Integrated Post-Exposure Protocol

GUIDELINES FOR MANAGING EXPOSURES TO BLOOD/BODY FLUIDS

NOVEMBER 2003

COMMUNICABLE DISEASE CONTROL

Manitoba
Building for the Future

1. This is an integrated protocol for managing occupational exposure to human blood/body fluids. The protocol integrates post-exposure guidelines for three **bloodborne pathogens**: hepatitis B virus (**HBV**), hepatitis C virus (**HCV**) and human immunodeficiency virus (**HIV**).

2. A **significant exposure** is defined as an injury during which one person's blood or other high-risk body fluid comes in contact with another person's body cavity; subcutaneous tissue; or non-intact, chapped, or abraded skin or mucous membrane. Body fluids presenting risk for bloodborne-disease transmission are: most importantly blood; also semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, amniotic fluid and peritoneal fluid; other body fluids (e.g., urine or vomitus) only if there is visible blood; or laboratory specimens containing HCV, HBV, or HIV. (Reference: CCDR 1992; 18: 177-184). Saliva has been shown to be potentially capable of HBV transmission, but not HIV or HCV.

   Injuries of concern include needlestick injuries, injuries from other sharp items, splashes and bites. It is important to note that any needle that has been used to immunize or inject any substance into a person should be considered contaminated, whether blood is visible or not.

3. **Prevention** of occupational exposures to blood/body fluids is most important. The best available infection-control measures should be used to minimize or eliminate such exposures. Additionally, all significant workplace exposures should be reported to a supervisor, through a mechanism that assures confidentiality, with the aim of decreasing the possibility of recurrences.

4. **Provide first aid** when a significant exposure occurs:

   a) encourage bleeding at the injured site

   b) wash area well with soap and warm water

   c) if splash is to the eyes, wash out the eye area well with cold water

   (Reference: Guideline No. 315, "HIV/HBV Post-Exposure Protocol for Sharps Injuries," The College of Physicians & Surgeons of Manitoba).

5. **Document the incident** in the worker's confidential medical file by recording the following:

   a) date and time of incident
   b) job duty being performed at time of exposure
   c) details of exposure incident
   d) protective measures employed
   e) action taken after exposure
   f) results of initial and follow-up testing of Source and Exposed

   (Adapted from: Guideline No. 315, "HIV/HBV Post-Exposure Protocol for Sharps Injuries," The College of Physicians & Surgeons of Manitoba).

6. Manitoba Health recommends testing as outlined in the accompanying protocols. However, **testing is voluntary**, both for the worker occupationally exposed to blood/body fluids ("**the Exposed**"), and for the patient or client whose blood/body fluid is the source of the exposure ("**the Source**"). Both the Exposed and the Source have the right to refuse the recommended testing. If the Exposed refuses testing, it is generally not recommended that testing of the Source be pursued.

7. **Informed consent** must be obtained prior to all testing. It may be given verbally rather than in writing, but this should be recorded. For the Source, consent should include permission to make the test results available to the Exposed. The Exposed should not become involved in obtaining consent from the Source.

8. When the Source is an infant up to the age of 6-12 months, **antibody testing of infant serum and maternal serum** will likely yield identical results, unless other risk factors are present in the infant. Therefore, consideration may be given to testing the mother as an alternative to testing the infant.

9. **Hepatitis B Virus:**

   9.1) Recommended actions after exposure to HBV are outlined in Protocols 1 and 2.

   9.2) Immunization and Post-immunization Testing

   All health or other workers who may be exposed to blood/body fluids should be immunized against hepatitis B and receive post-immunization antibody testing. Anti-HBs levels should be documented 1-2 months after receipt of the third dose of vaccine to assist in the management of future significant exposures. Specimens should be labeled "Post-hepatitis B immunization antibody testing" and submitted to the Cadham Provincial Laboratory (CPL). Previously immunized workers who have not been tested should be tested for anti-HBs as well, as opportunity presents.

   For health care workers testing susceptible (see Section 9.3) 1-2 months after completing a three-dose series of vaccine (primary vaccine failure), administration of an additional three-dose series followed by repeat testing is recommended. Those testing susceptible > 2 months after completion of their initial immunization series (primary vaccine failure or declining antibody over time) should receive a single booster dose followed by anti-HBs testing 1-2 months after the booster. If subsequent testing indicates susceptibility, administration of two additional doses to complete a second three-dose series is recommended, again followed by testing. If the worker remains susceptible after two complete immunization series, he/she should be tested for HBsAg and core antibody (anti-core IgG) to rule out infection.

9.3) Susceptibility and Immunity

- CPL reports anti-HBs levels as follows:

  < 1 I.U./L = "negative"
  1-9 I.U./L = "low"
  ≥ 10 I.U./L = "positive"

- Persons whose test result is "positive" are generally considered immune. Immunity may derive from immunization or natural infection. To be considered immune after immunization, the "positive" result must occur at least one month after completion of a full immunization series.

- Persons are generally considered susceptible if the anti-HBs level is "low" or "negative." However, persons who have ever had a "positive" anti-HBs result are considered immune (not susceptible), even if they subsequently have a "low" or "negative" anti-HBs result, as long as the "positive" result occurred at least one month after completion of a full immunization series.

- Persons who are HBsAg positive are defined as infected with hepatitis B.

9.4) Hepatitis B Immune Globulin (HBIG)

HBIG, when indicated, should be given as soon as possible, ideally within 48 hours after the exposure. With non-sexual exposures, efficacy is unknown after seven days; with sexual exposures, benefit has been demonstrated up to 14 days. HBIG is available in a 5 ml and 1 ml format (variable availability of the latter). The dose is 0.06 ml/kg.

9.5) Hepatitis B Vaccine

The dose of Hepatitis B vaccine is brand and age dependent:

	Recombivax		**Engerix-B**	
Age	µg	ml	µg	ml
Children ≤10 yrs*	2.5*	0.25*	10	0.5
11-19 yrs.	5.0	0.5	10	0.5
Adults	10	1.0	20	1.0
Haemodialysis† and immunocompromised	40	1.0§	40	2.0

* except infants of hepatitis B carrier mothers
§ when special formulation is used
† four-dose series for haemodialysis patients

9.6) Obtaining HBIG and Hepatitis B Vaccine

Due to limited quantities and expense, HBIG is stored only at selected locations:

St. Boniface General Hospital
Health Sciences Centre (Adult and Pediatric departments)
Misericordia Health Centre
Brandon General Hospital
Flin Flon General Hospital
Thompson General Hospital
Churchill Health Centre Pharmacy
Dauphin Regional Health Centre

To obtain HBIG and hepatitis B vaccine at a site other than those listed above, contact Livingston Health Care Services Inc., 204-633-2621 (phone) or 204-694-2380 (fax). After 4:30 p.m. call 204-781-5342. Assistance in determining the need for HBIG and hepatitis B vaccine can be obtained from the local Medical Officer of Health (MOH). If the MOH is unknown, call Health Links with the patient's address; 788-8200 or 1-888-315-9257. During evenings, weekends and holidays, contact the MOH on-call at 945-0183. Local public health units may also be able to provide assistance in identifying, contacting and counseling the Exposed and/or Source.

9.7) Follow-up Testing

Testing the **Exposed** following receipt of HBIG and vaccine is recommended to document lack of infection and development of immunity in the event of future exposures. Testing for anti-HBs and HBsAg should occur 1-2 months after receipt of the last dose of vaccine, or four months after receipt of HBIG, whichever is later. This applies to both occupational and non-occupational exposures.

10. **Hepatitis C Virus:**

10.1) Recommendations for HCV testing are outlined in Protocol 1 and Protocol 2.

10.2) If the Source is HCV antibody negative, no further action for HCV is required unless the Source is an injection drug user and there is reason to suspect that he/she may have been infected recently, and not yet produced sufficient antibody to test positive (i.e., is in a window period of infection). In this case, follow the same protocol as for where the Source is antibody positive (see 10.3 below).

10.3) If the Source is antibody positive for HCV, test the exposed person for HCV antibody at the time of exposure. If negative, test for HCV-RNA at three months post-exposure and for HCV antibody at six months post-exposure. If the exposed person is antibody positive at the time of the exposure, or on subsequent RNA or antibody testing, obtain appropriate medical consultation.

10.4) If the HCV status of the Source cannot be determined, test the exposed person for HCV antibody at the time of exposure. If negative, test for HCV antibody at six months post-exposure. If the exposed person is antibody positive at the time of the exposure, or on subsequent antibody testing, obtain appropriate medical consultation.

11. **Human Immunodeficiency Virus:**

11.1) HIV antibody testing of both Source and Exposed should always be accompanied by both pre-test and post-test counseling, with informed consent.

11.2) Post-exposure Prophylaxis (PEP) Indications

Studies have suggested that **post-exposure prophylaxis (PEP) with chemoprophylactic agents** such as zidovudine (ZDV) reduces the risk of HIV seroconversion following percutaneous exposure. (Reference: MMWR 1995; 44(50): 929-933).

Chemoprophylaxis should therefore be offered to exposed workers after occupational exposures in either of the following circumstances:

a) Significant exposures where the **Source is known to be HIV positive** (see guideline 2 for definition of significant exposure);

OR

b) Significant exposures where the **Source is known, but the HIV status of the Source is unknown** at the time of the exposure, **and BOTH of the following conditions are present**:

i) A **High Risk Exposure** has occurred, which is defined as at least one of the following:

- deep percutaneous injury (deep puncture or wound with or without bleeding)
- visible blood present on the device associated with the exposure
- exposure from a procedure which involved a needle placed directly into the Source's vein or artery

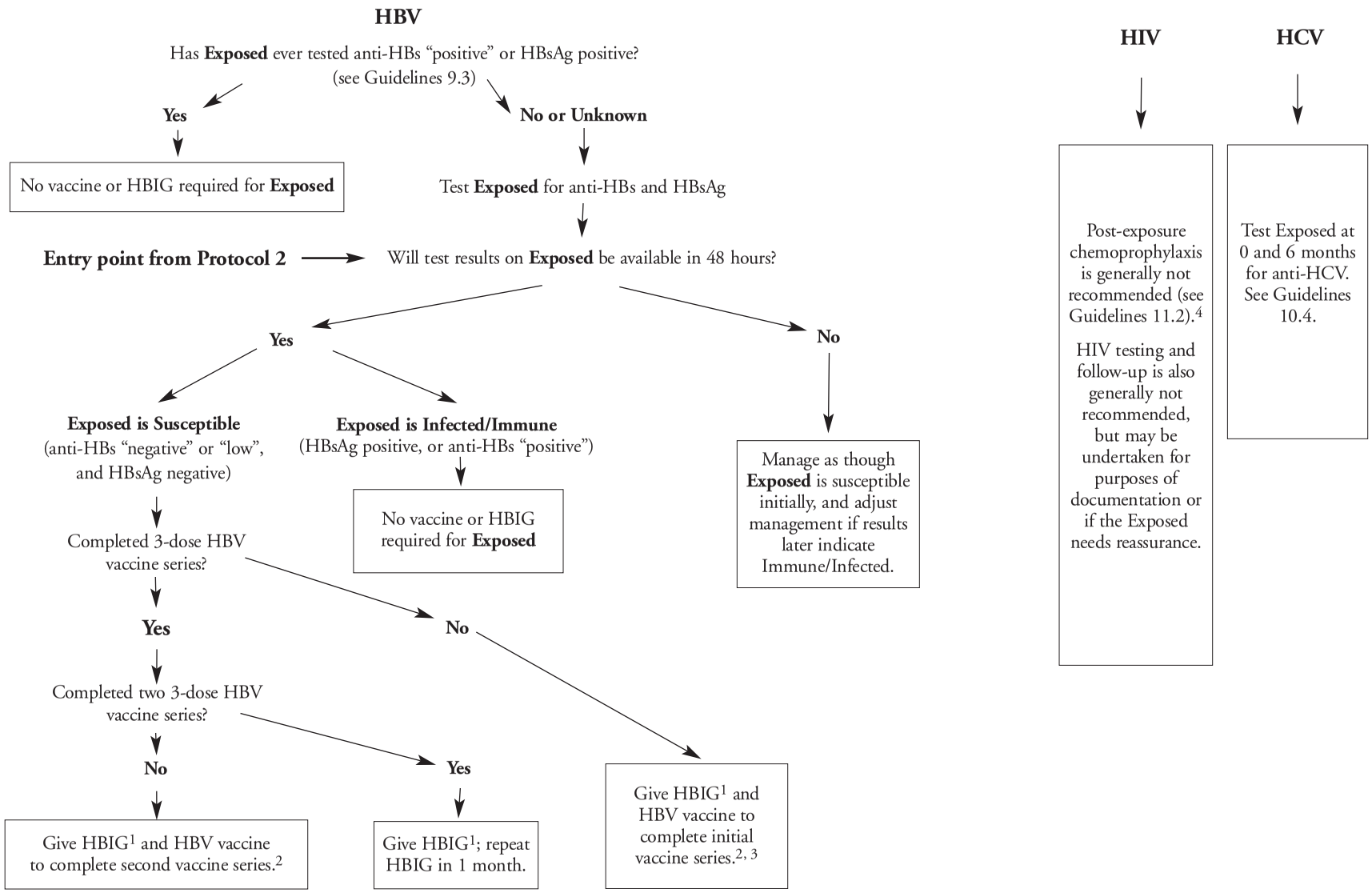
(Examples of significant exposures which are **not** High Risk Exposures would include splashes; superficial punctures without blood on the device; etc.)

ii) **Risk factors for HIV** infection are already **known** in the Source. At least one should be present, and these may include:

- history of residence in a country or area with a high HIV prevalence
- history of injection drug use
- history of sexually transmitted disease
- history of multiple sex partners
- history of hepatitis B or C
- recipient of blood products prior to 1985
- if male, having had sex with another male

Effort should be made to **determine the HIV antibody status of the Source as soon as possible**, as this may affect management (see below). Ensure that informed consent is obtained (see guidelines 6 and 7 above). If the Source has previously tested negative for HIV, re-testing the Source is still recommended.

Protocol 1 - Significant Exposure to Abandoned Needles or Sharps



[1] HBIG (0.06 ml./kg.) should be given as soon as possible, preferably within 48 hours. See guidelines 9.4. To obtain HBIG and/or HBV vaccine see Guidelines 9.6.

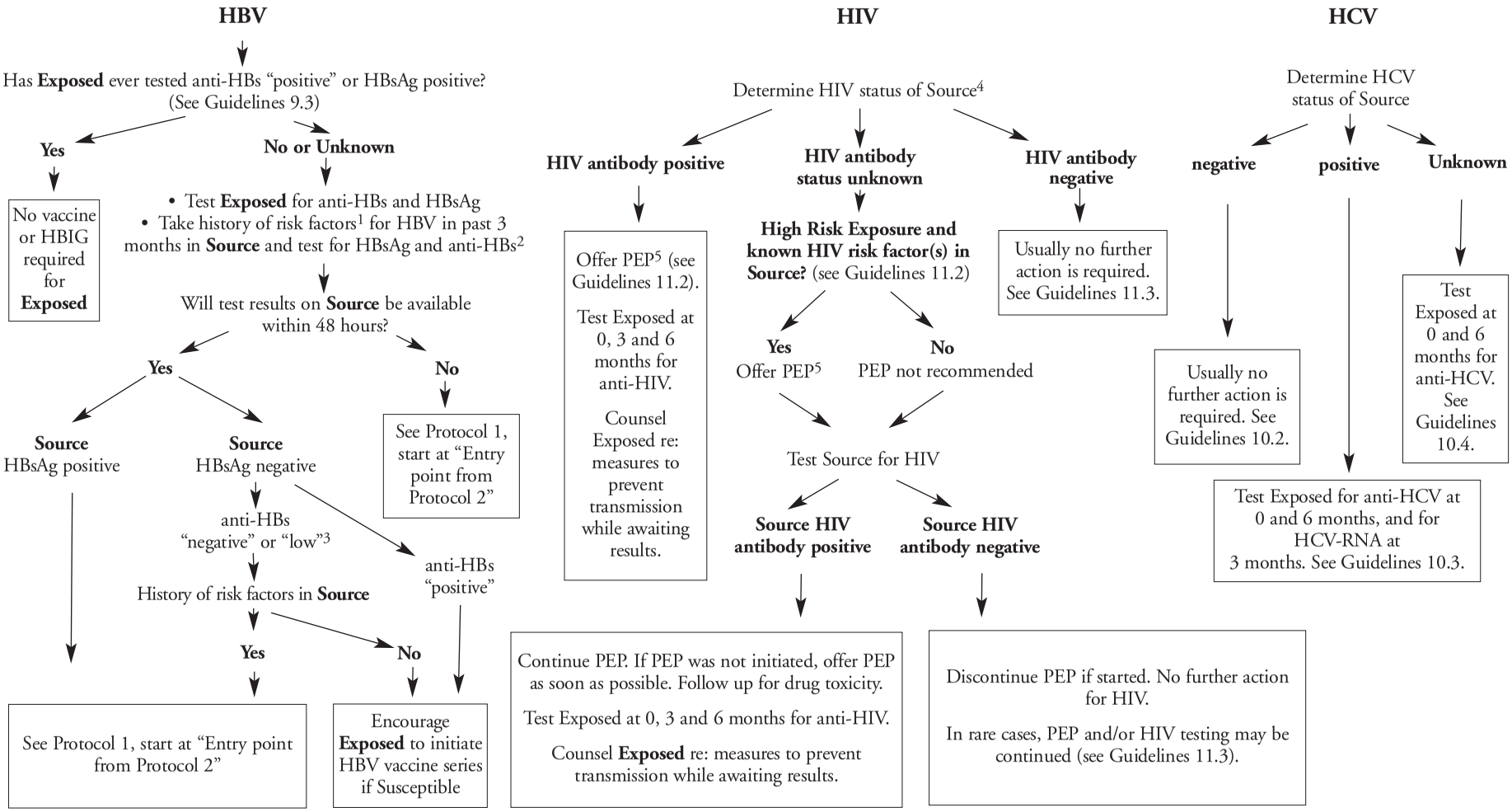
[2] Test for anti-HBs and HBsAg 1-2 months after receipt of last dose of vaccine or 4 months after receipt of HBIG, whichever is later, to document lack of infection and protection for the future.

[3] If still susceptible after testing as in 2 above, give three additional doses to complete a second three-dose vaccine series, followed by anti-HBs testing 1-2 months after the final dose.

[4] HIV post-exposure prophylaxis is generally not indicated after exposure to abandoned needles or sharps. In contrast to HBV, HIV does not survive long on exposed surfaces.

- For information and assistance in laboratory testing, contact Cadham Lab at 945-6123. See guidelines on Procedures for Laboratory Testing to ensure results are obtained in a timely fashion.
- If you have questions regarding this protocol during office hours (8:30 to 4:30) contact your local public health office. The appropriate public health office is the one serving the place of residence of the Exposed. After hours, contact the Medical Officer of Health on-call at 945-0183.

Protocol 2 - All Other Significant Exposures



[1] Risk factors include:
- high-risk sexual behaviour (e.g., men who have sex with men, sexual partner who is an injection drug user (IDU), multiple sex partners)
- history of a sexually transmitted disease
- sexual or blood contact with a known case of HBV infection
- intravenous drug use or tattoo/body piercing

[2] If **Source** refuses testing, see Protocol 1, start at "Entry point from Protocol 2."

[3] Consider immunizing **Source** with HBV vaccine series to prevent future infection, particularly if in a high-risk group.

[4] If the HIV status of the source cannot be determined, see Guidelines 11.2 and 11.3. Even if the Source has previously tested HIV negative, re-testing is recommended.

[5] HIV PEP should be initiated within 2 to 4 hours of exposure for maximal efficacy.

- For information and assistance in laboratory testing, contact Cadham Lab at 945-6123. See Guidelines 12, "Procedures for Laboratory Testing" to ensure results are obtained in a timely fashion.
- If you have questions regarding this protocol during office hours (8:30 to 4:30) contact your local public health office. The appropriate public health office is the one serving the place of residence of the Exposed. After hours, contact the Medical Officer of Health on-call at 945-0183.

If chemoprophylaxis has not been initiated at the time of exposure, but the Source subsequently tests HIV seropositive, begin chemoprophylaxis as soon as possible. Chemoprophylaxis in this circumstance may be initiated on the basis of a positive HIV antibody screening test, before results of a confirmatory test are obtained.

Chemoprophylaxis is generally not recommended for other exposures. This includes exposures to needles or sharps where the **Source is unknown**. There have been no documented HIV seroconversions after exposure to abandoned needles or sharps. In contrast to HBV, HIV does not survive long on exposed surfaces. PEP would therefore not be recommended for exposure to an abandoned needle found in a hospital laundry. HIV testing and follow-up is generally not recommended in these circumstances, but may be undertaken for purposes of documentation or if the Exposed person requires reassurance. Only in rare situations, if there is reasonable suspicion that an abandoned sharp or needle may have been in recent contact with an HIV infected person, might chemoprophylaxis and HIV testing be considered.

If chemoprophylaxis is to be implemented, **it should be started as soon as possible, ideally within 2 to 4 hours**. Efficacy is thought to be reduced if delayed. However, since there are no data to indicate if there is a specific time after which PEP is ineffective, consider implementing for up to 72 hours after exposure. For intervals longer than 72 hours, consult an infectious disease specialist.

11.3) Discontinuing Post-exposure Prophylaxis

When results of HIV testing of the Source are available, therapy should be re-evaluated. If the **Source is HIV negative, discontinue chemoprophylaxis**. Follow-up HIV testing of the Exposed is not generally necessary. In rare circumstances, chemoprophylaxis and/or follow-up HIV testing may be continued if there is concern about the Source being in a window period of infection (seroconversion phase). Therapy and follow-up HIV testing of the Exposed may also be continued if the Source refuses testing, and a **High Risk Exposure has occurred and HIV risk factors are known** in the Source (see definition in 11.2 above).

11.4) Recommended Chemoprophylactic Regimens

Zidovudine (ZDV) should be used in all chemoprophylactic regimens because it is the only agent for which there are data to support efficacy. The recommended regimen is **200 mg three times a day for four weeks**. At least one other agent, such as lamivudine (3TC), should be given together with ZDV for increased anti-retroviral activity and to address the possibility of ZDV-resistant strains. The suggested regimen for **3TC is 150 mg two times a day for four weeks.** For individuals who have been exposed to a known HIV-infected Source and have had a High Risk Exposure (see definition in 11.2 above, and include exposure to a Source with advanced HIV-related disease), consider adding a third agent, such as a **protease inhibitor**, after consultation with an infectious disease specialist. If the Source is already on anti-retroviral therapy and drug resistance is a possibility, consult an infectious disease specialist for the optimal regimen. Triple therapy should be instituted immediately in this situation.

Exposed workers should be informed that knowledge about the efficacy and toxicity of chemoprophylaxis is limited; that there are few data on the effectiveness or side effects of anti-retroviral agents other than ZDV when used for this purpose; and that the exposed worker may decline or discontinue treatment at any time. General symptoms such as fatigue, nausea and headache are not uncommon among individuals on anti-retroviral therapy, and are not indications for discontinuation. The main side effects can often be mitigated with acetaminaphen and gravol. **Contraindications** to therapy include chronic renal insufficiency, hepatic insufficiency and bone marrow dyscrasia. Caution should be used in persons treated with myelosuppressive, nephrotoxic, or hepatotoxic drugs in the two weeks prior to initiation of therapy. Zidovudine as PEP appears safe and well tolerated in both pregnant women and their children. Lamivudine also appears safe during pregnancy for women and their children, but follow-up has not yet been long-term. An infectious disease specialist should be consulted before prescribing anti-retroviral drugs in pregnancy.

Post-exposure prophylaxis should be initiated by the occupational health physician or designate of the institution or organization. If this individual is not available to institute therapy within 2 to 4 hours, the emergency room or on-call physician or designate can perform this function.

Follow-up counseling and medical evaluation should be provided for all workers who are given chemoprophylaxis. Follow-up should be provided by the occupational health physician, or other designated health professional. **HIV tests should be done at baseline, 6 weeks to 3 months, and 6 months.** Follow-up to 12 months may be undertaken in rare instances where it is felt that HIV seroconversion may be delayed. Counseling should be given to prevent possible secondary transmission. Abstinence from sexual contact is desirable. If this is not possible, any sexual contact should be protected with the use of a condom. Counseling for prevention of other modes of secondary transmission, such as through blood or organ donation, should also be provided.

No laboratory evaluation is required prior to initiation of chemoprophylaxis. If therapy is continued after five days, baseline tests should be performed on the Exposed. **Drug toxicity monitoring at baseline and at 2 weeks after starting chemoprophylaxis should include a complete blood count and hepatic chemical function tests (total bilirubin, AST, ALT, alkaline phosphatase)**. If toxicity is noted (i.e. hemoglobin < 80 mg/l, three-fold increase in liver function tests, neutropenia < 1000/mm^3), dose reduction or dose substitution should be considered, after consultation with an infectious disease specialist.

11.5) Availability of Chemoprophylactic Regimens

Five-day starter kits for zidovudine (200 mg three times a day) and lamivudine (150 mg twice a day) are provided by Manitoba Health through its supplier, Misericordia Health Centre Pharmacy, to selected depots throughout the province, primarily hospital emergency departments. Facilities that are not designated depots may obtain starter kits when required from a depot in their region. If after the initial five days of therapy it is decided to continue for the full 28-day course (an additional 23 days), the additional drugs required will also be provided to the depot. However, Manitoba Health will not assume the cost of these drugs. It will be the responsibility of the client to do so, although it is expected in the case of occupational exposures that either the employer will cover the cost, or that a claim will be filed with the Workers' Compensation Board. The usual Pharmacare procedures and deductibles applicable to a given client would apply to the additional drug costs associated with non-occupational exposures (or occupational exposures where the cost is not covered by the employer or the Workers' Compensation Board). Refill starter kits and additional drugs required to complete 4-week courses of therapy are available upon request from the Misericordia Health Centre Pharmacy (telephone 788-8235, fax 774-8488) in a timely fashion following an order being placed. Drugs required to complete a 4-week course are available at a competitive (cost) price and regimens are pre-packaged, with appropriate information for the provider and client included. Costs associated with drug ordering and shipping are covered by Manitoba Health.

11.6) Further Information

Further information on this protocol can be obtained during regular office hours (8:30 to 4:30) by contacting your local public health office. The appropriate public health office is the one serving the place of residence of the Exposed. After hours, contact the Medical Officer of Health on-call at 945-0183.

12. Procedures for Laboratory Testing

All diagnostic testing for hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV) in Manitoba is performed at CPL (945-6123).

12.1) Testing Schedule

- Hepatitis B surface antigen (HBsAg) and antibody (anti-HBs) testing - daily Monday to Friday; results available within 24-48 hours.
- Anti-HCV testing - daily Monday to Friday; results available within 24-48 hours.
- Anti-HIV testing - daily Monday to Friday; negative results available within 24-48 hours.

12.2) Sample Collection

- Samples from the Source and the Exposed should be taken at the same time to facilitate timely intervention if required.
- Two tubes of blood are required; one for HBV and HCV, and the other for HIV.
- Record the requisition numbers for future reference.

12.3) Requisition

- Complete the routine CPL requisition form for HBV and HCV testing. For HIV testing, the specific HIV requisition form must be filled out completely, with code and epidemiological data. Label both forms NEEDLESTICK or EXPOSURE TO BLOOD/BODY FLUIDS and indicate clearly whether the sample is from the Source or the Exposed.
- Provide the following additional information on requisition forms:
  a) Name of the person to whom results are to be provided. If arrangements have been made to phone results, include telephone number of person to whom results are to be phoned.
  b) Name/code of Source if known
  c) Time and type of exposure
  d) HBV vaccination status of Exposed

12.4) Urgent Test Requests

- Phone the laboratory (945-6143) and ask for the Serology Department:
  - to inform the lab how and when the samples will arrive;
  - to provide the name of the person who is to be notified of the results;
  - to provide the name (or code) of the Exposed and Source; and
  - to ensure that the specimens will receive prompt attention.
- After hours the telephone is answered by the CPL security guard. Ask to speak to the physician on call.
- When phoning for results of urgent tests, please ensure that you provide the requisition numbers as well as the name/code of the patient.

13. Abbreviations and Definitions

HBV	Hepatitis B virus
HBsAg	Hepatitis B surface antigen
anti-HBs	Antibody to Hepatitis B surface antigen
anti-core IgG	IgG antibody to core antigen
HBIG	Hepatitis B Immune Globulin
HCV	Hepatitis C virus
anti-HCV	Antibody to Hepatitis C virus
HIV	Human immunodeficiency virus
anti-HIV	Antibody to human immunodeficiency virus
PEP	Post-exposure prophylaxis
ZDV	Zidovudine - an anti-retroviral drug
3TC	Lamivudine - an anti-retroviral drug
Exposed	An individual exposed to blood/body fluids
Source	An individual whose blood/body fluids represents the source of exposure

14. Assessing the Nature of Exposures: Occupational and Non-occupational

The foregoing guidelines are directed at occupational exposures to blood or body fluids, and were formulated primarily with needlestick injuries in mind. However, they can also be applied to other kinds of occupational exposures, as well as to non-occupational exposures. There are a wide variety of such exposures and they must be assessed on a case-by-case basis, but the following examples illustrate how the guidelines might be applied. For exposures in children, consult an infectious disease specialist regarding drug dosages for HIV post-exposure prophylaxis.

14.1) Human Bites

As per the guidelines 2, saliva is considered to be a high-risk body fluid for transmission of HBV, but not HIV or HCV. Therefore for HBV, Protocol 2 should be followed. For HIV and HCV, an assessment must be made as to whether the human bite was associated (or likely associated) with transfer of blood. The presence of visual blood is particularly relevant. If blood transfer was unlikely, then no further action is required. If it was likely, then Protocol 2 should be followed for HCV and HIV; specifically, PEP should be initiated if the bite was deep, and if risk factors for HIV infection are known to be present in the Source. Judgement may have to be exercised as to the likelihood of the presence of risk factors for HIV infection. PEP may be discontinued according to the guidelines 11.3.

14.2) Exposure to blood from cuts, nosebleeds, etc., as a result of fights or sports injuries

Again, an assessment must be made as to whether a significant exposure has occurred, or has likely occurred, i.e., blood from a source has come into contact with an exposed person's body cavity, subcutaneous tissue, or non-intact, chapped or abraded skin or mucous membrane. If not, then no further action is required. If so, then for HBV, Protocol 2 should also be followed. Protocol 2 should also be followed for HCV and HIV; specifically, PEP should be initiated if there is deep penetration of the Exposed's skin or other tissue, and if risk factors for HIV infection are known to be present in the Source. Judgement may have to be exercised as to the likelihood of the presence of risk factors for HIV infection. PEP may be discontinued according to the guidelines 11.3.

14.3) Exposure to abandoned needles

This type of exposure may occur in schoolyards, laundry bags, etc. Protocol 1 for HBV, HIV and HCV should be followed. PEP and follow-up testing for HIV is generally not recommended (see Protocol 1 and the guidelines 11.2), but may be undertaken for purposes of documentation, or if the exposed person requires reassurance.

14.4) Exposure as a result of needle-sharing

This type of exposure is significant, and in the case of HIV infection, would constitute the equivalent of a High Risk Exposure, with risk factors for HIV present in the Source. Protocol 2 should be followed for HBV, HIV and HCV; specifically, PEP for HIV should be initiated, but may be discontinued according to the guidelines 11.3.

14.5) Sexual assault

In the case of sexual assault, if semen has come into contact with genital, anal or oral tract mucosa, then a significant exposure has occurred. For HBV, Protocol 2 should be followed. For HIV, the equivalent of a High Risk Exposure may be assumed, but often the identity of the Source is unknown or the Source cannot be tested for HIV. PEP would generally be indicated, but it is important to counsel the client as to the probability of transmission given an HIV-positive source (in the order of 1-2 per thousand, but probably somewhat higher if genital/rectal trauma/bleeding has occurred), as well as the probability of the assaulter being HIV infected (unknown, but even among identifiable high risk behaviour groups in Manitoba, probably not higher than 10-15%). The overall probability of HIV infection therefore is very small (probably less than 1 in 10,000), but not zero. Ultimately, the client (victim) must make an informed decision as to whether this risk is sufficient to accept prophylaxis.

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