01.02 – Blood Borne Pathogens (BBP) Occupational Post-Exposure Management

Purpose

Establish protocol for management of occupational exposures to blood or potentially infectious materials.

Audience

All employees of UTMB hospitals, clinics, outpatient surgical center, volunteers, students, and community first responders

Policy

Exposures to blood borne pathogens will be managed as described in sections to follow for any occupational exposure. UTMB will assume responsibility for testing of a source patient in the care of a UTMB facility.

Definitions

Definitions of exposure to infectious pathogens:

Occupational exposure to blood, body fluids and tissues with infectious pathogens may occur under the following circumstances. (Body fluids include semen; vaginal and oral secretions; and cerebrospinal, synovial, pleural, peritoneal, pericardial and amniotic fluids; and wound exudate)

- Percutaneous injury (e.g. needle stick, laceration with a sharp object)
- Contact of mucous membranes or ocular membranes (mucosal
- exposure)
- Contact of non-intact skin (e.g. skin that is chapped, abraded)

Insignificant or no-risk exposure to pathogens:

- Exposure to blood, body fluids and tissues that have been inactivated of pathogens with effective means is not a considered an infection risk, e.g., body tissues that have been fixed in formalin for 24 hours is not a risk for infection.
- Saliva, vomitus, urine, feces, sweat, tears and respiratory secretions do not transmit HIV (unless visibly bloody). The risks of HBV and HCV transmission from non-bloody saliva are considered to be negligible.

Contacts

Employee Health Clinic: 409-747-9172 **Fax**: 409-747-9172
E-mail: emphlthc@utmb.edu

Student Health: 409-747-9508 **Fax**: (409) 747-9330
E-mail: shcemail@utmb.edu

Infection Control & Healthcare Epidemiology:
During office hours: 409-772-3192
After hours pager: 409-643-3133

Procedures:

1. **Detailed instructions and all of the FORMS mentioned below are available online**.
    - For employees: https://www.utmb.edu/employee-health/bbp-exposure
    - For students: https://www.utmb.edu/studenthealth/exposures/occupational-exposures-info

2. **Initial Care of the Exposed Area:**
    a. Employee/student will cleanse exposed site with soap and water or rinse mucous membranes before reporting the exposure.

3. **Reporting:**
    b. Report exposure to supervisor, Clinical Operations Administrator (COA), or instructor/faculty

4. **Complete Notification Paperwork:**
    a. Employee
        i. Navigate to the website and complete the Bloodborne Pathogen Exposure Notification Form
        ii. Complete the Exposure Form, print source Laboratory Requisition, and print prophylaxis prescription if you wish to begin prophylaxis for HIV prior to source laboratory results (see below).
        iii. Post-exposure prophylaxis (PEP) for HIV is recommended within hours, to no more than 72 hours after the exposure. An Employee Health (EH) Nurse will contact you with laboratory results within 16 hours after your source laboratory tests have resulted. If you wish to begin prophylaxis prior to these results, print the prescription from the webform and follow the directions to receive your First Fill Authorization. Take the First Fill Authorization to a UTMB outpatient pharmacy or pharmacy of your choice for the first two doses of PEP. If you choose to wait until your source laboratory results are complete, EH will call for further directions.
        iv. No baseline laboratory work is clinically indicated for the exposed employee if the source blood work is negative. See below
    b. Student
        v. Navigate to the occupational exposure website (see Section 1) and follow instructions and complete the required information.

5. **Collect Source Blood**
    a. The priority for testing is to secure a specimen from the source patient to test for HIV, hepatitis B, and hepatitis C.
    b. Print the source laboratory requisition form that was generated by completing the exposure notification webform that was emailed to exposed employee's UTMB email address.

c. Obtain verbal consent to draw a blood sample from the source into 1 serum separator tube (SST). Laboratory tube with source patient's name, medical record number, and ensure laboratory requisition is in sample bag. If in the clinic, spin sample prior to transport to laboratory.
d. Send source sample directly to the to the laboratory. Do not walk source laboratory samples to Employee or Student Health Clinic, Urgent Care, or Emergency Department.
e. Source blood laboratory results are reviewed daily by the Employee Health staff.

6. Exposed Person's Blood Collection at baseline

a. An exposed employee's baseline laboratory tests are not required unless the source blood is positive for HIV, Hep. B, or Hep. C. This will be arranged after review of the laboratory results of the source sample (see Sections 7-9 below).

7. Exposure Evaluation, Counseling, and Management

a. Employees: An Employee Health Nurse will review the employee exposure cases daily (including weekends).
   vi. Source Laboratory results are **Negative**:
      1. EH will communicate results to exposed employee no later than the next day. Employee will be advised that no prophylaxis or follow-up laboratory tests will be required.
   vii. Source Laboratory results are **Positive** for HIV, Hepatitis B, and/or Hepatitis C**:**
      1. EH will communicate results to exposed employee. The exposed employee will be advised to come to an Employee Health Clinic for required baseline laboratory draws. If employee is not near an Employee Health Clinic, the employee will be directed to a UTMB laboratory and Employee Health Clinic will send laboratory requisition form to employee to take to the UTMB laboratory.
         a. If the employees' laboratory results are normal, employee will be advised to continue appropriate treatment.
         b. If the employee's laboratory results are abnormal, a consult with Employee Health Clinic provider will be scheduled.
      2. EH will send appropriate prescription to UTMB outpatient pharmacy, or pharmacy of choosing with First Fill Authorization for full course of prophylaxis.
      3. EH will email the exposed employee a schedule for follow-up laboratory tests.
   viii. Source laboratory results are **Uknown:**

1. EH will counsel exposed employee on risks and offer PEP. If the decision is made to take PEP, EH will follow step (ii) above.

b. Students: Navigate to the occupational exposure website (see Section 1) and follow instructions.

8. Post-Exposure Prophylaxis (PEP) for HIV

a. Following are the recommendations for both pregnant and non-pregnant persons:

Dolutegravir 50 mg tablet (Tivicay) - One tablet by mouth with or without food once daily for 4 weeks.

AND

Emtricitabine/Tenofovir 200mg/300mg tablet (Truvada or Descovy) - One tablet by mouth with or without food once daily for 4 weeks.

b. **Expert consultation is available** for exposure to a known HIV+ source: Infectious Diseases/HIV expert consultation for HIV postexposure prophylaxis (PEP) is recommended to review the source person's prior HIV treatment, viral suppression, and resistance pattern. The exposed person may be seen in the HIV clinic if necessary. Other reasons for consultation with the expert are listed below (note: provision of PEP should not be delayed while awaiting expert consultation).

- Delayed (i.e., later than 72 hours) exposure report. Interval after which benefits from PEP are undefined.
- Breastfeeding in the exposed person
- If source person's virus is known or suspected to be resistant to one or more of the drugs considered for PEP, selection of drugs to which the source person's virus is unlikely to be resistant is recommended.
- Toxicity of the initial PEP regimen
  - Symptoms (e.g., gastrointestinal symptoms and others) are often manageable without changing the PEP regimen by prescribing antimotility or antiemetic agents.
- Serious medical illness in the exposed person who is already taking multiple medications may increase the risk of drug toxicity and drug-drug interactions.

9. Post-exposure Prophylaxis for Hepatitis B and Hepatitis C

a. Risk of Hepatitis B or Hepatitis C Infection:
The average risk of Hepatitis B virus (HBV) infection in susceptible persons after percutaneous exposure to HBV-infected blood is 6 – 30%. The risk of Hepatitis C virus (HCV) infection after percutaneous exposure to HCV-infected blood is 7.4% (95% CI 3.9%-12.5%).

b. Testing and vaccination regimens for Hepatitis B:

For vaccinated EMPLOYEE (who have written documentation of a complete, Hepatitis B vaccine series with subsequent ≥ 10 mIU/mL, testing the source patient for HBsAg is unnecessary.

i. **Exposed employee/student has never received Hepatitis B vaccine**
   - Offer HBV vaccine if source is known to be positive for hepatitis B or is high risk for hepatitis B or source is unknown, (e.g., needle puncture through a trash bag) and employee/student has not been vaccinated against hepatitis B.
   - Offer Hepatitis B Immune Globulin 0.06 ml/kg IM if source is known to be positive for hepatitis B, or is high risk for hepatitis B or source is unknown, (e.g. needle puncture through a trash bag) and employee/student has not been vaccinated against hepatitis

ii. **For vaccinated employee/student (who have written documentation of Hepatitis B vaccination) with anti-HBs < 10 mIU/**mL after two complete ≥ 3-dose Hepatitis B vaccine series, the source patient should be tested for HbsAg as soon as possible after the exposure. If the source patient is HbsAg-positive or has unknown HbsAg status, Employee/student should receive 2 doses of HBIG. The first dose should be administered as soon as possible after exposure and the second dose should be administered 1 month later. If the source patient is HbsAg-negative neither HBIG nor Hepatitis B vaccine is necessary.

iii. **Exposed employee/student has received 3 doses of Hepatitis B vaccine but has not been tested for anti-HBs**: For vaccinated Employee/student (who have written documentation of a complete, ≥ 3-dose Hepatitis B vaccine series) without previous anti-HBs testing, the Employee/student should be tested for anti-HBs, and the source patient (if known) should be tested for HbsAg as soon as possible after the exposure. Testing the source patient and the Employee/student should occur simultaneously; testing the source patient should not be delayed while waiting for the Employee/student anti-HBs test results, and likewise, testing the Employee/student should not be delayed while waiting for the source patient HbsAg results.

iv. **Exposed employee/student has < 10 mIU/mL anti-HBs and source patient positive or has unknown HbsAg status**. If the employee/student has anti-HBs < 10 mIU/mL and the source patient is HbsAg- positive or has unknown HbsAg status, the employee/student should receive 1 dose of HBIG and be revaccinated as soon as possible after the exposure. The Employee/student should then receive the second 2 doses to complete the second Hepatitis B vaccine series (6 doses total when accounting for the original 3-dose series) according to the vaccination schedule. To document the employee's/student's vaccine response status for future exposures, anti-HBs testing should be performed 6 months after the last dose of vaccine.

v. **Exposed employee/student has anti-HBs < 10 mIU/mL and the source patient are HbsAg negative**. If the employee/student has anti-HBs < 10 mIU/mL and the source patient is HbsAg-negative, the employee/student should receive an additional Hepatitis B vaccine dose, followed by repeat anti-HBs testing 1-2 months later. If the employee's/student's anti-HBs remains < 10 mIU/mL, he/she should undergo revaccination with 2 more doses (6 doses total when accounting for the original 3-dose series). To document the employee's/student's vaccine response status for future exposures, anti-HBs testing should be performed 1-2 months after the last dose of vaccine.

vi. **Exposed employee/student has anti-HBs ≥ 10 mIU/mL at time of exposure.** If the employee/student has anti-HBs ≥ 10 mIU/mL at the time of exposure, no post-exposure HBV management is necessary, regardless of the source patient's HbsAg status.

vii. **Exposed employee/student unvaccinated or incompletely vaccinated (including those who refused vaccination)**. For unvaccinated or incompletely vaccinated Employee/student (including those who refused vaccination), the source patient should be tested for HbsAg as soon as possible after the exposure. Testing unvaccinated or incompletely vaccinated Employee/student for anti-HBs is not necessary and is potentially misleading, because anti-HBs ≥ 10 mIU/mL as a correlate of vaccine-induced protection has only been determined for persons who have completed an approved vaccination series. If the source patient is HbsAg-positive or has unknown HbsAg status, the employee/student should receive one dose of HBIG, and one dose of Hepatitis B vaccine administered as soon as possible after the exposure. The Employee/student should complete the Hepatitis B vaccine series according to the vaccination schedule. To document the employee's/student's vaccine response status for future exposures, anti-HBs testing should be performed approximately 1-2 months after the last dose of vaccine. Because anti-HBs testing of employee/student who received HBIG should be performed after anti-HBs from HBIG is no longer detectable (6 months after administration), it will likely be necessary to defer anti-HBs testing for a period longer than 1-2 months after the last vaccine dose.

c. Testing and follow-up recommendations for Hepatitis C:
Employees/students testing positive for Hepatitis C Qualitative RNA (PCR) at 6 weeks or HCV antibody at 4m and 6m months. For employees, treatment will be initiated in EHC. For students, referral will be made by Student Health to hepatitis C specialists.

References:

1. Kuhar DT, Henderson DK, Struble KA, Heneine W, et al. Updated US Public Health Service Guidelines for the Management of Occupational Exposures to Human Immunodeficiency Virus and Recommendations for Postexposure Prophylaxis. Infect Control Hosp Epidemiol 2013;34:875-892.

2. Centers for Disease Control and Prevention. CDC Guidance for Evaluating Health-Care Personnel for Hepatitis B Virus Protection and for Administering Postexposure Management, 2013;62(No. RR-10):1-16.

3. Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. Department of Health and Human Services. Availaboratoryle at: https://aidsinfo.nih.gov/guidelines

4. Recommendations for the Use of Antiretroviral Drugs in Pregnant Women with HIV Infection and Interventions to Reduce Perinatal HIV Transmission in the United States. Availaboratoryle at: https://aidsinfo.nih.gov/guidelines/html/3/perinatal-guidelines

5. Moorman AC, de Perio MA, Goldschmidt R, et al. Testing and Clinical Management of Health Care Personnel Potentially Exposed to Hepatitis C Virus — CDC Guidance, United States, 2020. MMWR Recomm Rep 2020;69(No. RR-6):1–8. DOI: http://dx.doi.org/10.15585/mmwr.rr6906a1