University of the Virgin Islands School of Medicine

Policy Name and Section: ***Infectious/Environmental Hazard Policy***	Effective Date:	UVISOM Policy Number: ***024***
Responsible Authority: ***Associate Dean for Clinical Affairs***	UVISOM Document where Policy Available: ***UVISOM Student Handbook***	Approval Body and Date: ***Executive Council, Self-Study Committee, Curriculum Committee***

I. Purpose of Program

This program provides an approach to mitigating the risks from potential blood-borne pathogen exposures (BBPEs) for those exposed and for the institutions they represent. The real-time responses at the time of a potential exposure outlined in this program should facilitate standard of care (e.g., as per CDC recommendations) and to eliminate or minimize occupational exposure to bloodborne pathogens in accordance with OSHA standard 29 *CFR* 1910.1030, "Occupational Exposure to Bloodborne Pathogens."

This program delineates recommended actions for participants in UVISOM in case of an occupational exposure to potentially infectious blood or body fluids while participating in an approved rotation or practicum. This program is expected to reduce and prevent exposure to the Human Immunodeficiency virus (HIV), Hepatitis B virus (HBV) and other bloodborne pathogens.

In the course of education and training at UVISOM, students may, on rare occasions, be inadvertently exposed to blood-borne pathogens or toxins, or be injured while engaged in a training activity. Example of such exposures and injuries would include accidental needle sticks or splashes with bodily fluid.

This guide is to facilitate your process of getting immediate and proper assistance should you experience any of these untoward events. You should follow the instructions below, if you have been exposed to a blood-borne pathogen or toxin, or were injured while doing your education or training.

This program refers to original source documents to the extent feasible and the outlined recommendations should be viewed as guidelines only. It does not replace individual choice. Each exposed person has the right to weigh the risks and benefits and make his/her own choice about whether and when to take human immunodeficiency virus (HIV) PEP.

II. Prevention of Infection

Those electing to participate in clinical experiences should be up-to-date on their routine immunizations (e.g. tetanus/diphtheria/acellular pertussis, meningococcus, measles/mumps/rubella, Hepatitis B (HBV), varicella, influenza, pneumococcal vaccine (if indicated) and have proven immunity to applicable pathogens (e.g., hepatitis B - especially but not limited to those providing medical care). All persons providing care should use standard precautions.

III. Blood-borne Pathogen Exposure Information

Ultimately there is a risk for exposure to blood and/or bodily fluids during rotations. A significant exposure would include splashing of blood or bodily fluids onto a mucosal surface (in the mouth or conjunctiva), or onto an open skin-wound. Similarly, any contaminated object penetrating your skin (e.g. scalpel blade or needle) would also be a significant exposure. Blood and/or body fluids splashing on clothes or intact skin do not constitute a significant exposure since there is no identifiable risk from these occurrences.

Definition of Exposure:

Occupational exposure is defined as any contact with potentially infectious body fluid as a result of an injury with a needle or other sharp instrument, or via mucous membranes (e.g., splash to eye) or any existing cutaneous condition (wound, eczema etc).

- **Potentially infectious body fluids include**: blood, cerebrospinal fluid (CSF), synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, semen, or vaginal secretions.
- **Non-infectious body fluids unless visibly bloody include:** feces, nasal secretions, saliva, sputum, sweat, tears, urine and vomitus.

Table 2. Risk for transmission after occupational exposure to infected blood **unless already immune by vaccine or previous illness*

Definition and brief overview of post-exposure prophylaxis (PEP):

PEP refers to medications given to prevent infection after exposure. The prophylactic treatment offers both potential benefits and risks to the exposed person. This program provides recommendations about when to take PEP and describes how PEP should be administered, but it does not mandate that PEP be taken when recommended, or not taken when not recommended. The exposed person must be advised of the risks and benefits and make their own decision whether or not to take PEP.

Once the decision is made to take PEP, start **as soon as possible and within 72 hours**. **PEP confers an 80% reduction in risk if started within 2 hours and taken consistently for the full 28 days**.

*Short-term side effects of the medication should be anticipated; weigh risk versus benefit.

The goal of achieving source HIV test is to obviate or halt PEP. If the source is negative and there has been no high-risk behavior by the source during the prior 3 months, then PEP should be halted. PEP is specific for potential HIV exposures only.

Treatment for Hepatitis B exposure to one who is not already immune would be HBIG (immune globulin) administered as soon as possible and within 7 days; however, this is not routinely available and carries additional risks as it is made from pooled blood products. There is no post-exposure regimen for exposure to Hepatitis C virus (HCV). However, treatment for cure can be made available if one were to convert from negative to positive for hepatitis C.

Agents	**Exposure mode**	**Risk of infection**
HIV	Percutaneous exposure	0.3%

HIV	Mucocutaneous contact	0.03-0.09%
HBV	Percutaneous exposure	10-30%*
HCV	Percutaneous exposure	0-7%

IV. Actions to Follow in Case of Exposure

1. If you are stuck with a used needle, sharp object contaminated with blood, splashed in the eye, nose and/or mouth with blood or bodily fluid containing visible blood, you (the exposed person) will stop what you are doing **as soon as it is safe to do so** (for patient and provider) and do the following:

    - Dispose of contaminated sharp safely; do not re-use on patient after puncture of health care provider
    - First aid to exposed area to include appropriate decontamination (depending on exposed tissue): For skin of hands, extremities, or trunk scrub with soap and water, and encourage bleeding. If you have been splashed with bodily fluid or sustained a needle stick, immediately flush the area with water for 5 minutes in the case of eyes or mucous membranes, or wash an area of skin for 5 minutes using Betadine® or Hibiclens® or any available soap. You can wipe the area afterwards with isopropyl alcohol. For eyes, rinse with clean room temperature running water.
    - In the case of injuries, be sure that you have addressed the immediate problem (stemmed the flow of bleeding for instance) and if you do not need 911-ambulance level of care, follow the procedure below. If you do need ambulance care, have someone call 911 immediately.

2. Alert supervisor or team leader. Do not delay the rest of the steps while waiting for the supervisor, if she/he is not immediately available.

3. As soon as exposed person completes administering first aid to the exposed area, he/she must proceed immediately to the Emergency Room for evaluation by the ER physician. Counseling will be provided by the ER physician, Nurse Practitioner or Physician Assistants.

4. **Exposed person contacts the Office of Student Affairs and Admissions and Tai Hunte, MD, Territorial Infectious Disease Control Specialist. Do not delay proceeding to the ER or initiating of PEP while awaiting consultation**.

5. Supervisor, group leader, exposed person, or delegate consents the source-patient and obtains sample for HIV test. The source has the right to decline and should not be pressured. The individual doing the consenting should, when feasible and in private, inquire about any recent high-risk behaviors. Information and test result to be utilized in PEP decision process. When feasible, evaluate the source-patient clinically for signs and symptoms of HIV, including signs and symptoms of primary HIV. If the source patient provides a history of engaging in high-risk behaviors in the last three months or is clinically suspected to have acute HIV infection, efforts should be made to test for HIV DNA by PCR. If this test cannot be performed, the patient should be considered “infected” for purposes of PEP decision-making.

6. **Lab Testing:** Base line labs will be drawn for Hepatitis B surface antigen and antibody, HIV ½

antibody, HCV RNA PCR viral load, and HTLV-I/II antibodies.

7. Begin PEP as directed. **PEP should be initiated as soon as possible after an exposure occurs. It must not be delayed for any reason. The first dose should be given, if indicated, while awaiting laboratory results**. There is no evidence on efficacy of PEP when initiated past 72 hours or more after an exposure. In the Emergency Room, you will receive a D-T booster shot, if you were stuck with a sharp object and have not had a booster in the past 10 years. Halt PEP as soon as a negative source-patient HIV test is available unless extenuating circumstances exist (e.g., concern about ongoing/recent high-risk behavior in source patient).

   The ER physician will determine the need to start on PEP medication based on the known HIV and Hepatitis status or the risk factors of the patient that the employee have been exposed to. PEP should be offered only if the baseline HIV test is nonreactive. If the HIV test of the source-patient returns negative, the employee should discuss with a physician if he/she should complete the 4 week course of PEP with antiretroviral (ART) mediations. Post exposure prophylactic treatment will be administered as recommended by the CDC.

8. **Supervisor, group leader, or exposed individual should keep notes regarding specific actions and decisions** as well as any side effects or impact on function. The supervisor, group leader, or exposed individual should consider readiness or safety issues with regards to ongoing service or participation.

9. Follow up will be done for results of lab work, and additional counseling. Patients who receive PEP should be monitored for drug toxicity. Testing should include a complete blood count including differential, and tests of hepatic and renal function at baseline and at two and four weeks after initiation of PEP. Patients treated with a protease inhibitor should also be monitored for hyperglycemia. HIV serologic testing at baseline, six weeks, three months, six months, and twelve months following the exposure with or without prophylaxis is important to identify HIV seroconversion.

<u>At an alternate clinical site or other setting during regular and non-regular business hours and holidays</u>

- Contact clerkship, module, elective or selective director of the clinical site.
- Inform resident or attending physician, as well as Tai Hunte, MD, Territorial Infectious Disease Control Specialist

- If HIV status of source is unknown, whenever possible, rapid HIV testing will be performed on source.
- If exposure occurs during UVI Health Services hours of operation and source HIV status is unknown, student will call UVI Health Services to speak with the medical director or his or her designee.
- If exposure occurs after Health Service hours of operation, or source is known HIV positive, student will proceed to nearest hospital emergency department for evaluation and treatment as deemed necessary.
- The student's clinical instructor and the student will report the exposure to the UVISOM Office of Student Affairs and Admissions.
    - The incident, including the names of all contact points, will be documented by the Office of Student Affairs and Admissions.
- Through a waiver of the in-network requirements specified in the United Healthcare Student

Health Services contract with UVISOM Health Services, BBP exposures and post-exposure prophylaxis can be obtained from immediately accessible medical facilities (both in-network and out-of-network) by medical students who are undergoing training in the clinical education environment in modules, clerkships, electives and selectives. Follow-up care for exposure must be obtained through arrangements with UVISOM Health Services and their arrangement with in-network providers.

- **Note: Students will be responsible for deductible specified in the United Healthcare Student Health Policy, or as specified in their health insurance policy (if other than United Healthcare Student Health.)*

Table 3. Recommended Laboratory Testing After Exposure

Time after exposure	
Initial labs (as soon as possible after exposure)	HIV, HCV and HBV antibody testing, CBC, CMP, urine HCG (females)
2 weeks*	CBC, CMP only if on HIV PEP
6 weeks	HIV antibody and HCV viral load** AST/ALT if source HCV-infected
3 months	HIV and HCV antibody** AST/ALT if source HCV-infected
6 months	HIV and HCV antibody** AST/ALT if source HCV-infected
12 months	HIV and HCV antibody** AST/ALT if source HCV-infected

**While on PEP, if symptomatic (e.g., lightheaded, nausea, vomiting, or diarrhea), then consider weekly labs for closer follow-up. **Additional HCV testing is indicated if source patient has a very high HCV viral load.*

V. Recommendations for Post-Exposure Prophylaxis (PEP)

Recommendations for HIV PEP:

The treatment course for HIV PEP is 4 weeks. One of the following combinations of 3 antiretroviral (ART) medications should be used providing the source-patient does not have known drug resistance to any of the following ART medications:

a. Tenofovir-emtricitabine (300/200 mg once daily) plus raltegravir (400 mg twice daily)
b. Tenofovir-emtricitabine (300/200 mg once daily) plus atazanavir (300 mg once daily) and ritonavir (100 mg once daily)
c. Tenofovir-emtricitabine (300/200 mg once daily) plus darunavir (800 mg once daily) and ritonavir (100 mg once daily) with food

d. Tenofovir-emtricitabine (300/200 mg once daily) plus lopinavir-ritonavir (200/50 mg two pills twice daily)
    - Tenofovir-emtricitabine is a combination pill called Truvada.
    - Tenofovir and emtricitabine are both nucleoside reverse transcriptase inhibitors. Lopinavir-ritonavir is a combination pill called Kaletra.
    - Lopinavir, atazanavir, darunavir, and ritonavir are protease inhibitors. Raltegravir is an integrase inhibitor.
    - Please note that ritonavir is given in combination with certain protease inhibitors solely to boost medication levels. It is not considered a 4th agent.
    - If tenofovir cannot be used (i.e., renal dysfunction), emtricitabine can be used alone in combination with the other listed protease inhibitors or integrase inhibitor.

If the source-patient is found to be HIV positive or at risk for HIV, whether or not the student elects to receive HIV post-exposure prophylaxis, the student is offered HIV testing through the Student Health Center within 7 days of the exposure, and again at 6 weeks, 3 months, and 6 months following the exposure.

It is the student's responsibility to follow-up with the Health Services for appropriate follow-up blood work and/or testing. The Health Services will be responsible for maintaining records.

Any student receiving immediate care in the emergency department should report to Health Services on the next regularly scheduled workday for follow-up care.

Should a student report that an exposure resulted in contraction of disease or disability, the student will be allowed to continue in the program to the extent that he or she does not pose a risk to self or others, based on their official activities.

Recommendations for hepatitis B:

If the student is not immune to hepatitis B, the hepatitis B vaccine series should be initiated immediately regardless of the source-patient's hepatitis B status.

If the source-patient's test result indicates current infection with Hepatitis B, and the student is not immune to Hepatitis B, the student will need to be tested for prophylaxis and schedule such an appointment as soon as possible. If the source-patient is known to be infected with Hepatitis B at the time of the exposure incident, the student will be offered prophylaxis immediately.

The following steps will be followed for the treatment for an exposure to Hepatitis B positive blood/body fluids is as follows:

1) If the student had previously completed the Hepatitis B immunization series, and follow up testing indicated an immune response, no further action with respect to Hepatitis B is required. If the student had previously completed the Hepatitis B immunization series but the follow up status is not known, a serum specimen is obtained from the student and tested for Hepatitis B surface antibody. If results indicate that the student is immune, no further action with respect to Hepatitis B is required. If results indicate that the student may not be immune, the student is given hepatitis B vaccine, 1.0 ml, deltoid, as well as HBIG.

2) If the student did not receive the complete series, the student is offered Hepatitis B immune globulin (HBIG), 0.06ml/kg, intramuscular in the gluteus maximus. Concurrently, the student is offered his/her first dose of Hepatitis B vaccine, 1.0 ml, intramuscular in the deltoid.

3) The above prophylaxis is to be administered within 7 days of the exposure incident.

4) The second and third doses of Hepatitis B vaccine are to be administered 30 days and 6 months, respectively, after the first dose, intramuscular, deltoid.

5) If the student refuses hepatitis B vaccine or was previously known to be a non-responder, a second dose of HBIG is administered 25 - 30 days after the first dose.

Recommendations for hepatitis C PEP:

- There is no recommendation for hepatitis C PEP.
- Students exposed to hepatitis C from a source-patient should receive the following testing:
    - Baseline testing for anti-HCV, HCV RNA, and alanine aminotransferase (ALT)
    - Follow-up testing for HCV RNA between four and six weeks after exposure
    - Follow-up testing for anti-HCV, HCV RNA, and ALT between four and six months after exposure

VI. HIV/AIDS, HBV and Other Infectious Diseases Policy

When an HIV or HBV infected individual comes to the attention of the University, whether a student, faculty, or staff member, confidentiality of the individual as well as the individual's welfare and that of the university community must be respected. Infectious diseases will be handled appropriately and reported according to Territory requirements.

At matriculation orientation all students receive verbal and written protocols and procedure for care and treatment should exposure occur. Should an exposure occurs, students should immediately report exposure to any potentially infectious material (blood, open wounds, etc.) to their clinical instructor or appropriate agency.

If exposure results in contraction of disease or disability, the student will be allowed to continue in the program to the extent that he or she does not pose a risk to self or others.

The UVISOM adheres to the most updated guidelines provided by the Centers for Disease Control and Prevention on the management of healthcare professionals with infectious diseases. For more information, visit Bloodborne Infectious Diseases: HIV/AIDS, Hepatitis B, Hepatitis C.

VII. Student Incident Policy

Any accidents or other incidents involving students (e.g., bloodborne pathogen exposures or needlesticks) will be reported to the Office of Student Affairs and Admissions of the UVISOM and to UVISOM Health Services (if applicable). The Associate Dean for Student Affairs and Admissions will provide assistance should students encounter difficulties and, when applicable, will inform and coordinate follow-up care with UVISOM Health Services. The student's clinical instructor and the student will report the incident to the UVISOM Office of Student Affairs. The incident, including the names of all contact points, will be documented by the Office of Student Affairs and Admissions. Depending on the nature of the incident,

emergency services (911) may be called to assess the student.

VIII. Contact Information:

Tai Hunte, MD, Territorial Infectious Disease Control Specialist

(340) 776-8311

IX. Sources:

1. Kuhar DT, Henderson DK, Struble KA, et al. for the US Public Health Service Working Group. Updated US Public Health Service Guidelines for the Management of Occupational Exposures to Human Immunodeficiency Virus and Recommendations for Postexposure Prophylaxis. *Infection Control and Hospital Epidemiology* 2013;34(9:875-892. Available at: http://www.jstor.org/stable/10.1086/672271.

2. Postexposure Prophylaxis following Occupational Exposure to Hepatitis B Virus. Available at: http://depts.washington.edu/hepstudy/hepB/prevention/pep_oe/discussion.html.

3. OSHA Bloodborne Pathogen Standard 1910.1030. Available at: http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051.