

# Guidelines for Managing Exposures to Blood Borne Pathogens

## Introduction

The purpose of this document is to provide healthcare providers with information on the assessment and management of persons with accidental exposures to blood and body fluids that may be infected with hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV). The attached Health Unit guidelines were extrapolated from recent scientific data on the exposure of health care workers (HCW) to blood borne pathogens. As well, an infectious diseases physician with expertise in antiretroviral management also provided input into the development of these guidelines.

In 1997 (last updated 2005), the Laboratory Center for Disease Control (LCDC) published a protocol for managing exposures to blood borne pathogens in HCW.<sup>1</sup> The LCDC document was intended for hospital employees, health care workers, laboratory personnel, and emergency response personnel exposed while on the job. As well, the Ontario Hospital Association / Ontario Medical Association is continually updating the 'Blood Borne Diseases Surveillance Protocol for Ontario Hospitals' (latest being October 2008) which emphasized the importance of testing and prophylaxis following a HIV exposure "among persons carrying on activities in the hospital".

The principles embodied in this document can be applied to both occupational and non-occupational exposures at the discretion of the physician. Physicians considering using post exposure prophylaxis (PEP) for HIV exposure in the non-occupational setting should be aware that the benefits would likely be limited to scenarios, in which the risk for HIV is high, and the medication regimen can be initiated promptly and medication compliance is probable.

All exposures to blood/body fluids should be assessed on a case-by-case basis. If PEP is to be initiated, the Health Unit recommends consultation with an infectious disease specialist. As well, decisions surrounding non-occupational exposures should be made by balancing the uncertain risk of infection against the potential toxicity associated with prophylactic medications.

All persons with significant recent exposures to blood or body fluids should be immediately referred to the nearest emergency department. If post exposure prophylaxis is indicated, it should begin as soon as possible, preferably within two hours of exposure. Delays in presenting to an emergency department should be avoided.

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<sup>1</sup> Blood Borne Diseases Surveillance Protocol for Ontario Hospital. OHA/OMA October 2008.

# Exposure to Blood/Body Fluids

## A. Initial Management Guidelines

### I. General Measures

- Allow the wound to bleed freely.
- Cleanse the wound thoroughly with soap and water.
- If contact is with mucous membranes (eyes, nose, or mouth), flush well with water.
- Remove clothing that is contaminated with blood or body fluids.
- Complete Incident Report as per agency policy.

### II. Evaluate the Significance of the Exposure

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

- 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 hepatitis C).
- Amniotic, pleural, peritoneal, pericardial, synovial, and cerebrospinal fluids.
- Saliva (for HBV, HCV and HIV if it is contaminated with blood and for HBV if it is not contaminated with blood).
- Organs and tissues.

Note: Feces, nasal secretions, sputum, tears, urine and vomitus are not implicated in the transmission of HBV, HCV and HIV unless visibly contaminated with blood.

To be considered significant, one of the potentially infectious fluids listed above must come into contact with tissue in one of the following ways:

- Percutaneous injury: needle stick or puncture/cut with a sharp object.
- Contact with mucous membranes: splash to eyes, nose or mouth.
- Contact with non-intact skin: prolonged or extensive contact with exposed skin, which is chapped or abraded, with blood or other potentially infectious body fluids.
- Bites resulting in blood exposure to either person involved.<sup>2</sup>

If a significant exposure has occurred, further investigation of the source is warranted. (Refer to Table 1- page 3). If the source is known to be HIV positive or believed to be high risk and the risk of transmission is a real possibility then PEP should be initiated.

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<sup>2</sup> Centers for Disease Control and Prevention. Public Health Service Statement. MMWR June 29, 2001.

**Patients with significant recent exposures to blood or body fluids should be immediately referred to the nearest emergency department. (Refer to Section B II. The Importance of Timing - page 6). The emergency physician should be informed of the case prior to referral and made aware of the urgency of the matter.**

<b>Table 1</b>	
<b>Source Risk Factors of Blood Borne Pathogens</b>	
<b>Blood Borne Pathogen</b>	<b>Risk Factor</b>
HBV	<ul style="list-style-type: none"> <li>• Consider high-risk if the source has:               <ul style="list-style-type: none"> <li>- High-risk sexual behaviour (i.e. men who have sex with men, sexual partner who is an injection drug user (IDU), multiple sexual partners)</li> <li>- Sexual partner of HBV infected persons or persons practicing high-risk behaviour</li> <li>- History of injection drug use</li> <li>- Comes from a highly endemic region</li> </ul> </li> </ul>
HCV	<ul style="list-style-type: none"> <li>• Consider high-risk if lifetime risk factors of source patient include:               <ul style="list-style-type: none"> <li>- High-risk sexual behaviour (i.e. a sexual partner who is an IDU, long term sexual partner who is HCV infected)</li> <li>- Injection drug use</li> <li>- Receipt of blood or blood products before 1990</li> <li>- Receipt of blood-derived coagulation products before 1985</li> </ul> </li> </ul>
HIV	<ul style="list-style-type: none"> <li>• Consider high-risk if source has:               <ul style="list-style-type: none"> <li>- High-risk sexual behaviour (i.e. men who have sex with men, sexual partner who is an IDU, multiple sexual partners)</li> <li>- History of injection drug use</li> <li>- Has received a blood transfusion, blood products or organs between 1978 and 1985</li> <li>- Involved with a sexual partner from any of the above groups</li> <li>- Infants born to HIV infected mothers</li> </ul> </li> </ul>

### **III. Serologic Testing for HBV, HCV and HIV**

Serologic testing of the source patient for HBV, HCV and HIV is the most reliable method to assess risk of exposure and should be strongly encouraged.

#### **i. Test the Source Person**

- If possible, perform serologic testing for HBV, HCV and HIV in the source person.
- Informed consent must be obtained from the source prior to testing and the source must be aware that the results will be disclosed to the exposed person.
- If the source patient tests positive for HBV, HCV or HIV, the Medical Officer of Health must be notified.
- If the source refuses to be tested follow the Mandatory Blood Testing Act, 2006.

#### **ii. Mandatory Blood Testing Act, 2006, Chapter 26**

In all cases where the source is known and informed consent cannot be obtained for testing, protocols in the Mandatory Blood Testing Act, 2006 may be implemented.

A person may apply to a medical officer of health to have a blood sample of another person analyzed if the applicant came into contact with a bodily substance of the other person in any of the following circumstances:

- As a result of being the victim of a crime.
- While providing emergency health care services or emergency first aid to the person, if the person was ill, injured or unconscious as a result of an accident or other emergency.
- In the course of his or her duties, if the person belongs to a prescribed class.
- While being involved in a prescribed circumstance or while carrying out a prescribed activity.

The diseases listed as communicable disease under the act are:

- HIV/AIDS
- Hepatitis B
- Hepatitis C

All relevant forms (including the applicant report, respondent report and physician report) can be accessed via the Ministry of Community Safety and Correctional Services website:

[http://www.mcscs.jus.gov.on.ca/english/about\\_min/MandatoryBloodTesting/Forms/mbt\\_forms.html](http://www.mcscs.jus.gov.on.ca/english/about_min/MandatoryBloodTesting/Forms/mbt_forms.html)

### **iii. Test the Exposed Person**

Obtain consent from the exposed worker to do baseline and follow-up serologic testing for HBV, HCV and HIV irrespective of whether or not prophylaxis is initiated. Recommended testing is as follows:

- Baseline: antibody to HBV, HCV and HIV
- Liver function testing (i.e. ALT if prophylaxis is being offered for HIV);

**Note: Without baseline data, any future claim for compensation for occupationally acquired blood borne illnesses could be jeopardized.**

- Repeat HIV serology at 6 weeks, 3 months and 6 months (if baseline testing at time of exposure is negative);
- Repeat HCV and HBV testing at 3 months and 6 months if negative at baseline.
- It is also recommended that for those with high-risk exposures (exposures where HIV Post Exposure Prophylaxis is recommended) be tested again at 12 months post exposure<sup>1</sup>. (*The Laboratory Centre for Disease Control 1997 protocol does not recommend testing at 12 months because there is “low probability of seroconversion after 6 months”. However, the BC Centre for Excellence in HIV/AIDS recommends testing at 12 months because antibody formation can be delayed when PEP fails to prevent infection. Their policy was based on unpublished case of a health care worker who was started on PEP and seroconverted 9 months after the exposure.*)

A theoretical potential exists for prophylaxis to delay the HIV seroconversion event. However, the vast majority of persons infected with HIV will seroconvert within 3 months of exposure.

#### **Offer referral to infectious disease/HIV clinic at:**

##### **Kingston General Hospital**

Infectious Diseases

613-548-3232

or

##### **The Ottawa Hospital, General Campus**

Infectious Diseases, Modular G

613-737-8856

## **B. Post Exposure Management: HIV**

This section will provide guidelines to help you decide whether to respond to a potential exposure to a blood-born pathogen with:

- HIV post-exposure antiretroviral prophylaxis (PEP)
- Hepatitis B immune globulin (HBIG) and /or hepatitis B vaccine
- Education about the early signs and symptoms of hepatitis
- Post-exposure counseling

### **I. Risk of HIV Infection Post Exposure**

The average risk of acquiring HIV infection following a percutaneous exposure to an infected source is currently estimated at 0.3% - 0.4%. The risk of HIV transmission following a mucocutaneous exposure is 0.1%. These figures represent only an average risk and the risk may actually be higher depending on other factors. Factors that increase the risk of HIV transmission include:

- High viral load in the source patient (source in seroconversion illness or late AIDS disease).
- Deep injury.
- Injury with a device previously placed in the source patient's vein or artery or with a device visibly contaminated with blood.

### **II. The Importance of Timing**

If there is any question about the indication for PEP, the therapy should be initiated and then re-evaluated after consultation with an infectious disease specialist.  
(Refer to Test the Exposed Person for testing and follow-up recommendations - page 5).

### **III. Medication Availability and Cost (Antiretrovirals)**

The use of PEP for HIV is recommended, offered or not offered depending on the characteristics of the source patient and the exposure. (Refer to Table 2 - page 8).

Most exposures do not result in transmission of HIV infection. Given the complexity of the HIV PEP protocol and restricted access to the recommended medications, the Health Unit recommends that post exposure prophylaxis be initiated by emergency department physicians in consultation with an infectious diseases specialist.

HIV PEP is usually prescribed for 28 days. It costs approximately \$1,000.00, depending on the combination of medications used. At this time, it is up to the individual to pay for the medications and then seek recovery of the cost, if appropriate, from Workplace Safety and Insurance Board, private insurance or the Trillium Drug Plan. Individuals without a private insurance plan may be eligible for assistance through the Trillium Drug Plan if a large part of their income is spent on prescription medication. Applications for the Trillium Drug Plan are available at most pharmacies.

#### **IV. Serologic Testing (if antiretrovirals are indicated)**

If HIV PEP therapy is started, drug toxicity monitoring including a complete blood count, renal and hepatic function tests should be completed initially, at week 1, and again 2 weeks after the patient begins taking the medications. If toxicity is suspected, the treating physician should consult with an infectious disease specialist.

**Table 2**

Prophylaxis after exposure to **Human Immunodeficiency Virus** (adapted from CDC-MMWR – Recommendations and Reports September 30, 2005 / 54 (RR09); 1 – 17  
 Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HIV and Recommendations for Post Exposure Prophylaxis Pg 22, 23

<b>Percutaneous Injuries (ie needle stick injury)</b>					
<i>Exposure Type</i>	<i>HIV positive Class 1*</i>	<i>HIV positive Class 2**</i>	<i>Source of unknown HIV status +</i>	<i>Unknown source €</i>	<i>HIV negative</i>
Less severe (ie solid needle or superficial injury)	Recommend basic 2-drug PEP	Recommend expanded ≥ 3-drug PEP	Generally, no PEP warranted; however, consider basic 2-drug PEP for source with HIV risk factors††	Generally, no PEP warranted; however, consider 2-drug PEP in settings in which exposure to HIV infected person is likely	No PEP warranted
More severe (large bore hollow needle, deep puncture, visible blood on device, or needle used in patient’s artery or vein)	Recommend expanded 3-drug PEP	Recommend expanded ≥ 3-drug PEP	Generally, no PEP warranted; however, consider basic 2-drug PEP ***for source with HIV risk factors††	Generally, no PEP warranted; however, consider basic 2-drug PEP*** in settings in which exposure to HIV-infected persons is likely	No PEP warranted
<b>Mucosal contacts and non intact skin exposures (ie eyes or exposed skin that is chapped abraded or afflicted with dermatitis has contact with blood, tissue or other infectious body fluids)</b>					
<i>Exposure Type</i>	<i>HIV positive Class 1*</i>	<i>HIV positive Class 2**</i>	<i>Source of unknown HIV status†</i>	<i>Unknown source ‡</i>	<i>HIV negative</i>
Small volume (ie few drops)	Consider basic 2-drug PEP	Recommend basic 2-drug PEP	Generally, no PEP recommended	Generally ,no PEP recommended	No PEP warranted
Large volume (ie major blood splash)	Recommend basic 2-drug PEP	Recommend expanded ≥ 3-drug PEP	Generally, no PEP warranted; however, consider basic 2-drug PEP for source with HIV risk factors	Generally, no PEP warranted; however, consider basic 2-drug PEP ***in setting in which exposure to HIV infected persons is likely	No PEP warranted

\* HIV positive class 1 – asymptomatic HIV infection or known low viral load (e.g. < 1,500 ribonucleic acid copies/ml)

\*\*HIV positive class 2 – symptomatic HIV infection, acquired immunodeficiency syndrome, acute seroconversion or known high viral load.  
 Initiation of PEP should not be delayed pending expert consultation and because expert consultation alone cannot substitute for face-to-face counseling. Resources should be available to provide immediate evaluation and follow-up care for all exposures.

+ For example, deceased source person with no sample available for HIV testing

€ For example, a needle from a sharps disposal container

‡ For example, slash from inappropriately disposed blood

\*\*\* The recommendation “consider PEP” indicates that PEP is optional; a decision to initiate PEP should be based on a discussion between the exposed person and the treating clinician regarding the risks versus benefits of PEP

†† If PEP is offered and administered and the source is later determined to be HIV negative, PEP should be discontinued

## **C. Post Exposure Management: Hepatitis B Virus (HBV)**

### **I. Risk of HBV Infection Post Exposure**

The risk of transmission of HBV following a needle stick exposure from an infected source is 6 - 30%. In the case of a human bite where the skin is broken, the risk of transmission to the person who was bitten is unknown but is likely to be quite low since the concentration of HBV is 1000 times lower in saliva than in blood.

### **II. Post Exposure Prophylaxis for HBV**

The management of persons with possible exposures (percutaneous or mucosal) to hepatitis B is outlined in Table 3. For persons who previously received a full course of hepatitis B vaccine, it is important to determine whether an adequate level of anti-HBs has been previously documented. (Refer to Table 3 - page 10).<sup>3</sup>

## **D. Post Exposure Management: Hepatitis C Virus (HCV)**

### **I. Risk of HCV Infection Post Exposure**

The risk of acquiring HCV following a needle stick exposure to an infected source is estimated to be in the range of 3% - 10%.

### **II. Post Exposure Prophylaxis for HCV/Early Treatment for HCV**

There is no prophylactic treatment currently available for a person exposed to the blood of a patient with hepatitis C virus infection. However, new research suggests that early treatment of acute hepatitis C infection with a 24 - week course of interferon alpha-2b prevents chronic infection. Persons experiencing a needle stick injury from a known or high-risk hepatitis C source should be monitored closely for acute hepatitis symptoms. Symptomatic patients and patients with detectable levels of HCV RNA in serum should be referred to a specialist for assessment and possible treatment.

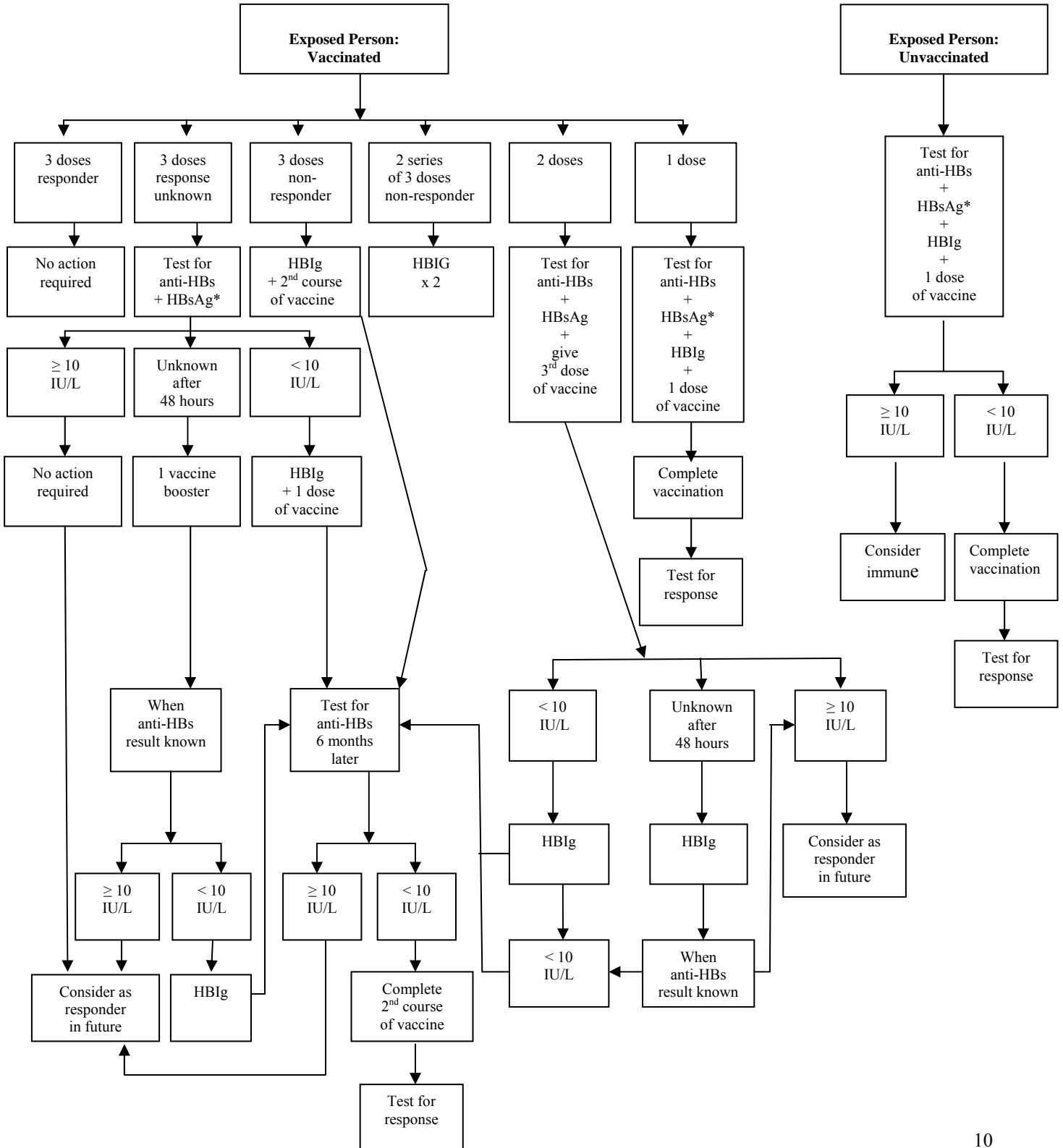
HCW exposed to HCV should be tested as soon as possible after exposure for the antibody to HCV and if negative, test again 3 and 6 months. Baseline liver function testing should also be done and be repeated at 3 and 6 months.

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<sup>3</sup> Canadian Immunization Guide, 2006. National Advisory Committee on Immunization.

**Table 3**

**Management of an Exposed Person by an Infected Source (HBsAg +)  
or High Risk Exposure**



\*If HBsAg +, infection present. Stop and begin hepatitis B follow-up.

## **E. Post Exposure Counseling**

All exposed persons should receive initial counseling in the emergency department setting. Initial counseling should concentrate on initiating antiretroviral therapy and reducing the risk of secondary spread from the exposed person to others.

Repeat counseling with the family physician and as needed is critical, as anxiety may limit comprehension in the emergency department setting. Follow-up counseling should include more in-depth counseling and emotional support for this critical incident. The following are general guidelines for follow-up counseling. It is recommended that an infectious disease specialist follow-up all pregnant, breastfeeding and pediatric patients being treated for a possible HIV exposure.

The **Health Unit will provide** persons with psychological support, counseling and educational resources after a reported puncture wound, mucous membrane or non-intact skin exposure, if requested.

### **I. Risk of Infection Post Exposure**

The exposed patient should be counseled thoroughly about the risks of infection and about the potential risks and benefits of antiretroviral chemoprophylaxis.

### **II. Reporting Illness in the Follow-up Period**

Patients should be counseled to report to the physician any illness during the 6-month follow-up period as follows:

- Following a possible HIV exposure counsel to report any fever, aches, rashes, swollen glands, fatigue and general malaise.
- Following a possible hepatitis exposure (B and C) counsel to report any abdominal discomfort, sore joints, jaundice and any change in colour of urine or stool.

### **III. Secondary Spread**

- For counseling recommendations regarding secondary spread. (Refer to Table 4 - page 12).

### **IV. Medication (PEP) Compliance and Medical Follow-up**

- Patients should be advised not to adjust the dose or stop the medications without consulting with a physician.
- Advise patients that a doctor must be consulted before taking any other medication; this includes any medications prescribed by a doctor and any over the counter medications.
- Counsel the exposed patient to report any side effects that develop.

**Table 4**

**Counseling Recommendations**

<b>Blood Borne Pathogen</b>	
HBV	<ul style="list-style-type: none"><li>• Risk of HBV transmission to sexual partner(s) of persons recently exposed who were non-immune and now receiving HBIG and/or the HBV vaccine series is unknown.</li><li>• May consider safer sexual practices and should discuss with their partner(s).</li><li>• Do not donate blood, semen, organs or tissues for 6 months.</li><li>• Do not share razors, toothbrushes, or needles.</li></ul>
HCV	<ul style="list-style-type: none"><li>• Risk of sexual transmission is low (0.1%). The exposed person should advise their sexual partner(s) of the potential risk.</li><li>• Transmission from mother to infant is rare.</li><li>• There is no known prophylaxis for HCV.</li><li>• Do not donate blood, semen, organs or tissues for 6 months.</li><li>• Do not share razors, toothbrushes, or needles.</li></ul>
HIV	<ul style="list-style-type: none"><li>• Should be advised to practice safer sex for a 6-month period and advise sexual partners of the potential risk.</li><li>• Pregnancy should be avoided for 6 months.</li><li>• Breastfeeding should be stopped (consult an infectious diseases physician).</li><li>• Do not donate blood, semen, organs or tissues for 6 months.</li><li>• Do not share razors, toothbrushes, or needles.</li></ul>

# Managing Non-Occupational Exposures to Blood/Body Fluids

## F. Community Acquired Needle Stick Injuries

### I. Decisions Surrounding Community Exposures

The most common scenario is one in which the source is unknown. Factors influencing decisions following a community acquired needle stick injury may include:

- **The Characteristics of the Exposure**

For instance, an injury with a visibly bloody syringe and/or deep wound would carry an increased risk for transmission of blood borne infections.

- **The Time Since the Exposure**

Ideally, post exposure prophylaxis for HIV should be **initiated within 1 - 2 hours of the exposure**. For hepatitis B, HBIG is preferably given within 2 days and the efficacy is unknown after 7 days.

### II. Infectious Risks

- **Human Immunodeficiency Virus (HIV)**

HIV is believed to survive for only several hours after infected blood has dried on a surface. Therefore the risk of HIV acquisition from a discarded needle is considered to be very low. However, it is recommended that each situation be assessed on a case-by-case basis. Currently, there are no studies available that indicate whether therapy with antiretrovirals will decrease the risk of seroconversion in children who sustain needle stick injuries. Decisions to initiate PEP for HIV should be made weighing the likelihood of infection against the potential medication toxicities. Physicians considering providing PEP for HIV exposure in the non-occupational setting should be aware that the benefits would likely be limited to situations in which the risk for HIV is high, the medication regimen can be initiated promptly and medication compliance is probable.

- **Hepatitis B Virus (HBV)**

Of the blood borne pathogens, hepatitis B virus is considered to be the greatest risk following a community acquired needle stick injury because the virus can survive for several days on environmental surfaces. The management of a potential percutaneous exposure to hepatitis B should be based on the vaccination and antibody status of the injured person. It is critical to determine whether the injured person has received the full course of the vaccine and to determine the anti-HBs antibody level. In this instance, extrapolation from similar injuries in HCW may be appropriate and chemoprophylaxis should be considered.

- **Hepatitis C Virus (HCV)**

Despite the high transmission among intravenous drug users, the risk of transmission of hepatitis C from a discarded syringe is considered to be low. It is believed that the ability of the virus to survive on environmental surfaces is poor. There are no drugs or vaccines that are effective either before or after exposure to prevent hepatitis C infection.

### **III. Counseling Recommendations and Follow-up**

- The low risk of transmission for all blood borne pathogens should be emphasized.
- Appropriate counseling regarding the aforementioned infectious agents should be provided. (Refer to Table 4 - page 12).
- The serologic testing outlined for HCW can be followed for community acquired needle stick injuries. However, opinions vary regarding the necessity for baseline testing and are at the discretion of the attending physician.

## **G. Sexual Exposures**

### **I. The Risk of Transmission following a Sexual Assault**

#### **Human Immunodeficiency Virus (HIV)**

- Heterosexual transmission is increasing ( $\frac{1}{3}$  of HIV positive test reports in Canada, 2005).<sup>4</sup>
- HIV transmission following sexual assault may be greater (than consensual sex) due to genital/rectal trauma and bleeding, exposure to multiple assailants, exposure through multiple receptive sites, and/or the presence of sexually transmitted infections (in the assailant or victim).<sup>5</sup>

#### **Hepatitis B Virus (HBV) and Hepatitis C Virus (HCV)**

- Sexual Assault can be a high risk exposure due to possible genital/rectal trauma and bleeding.

### **II. Evidence to Support HIV Post Exposure Prophylaxis**

- HIV PEP is used in occupational exposure & mother-to-child transmission settings<sup>6</sup>
- Efficacy studied in occupational exposure – taking HIV PEP reduced the risk of HIV infection by 81%<sup>7</sup>
- Guidelines for the provision of HIV PEP following sexual assault have been developed and implemented in multiple North American and European jurisdictions
- Early initiation of HIV PEP is most effective in preventing HIV infection<sup>6</sup>

### **III. Treatment**

- All victims of sexual assault should be referred to a Sexual Assault Team in their area
- If the victim chooses not to use the Sexual Assault Team, treatment information can be accessed from the Ontario Network of Sexual Assault/Domestic Violence Treatment Centres at [www.satontario.com](http://www.satontario.com) or made in consultation with an infectious diseases specialist at the Ottawa Hospital or Kingston General Hospital

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<sup>4</sup> Ontario Network of Sexual Assault/Domestic Violence Treatment Centres. [http://www.satontario.com/files/hivpepstudyfinalreport\\_20dec05.pdf](http://www.satontario.com/files/hivpepstudyfinalreport_20dec05.pdf).

<sup>5</sup> Ontario Network of Sexual Assault/Domestic Violence Treatment Centres. [http://www.satontario.com/files/hivpepstudyfinalreport\\_20dec05.pdf](http://www.satontario.com/files/hivpepstudyfinalreport_20dec05.pdf).

<sup>6</sup> CDC, 2005. Antiretroviral Post Exposure Prophylaxis After Sexual, Injection -Drug Use or Other Non-occupational Exposure to HIV in the United States: Recommendations from the U.S. Department of Health and Human Services. *MMWR*.54(RR-2):1-20.

<sup>7</sup> CDC, 2001. Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis. *MMWR*.50(RR-11); 1-42.

- **Sexual Assault Team contacts:**

**Leeds/Grenville:**

Assault Response and Care Centre  
**Brockville General Hospital** 613-345-3881

**Lanark:**

Lanark County Sexual Assault/Domestic Violence Program  
**Perth and Smiths Falls District Hospital** 613-283-2330 Ext. 1101

**Ottawa:**

Sexual Assault Partner Abuse Care Program  
**The Ottawa Hospital, Civic Campus** 613-761-4366

**Kingston:**

Sexual Assault/Domestic Violence Program  
**Kingston General Hospital** 613-549-6666 Ext. 4880

**• If involving children under the age of 16, please contact your local Sexual Assault Team who will assist with referral to a pediatric program.**

**Pediatric programs can also be reached at:**

Kingston General Hospital 613-549-6666 Ext 4880

Children's Hospital of Eastern Ontario 613-737-7600 Ext 2939

## **H. Human Bites**

### **I. Significance of the Exposure**

A bite that causes a break in the skin can increase the risk of transmission of blood borne pathogens.

A significant exposure has occurred if:

- The skin of the person bitten has been broken (possible exposure of the bitten person to hepatitis B from saliva).
- The skin has been broken and the bitten person's blood is found in the biting person's mouth (possible exposure of the biting person to HIV, hepatitis B and hepatitis C from blood).

For bites that do not break the skin, there is no risk of transmission of blood borne pathogens.

## II. Management of Human Bites

- **Human Immunodeficiency Virus (HIV)**

The transmission of HIV through a bite is extremely unlikely but theoretically possible. The risk of HIV transmission following a mucocutaneous exposure is 0.1%. The role of HIV PEP for bites remains unclear. In situations involving a high-risk source (known to be HIV positive or high-risk for HIV) and a significant blood exchange or situations involving multiple bites, consultation with an infectious disease specialist is recommended.

- **Hepatitis B Virus (HBV)**

Of the blood borne pathogens, hepatitis B transmission is the greatest concern because it is the most infectious. Instances where the skin has been broken and the bitten person's blood is found in the biting person's mouth, the need for hepatitis B vaccine and/or hepatitis B immune globulin should be assessed for both parties. (Refer to Table 3 - page 10).

- **Hepatitis C Virus (HCV)**

Hepatitis C can theoretically be transmitted through bites if there has been contact of the mucous membranes with contaminated blood. There is not any measure, other than flushing the mouth with water, which can be taken to prevent the development of infection in this situation. (Refer to Section D: Post Exposure Management: Hepatitis C Virus - page 9).

## I. Important Contact Information

### **Infectious Disease Consultation:**

**Kingston General Hospital**

24 hour service: ID Physician on-call 613-548-3232

**The Ottawa Hospital, General Campus**

24 hour service: ID Physician on-call 613-737-8222

### **Public Health Consultation and Vaccine Requests:**

**Leeds, Grenville & Lanark District Health Unit**

24 hour service 613-345-5685

### **Obtaining HBIG:**

**Canadian Blood System**

613-739-2392

## **J. Bibliography**

- <sup>1</sup> Blood Borne Diseases Surveillance Protocol for Ontario Hospital. OHA/OMA October 2008.
- <sup>2</sup> Centers for Disease Control and Prevention. Public Health Service Statement. *MMWR* June 29, 2001.
- <sup>3</sup> Henderson, D; HIV Post Exposure Prophylaxis in the 21<sup>st</sup> Century, CDC Mar-Apr 2001.
- <sup>4</sup> Canadian Immunization Guide. 2006. National Advisory Committee on Immunization.
- <sup>5</sup> Ontario Network of Sexual Assault/Domestic Violence Treatment Centres.  
[http://www.satcontario.com/files/hivpepstudyfinalreport\\_20dec05.pdf](http://www.satcontario.com/files/hivpepstudyfinalreport_20dec05.pdf).
- <sup>6</sup> Ontario Network of Sexual Assault/Domestic Violence Treatment Centres.  
[http://www.satcontario.com/files/hivpepstudyfinalreport\\_20dec05.pdf](http://www.satcontario.com/files/hivpepstudyfinalreport_20dec05.pdf).
- <sup>7</sup> CDC, 2005. Antiretroviral Post Exposure Prophylaxis After Sexual, Injection -Drug Use or Other Non-occupational Exposure to HIV in the United States: Recommendations from the U.S. Department of Health and Human Services. *MMWR*.54(RR-2):1-20.
- <sup>8</sup> CDC, 2001. Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis. *MMWR*.50(RR-11); 1-42.