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POST EXPOSURE MANAGEMENT: HEPATITIS B, HEPATITIS C AND HIV

Simcoe Muskoka District Health Unit

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simcoe muskoka
DISTRICT HEALTH UNIT

Purpose

This document provides guidance to health care providers (HCPs) in Simcoe and Muskoka who are called upon to assess and manage incidents of exposures (percutaneous, mucosal or non-intact skin) to blood or body fluids that are capable of transmitting hepatitis B (HBV), hepatitis C (HCV), or human immunodeficiency virus (HIV).

Introduction

Through a 5 step framework[(1)] developed by St. Michael's Hospital (Pocket P.E.P. Reference), this document provides guidance in assessing and managing blood or body fluid exposures. General information is also provided regarding the Mandatory Blood Testing Act (MBTA).

Exposed individuals may include health care workers or emergency service providers, who in the course of their duties accidentally sustain an injury which could mean a potential exposure. Additionally, others from the community may seek help for exposures such as blood splashes, bites, sexual exposures, accidental needle sticks or exposures within health care settings. Official guidance for hospitals in designing their response protocols for internal occupational exposures remains with the OHA/OMA - MOHLTC protocol.[(2)]

Each instance of a possible exposure to HBV, HCV or HIV must be assessed carefully and quickly. In most instances this is best done in an emergency department or urgent care setting. Where an exposure is determined to be significant, treatment with post exposure prophylaxis (PEP) for HBV and/or HIV may be warranted, and if so, should be started as soon as possible (for HIV PEP this is ideally within 2 hours).

Role of the Health Unit

The role of the health unit (HU) is primarily a supportive one for any person who sustains an exposure that could result in the transmission of HBV, HCV or HIV. Those who contact the health unit receive counseling and recommendations for follow-up; these interactions have a strong preventive and educational focus.

Although HCPs are not required to report exposures to the health unit, health unit staff can provide support and information to health care providers around blood borne infection exposures and management. Public health personnel are available to help assess the risk of a source person based on information available. Recommendations for testing and care may also be made, however decisions related to care ultimately rest between the patient and their HCP.

Health unit staff who respond to telephone calls from the community and HCPs about exposures provide information, education and support in consultation with the Medical Officer of Health. Contact the health unit as follows:

- During regular office hours, Monday through Friday 8:30-4:30 call 705-721-7520 or 1-877-721-7520 ext. 8376.

- After hours, on holidays and weekends, call 1-888-225-7851.

Patient Management

STEP 1 – Treat Exposure Site

Where relevant, perform the following and first aid[2]:

1. Remove any contaminated clothing.
2. Immediately allow the wound to bleed freely.
3. Wash the wound and injured area well with soap and water. Apply an antiseptic if available (note – however, that there is no evidence that the use of antiseptic reduces risk of pathogen transmission). Application of caustic agents such as bleach or injection of antiseptics or disinfectants into the wound is not recommended.
4. If the eyes, nose or mouth are involved, flush well with large amounts of water or saline (at least 1000 ml).
5. Occupational exposures should be reported to an immediate supervisor, who should immediately implement agency policy
6. Seek immediate medical assistance, preferably at a hospital emergency department.

For wound management, consider the use of tetanus toxoid-containing vaccine, with or without tetanus immune globulin, based on the nature of the wound and the vaccination history.[2;3]

STEP 2 – Assess the Exposure Risk

Significant Exposures

Any person with significant recent exposures to blood or body fluids should be immediately referred to the nearest emergency department. The emergency room (ER) staff should be notified and made aware of the urgency of the situation and actions should be taken to avoid wait times for the patient.

Body fluids capable of transmitting HBV, HCV and HIV from an infected source include[4]:

- blood, serum, plasma and all biological fluids visibly contaminated with blood.
- laboratory specimens, samples or cultures that contain concentrated HBV, HCV, or HIV.
- semen and vaginal fluids (very low risk for HCV).
- amniotic, pleural, peritoneal, pericardial, synovial, and cerebrospinal fluids.
- breast milk (HIV only).
- saliva (HBV only, unless it is contaminated with blood).
- organs and tissues.

Note: Faeces, nasal secretions, sweat, tears, urine and vomitus are not considered potentially infectious unless visibly contaminated with blood.

An exposure is considered significant if one of the aforementioned potentially infectious fluids comes into contact with the tissues of the exposed person in any of the following ways[4]:

- percutaneous exposure: e.g. a needle stick, puncture/cut with a sharp object, etc.
- contact with mucous membranes: e.g. a splash to eyes/nose/mouth, sexual contact, etc.
- contact with non-intact skin: skin lesion where there is a disruption of the epidermis and the injury to the skin is less than 3 days old[5].
- biting or receiving a bite where blood is present[4].

Risk of Transmission

The risk of becoming infected with HBV, HCV or HIV depends on the type of injury and a number of other factors. An exposure risk is greater in these examples:

- when there is visible blood on the device that caused the injury and especially if the device has been in the vein or artery of the source person.
- when there is a deep injury.
- if the volume of blood or body fluid is very large.
- when a needle stick injury has been made with a large gauge needle.

In general, the risk of transmission is much greater for HBV than for both HCV and HIV. Risk of transmission for each of the 3 pathogens is summarized here.

HBV

The risk of transmission of HBV following a needle stick exposure from an infected source ranges from 6 to 30%[2]. Risk of transmission from bites where there is a break in the skin poses much less risk, since the concentration of HBV in saliva is between 1000 to 10,000 times lower than what is in blood[6]. Of the blood borne pathogens, HBV is considered to be the greatest risk following a community-acquired injury because the virus can survive in dried blood for 7 days or more on environmental surfaces[4]. Unprotected sex is considered high risk for the transmission of HBV.

HCV

After a needle stick or sharps exposure with HCV-positive blood, the risk of HCV infection is approximately 1.8%[7]. Risk of transmission from a sexual contact is much lower. The type of sexual activity, presence of blood and/or STIs can increase the risk of transmission via sexual contact[8]. Although a few cases of HCV transmission via blood splash to the eye have been reported, the risk for such transmission is very low. HCV can survive in a dried state for at least 16 hours and possibly up to 4 days[9].

HIV

Risk of HIV transmission after an accidental percutaneous exposure to infected blood or body fluid is about 0.3%[10]. The risk of HIV transmission after a mucus membrane exposure is 0.09%[2]. HIV is believed to survive for only several hours after infected blood has dried on a surface, which makes the risk of HIV acquisition from a found (abandoned) needle to be very

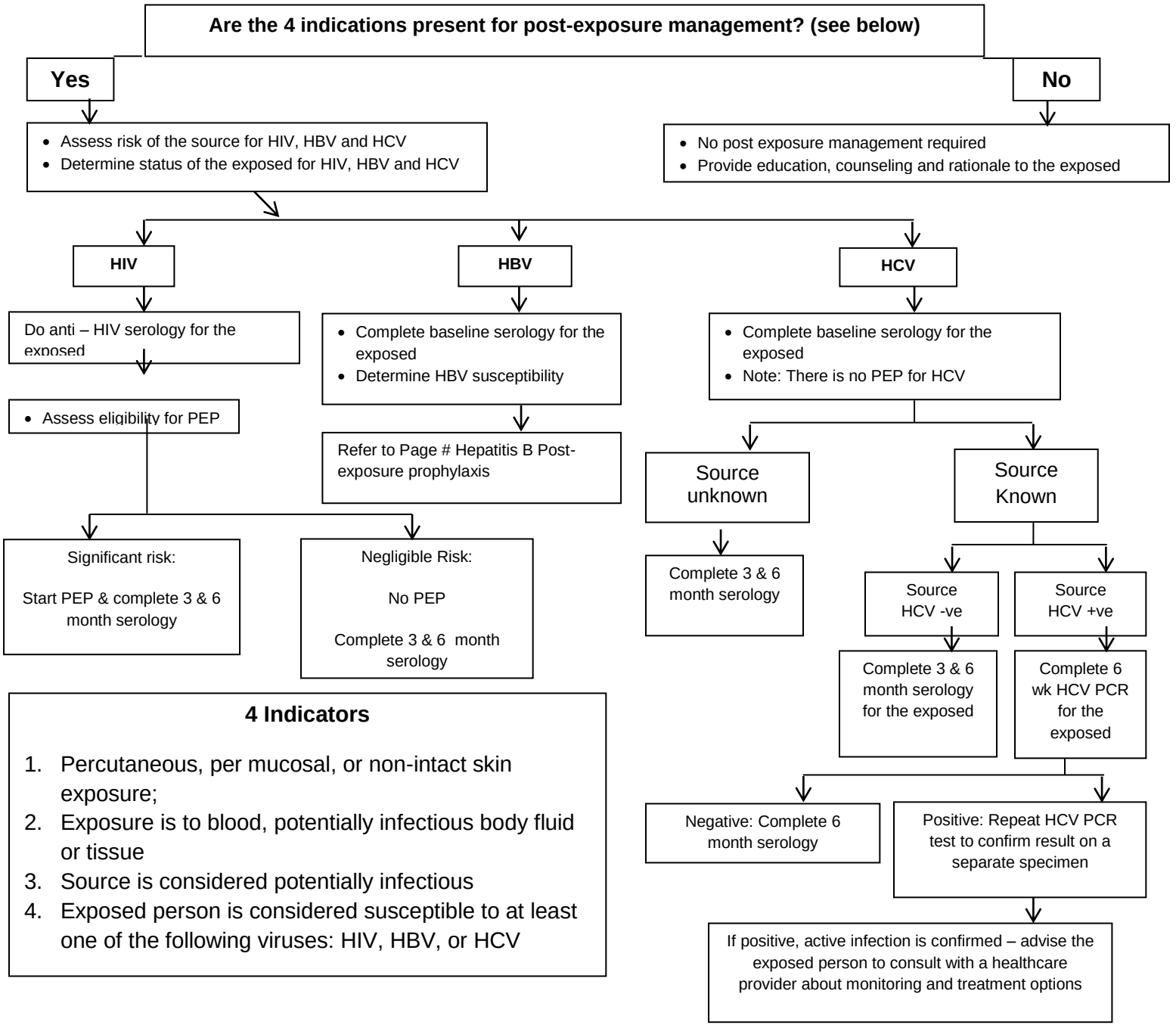
low. In many years of follow-up in Canada, the US and Europe, it appears no one has become infected with HIV from a found needle[5]. However, each situation must be assessed individually.

A variety of factors can impact on the risk of HIV transmission from an infected source but the greatest estimated risk is associated with blood transfusions, needle sharing by injection-drug users, receptive anal intercourse, and percutaneous needle stick injuries[11]. In addition, a high viral load in the source (such as when the person is newly infected or in AIDS stage of the disease), will increase risk of transmission.

The following chart may be helpful in assessing risk of HIV transmission from a **known HIV positive source**[11]. The 'Risk percent' column can be interpreted as the risk of transmission per single exposure from an HIV positive source. When the source is not known HIV positive, these numbers must be considered along with the source's risk factors for HIV, as discussed in the following section.

Exposure (*No condom used)	Risk per 10,000 acts	Risk percent
Hollow Bore Needle stick injury	30	0.3%
Needle sharing – injection drug use	67	0.67%
Penile-vaginal intercourse* (risk to male)	5	0.05%
Penile-vaginal intercourse* (risk to female)	10	0.1%
Anal intercourse* (risk to insertive partner)	6.5	0.06%
Anal intercourse* (risk to receptive partner)	50	0.5% - 3%
Oral intercourse* (risk to insertive partner)	0.5	0.005%
Oral intercourse* (risk to receptive partner)	1	0.01%

Blood and Body Fluid Exposure Management Algorithm: Exposed Person



4 Indicators

1. Percutaneous, per mucosal, or non-intact skin exposure;
2. Exposure is to blood, potentially infectious body fluid or tissue
3. Source is considered potentially infectious
4. Exposed person is considered susceptible to at least one of the following viruses: HIV, HBV, or HCV

Adapted from BC CDC Blood & Body Fluid Exposure Management 2009[12]

Source Person

When an exposure is determined to be significant, the source of the blood or body fluid must be considered to further determine risk of transmission of infections. Collect and document both **known** or **unknown** source information:

- Known Source:
    - name, date of birth (DOB), address and name of HCP
    - general health information
    - history of HBV, HCV or HIV infection or evidence of recent testing
    - immunization status for HBV (including date of last immunization and if done, immune titres for HBV)
    - risk factors for blood borne infection (history of injection drug use, needle sharing, men who have sex with men (MSM), multiple sexual partners, partners who have a blood borne infection, receipt of blood or blood products prior to 1990, etc.). See chart below for risk factors specific to each pathogen.
    - any other information pertinent to the exposure
- Unknown source:
    - collect as much information as possible. For example, a needle found in an area of high IDU (injection drug use) with reason to believe it was freshly used poses a greater risk than an old needle found in a backpack of a diabetic child.

Known SOURCE: Risk Factors for Transmission of Infection	
Pathogen	**Risk Factors for Blood Borne Pathogen**
HBV	**High risk if source :** • Practices high-risk sexual behavior without always using condoms (e.g. men who have sex with men, sexual partner who is an injection drug user (IDU), has multiple sexual partners). • Has an HBV infected sexual partner or a sexual partner (s) with high risk behaviours. • Has a history of injection drug use or sharing of drug-related equipment. • Received a tattoo or piercing in a setting where the equipment may not have been sterile. • Is a person from a highly endemic region. HBV prevalence is highest in sub-Saharan Africa and East Asia, but other regions have high rates as well: http://www.who.int/mediacentre/factsheets/fs204/en/.

HCV	**High risk if source[8] :** • Has a history of previous or current injection drug use or sharing of drug-related equipment. • Has a history of sharing intranasal or inhalation equipment. • Has received blood, blood products or organs prior to 1990. • Received of a tattoo or piercing in a setting where the equipment may not have been sterile. • Is infected with HIV or chronic hepatitis B • Practices high-risk sexual behaviour (has a sexual partner who is an IDU, has a long term sexual partner who is HCV infected). • Is from an area with a high prevalence of HCV
HIV	**High risk if source :** • Has a history of injection drug use or sharing of drug-related equipment. • Practices high-risk sexual behavior without always using condoms (e.g. men who have sex with men, sexual partner who is an injection drug user (IDU), has multiple sexual partners). • Is a person who has had multiple transfusions of blood or blood products, e.g. hemophiliacs prior to November 1985. • Has a sexual partner(s) known to be HIV-positive. • Is an infant born to an HIV infected mother.

STEP 3 – Test the Source Person and the Exposed Person

Testing of the Source Person

When the source person is known, they can be approached to provide information about health status, risk factors and to provide a blood sample for HBV, HCV, and HIV testing. Recommended tests are:

- **HBsAg**
- **Anti-HCV**
- **HIV**[4]

Call the Orillia Public Health lab to request these tests STAT, indicating they relate to a blood or body fluid exposure. Indicate the same on the requisition form. Depending on the time of arrival, results may be available within a few hours or less. Contact the lab at:

- Monday to Friday, 8am-5pm: 705-325-7449
- After hours: a call can be made to the Manager of the Orillia Public Health Lab using their pager 1-888-279-4796 or cell number 705-345-3694 to discuss whether a staff member can be brought in to perform the tests

Testing of blood or fluid from an unknown source such as a found needle is not recommended since testing can be inaccurate, take too long for results to be determined and may pose an unnecessary risk to a lab employee[4].

WINDOW PERIODS	
HIV	12 weeks
HCV	6 months
HBV	6 months

Where a source person is known, processes legislated by the MBTA may be initiated by the exposed person, if eligible. The process is never a requirement in the management of an exposure, but rather an option that is available. The exposed person, if eligible, can submit an application requesting a source person provide a blood sample for testing for HBV, HCV and HIV. However, recommended testing and potential post-exposure treatment for the exposed person should not await the outcome of the MBTA application, as the application's outcome may take days to weeks. See the MBTA section of this document for additional information.

Baseline Testing of the Exposed Person

Testing should be done at the time of the exposure, or as soon after as possible, to establish a baseline and generally again at 3 months post exposure. In some circumstances, retesting at 6 months may be indicated. Baseline testing of the exposed person should include:

- **Anti-HBs**
- **HBs Ag (if unvaccinated or if unknown response to vaccine)**
- **Anti-HCV**
- **HIV antibody**

When baseline results would be of value in determining immediate management plans, call the Orillia Public Health lab to request these tests STAT, indicating they relate to a blood or body fluid exposure. Indicate the same on the requisition form. Depending on the time of arrival, results may be available within a few hours or less. Contact the lab at:

- Monday to Friday, 8am-5pm: 705-325-7449
- After hours: a call can be made to the Manager of the Orillia Public Health Lab using their pager 1-888-279-4796 or cell number 705-345-3694 to discuss whether a staff member can be brought in to perform the tests

Depending on the amount of time that has elapsed since the exposure and the anticipated lab turn-around time, it may be best to make a decision on PEP for HBV and/or HIV without

awaiting baseline results. See STEP 4 of this document for recommended timing for initiating PEP, for optimal effectiveness.

Exposure to the blood or body fluids of another person almost always produces significant anxiety in the patient, regardless of the type of injury. Counselling regarding testing and its implications, planning for preventive treatments as well as follow-up, is critical at the time of the assessment. A summary of recommended counseling points are provided in STEP 5 of this document. Appendix B and C can also be used to assist with patient teaching and recommended follow up. If you do not have time to provide complete counseling, such as in the ER setting, encourage patients to follow up with the health unit or their HCP for additional information and counseling. At the health unit, the Sexual Health Program can be reached at 705-721-7520 or 877-721-7520 ext. 8376 Monday to Friday between 0830-1630 hours.

Baseline testing may be refused in some instances by the exposed person. If so, counsel accordingly for health implications and potential for transmission to others. Additionally, when an exposure occurs within a work setting, failure to provide baseline testing information could result in jeopardized compensation claim should an infection be acquired. A Mandatory Blood Testing application cannot proceed if baseline testing and counselling have not been done.

HBV

The usual baseline tests for HBV are anti-HBs (HBV surface antibodies) and, for patients who are unvaccinated or if their response to previous HBV vaccination is unknown, HBV antigen (HBs Ag)[13]. A positive antibody test at >10mIU/mL means the person is immune[3], either because they have been immunized or because they were infected in the past. In the latter case, the person is not infectious. When the antibody test is negative or <10 mIU/mL, the exposed person is susceptible to infection and post-exposure prophylaxis may be warranted[3].

Usual time frames for follow-up testing for HBV after an exposure are at 2 months (or follow-up can be 3 months to include the repeat test for HIV) and 6 months.

If the exposed person is previously known to be immune to HBV (documented anti-HBs ≥ 10 IU/L at any time in the past) or is known HBs Ag positive, then HBV testing of the source and exposed person is unnecessary.

HCV

There are 2 types of tests available for HCV: anti-HCV (HCV antibodies), and HCV-RNA (qualitative PCR) test which tests for the presence of the virus in the blood.

Anti-HCV:

- this is the only HCV test required at baseline
- a negative HCV antibody test means: no history of infection or the person is in the window for seroconversion, anywhere from 4-12 weeks[14] after exposure. As such, the exposed person should have a repeat antibody test in 3 months, and again at 6 months.
- a false negative antibody test may happen when the person is immunocompromised. This situation would warrant further testing with HCV-RNA to rule out the false negative or to look for presence of disease.
- a positive antibody test means: there has been prior exposure to HCV. To determine presence of active infection an HCV-RNA test is needed. Up to 20% of infected people will have the infection resolve spontaneously[14].

HCV-RNA:

- commonly known as the PCR test or viral load test, HCV-RNA tests for the presence of active infection.
- the value in doing the PCR test means earlier detection, referral and treatment.
- HCV-RNA testing is usually done after a positive HCV antibody test but may be recommended following a potential high risk exposure such as a blood exposure involving the sharing of injection drug using (IDU) equipment or through blood exposure to person known to be HCV positive.
- HCV-RNA detection may be possible as early as 1-3 weeks post exposure, however the health unit recommends testing at 6 weeks since the likelihood of detecting HCV reaches 70% by that time[15].
- if HCV-RNA is negative at 6 weeks, additional Anti-HCV tests are recommended at 3 and 6 months.

Understanding the results:

- when HCV-RNA testing detects the virus, it will give a number indicating viral load. This number will read >15 IU/ml, although lower viral loads can be detected.
- false positives for HCV-RNA testing are possible (if the specimen is contaminated) and false negatives are also possible (if the specimen was not rapidly frozen or was transported under sub-optimal conditions) .
- positive Anti-HCV and negative HCV-RNA: unless this is a false negative means there is a history of disease which has resolved on its own. The person is not infectious and all future Anti-HCV tests will be positive. However due to varying genotypes for HCV, a positive antibody test does not imply immunity to a future infection.
- positive Anti-HCV and positive HCV-RNA: this means the individual is infected, needs further assessment to determine progression of the disease and may be offered antiviral treatment, depending on genotype. This person is infectious and should be counselled to protect others.

*When ordering an HCV-RNA test it requires a specific requisition and transport to the lab. A minimum 2.5ml frozen serum or plasma is required; it must be centrifuged and separated within four hours of collection. When this is not possible at the site where the blood is drawn, the blood sample must be sent to the PHL lab within 4 hours for preparation. Life Labs are able to do this as well. The sample must be accompanied by a completed Hepatitis PCR Information Form F-C-HE-036-006 which is considered the requisition. The form is available at local labs and for download from Public Health Ontario.

HIV

HIV antibody is the baseline test done immediately after the exposure. From the time of infection to the development of measurable antibodies can take up to 12 weeks or 3 months for most people. This is known as the "window" or seroconversion period.

P24 Antigen is now included with every HIV antibody test in Ontario, with all HIV testing done at the Public Health Lab. P24 Antigen test can diagnose acute HIV infection, as P24 Ag can be detectable at 2-3 weeks after exposure and peaks at 3-4 weeks. P24 Ag will disappear as antibodies develop.

A positive HIV antibody or P24 Antigen should prompt confirmatory testing at the public health lab to confirm that the person is infected with HIV.

A negative test for the antibody and antigen means no infection is present or the person is in the window period. The exposed person should, at a minimum, have follow-up testing at 3 months following the exposure. If PEP for HIV is to begin, liver enzymes, creatinine and complete blood count should be done, as well as other blood work if indicated.

STEP 4 – Post Exposure Management

Post Exposure Management HBV

The management of a person at risk of HBV from an exposure is dependent on their susceptibility to the infection based on history of prior infection and/or vaccination together with consideration of the source as a high risk or low risk.

The HBV vaccination history and the vaccine-response status (anti-HBS, if known) of the exposed person should be reviewed and documented.

Any person who has had an exposure to HBV, and is not immune or has never been vaccinated for HBV should begin the HBV immunization series immediately.

Staff working in areas where they have a greater risk of infection through occupational exposures to blood and body fluids are encouraged to be immunized for HBV and have an anti-HBs test within 1 to 6 months of completion of the vaccine series to verify immunity. If the staff member has been immunized for HBV but an anti-HBs has never been done, then one should be ordered[(3)].

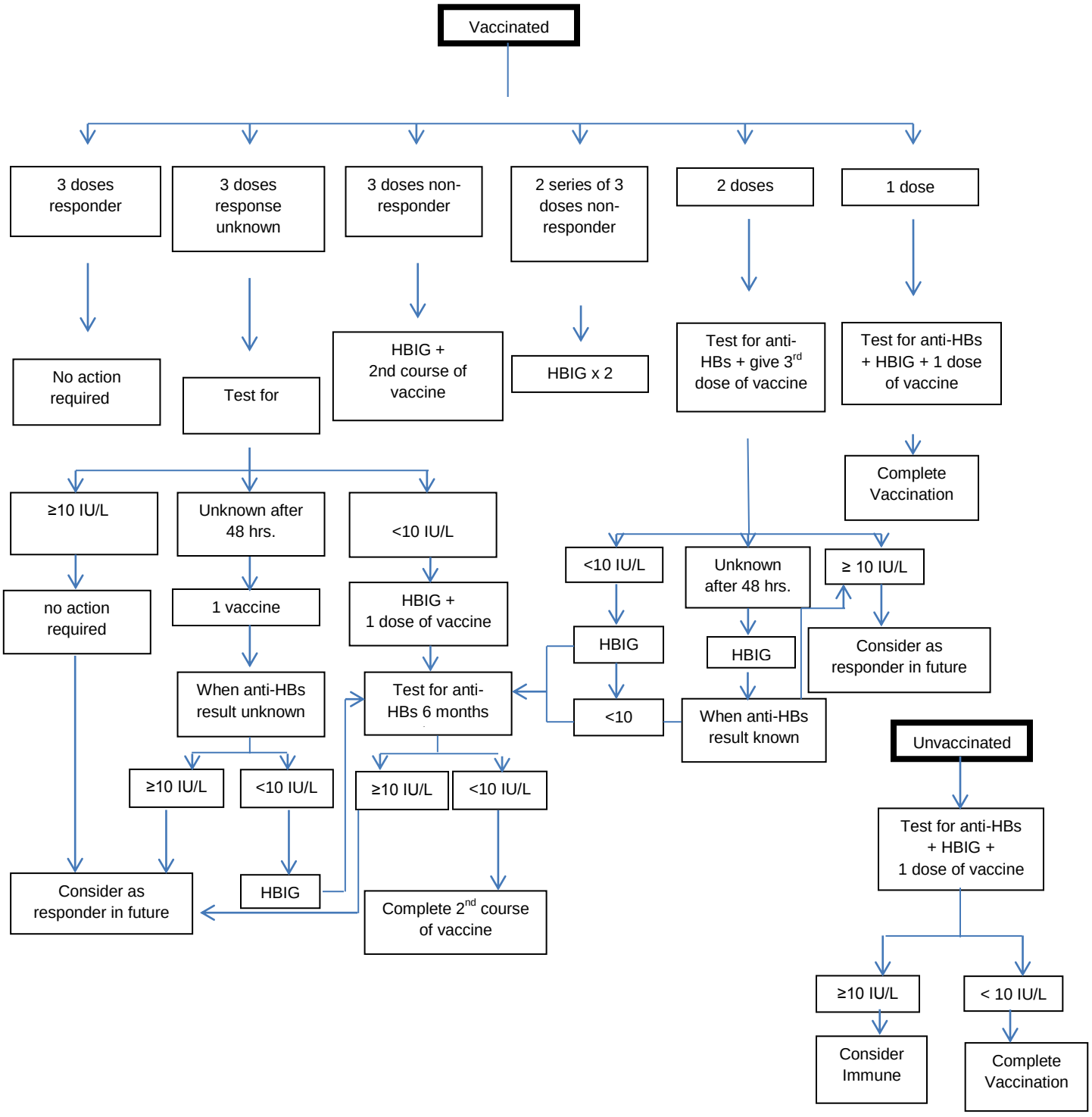
HBV vaccine and/or passive immunization with HBV immune globulin (HBIG) may be warranted. Refer to the Canadian Immunization Guide for complete directions, or refer to the summary of information from this guide on the following pages. Whenever possible, the source should be tested to help avoid unnecessary use of HBIG.

If the HBV test results of the exposed person and the source are not available within 48 hours, management of the exposed person should assume possible exposure[(16)]. If indicated, HBIG should be administered to susceptible individuals within 48 hours after exposure. The efficacy of HBIG decreases significantly after 48 hours, but may be given up to 7 days after exposure for a percutaneous (needlestick, bite) or mucosal exposure. The benefit of HBIG given more than 7 days after exposure is unknown. However, it can be given up to 14 days following last sexual exposure, due to a lower level of exposure[(16)]**.** Where required, the recommended dose of HBIG for older children and adults is 0.06 mL/kg given intramuscularly (IM)[(3)].

HBIG can be accessed at all hospitals throughout Simcoe and Muskoka, generally through their blood bank/lab. Simcoe Muskoka District Health Unit does not carry HBIG and patients should not be referred to the health unit for this. Hepatitis B vaccine is also available at all hospitals, generally in the emergency department or through the hospital pharmacy.

If Hepatitis B vaccine is initiated in the ER following an exposure, dose 2 and 3 can be obtained through the health unit, Vaccine Preventable Disease (VPD) program. The vaccine can be released to the patient's HCP or the patient can book an appointment with the VPD program at a community clinic. Contact the VPD program at 705-721-7520 or 877-721-7520 ext. 8808. Employees exposed as a result of a work related incident should follow up with their employers Occupational Health and Safety Department.

Management of individuals with percutaneous or mucosal exposure to an infected (HBsAg +) or high risk source*[3]

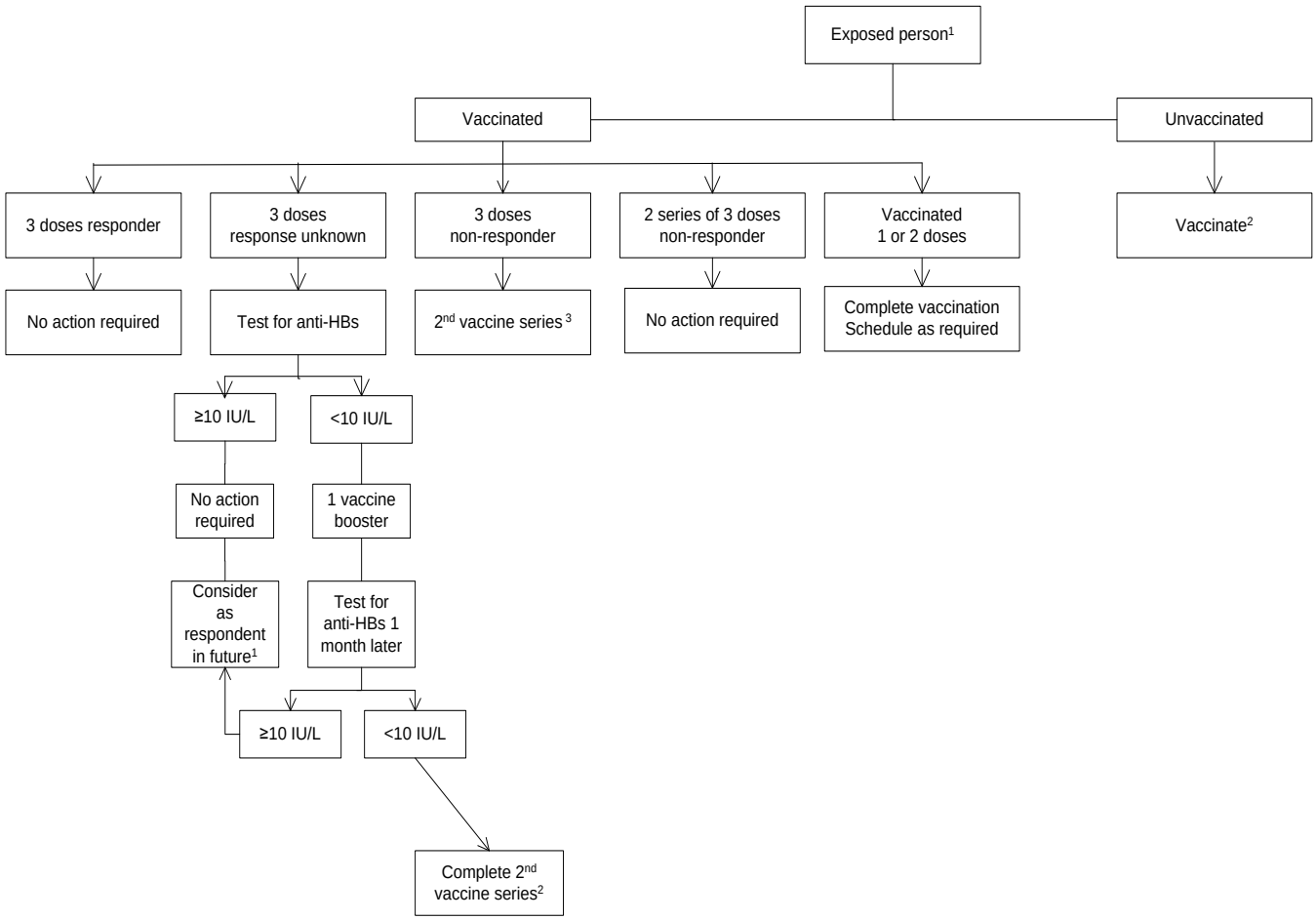


* A known source is high risk if the person comes from a region highly endemic for HBV; has sexual relations with multiple partners; has a partner infected with HBV or at high risk of being so; is in close family contact with an infected person; uses injection drugs; or received blood or blood products prior to 1970. Wherever possible, the source should be tested. In the case of an unknown source, background circumstances may provide some indication of the degree of risk.

Summary of high risk chart:

- If the exposed person is immunized with documented immunity to HBV (anti-HBs >10mIU/ml) at any time, or is documented as immune from previous natural infection, no further action is required.
- If the exposed is a known non-responder to 2 courses of HBV vaccine, administer HBIG and repeat it in one month.
- If the exposed is a non-responder to 1 course of HBV vaccine, administer HBIG and second course of vaccine (3 doses).
- If the exposed person has received 2 doses of vaccine, test for anti-HBs and give one dose of vaccine. If anti-HBs is negative or unknown at 48 hours, give HBIG. If anti-HBs show adequate immunity, consider the person as a responder in the future.
- If the exposed person has received 3 doses of vaccine but the immune response is unknown, test for anti-HBs. If anti-HBs shows adequate immunity (anti-HBs >10mIU/ml), no action is required; consider as responder in future. If anti-HBs shows inadequate response (anti-HBs<10mIU/ml), give HBIG and 1 dose of vaccine; test for anti-HBs at 6 months. If result unknown at 48 hours, give 1 dose of vaccine; when result known, if adequate immunity, consider as responder in future; if inadequate immunity, give HBIG; test for anti-HBs at 6 months. If the exposed has not received vaccine, test for anti-HBs, give HBIG immediately and a course of vaccine starting immediately.
- If the exposed has received one dose of vaccine, test for anti-HBs, give HBIG immediately and a course of vaccine starting immediately. Omit administration of HBIG if it is possible to obtain anti-HBs serology within 48 hours and a titre of at least 10 IU/L is confirmed.
- When HBIG is indicated, it should be administered as soon as possible after exposure (preferably within 48 hours). However, it can be given up to 7 days following percutaneous or mucosal exposure, and 14 days following sexual exposure.
- When HBV vaccine is indicated, it should also be administered as soon as possible (preferably within 48 hours) and can be administered simultaneously with HBIG at a separate site (vaccine should always be administered in the deltoid muscle).

Management of individuals with percutaneous or mucosal exposure to an uninfected or low risk source for Hepatitis B[3]



Summary of low risk chart:

- If the exposed person is vaccinated and is known to be immune to HBV (anti-HBs >10mIU/ml), no action is required.
- If the exposed person has received three doses of vaccine but response unknown, then test for anti-HBs. If immunity is adequate (anti-HBs>10mIU/ml), no action is needed. If immunity is inadequate give 1 vaccine booster and re-test for anti-HBs 1 month later. If response is adequate, consider the person as immune for the future. If the retest shows inadequate response (anti-HBs<10mIU/ml) complete the course of vaccine, then test again for immunity at 1-6 months after vaccination is finished.
- If the exposed has had 3 doses and is a known non-responder, give 2nd course of vaccine.
- If the exposed has had 2 series of 3 doses and is a non-responder, no action needed.
- If the exposed has been vaccinated with 1 or 2 doses only, then complete vaccination schedule.
- If the exposed person has never been vaccinated, vaccinate.

Post Exposure Management HCV

There is no specific intervention available to prevent transmission of HCV following an exposure. Immune serum globulin should not be given, as there is no demonstrated benefit. There is no evidence for use of anti-viral agents in the HCV post-exposure setting and such treatment is not recommended[4].

In the absence of HCV PEP the recommendation is to closely monitor the exposed person for early infection and if present refer to a specialist for treatment options[4]. Persons experiencing a needle stick injury from a known or high-risk HCV source should be monitored closely for symptoms of acute infection.
When HCV transmission occurs, a person may have no symptoms, or they may become symptomatic and experience jaundice, feel unwell and may display evidence of abnormal liver biochemistry. Up to 20% of infected people will clear the infection. The remaining 80% will go on to become chronically infected with HCV[14].

Therapy for HCV can cure HCV infection in 40-90% of cases, depending on the HCV genotype[14]. Treatment duration is dependent on the genotype and can vary from 24 to 72 weeks[7].

After a positive HCV-RNA test, the RNA test should be repeated at 12 weeks post exposure to confirm the presence of infection. This is the marker that determines the start point for treatment.

For an individual recently exposed, it is especially important to diagnose HCV early so that referral to a specialist and treatment can be considered.

Post Exposure Management HIV

Guidelines in the U.S. and a number of Canadian provinces recommend HIV PEP following high risk exposures, to reduce the likelihood of HIV transmission. While there are no Ontario guidelines on this issue and the Canadian guidelines[17] are out of date, the use of HIV PEP has become well accepted. The decision to treat with HIV PEP rests with the physician and the exposed person at the time of the assessment of the exposure and should take into account the facts collected about the exposure and the source, as described in STEP 2.

The provision of treatment should never be based solely on the anxiety of the person exposed, as the drugs pose a risk of toxicity and side effects. As described by the BC Centre for Excellence in HIV/AIDS, “The treatment of a high anxiety level in the exposed person is reassurance counseling and education. It is not antiretroviral therapy. Antiretroviral therapy may be toxic and should be provided for medical indications only”[5].

The following information may be helpful in decision making regarding PEP. When there is doubt about initiating HIV PEP, treatment in consultation with an infectious disease specialist is advised.

Occupational Exposures

This section applies to health care workers who have had an occupational exposure.

Previous US occupational exposure guidelines provided HIV PEP recommendations based on the severity of exposure and the information known about the source person’s HIV status or risk factors. Based on this, recommendations varied from generally no PEP warranted, to a 2-drug PEP regimen, to a 3-drug PEP regimen[10]. However, this approach has changed with the 2013

update of these guidelines[18]. Most importantly, a regimen containing **3** (or more) **antiretroviral (ARV) drugs** is now recommended routinely for all occupational exposures to HIV. However, clinicians facing challenges such as ARV availability, potential adherence and toxicity issues, and others associated with a 3-drug PEP regimen might still consider a 2-drug PEP regimen in consultation with an expert.

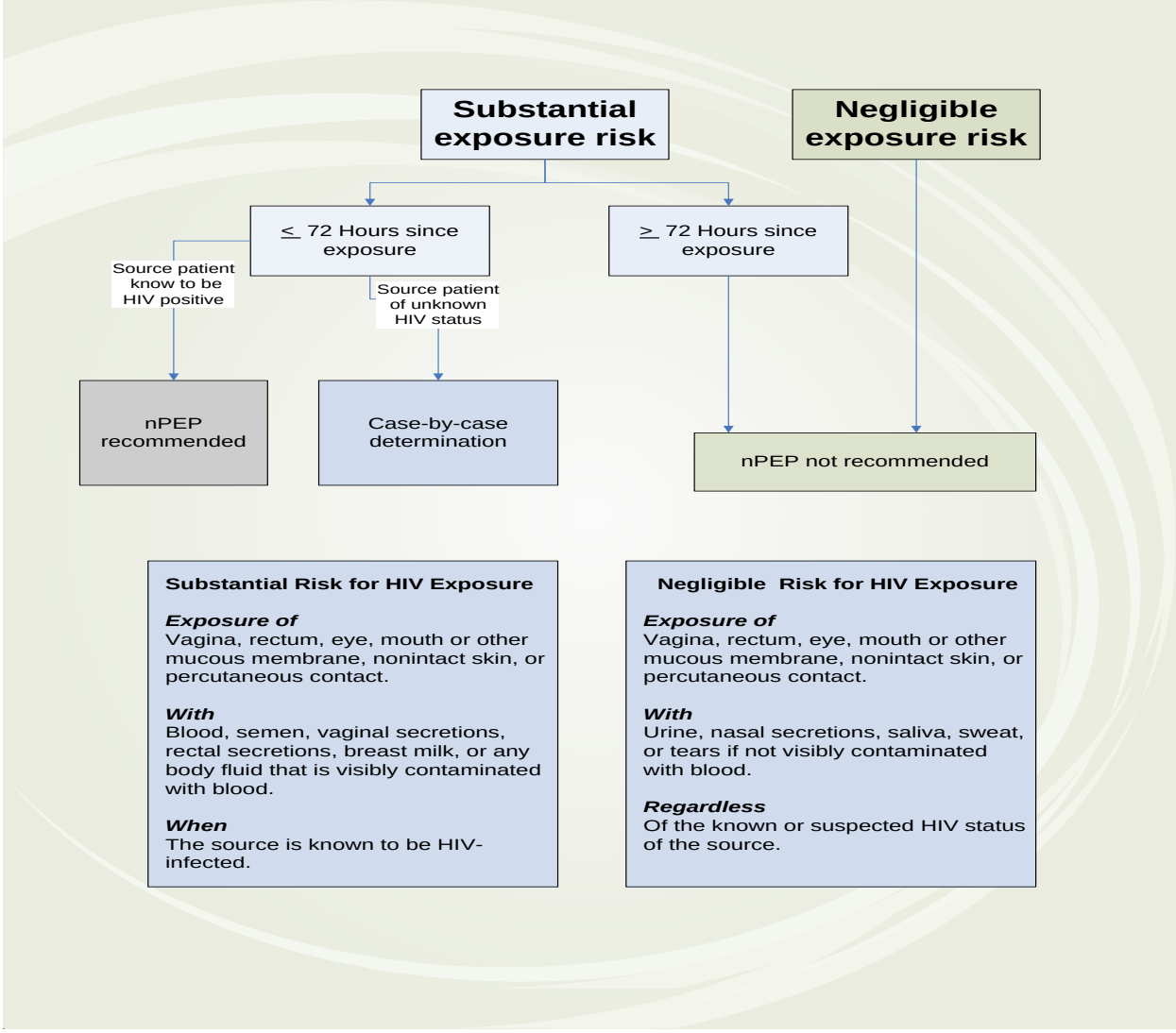
The recommendations for PEP in the 2013 guidelines apply to "**situations in which a healthcare provider has been exposed to a source person who has HIV infection or for whom there is reasonable suspicion of HIV infection[18]**." As such, if the source person's HIV status is not known, the treating provider must consider the known or likely risk factors in informing their recommendation for or against PEP, as well as the risks and benefits of PEP, as described in a subsequent section of this document.

The official guidance for Ontario hospitals for managing occupational exposures in their own staff remains the OHA/OMA - MOHLTC protocol.[2]

Non-occupational Exposures[11]

The following guidelines apply to a range of exposures and settings - other than health care workers exposed in occupational settings - and commonly include sexual and injection-drug use exposures:

FIGURE 1. Algorithm for evaluation and treatment of possible non-occupational HIV exposures



Clinicians might consider prescribing non-occupational PEP (nPEP) for exposures conferring a serious risk for transmission even if the person seeks care >72 hours after exposure if, in their judgment, the diminished potential benefit of nPEP outweighs the risks for transmission and adverse events[10].

When a 'case-by-case determination' is required as per Figure 1, because the source-person is of unknown HIV status, the treating health care provider and exposed person must balance the risks of HIV transmission with the potential risks and benefits of HIV PEP for preventing HIV acquisition. This balance depends on the specific circumstances of each exposure i.e., the risk that the source is HIV infected, and the risk for transmission based on the nature of the exposure[10]. This is discussed further in the following section of this document.

In addition to non-occupational exposures through sexual and injection-drug–use situations, percutaneous injuries from needles discarded in public settings (e.g., parks and buses) sometimes result in requests for HIV PEP. Although no HIV infections from such injuries have been documented in Canada, the US, or Europe, concern exists that syringes discarded by injection drug users - who have a higher rate of HIV than the general public - might pose a risk. However, these injuries typically involve small bore needles that contain only limited amounts of blood, and the viability of any virus present is limited[11]. A risk-benefit consideration is again appropriate in this circumstance. The approach of the BC Centre for Excellence in HIV/AIDS is that PEP following needlesticks from an abandoned needle outside the health care setting is not recommended if there is no history of the origin of the needle or the time of its abandonment[5].

Consider Risks of HIV Transmission versus Risks of HIV PEP

Because the substantial majority of blood and body fluid exposures do not result in transmission of HIV, the potential benefits and risks of PEP - including the potential for severe toxicity and drug interactions - must be strongly considered when prescribing PEP.

When the decision to initiate PEP for either occupational or non-occupational exposures is unclear, it may be helpful to weigh the potential for HIV transmission against the potential for toxicity from antiretrovirals. The factors to consider in the potential for HIV transmission were discussed in STEP 2, which included numerical estimates of transmission risk for various routes of exposure from a *known HIV positive source*. The potential for toxicity from a complete course of HIV PEP has been less well studied, but the following summary is provided by the BC Centre for Excellence in HIV/AIDS[5]:

POTENTIAL ADVERSE EFFECTS OF ONE MONTH OF ANTIRETROVIRAL THERAPY

These estimates are based on the experience of the BC Centre in the use of HIV prophylaxis and also use in the treatment of HIV infection. In most cases, the estimates are based on the use of two drugs and the adverse effects of three drugs may be higher.

- Minor adverse reactions, e.g. nausea, fatigue, etc. (70% of patients).
- Serious reactions, e.g. unable to work for the month of therapy (30 – 60% of patients). This risk is probably lower with newer drugs.
- Long term adverse effects (poorly defined) 1:5,000
- Risk of death is unknown but we would estimate that the risk of dying is 1:15,000 to 1:150,000. With three drugs without good follow-up, it may actually be much higher.

With the exception of the minor adverse reactions, these risks are not based on solid data and are provided only to guide physicians and exposed persons with a crude estimate of the hazards.

Prescribing HIV PEP

Exposures to HIV should be considered urgent medical issues and treated immediately[18]. When HIV PEP is used in the context of an occupational or non-

occupational exposure, PEP needs to begin as soon as possible - ideally within 2 hours - in order to be most effective at preventing HIV transmission. While PEP has known efficacy only when initiated up to 72 hours after exposure, the interval after which no benefit is gained from PEP is undefined[18] and so initiation after longer intervals might be considered for extremely high risk exposures. However, if initiation of PEP is delayed, the balance of risks and benefits becomes less favourable. Sexual Assault centers will provide HIV PEP up to 72 hours after a sexual assault. See the Sexual Assault section.

Due to the complexity of selecting HIV PEP regimens, the US guidelines encourage implementation of their recommendations, whenever possible, in consultation with persons who have expertise in the administration of antiretroviral therapy and who are knowledgeable about HIV transmission. However, such consultation is particularly important in the following situations[18]:

- Delayed (i.e. later than 72 hours) exposure report
- Unknown source (e.g. discarded needle in sharps disposal, laundry, or public place)
- Known or suspected pregnancy or breast-feeding in the exposed person (Provision of PEP should not be delayed while awaiting expert consultation)
- Known or suspected resistance of the source virus to antiretroviral agents (Do not delay initiation of PEP while awaiting any results of resistance testing)
- Toxicity of the initial PEP regimen
- Serious underlying medical illness in the exposed person

Treatment regimens most commonly include 3 antiretrovirals. As recommendations for specific ARVs change over time, health care providers are encouraged to consult with current guidelines and/or infectious disease practitioners and pharmacists in selecting PEP regimens. There are currently no Canadian or Ontario guidelines for HIV PEP regimens. Other guidelines to consider include the BC Center for Excellence in HIV/AIDS, US guidelines for occupational exposures, and St Michael's Hospital Pocket P.E.P. guide, amongst others.

As well, most hospitals in Simcoe and Muskoka stock HIV PEP starter kits for use in occupational exposures of their own staff as well as for exposed patients. The HIV PEP starter kit – usually 3 days of ARVs - can be given along with a prescription for additional days. A full course of HIV PEP is 28 days. Providing a starter kit is extremely helpful for exposed staff or patients to ensure they can start HIV PEP in a timely fashion, and to allow enough time for a local pharmacy to order in the prescribed HIV PEP regimen as most in Simcoe and Muskoka do not routinely stock these medications.

The approximate cost of 28 days of HIV PEP in Ontario in 2013 was $1,700.00, depending on the combination of medications used. Currently, the exposed individual is responsible for the cost of the medications as it is not publicly funded. If relevant, they can then seek recovery of the cost from the Workplace Safety and Insurance Board, or a private insurance plan. Individuals without a private insurance plan may be eligible for assistance through the Trillium Drug Plan (1-800-575-5386) if a large part of their household income is spent on prescription medication. Applications for the Trillium Drug Plan are available at most pharmacies and online at the Trillium Drug Program website.

A prescription for HIV PEP should be accompanied by counselling regarding the potential for drug toxicity, possible drug interactions (including with oral contraceptives, H2-receptor antagonists, proton pump inhibitors, and many other drugs[18])**, and the importance of initiating the prescribed regimen immediately as well as adhering to the full course.**

Side effects frequently reported during HIV PEP include nausea, malaise, and fatigue. Symptoms may be manageable with antiemetic or antimotility agents[10].

Baseline blood work should be drawn for liver and renal function and complete blood count, as well as other blood work if indicated. In most cases, results are not necessary before initiating HIV PEP.

Follow up with a primary health care provider or specialist is strongly recommended within 72 hours of initiating HIV PEP[18], and a similar approach is standard practice in major Canadian centres. The health unit does not have physicians to provide HIV PEP follow up.

The primary health care provider or specialist follow up can include:

- provide another (and often less anxiety-laden) opportunity for the exposed person to make an informed decision about continuing HIV PEP based on risks of infection (including any new information on the source) and risks and benefits of HIV PEP
- allow the provider to ensure that continued treatment with HIV PEP is indicated
- increase adherence to HIV PEP regimens
- manage associated symptoms and side effects more effectively
- provide an early opportunity for ancillary medications or regimen changes
- improve detection of serious adverse effects and ensure appropriate monitoring of symptoms and blood work, including at a minimum a repeat of CBC, liver and renal function tests at 2 weeks
- and improve the likelihood of follow-up serologic testing for detection of new infection.

As such, it may be appropriate for the client to fill the prescription only for the days until the first follow-up appointment, at which time a decision can be made on HIV PEP continuation. If the source is determined to be HIV negative, HIV PEP should be discontinued[18].

Special Circumstances

Human Bites

The risk of transmission of infection from a bite is generally low.

HBV can be transmitted when a person infected with HBV bites another and breaks the skin, as saliva is considered an infectious fluid for HBV. Transmission is also possible if infected blood from an HBV positive person who has been bitten enters the mouth of the biter. In most biting situations, assessment should be made for both parties. Saliva alone poses a potential, albeit lower risk. In situations where the skin has been broken, consider HBV vaccination for both the biter and the bitten.

HCV is rarely passed from one to another via a bite, but should be considered a significant risk when a large volume of blood is involved.

HIV is unlikely to be transmitted from a bite unless a large volume of blood enters the mouth of the biter.

Bites occurring in children are rarely a concern for the transmission of blood borne pathogens. Assessment of both parties should be considered, first aid measures taken and tetanus and HBV immunizations offered.

Sexual Exposures

Individuals with recent sexual exposures should be assessed and managed with respect to HBV, HCV and HIV as described in this document. Additional testing and counselling may be warranted for other sexually transmitted infections (STIs) like chlamydia, gonorrhea and syphilis. Consult the Canadian Guidelines on Sexually Transmitted Infections[15] for direction or refer to the health unit's sexual health program at 705-721-7520 or 1-877-721-7520.

Sexual Assault

Risk of transmission of blood borne infections is greater following a sexual assault compared to consensual sex because there is often bleeding and trauma to tissues, as well as the possibility of exposure at more than one site. Fear and anxiety related to possible transmission of infection is very high for the sexual assault victim and this adds to the complexity of care.

Staff at sexual assault centers have expertise in managing the assessment and treatment of those sexually assaulted and in addressing their legal needs, providing counselling and follow-up support. Wherever possible it is recommended that these patients be referred to a sexual assault center (SAC). In Simcoe Muskoka, the SAC operates from Orillia Soldiers Memorial Hospital (OSMH) to service both adults and children. Services are provided 24/7, and nurses are on call after regular hours. The local SAC follows guidelines and protocols established by the Ontario Network of Sexual Assault/Domestic Violence Treatment Centers whose mandate is to address the medical, emotional, social, forensic and legal needs of women, men and children.

When a patient is referred from an emergency department or clinic to SAC, they should be medically stabilized, and consent obtained. A call should then be placed to a registered nurse at SAC to inform them of the referral. This call will allow the nurse time to arrive at the hospital to meet the patient without delays. Where a patient will not be transferred, but is cared for at their local hospital, staff at the SAC will welcome calls from HCPs to answer any questions, and provide support and advice about assessment and management of medical or emotional care. In some circumstances, care may be initiated at the local hospital, with additional care and follow-up administered at the SAC.

Although HIV PEP, if warranted, should ideally be started within 72 hours of an assault, assessment and care can be provided if the patient presents after 72 hours as well.

Children who are victims of sexual assault should be referred to the SAC within 24 hours of an abusive incident to enable appropriate and timely forensic testing. If a child presents later than 24 hours, SAC should be contacted to arrange for the child to be seen in the pediatric day clinic at OSMH for a physical examination, counselling and follow-up.

OSMH SAC contact:

170 Colborne St. W. Orillia

1-877-377-7438 or 705-327-9155

The Ontario Network of Sexual Assault/Domestic Violence Treatment Centers website provides extensive information to assist any practitioner with a patient who declines referral and includes guidelines for assessment and treatment, specific treatment information and algorithms as well as patient follow-up and fact sheets.

STEP 5 – Counselling and Follow Up

Below is a summary of counselling points for anyone with an exposure where transmission is possible. It is also helpful to reinforce the transmission risks – which are often low - for HBV, HCV and HIV, as described in STEP 2. In general, precautions should be followed for a period of 6 months, though a longer period may be warranted in some circumstances.

HBV, HCV and HIV

- Recommend follow-up and retesting at 3 months, and 6 months.
- The exposed person should be considered potentially infectious until tests are complete and results known. Precautions should be taken, usually for a 6 month period.
- Encourage safer sex practices and informing sexual partner(s) of risk until tests are complete and results known, usually for a 6 month period.
- Do not donate blood, semen, organs or tissues for 6 months
- Do not share personal items like toothbrushes, razors that might hold even small amounts of blood which can pose a risk to others.
- Do not share needles or other drug equipment.
- Cover cuts or abrasions on the skin.
- Reassure that HBV, HCV and HIV are not spread through food and water

HBV

- Delay pregnancy until final blood work is done at 6 months. Babies born to HBV positive mothers are at greater risk of becoming HBV positive[19;20].
- Of those infected with Hepatitis B as adults, less than 5% develop chronic hepatitis[6].
- If infected, symptoms of acute HBV begin on average 90 days after exposure, with a range of 60 to 150 days[19].
- Symptoms can include fever, fatigue, loss of appetite, nausea and vomiting, abdominal pain, jaundice.
- If symptoms occur, report as soon as possible to a HCP.
- If the exposed person has an occupational risk (e.g. health care worker) and was vaccinated as part of treatment, encourage post vaccination testing to determine and document immunity.

HCV

- If exposure is high risk, also recommend HCV RNA testing at 6 weeks.
- Transmission from mother to unborn infant is rare.
- When HCV transmission occurs, a person may have no symptoms, or become symptomatic, including jaundice and feeling unwell.
- If any symptoms occur, report as soon as possible to a HCP.

- In those persons who do develop symptoms, the average time period from exposure to symptom onset is 4–12 weeks, but could range from 2-24 weeks[7].
- Approximately 20% of infected people will clear the infection and the remaining 80% will go on to become chronically infected with HCV[14].
- Therapy for HCV can cure HCV infection in 40-90% of cases, depending on the HCV genotype[14].

HIV

- Delay pregnancy until final blood work is done at 6 months. Babies born to HIV positive mothers are at greater risk of becoming HIV positive.
- It is acceptable to continue breastfeeding, while waiting for the source's test results. The issue of continuing breastfeeding should be decided when results are available[5].
- Flu-like symptoms occurring within weeks of exposure such as unexplained weight loss, chronic diarrhea, swollen lymph nodes, fever, fatigue or opportunistic infections should be reported as soon as possible to the HCP.
- When HIV PEP has been prescribed, ensure counselling related to medication use, risks and benefits, side effects, drug interactions and monitoring has been provided. Recommend follow-up assessment within several days (e.g. 5 days) of initiating PEP.

Follow-up and Additional Counseling

Many patients who experience an exposure will require some follow-up, which may simply be a review or reinforcement of information already provided. Some may require additional testing. Appendix B and C can be used to support the sharing of information and reinforce further recommendations. The anxiety resulting from the event as well as the complexity surrounding assessment and treatment may leave patients unable to process all of the information provided to them at the initial visit.

Planning for follow-up and/or additional counselling is an essential part of each patient's care. Consider referring the patient to their primary health care provider or other HCP if available. Public health nurses can assist in providing supportive counselling following an exposure to reinforce follow-up measures, assist with access to testing if needed and to help the exposed person understand how to keep others safe until transmission of infection can be ruled out. Counselling will address the inherent anxiety associated with an exposure.

To contact a public health nurse in the sexual health program during regular office hours, Monday through Friday 8:30-4:30, patients or HCPs can call 705-721-7520 or 1-877-721-7520 ext. 8376.
After hours and on holidays and weekends, patients or HCPs can call 1-888-225-7851.

MANDATORY BLOOD TESTING ACT (MBTA)

The MBTA is a law that enables specific individuals to request a source person be tested for HBV, HCV and HIV. The legislation is implemented by the Ministry of Community Safety and Correctional Services. There is no requirement to submit an application when an exposure has occurred; this is the person's personal decision. In the MBTA, the person making the request is known as the applicant, and the person who is required to respond is known as the respondent. However, recommended testing and potential post-exposure treatment for the exposed person. Do not wait for the outcome of the MBTA application, as the application's outcome may take days to weeks.

To be eligible to apply, the applicant must have come into contact with the respondents blood or body fluids:

- while providing emergency health care,
- giving emergency first aid,
- as a victim of a crime, or
- persons belonging to a prescribed class and who, in the course of duty become exposed. These include:
    - persons who are employed in a correctional institution, place of open custody or place of secure custody
    - police officers, civilian employees of a police service, First Nations constables and auxiliary members of a police service
    - firefighters (including volunteer firefighters)
    - paramedics and emergency medical attendants and paramedic students on field placement
    - members of the College of Nurses of Ontario
    - members of the College of Physicians and Surgeons of Ontario
    - medical students engaged in training.

Applications must be received by the health unit no more than 7 days after the date of the occurrence (however, if the deadline falls on a Saturday, Sunday or other holiday, it is extended by one day). The health unit reviews applications for validity and then contacts the respondent who can either voluntarily provide their blood for testing, or submit to testing as ordered under the MBTA. Under the MBTA, blood is tested for HIV, HBV and HCV only.

Detailed information regarding MBTA, and application forms for completion by the physician and applicant, are available at the Ministry of Community Safety and Correctional Services website.

Appendices

Appendix A

Hospital/ Clinic Name

Assessment of Potential Exposures to Bloodborne Infection

Documentation Form

For use by health care professionals in collecting and documenting information related to potential exposures to HBV, HCV, and HIV

Section A	***Intake***				
Date & time of assessment					
Assessed by:		Title:			
Information about the person providing the assessment information if different from the exposed person: (name, address, phone number, designation, etc.)					
Section B	***Assessment of the Exposed Person***				
Last Name:		First Name:		DOB	
Address:					
Phone number:		Gender: Male ☐ Female ☐		Health Care Provider	
Date, time and place exposure occurred:					
Nature of exposure and how the exposure occurred: (e.g. needle stick, splash, sexual, etc. and describe how it happened e.g. while providing emergency health care or first aid, during the commission of a crime, consensual, etc.)					
Description of the injury/exposure: (e.g. where on the body, nature of wound, fluid volume, etc.)					
Action taken prior to this assessment (first aid measures or other actions, if relevant)					

Immunization history: Tetanus: Hepatitis B vaccine: Hepatitis B titre (antiHBS): documented response	History of prior testing for HBV, HCV or HIV? (If yes, obtain date and results)

General health history: (e.g. well, immune compromised, degree of anxiety related to the exposure, pregnancy etc.)

Notes:

Section C ***Assessment of the Source***

Source known: ☐ Yes ☐ No (if source is unknown, skip this section)

Name of source:	DOB:

Address:

General health information:

Health Care Provider:	Immunization status Hep B #1 ☐ #2 ☐ #3 ☐

History of blood borne disease or evidence of prior testing:

Risk factors: from endemic country, high risk sexual behaviour, injection drug user, received blood products prior to 1990, etc.

Source person tested (if applicable):	Date and Time	HBV ☐
	Date and Time	HCV ☐
	Date and Time	HIV ☐

Consent to share test results: ☐ Yes Who?_____ No ☐

Other (if occupational exposure, ensure appropriate documentation to include incident reporting and WSIB reports.)

Section D	***Actions/Interventions: Testing and Treatment of the Exposed Person***
Baseline Testing of the Exposed Person ☐ anti-HBs ☐ HBsAg ☐HCV (anti-HCV) ☐HIV	Other Tests ☐ pre-test counselling ☐ consent to share results, if required
Summary of assessed significance of the exposure:	

Treatment

Treatment and Counselling Provided

☐ First Aid Measures
☐ Tetanus (Td ☐ or Tdap ☐)
☐ Hepatitis B vaccine
☐ HBIG
☐ HIV PEP (antiretrovirals)
☐ Counselling: post exposure, protecting others, f/u if required
Notes:

Section E: ***Planned Follow-up***

Recommended follow-up	Location & who will provide	When/Date
☐ Anti HBs		
☐ Additional Hepatitis B vaccine		
☐ HBIG		
☐ anti- HCV		
☐ HCV RNA PCR		
☐ HIV antibodies		
☐ HIV PEP Follow-up		
☐ Additional counselling		
☐ Other WSIB, Results from baseline testing		
Notes:		

Resources Provided

☐ Instruction Sheet ☐ MBTA information
☐ Fact sheet ☐ other

Date and Time Signature

simcoe muskoka DISTRICT HEALTH UNIT
Your Health Connection

Appendix B

Post Exposure Instruction and Planning Sheet
Hepatitis B, Hepatitis C and HIV

You have had an exposure to the blood or body fluid of another person. It is normal to feel anxious about what has happened and even overwhelmed by the amount of information received during the assessment. This sheet will review the main points about your exposure and assessment and will provide you with a record of what follow-up is recommended. If an appointment with another health care provider is advised, you may find it helpful to take this sheet with you.

_____ _____ was seen at _____
Name ***Date of Birth*** ***Name of Health Care Facility***

on _____ following an exposure to blood or body fluids.
Date

Initial assessment done by _____. The exposure occurred on_____
Name of Health Care Provider ***Date***

The infections of concern following an exposure to another person's blood or body fluids are hepatitis B, hepatitis C and HIV (human immunodeficiency virus).

Tests and Treatments

Your health care provider has assessed your risk and together you have decided on the best course of action. You have had the following blood tests and treatments:

Blood Tests	*Treatments*
☐ HIV	
☐ hepatitis C	☐ hepatitis B vaccine
☐ hepatitis B antigen	☐ hepatitis B immune globulin (HBIG)
☐ hepatitis B antibodies	☐ HIV antiretroviral medication (HIV PEP)

List medications, dose & instructions and any other recommendations.

simcoe muskoka DISTRICT HEALTH UNIT
Your Health Connection

Next Steps

Your health care provider has suggested you go for follow-up blood testing or treatment:

Follow up is recommended for	*Location for follow-up*	*Date*
☐ Hepatitis B (blood test)		
☐ Additional Hepatitis B vaccine		
☐ Hepatitis B Immune Globulin (HBIG)		
☐ Hepatitis C (blood test)		
☐ HIV (blood test)		
☐ Additional assessment if you have been started on HIV antiretroviral medications		
☐ Other		

If you become ill with any of the following symptoms, see your health care provider for assessment: ***fever, rash, jaundice (yellowing of skin or eyes) nausea or upset stomach, lack of appetite, vomiting, tiredness, muscle aches, or swollen glands***.

Protecting Others

Even in situations where the likelihood of becoming infected is very low, it is important for you to protect others from contact with your blood and body fluid. You can do this by taking the following precautions until all your blood test results are known, usually for a period of about 6 months:

- Do not let your blood or body fluid get on another person
- Tell your sexual partners they could be at risk.
- Abstain from having sex or use condoms during sex (including oral, vaginal and/or anal sex).
- Avoid becoming pregnant during this time
- Do not share a razor, toothbrush, nail file or tweezers
- Do not share needles or drug equipment with anyone
- Do not donate blood, semen, organs and tissues.

For questions about these infections, protecting others while waiting for follow-up testing or help with any anxiety about your exposure, you can call the Simcoe Muskoka District Health Unit to talk with a public health nurse at 705-721-7520 or 1-877-721-7520. Ask for the Sexual Health Program during business hours, 8:30 - 4:30. For enquires or concerns related to your tests or follow-up treatment, please contact your health care provider.

Appendix C

Exposure to Another Person's Blood or Body Fluids

What infections can be spread from blood or body fluids?

The infections that can be spread from one person to another through infected blood or other body fluids are hepatitis B, hepatitis C and HIV (human immunodeficiency virus).

Body fluids capable of spreading any of these infections include blood, semen, vaginal fluid, cerebral spinal fluid, body tissues and organs.

Saliva does not contain HIV or hepatitis C, but may contain small amounts of hepatitis B. Breast milk can contain HIV. Urine, feces, vomit, and tears do not carry these infections. However, any of the body fluids listed here can carry hepatitis B, hepatitis C or HIV if blood is present.

What is the risk of infections from body fluids?

For an infection to spread, it must be present in the blood or body fluid of another person and have a way to get into your blood stream. This can happen:

- when needles are shared or you have a needle stick injury
- when blood or body fluid comes in contact with skin that is damaged or cut, especially when a cut or abrasion is less than 3 days old
- when infected fluids are splashed or in any way enters your eyes, nose or mouth
- during sexual activity where body fluids are shared

The risk of becoming infected from an exposure to blood or body fluids is greater:

- when the amount of blood is of a large volume
- when the cut or entry point into your body is large or deep

Risk will also depend on what infections the other person has, and whether or not you have previously been vaccinated against Hepatitis B.

Contact between infected blood and healthy skin will not spread infections, as healthy skin acts as a very good barrier to viruses.

What do I do if I am exposed?

The best action to take is to be assessed at an emergency department as soon as possible after your exposure. You will receive first aid if needed and be assessed for risk of exposure to an infection. You may receive some blood tests to help determine if you need any special treatment.

There are some medications that can be taken after an exposure that may prevent you from becoming infected. These treatments are called Post Exposure Prophylaxis or PEP for short.

What treatments can I have to prevent me from getting an infection?

There are treatments to prevent the spread of hepatitis B and HIV infections after a possible exposure. There is no treatment yet that can stop the spread of hepatitis C once an exposure has occurred.

For hepatitis B, vaccination and/or immune globulin may be an option to give your body immunity. If you have been vaccinated for hepatitis B in the past you may already be immune and will need no additional treatment. A blood test can show whether you are immune or not.

For HIV, there are medications that help to prevent the virus from infecting you. The medications are strong and do have side effects and are recommended only for high risk exposures. The treatment, to work well for you, should be started as soon as possible after an exposure - ideally within 2 hours.

Who can you talk to if you have more questions? If you have concerns or questions call and ask for Sexual Health, or visit the health unit website at www.simcoemuskokahealth.org

simcoe muskoka DISTRICT HEALTH UNIT
Tel: 705-721-7520
Toll free: 1-877-721-7520
www.simcoemuskokahealth.org
Your Health Connection

How can I find out if the other person is infected?

If you are worried that the person you've been exposed to (source person) has hepatitis B, C or HIV you may be able to ask that person to voluntarily have a test and share the results.

However, you should know that if the person was very recently infected, it may be too soon to detect the infection.

For this reason, you should keep in mind that a negative result does not always mean the person is free of infection. It is important for you to have your own tests done.

The health care provider providing your care will advise you about what tests you should have and when you should have them done.

What if the other person refuses to be tested?

There is a law called the Mandatory Blood Testing Act that allows some people in specific situations to submit an application to ask that a source person be ordered to provide a blood sample that will test for hepatitis B, C and HIV. You can learn more about this at the web site for the Ministry for Community Safety and Correctional Services:
http://www.mcscs.jus.gov.on.ca/english/LinksResources/MandatoryBloodTesting/blood_testing.html
This application must be submitted within 7 days of your exposure, and can take some time to be processed (likely days to weeks); it is important not to wait for this application to start any treatment or testing your health care provider recommends at the time of your exposure.

What should I do after possible exposure?

It is very important for you to make sure you go for any follow-up testing recommended. You should speak to your health care provider about what you should do to protect others while you are waiting for your follow up tests.

What are the precautions I should take to protect others?

Follow these precautions for at least 6 months or for the time period your health care provider has advised, until all your blood test results are known

- Do not let your blood or body fluid get on another person
- Tell your sexual partners they could be at risk.
- Abstain from having sex or use condoms during sex (including oral, vaginal and/or anal sex).
- Avoid becoming pregnant during this time
- Do not share a razor, toothbrush, nail file or tweezers.
- Do not share needles or drug equipment with anyone
- Do not donate blood, semen, organs and tissues.
- See your health care provider if you develop any of these symptoms in the 6 months following your exposure: fever, rash, jaundice (yellowing of skin or eyes), nausea or upset stomach, lack of appetite, vomiting, tiredness, muscle aches, swollen glands

Who can you talk to if you have more questions?
If you have concerns or questions call and ask for Sexual Health, or visit the health unit website www.simcoemuskokahealth.org

If you have experienced an exposure to another person's blood or body fluids, it is important that you be assessed by a health care provider to determine your risk of infection and to get appropriate and timely treatment to help prevent transmission of hepatitis B, hepatitis C and HIV.

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