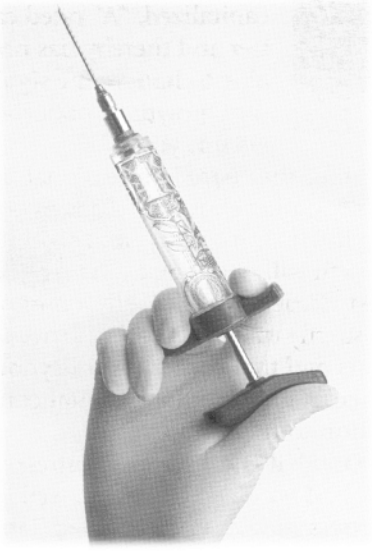
# Steps to Handle Sharps Injuries



In the best of hands, despite recommended precautions, latex gloves and careful procedures, sharps injuries still occur. Offices have comprehensive exposure control plans, invest in safety sharps, and train surgeons and staff in their use. These are the most important strategies for sharps injury prevention. However, they can't guarantee that a sharps injury won't happen in your facility.

If an injury does occur, it is vital to have an effective plan in place for treating the injury, to determine whether the employee has been exposed to bloodborne pathogens, and to take the necessary follow-up steps.

Boris Lushniak, MD, MPH, Medical Officer with the Division of Surveillance, Hazard Evaluations, and Field Studies at the Centers for Disease Control and Prevention (DCD), National Institute for Occupational Safety and Health (NIOSH), recommends the following six steps for handling a sharps injury which may result in an occupational exposure to bloodborne pathogens:

1. **Treat the wound and seek medical care.** Wash the affected area immediately with soap and water. Flush any exposed mucous membranes with water. Do not squeeze the wound to draw out blood, wash the site with harsh chemicals such as bleach, or inject antiseptics or disinfectants into the wound. Seek medical care for further treatment, and, if indicated, blood testing, counseling and postexposure prophylaxis.
2. **File an occupational exposure report.** This is mandated by the Needlestick Safety Act (See the June, 2002 MONITOR). Dr. Lushniak recommends that facilities have a written policy for the management of exposures, establish exposure reporting systems, and have readily available personnel who can manage an exposure. The exposure report form should include:
   a. The date and time of exposure;
   b. Details about the procedure being performed; where and how the exposure occurred;
   c. What brand and type of device caused the injury;
   d. How the exposed person was handling the device when the exposure occurred;
   e. The severity of the exposure (depth and whether fluid was injected);
   f. The condition of the skin or mucous membranes which may have been exposed;
   g. Details about the patient (or potential source) including whether he or she has HBV, HCV or HIV (including stage of disease);
   h. The source's history of antiretroviral therapy, viral load and antiretroviral resistance information;
   i. Information about the exposed person (whether or not he or she was vaccinated for hepatitis B or previously infected, or whether the person has hepatitis C or AIDS).

Evaluate the exposure to determine the chances of transmission of HBV, HCV and HIV based on the type of body substance involved and the route and severity of the exposure. Different kinds of sharps require different responses (i.e., exposure to a blood filled hollow needle or visibly bloody device pose a higher risk of infection than needles used for injections).

3. **Evaluate the source's infection status.** If this is unknown, the source should be informed of the incident and the source's blood should be tested for HBV, HCV and HIV infection. Obtain informed consent to perform the blood tests, as in most states, physicians can not perform the tests without a signed consent. There are several methods of testing:

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- The FDA-approved rapid HIV-antibody test kit is the fastest HIV test available. It requires a blood sample and centrifuge equipment.
- The ELISA test is commonly used as an initial screening test. It is relatively easy and inexpensive. It should be confirmed with a second test (HIV Western Blot), as it has been known to give false positives.
- The Western Blot is a confirmatory test, performed if the previous test is positive. False positives are extremely rare.
- The Immunoflourescent antibody test is faster than the Western Blot and can be used instead. It is faster than the Western Blot and is becoming increasingly popular.

If the source is positive for HIV, one should collect all available information about his or her stage of infection, CD4+ T-cell count, results of viral load testing, and current and previous antiretroviral therapy. This is necessary to help choose an appropriate Post Exposure Prophylaxis (PDP) regimen for the exposed person. If unknown, begin the PEP without it, and make changes as necessary when the information becomes available.

No further testing of the exposed person for HIV is indicated if the source is HIV negative and has no clinical evidence of AIDS or symptoms of HIV infection. If the exposure source's infection status is unknown or he or she will not agree to testing, it is important to consider the prevalence of HBV, HCV or HIV in the community population.

It is recommended that testing of needles or other sharps involved in an exposure **not be performed**, whether or not the source is known. The devices should be placed in a proper container and disposed of according to state laws.

4. **Obtain baseline blood tests if indicated** for employees who are exposed to blood or body fluids of a source patient with HIV, HCV, or HBV. For cases where the infection status of the source is unknown or the source is unknown, base the decision of blood tests for the exposed worker on medical diagnoses, clinical symptoms and history of risk behaviors of the source and the likelihood of bloodborne pathogen infection among patients in the exposure setting. Baseline testing is not necessary if the source patient is not infected with a bloodborne pathogen.
5. **Treat the employee for exposure posing a risk of infection transmission.**
   - Exposure to HBV: The health care worker (and all health care workers) should receive a minimum of three vaccinations. Test for antibodies one to two months after completion of the vaccination series. No treatment is necessary if the worker has immunity. If the worker has partial immunity, they should be given 0.06 ml/kg intramuscular hepatitis B immunoglobulin (HBIG) within 24 hours of the injury if possible. If not, give the injection within 48 hours.
   - Exposure to HCV: There is no effective drug prophylaxis for HCV. For this exposure, follow the worker closely for 12 months and perform serological examination for HCV after three, six, and nine to 12 months. Refer an exposed person to a specialist for medical management.
   - Exposure to HIV: For an exposure, review the circumstances of the incident and blood test results, and have a managing physician determine whether or not to prescribe antiretroviral drugs (PEP) and which regimen to prescribe. If in doubt, contact an AIDS expert and/or the National Clinician's Postexposure Prophylaxis Hotline (PEPLINE) at 1 (888) 448-4911. PEP treatments should start as soon as possible, ideally within hours after the incident. Discontinue PEP if the final HIV test results of the source patient are negative. PEP regimens should be administered for four weeks, if tolerated.
6. **Follow-up testing and counseling.** Required testing for exposed persons can prolong the aftermath of a sharps injury for a year, with tests at six weeks, three months, six months and one year. Counseling should be provided for the emotional effects of an exposure. Information on counseling services can be accessed through the National AIDS Hotline at 1 (800) 342-2347.

As safer techniques and devices are developed, sharps injury protocols will hopefully become a thing of the past. However, practices will always need to have a clear plan in place to address any injury that occurs.