



Guidelines for Blood-borne Pathogen Exposure and Post-Exposure Prophylaxis for BMC Resident Physicians Participating in Global Health Electives

*Revised **February 2014** by Gabrielle Jacquet MD, MPH (Emergency Medicine), Sabrina Assoumou MD (Infectious Diseases), Natasha Hochberg MD (Infectious Diseases, Travel Clinic), Elizabeth Barnett MD (Infectious Diseases, Travel Clinic) and Diana Seufert MSN, RN, NP (Occupational and Environmental Medicine)*

Table of Contents

- I. Purpose of Program**
- II. Prevention of Infection**
- III. Pre-travel Preparation**
- IV. HIV Post-Exposure Prophylaxis (PEP)**
- V. Definition of Blood-borne Pathogen Exposures**
- VI. Actions to Follow in Case of Exposure**
- VII. Contact Information**
- VIII. Sources**

*Note: While the authors intend this to be a guide to PEP, we encourage all medical providers to review the original sources of this information, as listed in the **Sources** section at the end of this document.*

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 pre-travel preparations and 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 the consultation stipulated per OSHA BBPE Standard 1910.1030.

This program delineates recommended actions for participants in BMC global health electives in case of an occupational exposure to potentially infectious blood or body fluids while participating in an approved international rotation or practicum.

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 their own choice about whether and when to take human immunodeficiency virus (HIV) PEP.

II. Prevention of Infection

Those electing to participate in international 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 or dental care). All persons providing care in an international setting should use standard precautions, as outlined in the separate BMC Standard Precautions Policy available on the [BMC Intranet](#).

III. Pre-Travel Preparation

- Prior to scheduling any international travel:
 - Review this document to familiarize yourself with what needs to be done and when to do it.
- At least 6 weeks prior to departure:
 - Call (617) 414-4290 and make an appointment with the BMC Travel Clinic (Center for Infectious Diseases) or with another travel clinic.
 - Obtain your previous vaccination records, a current medication list, and your travel itinerary. **You will need to bring these documents to your appointment.**
- At your travel clinic appointment:
 - Review and receive necessary travel vaccinations, medications, and travel advice. You will need to check with your insurance provider to determine whether travel vaccinations are covered and/or whether you will need to pay for these out-of-pocket.
 - If you are going to a site where there will not be PEP available, ask for a prescription for PEP (prescribed to you).
- 1-2 weeks prior to departure:
 - Fill prescriptions for any needed medications and for PEP (if needed). You will need to check with your insurance provider to determine whether PEP is covered and/or whether you will need to pay for these out-of-pocket.

IV. HIV Post-Exposure Prophylaxis Protocol

Table 1. Medications

PEP	Prescription	Most common side effects
PEP	Truvada (emtricitabine 200mg/tenofovir 300mg) 1 tablet PO once daily PLUS Raltegravir 400 mg PO twice daily	Nausea, vomiting, rash, headache
Antiemetic	Prochlorperazine 10mg tablet, take 1 tablet (max up to 4 tablets/day) 30 minutes before the PEP medication as needed for nausea <i>Note: This is not a PEP medication and should be taken only if you have side effects of nausea or vomiting due to the PEP medications.</i>	Dizziness, orthostatic hypotension, blurred vision

V. Blood-borne Pathogen Exposure Information

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

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%

*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 to 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.

VI. Actions to Follow in Case of Exposure

1. The exposed person will stop what they are doing **as soon as it is safe to do so** (for patient and provider or traveler) and do the following:
 - Dispose of contaminated sharp safely; do not re-use on patient after puncture of health care provider/traveler
 - 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. You can wipe the area afterwards with isopropyl alcohol. For eyes, rinse with clean room temperature running water; in certain regions, this may require the use of bottled water to ensure sterility.
2. **Alert local 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. **Group leader or individual traveling solo accesses PEP.**
4. **Exposed person contacts BMC OEM Department (7:30 AM -3:30 PM EST) at (617) 638-8400 #5 or BMC STIK on call at (617)-638-8000, pager 7845. Do not delay initiation of PEP while awaiting consultation.** It may take several minutes for the call to be connected, so please wait on the line. BMC OEM or on-call ID Physician will counsel on decision to take PEP based on circumstances, prevalence of HIV in community, risk factors specific to source, and mode or route of exposure. **If unable to reach STIK pager or OEM, go ahead and start taking PEP.**
5. **If HIV testing is available on site: 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. **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.
7. **PEP initiation.** Begin PEP as directed. 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).

8. **Lab Testing:** Use *Table 3* below to determine labs that should be obtained at baseline and at subsequent follow up. If local lab testing is unavailable, you may need to travel to a nearby referral hospital.
9. **Group leader or exposed individual should keep notes regarding specific actions and decisions** as well as any side effects or impact on function. The group leader or exposed individual should consider readiness or safety issues with regards to ongoing service or participation.
10. **The exposed person should follow up with OEM immediately upon return to campus.**

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

**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.*

VII. Contact Information:

BMC Travel Clinic

<http://www.bmc.org/travelclinic.htm>
Shapiro Center, 9th Floor, Suite 9B
725 Albany Street
Mon-Fri 9am-5pm
617-414-4290

BMC Occupational and Environmental Medicine

<http://www.bmc.org/occupational-environmental.htm>
Yawkey Ambulatory Care Center, 1st Floor
850 Harrison Avenue
Mon-Fri 7:30am-4pm
(617) 638-8400 #5

BMC STIK On-Call Infectious Disease Physician

BMC page operator (617)-638-8000, pager 7845

VIII. 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>. Accessed 3 Oct 2013.
2. Postexposure Prophylaxis following Occupational Exposure to Hepatitis B Virus. Available at: http://depts.washington.edu/hepstudy/hepB/prevention/pep_oe/discussion.html. Accessed 3 Oct 2013.
3. OSHA Bloodborne Pathogen Standard 1910.1030. Available at: http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051. Accessed 3 Oct 2013.
4. BMC Standard Precautions. Available at: http://internal.bmc.org/policy/pdf/HospitalWide/05_03_010_StandardPrecautions_122012.pdf. Accessed 13 October 2013.
5. BMC Bloodborne exposure policy. Available at: http://internal.bmc.org/policy/pdf/Emergency/26_11_000_BloodExposureProphylaxis_092013.pdf