

**ADVISORY 12.1: NEEDLESTICK, OTHER PERCUTANEOUS AND MUCOUS
MEMBRANE EXPOSURES**

POLICY

University Health Services (UHS) will be responsible for epidemiological surveillance and management of all potential exposures to Human Immunodeficiency Virus (HIV) and Hepatitis B and C by a needlestick, a body fluid splash, or a sharp injury from a source with known or suspected infection.

It is the policy of UHS to recommend and offer post-exposure prophylaxis (PEP) in accordance with the Public Health Service (PHS) recommendations (MMWR, May 15, 1998, Vol. 47.)

PROCEDURE

- A. Appropriate wound care should be implemented immediately by the employee or student, i.e., wash the injury site and apply antiseptic. If the exposure is mucous membrane (i.e., eyes), copious irrigation with tap water should be performed immediately for 15 minutes.
- B. An employee or student who sustains an injury with a needle or sharp object, or sustains a mucous membrane splash with blood or other body fluid must report the exposure IMMEDIATELY. The exposure is to be reported to UHS during working hours (Monday-Friday, 7:00 a.m. to 4:00 p.m., except University holidays and weekends) or to the Emergency Room at University Hospital, Inc. if the exposure occurs after regular hours. The injury can also be reported to UHS by calling 584-STIX (584-7849).
- C. It is imperative that exposures be reported **IMMEDIATELY**. If indicated, post-exposure prophylaxis (PEP) should be started within 2 hours of the exposure if possible.
- D. University Health Services (UHS) will assist the employee or student in completing the appropriate University of Cincinnati report forms [A1352(a) and A1352(b)].
- E. **Source Patient**
Whenever the patient, who is the source of the exposure (source patient) can be identified, the employee/student or their supervisor must notify the senior resident physician, the chief resident or the attending physician so that an HIV consent form (UMC 250) is completed and required blood tests are ordered (if not already available). Required lab tests on the source patient include: Hepatic profile, HIV antibody and Needlestick Profile I (includes Hepatitis B Surface Antigen (HBsAg), Hepatitis B Core IgM (HBcIgM) and Hepatitis C Antibody).

Source Patient Consent

An HIB consent form (UMC 25) must be completed prior to testing the source patient and this consent documented on the lab requisition. Consent for HIV testing on source patients should be obtained in accordance with the University Hospital policy on HIV testing (see HP/P I-813, "Consent for HIV Testing"). If a patient is unable to give consent or refuses to give consent, the Chairperson or designee of the Infection Control Committee should be notified. In addition, the physician who orders the tests (attending or resident physician) is responsible for appropriate pre and post test counseling with regards to HIV testing.

If the source patient is unknown, the employee/student should be evaluated for PEP and will be followed up in 6 months for lab work.

F. **Employee/Student**

The employee/student must report in person to UHS immediately when an exposure occurs. Blood will be drawn for the following tests: hepatic profile, HIV antibody and Needlestick Profile II (includes Hepatitis B surface antigen, Hepatitis B surface antibody, Hepatitis B core antibody (IgG) and Hepatitis C antibody). Consent must be requested and obtained for HIV testing to be done. Appropriate counseling and treatment will be provided at that visit.

If the injury or exposure occurs at a health care facility other than the University Hospital, the employee/student must notify the Employee Health Department at that facility so that the source patient labs can be obtained. The employee/student must also follow-up with UHS.

IF UHS IS NOT OPEN:

1. The employee/student should call the Needlestick Hotline (584-STIX) immediately for reporting the incident, further instruction and follow-up information.
2. The employee/student must go to the University Hospital Emergency Room, if medically indicated, at the time of the incident.
3. If the injury or exposure occurs at an outlying campus (i.e., Raymond Walters College or Clermont College), the employee/student should seek medical treatment at the nearest hospital and notify UHS as soon as possible.
4. If the source patient is known to be HIV positive, hepatitis surface antigen positive (HBsAg) or hepatitis C antibody positive, the employee/student should immediately go to the University Hospital Emergency Room. The UHS physician on call may be contacted through the hospital operator (584-PAGE).
5. **Any employee or student who sustains an exposure must report to UHS, in person, on the next day of operation of the University Health Services even if treatment has been provided in the University Hospital Emergency Room.**

G. UHS will render treatment to the employee/student base on source patient (donor) results. All employees with exposures will be offered Hepatitis B vaccine unless previously known to be immune, and tetanus toxoid booster, if needed.

H. All UHS Physician Report Forms and Accident Reports will be sent to the University's Environmental Health & Safety (ML #0218) and Benefits (ML #0099) departments.

SPECIFIC TREATMENT

A. Hepatitis Exposure: The employee/student will be managed according to the specific characteristics of the exposure as outlined below:

1. Hepatitis B: If the source patient is HBsAg and/or anti-HBc IgM(+):
 - a. Unvaccinated Employee/Student:: If the employee/student is unvaccinated and non-immune, give Hepatitis B Immune Globulin (HBIG) immediately and begin HBV vaccine at a different site.
 - b. Vaccinated Employee/Student:
 1. If the exposed vaccinee has not completed vaccination and has inadequate antibody levels (< 10 mIU/ml), one dose of HBIG should be administered and vaccination completed as scheduled.
 2. If exposed vaccinee is shown to have inadequate antibody on testing (< 10mIU/ml), but has been previously known to have protective levels of antibody, a booster dose of HBV should be offered.
 3. If the exposed vaccinee is known not to have responded to immunization, 2 doses of HBIG should be given.

4. If the exposed vaccinee is shown to have inadequate antibody on testing and has not previously been shown to have protective antibody levels, give HBIG and a booster dose of vaccine.
 5. If the exposed vaccinee is shown to have adequate antibody, no treatment is indicated.
- c. Naturally Immune Employee/Student: No treatment is indicated.
- B. HIV Exposure (Potential and Known)
1. Each exposure should be evaluated for potential to transmit HIV based on the type of body substance involved and the route and severity of the exposure based on the PHS guidelines for PEP (see attachments from MMWR, May 15, 1998).
 2. If the source patient is known to have HIV infection, available information about this person's stage of infection (i.e., asymptomatic or AIDS), CD4 and T-cell count, results or viral load testing, and current and previous antiretroviral therapy, will be gathered, if available, for consideration in choosing an appropriate PEP regimen. The Infectious Disease Center at Holmes is available for consultation in the use of PEP and possible PEP regimens based on source patient information. If this information is not immediately available, initiation of PEP, if indicated, should not be delayed; changes in the regimen can be made after PEP has been started.
 3. Recommendations for PEP should be explained to the employee/student who sustains an occupational exposure.
 4. If PEP is initiated, the employee/student should have baseline CBC and renal tests in addition to other baseline labs. Female employees/students should also have a urine pregnancy test. The lab tests should be repeated every 1-2 weeks after starting PEP. If PEP is initiated in the University Hospital Emergency Room, the employee/student must report to UHS on the next regular workday so the medication can be continued and follow-up can be arranged.
 5. PEP should be administered for 4 weeks if tolerated. Any adverse reactions to the medications should be reported to UHS promptly.
 6. If the source patient's HIV test is negative, the employee or student will be notified and PEP may be discontinued.
 7. A female employee/student who has had an occupational exposure should be counseled to abstain from sexual contact or use a barrier (condom) contraceptive to avoid pregnancy and the possibility of transmitting HIV infection for at least 6 months during and after treatment. A male employee/student should be counseled to abstain from sexual contact or use a condom to avoid the possibility of transmitting HIV infection for 6 months after exposure.
 8. The employee/student should be instructed not to donate blood for 1 year from the date of exposure.
 9. The employee/student should have advised to report any and all illnesses which occur within the initial six month period following the exposure, specifically the occurrence of sore throat, skin rashes, fever, malaise, joint pain, muscle aches, enlargement of lymph nodes and any acute infections.
 10. REACH may be contacted if the employee or the student needs additional counseling.

C. Follow-Up:

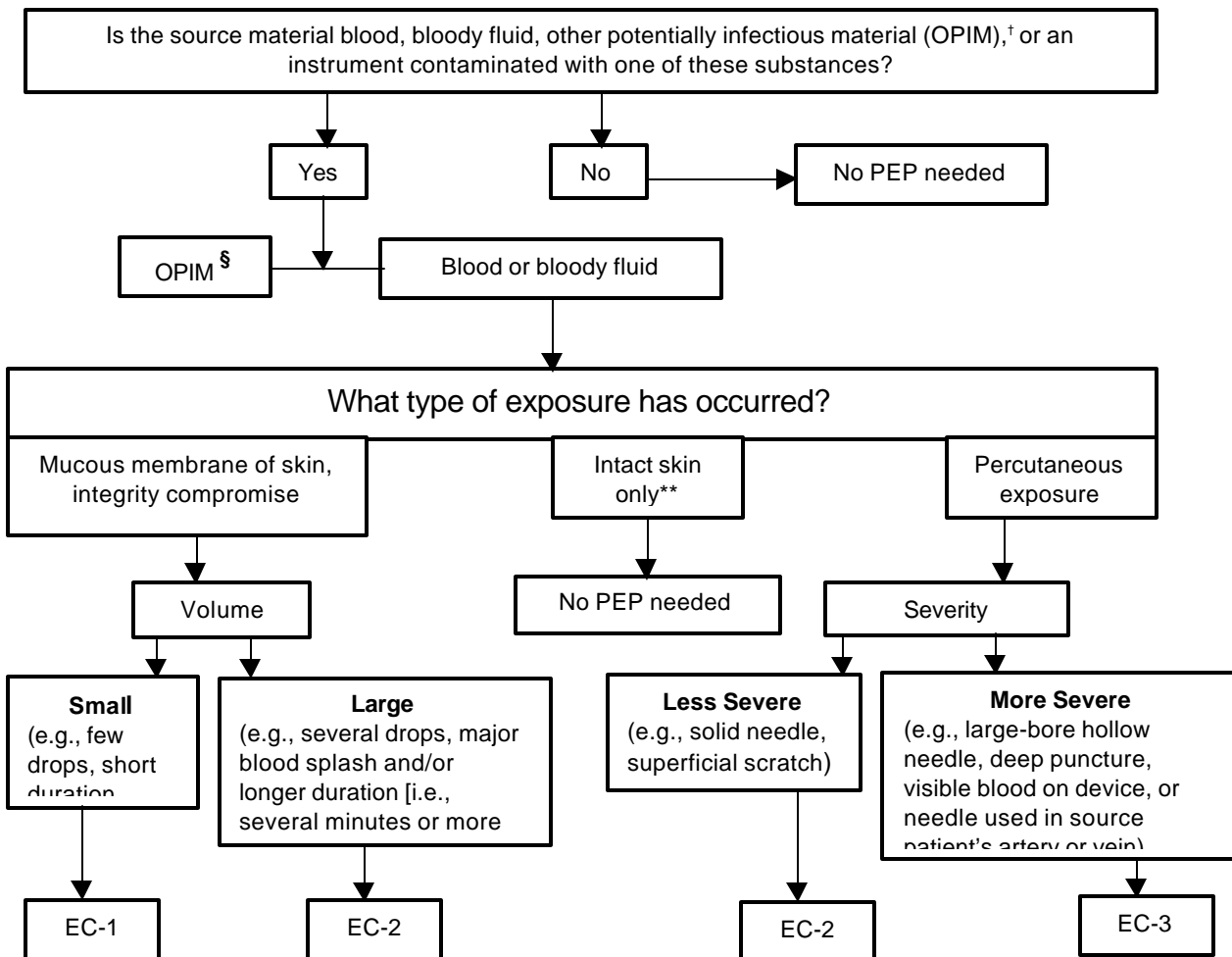
Any employee/student with an occupational exposure to HIV or HCV (regardless of whether they receive PEP) are offered and encouraged to complete a medical evaluation, including HIV antibody and/or HCV tests and Hepatic Profile at baseline, and at 6 weeks, 12 weeks, 6 months

and 12 months following the exposure.

MMWR
(May 15, 1998)

FIGURE 1: Determining the need for HIV post-exposure prophylaxis (PEP) after an occupational exposure*

STEP 1: Determine the Exposure Code (EC)



* This algorithm is intended to guide initial decisions about PEP and should be used in conjunction with other guidance provided in this report.

† Semen or vaginal secretions; cerebrospinal, synovial, pleural, peritoneal, pericardial, or amniotic fluids; or tissue.

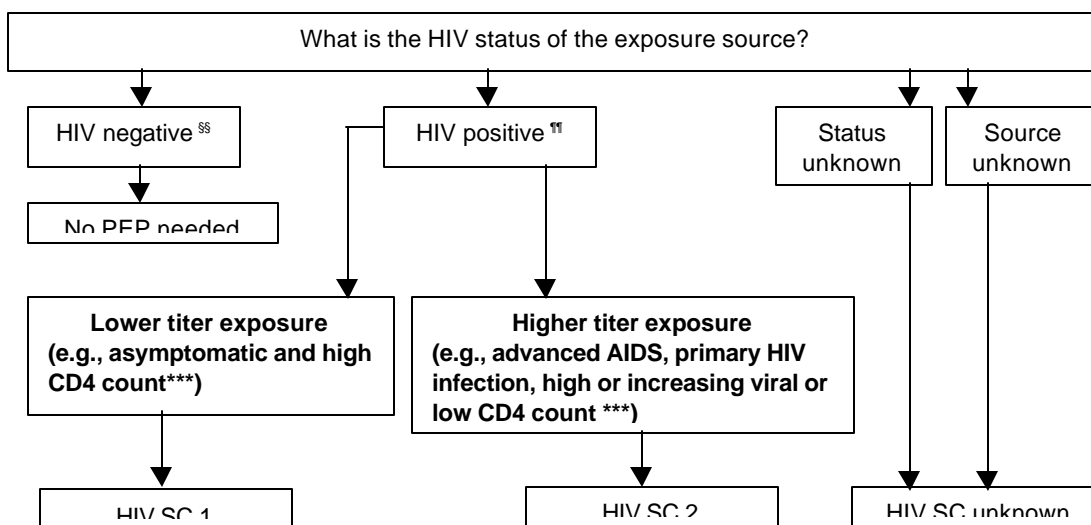
§ Exposures to OPIM must be evaluated on a case-by-case basis. In general, these body substances are considered a low risk for transmission in health-care settings. Any unprotected contact to concentrated HIV in a research laboratory or production facility is considered an occupational exposure that requires clinical evaluation to determine the need for PEP.

† Skin integrity is considered compromised if there is evidence of chapped skin, dermatitis, abrasion, or open wound.

** Contact with intact skin is not normally considered a risk for HIV transmission. However, if the exposure was to blood, and the circumstance suggests a higher volume exposure (e.g., an extensive area of skin was exposed or there was prolonged contact with blood), the risk for HIV transmission should be considered.

†† The combination of these severity factors (e.g., large-bore hollow needle and deep puncture) contribute to an elevated risk for transmission if the source person is HIV-positive.

STEP 2: Determine the HIV Status Code (HIV SC)



^{§§} A source is considered negative for HIV infection if there is laboratory documentation of a negative HIV antibody, HIV polymerase chain reaction (PCR), or HIV p24 antigen test result from a specimen collected at or near the time of exposure and there is no clinical evidence of recent retroviral-like illness.

^{¶¶} A source is considered infected with HIV (HIV positive) if there has been a positive laboratory result for HIV antibody, HIV PCR, or HIV p24 antigen or physician-diagnosed AIDS.

^{***} Examples are used as surrogates to estimate the HIV tier in an exposure source for purposes of considering PEP regimens and do not reflect all clinical situations that may be observed. Although a high HIV tier (HIV SC 2) is an exposure source has been associated with an increased risk for transmission, the possibility of transmission from a source with a low HIV titer also must be considered.

STEP 3: Determine the PEP Recommendation

EC	HIVSC	PEP Recommendation
1	1	PEP may not be warranted. Exposure type does not pose a known risk for HIV transmission. Whether the risk for drug toxicity outweighs the benefit of PEP should be decided by the exposed HCW and treating clinician.
1	2	Consider basic regimen.^{†††} Exposure type poses a negligible risk for HIV transmission. A high HIV titer in the source may justify consideration of PEP. Whether the risk for drug toxicity outweighs the benefit of PEP should be decided by the exposed HCW and treating clinician.
2	1	Recommend basic regimen. Most HIV exposures are in this category; no increased risk for HIV transmission has been observed but use of PEP is appropriate.
2	2	Recommend expanded regimen.^{§§§} Exposure type represents an increased HIV transmission risk.
3	1 or 2	Recommend expanded regimen. Exposure type represents an increased HIV transmission risk.
Unknown		If the source or, in the case of an unknown source, the setting where the exposure occurred suggests a possible risk for HIV exposure and the EC is 2 or 3, consider PEP basic regimen.

^{†††} Basic regimen is four weeks of zidovudine, 600 mg per day in two or three divided doses and lamivudine, 150 mg twice daily.

^{§§§} Expanded regimen is the basic regimen plus either indinavir, 800 mg every 8 hours or nelfinavir, 750 mg three times a day.

Center for Disease Control & Prevention, (May 15, 1998). Public Health Service Guidelines for the Management of Health Care Worker Exposure to HIV and Recommendations for Post-exposure Prophylaxis. *MMWR*, 47 1-34.

Adv. 12.1: Needlestick, Other Percutaneous, and Mucous Membrane Exposures

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