Medical Management of Exposures: HIV, HBV, HCV, Human Bites, and Sexual Assaults

Federal Bureau of Prisons

Clinical Practice Guidelines

March 2014

What's New in This Document?

Changes included in the March 2014 guidelines:

All substantive changes are highlighted in yellow. In particular:

- Revisions have been made to reflect the updated 2013 guidance from the U.S. Public Health Service on managing exposures to HIV (listed under *Bloodborne Pathogens* in the *References* section). USPHS guidelines now recommend 3-drug HIV PEP for all exposures to HIV, regardless of the severity of the exposure. Emtricitabine *plus* tenofovir (may be dispensed as Truvada) *plus* raltegravir is recommended as HIV PEP for exposures to HIV unless otherwise contraindicated (e.g., known antiretroviral resistance, preexisting renal disease).
- Rapid HIV testing should be available at each institution to test source cases in exposure incidents, in order to facilitate timely decision making regarding the need for HIV PEP after exposure to sources whose HIV status is unknown.
- Consultation with the PEPline (1-888-448-4911) is *required* when available (9 a.m.–2 a.m., EST).
- Revisions have been made to reflect the December 2013 guidance from the CDC on managing exposures to hepatitis B virus (listed under *Bloodborne Pathogens* in the *References* section). In particular, *Step 5* of *Postexposure Management* has been updated, and a new appendix has been added. The new *Appendix 7* provides detailed guidance on HBV postexposure management, based on the hepatitis B vaccination status of the exposed person.

Changes that were made in the October 2012 guidelines:

- ***Specific guidance for management of exposures for BOP employees is no longer included in these guidelines. This guidance is provided separately.***
- *Appendix 3*, *Preferred Regimens for HIV Postexposure Prophylaxis*, was updated.
- Nelfinavir (Viracept®) was added to the list of medications *not* to be given to *pregnant women*.
- *Appendix 4*, *"Sexual Assault and STDs," CDC 2010 Treatment Guidelines for Adults and Adolescents*, was updated by the CDC in 2010 to replace the 2007 guidelines.

Changes that were made in the June 2009 guidelines:

In the June 2009 version of these guidelines, the recommendations for management of exposures to hepatitis C were revised to match the 2009 update to the BOP *Clinical Practice Guidelines for the Prevention and Treatment of Hepatitis C and Cirrhosis*. Recommendations for postexposure management of hepatitis C were revised.

Table of Contents

1. Purpose and Overview

Note: *Specific guidance for management of exposures for BOP employees is provided separately.*

The BOP Clinical Practice Guidelines for the *Medical Management of Exposures* are based on the recommendations of the U.S. Public Health Service (USPHS) and the Centers for Disease Control and Prevention (CDC), as well as the requirements of the Occupational Safety and Health Administration (OSHA). These guidelines provide specific recommendations for medically managing BOP inmates who have experienced potential exposures to human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV) through various means, including human bites and sexual assaults. *Section 3*, which discusses a step-wise approach for managing these exposures, can be used in conjunction with the *Postexposure Worksheet* in *Appendix 1*.

Consultation on postexposure management for HIV, HBV, and HCV is *required* when available.
Call PEPline, the National Clinicians' Postexposure Prophylaxis Hotline, at 1-888-448-4911 (every day, 9 a.m.–2 a.m. EST). *For more information, see: http://www.nccc.ucsf.edu/about_nccc/pepline/*

Bloodborne Pathogen Exposure Control Plan (ECP): Each institution's ECP should address specific administrative, personnel, and medical procedures for implementing the guidelines. The plan should include recommendations for preventing exposures to blood and body fluids, prompt reporting and management of possible exposures, expert consultation, HIV testing to determine the HIV status of the source case, and providing immediate availability of antiretroviral medications to treat individuals with HIV exposures, as well as treatment for virologic, immunologic, and serologic signs of infection. The institution's routine orientation and training for inmate workers should cover the local procedures for providing HIV and HBV postexposure management.

Note: *Program Statement 6190.03 requires that BOP facilities annually update an ECP that meets Occupational Safety and Health Administration (OSHA) requirements. An optional fill-in-the-blank ECP template is now available on Sallyport.*

"PEP" vs. "nPEP": The CDC has published separate and distinct guidelines for managing occupational and non-occupational HIV exposures. The CDC recommendations use different acronyms to identify the two types of postexposure prophylaxis (PEP); *PEP* refers to drug regimens for "occupational" exposures, and *nPEP* refers to regimens directed at "non-occupational" exposures. In the correctional setting, occupational distinctions can become blurred. Therefore, these BOP guidelines adapt the USPHS and CDC guidelines to the correctional setting, outlining HIV postexposure management recommendations, regardless of the exposed person's occupational status. For example, while human bites can be either occupational or non-occupational, depending on who is bitten, common sense dictates that clinical management in the correctional setting be the same for either one. All references to postexposure prophylaxis in these guidelines, whether derived from nPEP or PEP source guidelines, will be referred to as *PEP* for the reasons described above.

Prevention and Risk Management: No document on postexposure management is complete without emphasizing that the prevention of exposures is critically important. Regular hand washing, appropriate use of protective gear such as gloves and face shields, adherence to recommendations for safe handling of sharps, and the strategic use of needle-less devices will prevent many exposure incidents. Risk management also entails systematic reviews of all exposure incidents—identifying contributing factors and then improving infection control policies, procedures, and training methods.

It is recommended that each facility develop a PEP packet or notebook that is readily available for emergency use. *Appendix 6a* outlines the recommended contents of the packet, including the *Postexposure Worksheets* (*Appendix 1*), consent forms, and patient educational materials. Facility-specific instructions for postexposure management should also be included.

➔ ***Any incidents involving inmate workers that are deemed to be true exposures must be reported to the Safety Office for inclusion in the OSHA 300 Log.***

2. Transmission Risk

HIV

The risk of viral transmission following an exposure incident depends on the type and extent of the exposure. The per-incident transmission risk for HIV infection depends on the type of exposure, as shown in *Table 1* below.

Table 1. Estimated Per-Incident Risk for Acquisition of HIV, by Exposure Route

Needle-sharing (injection drug use)	0.67%	Insertive anal intercourse	0.065%
Receptive anal intercourse	0.5%	Insertive penile-vaginal intercourse	0.05%
Percutaneous needle stick	0.3%	Receptive oral intercourse	0.01%
Receptive penile-vaginal intercourse	0.1%	Insertive oral intercourse	0.005%

Source: CDC. Antiretroviral postexposure prophylaxis after sexual, injection-drug use, or other nonoccupational exposure to HIV in the United States: recommendations from the U.S. Department of Health and Human Services. *MMWR*. 2005;54(No. RR-2):7.

The risk of HIV infection appears higher with:

- Exposure to a larger quantity of blood or other infectious fluid
- Exposure to the blood of a patient with advanced HIV disease, as indicated by higher viral load
- A deep percutaneous injury
- Injury with a hollow-bore, blood-filled needle
- Exposure to a source with concomitant hepatitis C viral infection
- Sexual assault (due to mucosal trauma, multiple assailants, or traumatic intercourse)
- The presence of a sexually transmitted infection in either the source or the exposed individual

HBV and HCV

The risk of viral transmission after a percutaneous exposure incident is highest for HBV (especially when the source is both HBsAg-positive and HBeAg-positive), followed by HCV and HIV, as shown in *Table 2* below.

Table 2. Average Transmission Risk After Percutaneous Injury	
Hepatitis B:	
HBsAg-positive/HBeAg-positive*	37–62%
HBsAg-positive/HBeAg-negative*	23–37%
Hepatitis C	1.8% (range 0–7%)
HIV	0.3%
* HBsAg = hepatitis B surface antigen; HBeAg = hepatitis B e antigen	

Human Bites

Human bites have rarely resulted in transmission of HIV or HBV infection. There have been no reports of transmission of HIV or HBV following a human bite that occurred as part of an occupational exposure. Human bites, however, are associated with a significant risk for serious bacterial infection, including *Eikenella corrodens*, a gram-negative organism that is resistant to cephalosporins. Common organisms associated with human bites are *Streptococcus anginosus* and *Staphylococcus aureus,* among many others.

3. Steps in Postexposure Management

Frequently, evaluation of a reported "exposure" reveals that no significant exposure actually occurred (e.g., contact of intact skin with blood). These individuals should be counseled that this type of exposure is not considered a "true exposure" and that no further follow-up is needed.

Individuals who are evaluated to have exposure to bloodborne pathogens should be provided with emergent care, evaluation, and, if indicated, treatment with postexposure medications. A follow-up evaluation by a qualified healthcare professional should also be obtained. If HIV postexposure prophylaxis (PEP) is indicated, it is ideal to administer it within two hours of the exposure incident.

➔ ***Prompt evaluations of both the exposed person and the source case are essential.***

Consultation on postexposure management for HIV, HBV, and HCV is *required* when available.
Call PEPline, the National Clinicians' Postexposure Prophylaxis Hotline, at 1-888-448-4911 (every day, 9 a.m.–2 a.m. EST). *For more information, see: http://www.nccc.ucsf.edu/about_nccc/pepline/*

Follow Steps 1–11 below for postexposure management, in conjunction with *Appendix 1*, *Postexposure Worksheet: Management of Exposed Person.* The *Postexposure Worksheet* is itself an optional form that, if utilized, should be filed in the Infection Control Office to document the process of working up the exposure. A separate note in the exposed inmate's medical record should summarize the actions taken.

➔ ***Never record the source case's identity on the exposed person's medical record or worksheet.***

Step 1. Evaluate the Exposure

The evaluating healthcare professional should interview the injured person to obtain details about the exposure incident and to assess risk of exposure to HIV, HBV, and HCV. Review the exposure in terms of the data on the risk of transmission, as outlined in *Table 1* and *Table 2*.

a. Describe the exposure site and initial care provided.

The following are general instructions for treating the exposure site:

- The injured skin or wound should be emergently cleaned with soap and running water for two minutes.
- Mild bleeding should be allowed to continue freely for 30 seconds. Pressure should then be applied to stop bleeding and bandage as necessary. Aspiration, forced bleeding, and wound incision are *not* recommended.
- Antiseptics, bleach, or other cleansing agents should *not* be used.
- Mucous membranes should be rinsed with water for at least two minutes.
- Exposed eyes should be flushed with water or saline for at least two minutes.

b. Describe the incident (location, circumstances). Include detail on where the incident occurred, who was present in the room, and factors that may have contributed to the occurrence of the exposure incident.

c. Exposure occurred while exposed person was: working *or* not working. Check (√) the appropriate box.

d. Type of body fluid. Check (√) the specific types of body fluid involved.

- **Potentially infectious body fluids** are those that can spread bloodborne pathogens. Such body fluids include **blood; tissue; fluids containing visible blood; semen; rectal and vaginal secretions; breast milk; and cerebrospinal, synovial, pleural, peritoneal, pericardial, and amniotic fluids**. Exposure to any of these fluids—whether through a percutaneous injury (i.e., needle stick or other penetration from a sharp), contact with a mucous membrane, contact with non-intact skin, sexual exposure, or sharing injection drug use equipment—poses a risk for bloodborne virus transmission and requires further evaluation.
- Non-infectious body fluids are those that have not been demonstrated to spread blood-borne pathogens. These include **feces, nasal secretions, saliva, sputum, sweat, tears, urine,** and **vomitus.** Exposure to these body fluids is not considered an exposure, unless they contain visible blood. Unless the fluid is visibly bloody, no further evaluation is required.

e. Exposure type. Check (√) the type of exposure(s) that occurred.

- **Percutaneous** (injuries that occur when the skin is penetrated by a contaminated sharp object). Document the specific type of sharp, including the brand and gauge in the case of needles. A tattoo applied with non-sterile needles (i.e., previously used on others) constitutes a percutaneous exposure. Indicate whether the injury is:
  - **Less severe** (e.g., superficial injury; penetration with a solid needle such as a suture needle); *or*
  - **More severe** (e.g., deep puncture; penetration with a large bore, hollow needle; blood visible on the device; needle that was used in an artery or vein).
- **Mucous membrane** exposure (inside the eyes, nose, or mouth) or exposure to **non-intact skin** (e.g., chapped, dermatitis, abrasion, or open wound). Indicate volume of exposure:
  - **Small-volume exposure** (a few drops); *or*
  - **Large-volume exposure** (larger splash).
- **Human bite**
  - Clinical evaluation must include the possibility that the person bitten *and* the person who inflicted the bite both may have been exposed to a bloodborne pathogen.
  - **Identify whether blood exposure is suspected.** This includes examining:
    (1) The mouth of the biter, to assess the likelihood that the bitten person was exposed to the biter's blood; *and*
    (2) The wound of the person bitten, to determine if blood exposure to the mouth of the biter occurred.
  - Indicate whether the **person was bitten** (potential percutaneous exposure) or the **person was the biter** (potential mucous membrane exposure).
  - All individuals who sustain a human bite should be assessed for tetanus prophylaxis. See Step 7 below, "Determine Need for Tetanus Vaccine."
  - The risk for infection with other types of organisms significantly exceeds the risk of exposure to bloodborne pathogens, and prophylactic antibiotics may be indicated. See Step 8 below, "(Human bites only) Determine Need for Antibiotic Prophylaxis."
- **Sexual.** For PEP evaluation, indicate the type of sexual exposure: **receptive anal** intercourse, **receptive vaginal** intercourse, or **other** sexual exposure. For the purposes of these BOP guidelines, only receptive anal or vaginal intercourse are generally considered exposures that should be considered for PEP (except in cases that involve trauma or assault). If the behavior is recurrent or occurred more than 72 hours ago, PEP is not indicated. Any allegation made by an inmate of recent sexual assault should receive prompt forensic evaluation by a healthcare professional trained in collecting sexual assault forensic evidence. For more information on sexual exposures, see Step 9 below and the CDC guidelines on sexually transmitted disease evaluation for sexual assault in *Appendix 4*.
- **Shared injection drug use equipment.** Assess the nature of the exposure and whether or not the behavior is likely to recur. If the behavior is recurrent or occurred more than 72 hours ago, PEP is not indicated.
- **Intact skin.** Exposure of intact skin (without signs of abrasion) to blood or other infectious body fluid does *not* constitute an exposure and does *not* require follow-up.

Step 2. Evaluate the Source Case

The *Postexposure Worksheet* for managing the exposed person (*Appendix 1*) refers the practitioner to a separate form for evaluating the source case (see *Appendix 2*).

To obtain information about the source case, utilize all available information: chart review, interviewing the source, and interviewing the source person's clinician. Record previous and current laboratory results (HIV EIA, HBsAg, and anti-HCV). File this record of the source case assessment in the Infection Control Office.

➔ ***Do not record the source case's identity on the exposed person's medical record or worksheet.***

- **If HIV infected:** Obtain results of the most recent HIV viral load and CD4+ T-cell count, history of antiretroviral therapy, results of resistance testing, and clinical status. Resistance testing of the source case at the time of exposure is *not* useful because the results will not be available in time to select the PEP regimen.
- **If HIV status is unknown:** Obtain history of HIV risk factors; obtain HIV test in accordance with BOP policy. Whenever the source case is known, the HIV status of the exposure source patient should be determined to guide appropriate use of HIV PEP. Rapid HIV testing should be available at each institution in order to facilitate timely decision making regarding the need for HIV PEP after exposure to sources whose HIV status is unknown. FDA-approved rapid tests can produce reliable test results within 30 minutes. Rapid HIV testing should be performed test per local policies and procedures, as well as guidance from the BOP Medical Director. *Administration of PEP should not be delayed while awaiting test results.* If the source patient is determined to be HIV negative, PEP should be discontinued, and no follow-up HIV testing for the exposed patient is indicated.
- **If HBsAg positive:** Obtain HBeAg.

Step 3. Evaluate the Health Status of the Exposed Person

Obtain the following baseline labs on the exposed person (preferably within 72 hours):

- **HIV EIA**
- **Anti-HBs** (if previously completed hepatitis B (HepB) vaccination series *or* vaccination status is uncertain, *and* if post vaccination anti-HBs test results are unavailable)
- **Total Anti-HBc** (if post-vaccination anti-HBs < 10 mIU/mL *or* if not vaccinated *or* incompletely vaccinated)
- **Anti-HCV**

Assess vaccination status for tetanus and HepB. If available, record dates of HepB vaccination and results of vaccine response testing. (Persons with anti-HBs ≥ 10 mIU/ml after ≥ 3 vaccine doses are considered responders and immune; those with anti-HBs < 10 mIU/ml after ≥ 6 vaccine doses are non-responders and potentially susceptible.) Persons with unknown HepB vaccine response status should be tested for anti-HBs. A pregnancy test should ordinarily be obtained for females prior to prescribing HIV PEP unless they are currently menstruating, have a history of hysterectomy, or are post-menopausal. Record other medical conditions, current medications, and drug allergies.

Step 4. Determine Need for HIV PEP

Outlined below is the assessment process for determining need for HIV postexposure prophylaxis. Prompt assessment and follow-up is essential. Ideally, HIV PEP is initiated within two hours of the exposure. If PEP is delayed more than 36 hours, seek expert consultation.

Consultation on postexposure management for HIV, HBV, and HCV is *required* when available.
Call PEPline, the National Clinicians' Postexposure Prophylaxis Hotline, at 1-888-448-4911 (every day, 9 a.m.–2 a.m. EST). *For more information, see: http://www.nccc.ucsf.edu/about_nccc/pepline/*

Determining the need for HIV PEP:

- Recommendations for PEP are based on the HIV status of the source case, and the type and conditions of the exposure. *Table 3* below is from page 2 of the *Postexposure Worksheet* for the exposed person (*Appendix 1*). The table is adapted from USPHS/CDC recommendations and can be used as a clinical tool to assist in determining the need for PEP. This table should be used to identify **(1) Exposure Type** and **(2) Condition** of the exposure; then, determine the **(3) Recommendations Based on HIV Status of the Source**.
- Individuals exposed to a known or suspected HIV-infected source case should be counseled about the need for the PEP regimen to be initiated promptly and carried out for 28 days. Although newer antiretroviral agents are better tolerated than agents previously used and have preferable toxicity profiles, consultation with a pharmacist or physician with expertise in HIV PEP and antiretroviral medication drug interactions/adverse effects is strongly encouraged when initiating HIV PEP.

Table 3. HIV Exposures: PEP Recommendations

1. Exposure Type	2. Condition	3. Recommendations Based on HIV Status of the Source	
		HIV+	HIV Status Unknown
Percutaneous (includes illicit tattoo)	Any severity	PEP	Consider PEP
Mucous membrane	Small volume	PEP	Generally no PEP
	Large volume	PEP	Consider PEP
Non-intact skin	Small volume	PEP	Generally no PEP
	Large volume	PEP	Consider PEP
Sexual[1,2] (<72 hrs/ not recurrent)	Receptive anal or vag sex	PEP	Consider PEP
	Other sexual exposure	PEP generally not recommended	PEP not recommended
Sharing IDU equip[1]	<72 hrs/not recurrent	PEP	Consider PEP

[1] PEP is generally not indicated ≥ 72 hours after exposure or if behavior is either frequent or recurrent. PEP may be considered after longer intervals (e.g., one week) on a case-by-case basis for exposures that represent an extremely high risk of transmission.

[2] For the purposes of these BOP guidelines, receptive anal and vaginal intercourse are the only types of sexual exposures that should be considered for PEP (except if trauma or assault).

Adapted from:

CDC. *MMWR*. 2005;54(No. RR-9). At http://www.cdc.gov/mmwr/pdf/rr/rr5409.pdf

CDC. *MMWR*. 2005;54(No. RR-2) At http://www.cdc.gov/mmwr/PDF/rr/rr5402.pdf

USPHS. *Infect Control Hosp Epidemiol*. 2013;34(9):875–892. At http://www.jstor.org/stable/10.1086/672271

Preferred regimens for HIV PEP:

USPHS guidelines now recommend 3-drug HIV PEP for all exposures to HIV, regardless of the severity of the exposures. PEP can still be associated with severe side effects and is not justified for exposures that pose a negligible risk for transmission. The USPHS now recommends emtricitabine plus tenofovir (may be dispensed as Truvada, a fixed-dose combination tablet) plus raltegravir (RAL/FTC/TDF) as HIV PEP for exposures to HIV. This regimen is tolerable, potent, conveniently administered, and associated with minimal drug interactions.

➜ RAL/FTC/TDF should be used for all PEP unless otherwise contraindicated, e.g., known antiretroviral resistance, renal disease.

Antiretroviral agents not recommended:

The following drugs are *not* recommended for use as PEP:

- Didanosine
- Nelfinavir
- Tipranavir
- Nevirapine (contraindicated)

➜ Enfurvitide (Fuzeon®; T20) should not be included in PEP regimens, *except with expert consultation*.

Monitoring and management of PEP toxicity:

Exposed individuals who are prescribed PEP should be monitored for drug toxicity by testing at baseline and again at two weeks after starting PEP. Monitoring should include at least a complete blood count, as well as renal and hepatic function tests. If a protease inhibitor (PI) is utilized, monitoring for hyperglycemia should be considered for diabetic patients. If toxicities are identified, modification of the regimen should be considered after expert consultation. Patients should be provided with information about measures that may assist in minimizing side effects and about the methods of clinical monitoring for toxicity during the follow-up period. Patients should be advised that evaluation of certain symptoms (e.g., fever, rash, back or abdominal pain, pain on urination or blood in the urine, dark urine, yellowing of the skin or whites of the eyes, or symptoms of hyperglycemia) should not be delayed.

Postexposure follow-up:

Individuals with exposure to HIV should receive follow-up counseling, postexposure testing, and medical evaluation—*regardless of whether they receive PEP*. After baseline testing at the time of exposure, follow-up HIV-antibody testing should be performed at the following intervals after the exposure date: 6 weeks, 12 weeks, and 6 months. If the exposed person becomes HCV-infected after exposure to an HIV/HCV co-infected source, an HIV-antibody test should also be obtained at 12 months.

Special considerations for HIV PEP:

While expert consultation regarding provision of HIV PEP is generally advised, it is considered essential in the following special situations listed below.

➜ **Delayed initiation of HIV PEP:** PEP for occupational exposures should generally not be delayed beyond 24-36 hours postexposure; PEP for sexual and injection drug use related

exposures should not be provided after 72 hours. The maximum time interval after which PEP provides no benefit is unknown.

- **Unknown source (e.g., needle in a sharps container/tattoo needles):** Decide about using PEP on a case-by-case basis, in consultation with the PEPline. Consider both the epidemiological likelihood of HIV exposure and the severity of the exposure. Do not test needles or other sharp instruments for HIV.
- **Known or suspected pregnancy in the exposed person:** Pregnancy does not preclude the use of optimal PEP regimens, and PEP should not be withheld on the basis of pregnancy. Expert consultation should be sought in all cases in which antiretroviral medications are prescribed to pregnant patients for PEP. *The following medications are contraindicated for use in pregnant women: efavirenz (during first trimester) and nelfinavir, as well as the combination of didanosine and stavudine.*
- **Source case has evidence of antiretroviral resistance:** When the source patient's virus is known or suspected to be resistant to one or more of the drugs being considered for the PEP regimen, it is recommended that these drugs not be selected as part of the regimen; *expert consultation is strongly advised*. If this information is not immediately available, the initiation of PEP, if indicated, should not be delayed. The regimen can be modified after PEP has been initiated whenever such modifications are deemed appropriate, based on relevant information received.
- **PEP side effects:** Health care providers who are knowledgeable about the possible drug toxicities, drug interactions, and need for adherence should discuss these issues with the patient. RAL/FTC/TDF is generally well-tolerated, but side effects, if they occur, frequently can be managed without changing the PEP regimen. Seek consultation when side effects are difficult to manage.
- **Expanded regimens:** Regimens other than RAL/FTC/TDF should normally only be selected in consultation with an HIV PEP expert. Consultation should be considered when the source patient has known antiretroviral resistance or when the treated patient has preexisting disease. Tenofovir has been associated with renal toxicity, and an alternative should be considered for the patients.

Step 5. Determine Need for HBV Postexposure Management

General Principles

Prompt assessment and follow-up is essential in the evaluation and decision-making regarding HBV postexposure management. *Management of exposures is dependent upon the source case test results and the vaccination status of the exposed person.* Contact the PEPLINE for guidance.

- ***The source case*** should be tested for HBsAg; those that are HBsAg positive should be tested for HBeAg.
- ***The exposed person*** should be assessed for HepB vaccination status and vaccine response status (previous anti-HBs result). Those that were tested post-vaccination do not need further testing to assess anti-HBs levels. Previously vaccinated persons who were not tested for anti-

HBs post-vaccination should be tested for anti-HBs, using a quantitative method that allows detection of the protective concentration of anti-HBs.

- A vaccine ***responder*** is defined as a person with anti-HBs ≥10 mIU/mL after ≥3 doses of HepB vaccine.
- A vaccine ***nonresponder*** is defined as a person with anti-HBs <10 mIU/mL after 2 complete series (≥6 doses) of HepB vaccine.

- ***Testing the source patient and the exposed person should occur simultaneously***. Testing the source patient should not be delayed while waiting for the exposed person's anti-HBs test results; likewise, testing the exposed person should not be delayed while waiting for the source patient HBsAg results.
- ***For exposed persons who are potentially susceptible*** (i.e., do not have evidence of a post-vaccination anti-HBs ≥10 mIU/mL), HBIG and HepB vaccine should be administered as soon as possible after an exposure. The effectiveness of HBIG when administered > 7 days after exposures is unknown. HBIG dosage is 0.06 mL/kg.

  Note: *If a person is currently in the middle of a HepB vaccine series when exposed, then vaccine should be given according to the usual schedule.*

- ***Incompletely vaccinated persons should receive additional dose(s) to complete the 3-dose vaccine series.*** The vaccine series does not need to be restarted; however, minimum dosing intervals should be heeded. Minimum dosing intervals are 4 weeks between the first and second dose, 8 weeks between the second and third dose, and 16 weeks between the first and third dose.

Management of Exposure to an HBsAg+ or Unknown Source, by Vaccination Status

Recommendations for postexposure management of persons who sustain a bloodborne exposure to an HBsAg positive or unknown source are outlined in *Appendix 7*, which provides a flow diagram based on vaccination status. A more detailed description of the six categories based on vaccination status is provided below:

1. ***Three Doses & Responder:*** Exposed persons with documentation of a complete (≥3 doses) HepB vaccine series, and subsequent post-vaccination anti-HBs ≥10 mIU/mL, are considered to be *responders* and hepatitis B immune.
   - Immunocompetent persons have long-term protection against HBV and do not need further testing to assess anti-HBs levels.
   - No HBV postexposure management is necessary, regardless of the source patient's HBsAg status.

2. ***Three Doses & Response Unknown:*** Exposed persons with documentation of a complete (≥3 doses) HepB vaccine series, and no documentation of post-vaccination anti-HBs results, should undergo anti-HBs testing as soon as possible after the exposure.
   - If the anti-HBs is ≥10 mIU/mL, then the person is considered a *responder* and no HBV postexposure management is necessary.
   - If the anti-HBs is <10 mIU/mL, then see instructions below for *Category 3*, *Three Doses & Anti-HBs <10 mIU/mL*.

Categories 3–6 Below

Persons who have a post-vaccination anti-HBs <10mIU/mL, or who are unvaccinated or incompletely vaccinated (Categories 3–6 below), are presumed to be susceptible and require follow-up laboratory testing for HBV infection. They should undergo baseline testing (anti-HBc) as soon as possible after exposure, and follow-up testing approximately 6 months later (anti-HBc and HBsAg).

- Anti-HBc is drawn at the time of the exposure. *Vaccination and HBIG should not be delayed while awaiting test results.*
  - ➔ A positive anti-HBc indicates past or current HBV infection. If the anti-HBc* is positive, discontinue vaccination and then test for HBsAg*****.
- Anti-HBc***** and HBsAg***** is drawn 6 months after the exposure.

For persons in Categories 3–5 below, an anti-HBs is drawn 1–2 months post-vaccination, and at least 4–6 months after HBIG is administered, to assess responder status.

***** If anti-HBc is positive and HBsAg is negative, then the exposed person is considered to have natural immunity to HBV and requires no additional vaccination and no special evaluation unless they become immunosuppressed or immunocompromised. If HBsAg is positive, then evaluate for chronic HBV infection. See the BOP Clinical Practice Guideline, *Stepwise Approach for Detecting, Evaluating, and Treating Chronic Hepatitis B Virus Infection*.

3. ***Three Doses & Anti-HBs < 10 mIU/mL:*** Vaccinated exposed persons with anti-HBs <10 mIU/mL after one complete (3-dose) HepB vaccine series should receive 1 dose of HBIG and a HepB vaccine dose as soon as possible and be tested for anti-HBc. The exposed person should then receive the second 2 doses to complete a second HepB vaccine series according to the vaccination schedule (6 doses total when accounting for the original 3-dose series).

4. ***Not Vaccinated:*** An exposed person who has no history of HepB vaccination should receive 1 dose of HBIG and 1 dose of HepB vaccine as soon as possible and be tested for anti-HBc.

5. ***One or Two Doses Only (Incomplete):*** The incompletely vaccinated exposed person (history of 1 or 2 vaccine doses) should receive 1 dose of HBIG and be tested for anti-HBc.. If the person is currently in the middle of a vaccine series, vaccine dosing should continue according to schedule. If vaccination occurred sometime in the past, then a vaccine dose should be given immediately. Those in need of a third dose to complete the 3-dose series should be vaccinated $\geq$ 8 weeks later

6. ***Two Series of Three Doses & Non-Responder:*** An exposed person who has documentation of HepB vaccination, with anti-HBs <10 mIU/mL after two complete, 3-dose HepB vaccine series (6 doses), should receive 1 dose of HBIG and be tested for total anti-HBc. A second dose of HBIG should be administered 1 month later.

Step 6. Determine Need for HCV Postexposure Follow-Up

There is no known effective prophylaxis for persons exposed to an HCV-positive source. If the source is anti-HCV positive or unknown, the following is the recommended follow-up schedule for the exposed person:

- **Baseline (at time of exposure):** Obtain anti-HCV and ALT.
- **4 months postexposure:** Obtain anti-HCV and ALT. If anti-HCV is positive, then obtain HCV RNA. If HCV RNA is positive, then evaluate for treatment.
- **6 months postexposure:** If 4-month anti-HCV is negative, then obtain an anti-HCV and ALT. If anti-HCV is negative, then STOP follow-up. If anti-HCV is positive, then obtain HCV RNA. If HCV RNA is positive, then evaluate for treatment.

Step 7. Determine Need for Tetanus Vaccine

For "clean" wounds, a tetanus booster is not indicated. An example of a clean wound is when an individual sustains a needle stick injury from a needle that was used on a patient, but was known to be sterile prior to use. If the wound is neither minor nor clean (potentially contaminated with dirt or saliva), the exposed person should be evaluated as follows:

- **For those with an unknown history of tetanus vaccine or less than 3 doses,** administration of tetanus immune globulin and the 3-dose vaccine series* is indicated.

  ***** *The tetanus vaccine series consists of 3 doses of Td (preferably with one of the 3 doses being Tdap) administered at 0 and 4 weeks, and again at 6–12 months.*

- **For those with a history of a complete tetanus series, who had a booster more than 5 years ago,** administration of Td or Tdap** is indicated. Tdap is indicated if the person is not known to have received it previously, to provide adult coverage for pertussis.

- **For those with a history of 3 or more doses of Td vaccine and whose last booster was less than 5 years ago,** no tetanus booster is required.

  ****** *Td = Tetanus and diphtheria vaccine*
  Tdap = Tetanus, diphtheria, and pertussis vaccine

Step 8. (Human bites only) Determine Need for Antibiotic Prophylaxis

Individuals with human bite wounds have a high risk of serious bacterial infections; close monitoring of the wound is therefore necessary.

- **Those with the following types of human bite wounds should be considered for prophylactic antibiotic treatment:** Bites to the hands, feet, face, or skin overlying cartilaginous structures; or bites that penetrated deeper than the epidermal layer.
- **As soon as possible (prior to signs of infection):** These persons should be treated with amoxicillin-clavulanate 875/125 mg by mouth, twice daily for 5 days.
- **For persons allergic to penicillin:** Treat for five days with clindamycin (450 mg three times daily) together with *either* ciprofloxacin (500 mg twice daily) *or* sulfamethoxazole/ trimethoprim (800/160 mg twice daily).

➔ ***Individuals who develop cellulitis or other serious skin or soft tissue infection following a human bite should be referred urgently for IV antibiotics.***

Step 9. (Sexual exposures only) Conduct Screening for STDs

Any allegation made by an individual of recent sexual assault should receive prompt forensic evaluation by a healthcare professional trained in collecting sexual assault forensic evidence. Evaluation for sexually transmitted diseases should be based on the CDC 2010 STD Treatment Guidelines (see *References* section). The portion of the CDC guidelines on sexual assault (including specimen collection and prophylactic treatment) is reprinted in *Appendix 4*. The most common STDs among sexually assaulted women are trichomoniasis, bacterial vaginosis, gonorrhea, and chlamydial infections. Empiric antimicrobial treatment for potential STDs in sexually assaulted inmates should be considered on a case-by-case basis, considering the known medical history of the assailant, type of exposure, and likelihood of follow-up (e.g., potential for release during the incubation period.) Follow BOP policy and reporting requirements, as appropriate.

Step 10. Provide Counseling, Education, and Referral

Counseling and education: Individuals with exposures to bloodborne pathogens should be counseled to avoid behaviors by which they could transmit the organism to another person. *Table 4* below outlines risk behaviors that should be avoided, depending on the source case status.

Table 4. Educational Messages to Prevent Transmission

Behaviors/Conditions	HIV Exposure	HBV Exposure	HCV Exposure
Unprotected sex	Avoid	—	—
Pregnancy	Avoid	—	—
Breast feeding	Avoid	—	—
Donating blood, organs, tissue, or semen	Avoid	Avoid	Avoid

Referrals: A plan should be made for appropriate follow-up care, preferably with an experienced clinician. When indicated, also make referrals for counseling to help the exposed person cope with the stress associated with a significant exposure.

Step 11. Complete Reporting and Documentation

Reporting and documentation of exposure incidents should include the following:

- Report the exposure incident to the appropriate supervisor (if an inmate worker).
- Send an incident report to the Safety Office and the Infection Control Office. The Safety Office must include in the OSHA 300 Log any worker incidents deemed to be true exposures (including those involving inmate workers).
- Maintain a copy of the completed Postexposure Worksheets (*Appendix 1* and *Appendix 2*) or similar documentation in the Infection Control Office.
- Document exposure follow-up in the individual's medical record. ***Do not record the identity of the source case in the exposed person's medical record.***
- Utilize appropriate forms in conjunction with HIV testing, administering vaccines, etc. See *Appendix 6a* for list of available forms.

Analyzing the exposure incident: After providing initial postexposure management, analyze the incident to determine how similar incidents could be prevented in the future. Consider interviewing the exposed person, or others present when the incident occurred, to identify contributing factors and insights as to how the incident could have been prevented. An action plan and interventions to reduce blood exposure and sharp injuries should include investigating incidents, monitoring progress of actions taken, and measuring performance improvements to reduce specific types of injuries. Institutions should establish quality indicators for evaluating sharps safety and injury prevention programs; progress should be reported to the local Infection Prevention and Control Committee.

References

Bloodborne Pathogens

CDC. Antiretroviral postexposure prophylaxis after sexual, injection-drug use, or other nonoccupational exposure to HIV in the United States: recommendations from the U.S. Department of Health and Human Services. *MMWR*. 2005;54(No. RR-2):1–19. Available at: *http://www.cdc.gov/mmwr/PDF/rr/rr5402.pdf*

CDC. Guidance for evaluating health-care personnel for hepatitis B virus protection and for administering postexposure management. *MMWR*. 2013;62(10):1–24.

CDC. Updated information regarding antiretroviral agents used as HIV postexposure prophylaxis for occupational HIV exposures. *MMWR*. 2007;56(No.49):1291–1292. Available at: *http://www.cdc.gov/mmwr/pdf/wk/mm5649.pdf*

CDC. Updated U.S. Public Health Service guidelines for the management of occupational exposures to HIV and recommendations for postexposure prophylaxis. *MMWR*. 2005;54. (No. RR-9):1–17. Available at: *http://www.cdc.gov/mmwr/pdf/rr/rr5409.pdf*

CDC. Updated U.S. Public Health Service guidelines for the management of occupational exposures to HBV, HCV, and HIV and recommendations for postexposure prophylaxis. *MMWR*. 2001;50(No. RR-11). Available at*:*
http://www.cdc.gov/MMWR/preview/MMWRhtml/rr5011a1.htm

USPHS. 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(9):875–892. Available at: *http://www.jstor.org/stable/10.1086/672271*

Tetanus

CDC. Diphtheria, tetanus, and pertussis: recommendations for vaccine use and other preventive measures: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR*. 1991;40(No. RR-10):1–28. Available at:
http://www.cdc.gov/MMWR/preview/MMWRhtml/00041645.htm

CDC. Preventing tetanus, diphtheria, and pertussis among adults: use of tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccine. Recommendations of the Advisory Committee on Immunization Practices (ACIP) and recommendation of ACIP, supported by the Healthcare Infection Control Practices Advisory Committee (HICPAC), for use of Tdap among health-care personnel. *MMWR*. 2006;55(No. RR-17):1–37. Available at:
http://www.cdc.gov/mmwr/pdf/rr/rr5517.pdf

Human Bites

Gilbert DN, Moellering RC, Eliopoulos GM, Sande MA, eds. The Sanford Guide to Antimicrobial Therapy 2006. Sperryville, VA: Antimicrobial Therapy, Inc.; 2006.

Rittner AV, Fitzpatick K, Corfield A. Best evidence topic report. Are antibiotics indicated following human bites? *Emerg Med J*. 2005;22:654.

Talan DA, Abrhamian FM, Moran GJ, et al. Clinical presentation and bacteriologic analysis of infected human bites in patients presenting to emergency departments. *Clin Infect Dis.* 2003;37:1481–1489.

Sexually Transmitted Diseases

CDC. Sexually transmitted diseases treatment guidelines, 2010. *MMWR*. 2010;59(No. RR-12):1–119. Available at: *http://www.cdc.gov/mmwr/pdf/rr/rr5912.pdf*

Appendix 1: Postexposure Worksheet – Management of Exposed Person

Postexposure Worksheet: Management of Exposed Person (Page 1 of 4)

****** Optional Form. File in Infection Control Office.******

Incident #: __ __ __ - ___/___/___ __ (Incident # = 3-letter facility code + date (mm/dd/yy) + exposure # for that day, e.g.,1,2,3)

Last name:	**First:**	**Initial:**
Reg.#:	**Date of birth:** _____/____ /_____	**Sex:** ☐ male ☐ female
Exposure: date ____/____/____ time ___:____ ☐ am ☐ pm	**Evaluation:** date ____/____/____ time ___:____ ☐ am ☐ pm	

Step 1. Evaluate the Exposure

a. Describe the exposure site and initial care provided: _____

b. Describe the incident (location, circumstances): _____

_____

_____

c. Exposure occurred while individual was: ☐ working ☐ not working

d. Type of body fluid (check all that apply)

☐ **Potentially infectious**

- ☐ blood
- ☐ tissue
- ☐ semen
- ☐ peritoneal fluid
- ☐ rectal secretions
- ☐ cerebrospinal fluid
- ☐ vaginal secretions
- ☐ synovial fluid
- ☐ breast milk
- ☐ pleural fluid
- ☐ amniotic fluid
- ☐ pericardial fluid
- ☐ blood-contaminated fluid: _____

☐ **Not infectious*** (unless visibly bloody)

- ☐ feces
- ☐ nasal secretions
- ☐ saliva
- ☐ sputum
- ☐ sweat
- ☐ tears
- ☐ urine
- ☐ vomitus

*** Postexposure management is not required for exposures to fluids that are *not infectious*. STOP!**

e. Exposure type (check all that apply)

☐ **Percutaneous** (by a sharp, including illicit tattoo)

Type /brand of sharp: _____

- ☐ less severe: superficial, solid (e.g., suture) needle
- ☐ more severe: deep puncture, bore needle, blood visible on device, needle used in artery/vein

Exposure type (*continued*)

☐ **Mucous membrane or** ☐ **Non-intact skin** (mouth/nose/eyes)

- ☐ small-volume exposure (a few drops)
- ☐ large-volume exposure (larger splash)

☐ **Human bite:**

Exposed person was: ☐ biter ☐ bitten

Blood exposure suspected? ☐ yes ☐ no

If no, skip to #7 on page 3 of this form.

If yes, check **exposure type** above as follows:

- ▸ If person was bitten: *percutaneous*
- ▸ If person was biter: *mucous membrane*

☐ **Sexual**

☐ receptive anal ☐ receptive vaginal ☐ other

Is behavior recurrent? ☐ yes ☐ no

Time elapsed since exposure: ___ hours

☐ **Shared injection drug use equipment**

Is behavior recurrent? ☐ yes ☐ no

Time elapsed since exposure: ___ hours

☐ **Intact skin?** This is *not* a bloodborne exposure. **STOP!**

Step 2. Evaluate the Source Case

Use *Appendix 2, Postexposure Worksheet: Assessment of Source Case,* to gather data regarding the source case.

Step 3. Evaluate the Health Status of the Exposed Person

Baseline labs:

HIV EIA ____/____/____ _____

Anti-HBs ____/____/____ _____

(if previously vaccinated & no post-vaccination test result)

Total Anti-HBc ____/____/____ _____

(if not vaccinated or incompletely vaccinated)

Anti-HCV ____/____/____ _____

Date *Result*

Females: STAT pregnancy test if HIV PEP indicated (unless currently menstruating, s/p hysterectomy, or post-menopausal)

History of tetanus series? ☐ yes ☐ no ☐ unknown

Last tetanus booster: ☐ **Td** ☐ **Tdap** ___/____/____

History of HepB vaccine: ☐ yes ☐ no

(1) ___/___/___ (2) ___/___/___ (3) ___/___/___

Hepatitis B Vaccine Response Status: ___/___/___

☐Responder (anti-HBs ≥10 mIU/mL)

☐Non-Responder (anti-HBs < 10 mIU/mL)

☐Unknown response status

Other medical conditions: _____

Current medications: _____

Drug allergies: _____

Postexposure Worksheet: Management of Exposed Person (Page 2 of 4)

Last name: _____ **First:** _____ **Initial:** ___ **Incident #:** __ __ __ - __/__/__ __

Step 4. Determine Need for HIV PEP ☐ NA

a. Assess need for HIV PEP by consulting the chart below. If source is HIV EIA negative, PEP is *not* indicated.

1. Identify the "**Exposure Type**."
2. Identify the "**Condition**" of the exposure.
3. Determine recommended PEP (if any) based on "**HIV Status of the Source**" case.

➔ **HIV PEP should be started as soon as possible.** For information about specific drug regimens, consult *Appendix 3*.

HIV Exposures: PEP Recommendations

1. ExposureType	2. Condition	3. Recommendations HIV PEP	
		HIV+	HIV Status Unknown
Percutaneous (includes illicit tattoo)	Any severity	PEP	Consider PEP
Mucous membrane	Small volume	PEP	Generally no PEP
	Large volume	PEP	Consider PEP
Non-intact skin	Small volume	PEP	Generally no PEP
	Large volume	PEP	Consider PEP
Sexual[1,2] (<72 hrs/not recurrent)	Receptive anal or vag sex	PEP	Consider PEP
	Other sexual exposure	PEP generally not recommended	PEP not recommended
Sharing IDU equip[1]	<72 hrs/not recurrent	PEP	Consider PEP

[1] PEP is generally not indicated ≥ 72 hours after exposure or if behavior is either frequent or recurrent. PEP may be considered after longer intervals (e.g., one week) on a case-by-case basis for exposures that represent an extremely high risk of transmission.

[2] *For the purposes of these BOP guidelines, receptive anal and vaginal intercourse are the only types of sexual exposures that should be considered for PEP (except if trauma or assault).*

Adapted from: CDC. *MMWR*. 2005;54(No. RR-9) at http://www.cdc.gov/mmwr/pdf/rr/rr5409.pdf and
CDC. *MMWR*. 2005;54(No. RR-2) at http://www.cdc.gov/mmwr/PDF/rr/rr5402.pdf
USPHS. *Infect Control Hosp Epidemiol. 2013;34(9):875-892 at http://www.jstor.org/stable/10.1086/672271*

b. Expert consultation is required, if available, whenever managing exposures. The National Clinician's Postexposure Prophylaxis Hotline (PEPline) is available at 888-448-4911, 9 a.m. to 2 a.m. EST. For more information go to their website at http://www.nccc.ucsf.edu/about_nccc/pepline/. Definitely seek consultation if delay is more than 36 hours, or if the source case is drug-resistant. For exposures related to sex or injection drug use, PEP should not be started after 72 hours.

PEPline Consultation: Date: __/__/__ Time: _____ Recommendations: _____
_____

c. Summarize actions taken, based on evaluation of exposed person: _____

Summary of HIV PEP Recommendations

☐ **HIV PEP *not* recommended**
☐ **HIV PEP recommended and exposed person refused it.** (Document refusal in medical record.)
☐ **HIV PEP recommended and was accepted:** ☐ Consent signed?

☐ Prescription given ____ hours after exposure
☐ Regimen prescribed: _____ _____mg q _____ _____ _____mg q _____
_____ _____mg q _____ _____ _____mg q _____
☐ Medication provided ____ hours after exposure

☐ Patient informed of importance of immediate start of medication and duration of 28 days

☐ Baseline labs obtained: ☐ CBC ☐ AlkPhos ☐ Amylase ☐ AST ☐ Bili ☐ CK ☐ BUN ☐ ALT

☐ Follow-up instructions: ☐ Report S/S of acute retroviral syndrome (flu-like symptoms)
☐ Return in 72 hours (as additional information about source is obtained)
☐ Return in 2 weeks (monitor for drug toxicity(e.g., CBC and renal and hepatic function tests)
☐ Referral for follow-up care to: _____

Postexposure Worksheet: Management of Exposed Person (Page 3 of 4)

Last name: _____ **First:** _____ **Initial:** ___ **Incident #:** __ __ __ - __/__/__ __

Step 5. Determine Need for HBV Postexposure Management ☐ NA

a. Assess need for HBV postexposure management by consulting *Appendix 7*.

Vaccination Status of Exposed Person at Time of Exposure

- ☐ 3 Doses & Responder
- ☐ 3 Doses & Response Unknown
- ☐ 3 Doses & Anti-HBs < 10mIU/mL
- ☐ Not Vaccinated
- ☐ 1 Dose Only (incomplete)
- ☐ 2 Doses Only (incomplete)
- ☐ 2 Series of 3 Doses & Non-Responder

Source HBsAg Results

☐ Positive ☐ Negative ☐ Unknown

b. See *Appendix 7* for specific recommendations for lab follow-up. If tests are performed, record results below to summarize:

Lab Tests Performed

Test	*Date*	*Results*
Anti-HBs	___/___/_____	_____
Anti-HBs	___/___/_____	_____
Total anti-HBc	___/___/_____	_____
Total anti-HBc	___/___/_____	_____
HBsAg	___/___/_____	_____
HBsAg	___/___/_____	_____

c. See *Appendix 7* for specific recommendations for giving HepB vaccine and HBIG. Record below if given.

HBIG 0.06 mLkg IM Date: ___/___/_____
HBIG 0.06 mLkg IM Date: ___/___/_____

HepB Vaccine Date: ___/___/_____
Date: ___/___/_____
Date: ___/___/_____

Step 6. Determine Need for HCV Postexposure Follow-Up. ☐ NA

There is no postexposure prophylaxis recommended for hepatitis C exposures. If the source is anti-HCV negative, no follow-up is required. If source is anti-HCV positive or unknown, the following is the recommended follow-up schedule:

- **Baseline (at time of exposure):** Date: ___/___/___ Anti-HCV _____ ALT:_____
- **4-months postexposure:** Date: ___/___/___ Anti-HCV _____ ALT:_____. If anti-HCV (+), obtain HCV RNA.
- **6-months postexposure:** Date: ___/___/___ Anti-HCV _____ ALT:_____. If anti-HCV (+), obtain HCV RNA.

If HCV RNA is positive, then evaluate for treatment for hepatitis C.

Step 7. Determine Need for Tetanus Vaccine. ☐ NA

If wound is clean (includes needle stick wounds from needle known to be previously sterile) ➜ no booster is required.

If wound is potentially contaminated with dirt or saliva ➜ evaluate for tetanus booster:

- If unknown vaccine history or < 3 dose series ➜ give tetanus immune globulin (TIG) and vaccine series.*
- If history of 3 or more doses and last booster > 5 years ago ➜ give Td or Tdap (preferred).
- If history of 3 or more doses and last booster < 5 years ago ➜ no tetanus booster required.

***** *Tetanus vaccine series: 3 doses of Td (Tdap substituted for one dose). Administer at 0, 4 weeks, and 6-12 months.*

Administered: TIG ___/___/___ Td ___/___/___ Tdap___/___/___ *(Td = tetanus/diphtheria Tdap = tetanus/diphtheria/pertussis)*

Step 8. (Human bites only) Determine Need for Antibiotic Prophylaxis. ☐ NA

Human bite wounds are at risk for bacterial infection. Observe closely. Consider antibiotic prophylactic treatment for the following types of human bite wounds: bites to the hands, feet, face, skin overlying cartilaginous structures or bite that penetrated deeper than the epidermal layer.

Recommended prophylaxis (prior to S/S of infection)**:** Amoxicillin/clavulanate 875/125 mg po 2x daily x 5 days *(If penicillin allergy*, treat for 5 days with: clindamycin (450 mg 3x daily) *plus either* ciprofloxacin (500 mg 2x daily) *or* sulfamethoxazole/trimethoprim (800/160 mg 2x daily).

If signs and symptoms of cellulitis or soft tissue infection develop, refer urgently for IV antibiotic treatment.

Postexposure Worksheet: Management of Exposed Person (Page 4 of 4)

Last name: _____ **First:** _____ **Initial:** ___ **Incident #:** __ __ __ - __/__/__ __

Step 9. (Sexual exposures only) Conduct STD Screening ☐ NA

Any allegation of a recent sexual assault should result in a prompt forensic evaluation by a healthcare professional trained in collecting sexual assault forensic evidence. See CDC guidelines in *Appendix 4*. Follow BOP sexual assault policy.

Step 10. Provide Counseling, Education, and Referral ☐ NA

Check any of the following actions that have been taken.

☐ **Provided education to the exposed person on these topics:**
- ☐ Avoiding unprotected sex/pregnancy (HIV)
- ☐ Not to breast feed (HIV)
- ☐ Not to donate blood/tissue/semen (HIV/HBV/HCV)
- ☐ Wound management (signs and symptoms of infection to report)

☐ **Referred for counseling to:** _____

☐ **Determined recommended medical/laboratory follow-up (see table below):**

Recommended Postexposure Laboratory Follow-Up

Time from Exposure	HIV Exposure	HBV Exposure	HCV
Baseline	CBC, AlkPhos, AST, ALT, Bili, CK, Amylase, BUN	—	Anti-HCV & ALT
2 weeks (if on PEP)	CBC, AlkPhos, AST, ALT, Bili, CK, Amylase, BUN	Based on vaccination status. (see *Appendix 7*)	—
6 weeks	HIV EIA		—
3 months	HIV EIA		—
4 months	—		Anti-HCV* & ALT
6 months	HIV EIA		Anti-HCV* & ALT
1–2 months after last HepB vaccine dose**	—		—
1 year (if exposed person newly HCV-infected)	HIV EIA		—

** Confirm positive with HCV RNA.* *** Cannot be ascertained if HBIG given in last 6–8 weeks.*

Step 11. Complete Reporting and Documentation ☐ NA

Check off the following actions when you complete them:

- ☐ Report incident to supervisor as soon as possible.
- ☐ For inmate workers, give incident report to Safety Office, which must include in the OSHA 300 Log any incident deemed to be a worker exposure
- ☐ Report incident to Infection Control Office.
- ☐ Analyze exposure incident.

Healthcare Provider Signature: _____ **Date:**___/___/___

Appendix 2: Postexposure Worksheet – Assessment of Source Case

Postexposure Worksheet: Assessment of Source Case

****** Optional Form. File in Infection Control Office. Do not file in exposed person's medical record.******

Incident #: __ __ __ - ___/___/___ __ **Exposure:** date ____/____/____ time ___:____ ☐ am ☐ pm

Exposure type: ☐ percutaneous ☐ mucous membrane ☐ non-intact skin ☐ sexual ☐ injection drug use

Last name:	**First:**	**Initial:**
Registration #:	**Date of birth:** _____/____/_____	**Sex:** ☐ male ☐ female

Location:

Laboratory Results

For the source case, obtain previous and current test results. Rapid HIV testing should be utilized to facilitate prompt determination of the need for PEP. Confirm positives with standard HIV serologic tests. ***Sources of information:***

☐ Chart review: __/__/___ (*Date*) ☐ Patient/proxy interview: __/__/___ (*Date*) ☐ Clinician interview: __/__/___ (*Date*) Clinician: _____

Significant medical problems/risk factors: _____

Source Case Laboratory Results

Test	Prior Tests		Current Tests	
	Date	**Result**	**Date**	**Result**
HIV EIA				
HBsAg				
HBeAg				
Anti-HCV				

HIV Infected Source Case

HIV Status: ☐Positive ☐Negative (date tested: ___/___/___) ☐Unknown ☐Pending

If positive, last CD4 counts/% and viral loads:

Date: _____ Count: _____ %: ____ VL: _____

Date: _____ Count: _____ %: ____ VL: _____

History of anti-retroviral therapy? ☐Yes ☐No ☐Unknown

If Yes, current medications: _____

_____

History of resistance to anti-retroviral therapy? ☐Yes ☐No ☐Unknown

If Yes, resistance to which medications: _____

_____

HIV Status of Source Case Unknown

HIV risk factors:

☐ Has injected illegal drugs and shared equipment
☐ Male who has had sex with another man
☐ Has had unprotected intercourse with a person with known or suspected HIV infection
☐ Has history of gonorrhea or syphilis
☐ Has had unprotected sex with more than one sex partner
☐ Is from a high risk country (in Sub-Saharan or West Africa)
☐ Is hemophiliac or has received blood products from 1977 to 1985
☐ Risk factors unknown because:_____

Healthcare Provider Signature: _____ **Date:**___/___/___

Appendix 3: Preferred Regimens for HIV Postexposure Prophylaxis

Treatment is prescribed on a case-by-case basis in consultation with the PEPline (888-448-4911, 9 a.m.–2 a.m. EST). *Preferred and alternative PEP regimens and dosing are listed below. The BOP recommends utilizing a combination of three medications for PEP to include raltegravir plus* Truvada® (*emtricitabine plus tenofovir fixed dose combination tablet). In general, this regimen should be utilized unless there is a reason not to, such as a drug-resistant source case or preexisting renal disease.* ***PEP is administered for 28 days.*** *For alternative regimens and information about side effects, consult the USPHS guidelines referenced below.*

PEP Regimens *(for percutaneous, non-intact skin, mucous membrane, and human bite exposures)*

Preferred Regimen[1]	• Truvada® ONCE DAILY ***plus*** • Raltegravir 400 mg TWICE DAILY
Alternative Regimens	May combine one drug or one drug pair from **Column A** with one pair of nucleoside/tide reverse-transcriptase inhibitors from **Column B**. The selection of an alternative antiretroviral combination should be made in consultation with providers who are familiar with the agents and their side effects.

Column A	Column B
• Raltegravir 400 mg TWICE DAILY • Darunavir 800 mg ***plus*** ritonavir 100 mg ONCE DAILY • Etravirine 200 mg TWICE DAILY • Rilpivarine 25 mg ONCE DAILY • Atazanavir 300 mg ***plus*** ritonavir 100 mg ONCE DAILY[2] • Kaletra® two tablets TWICE DAILY	• Truvada® ONCE DAILY • Combivir® TWICE DAILY

[1] *Expert consultation should be sought in all cases in which antiretroviral medications are prescribed to pregnant patients and preexisting renal disease for PEP.*

[2] *Do not use with proton pump inhibitors, e.g., omeprazole.*

Combination Drug Dosing

Trade Name	*Generic Name(s)/Dosage Form*	*Frequency*
Truvada®	emtricitabine 200 mg ***and*** tenofovir 300 mg	one tablet ONCE DAILY
Combivir®	zidovudine 300 mg ***and*** lamivudine 150 mg	one tablet TWICE DAILY
Kaletra®	lopinavir 200 mg ***and*** ritonavir 50 mg	two tablets TWICE DAILY

Agents *Not* Recommended for PEP

The following agents are not recommended for PEP:

- didanosine
- nelfinavir
- tipranavir
- nevirapine (contraindicated)

Patient Information Sheets on HIV PEP Drugs

DHHS. AIDSinfo Drug Database. Available at: http://aidsinfo.nih.gov/DrugsNew/Default.aspx?MenuItem=Drugs

Source (for more detailed information on PEP, side effects, alternative regimens):

USPHS. 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(9):875–892. Available at: http://www.jstor.org/stable/10.1086/672271

Appendix 4: "Sexual Assault and STDs," CDC 2010 Treatment Guidelines for Adults and Adolescents

The following is abstracted from the CDC's 2010 Sexually Transmitted Disease Treatment Guidelines. Source: Centers for Disease Control and Prevention. Sexually transmitted diseases treatment guidelines, 2010. MMWR. 2010;59 (No. RR-12):90–95. Available at: http://www.cdc.gov/mmwr/pdf/rr/rr5912.pdf as a pdf file or online at http://www.cdc.gov/std/treatment/2010/sexual-assault.htm.

The recommendations in this report are limited to the identification, prophylaxis, and treatment of STDs and conditions commonly identified in the management of such infections. The documentation of findings, collection of nonmicrobiologic specimens for forensic purposes, and management of potential pregnancy or physical and psychological trauma are beyond the scope of this report.

Examinations of survivors of sexual assault should be conducted by an experienced clinician in a way that minimizes further trauma to the survivor. The decision to obtain genital or other specimens for STD diagnosis should be made on an individual basis. Care systems for survivors should be designed to ensure continuity (including timely review of test results), support adherence, and monitor for adverse reactions to any therapeutic or prophylactic regimens prescribed at initial examination. Laws in all 50 states strictly limit the evidentiary use of a survivor's previous sexual history, including evidence of previously acquired STDs, as part of an effort to undermine the credibility of the survivor's testimony. Evidentiary privilege against revealing any aspect of the examination or treatment also is enforced in most states. Although it rarely occurs, STD diagnoses might later be accessed, and the survivor and clinician might opt to defer testing for this reason. While collection of specimens at initial examination for laboratory STD diagnosis gives the survivor and clinician the option to defer empiric prophylactic antimicrobial treatment, compliance with follow up visits is traditionally poor. Among sexually active adults, the identification of an STD might represent an infection acquired prior to the assault, and therefore might be more important for the psychological and medical management of the patient than for legal purposes.

Trichomoniasis, BV, gonorrhea, and chlamydial infection are the most frequently diagnosed infections among women who have been sexually assaulted. Such conditions are relatively prevalent, and the presence after an assault does not necessarily imply acquisition during the assault. However, a postassault examination presents an important opportunity to identify or prevent STDs. Chlamydial and gonococcal infections in women are of particular concern because of the possibility of ascending infection. In addition, HBV infection can be prevented by postexposure administration of hepatitis B vaccine. Reproductive-aged female survivors should be evaluated for pregnancy, if appropriate.

Evaluating Adults and Adolescents for Sexually Transmitted Diseases

Initial Examination

An initial examination might include the following procedures:

- NAATs for *C. trachomatis* and *N. gonorrhoeae*. These tests are preferred for the diagnostic evaluation of sexual assault victims, regardless of the sites of penetration or attempted penetration.
- Wet mount and culture or point-of-care testing of a vaginal-swab specimen for *T. vaginalis* infection. The wet mount also should be examined for evidence of BV and candidiasis, especially if vaginal discharge, malodor, or itching is evident.
- A serum sample for immediate evaluation for HIV infection, hepatitis B, and syphilis. Decisions to perform these tests should be made on an individual basis.

Follow-Up Examinations

After the initial postassault examination, follow-up examinations provide an opportunity to:

- Detect new infections acquired during or after the assault.
- Complete hepatitis B vaccination, if indicated.
- Complete counseling and treatment for other STDs.
- Monitor side effects and adherence to postexposure prophylactic medication, if prescribed.

Examination for STDs can be repeated within 1–2 weeks of the assault. Because infectious agents acquired through assault might not have produced sufficient concentrations of organisms to result in positive test results at the initial examination, testing can be repeated during the follow-up visit, unless prophylactic treatment was provided. If treatment was provided, testing should be conducted only if the survivor reports having symptoms. If treatment was not provided, follow-up examination should be conducted within 1 week to ensure that results of positive tests can be discussed promptly with the survivor and that treatment is provided. Serologic tests for syphilis and HIV infection can be repeated 6 weeks, 3 months, and 6 months after the assault if initial test results were negative and infection in the assailant could not be ruled out (see *Risk for Acquiring HIV Infection below*).

Prophylaxis

Compliance with follow-up visits is poor among survivors of sexual assault. As a result, routine preventive therapy after a sexual assault should be encouraged. The following prophylactic regimen is suggested as preventive therapy:

- Postexposure hepatitis B vaccination, without HBIG. This vaccine should be administered to sexual assault survivors at the time of the initial examination if they have not been previously vaccinated. Follow-up doses of vaccine should be administered 1–2 and 4–6 months after the first dose.
- An empiric antimicrobial regimen for chlamydia, gonorrhea, and trichomonas.
- Emergency contraception. (This measure is necessary only when the assault could result in pregnancy in the survivor.)

Recommended Regimens

- **Ceftriaxone** 250 mg IM in a single dose ***OR*** **Cefixime** 400 mg orally in a single dose
  PLUS
- **Metronidazole** 2 g orally in a single dose
  PLUS
- **Azithromycin** 1 g orally in a single dose ***OR*** **Doxycycline** 100 mg orally twice a day for 7 days

For those requiring alternative treatments, refer to the specific sections in this report relevant to the specific agent. The efficacy of these regimens in preventing infections after sexual assault has not been evaluated. Clinicians should counsel patients regarding the possible benefits and toxicities associated with these treatment regimens; gastrointestinal side effects can occur with this combination.

Other Management Considerations

At the initial examination and, if indicated, at follow-up examinations, patients should be counseled regarding 1) symptoms of STDs and the need for immediate examination if symptoms occur and 2) abstinence from sexual intercourse until STD prophylactic treatment is completed.

Risk for Acquiring HIV Infection

HIV seroconversion has occurred in persons whose only known risk factor was sexual assault or sexual abuse, but the frequency of this occurrence is probably low. In consensual sex, the risk for HIV transmission from vaginal intercourse is 0.1%–0.2% and for receptive rectal intercourse, 0.5%–3%. The risk for HIV transmission from oral sex is substantially lower. Specific circumstances of an assault (e.g., bleeding, which often accompanies trauma) might increase risk for HIV transmission in cases involving vaginal, anal, or oral penetration.

Site of exposure to ejaculate, viral load in ejaculate, and the presence of an STD or genital lesions in the assailant or survivor also might increase the risk for HIV.

Postexposure therapy with zidovudine was associated with a reduced risk for acquiring HIV in a study of health-care workers who had percutaneous exposures to HIV-infected blood. On the basis of these results and the results of animal studies, PEP has been recommended for health-care workers who have occupational exposures to HIV. These findings have been extrapolated to other types of HIV exposure, including sexual assault. If HIV exposure has occurred, initiation of PEP as soon as possible after the exposure likely increases benefit. Although a definitive statement of benefit cannot be made regarding PEP after sexual assault, the possibility of HIV exposure from the assault should be assessed at the time of the postassault examination. The possible benefit of PEP in preventing HIV infection also should be discussed with the assault survivor if the assault poses a risk for HIV exposure.

Several factors impact the medical recommendation for PEP and affect the assault survivor's acceptance of that recommendation, including 1) the likelihood of the assailant having HIV, 2) any exposure characteristics that might increase the risk for HIV transmission, 3) the time elapsed after the event, and 4) the potential benefits and risks associated with the PEP. Determination of the assailant's HIV status at the time of the assault examination usually is not possible. Therefore, the health-care provider should assess any available information concerning 1) characteristics and HIV risk behaviors of the assailant(s) (e.g., a man who has sex with other men and persons who use injection drugs or crack cocaine), 2) local epidemiology of HIV/AIDS, and 3) exposure characteristics of the assault. When an assailant's HIV status is unknown, factors that should be considered in determining whether an increased risk for HIV transmission exists include 1) whether vaginal or anal penetration occurred; 2) whether ejaculation occurred on mucous membranes; 3) whether multiple assailants were involved; 4) whether mucosal lesions are present in the assailant or survivor; and 5) any other characteristics of the assault, survivor, or assailant that might increase risk for HIV transmission.

If PEP is offered, the following information should be discussed with the patient: 1) the unproven benefit and known toxicities of antiretrovirals; 2) the importance of close follow-up; 3) the benefit of adherence to recommended dosing; and 4) the necessity of early initiation of PEP to optimize potential benefits (i.e., as soon as possible after and up to 72 hours after the assault). Providers should emphasize that PEP appears to be well-tolerated in both adults and children and that severe adverse effects are rare. Clinical management of the survivor should be implemented according to the following guidelines. Specialist consultation on PEP regimens is recommended if HIV exposure during the assault was possible and if PEP is being considered. The sooner PEP is initiated after the exposure, the higher the likelihood that it will prevent HIV transmission if HIV exposure occurred; however, distress after an assault also might prevent the survivor from accurately weighing exposure risks and benefits of PEP and from making an informed decision to start such therapy. If use of PEP is judged to be warranted, the survivor should be offered a 3–5-day supply of PEP, and a follow-up visit should be scheduled several days later to allow for additional counseling.

Recommendations for Postexposure Assessment of Adolescent and Adult Survivors Within 72 Hours of Sexual Assault

- Assess risk for HIV infection in the assailant.
- Evaluate characteristics of the assault event that might increase risk for HIV transmission.
- Consult with a specialist in HIV treatment, if PEP is being considered.
- If the survivor appears to be at risk for HIV transmission from the assault, discuss antiretroviral prophylaxis, including toxicity and lack of proven benefit.
- If the survivor chooses to start antiretroviral PEP, provide enough medication to last until the next return visit; reevaluate the survivor 3–7 days after initial assessment and assess tolerance of medications.
- If PEP is started, perform CBC and serum chemistry at baseline (initiation of PEP should not be delayed, pending results).
- Perform HIV antibody test at original assessment; repeat at 6 weeks, 3 months, and 6 months.

Appendix 5: OSHA Bloodborne Pathogens Standard

The section of the OSHA bloodborne pathogen standard that covers postexposure management is printed below. It should be provided to all healthcare professionals evaluating workers who sustain potential exposures to bloodborne pathogens. The text for the entire standard, as well as other informational materials, are available at: http://www.osha.gov/SLTC/bloodbornepathogens/index.html.

Standard CFR29 Bloodborne Pathogens – Postexposure Evaluation and Follow-Up (1910.1030(f))

Occupational Safety and Health Administration (OSHA)

1910.1030(f) Hepatitis B Vaccination and Postexposure Evaluation and Follow-up

1910.1030(f)(1) General

1910.1030(f)(1)(I) **The employer shall make available the hepatitis B vaccine and vaccination series** to all employees who have occupational exposure, and postexposure evaluation and follow-up to all employees who have had an exposure incident.

1910.1030(f)(1)(ii) **The employer shall ensure that all medical evaluations and procedures including the hepatitis B vaccine and vaccination series and postexposure evaluation and follow-up, including prophylaxis, are:**

1910.1030(f)(1)(ii)(A) **Made available at no cost to the employee;**

1910.1030(f)(1)(ii)(B) **Made available to the employee at a reasonable time and place;**

1910.1030(f)(1)(ii)(C) **Performed by or under the supervision of a licensed physician** or by or under the supervision of another licensed healthcare professional; and

1910.1030(f)(1)(ii)(D) **Provided according to recommendations of the U.S. Public Health Service** current at the time these evaluations and procedures take place, except as specified by this paragraph (f).

1910.1030(f)(1)(iii) The employer shall ensure that all laboratory tests are conducted by an accredited laboratory at no cost to the employee.

1910.1030(f)(2) Hepatitis B Vaccination.

1910.1030(f)(2)(I) Hepatitis B vaccination shall be made available after the employee has received the training required in paragraph (g)(2)(vii)(I) and within 10 working days of initial assignment to all employees who have occupational exposure unless the employee has previously received the complete hepatitis B vaccination series, antibody testing has revealed that the employee is immune, or the vaccine is contraindicated for medical reasons.

1910.1030(f)(2)(ii) **The employer shall not make participation in a prescreening program a prerequisite for receiving hepatitis B vaccination.**

1910.1030(f)(2)(iii) If the employee initially declines hepatitis B vaccination but at a later date while still covered under the standard decides to accept the vaccination, the employer shall make available hepatitis B vaccination at that time.

1910.1030(f)(2)(iv) The employer shall assure that employees who decline to accept hepatitis B vaccination offered by the employer sign the statement in Appendix A.

1910.1030(f)(2)(v) If a routine booster dose(s) of hepatitis B vaccine is recommended by the U.S. Public Health Service at a future date, such booster dose(s) shall be made available in accordance with section (f)(1)(ii).

1910.1030(f)(3) Postexposure Evaluation and Follow-up. Following a report of an exposure incident, the employer **shall** make immediately available to the exposed employee a confidential medical evaluation and follow-up, including at least the following elements:

1910.1030(f)(3)(I) **Documentation of the route(s) of exposure**, and the circumstances under which the exposure incident occurred;

1910.1030(f)(3)(ii) **Identification and documentation of the source individual**, unless the employer can establish that identification is infeasible or prohibited by state or local law; 1910.1030(f)(3)(ii)(A) The source individual's blood shall be tested as soon as feasible and after consent is obtained in order to determine HBV and HIV infectivity. If consent is not obtained, the employer shall establish that legally required consent cannot be obtained. When the source individual's consent is not required by law, the source individual's blood, if available, shall be tested and the results documented.

1910.1030(f)(3)(ii)(B) When the source individual is already known to be infected with HBV or HIV, testing for the source individual's known HBV or HIV status need not be repeated.

1910.1030(f)(3)(ii)(C) Results of the source individual's testing shall be made available to the exposed employee, and the employee shall be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.

1910.1030(f)(3)(iii) **Collection and testing of blood for HBV and HIV serological status;**

1910.1030(f)(3)(iii)(A) The exposed employee's blood shall be collected as soon as feasible and tested after consent is obtained.

1910.1030(f)(3)(iii)(B) If the employee consents to baseline blood collection, but does not give consent at that time for HIV serologic testing, the sample shall be preserved for at least 90 days. If, within 90 days of the exposure incident, the employee elects to have the baseline sample tested, such testing shall be done as soon as feasible.

1910.1030(f)(3)(iv) **Postexposure prophylaxis**, when medically indicated, as recommended by the U.S. Public Health Service;

1910.1030(f)(3)(v) **Counseling**; and

1910.1030(f)(3)(vi) **Evaluation of reported illnesses.**

1910.1030(f)(4) Information Provided to the Healthcare Professional.

1910.1030(f)(4)(I) The employer shall ensure that the healthcare professional responsible for the employee's Hepatitis B vaccination is provided a copy of this regulation.

1910.1030(f)(4)(ii) **The employer shall ensure that the healthcare professional evaluating an employee after an exposure incident is provided the following information:**

1910.1030(f)(4)(ii)(A) **A copy of this regulation;**

1910.1030(f)(4)(ii)(B) **A description of the exposed employee's duties as they relate to the exposure incident;**

1910.1030(f)(4)(ii)(C) **Documentation of the route(s) of exposure and circumstances under which exposure occurred;**

1910.1030(f)(4)(ii)(D) **Results of the source individual's blood testing,** if available; and

1910.1030(f)(4)(ii)(E) **All medical records relevant to the appropriate treatment** of the employee including vaccination status which are the employer's responsibility to maintain.

1910.1030(f)(5) Healthcare Professional's Written Opinion. The employer shall obtain and provide the employee with a copy of the evaluating **healthcare** professional's written opinion within 15 days of the completion of the evaluation.

1910.1030(f)(5)(I) The healthcare professional's written opinion for Hepatitis B vaccination shall be limited to whether Hepatitis B vaccination is indicated for an employee, and if the employee has received such vaccination.

1910.1030(f)(5)(ii) The healthcare professional's written opinion for postexposure evaluation and follow-up shall be limited to the following information:

1910.1030(f)(5)(ii)(A) That the employee has been informed of the results of the evaluation; and

1910.1030(f)(5)(ii)(B) That the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.

1910.1030(f)(5)(iii) All other findings or diagnoses shall remain confidential and shall not be included in the written report.

1910.1030(f)(6) Medical Recordkeeping. Medical records required by this standard shall be maintained in accordance with paragraph (h)(1) of **this** section.

Appendix 6a: Contents of Emergency PEP Packet

It is recommended that each facility prepare a packet or notebook of PEP materials to be made readily available to healthcare personnel who are responsible for initial postexposure management. The purpose of the packet is to provide necessary information and forms required to efficiently respond to an exposure situation. Listed below are recommended contents of an emergency PEP packet.

☐ **BOP Clinical Practice Guidelines:** *Medical Management of Exposures.*
(including extra copies of Appendices 1, 2, 5)

☐ **Local Facility PEP Procedures**

☐ **Inmate Forms**

BP-A0362 Inmate Injury Assessment and Follow-Up (Medical)
BP-A0140 Injury Report - Inmate - Part 1 (use for work-related incidents)
BP-A0492 HIV Post-Test Counseling (Positive)
BP-A0621 Authorization For Release of Medical Information

☐ **Lab Slips / Blood Tubes** (see schedule of tests in *Appendix 6B*)

☐ HIV EIA ☐ HBsAg ☐ HBeAg ☐ Anti-HCV ☐ Complete blood count ☐ Liver enzymes
☐ Chemistry (BUN, alkaline phosphatase, bilirubin, creatinine kinase, amylase)

☐ **Patient Education Materials**

- CDC (pamphlet). *Exposure to Blood – What Healthcare Personnel Need to Know, 2003.* Available at: http://www.cdc.gov/HAI/pdfs/bbp/Exp_to_Blood.pdf
- CDC. Hepatitis B Fact Sheets. Available at: http://www.cdc.gov/hepatitis/B/PatientEduB.htm#cdc
- CDC. Hepatitis C Fact Sheets. Available at http://www.cdc.gov/hepatitis/HCV/PatientEduHCV.htm#cdc
- DHHS. AIDSinfo Drug Database. (patient information sheets for HIV PEP drugs). Available at: http://aidsinfo.nih.gov/DrugsNew/Default.aspx?MenuItem=Drugs
- University of California , San Francisco (UCSF), Center for AIDS Prevention Studies. *What is postexposure prevention (PEP)?* (and other fact sheets in English and Spanish)
  Available at: http://caps.ucsf.edu/resources/fact-sheets

Appendix 6b: Potential Bloodborne Pathogen Exposure – Summary of Recommended Follow-Up of Exposed Person

Baseline

☐ **Medical and vaccine history**

☐ **HIV EIA**

☐ **Anti-HBs** *(only if previously vaccinated and previous result is unavailable)*

☐ **Anti-HBc** *(if post-vaccination anti-HBs < 10 mIU/mL, or not vaccinated or incompletely vaccinated)*

☐ **Anti-HCV**

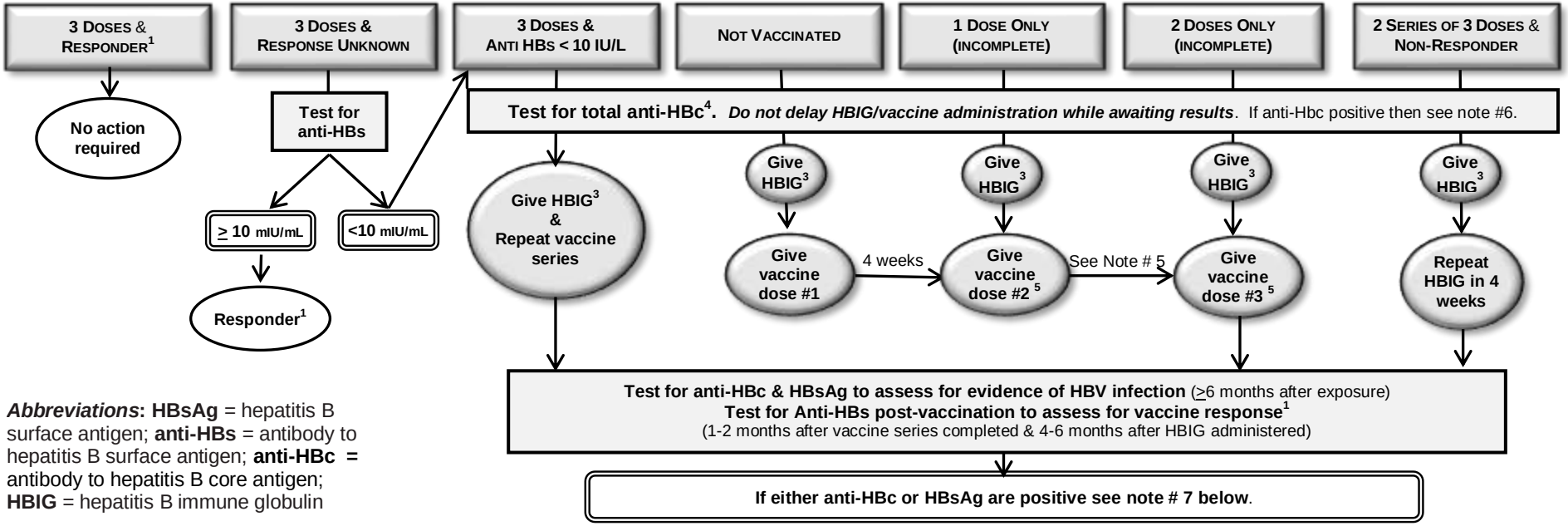
☐ **(Females) STAT pregnancy test if HIV PEP indicated**
(unless currently menstruating, s/p hysterectomy, or post-menopausal)

Follow-Up

Time from Exposure	HIV Exposure	HBV Exposure	HCV Exposure
At time of exposure	**Prior to starting PEP:** CBC, AlkPhos, AST, ALT, Bili, CK, Amylase, BUN	Based on HepB vaccination status. See *Appendix 7*.	Anti-HCV & ALT
2 weeks (if on PEP)	CBC, AlkPhos, AST, ALT, Bili, CK, Amylase, BUN		—
6 weeks	HIV EIA		—
3 months	HIV EIA		—
4 months	—		Anti-HCV[1] & ALT
6 months	HIV EIA		Anti-HCV[1] & ALT
1–2 months after last HepB vaccine dose[2]	—		—
1 year (if exposed person newly infected with HCV)	HIV EIA		—

[1] Confirm positive with anti-HCV with HCV RNA assay.
[2] Cannot be ascertained if HBIG given in last 6–8 weeks

Appendix 7: Management of Exposure to an HBsAg+ or Unknown Source, by Vaccination Status



***Abbreviations*: HBsAg** = hepatitis B surface antigen; **anti-HBs** = antibody to hepatitis B surface antigen; **anti-HBc =** antibody to hepatitis B core antigen; **HBIG** = hepatitis B immune globulin

[1] A **responder** is defined as a person with anti-HBs ≥10 mIU/mL after ≥3 doses of HepB vaccine**.** A **nonresponder** is defined as a person with HBs <10 mIU/mL after 2 complete vaccine series (usually ≥6 doses) of HepB vaccine

[2] **Test for anti-HBs** should be performed 1–2 months after the last dose of the HepB vaccine series and 4–6 months after administration of HBIG, to avoid detection of passively administered anti-HBs. Testing should use a quantitative method that allows detection of the protective concentration of anti-HBs (≥10 mIU/mL).

[3] HBIG should be administered intramuscularly as soon as possible after exposure when indicated. The effectiveness of HBIG when administered >7 days after percutaneous, mucosal, or nonintact skin exposures is unknown. HBIG dosage is 0.06 mL/kg.

[4] Persons who have anti-HBs <10mIU/mL, or who are unvaccinated or incompletely vaccinated, and sustain an exposure to a source patient who is HBsAg-positive or has unknown HBsAg status, should undergo baseline testing for HBV infection as soon as possible after exposure, and follow-up testing approximately 6 months later. Initial baseline tests = total anti-HBc; testing at approximately 6 months = HBsAg and total anti-HBc. If total anti-HBc or HBsAg are positive then see note # 7.

[5] If exposed person is currently in the middle of the HepB vaccination series, then continue vaccine series according to routine schedule. If exposed person started vaccine sometime in the past, then give immediate post-exposure vaccine dose ASAP. Dose 2 should be at least 4 weeks from dose 1; dose 3 should be at least 8 weeks from dose 2; and there should be at least 16 weeks between dose 1 and dose 3.

[6] A positive anti-HBc indicates past or current HBV infection. Stop vaccination. Test for HBsAg: If positive see Note #7.

[7] If anti-HBc positive and HBsAg is negative person is considered to have natural immunity to HBV and requires no additional vaccination and no special evaluation unless they become immunosuppressed or immunocompromised. If HBsAg positive, then evaluate for chronic HBV infection. See: BOP Clinical Practice Guideline. *Stepwise Approach for Detecting, Evaluating and Treating Chronic Hepatitis B Virus Infection.*

Adapted from: CDC guidance for evaluating health-care personnel for hepatitis B virus protection and for administering postexposure management. *MMWR.* 2013, 62(10):1–24.