur. Refer to Saskatchewan Guidelines for the Management of Blood and Body Fluids² for further consideration</p> <p>^b HIV transmission through these exposure routes is technically possible but extremely unlikely and cases are not well documented. Increased risk occurs when the activity involved exposure to blood</p>		

Source: New York State Department of Health AIDS Institute, 2013. AIDS (2014)

Risks for HIV Transmission

- Multiple sexual partners (> 1 in 3 months).
- Unprotected sexual activity (i.e., no barrier protection).
- Sex with a person infected with HIV.
- Receptive anal/vaginal intercourse.
- Sharing of needles or other drug-using equipment.

Specimen Collection and Transport

HIV infection is diagnosed by detection of antibodies, or of HIV antigens or nucleic acids in blood. For serological testing, collect blood in serum separator vacutainer (SST). Refer to Roy Romanow Provincial Laboratory (RRPL) Compendium of Tests at <https://rrpl-testviewer.ehealthsask.ca/>. The serological test used at RRPL is the HIV combo assay, which detects the presence of both antibodies and the p24 antigen in serum. Reactive results in this assay are confirmed. See Saskatchewan HIV Testing Policy, Lab Testing Flowchart³.

HIV viral load

Patients with confirmed HIV infection should have at least one HIV viral load assay performed. Refer to Roy Romanow Provincial Laboratory (RRPL) Compendium of Tests at <https://rrpl-testviewer.ehealthsask.ca/>.

² <http://www.ehealthsask.ca/services/manuals/Pages/hiv-guidelines.aspx>

³ <http://www.skshiv.ca/#!routine-testing/ciha>

HIV resistance genotyping

Patients who are receiving anti-retroviral therapy, and whose viral load increases should have a sample submitted for HIV resistance genotyping. Submit frozen specimens to RRPL with completed requisition for British Columbia Center of Excellence.

Newborns: sample referred to Reference laboratory for HIV detection by molecular methods.

Public Health Investigation

I. Case

History

Obtain as detailed a history as possible using the [Attachment – HIV Data Collection Worksheet](#). This should be done in consultation and partnership with the ordering practitioner who initially diagnosed HIV in the individually. In order to monitor trends in epidemiology in Saskatchewan, it is important that all risk factors are asked and responses are documented. When a transmission risk is identified, timely follow-up must be completed.

- Inquire about factors that are associated with HIV acquisition or transmission:
 - Men who have sex with men (MSM);
 - multiple sexual partners;
 - injection drug use;
 - sharing injection or non-injection drug equipment; .
- history of sexual or needle-sharing contact with someone infected with HIV. Discuss all potential risks that the case has been exposed to with particular focus on parenteral exposures such as:
 - heterosexual sex with at risk individuals (person who injects drugs, men who have sex with men, persons from endemic country, injection drug use);
 - invasive body art (tattooing/piercing)⁴;
 - medical/dental procedures in sub-standard settings;
 - transfusions of blood/blood products in Canada;
 - transfusions of blood/blood products outside of Canada.

⁴ It is important to obtain details regarding dates of exposures and names/locations of the facilities in which exposures may have occurred. Consider whether investigation of any facility may be indicated. Consult with MHO. When personal service or medical/dental facilities are identified as a potential source for exposure, further investigation of other clientele may be warranted.

Public Health Interventions

Assessment

- It is important to know if the client is aware of their diagnosis or if the testing provider has not yet been able to notify the case. Prior to communicating with the client, discuss with health care provider who diagnosed the individual. Know whether the health care provider has informed their patient of the diagnosis and if they have collected information on contacts.
- Assess for contacts and obtain names and phone numbers of contacts as per [Contact Investigation](#).

Communication

- Individuals may be difficult to reach. Make several attempts to contact individuals using various methods (phone, text, home visit) at different times of the day. Some individuals' mobile service contracts only allow for text messaging. It is important to have policies and procedures that support the use of alternate modes of communication to assist in case follow-up.
- The primary care provider is an important partner in the public health follow-up of HIV. It is important to provide updates to care providers when referrals have been made to public health to assist in follow-up.

Education

Providers are expected to be proficient in providing education in the topics below:

- Description of HIV infection – progression, chronicity, treatment, management.
- Blood borne transmission/prevention, including risk reduction.
- *The Public Health Act, 1994*/Transmission/Prevention/Partner Notification of current and future partners:
 - the legal necessity to disclose HIV status with current and new sexual and needle-sharing partners.
- HIV post-exposure prophylaxis (PEP) use/availability in Saskatchewan.
- Contact notification – responsibilities under *The Public Health Act, 1994*: Sexual/IDU/Other Blood Body Fluid Exposure.
- Infectious Diseases (ID) Specialist referral.

Education must be tailored to the individual and often requires repetition and reinforcement of learning. Information may need to be reinforced using written materials and repeated conversations.

Environmental Assessment

- If personal service facilities are identified in the investigation, it may be prudent for a public health inspection to be made to ensure adequate infection prevention and control measures are in place.

Exclusion

- Not applicable. Standard/Routine Infection Prevention and Control measures apply.

Immunization

- See Saskatchewan Immunization Manual – Chapter 7⁵ for vaccines that HIV positive individuals are eligible for. Discuss with the regional medical health officer (MHO) and/or primary care practitioner/ID Specialist as required.

Referrals

Cases should be referred to clinical and social services:

- Infectious Diseases (ID) specialist or other treating practitioner.
- Social programs as agreed to by client (e.g., community agencies that provide support to HCV positive people) or harm reduction programs for needle exchange services and related health services;
- Employee Health Department if case is a health care worker with a high risk of exposure to clients.
- Canadian Blood Services (CBS) if the case has a history of donation or receipt of blood or blood products. See [Appendix K – Notification to Canadian Blood Services](#).
- Saskatchewan Transplant Program if the cases has a history of donation or receipt of tissues. See [Appendix M – Notification to the Saskatchewan Transplant Program](#).
- In addition, a referral to an HIV Case Manager may be beneficial for clients that require additional supports.

Testing

Cases should be advised that they should also be tested for other sexually transmitted and blood borne pathogens including chlamydia, gonococcal infections, syphilis, hepatitis B and hepatitis C.

⁵ <http://www.ehealthsask.ca/services/manuals/Documents/sim-chapter7.pdf>

Treatment

The treatment of HIV infections is to be prescribed by an ID Specialist or General Practitioner mentored by an ID Specialist.

Clinical management of cases involves follow-up testing which is not described in this document.

II. Contacts/Contact Investigation

Contact Definition

Contacts are defined as all sexual and needle/equipment-sharing partners of the case as well as others who may have been exposed to the case's blood or body fluids (e.g., trauma – see [Mode of Transmission](#) above) since:

- a. three months prior to the case's last negative HIV test

OR

- b. onset of risk behaviour (for cases that have not been previously tested).
In the case of "b", priority should be given to the most recent contacts.

All children born to mothers who are or may be HIV-infected need to be evaluated. Refer to Perinatal HIV Prevention Protocols⁶. This includes:

- a. children born within the window periods of the mother's positive test

AND

- b. any children born since the last negative HIV test of the mother.

Public Health Interventions

Education

- Contacts should be identified and notified of their exposure to the disease.
- Contacts should be informed of their duties as outlined in the Disease Control Regulations:
 - to protect themselves by going to a physician or clinic nurse for testing and care;
 - to take all reasonable measures to reduce significantly the risk of infecting others.

⁶ <https://skhiv.ca/pregnancy-and-newborn-care/>

- Contacts should be assessed for risk behaviours and counselling should be provided to reduce risk exposures including the use of pre-exposure prophylaxis (PrEP).
- Referrals to harm reduction and supportive services should be provided as applicable.
- Contacts must be advised about blood and body fluid precautions while undergoing testing in the window period for HIV.

Testing

- In addition to the education provided, pre-test counselling should be provided. *Canadian Guidelines on Sexually Transmitted Infections*⁷ as well as the British Columbia Centre for Disease Control Communicable Disease Control Manual, Chapter 5: HIV Pre and Post Test Guidelines.
- The frequency and timing of testing should be based on the time since the most recent exposure/risk behaviour. Baseline testing is recommended at the time of contact notification. Follow-up tests should be conducted at 4 weeks and 3 months.
- If the exposure was 12 months ago, the baseline test would be all that is required unless the contact is engaging in other risk behaviours in which, case regular sexually transmitted and blood borne infection testing should be suggested.

Prophylaxis

The *Guidelines for Exposures to Blood and Body Fluids*⁸ outline the recommendations for the use of HIV post-exposure prophylaxis and the *Saskatchewan Pre-Exposure Prophylaxis (PrEP) Guidelines*⁹ outline recommendations for PrEP. This may provide an opportune time to discuss PrEP for contacts that are engaged in ongoing exposures.

Immunization

There is no vaccine to prevent HIV infections. Contacts should be provided immunizations as per the Saskatchewan Immunization Manual, Chapter 5¹⁰ and Chapter 7.¹¹

⁷ <http://www.phac-aspc.gc.ca/std-mts/sti-its/cgsti-lcits/section-5-8-eng.php>.

⁸ <http://www.ehealthsask.ca/services/manuals/Pages/hiv-guidelines.aspx>

⁹ https://skhiv.ca/wp-content/uploads/2018/03/Pre-Exposure-Prophylaxis_Guideline-Review-for-Primary-Care-Practitioners-in-Saskatchewan.pdf

¹⁰ <http://www.ehealthsask.ca/services/manuals/Documents/sim-chapter5.pdf>

¹¹ <http://www.ehealthsask.ca/services/manuals/Documents/sim-chapter7.pdf>

Exclusion

Not applicable. Standard blood and body fluid precautions apply until assured negative through testing as recommended above.

III. Environment

Child Care Centre Control Measures

Refer to the Saskatchewan Ministry of Health Infection Control Manual for Child Care Facilities.¹² All childcare centre staff should use standard precautions when handling all blood and body fluids. Children known to have HIV do not need to be excluded from childcare. If the child is known to bite, this should be discussed with the Medical Health Officer.

Institutional Control Measures

Refer to Saskatchewan Health Authority or former Regional Health Authority Infection Control Policies. Standard precautions should be followed by all staff working in health care settings. All health care settings should have policies and procedures in place for managing staff with occupational risk due to exposure to blood or body fluids. As well, there should be policies and procedures in place to manage occupational exposures to blood and body fluids.

For more information on occupational exposure see the Saskatchewan Guidelines for the Management of Exposures to Blood and Body Fluids.¹³

Personal Service Facilities

Refer to Saskatchewan Personal Service Facility Best Management Practices¹⁴.

- If personal service facilities are identified in the investigation, it may be prudent for a public health inspection to be made to ensure adequate infection prevention and control measures are in place. Consultation with the MHO is suggested.

¹² <http://www.saskatchewan.ca/live/births-deaths-marriages-and-divorces/starting-a-family/early-learning-and-child-care/child-care>

¹³ <http://www.ehealthsask.ca/services/manuals/Pages/hiv-guidelines.aspx>

¹⁴ <http://www.saskatchewan.ca/residents/environment-public-health-and-safety/environmental-health/personal-service-facilities>

Other Facilities with Alternate Caregivers and Other Residents (eg. group homes, foster homes, etc)

Standard precautions should be followed by all staff working in these settings. All settings should have policies and procedures in place for mitigating occupational risk of exposure to blood or body fluids. As well, there should be policies and procedures in place to manage occupational exposures to blood and body fluids should these occur.

For more information on occupational exposure see the Saskatchewan Guidelines for the Management of Exposures to Blood and Body Fluids.¹⁵

IV. Epidemic Measures

When two or more cases occur in association with a common exposure, search for additional cases. Screen contacts and implement measures to interrupt further transmission as appropriate to the situation

Medical Health Officers may declare and outbreaks of HIV that has been identified through contact tracing efforts. Responding to an HIV or HCV outbreak may require augmenting and redirecting resources, engaging a large and diverse group of partners and stakeholders, building upon collaborations and developing targeted communication messages for specific groups. Increased resources are usually needed to respond to the increased number of new diagnoses and to identify the root causes of the outbreak. Refer to the US CDC publication, *Managing HIV and Hepatitis C Outbreaks Among People Who Inject Drugs*¹⁶ for reference.

Prevention and Education

Refer to the [Blood and Body Fluid Pathogens Introduction and General Considerations](#) section of the manual that highlights topics for client education that should be considered.

¹⁵ <http://www.ehealthsask.ca/services/manuals/Pages/hiv-guidelines.aspx>

¹⁶ <https://www.cdc.gov/hiv/pdf/programresources/guidance/cluster-outbreak/cdc-hiv-hcv-pwid-guide.pdf>

Health education efforts should include both broad-based campaigns to raise awareness of risk, modes of transmission, and prevention measures, and reduce stigma as well as targeted programs to educate and reduce risk in target populations.

Routine testing should be promoted by health care providers. Refer to the Public Health Agency of Canada HIV Screening and Testing Guide¹⁷ and the SK HIV Testing Policy¹⁸ for additional information on routine testing.

Immunization

There is no immunization available for the prevention of HIV infection.

Pre-Exposure Prophylaxis

PrEP is an important prevention intervention that should be offered as part of an overall risk reduction strategy. PrEP involves the use of antiretroviral medications by confirmed HIV negative individuals with ongoing risk of HIV acquisition. It is initiated before HIV exposures. It should be used in conjunction with behavioural risk counselling and other harm reduction interventions. Refer to the Saskatchewan Pre-Exposure Prophylaxis Guidelines.¹⁹

Education

- Health education efforts should include both broad-based campaigns to raise awareness of risk, modes of transmission, and prevention measures, and reduce stigma as well as targeted programs to educate and reduce risk in at-risk populations.
- Personal service providers should be referred to Saskatchewan Personal Service Facility Best Management Practices⁸ for infection prevention and control measures.

¹⁷ <http://www.phac-aspc.gc.ca/aids-sida/guide/hivstg-vihgdd-eng.php>

¹⁸ <http://www.skshiv.ca/#!/routine-testing/ciha>

¹⁹ https://skshiv.ca/wp-content/uploads/2018/03/Pre-Exposure-Prophylaxis_Guideline-Review-for-Primary-Care-Practitioners-in-Saskatchewan.pdf

Revisions

Date	Change
September 2018	<ul style="list-style-type: none">• Clarified the purpose for notification of cases to public health• Incorporated Stages of HIV based on CD4 counts• Incorporated a placeholder for an Epidemiology and Occurrence section to the chapter.• Removed case definition for AIDS as it is included in its own chapter.• Incorporated standardized HIV Data Collection Worksheet.• Rearranged and updated the style into the new format of the Manual.• Added information on U=U and PrEP.• References reviewed and updated as applicable.

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HIV Notification Form

Please complete all sections



Panorama QA complete: Yes No
Initials:

A) PERSON REPORTING – HEALTH CARE PROVIDER INFORMATION

Clinic Name: Location: Attending Physician or Nurse: Address: Phone number:	FOR PUBLIC HEALTH OFFICE USE ONLY: Service Area: Date Received: Panorama Client ID: Panorama Investigation ID:
---	---

B) CLIENT INFORMATION

Last Name:	First Name: and Middle Name:	Alternate Name:
DOB: YYYY / MM / DD Age: _____	Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unknown <input type="checkbox"/> Other	Phone : <input type="checkbox"/> Primary Home: <input type="checkbox"/> Mobile contact: <input type="checkbox"/> Workplace: <input type="checkbox"/> Alt Contact: Name: _____ Relationship: _____
Health Card Province: _____ Health Card Number (PHN): _____	<u>Gender Identity:</u> <input type="checkbox"/> Transgender Male-to-female <input type="checkbox"/> Transgender Female-to-male <input type="checkbox"/> Undifferentiated <input type="checkbox"/> Other (specify)	Preferred Communication Method: <input type="checkbox"/> Home <input type="checkbox"/> Work <input type="checkbox"/> E-mail <input type="checkbox"/> Text
Place of Employment/School:	Email Address:	
Address Type: <input type="checkbox"/> No fixed <input type="checkbox"/> Postal Address <input type="checkbox"/> Primary Home <input type="checkbox"/> Temporary <input type="checkbox"/> Legal Land Description Mailing (Postal address): Street Address or FN Community (Primary Home):		

C) IMMIGRATION INFORMATION

Country Born In: _____
Country Emigrated from: _____ Arrival Date: YYYY / MM / DD OR Arrival Year YYYY

D) DISEASE EVENT HISTORY

Site / Presentation: <input type="checkbox"/> Adults, adolescents, and children \geq 18 months <input type="checkbox"/> Children <18 months
Staging (see CDC Manual): <input type="checkbox"/> Stage 0 <input type="checkbox"/> Stage 1 (CD4 \geq 500) <input type="checkbox"/> Stage 2 (CD4 200-499) <input type="checkbox"/> Stage 3 (CD4 <200) <input type="checkbox"/> Unknown

E) SIGNS & SYMPTOMS

	YES	NO		YES	NO	SPECIFY
Asymptomatic			Symptoms prior to or at time of testing?			
Initial CD4 result						

HIV Notification Form

Please complete all sections

Panorama QA complete: Yes No
Initials:

F) RISK FACTORS (Please complete *all* Risk Factors from 3 months prior to last known negative result –specify dates as needed)

Legend: N-No, NA-Not Asked, U-Unknown

DESCRIPTION	Yes Start date	N, NA, U	Add'l Info
Sexual Behaviour – MSM +	TE		
Sexual Behaviour - Heterosexual Sex	TE		
Sexual Behaviour - Heterosexual sex with person who injects drugs	TE		
Sexual Behaviour - Heterosexual sex with MSM	TE		
Sexual Behaviour - Heterosexual sex with person with hemophilia/coagulation disorder	TE		
Sexual Behaviour - Heterosexual sex with person from endemic country (Add'l Info)			
Sexual Behaviour – Heterosexual sex with person with confirmed/suspected HIV/AIDS (Add'l Info)	YYYY / MM/DD		
Sexual Behaviour – Sex with a known case	YYYY / MM/DD		
Sexual Behaviour - Unknown/Anonymous Partner (Add'l Info)	TE		
Sexual Behaviour - E-partnering internet/apps (Add'l Info.)	TE		
Sexual Behaviour - Goods provided (food, shelter, money or drugs) in exchange for sex	TE		
Sexual Behaviour - Goods received (food, shelter, money or drugs) in exchange for sex	TE		
Sexual Behaviour - Events with multiple sexual partners (Add'l Info)	TE		
Exposure - Blood and body fluids (not otherwise listed) (Add'l Info.)	YYYY / MM/DD		
Exposure - Invasive body art (e.g. tattoo, body piercing, scarification)	YYYY / MM/DD		
Exposure - Non medical, non-occupational source (acupuncture, breastmilk) (Add'l Info)	YYYY / MM/DD		
Exposure - Occupational - HIV contaminated blood, body fluid	YYYY / MM/DD		
Special Population - Infant born to an infected mother	YYYY / MM/DD		
Special Population - From or residence in an endemic country (Add'l Info)			
Special Population – Pregnancy			
Special Population - Self-reported Indigenous			
Substance Use - Injection drug use (including steroids)	YYYY / MM/DD		
Risk Behavior - Sharing injection drug equipment	YYYY / MM/DD TE		
Medical Treatment - Blood, blood product or tissue recipient (Add'l Info.)	YYYY / MM/DD INTERVENTION		
Medical Treatment - Other (transplant, surgery, dental, oscopy, etc.) (Add'l Info)	YYYY / MM/DD INTERVENTION		
Blood, blood product, tissue or transplant donor	Document referral in Interventions and complete Appendix K – Referral to CBS, and upload into Document Management		
Unable to obtain Risk Factors <input type="checkbox"/> yes (not entered in Panorama – update in disposition)			

G) UNKNOWN/ANONYMOUS CONTACTS

Anonymous contacts: _____ (number of contacts that the individual cannot name)

Include known contacts on the following pages

HIV - Contacts

Case Name: _____
Page _____ of _____

Please complete all sections.

Please include information on additional contacts on a separate sheet

NOTE for Public Health: Create contact investigation in Panorama

CONTACTS

Last Name:		First Name: and Middle Name:		Alternate Name:	
DOB: YYYY / MMM / DD Age: _____		Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unknown <input type="checkbox"/> Other			
HSN: _____					
Phone #: <input type="checkbox"/> Primary Home: <input type="checkbox"/> Workplace: <input type="checkbox"/> Mobile contact: <input type="checkbox"/> alternate phone: Relationship:			e-mail Address:		
Online Names: Site/Service: _____ User Name: _____					
Place of Employment/School:			Is contact pregnant? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		
			Is contact HIV positive <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		
			If yes, did they inform case? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		
Address Type: <input type="checkbox"/> No fixed <input type="checkbox"/> Postal Address <input type="checkbox"/> Primary Home <input type="checkbox"/> Temporary <input type="checkbox"/> Legal Land Description					
Mailing (Postal address):					
Street Address or FN Community (Primary Home):					
Exposure Dates: 1st YYYY / MMM / DD to YYYY / MMM / DD					
Exposure Type: <input type="checkbox"/> Heterosexual <input type="checkbox"/> Sharing Injection Drug Equipment <input type="checkbox"/> MSM					
Comments:			INTERVENTION Testing <input type="checkbox"/> Advised <input type="checkbox"/> Received <input type="checkbox"/> Referral (Specify)		

CONTACTS

Last Name:		First Name: and Middle Name:		Alternate Name:	
DOB: YYYY / MMM / DD Age: _____		Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unknown <input type="checkbox"/> Other			
HSN: _____					
Phone #: <input type="checkbox"/> Primary Home: <input type="checkbox"/> Workplace: <input type="checkbox"/> Mobile contact: <input type="checkbox"/> alternate phone: Relationship:			e-mail Address:		
Online Names: Site/Service: _____ User Name: _____					
Place of Employment/School:			Is contact pregnant? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		
			Is contact HIV positive <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		
			If yes, did they inform case? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		
Address Type: <input type="checkbox"/> No fixed <input type="checkbox"/> Postal Address <input type="checkbox"/> Primary Home <input type="checkbox"/> Temporary <input type="checkbox"/> Legal Land Description					
Mailing (Postal address):					
Street Address or FN Community (Primary Home):					
Exposure Dates: 1st YYYY / MMM / DD to YYYY / MMM / DD					
Exposure Type: <input type="checkbox"/> Heterosexual <input type="checkbox"/> Sharing Injection Drug Equipment <input type="checkbox"/> MSM					
Comments:			INTERVENTION Testing <input type="checkbox"/> Advised <input type="checkbox"/> Received <input type="checkbox"/> Referral (Specify)		

HIV – Public Health Follow-Up

Panorama QA complete: Yes No
 Initials: _____

Panorama Client ID: _____
 Panorama Investigation ID: _____

A) CLIENT INFORMATION

LHN -> SUBJECT -> CLIENT DETAILS -> PERSONAL INFORMATION

Last Name:	First Name: and Middle Name:	Alternate Name:
DOB: YYYY / MM / DD Age: _____	Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unknown <input type="checkbox"/> Other	PHN:

B) INVESTIGATION INFORMATION

LHN -> SUBJECT SUMMARY -> STBBI ENCOUNTER GROUP -> CREATE INVESTIGATION

Disease Summary Classification: CASE:	Date	Classification: CONTACT:	Date	LAB TEST INFORMATION:
<input type="checkbox"/> Lab Confirmed	YYYY / MM / DD	<input type="checkbox"/> Contact	YYYY / MM / DD	Date specimen collected: YYYY / MM / DD
<input type="checkbox"/> Suspect	YYYY / MM / DD	<input type="checkbox"/> Not a Contact	YYYY / MM / DD	
<input type="checkbox"/> Person Under Investigation	YYYY / MM / DD	<input type="checkbox"/> Person Under Investigation	YYYY / MM / DD	

Disposition: FOLLOW UP:

<input type="checkbox"/> In progress	YYYY / MM / DD	<input type="checkbox"/> Complete	YYYY / MM / DD
<input type="checkbox"/> Incomplete - Declined	YYYY / MM / DD	<input type="checkbox"/> Not required	YYYY / MM / DD
<input type="checkbox"/> Incomplete – Lost contact	YYYY / MM / DD	<input type="checkbox"/> Referred – Out of province	YYYY / MM / DD
<input type="checkbox"/> Incomplete – Unable to locate	YYYY / MM / DD	(Specify where)	YYYY / MM / DD

C) INTERVENTIONS

LHN -> INVESTIGATION -> TREATMENT & INTERVENTIONS -> INTERVENTION SUMMARY

Intervention Type and Sub Type:				
Assessment:	Immunization: Investigator name			
<input type="checkbox"/> Assessed for contacts Investigator name YYYY / MM / DD	<input type="checkbox"/> Eligible Immunization recommended			YYYY / MM / DD
<input type="checkbox"/> Client aware of diagnosis Investigator name YYYY / MM / DD	<input type="checkbox"/> Immunization nurse notified			YYYY / MM / DD
Communication:	Environmental health:			
<input type="checkbox"/> Phone call (morning) Investigator name YYYY/MM/DD	<input type="checkbox"/> Personal Service Facility inspection			YYYY / MM / DD
<input type="checkbox"/> Phone call (afternoon) Investigator name YYYY/MM/DD	Investigator name			
<input type="checkbox"/> Phone call (evening) Investigator name YYYY/MM/DD	Referral: Investigator name			
<input type="checkbox"/> Text Message sent Investigator name YYYY/MM/DD	<input type="checkbox"/> Canadian Blood Services			YYYY / MM / DD
<input type="checkbox"/> E-mail Investigator name YYYY/MM/DD	<input type="checkbox"/> Child Protective Services			YYYY / MM / DD
<input type="checkbox"/> Home visit Investigator name YYYY/MM/DD	<input type="checkbox"/> Harm Reduction Services			YYYY / MM / DD
<input type="checkbox"/> Letter Sent Investigator name YYYY/MM/DD	<input type="checkbox"/> HIV Case Management			YYYY / MM / DD
<input type="checkbox"/> Letter (See Document Management)	<input type="checkbox"/> Infectious Disease Specialist			YYYY / MM / DD
Investigator name	<input type="checkbox"/> Primary Care Provider			YYYY / MM / DD
<input type="checkbox"/> Ordering practitioner contacted	<input type="checkbox"/> Saskatchewan Transplant Program			YYYY / MM / DD
Investigator name	<input type="checkbox"/> Consultation with MHO			YYYY / MM / DD
<input type="checkbox"/> Other communication (See Investigator Notes)	Other:			
Investigator name	<input type="checkbox"/> Other (specify) _____			YYYY / MM / DD
General: Investigator name	Other Investigation Findings			
<input type="checkbox"/> Disease-Info/Prev-Control YYYY/MM / DD	<input type="checkbox"/> Investigator Notes			YYYY/ MM /DD
<input type="checkbox"/> Disease-Info/Prev-Cont/Assess'd for Contacts YYYY/MM / DD	<input type="checkbox"/> See Document Management			YYYY/ MM /DD
Education/counselling:	Testing:			
<input type="checkbox"/> Prevention/Control measures Investigator name YYYY / MM / DD	<input type="checkbox"/> Laboratory testing recommended			YYYY / MM / DD
<input type="checkbox"/> Disease information provided Investigator name YYYY / MM / DD	<input type="checkbox"/> STBBI Testing recommended -See Investigator Notes			YYYY / MM / DD
<input type="checkbox"/> Other (See Investigator Notes) YYYY / MM / DD				
Date	Intervention subtype	Comments	Next follow-up Date	Initials
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	

HIV Public Health Follow-up

Please complete all sections.

Panorama QA complete: Yes No
Initials:

D) OUTCOMES *(Optional except for severe influenza)*

LHN-> INVESTIGATION-> OUTCOMES

<input type="checkbox"/> Hospitalization YYYY/MM/DD	<input type="checkbox"/> ICU/intensive medical care: YYYY/MM/DD	<input type="checkbox"/> Intubation/Ventilation YYYY/MM/DD	<input type="checkbox"/> Unknown YYYY/MM/DD
<input type="checkbox"/> Other _____	YYYY/MM/DD		
<input type="checkbox"/> Fatal _____	YYYY/MM/DD	Cause of Death: (if Fatal was selected) _____	

E) Transmission Events

LHN -> INVESTIGATION-> EXPOSURE SUMMARY -> TRANSMISSION EVENT SUMMARY -> QUICK ENTRY

Transmission Event ID <small>(system-generated can be documented below)</small>	Exposure Name	Setting type Important: <small>(Select the most appropriate setting for the TE; if >1 select multiple settings)</small>	Date/Time <small>(included the earliest transmission date to the latest date)</small>	# of contacts
	HIV Contact – Inv ID #	<input type="checkbox"/> Sexual Exposure <input type="checkbox"/> Type of community contact (IDU) <input type="checkbox"/> Public facilities <input type="checkbox"/> Multiple Settings		

F) Total number of contacts

LHN -> INVESTIGATION-> EXPOSURE SUMMARY -> TRANSMISSION EVENT SUMMARY -> TE HYPERLINK -UNKNOWN/ANONYMOUS CONTACTS

_____ (Total number of <i>unknown</i> and <i>known</i> contacts)
--

Initial Report completed by:		Date initial report completed: YYYY / MMM / DD
-------------------------------------	--	--

CONTACTS

Last Name:	First Name: and Middle Name:	Alternate Name:
DOB: YYYY / MMM / DD Age: _____	Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unknown <input type="checkbox"/> Other	
HSN: _____		
Phone #: <input type="checkbox"/> Primary Home: <input type="checkbox"/> Workplace: <input type="checkbox"/> Mobile contact: <input type="checkbox"/> alternate phone: Relationship:	e-mail Address:	
Online Names: Site/Service: _____ User Name: _____		
Place of Employment/School:	Is contact pregnant? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown Is contact HIV positive <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, did they inform case? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Address Type: <input type="checkbox"/> No fixed <input type="checkbox"/> Postal Address <input type="checkbox"/> Primary Home <input type="checkbox"/> Temporary <input type="checkbox"/> Legal Land Description		
Mailing (Postal address): Street Address or FN Community (Primary Home):		
Exposure Dates: 1st YYYY / MMM / DD to YYYY / MMM / DD		
Exposure Type: <input type="checkbox"/> Heterosexual <input type="checkbox"/> Sharing Injection Drug Equipment <input type="checkbox"/> MSM		
Comments:	INTERVENTION Testing <input type="checkbox"/> Advised <input type="checkbox"/> Received <input type="checkbox"/> Referral (Specify)	

Complete more contact sheets if needed

Please see the following pages for the AIDS Case Report Form.



HIV/AIDS Case Report Adult, Adolescent and Pediatric (non maternal-fetal) Cases

HIV AIDS New case report Update

For provincial/territorial use	For use by PHAC
Provincial/territorial ID Number	EPIC No.
Province/Territory to which case is attributed	Date received YY MM DD

SECTION I – PATIENT INFORMATION

Reporting physician's name	City	Telephone number ()
----------------------------	------	-------------------------

Hospital or clinic	City	Province/Territory
--------------------	------	--------------------

Is another physician providing ongoing care to this patient? Yes No
 If so, please provide name, city and telephone number.
 Name City Telephone number
 ()

Patient's initials First Middle Last	Sex <input type="checkbox"/> M <input type="checkbox"/> F	Date of birth YY MM DD	Vital Status <input type="checkbox"/> Alive (If yes, date last known to be alive) <input type="checkbox"/> Dead (If yes, date of death)	YY MM DD <input type="checkbox"/> unknown
---	--	---------------------------	---	--

• Is the patient: (please ask patient to assist you in answering this question)

<input type="checkbox"/> White	<input type="checkbox"/> South Asian (e.g. East Indian, Pakistani, Sri Lankan, Punjabi, Bangladeshi, etc.)
<input type="checkbox"/> Black (e.g. African, Haitian, Jamaican, Somali, etc.)	<input type="checkbox"/> Arab/West Asian (e.g. Armenian, Egyptian, Iranian, Lebanese, Moroccan, etc.)
<input type="checkbox"/> North American Indian <input type="checkbox"/> Métis <input type="checkbox"/> Inuit	<input type="checkbox"/> Latin-American (e.g. Mexican, Central/South American, etc.)
<input type="checkbox"/> Asian (e.g. Chinese, Japanese, Vietnamese, Cambodian, Indonesian, Laotian, Korean, Filipino, etc.)	<input type="checkbox"/> Other – includes mixed ethnicity (specify) →

What language does this person speak most often at home?	Country of birth <input type="checkbox"/> Canada <input type="checkbox"/> Other (specify) →	Year of arrival in Canada
--	--	---------------------------

City and province/territory of residence at diagnosis City Province/Territory First 3 digits of Postal Code	Current city and province/territory of residence City Province/Territory First 3 digits of Postal Code
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SECTION II – RISK(S) ASSOCIATED WITH THE TRANSMISSION OF HIV IN THIS PATIENT

• Since January 1978 and preceding the diagnosis of HIV/AIDS, this patient had: (check ALL that apply)

Yes	No	Unknown	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sex with a male.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sex with a female.
Heterosexual sex with: (check ALL that apply)			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• an injection drug user;
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• a bisexual male;
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• a transfusion recipient with documented HIV infection;
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• a person with hemophilia/coagulation disorder;
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• a person born in a country where heterosexual transmission predominates. If yes, specify country →
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• a person with confirmed or suspected HIV infection or AIDS (whether or not risk factor is known).
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Injected non-prescription drugs (including steroids).
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Received pooled concentrates of factor VIII or IX for treatment of hemophilia/coagulation disorder. If yes, please complete Section 1 of the Supplement to HIV/AIDS Case Report.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Received transfusion of whole blood or blood components such as packed red cells, plasma, platelets or cryoprecipitate. If yes, please complete Section 2 of the Supplement to HIV/AIDS Case Report.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Exposure to HIV-contaminated blood or body fluids or concentrated virus in an occupational setting. If yes, specify occupation →
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other medical exposure (e.g., organ or tissue transplant, artificial insemination). If yes, please give details in Section VI "Additional Information or Comments".
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Non-medical, non-occupational exposure which could have been the source of the infection (e.g. acupuncture, tattoo, body piercing, breast milk). If yes, please give details of type of exposure, date and location in Section VI "Additional Information or Comments".

Since January 1978, has this patient donated blood, plasma, platelets, organs, tissues, semen or breast milk?
 If yes, please give details of type of donation, date and location in Section VI "Additional Information or Comments". Yes No Unknown

Has the Red Cross or other appropriate donor program been notified? Yes No Unknown

Do you want a public health official to ensure this notification? Yes No Unknown

SECTION III – LABORATORY DATA

• Does this case have evidence, as defined in the above instructions, of HIV infection?
 Yes No Unknown

Date of first positive HIV test (if known)
 Year Month

Current CD4 count (if known)
 cells/μ l

SECTION IV – DISEASES INDICATIVE OF AIDS

DISEASES	Date of Diagnosis		Diagnostic method	
	Year	Month	Definitive	Presumptive
Bacterial pneumonia, recurrent	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Candidiasis (bronchi, trachea or lungs)	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Candidiasis (esophageal)	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cervical cancer, invasive	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coccidioidomycosis (disseminated or extrapulmonary)	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cryptococcosis (extrapulmonary)	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cryptosporidiosis (chronic intestinal, >1 mo. duration)	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cytomegalovirus disease (other than in liver, spleen or nodes)	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cytomegalovirus retinitis (with loss of vision)	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Encephalopathy, HIV-related (dementia)	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Herpes simplex: chronic ulcer(s) (>1 mo. duration) or bronchitis, pneumonitis or esophagitis	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Histoplasmosis (disseminated or extrapulmonary)	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Isosporiasis, chronic intestinal (>1 mo. duration)	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kaposi's sarcoma	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lymphoma, Burkitt's (or equivalent term)	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lymphoma, immunoblastic (or equivalent term)	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lymphoma, primary in brain	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>

DISEASES	Date of Diagnosis		Diagnostic method	
	Year	Month	Definitive	Presumptive
<i>Mycobacterium avium</i> complex or <i>M. kansasii</i> (disseminated or extrapulmonary)	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mycobacterium of other species or unidentified species	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>M. tuberculosis</i> (disseminated or extrapulmonary) (Please complete SECTION V)	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Specify Site:				
<input type="checkbox"/> Miliary	<input type="checkbox"/> Pleurisy	<input type="checkbox"/> Other respiratory		
<input type="checkbox"/> C.N.S.	<input type="checkbox"/> Bone and joint	<input type="checkbox"/> Genitourinary		
Other (specify) → <input type="text"/>				
<i>M. tuberculosis</i> (pulmonary) (Please complete SECTION V)	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Pneumocystis carinii</i> pneumonia	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Progressive multifocal leukoencephalopathy	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Salmonella septicemia, recurrent	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Toxoplasmosis of brain	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wasting syndrome due to HIV	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diseases affecting pediatric cases only (<15 years old)				
Bacterial infections, multiple or recurrent (excluding recurrent bacterial pneumonia)	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lymphoid interstitial pneumonia and/or Pulmonary lymphoid hyperplasia	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION V – TUBERCULOSIS

1. Before the diagnosis of AIDS, was this patient ever treated for tuberculosis? Yes – when? → Year Month No Unknown
2. Has this patient ever had a PPD skin test? Yes – What was the size in mm? → mm No Unknown
3. If the PPD test was negative, was the patient anergy tested? Yes No Unknown If yes, were any sites positive? Yes No Unknown

SECTION VI – ADDITIONAL INFORMATION OR COMMENTS

(Please use this section for information of interest about the acquisition of the virus, etc.)

Person completing this form <input type="text"/>	Telephone number (<input type="text"/>) <input type="text"/>	Date report completed YY MM DD <input type="text"/> <input type="text"/> <input type="text"/>
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FOR PROVINCIAL/TERRITORIAL USE: To which exposure category has this patient been assigned?

- | | | | | |
|--|--|--|---|---|
| <input type="checkbox"/> Men who have sex with men (MSM) | <input type="checkbox"/> Injection drug user (IDU) | <input type="checkbox"/> MSM and IDU | <input type="checkbox"/> Heterosexual – Endemic | <input type="checkbox"/> NIR – Heterosexual |
| <input type="checkbox"/> Blood transfusion recipient | <input type="checkbox"/> Clotting factor recipient | <input type="checkbox"/> Occupational exposure | <input type="checkbox"/> Heterosexual – Partner at risk | <input type="checkbox"/> NIR – Other |