DEPARTMENT OF THE ARMY
BROOKE ARMY MEDICAL CENTER
JBSA, Fort Sam Houston, Texas 78234

BAMC MEMORANDUM
No. 40-135 22 June 2015

Medical Services
BLOODBORNE PATHOGEN EXPOSURE MANAGEMENT

Purpose. To establish policy and procedures for managing employees exposed to blood or other potentially infectious material (OPIM) at Brooke Army Medical Center (BAMC) in order to mitigate risk of bloodborne pathogen (BBP) transmission.

Applicability. This memorandum applies to all military and civilian personnel on duty at BAMC and medical research activities in the Fort Sam Houston area including, but not limited to, the United States Army Institute of Surgical Research, Dental Command, Fort Sam Houston who have been exposed to blood or OPIM.

Background.

The principal agents of concern for healthcare workers (HCWs) from percutaneous, ocular, or mucous membrane exposure to blood or OPIM are hepatitis B virus (HBV), human immunodeficiency virus (HIV), and hepatitis C virus (HCV). This memorandum focuses on protection from these BBPs. Special situations, e.g., unusual pathogens or isolation procedure breakdowns, should be brought to the attention of the Infection Control Clinic and/or the Department of Preventive Medicine for case-by-case response and management.

The risk for HBV transmission to a susceptible HCW ranges from 23-62 percent after a single needle stick exposure to an HBV-infected patient. Prospective studies of HCWs have estimated the average risk for HIV transmission after percutaneous exposure to infected blood is approximately 0.3 percent. After a mucous membrane exposure, the risk is estimated to be 0.09 percent. The average incidence of anti-HCV antibody seroconversion after accidental percutaneous exposure to an HCV-infected source is 1.8 percent (range 0-7 percent).

HIV transmission after skin exposure has been documented; but, the average risk for transmission by this route has not been precisely quantified because no HCWs enrolled in the prospective studies have seroconverted after an isolated skin exposure. The risk for transmission is estimated to be much less than that from mucous membrane exposure.

References. Appendix A.

Abbreviations and Terms. Appendix B.

*This memorandum supersedes BAMC Memo 40-135 dated 7 May 2003.

SUMMARY OF CHANGES: Addressed APEQS training requirement; removed the requirement for consent for hospitalized patients when source patient; added requirement for verbal consent for blood draw for outpatients when source patient; added requirement for exposed personnel to bring pre-drawn source blood vials from ward/clinic to ED to expedite processing and disposition

1. Responsibilities.

1.1. Individual employees will:

1.1.1. Obtain all vaccinations required for the respective position.

1.1.2. Complete BBP training requirements as specified in the AMEDD Personnel Education and Quality System (usually referred to as, "APEQS") and observe all relevant laws, guidelines, memoranda, policies, and regulations regarding protection from BBP transmission.

1.2. Exposed Person (EP's) will:

1.2.1. Immediately initiate first aid by thoroughly washing the injured or exposed skin area with soap and water and/or irrigating the exposed mucous membranes with water.

1.2.2. Report the exposure to the respective supervisor as soon as possible after first aid has been completed. Identification of the Source Patient (SP) and his/her risk factors for BBP disease should be made as soon as possible. The EP and supervisor will initiate a BAMC Form 1195, Report of Exposure to Blood/Body Fluid, and a BAMC Form 889, Incident/Injury/Near Miss Report and CA-1 Form, Federal Employee Notice of Traumatic Injury and Claim for Continuation of Pay/Compensation.

1.2.3. If SP is known, EP and/or nursing supervisor will ensure 3 tubes of blood are drawn from SP. SP blood should be properly labeled and packaged for transport. EP will hand carry SP blood and required forms from step 1.2.2 to Emergency Department.

1.2.4. Report expeditiously, within 1-2 hours, to the Emergency Department for evaluation and possible treatment. If the SP is not a patient at BAMC, every effort should be made to have the SP see their provider. Upon presentation, the EP should identify him/herself as an employee who sustained a blood or OPIM exposure. If urgent HIV PEP is likely to be indicated (i.e., the source of exposure is known or suspected to be HIV-positive), this evaluation must be expedited as PEP should ideally be given within 1-2 hours of the exposure.

1.2.5. Contact the Occupational Health Clinic for a follow-up appointment. Submit the completed BAMC Form 1195, Report of Exposure to Blood/Body Fluid.

1.2.6. Contact the Infectious Disease on call fellow or staff for PEP follow-up, as necessary.

1.2.7. Contact the Safety Office to coordinate the timely completion and submission of the BAMC Form 889, Incident/Injury/Near Miss Report.

1.3. Immediate supervisors available at the time of injury will:

1.3.1. Assist the EP with SP identification and determination of his/her risk factors for BPP infection. Then, ensure steps 1.2.1. through 1.2.7 above are expeditiously completed.

1.3.2. Assist the EP in completing the necessary forms after sending him/her to the Emergency Department. In emergency situations, the supervisor should contact the Emergency Department as soon as possible with the pertinent information. Encourage civil service employees to file a CA-1 Form, Federal Employee Notice of Traumatic Injury and Claim for Continuation of Pay/Compensation. The supervisor will complete his/her portion of the form. (This is posted at www.dol.gov/esa/regs/compliance/owcp/forms.) Completion of this form should not delay evaluation or treatment of the EP. Electronic completion and submission are preferable. Encourage contract employees to file the appropriate workers compensation program form. Filing a worker's compensation claim is voluntary. However, the EP should be notified that filing may provide for certain benefits and employment protections and is likely in his/her best long-term interests.

1.3.3. Assist the EP to make a follow-up appointment at the Occupational Health Clinic as soon as possible, in order to review lab test results, complete database entry, and perform further determination of risk, as necessary.

1.3.4. Notify the SP's physician to order the appropriate lab panel (see below) and ensure the lab tests are drawn and hand carried by EP to Emergency Department.

1.4. The Emergency Department will:

1.4.1. Evaluate and treat the EP, as appropriate.

1.4.2. Use the CHCS/AHLTA lab panels "NEEDLESTICK SOURCE" for the SP and "NEEDLESTICK EXPOSED" for the EP. The "NEEDLESTICK SOURCE" panel contains tests for HIV (rapid processing), HBV surface antigen, and anti-HCV antibody. The "NEEDLESTICK EXPOSED" panel contains tests for HIV 1 and 2, anti-HBV surface antibody, and anti-HCV antibody. For civilian employees, use BAMC Overprint 636, Patient Information, Routine HIV Testing/Patient Information and Consent.

1.4.3. Administer tetanus booster if indicated and document the vaccination in the medical record (AHLTA, MEDPROS, and/or other immunization database).

1.4.4. Refer the EP to the Occupational Health Clinic for follow-up.

1.4.5. If the SP is currently hospitalized at another institution, the Emergency Department will contact that hospital as soon as possible to request appropriate lab tests be drawn. If unable to coordinate, contact the Occupational Health Clinic to facilitate information transfer between the facilities.

1.4.6. Place all records, documents, and/or forms in the pickup box for retrieval by the Department of Preventive Medicine.

1.5. The Infectious Disease Clinic will:

1.5.1. Provide clinical consultative services to the Emergency Department and the Occupational Health Clinic. The on-call Infectious Disease fellow or attending physician will support the Emergency Department or Occupational Health Clinic with a stat consultation response, as necessary, to assist in determining the need for HIV PEP.

1.5.2. Provide PEP follow-up care and counseling. An EP receiving PEP should be evaluated according to Infectious Disease Clinic protocol.

1.6. The SP's physician/healthcare provider from BAMC will assist the Emergency Department in determining the SP's infectious status by providing known risk history, ordering appropriate lab tests, and reviewing the medical record, as necessary.

1.7. Occupational Health Clinic will:

1.7.1. Provide a follow-up evaluation for the EP within 1 duty day after the exposure. Review appropriate Emergency Department records and ensure appropriate initial lab tests were obtained from the SP and the EP, and ensure PEP was started, if necessary. Further follow-up evaluations will be scheduled, as appropriate. Any significant clinical findings and lab test results not related to the exposure will be managed through the Occupational Health Clinic or through referrals to other consultants or clinics, as appropriate.

1.7.2. Open a clinical encounter in AHLTA to document the facts of the exposure, review lab test results, and insure appropriate lab testing was performed. For lab test results that are pending at the time of the follow-up evaluation, the Occupational Health Clinic will contact and inform the EP after the lab tests have been completed.

1.7.3. For civilian employees, use BAMC Overprint 636. Contact and inform him/her of the lab test results, if not currently hospitalized at BAMC. If currently hospitalized at BAMC, his/her attending physicians will make the notifications.

1.7.4. Review the SP's lab tests results, when available, with the EP, in a manner that is consistent with all laws, guidelines, memoranda, policies, and regulations concerning protected health information.

1.7.5. Review the completed BAMC Form 1195, Report of Exposure to Blood/Body Fluid. Analyze trends, as necessary, and report significant findings to the Chief, Department of Preventive Medicine.

1.8. Contract employees will:

1.8.1. Be evaluated and treated, as appropriate, by the Emergency Department in the same manner as active duty and civil service employees.

1.8.2. Report to the Occupational Health Clinic for a follow-up evaluation. In contrast to active duty and civil service employees, arrange for subsequent follow-up evaluations and any necessary medical services with the healthcare provider specified in the respective contract. This is even if they are eligible for care at BAMC as a Military Health System beneficiary (work-related injury health care is borne by the contract company).

1.8.3. Costs associated with services provided to contract employees may be charged back to the contractor company. They and/or their supervisors should contact the Uniform Business Office to discuss the covered costs.

2. Evaluation and Treatment Protocols for EPs.

2.1. The following protocols address the principal BBPs separately, however, all should be considered after an exposure.

2.2. The protocol for exposure to HBV is detailed in Appendix C.

2.3. The protocol for exposure to HIV is detailed in Appendix D.

2.3.1. If PEP may be necessary, a stat consultation request will be made to the on-call Infectious Disease fellow or attending physician pager.

2.3.2. Additional HIV testing on the EP will be repeated at 6 weeks, 3 months, 6 months, and 12 months from the time of exposure.

2.3.3. If a civilian employee refuses the initial HIV testing, a blood sample may be preserved for up to 90 days to allow him/her an opportunity to decide later.

2.4. Protocol for exposure to a known HCV-positive SP.

2.4.1. Perform baseline testing for anti-HCV antibody and alanine aminotransferase; perform follow-up testing at 4-6 months after exposure. Alternatively, follow-up testing may consist of HCV RNA testing at 4-6 months after exposure.

2.4.2. The enzyme immunoassay (EIA) for anti-HCV antibody is a very sensitive test. If the SP has a negative EIA result, the EP does not need to undergo follow-up testing for HCV infection.

2.4.3. If the anti-HCV antibody EIA result is positive, confirm with a HCV viral load or polymerase chain reaction test.

2.4.4. PEP with immune globulin or antiretroviral agents (e.g., interferon) is not recommended.

2.5. For EPs who require PEP but who are not immunocompentent, immediately contact the Infectious Disease Clinic on call fellow or staff for guidance.

2.6. For special situations or unusual circumstances, 24-hour consultation services are available from the National Clinicians Post-Exposure Prophylaxis Hotline (www.nccc.ucsf.edu).

2.7. Of note, these protocols may be modified as new knowledge is obtained about BBP transmission in the healthcare setting. All personnel who evaluate, treat, or manage EPs should keep abreast of the latest recommendations and implement them accordingly.

3. Obtaining Follow-up Laboratory Results From the SP.

3.1. For an SP who is obtaining care at BAMC, the Occupational Health Clinic will obtain results from the CHCS/AHLTA database.

3.2. For an SP who is hospitalized at University Hospital, the Occupational Health Clinic will contact the San Antonio Metropolitan Health Department (SAMHD) epidemiologist. If results are not available, the Occupational Health Clinic will contact the University Hospital Infection Control representative.

3.3. For other SPs, the Occupational Health Clinic will contact the SAMHD epidemiologist.

4. Written Post-exposure Evaluation Opinion: The Occupational Health Clinic will provide brief written notices to the EP within 15 days of an evaluation. This opinion will include 1) a summary of the relevant findings; 2) recommendations for PEP, HBV vaccination, and other interventions, as appropriate; and 3) recommendations for follow-up evaluations, as appropriate.

5. Source Patient Specimens:

5.1 Patients who are not otherwise having blood work drawn or have vascular access in situ must verbally consent to having a venipuncture performed.

5.2 Consent is not required for source patients who are currently hospitalized, who are undergoing surgeries or ambulatory procedures, or who already are having lab work done as part of out-patient healthcare services.

5.3 The above statements apply to all lab work required or indicated following an exposure event. Any Licensed Independent Provider involved in the care of the patient, the supervision or medical care of the exposed individual, or supervision of the work area may order these labs.

APPENDIX A
References

1. Bloodborne Pathogens Standard. 29 CFR Part 1910.1030 .

2. Needlestick Safety and Prevention Act (H.R. 5178), Public Law 106-430.

3. AR 40-5, Preventive Medicine.

4. AR 385-10, The Army Safety Program.

5. DA Pam 385-40, Army Accident Investigations and Reporting.

6. DA Pam 40-11, Preventive Medicine.

7. Centers for Disease Control and Prevention. Recommendations for Postexposure Interventions to Prevent Infection with Hepatitis B Virus, Hepatitis C Virus, or Human Immunodeficiency Virus, and Tetanus in Persons Wounded During Bombings, and other Mass-Casualty Events --- United States, Mortality and Morbidity Weekly Reports (MMWR), http://stacks.cdc.gov/view/cdc/7322, 57(RR06);1-19

8. A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States, MMWR (www.cdc.gov/mmwr/pdf/rr/rr5516.pdf), 54(RR16); 1-23

9. Centers for Disease Control and Prevention. Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HIV and Recommendations for Postexposure Prophylaxis, MMWR (www.cdc.gov/mmwr/pdf/rr/rr5409.pdf), 54(RR09); 1-17

10. Centers for Disease Control and Prevention. Updated Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, HIV and Recommendations for Postexposure Prophylaxis, MMWR (http://stacks.cdc.gov/view/cdc/13608), 50(RR11); 1-67

APPENDIX B
Abbreviations and Terms

1. Exposure**.** Defined as percutaneous injury (e.g., a needlestick or cut with a sharp object), contact of mucous membrane or nonintact skin (e.g., when the exposed skin is chapped, abraded, or afflicted with dermatitis), or contact with intact skin when the duration of contact is prolonged (i.e., several minutes or more) or involves an extensive area, with blood or OPIM. The exposed person (EP) is the individual who has been exposed to blood or OPIM.

2. OPIM**:** Includes the following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in the setting of a dental procedure, and any body fluid that is visibly contaminated with blood.

2.1. Any unfixed tissue or organ (other than intact skin) from a human, living or dead.

2.2. HBV- or HIV-containing culture medium or other solutions. Blood, organs, or other tissues from experimental animals infected with HBV or HIV. HIV-containing cell, tissue, or organ cultures.

2.3. Urine is not considered to be a vehicle for transmissible viruses unless visibly contaminated with blood.

3. Source patient (SP). The individual who is the point of origin of blood and/or OPIM.

4. Post-exposure prophylaxis (PEP). The provision or administration of antiretroviral drugs, vaccine, or immune globulin after an exposure that carries a significant risk for BBP transmission.

APPENDIX C
Hepatitis B Protocol

TABLE 3. Recommended postexposure prophylaxis for exposure to hepatitis B virus

Vaccination and antibody response status of exposed workers*	Treatment		
	Source HBsAg† positive	Source HBsAg† negative	Source unknown or not available for testing
Unvaccinated	HBIG§ x 1 and initiate HB vaccine series¶	Initiate HB vaccine series	Initiate HB vaccine series
Previously vaccinated			
Known responder**	No treatment	No treatment	No treatment
Known nonresponder††	HBIG x 1 and initiate revaccination or HBIG x 2§§	No treatment	If known high risk source, treat as if source were HBsAg positive
Antibody response unknown	Test exposed person for anti-HBs¶¶ 1. If adequate,** no treatment is necessary 2. If inadequate,†† administer HBIG x 1 and vaccine booster	No treatment	Test exposed person for anti-HBs 1. If adequate,¶ no treatment is necessary 2. If inadequate,¶ administer vaccine booster and recheck titer in 1–2 months

* Persons who have previously been infected with HBV are immune to reinfection and do not require postexposure prophylaxis.

† Hepatitis B surface antigen.

§ Hepatitis B immune globulin; dose is 0.06 mL/kg intramuscularly.

¶ Hepatitis B vaccine.

** A responder is a person with adequate levels of serum antibody to HBsAg (i.e., anti-HBs ≥10 mIU/mL).

†† A nonresponder is a person with inadequate response to vaccination (i.e., serum anti-HBs < 10 mIU/mL).

§§ The option of giving one dose of HBIG and reinitiating the vaccine series is preferred for nonresponders who have not completed a second 3-dose vaccine series. For persons who previously completed a second vaccine series but failed to respond, two doses of HBIG are preferred.

¶¶ Antibody to HBsAg.

CDC. Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis, (http://stacks.cdc.gov/view/cdc/13608), 50(RR11); 1-42.

APPENDIX D
HIV Protocol

TABLE 1. Recommended HIV postexposure prophylaxis (PEP) for percutaneous injuries

Exposure type	Infection status of source				
	HIV-positive, class 1*	HIV-positive, class 2*	Source of unknown HIV status†	Unknown source§	HIV-negative
Less severe¶	Recommend basic 2-drug PEP	Recommend expanded ≥3-drug PEP	Generally, no PEP warranted; however, consider basic 2-drug PEP** for source with HIV risk factors††	Generally, no PEP warranted; however, consider basic 2-drug PEP** in settings in which exposure to HIV-infected persons is likely	No PEP warranted
More severe§§	Recommend expanded 3-drug PEP	Recommend expanded ≥3-drug PEP	Generally, no PEP warranted; however, consider basic 2-drug PEP** for source with HIV risk factors††	Generally, no PEP warranted; however, consider basic 2-drug PEP** in settings in which exposure to HIV-infected persons is likely	No PEP warranted

* HIV-positive, class 1 — asymptomatic HIV infection or known low viral load (e.g., <1,500 ribonucleic acid copies/mL). HIV-positive, class 2 — symptomatic HIV infection, acquired immunodeficiency syndrome, acute seroconversion, or known high viral load. If drug resistance is a concern, obtain expert consultation. Initiation of PEP should not be delayed pending expert consultation, and, because expert consultation alone cannot substitute for face-to-face counseling, resources should be available to provide immediate evaluation and follow-up care for all exposures.
† For example, deceased source person with no samples available for HIV testing.
§ For example, a needle from a sharps disposal container.
¶ For example, solid needle or superficial injury.
** The recommendation "consider PEP" indicates that PEP is optional; a decision to initiate PEP should be based on a discussion between the exposed person and the treating clinician regarding the risks versus benefits of PEP.
†† If PEP is offered and administered and the source is later determined to be HIV-negative, PEP should be discontinued.
§§ For example, large-bore hollow needle, deep puncture, visible blood on device, or needle used in patient's artery or vein.

TABLE 2. Recommended HIV postexposure prophylaxis (PEP) for mucous membrane exposures and nonintact skin* exposures

Exposure type	Infection status of source				
	HIV-positive, class 1†	HIV-positive, class 2†	Source of unknown HIV status§	Unknown source¶	HIV-negative
Small volume**	Consider basic 2-drug PEP††	Recommend basic 2-drug PEP	Generally, no PEP warranted§§	Generally, no PEP warranted	No PEP warranted
Large volume¶¶	Recommend basic 2-drug PEP	Recommend expanded ≥3-drug PEP	Generally, no PEP warranted; however, consider basic 2-drug PEP†† for source with HIV risk factors§§	Generally, no PEP warranted; however, consider basic 2-drug PEP†† in settings in which exposure to HIV-infected persons is likely	No PEP warranted

* For skin exposures, follow-up is indicated only if evidence exists of compromised skin integrity (e.g., dermatitis, abrasion, or open wound).
† HIV-positive, class 1 — asymptomatic HIV infection or known low viral load (e.g., <1,500 ribonucleic acid copies/mL). HIV-positive, class 2 — symptomatic HIV infection, AIDS, acute seroconversion, or known high viral load. If drug resistance is a concern, obtain expert consultation. Initiation of PEP should not be delayed pending expert consultation, and, because expert consultation alone cannot substitute for face-to-face counseling, resources should be available to provide immediate evaluation and follow-up care for all exposures.
§ For example, deceased source person with no samples available for HIV testing.
¶ For example, splash from inappropriately disposed blood.
** For example, a few drops.
†† The recommendation "consider PEP" indicates that PEP is optional; a decision to initiate PEP should be based on a discussion between the exposed person and the treating clinician regarding the risks versus benefits of PEP.
§§ If PEP is offered and administered and the source is later determined to be HIV-negative, PEP should be discontinued.
¶¶ For example, a major blood splash.

CDC. Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HIV and Recommendations for Postexposure Prophylaxis, MMWR (www.cdc.gov/mmwr/pdf/rr/rr5409.pdf), 54(RR09); 1-17.

The proponent for this memorandum is the Department of Preventive Medicine, Occupational Health Clinic. Users are invited to send comments and suggestions for improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) to Commander, Brooke Army Medical Center, ATTN: MCHE-DHO, Fort Sam Houston, Texas 78234-4505

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