SUBJECT: POST EXPOSURE TO BLOOD-BORNE PATHOGENS FOR HEALTH CARE WORKERS
APPLIES TO: ALL PERSONS CARRYING ON ACTIVITIES IN THE HOSPITAL

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POLICY

Sault Area Hospital is committed to providing and maintaining a safe and healthy work environment for all health care workers (HCWs) and minimizing the risk of occupational injury and illness related to blood-borne pathogens exposures. This policy provides guidelines for managing potential exposure to blood-borne pathogens in HCWs, specifically Hepatitis B Virus (HBV), Hepatitis C Virus (HCV) and Human Immunodeficiency Virus (HIV).

Occupational Health Services (OHS) will follow the Ontario Hospital Association (OHA) / Ontario Medical Association (OMA) Blood-borne Diseases Surveillance Protocol for Ontario Hospitals. HCWs who have potential contact with blood and/or body fluids of patients have an occupational risk of acquiring infection with HBV, HCV, and/or HIV. This policy will provide guidance for the prevention of HBV through immunization, and the most appropriate follow up for HCWs exposed to blood or body fluids of potentially infected patients.

Scope

This policy applies to all persons carrying out activities in the hospital, including employees, volunteers, physicians, students, learners and contractors. OHS will be responsible for follow up for employees, physicians, volunteers, and certain contractors (specifically Ellis Don, Marek, and Security staff). The applicable educational institution / agency hiring contractors are responsible for ensuring follow up for students and all other contractors.

The guidelines in this policy are for use in Occupational Health Services only.

PROCEDURE

Routine Practices

HCWs who have potential contact with blood and/or body fluids of patients should have documented evidence of immunity to HBV. Evidence of immunity is defined as an anti-HBs titre greater than or equal to 10mIU/mL. HCWs who have previously received HBV vaccine, but do not have documented evidence of immunity, should be sent for immunity testing at least one month following the completion of the HBV vaccine series (optimal timing is one to six months following the completion of the vaccine series). If immunity testing does not show immunity to HBV, a second HBV vaccine series should be initiated, followed by repeat immunity testing.

If, after two complete series of HBV vaccine, the worker is still not immune, further vaccination is not indicated, and the worker shall be managed as non-immune and a non-responder to vaccination. HCWs who perform exposure-prone procedures (see Definitions) and who are non-immune should be offered regular screening for HBV. HCWs who have potential contact with blood and/or body fluids of patients and have not yet received HBV vaccine should be offered vaccine, followed by immunity testing as above.

Post-Exposure

When a HCW has an exposure, the HCW, the Occupational Health Nurse (OHN), and the HCW's manager/supervisor or delegate all have responsibilities as outlined below.

WORKER RESPONSIBILITIES

When a HCW has a potential exposure to blood-borne pathogens from a known or unknown source, the individual should:

1) Receive first aid.
2) Report the incident immediately to the manager/supervisor or delegate
3) Complete an Employee Incident Report
4) Refer to *HCW Blood-Borne Pathogens Exposure Algorithm (Appendix A)* for specific actions to take in follow up, including source patient testing, reporting to OHS, and seeking medical attention.

MANAGER/SUPERVISOR RESPONSIBILITIES (OR DELEGATE)

1) Ensure the HCW is provided with appropriate first aid and follows the steps outlined under Worker Responsibilities.
2) Refer the HCW for assessment as follows:
    - To the Emergency Department if the HCW:
        i. Requires medical attention other than first aid, OR
        ii. Had exposure to a source patient who is high risk and outside of OHS business hours, OR
        iii. Requires or is requesting immediate assessment and outside of OHS business hours.
    - To OHS in all other circumstances.
3) If known, attempt to obtain consent from the source patient (or their substitute decision maker) for testing for rapid HIV, HBV and HCV. Note that if the HCW is not willing to be tested, the source patient should not be tested.
4) If consent is obtained, work with the source patient (or their substitute decision maker) to obtain signed consent and identify relevant risk factors. Complete *Source Patient Release of Information Consent and Risk Assessment (Appendix B – Form # 16012)* and send signed copy to OHS.
5) If consent is obtained, liaise with the source patient's primary nurse and/or physician to order the *Source Pt – SAH HCW Exposure* order set in Meditech and ensure samples drawn the same day. This order includes Rapid HIV (results within 24h), Hepatitis B Acute/Chronic infection (anti-HBV, anti-HBs, anti-HBc, HBsAg), and Hepatitis C Acute/Chronic infection (anti-HCV and HCV RNA). The complete order set must be used. Public health lab requisitions must also be completed and accompany the samples to the lab.
6) Ensure the HCW completes an Employee Incident Report

OCCUPATIONAL HEALTH NURSE RESPONSIBILITIES

Note that the Occupational Health Nurse will be responsible for follow up for employees, physicians, volunteers, and certain contractors (specifically Ellis Don, Marek, and Security staff). The applicable educational institution / agency hiring contractors are responsible for ensuring follow up for students and all other contractors as outlined below.

1) Provide first aid.
2) Review HCW immune status:
    - Tetanus – History of Td or Tdap within last 10 years. If no tetanus-containing vaccine within last 10 years, provide booster dose.
    - Hepatitis B – If history of reactive Hepatitis B titre (>10mIU/mL), HCW is considered immune and further HBV testing or immunization is not indicated. If non-immune or no history of reactive tire, initiate HBV vaccine series and appropriate serology.
3) Ensure signed Meditech Access Consent is on file.
4) Evaluate the significance of the exposure as it relates to the risk of acquiring HIV, HBV, and HCV. Provide counselling to HCW regarding risk of acquiring HIV, HBV, and HCV, and provide information regarding signs and symptoms of infection.
5) Discuss source patient testing (if known). Encourage HCW to follow up with manager/supervisor or delegate to arrange testing of source patient. Advise HCW that source patient cannot be tested unless HCW is also willing to be tested.

6) If exposure is significant (as per definitions), provide counselling regarding option of post-exposure prophylaxis (PEP) and offer referral to Occupational Health Physician if available to see within 24h; otherwise, offer referral to Emergency Department for physician assessment regarding PEP.
7) Order initial laboratory tests as per Medical Directive OHS 05 Blood-borne Pathogens Exposure. Provide copy of public health lab requisition to HCW.
8) Follow up laboratory tests will not be needed for low risk source patients who test negative. Await results of source patient testing (if available) prior to scheduling further laboratory appointments for follow up testing.
9) Any HCW who initiates HIV PEP will be referred to their primary health care provider or the Occupational Health Physician for monitoring.
10) If results are positive at any point during 6 month post-exposure follow up period, notify Algoma Public Health, Abilities Management for WSIB, and the Occupational Health and Safety Officer who will notify the Ministry of Labour as required.
11) Refer HCW to Occupational Health Physician as required (i.e. high risk exposure).
12) Follow HCWs in the following circumstances at 6 weeks, 3 months, and 6 months to arrange laboratory tests as per Medical Directive OHS-05 Blood-borne Pathogens Exposure:
    - High risk source patient (regardless of source patient test results)
    - Unknown source patient
    - Source patient with positive results for HIV, HCV or HBV.

DEFINITIONS

Body Fluids	Any body fluid containing visible blood and all body fluids with the capability of transmitting HBV, HCV and/or HIV (i.e. seminal fluid, vaginal secretions, cerebral spinal fluid, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, amniotic fluid and tissues)
Exposed HCW	Any individual carrying on activities in the hospital who has had an exposure; this exposure may be through percutaneous injury from a contaminated needle or other sharp object, a splash onto a mucous membrane or non-intact skin or a human bite that breaks the skin. Such an injury together with blood or any body fluid capable of transmitting HBV, HCV and/or HIV must be present for a HCW to be expos
Exposure-Prone Procedure	Procedures during which transmission of HBV, HCV or HIV from a HCW to a patient is most likely to occur, including the following: - Digital palpation of a needle tip in a body cavity or the simultaneous presence of the HCW's fingers and a needle or other sharp instrument or object in a blind or highly confined anatomic site - Repair of major traumatic injuries - Manipulation, cutting or removal of any oral or perioral tissue, including tooth structures, during which blood from a HCW has the potential to expose the patient's open tissue to a blood-borne pathogen
Hepatitis B Immune	The equivalent of >10 International Units of antibody to hepatitis B surface antigen per liter (IU/L) when tested by the radioimmunoassay (R/A) method
Percutaneous Injury	A puncture through the skin caused by a needle or sharp instrument
Mucotaneous Injury	An exposure caused by the transfer of blood or body fluids through splashes to body orifices or mucosa
Post-Exposure Prophylaxis (PEP)	A prophylactic (disease preventing) treatment started immediately after exposure to a pathogen (such as a disease-causing virus) in order to prevent infection by the pathogen and the development of disease.
Sharps	Needles, syringes, blades, lancets, clinical glass and any other clinical item that may be contaminated with blood or body fluids and could cause a cut, puncture or abrasion
Symptoms of HBV and HCV Infection	Fatigue, loss of appetite, abdominal discomfort, jaundice, change in colour of urine and stool, rash, sore joints; occurring within 6 weeks to 6 months after exposure
Symptoms of	Flu-like symptoms occurring within weeks of exposure; unexplained weight loss, chronic diarrhea, swollen

Early HIV Infection	lymph nodes, fever, fatigue or opportunistic infections
Patients at High Risk for Carrying HIV Infection	• Persons who share drug use equipment • Sex workers • Persons who have multiple sexual partners without use of a condom • Persons who engage in condomless sexual activity with someone whose HIV status is unknown or HIV positive and not on treatment • Persons who have had medical procedures or personal services in regions where HIV is endemic • Persons who have a history of sexually transmitted infections • Infants born to HIV-infected mothers • Persons who have had a blood transfusion or received blood products or organ transplant between 1978 and 1985
Exposure Risk for HIV	Assessment of Risk for Percutaneous Occupational Blood Exposure to HIV for Post Exposure Prophylaxis: • **Highest Risk:** BOTH a larger volume of blood (i.e. deep injury with large diameter hollow bore needle previously in source patient's vein or artery, especially involving an injection of a source patient's blood); AND blood containing a high titre of HIV (i.e. source with acute retroviral illness or end-stage AIDS). • **Increased Risk:** EITHER exposure to a larger volume of blood OR blood with a higher titre of HIV. • **No Increased Risk:** NEITHER exposure to a larger volume of blood NOR blood with a high titre of HIV (i.e. solid suture needle injury from source patient with asymptomatic HIV infection)
(Adapted from OHA/OMA Protocols, 2018, and Public Health Agency of Canada, 2020)	

RELATED POLICIES AND PROCEDURES

Routine Practices; IPAC Policy # II-15; February 2000/Revised June 2017
Hand Hygiene; IPAC Policy # II-10; May 1996/Revised June 2017
Personal Protective Equipment; IPAC Policy # II-20; May 1996/Revised June 2016

REFERENCES

1. Ontario Hospital Association / Ontario Medical Association (2018). *Blood-Borne Diseases Surveillance Protocol for Ontario Hospitals.*
2. St. Michael's Hospital (2019). *Pocket PEP – Clinical management of non-occupational and occupational exposure to blood borne pathogens.*
3. Public Health Agency of Canada (2020). *HIV factsheet: Screening and testing.* Retrieved from https://www.canada.ca/en/public-health/services/publications/diseases-conditions/hiv-factsheet-screening-testing.html

APPENDICES

Appendix A: HCW Blood-Borne Pathogens Exposure Algorithm
Appendix B: Form #16012 Source Patient Release of Information Consent and Risk Assessment