Needlestick Injuries

Within the past year there have been several needlestick injuries with potential exposures to biohazardous materials. Some of the injuries resulted from improper disposal of needles in red biohazard bags, whereas the latest incident involved recapping of a needle following manipulations of infectious material. Environmental Health & Safety and the Institutional Biosafety Committee are distributing this bulletin to focus the University community’s attention on the proper use and disposal of hypodermic needles.

Background:
Use of hypodermic needles is the primary factor leading to percutaneous (through the skin) injuries of laboratory personnel. When disposed of incorrectly, these instruments also present a risk to building care staff and individuals who transport and package regulated medical waste.

Specifically, injuries can occur when laboratory personnel:
- Attempt to recap used needles
- Apply force to a needle during a procedure, which results in slippage, bending, or breakage of needles
- Use hypodermic needles in tasks where their use is unnecessary or inappropriate
- Leave needles unattended and/or not in view
- Place needles in an over-filled or poorly accessible sharps disposal container
- Do not use sharps containers for proper disposal

Needlestick injuries on campus have resulted in:
- Detailed medical evaluation for exposed individuals
- Follow-up surveillance that may last several months
- Repeated blood tests
- Drug treatments with potentially significant side effects

Recommendations:
- Avoid needle re-capping or other needle manipulations
- Assess the need for recapping. If necessary, use forceps to replace cap, or utilize a one handed scoop technique
- Dispose of used needles directly into a readily available sharps disposal container
- Use blunt-end needles or devices with sharps injury prevention features (see page two)
- Use one device at a time and keep in full view
- Consider a restraining device or anesthetic for animals when working with sharps and hazardous materials
Types of Hypodermic Syringes and Needles with Sharps Injury Prevention Features

- **Syringe or needle with sliding sheath that covers needle after use.**
  Scope of needle/syringe use is not limited. No-forcing function requires user to activate safety feature.

- **Hinged needle guard/shield attached to needle hub is manually folded over needle after use; hinged guards also can be purchased separately.**
  Scope of needle/syringe use is not limited. Ability to permanently lock hinge in place over needle varies among devices with this feature. Some interference with the procedure is possible if working in a confined area.

- **Sliding shield needle guard attached to needle hub is manually moved forward to cover needle after use.**
  Scope of needle/syringe use is not limited. No-forcing function requires user to activate safety feature.

- **Syringe with mechanical needle-retraction feature isolates needle inside syringe; placing additional pressure on plunger upon completing injection activates retraction feature.**
  Needle is completely isolated after use. Device can only be used for performing injections; fixed needle does not permit change of needle if needed; potential exists for creating aerosols if needle is retracted outside the body.

- **Needleless jet injection devices.**
  Eliminates needle hazard. Scope of use is currently limited to giving injections and only with certain drugs.

Photos courtesy of Becton Dickinson and Bioject

Adapted from the *CDC Workbook on Engineered Sharps Injury Prevention Features*: [http://www.cdc.gov/sharpssafety/appendixB.html](http://www.cdc.gov/sharpssafety/appendixB.html)

For more information on the types and manufacturers of engineered systems:

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If you experience a needlestick or other exposure, you should:

- IMMEDIATELY wash skin injuries thoroughly with soap and water. Under running water, apply pressure to the wound to encourage bleeding
- Flush mucous membranes (such as eyes or mouth) with running water
- Use alcohol-based sanitizing agents on skin if water is not available. Follow-up with soap and water as soon as possible
- Notify your supervisor or person in charge
- Obtain medical evaluation, counseling, and preventive treatment, especially if the incident involved a hazardous substance or if you are immunocompromised
- Complete CU injury and illness report  [http://cfp-isca.cit.cornell.edu/accinj/](http://cfp-isca.cit.cornell.edu/accinj/)