BLOOD-BORNE DISEASES SURVEILLANCE PROTOCOL FOR ONTARIO HOSPITALS

Developed by the Ontario Hospital Association and
the Ontario Medical Association
Joint Communicable Diseases Surveillance Protocols Committee
in collaboration with the Ministry of Health and Long-Term Care

Approved by:
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This protocol was developed jointly by the Ontario Hospital Association and the Ontario Medical Association to meet the requirements of the *Public Hospitals Act 1990*, Revised Statutes of Ontario, and Regulation 965[(1)].

The protocol is based on clinical knowledge, current data and experience, and a desire to ensure maximum cost effectiveness of programs, while protecting health care workers and patients. It is intended as a minimum practical standard for Ontario hospitals; however, hospitals may adopt additional strategies when indicated by local conditions.

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Blood-Borne Diseases Surveillance Protocol

Health care workers (HCWs) who have potential contact with blood and/or body fluids of patients have an occupational risk of acquiring infection with hepatitis B virus (HBV), hepatitis C virus (HCV) and/or human immunodeficiency virus (HIV), the causative agent of acquired immunodeficiency syndrome (AIDS). This protocol is intended to provide guidance about the most appropriate follow-up for workers exposed to the blood or body fluids of potentially infected individuals.

In developing surveillance policies for blood-borne pathogens, hospitals should include prevention programs to reduce exposure to blood and body fluids, including use of safety-engineered devices. Analysis of incident reports, worker education and process improvement are critical to reducing exposures.

Hepatitis B

Hepatitis B vaccine has been widely available since 1983. The vaccine is safe and effective, and immunization should be initiated at the earliest opportunity for all persons who may have occupational exposure to HBV [(1)].

Transmission of HBV from HCWs to patients has been documented on a number of occasions [(2)].

Hepatitis C

HCV infection is most common in persons who received blood or blood products prior to 1990 (when screening of donated blood started) and persons who use illegal drugs by injection. The risk of occupational acquisition of HCV infection after blood or body fluid exposure is intermediate between that of HBV and HIV. HCV screening and follow-up should be included in protocols for potential blood-borne pathogen exposure.

Transmission of HCV to patients by infected HCWs has also been documented.

HIV

The emergence of AIDS and recognition of HIV infection increased awareness of infection control practices in health care settings. The realization that people could carry HIV asymptomatically resulted in calls for increased protection for HCWs and led to recommendations to apply precautions for all potential blood and body fluid exposures to all patients in hospital.

Several look-back investigations have now shown that transmission from an HIV-positive HCW to a patient is extremely unlikely when routine infection control practices are followed. However, transmission of HIV from an infected surgeon to a patient and from an infected obstetrician/gynecologist to a patient has been documented.

Current Recommendations

Because HBV, HCV and HIV are spread by similar means, one protocol should apply to all three diseases. HBV is transmitted much more easily than HIV in the health care setting. After a needle-stick injury from a needle contaminated with HBV, there is a 6-30% chance that an exposed susceptible person will be infected. In a similar situation with HIV, there is about a 0.3% chance of infection. Occupational acquisition of HCV infection after documented exposure is intermediate between HBV and HIV, at approximately 2%.

The most significant difference is that infection with HBV can be prevented, in most cases, by pre-exposure administration of an effective, safe vaccine. Also, if a susceptible (non-vaccinated or vaccine non-responsive) individual is exposed to HBV, effective prophylaxis (HBIG and, if indicated, vaccine) can be used to decrease significantly the chances of infection.

Preplacement

Most persons carrying HBV, HCV or HIV can work safely with patients without risk of transmission of the virus, as long as reasonable precautions are taken. Therefore, routine screening of staff is not justified. However, HBV has been transmitted from physicians or employees to patients when reasonable precautions were not taken or when sharps injuries occurred during invasive procedures; such transmission usually occurred when the HCW was positive for hepatitis B "e" antigen (HBeAg). Transmission of HCV and HIV from HCWs to patients has also been documented. This emphasizes the need for compliance with precautions and primary prevention.

HCWs who have the potential for exposure to the blood and/or body fluids of patients/residents/clients must be protected by hepatitis B vaccination. This vaccine must be offered at the expense of the hospital or agency, not the employee, since the employee's risk of HBV infection is primarily related to working in the hospital or for the agency.

The protocol states that the hospital must provide this vaccine for "any part-or full-time employees who are at risk of exposure to blood-borne illnesses, due to the nature of their activities in the hospital, through potential exposure to blood, body fluids or wounds from contaminated sharps." This should include staff who may not be in direct contact with patients or gross blood, but may be at risk for sharps injuries (e.g., laundry, housekeeping, central reprocessing staff). For students and agency workers, the hospital should ensure that the supplying school or agency accepts responsibility for immunization of contract workers and students.

Continuing Surveillance

The lack of need for routine continuing screening for HBV, HCV or HIV is based on current consensus and literature. Therefore, hepatitis B screening of staff is not needed in any area of the hospital, including dialysis units, unless there is evidence of transmission of HBV. However, annual hepatitis B screening should be offered to HCWs who are at ongoing risk of exposure to blood-borne pathogens and who are unimmunized or non-responders to vaccine.

Post-Exposure Follow-Up

Since any patient could possibly be infected with HBV, HCV or HIV, whenever exposure to blood from a known source occurs the patient source should be tested for HBsAg, antibody to HCV and antibody to HIV. Testing of the patient should be done with informed consent.

Whereas an effective intervention is available for exposure to HBV, no intervention is available for HCV. There is no benefit to the use of immune serum globulin in this situation and it should not be given. There is no evidence for use of anti-viral agents in the HCV post-exposure setting and such treatment is not recommended.

A case control study published by the Centers for Disease Control and Prevention (CDC) suggests that there is some risk reduction associated with the use of zidovudine (AZT) after known percutaneous exposure to blood containing HIV. Use of a combination of anti-retroviral agents is recommended by CDC in situations where there is a risk of HIV transmission, a basic two-drug regimen and an expanded three-drug regimen for high-risk exposures. This prophylactic use of anti-retrovirals requires administration of the drug within hours of exposure, presenting a number of logistic hurdles. Access to information regarding the risk vs benefit of this use of anti-retroviral drugs must be available to counsel the exposed person. It should be noted that there are documented failures of post-exposure prophylaxis after percutaneous exposure to HIV positive blood. **It is recommended that hospitals consult with academic health sciences centers to develop specific post-exposure programs.**

Asymptomatic Carriers of Blood-Borne Pathogens

The recommendation that most infected persons may continue to carry on activities in the hospital is based on current Canadian practice and consensus recommendations. Persons engaged in invasive procedures should be assessed on a case-by-case basis. Evidence of transmission of infection would be cause for investigation and possible work restrictions. Persons who perform “exposure-prone” procedures have an ethical obligation to know their serologic status for HBV, HCV and HIV and to seek guidance from their professional regulatory body or, for those with no regulatory body, the local Medical Officer of Health or the occupational health service with respect to the potential for transmission of their infection to their patients. Some professional colleges have specific policies with regard to blood-borne pathogen infected health care professionals licensed by the college;

health care professionals must be aware of and follow the requirements of their college.

Effective antiviral therapies are available for HBV, HCV and HIV to reduce viral load to low or undetectable levels, improving patient safety and the medical status of the worker.

Blood-Borne Diseases Surveillance Protocol for Ontario Hospitals

Developed by
The Ontario Hospital Association and the Ontario Medical Association
Last Reviewed and Revised November 2012

I. Purpose

The purposes of this protocol are:

i. To provide direction to hospitals for preventing transmission of blood-borne pathogens from persons carrying on activities in the hospital to patients, or from patients to such persons; and

ii. To establish a system for managing potential exposures to blood-borne pathogens, especially hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV), among persons carrying on activities in the hospital.

Exposed persons (see Glossary) and their personal physicians are responsible for follow-up care and therapy if disease occurs.

II. Applicability

This protocol applies to all persons carrying on activities in the hospital (except where limitations are specified in the text), including employees, students, volunteers, undergraduate and postgraduate medical trainees, physicians and contract workers. The term health care worker (HCW) is used in this protocol to describe these individuals.

When hiring contract workers or training students, the hospital must inform the supplying agency/school that the agency/school is responsible for pre-exposure hepatitis B immunization and post-exposure follow-up for their personnel, as appropriate. Alternatively, the hospital may wish to assume either or both of these responsibilities.

These guidelines are for use by the Occupational Health Service (OHS) in hospitals.

III. Preplacement

No routine screening of persons carrying on activities in the hospital is generally needed for hepatitis B surface antigen (HBsAg), antibody to HCV or for antibody to HIV.

Hepatitis B vaccine must be offered, at the expense of the hospital, to part- or full-time employees who are at risk for exposure to blood-borne illnesses due to the nature of their activities in the hospital through potential exposure to blood, body fluids or wounds from contaminated sharps (see Glossary). Refusal of immunization should be documented in the individual's health record. If a person receiving the hepatitis B vaccine series misses or is late for either the second or third dose of vaccine, the next dose should be given as soon as possible. It is not necessary to restart the schedule or repeat doses.

Post-vaccination testing for antibody to HBsAg is recommended since knowledge of initial antibody response helps determine post-exposure response. Testing should be done at least one month after the vaccine series is complete. HCWs who have received three vaccine doses and who have had an inadequate serological response should receive an additional three-dose series,[2] with repeat testing for antibody to HBsAg one month after the second series is completed; if they remain negative, they should be considered vaccine non-responders. Persons whose immunization was remote (e.g. immunized in the public school based program) who test negative for antibody to HBsAg should receive one dose of vaccine and be tested 1 month later to document anamnestic response; if found negative again, they should complete the second vaccine series.

Routine booster doses of vaccine are not currently recommended for immunocompetent persons. [2] In persons with previously demonstrated antibody, immune memory persists even in the absence of detectable anti-HBs. Immunity may wane in immunocompromised persons; periodic testing of these persons should be considered and booster dosing given with re-testing as necessary. [2]

HCWs who perform exposure-prone procedures (see Glossary) have an ethical responsibility to know their serologic status for HBV, HCV and HIV. Those who learn that they are infected with HBV, HCV or HIV should self-report their serostatus to their professional regulatory body or, if they have no regulatory body, to the local Medical Officer of Health or the OHS. [3, 4] Some professional colleges have specific policies with regard to screening health care professionals licensed by the college for HBV, HCV and HIV if they perform exposure-prone procedures; health care professionals must be aware of and follow the requirements of their college.

IV. Continuing Surveillance

No routine ongoing serologic screening of any persons carrying on activities in the hospital is needed for hepatitis B infection, hepatitis C infection or HIV infection.

HCWs who are at risk for exposure to blood-borne pathogens and who are unimmunized or non-responders to HBV vaccine should be offered annual screening for infection with HBV (i.e., HBsAg, antibody to HB core).[3] (p. 9)

Some professional colleges have specific policies with regard to annual screening for HBV, HCV and HIV of health care professionals licensed by the college if they perform exposure-prone procedures; health care professionals must be aware of and follow the requirements of their college.

V. Post-Exposure Follow-Up

Definition

In this protocol, the term "exposed HCW" refers to any person carrying on activities in a hospital who has been exposed to the blood or body fluids (see Glossary) of patients through 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.

Policies and Procedures

Policies and procedures to follow-up exposed HCWs must be available in the occupational health service manual and the infection prevention and control manual, and be readily accessible to any and all exposed HCWs. They must include the procedures to protect and/or follow up the person possibly exposed to HBV, HCV, HIV and tetanus (after a dirty or deep puncture). (Although tetanus is not a blood-borne disease, it is included in this protocol because tetanus prophylaxis is part of the first aid for some types of exposure).

An alternative mechanism must be in place to follow-up exposed HCWs when the occupational health service is not available or does not formally exist. Everyone who bears any responsibilities under these policies and procedures must understand and have access to them at all hours.

If a contract worker or student suffers possible exposure to a blood-borne disease in the hospital the OHS must notify the supplying agency/school:

- that the person has been exposed; and
- that the agency/school must follow up the case. If required, the Medical Officer of Health will provide advice.

If a contract worker or student suffers possible exposure to a blood-borne disease in the hospital and has no supplying agency the OHS must inform the worker of the need for follow-up. If required, the Medical Officer of Health will provide advice.

Procedures for following-up of exposed persons are detailed below.

Reporting Illness After Exposure

The OHS must inform all exposed persons of the symptoms of blood-borne diseases and advise them to report these, if they should occur, to the OHS. (Refer to the Glossary for symptoms and relevant time frames). Whenever such symptoms are reported, the person must be referred to his/her personal physician for medical investigation and treatment.

Follow-Up Procedures After Exposure

A. Initial Procedures for All Cases

When a HCW is exposed to blood or body fluids from a known or unknown source, the HCW should:

- allow any wound to bleed freely, then wash it gently but thoroughly with soap and water;
- complete an Incident Report; and
- proceed immediately to the OHS (or designated alternate) with the Incident Report.

When an exposed HCW is seen, the OHS (or designate) will perform the following procedures:

- thoroughly cleanse and apply an appropriate antiseptic to any wound;
- if the wound was caused by a dirty object or is a deep puncture that cannot be adequately cleansed (i.e., tetanus-prone wound), assess the exposed person's tetanus immunization status and give appropriate prophylaxis;
- continue with the procedures in parts B to F, below, as appropriate, and
- emphasize to the HCW the importance of the 6 month follow-up, if indicated, as infection with HBV, HCV or HIV may be asymptomatic.

B. Unknown Source

If the patient source of the blood is not known, the OHS (or designate) must follow the procedure below:

- if the HCW has received a **full** series of hepatitis B vaccine **and has a documented adequate antibody response**, counsel him/her to report to the OHS any symptoms of blood-borne diseases such as hepatitis B, hepatitis C or HIV infection (see Reporting Illness After Exposure, page 10);

- if the HCW has begun the vaccine series, continue and complete it as originally scheduled; or

- if the HCW has received no doses of hepatitis B vaccine, give the first dose of the vaccine, and arrange for the second and third doses according to the recommended schedule.

- offer the HCW baseline testing for HBV, HCV and HIV and follow-up at 3 and 6 months.

Notes:

1. If there is a high probability that the source of the blood is infective for hepatitis B, follow the recommended action in section D.

2. If there is a high probability that the source of the blood is infective for HIV, follow the recommended action in section E.

C. Known Source

Note: Whenever there is a possibility that a HCW has been exposed to a blood-borne virus, the issues of patient confidentiality and HCW rights may conflict. This is an ethical dilemma for which there is no simple solution. The procedure below was developed according to the principles of both practicality and respect for these apparently opposing rights.

Testing the Source Patient for Hepatitis B, Hepatitis C 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.

Ascertain whether the exposed HCW is willing to be tested for antibody to HBV, HCV and HIV. This testing should be strongly encouraged. Without

this information, any future claim for compensation for occupationally-acquired HBV, HCV or HIV illness could be jeopardized.

If the exposed HCW is willing to be tested:

- draw blood from the exposed person for baseline testing for antibody to HBV, HCV and HIV and liver function testing, i.e., ALT;

- have the attending physician or medical designate inform the patient of the incident and request informed consent from the patient for testing. Consent must include the need to reveal the test results to the exposed person; the patient should be informed that positive results are reportable to the local Medical Officer of Health. (Refer to facility policies regarding consent when the patient is unconscious or incompetent to consent). With consent, draw blood as soon as possible from the patient and test for HBsAg and antibody to HCV and HIV.

- if the patient does not consent to testing and has clinical or epidemiological risk of HBV, HCV and/or HIV (see Glossary), see parts D, E, and F, below.

- if results of the patient's test(s) is/are positive, follow the procedures in D, E and/or F below.

If results of the patient's test(s) are negative, no further follow up is usually required. **However, if the patient is at high clinical or epidemiological risk for HBV, HCV or HIV infection**, ensure that the exposed person receives counselling about the possible risk of infection and prevention of transmission of blood-borne diseases.

Encourage the exposed individual to take a course of hepatitis B vaccine, if he/she has not done so.

If the exposed HCW is not willing to be tested:

- do not test the patient (when the exposed HCW is not tested, there is no value in testing the patient source); and

- counsel the exposed HCW about the risk of becoming infected and the implications for his/her behaviour in the follow-up period.

Options Under the *Mandatory Blood Testing Act, 2006* [5]

In instances where an individual has come into contact with a bodily substance of another person while providing emergency health care services or emergency first aid to that

person, or while in the course of his or her duties, if the person belongs to a prescribed class, the individual may have remedies under the *Mandatory Blood Testing Act, 2006.*[6]

Under such circumstances, the individual may apply to a Medical Officer of Health to have a blood sample of another person analyzed. If the respondent does not provide a blood sample voluntarily within two days, the application is referred to the Consent and Capacity Board, who will convene a hearing to determine whether or not a mandatory order should be issued.

The Ministry of Community Safety and Correctional Services has further information regarding the application process, including template application forms, on their website at http://www.mcscs.jus.gov.on.ca/english/about_min/blood_testing.html.

A copy of the *Mandatory Blood Testing Act, 2006,* http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_06m26_e.htm, and Regulation 449/07 http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_070449_e.htm, can be accessed through Service Ontario.

D. Hepatitis B Contact

When screening indicates the source patient is positive for HBsAg, response is dependent on the vaccination and antibody status of the exposed HCW. [2] (p. 197)

- if the HCW is immunized with documented immunity to HBV (see Glossary) at any time, or is documented as immune from previous natural infection, no further action is required.

- if the HCW is a non-responder to 2 courses of hepatitis B vaccine, administer HBIG and repeat HBIG in one month.

- if the HCW is a non-responder to 1 course of hepatitis B vaccine, administer HBIG and second course of vaccine (3 doses).

- if the HCW has received 2 doses of vaccine, test for anti-HBs and give one dose of vaccine. If antibody to HBs is negative or unknown at 48 hours, give HBIG. If antibody to HBs shows adequate immunity, consider as responder in future.

- if the HCW has received 3 doses of vaccine but immune response is unknown, test for antibody to HBs. If antibody to HBs shows adequate immunity, no action is required; consider as responder in future. If anti-HBs shows inadequate response, 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 antibody to HBs at 6 months.

- if the HCW has received no vaccine or one dose of vaccine, test for antibody to HBs, give HBIG and a course of vaccine, or complete the vaccine series, starting immediately.

Note: When indicated, give HBIG as soon after the incident as possible. It is believed to be somewhat effective up to 7 days after exposure; however, efficacy decreases substantially when it is given >48 hours after exposure.

Because of the necessity for timely action, a small stock of vaccine and one or two vials of HBIG should be kept for emergencies. Arrange to obtain HBIG from the Canadian Blood Services.

If seroconversion occurs during the follow-up period after a documented exposure to HBV, refer for medical assessment and follow-up and report to the Workplace Safety and Insurance Board (WSIB), local Medical Officer of Health and Ministry of Labour.

E. HIV Contact

If a person has sustained an exposure to the blood or body fluids from a patient who is HIV positive:

- counsel the exposed person about the risk of becoming infected (currently estimated as 0.3% for percutaneous exposure and 0.09% for mucous membrane exposure) and the implications for his/her behaviour in the follow-up period. "Factors associated with HIV transmission include a deep injury, device visibly contaminated with the source patient's blood, procedures involving a needle placed directly in a vein or artery, and terminal HIV illness in the source patient."[7] These exposures involve a larger volume of blood and/or a higher titre of HIV.
- encourage the HCW to permit baseline testing for HIV antibody status of his/her blood drawn within 1 week of the incident. Without baseline data, any future claim for compensation for occupationally-acquired HIV illness could be jeopardized; and
- OHS should follow the exposed person with screening for HIV antibody at 6 weeks, 3 months and 6 months. The confidentiality of the exposed person must be protected.

Post-Exposure Prophylaxis (PEP) for HIV:

Retrospective case-control data published by the CDC suggests that the post-exposure use of zidovudine (AZT) may be protective for HCWs.[7] After significant occupational exposure to HIV which carries a risk for transmission of HIV, anti-retroviral PEP is recommended.

PEP regimens should include a basic regimen for 4 weeks, and an expanded regimen, adding a protease inhibitor for 4 weeks to the basic regimen for high-risk exposures. [8] The choice of the basic or expanded regimen is dependent on the nature and risk of the exposure (see Glossary). Consult with your nearest academic health sciences centre to develop a protocol and maintain currency.

The potential benefits and risks of anti-retroviral agents should be discussed with the exposed HCW; if the HCW is pregnant, the discussion should also include potential benefits and risks for the fetus. Referral to an Infectious Diseases physician with expertise in anti-retroviral treatment is advised for exposed pregnant or breastfeeding HCWs or if anti-retroviral resistance in the source virus is known or suspected. [8]

If the decision is made to give prophylaxis, it must be started within hours of exposure, preferably within 1 hour. [9] The interval after which there is no benefit from PEP is undefined. Hospitals should establish a system and protocol providing availability of counselling and prophylactic therapy at all times. In cases where HIV infection is suspected, the employer must report the injury to the WSIB if PEP is given. (WSIB Employer's Initial Accident Reporting Obligations – OMP 15-01-02).

- If the exposed HCW is positive for HIV antibody during baseline testing, give appropriate counseling, encourage medical referral and follow the policies of your facility.
- If seroconversion occurs during the follow-up period after a documented exposure to HIV, refer for medical assessment and follow-up and report to the WSIB, local Medical Officer of Health and Ministry of Labour.
- If a HCW has sustained an exposure to the blood or body fluids from a patient who has clinical or epidemiological risk for HIV infection and who refuses to allow testing of his/her blood, offer the exposed HCW a follow-up program similar to that outlined above.
- HCWs who become infected with HCV after an exposure to a source patient co-infected with HIV and HCV should be followed for HIV seroconversion for an extended period of time, i.e., for 12 months. [8]

F. Hepatitis C Contact

There is no prophylaxis currently available for a person exposed to the blood of a patient with hepatitis C virus infection. Available data does

NOT support the use of immune globulin (IG) or antiviral agents in this situation, and they should not be given.

Counsel the exposed HCW about the risk of becoming infected. Risk is lower than that for HBV, approximately 2%.

Counsel the exposed HCW to report any signs of hepatitis-like illness (see Glossary).

HCWs exposed to HCV should be tested as soon as possible after exposure for antibody to HCV and, if negative, again 3 and 6 months later. Baseline liver function testing (i.e. ALT) should also be done and repeated at 3 and 6 months. If the exposed HCW is positive for anti-HCV, refer for medical assessment and follow-up. If seroconversion occurs during the follow-up period, refer for medical assessment and follow-up, report to the WSIB, the local Medical Officer of Health and Ministry of Labour.

HCWs who become infected with HCV after an exposure to a source patient co-infected with HIV and HCV should be followed for HIV seroconversion for an extended period of time, i.e., for 12 months. [8]

VI. Asymptomatic Carriers of Blood-Borne Pathogens

Persons carrying on activities in the hospital who are asymptomatic carriers of blood-borne pathogen(s) are generally not regarded as an infectious risk to patients or staff. Adherence to routine infection prevention and control practices (as per *Routine Practices and Additional Precautions in All Health Care Settings*, Ontario Provincial Infectious Diseases Advisory Committee - PIDAC) usually obviates any risk to patients.

However, HCWs who perform exposure-prone procedures (see Glossary):

- have an ethical responsibility to know their serologic status for HBV, HCV and HIV, and if positive;
- should report their serologic status to their professional regulatory body, or if they have no regulatory body, to the local Medical Officer of Health or the OHS, if they learn that they are infected with HBV, HCV or HIV; and
- should seek medical evaluation with respect to the potential for transmission of their infection to patients, which is dependent on the worker's type of practice, the infecting virus(es), and the status of their infection and the potential for antiviral therapy to reduce viral load, thereby reducing risk for patients and improving the HCW's health status[10]
- must be aware of and follow the requirements of their professional regulatory body with regard to screening for HBV, HCV and HIV.

Disclosure of an infected HCW's status to patients is not required. [10] (p. 225)

Exposure of a Patient to a Health Care Worker's Blood

If a patient has an exposure to a HCW's blood the patient must be notified, counseled and offered the appropriate post-exposure regimen, if indicated. The HCW has an ethical obligation to be tested for HBV, HCV and HIV at the time of the exposure. The confidentiality of the HCW must be maintained; disclosure of the identity of the health care worker to the patient is not necessary.[10] (pp. 226-227) Assess HCW for risk factors for infection with BBPs. Depending on the clinical status of the HCW and results of the HCW testing, appropriate management and follow-up should be provided for the exposed patient.

VII. Evaluation

Ongoing evaluation of the program implementing the surveillance protocol is essential to ensure effectiveness. Incident reports from exposures to blood or body fluids should be analyzed with respect to time, place and person, and the summary data reported to the hospital Infection Prevention and Control committee and Joint Health and Safety committee. Analysis should be directed towards in-service education and process improvement to reduce or eliminate exposures.

The Needle Safety Regulation 474/07 made under the Occupational Health and Safety Act came into force September 1, 2008 and mandates the use of safety-engineered needles in Ontario hospitals. [11]

Glossary

Body Fluid

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 Health Care Worker

Any person carrying on activities in a hospital who has had an exposure to blood-borne pathogens; 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 a body fluid capable of transmitting HBV, HCV and/or HIV must be present for a HCW to be exposed.

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:

a) 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, e.g., during major abdominal, cardiothoracic, vaginal and/or orthopaedic operations; or

b) repair of major traumatic injuries; or

c) major cutting or removal of any oral or perioral tissue, including tooth structures during which blood from an injured HCW may be exposed to the patient's open tissues. [3] (p. 15)

Patients at High Risk for HIV Infection

- men who have sex with men;
- persons who inject drugs using shared needles;
- persons who have had a blood transfusion or received blood products or organs between 1978 and 1985;
- persons who come from areas of the world in which HIV is endemic. (Refer to your local Medical Officer of Health for current information regarding which countries are considered endemic);
- persons who have had a sexual partner from any of the above groups; and
- infants born to HIV-infected women.

Hepatitis B Immune

The equivalent of $>$ 10 International Units of antibody to hepatitis B surface antigen per litre (IU/L) when tested by the radioimmunoassay (RIA) method.

Sharps

Needles, syringes, blades, lancets, clinical glass and any other clinical items that may be contaminated with blood or body fluids and could cause a cut, puncture or abrasion.

Symptoms of Hepatitis B and Hepatitis C 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 the exposure.

Symptoms of Early HIV Infection

Flu-like symptoms occurring within weeks of exposure; unexplained weight loss, chronic diarrhoea, swollen lymph nodes, fever, fatigue or opportunistic infections.

Assessment of Risk for Percutaneous Occupational Blood Exposure to HIV for POST EXPOSURE PROPHYLAXIS. (12)

Highest risk: BOTH a larger volume of blood (e.g., 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 (e.g., 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 (e.g., solid suture needle injury from source patient with asymptomatic HIV infection).

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