Blood & Body Fluids Exposure
General Recommendations

Before any exposure happens:

1. Get vaccinated for hepatitis B.
2. Know the protocol for your institution.
3. Know where you would go at your facility, including eye wash area(s).

After an exposure happens:

1. Immediately wash site with soap and water (eyes with eye wash facility or water).
2. Seek medical evaluation ASAP and report exposure to supervisor or employee health nurse according to your institution's protocol.
3. Don't panic. Risk of transmission of HIV or Hepatitis C from a needle stick is low.

References:

- PEPline (the National Clinicians' Post-Exposure Prophylaxis Hotline) is a 7-day-a-week consultation service for clinicians managing occupational exposures (HBV, HCV, and HIV). PEPline can be contacted by phone at **(888) 448-4911 (toll-free)** 9am-2am EST 7 days a week or on the Internet at http://nccc.ucsf.edu/clinician-consultation/post-exposure-prophylaxis-pep/ or http://nccc.ucsf.edu/ . Calls received during off-hours are answered the next day.

- Immunization of Health-Care Personnel; Recommendations of the Advisory Committee on Immunization Practices. CDC MMWR Vol 40, No. 7, Nov. 25, 2011 available at http://www.cdc.gov/mmwr/pdf/rr/rr6007.pdf

- Centers for Disease Control and Prevention's Bloodborne Infectious Diseases: HIV/AIDS, Hepatitis B, Hepatitis C website. Available at: http://www.cdc.gov/niosh/topics/bbp/ and http://www.cdc.gov/niosh/topics/bbp/guidelines.html

Blood & Body Fluids Exposure: Hepatitis B

The risk of infection varies with:

- The HBsAg and HBeAg status of the source.
- The hepatitis B vaccination and vaccine-response status of the exposed person.
- The route of exposure (parenteral, sexual, etc.)

Needle stick	Percent Risk of Developing Clinical Hepatitis
HBsAg positive only	1-6
HBsAg and HBeAg positive	22-31

Post-exposure general recommendations

Exposure	HBIG Dose	Recommended timing	Vaccine Dose	Recommended timing
Perinatal*	0.5 ml IM	Within 12 hours of birth	0.5 ml IM	Within 12 hours of birth
Sexual	0.06ml/kg IM	Single dose within 14 days of last sexual contact	1.0 ml IM	First dose at time of HBIG treatment.

(The first dose of vaccine can be given the same time as the HBIG dose but at a different site.)
*Immunization Action Coalition 9/12. Available at http://www.immunize.org/catg.d/p2130.pdf
Hepatitis B Prenatal Transmission, CDC web link http://www.cdc.gov/hepatitis/HBV/PerinatalXmtn.htm

Percutaneous or permucosal exposure
Following any such exposure, a blood sample should be obtained from the person who is the source of the exposure and should be tested for HBsAg.

For greatest effectiveness, passive prophylaxis with HBIG, where indicated, should be given as soon as possible after exposure—preferably within 24 hours, if possible, and before 7 days.

Recommended post-exposure prophylaxis for exposure to hepatitis B virus*

Exposed person	Source is HbsAg-positive	Source is HbsAg-negative	Source not tested or unknown
Unvaccinated			
	HBIG 0.06 ml/kg IM one dose and initiate HB vaccine	Initiate HBV vaccine	Initiate HBV vaccine
Previously vaccinated			
Known responder	No treatment	No treatment	No treatment
Known Non-responder	HBIG x1 and initiate revaccination or HBIG x 2	No treatment	If known high-risk source, treat as if source were HbsAg-positive.
Response unknown	Test exposed for anti-HBs 1. If inadequate, HBIG x 1 plus HB vaccine booster dose. 2. If adequate, no treatment.	No treatment	Test exposed for anti-HBs 1. If inadequate, administer vaccine booster and recheck titer in 1-2 months 2. If adequate, no treatment

Note: The Section of Epidemiology does not routinely provide hepatitis B vaccine to adults who have an acute exposure unless they have no other resources. We do not provide HBIG.

***For more complete information consult CDC MMWR 62(RR10); 1-19, December 20, 2013. CDC Guidance for Evaluating Health-Care personnel for Hepatitis B Virus Protection and for Administering Post Exposure Management. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6210a1.htm**

Pregnancy

Hepatitis B vaccine and HBIG may be used in pregnant or lactating women.

Hospital Considerations

- Use Standard Precautions

References

Centers for Disease Control and Prevention's MMMR Dec 8, 2006/Vol 55 A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States. Available at: http://www.cdc.gov/mmwr/PDF/rr/rr5516.pdf

Pre-exposure Management for Healthcare Personnel with a Documented Hepatitis B Vaccine Series Who Have Not Had Post-Vaccination Serological Testing. Immunization Action Coalition March 2015. Available at http://www.immunize.org/catg.d/p2108.pdf

Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis. *Morb Mort Wkly Rep MMWR*, Jun 29, 2001/50 (RR11);1-42. Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5011a1.htm

Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee. 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. Available at http://www.cdc.gov/hicpac/pdf/isolation/isolation2007.pdf

Exposure to Blood: What Health Care Personnel Need to Know**,** available at: www.cdc.gov/HAI/pdfs/bbp/Exp_to_Blood.pdf

PEP Guidance for Occupational Exposure
http://nccc.ucsf.edu/clinician-consultation/pep-post-exposure-prophylaxis/
or http://nccc.ucsf.edu/

Resources

Clinician's Hotline: 1-888-448-4911
Clinician's Warmline: 1-800-933-3413

Blood & Body Fluids Exposure: Hepatitis C

Routes of Transmission

- Bloodborne (most common route is sharing needles).
- Sexual (very low risk).

Risk of Transmission

- 1.8% (range 0-10%) after a needle stick from an HCV positive source.
- Sexual transmission has occurred, but very infrequently.

Management

- There is no vaccine against hepatitis C and no treatment after an exposure that will prevent infection. Neither immune globulin nor antiviral therapy is recommended after exposure. For these reasons, following recommended infection control practices to prevent percutaneous injuries is imperative.
- For the source, perform testing for anti-HCV.
- For the person exposed to an HCV positive source:
  - perform baseline testing for anti-HCV and ALT activity; and
  - perform follow-up testing (e.g., at 4–6 months) for anti-HCV and ALT activity (if earlier diagnosis of HCV infection is desired, testing for HCV RNA may be performed at 4–6 weeks).
  - confirm all anti-HCV results reported positive with PCR testing for HCV RNA.
- HCW may continue regular job duties with no modifications. Person should follow recommended infection control practices, just as all HCP.
- Exposure to Hepatitis C is not a contraindication to becoming pregnant or breastfeeding.

Prevention

- No vaccine is currently available.
- Do not share needles or other drug injection items.
- Do not share personal care items (razors, toothbrushes).
- HCW should follow barrier precautions and safely handle needles and sharps.
- Tattooing and body piercing may cause transmission from contaminated instruments.
- HCV positive individuals should not donate blood, organs, or tissue.

Screening Recommendations for the Identification of Chronic Hepatitis C Virus Infection Among Persons Born during 1945–1965

- Adults born during 1945–1965 should receive one-time testing for HCV without prior ascertainment of HCV risk.
- All persons with identified HCV infection should receive a brief alcohol screening and intervention as clinically indicated, followed by referral to appropriate care and treatment services for HCV infection and related conditions.

Guidelines for Prevention and Treatment of Opportunistic Infections in HIV-Infected Adults and Adolescents

- HIV-infected patients should be tested routinely for evidence of chronic HCV infection. Initial testing for HCV should be performed using the most sensitive immunoassays licensed for detection of antibody to HCV (anti-HCV) in blood.

Blood & Body Fluids Exposure: Hepatitis C

Recommendations for Prevention and Control of Hepatitis C Virus (HCV) Infection and HCV-Related Chronic Disease

Routine HCV testing is recommended for

- Persons who ever injected illegal drugs, including those who injected once or a few times many years ago and do not consider themselves as drug users.
- Persons with selected medical conditions, including
  - persons who received clotting factor concentrates produced before 1987;
  - persons who were ever on chronic (long-term) hemodialysis; and
  - persons with persistently abnormal alanine aminotransferase levels.
- Prior recipients of transfusions or organ transplants, including
  - persons who were notified that they received blood from a donor who later tested positive for HCV infection;
  - persons who received a transfusion of blood or blood components before July 1992; and
  - persons who received an organ transplant before July 1992.

Routine HCV testing is recommended for persons with recognized exposures, including

- Health care, emergency medical, and public safety workers after needle sticks, sharps, or mucosal exposures to HCV-positive blood.
- Children born to HCV-positive women.

Hospital Considerations

- Use Standard Precautions

References

Exposure to Blood: What Health Care Personnel Need to Know**,** available at: www.cdc.gov/HAI/pdfs/bbp/Exp_to_Blood.pdf

Hepatitis C Recommendations for Health Care Workers. Available at: http://www.cdc.gov/hepatitis/HCV/HCVfaq.htm

Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee. 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. Available at: http://www.cdc.gov/hicpac/pdf/isolation/isolation2007.pdf

Recommendations for the Identification of Chronic Hepatitis C Virus Infection Among Persons Born During 1945-1965. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6104a1.htm?s_cid=rr6104a1_w

Testing Recommendations for Hepatitis C Virus Infection. Available at: http://www.cdc.gov/hepatitis/HCV/GuidelinesC.htm

Blood & Body Fluids Exposure: HIV

Most exposures to blood and body fluids do not result in infections. The risk of infection varies with:

- The amount of blood involved in the exposure.
- The amount of virus in the person's blood at the time of exposure.
- Whether post-exposure treatment was taken.
- The immune status of the exposed individual.
- Route of exposure (parenteral, sexual, mucosal, etc.)

Risk of Transmission

- The average risk of HIV infection after a needlestick/cut exposure to HIV-infected blood is 0.3% (about 1 in 300). Stated another way, 99.7% of needlestick/cut exposures do not lead to infection.
- The risk of exposure of the eye, nose, or mouth to HIV-positive infected blood is estimated to be, on average, 0.1% (1 in 1,000).
- The risk after exposure of the skin to HIV-infected blood is estimated to be <0.1%.
- The risk following one unprotected intercourse with an HIV positive individual is 0.1 %-0.3% (receptive penile and sexual exposure) & 0.1% - 0.2% (receptive vaginal exposure). There are no published estimates of the risk of transmission from receptive oral exposure, but transmission has been reported.

Management

- Immediate treatment is of utmost importance
- Needle sticks and cuts should be washed with soap and water
- Splashes to the nose, mouth, or skin should be flushed with water
- Eyes should be irrigated with clean water, saline, or sterile irrigants
- **If prophylaxis is chosen, HIV Post-Exposure should optimally be given within 1-2 hours after the exposure**. Although animal studies suggest that treatment is not effective when started more than 24-36 hours after exposure, it is not known if this time frame is the same for humans. Starting treatment after a longer period (e.g., 1-2 weeks) may be considered for the highest risk exposures; even if HIV infection is not prevented, early treatment of initial HIV infection may lessen the severity of symptoms and delay the onset of AIDS.
- Contact the National Clinician's Post-Exposure Prophylaxis Hotline at 888-448-4911 for risk assessment and current medications to be given for prophylaxis.
- If post-exposure treatment is started, obtain a CBC, kidney (BUN/creatinine) and liver function tests just before treatment and 2 weeks after starting treatment.

Hospital Considerations

- Use Standard Precautions

Follow-up treatment includes

- Obtain HIV antibody testing as soon as possible after exposure to establish a baseline and then again at 6 weeks, 12 weeks, and 6 months.
- Report any sudden or severe flu-like illness (fever, rash, muscle aches, tiredness, malaise, or swollen glands), especially during the first 6-12 weeks after exposure.
- Refrain from blood, semen, or organ donation and abstain from sexual intercourse (or use a condom) for 12 weeks after exposure until the 12-weeks HIV test is completed.
- Women should not breast-feed infants during the follow-up period to prevent exposing their infant to HIV in breast milk.

References

Exposure to Blood: What Health Care Personnel Need to Know**,** available at: http://www.cdc.gov/HAI/pdfs/bbp/Exp_to_Blood.pdf

Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee. 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. Available at: http://www.cdc.gov/hicpac/pdf/isolation/isolation2007.pdf

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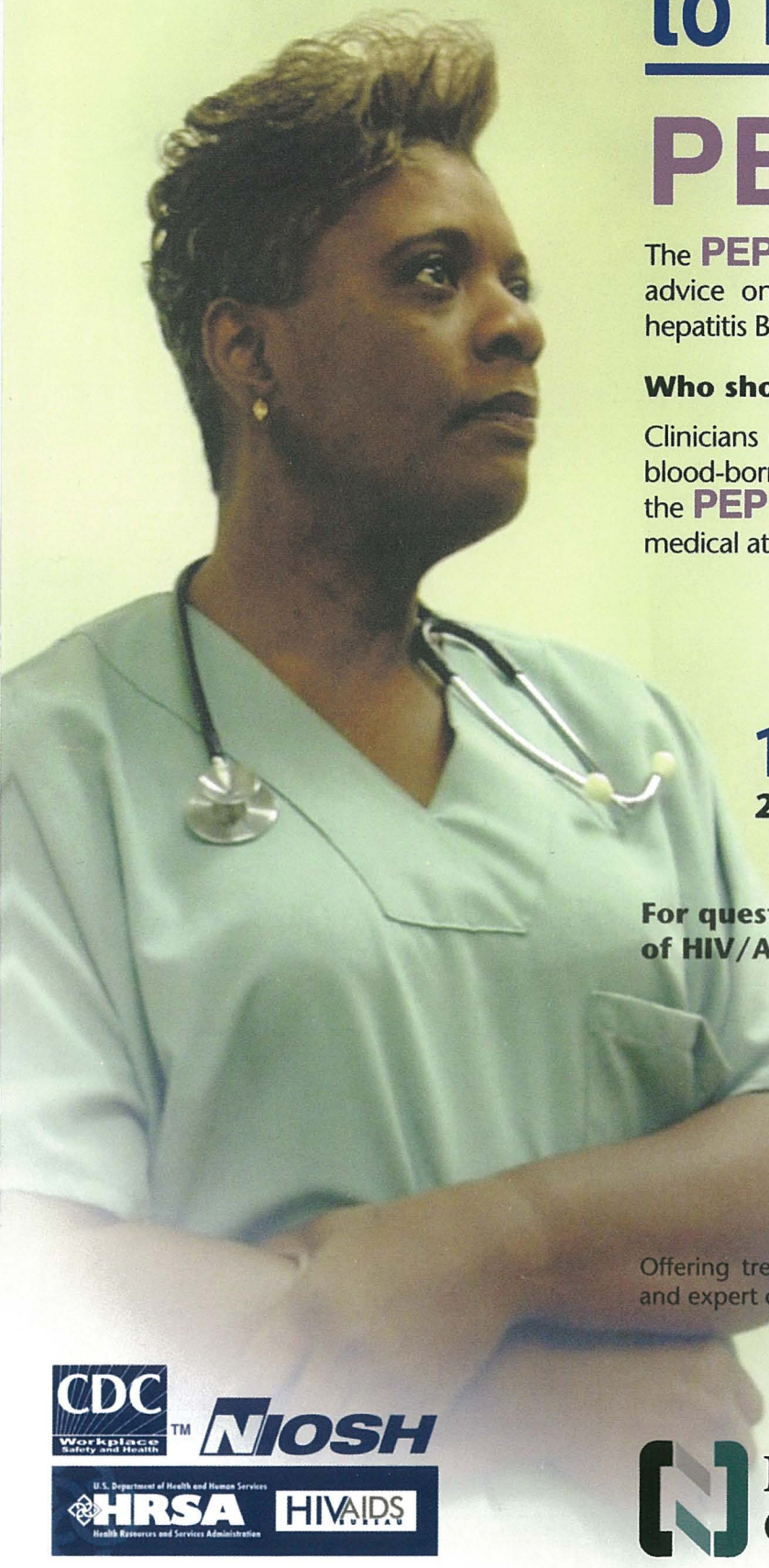
Managing Occupational Exposures to HIV & Hepatitis?



PEP line

The **PEP line** offers health care providers around-the-clock advice on managing occupational exposures to HIV and hepatitis B & C.

Who should call the PEP line ?

Clinicians caring for health care workers who are exposed to blood-borne pathogens. Exposed health care workers may call the **PEP line** but are encouraged to first seek prompt local medical attention.

National Clinicians' Post-Exposure Prophylaxis Hotline

1-888-448-4911

24 hours a day • 7 days a week

For questions regarding the clinical management of HIV/AIDS, contact the

Warmline

National HIV Telephone Consultation Service

1-800-933-3413

Offering treating clinicians current HIV clinical and drug information and expert case consultation.

CDC Workplace Safety and Health ™ NIOSH

U.S. Department of Health and Human Services HRSA Health Resources and Services Administration HIV/AIDS Bureau

National HIV/AIDS Clinicians' Consultation Center

The National HIV/AIDS Clinicians' Consultation Center is a component of the AIDS Education and Training Centers Program funded by the Ryan White CARE Act of the Health Resources and Services Administration HIV/AIDS Bureau in partnership with the Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

Visit the Center website **www.nccc.ucsf.edu** for additional information.