

Safe Injection Practices

From the CDC Healthcare Infection Control Practices Advisory Committee
Guideline for Isolation Precautions: Preventing Transmission of Infectious
Agents in Healthcare Settings, 2007

<http://www.cdc.gov/ncidod/dhqp/pdf/guidelines/Isolation2007.pdf>

The investigation of large outbreaks of HBV and HCV infections among patients in US ambulatory care facilities identified a need to define and reinforce safe injection practices. The primary breaches in infection control practice that contributed to these outbreaks were 1) reinsertion of used needles into a multi-dose vial or solution container (e.g., saline bag) and 2) use of a single needle/syringe to administer intravenous medication to multiple patients. In one of these outbreaks, preparation of medications in the same workspace where used needles/syringes were dismantled also may have been a contributing factor.

These and other outbreaks of viral hepatitis could have been prevented by adherence to basic principles of aseptic technique for the preparation and administration of parenteral medications. These include the use of a sterile, single-use, disposable needle and syringe for each injection given and prevention of contamination of injection equipment and medication. Whenever possible, use of single-dose vials is preferred over multi-dose vials, especially when medications will be administered to multiple patients.

Outbreaks related to unsafe injection practices indicate that some healthcare personnel are unaware of, do not understand, or do not adhere to basic principles of infection control and aseptic technique. A survey of US healthcare workers who provide medication through injection found that 1% to 3% reused the same needle and/or syringe on multiple patients. Among the deficiencies identified in recent outbreaks were a lack of oversight of personnel and failure to follow-up on reported breaches in infection control practices in ambulatory settings. Therefore, to ensure that all healthcare workers understand and adhere to recommended practices, principles of infection control and aseptic technique need to be reinforced in training programs and incorporated into institutional policies that are monitored for adherence.

The following recommendations apply to the use of needles, cannulas that replace needles, and, where applicable, intravenous delivery systems.

- Use aseptic technique to avoid contamination of sterile injection equipment.
- Do not administer medications from a syringe to multiple patients, even if the needle or cannula on the syringe is changed. Needles, cannulae and syringes are sterile, single-use items; they should not be reused for another patient or to access a medication or solution that might be used for a subsequent patient.
- Use fluid infusion and administration sets (i.e. intravenous bags, tubing and connectors) for one patient only and dispose appropriately after use. Consider a

syringe or needle/cannula contaminated once it has been used to enter or connect to a patient's intravenous infusion bag or administration set.

- Use single-dose vials for parenteral medications whenever possible.
- Do not administer medications from single-dose vials or ampoules to multiple patients or combine leftover contents for later use.
- If multi-dose vials must be used, both the needle or cannula and syringe used to access the multi-dose vial must be sterile.
- Do not keep multi-dose vials in the immediate patient treatment area. Store in accordance with the manufacturer's recommendations and discard if sterility is compromised or questionable.
- Do not use bags or bottles of intravenous solution as a common source of supply for multiple patients.
- Infection control practices for special lumbar puncture procedures: Wear a surgical mask when placing a catheter or injecting material into the spinal canal or subdural space (i.e., during myelograms, lumbar puncture, and spinal or epidural anesthesia).
- Worker safety: Adhere to federal and state requirements for protection of healthcare personnel from exposure to bloodborne pathogens (see OSHA Bloodborne Pathogens Standard CFR 1910.1030 and Needlestick Safety and Prevention Act on the OSHA website at <http://www.osha.gov/SLTC/bloodbornepathogens/index.htm>)

REMEMBER

Improper use of syringes, needles,
and medication vials can result in

-  transmission of life-threatening infections to patients
-  notification of patients of possible exposure to bloodborne pathogens and recommendations that they be tested for hepatitis B virus, hepatitis C virus, and human immunodeficiency virus
-  referral of providers to licensing boards for disciplinary action
-  malpractice suits filed by patients