SOP on Occupational Exposure to Blood and Body Fluids and Post Exposure Prophylaxis

1. Purpose

This chapter deals with the occurrence of occupational exposure of healthcare workers to some blood-borne viral pathogens (e.g., HIV, HBV and HCV); ways of minimizing/preventing such exposures; and the need for prompt institution of Post Exposure Prophylaxis (PEP) after such exposure. In the occupational settings, there is a risk that healthcare providers will be exposed to blood borne pathogens like HIV, HBV, and HCV during working hours.

2. Definition

An exposure that may place a HCP at risk of blood-borne pathogens is defined as: a percutaneous injury (e.g., needle stick or cut with a sharp instrument); contact with the mucous membrane of the eye or mouth; contact with non-intact skin (particularly when the exposed skin is chapped, abraded, or affected with dermatitis); or contact with the intact skin when the contact duration is prolonged (e.g., several minutes or more) with blood or other potentially infectious body fluids.

3. Potentially infectious body fluids include blood, semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, amniotic fluid or other body fluids contaminated with visible blood.
4. The following are not considered potentially infectious, unless visibly contaminated with blood: Faeces, nasal secretions, saliva, sputum, sweat, tears, urine and vomitus. Any direct contact (i,e., contact without barrier protection) with the concentrated virus in a research laboratory or production facility requires clinical evaluation.
5. Factors that influence risk of infection:
   - 5.1 Various epidemiological and laboratory studies have shown that the risk of infection, following exposure, varies with the type of exposure:
   - 5.2 Type of needle (hollow bore vs. Solid)
   - 5.3 Device visibly contaminated with patients' blood
   - 5.4 Depth of injury
   - 5.5 The amount of blood involved in the exposure
   - 5.6 The amount of virus (viral load) in the exposed blood/body fluid at the time of exposure
   - 5.7 Timely (< 2 hours and up to 72 hours) availability and efficacy of the PEP.

6. The essentials of Sharp precautions

6.1 Blood, blood products, all body fluids, and materials contaminated with them are considered as infectious for HIV, HBV and HCV.

6.2 Use appropriate barrier precautions to prevent exposure to skin and mucous membranes. Wear gloves, gowns/aprons, masks, and goggles, while handling all potentially infectious material.

6.3 Take special care of handling sharp objects (like needles, lancets, scalpels, etc.) to avoid injuries:

6.4 Avoid unnecessary use of sharps and needles

6.5 Disposable needles should be used

6.6 Never recap needles

6.7 Never break/bend needles by hand

6.8 Needles/sharps should not be left on trolleys and bed side tables and must be disposed of immediately

6.9 Never pass used sharps from one person to another directly

6.10 Dispose sharps in a puncture resistant container containing 1% sodium hypochlorite solution

7. Dos and Don'ts for the exposed individual

7.1 Don'ts

7.1.1 Do not panic

7.1.2 Do not place the pricked finger into the mouth reflexively

7.1.3 Do not squeeze blood from wound

7.1.4 Do not use Bleach, alcohol, iodine, antiseptic, detergent, etc.

7.2 Do's

7.2.1 Stay calm

7.2.2 Remove gloves, if appropriate

7.2.3 Wash exposed site thoroughly with running water and soap. Irrigate thoroughly with water, if splashes have gone into the eyes or mouth

7.2.4 Report to the nurse in-charge/PMO who will inform ICN.

8. Steps for post exposure prophylaxis

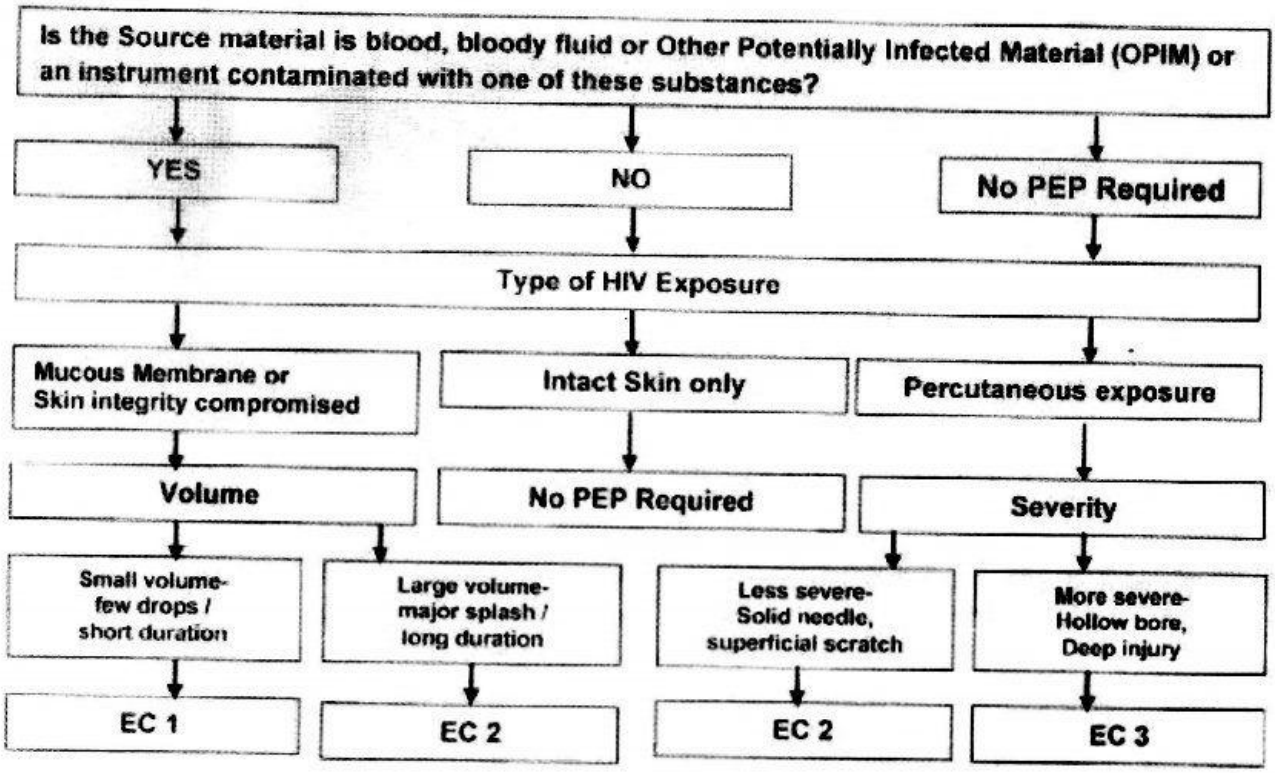
8.1 **First Aid:** Management of Exposed Site

8.1.1 **For skin:** if the skin is broken after a needle stick or sharp instrument, immediately wash the wound and surrounding skin with water and soap, and rinse. Do not scrub. Do not use antiseptics or skin washes (e.g., bleach,chlorine,alcohol). Wash the area immediately after a splash of blood or bodily fluid on unbroken skin. Do not use antiseptics.

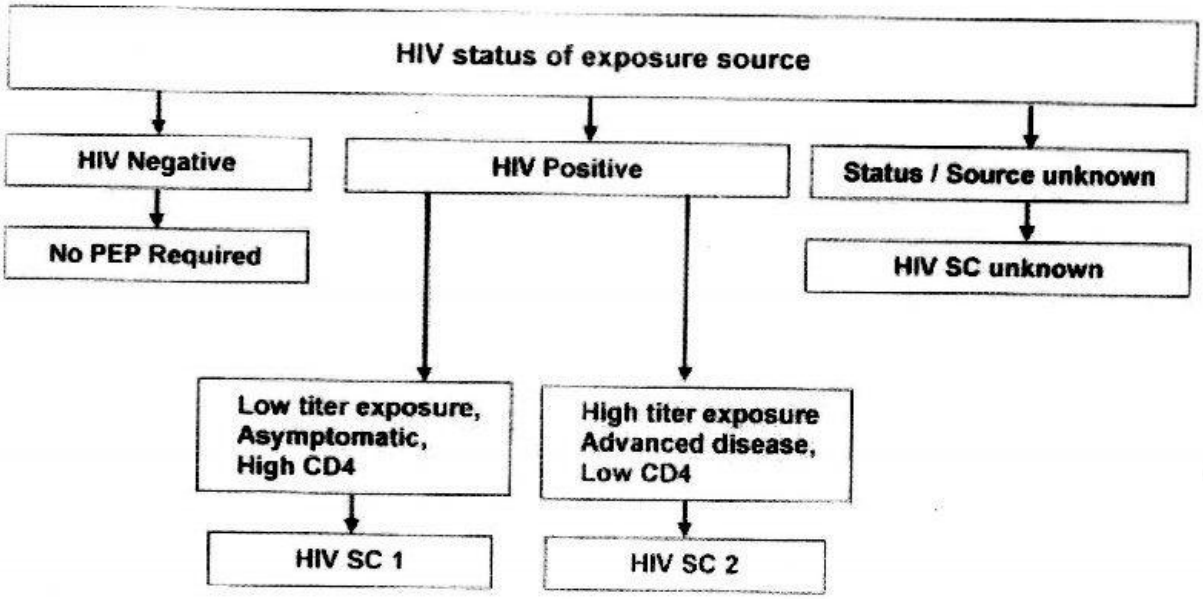
8.1.2 **For the eye:** immediately irrigate the exposed eye thoroughly using water or normal saline. If wearing contact lenses, leave them in place while irrigating. Once the eye is cleaned, remove the contact lens and clean them in a normal manner. Do not use soap or disinfectant in the eye.

9. Assessing the exposure Code

Annexure 1: HIV Exposure Code



Annexure 2: HIV Source Code



1. **PEP recommendations**
   a. **Occupational Exposure**

Exposure Codes *	HIV Source Code**	PEP Recommendations	Duration
1	1	Not warranted	28 days
1	2	Recommended	
2	1		
2	2		
3	1 or 2		
2/3	Unknown	Consider PEP, if HIV prevalence is high in the given population & risk categorisation	

PEP regimen

a. Wherever PEP is indicated and source is ART naive or unknown: recommended regimen is **Tenofovir 300 mg + Lamivudine 300 mg + Efavirenz 600 mg** once daily for 28 days. Wherever available, single pill containing these formulations should Ibe used. Dual drug regimen should not be used any longer in any situation for PEP.

b. The first dose of PEP regular should be administered as soon as possible, preferably within 2 hours of exposure and the subsequently dose should be given at bed time with clear instruction to take it 2-3 hours after dinner & to avoid fatty food in dinner.

c. In case of intolerance to Efavirenz, regimen containing Tenofovir + Lamivudine + PI (ATV/r or LPV/r) can be used after expert consultation by an experienced physician

d. In case of exposure where Source is on ART, Tenofovir 300 mg + Lamivudine 300 mg + Efavirenz 600 mg should be started immediately. And an expert opinion should be sought urgently by phone/e—mail from CoE/ART Plus center

e. Appropriate and adequate counselling must be Provided regarding possible side effects adherence and follow up protocol

Follow up

- HIV Antibody testing should be done at baseline, 3 months and 6 months post-exposure to ensure no transmission has occurred.
  - o If the test at 6 months is negative, no further testing is recommended.
  - o Advice exposed persons to use precautions to prevent secondary transmission during the follow up period.

10.2 POST EXPOSURE PROPHYLAXSIS FOR EXPOSURE TO HBV

10.2.1 The risk of infection with hepatitis B virus (HBV) can be avoided by decreasing exposure to blood and body fluids and through vaccination.

10.2.2 Post-exposure prophylaxis (PEP) varies with the immune status of the HCW.

10.2.3 If PEP is required it should be administered as soon as possible (preferably within 24 hours).

10.2.4 Recommended post-exposure prophylaxis for exposure to hepatitis B virus

Vaccination and antibody response status of exposed workers*	**Source HBsAg† positive**	**Source HBsAg† negative**	**Source unknown or not available for testing**
Unvaccinated	Hepatitis B immunoglobulin(HBIG) single dose and initiate vaccination	Initiate HB vaccine series	Initiate HB vaccine series
Previously vaccinated			
Known responder	No treatment	No treatment	No treatment
Known Non responder	HBIG x 1 and initiate revaccination or HBIG X 2	No treatment	If known high-risk source, treat as if source were HBsAg positive
After one series (3- dose) of vaccination	HBIG single dose and initiate revaccination	No treatment	If source known to be high-risk: treat as if source were HBsAg positive (HBIG single dose and initiate revaccination)
After 2 series (6 doses) of vaccination	HBIG two doses (separated by 1 month)	No treatment	If source known to be high-risk: (treat as if source were HBsAg positive) HBIG single dose and initiate revaccination

Antibody response unknown	Test exposed person for anti-HBs: If ≥10 mIU/mL: no Treatment If <10 mIU/mL: HBIG single dose and vaccine booster	No treatment	Test exposed person for anti-HBs If ≥10 mIU/mL: no Treatment If <10 mIU/mL: Initiate revaccination

- If the HCW is unimmunized or a non-responder (did not seroconvert to the vaccine) or has antibody levels to HBsAg less than 10 IU/mL), and sustains a needle-stick injury from a patient with evidence of chronic HBV (HBsAg positive), they should be given HBIG (hepatitis B hyper-immune globulin) 0.06ml/kg as soon as possible, preferably within 24 hours and should simultaneously start/reinitiate the course of HBV immunization with three dose of hepatitis B vaccine at a different site for unimmunized/previously unfinished second hepatitis B series. The second and third doses should be separated by at least 2 months interval. If the HCW has had two series of the HBV vaccine and was still a non-responder, they should receive a second dose of HBIG, 1 month after the first dose.

10.3 POST EXPOSURE PROPHYLAXSIS FOR EXPOSURE TO HCV

There is currently no recommended PEP for hepatitis C virus (HCV). Perform baseline and follow-up testing for anti-HCV and alanine aminotransferase (ALT) at baseline, 3 months and 6 months after exposure.