



Risk Advisor

Needle and Syringe Reuse = Infection Risk

Reuse of needles and syringes and other equipment used to inject medications can result in transmission of bloodborne pathogens (including HIV and hepatitis), potentially endangering patients, residents and staff. As a general rule, the vast majority of needles and syringes are not reusable. Those needles that may be reprocessed (such as cardiac or biopsy needles) contain a manufacturer's statement to that effect.

Reusing needles and syringes to administer parenteral substances on multiple patients or residents is strictly prohibited by the infection control guidelines of the Centers for Disease Control (CDC) and the practice standards of various professional associations, including the Association for Professionals in Infection Control and Epidemiology, the American Society of Anesthesiologists and the Association of Nurse Anesthetists. However, studies demonstrate that compliance problems persist, especially in physician offices and among anesthesiologists.

This edition of *ALERT Bulletin* highlights common causes of needle/syringe reuse and multi-dose vial contamination. It also offers practical risk management strategies to enhance patient/resident safety and minimize liability.

Common Risks

As a first step in assessing risks, conduct a quick survey of practitioners who prescribe and administer injections, and of patients and residents who receive them. Use an assessment tool that addresses basic injection practice indicators, such as the annual number of injections per practitioner and the proportion of injections administered with single-use equipment. The tool also should compare the number of disposable needles ordered against the use of these needles as reported by nurses and physicians. The data will help you identify key vulnerabilities.

Focus your assessment on relatively common risk-prone practices, including the following:

Multiple use of disposable syringes. The practice of administering medications (especially expensive or controlled drugs) to multiple patients or residents from the same syringe as a cost-saving measure is highly unsafe and cannot be condoned in any setting. Misguided practitioners may believe



that changing the needle on a syringe is sufficient to administer medication to multiple patients or residents. Staff members must be apprised that reuse of syringes on different patients or residents is *not* permissible. Explain that even with the use of needleless systems and luer-fitted IV infusion ports, blood-borne pathogens may contaminate a syringe if backflow occurs. As it is impossible to prevent all microorganisms from entering a syringe after it has been connected to a patient's or resident's IV infusion, the syringe should be considered contaminated and appropriately discarded.

To further reduce the risks associated with syringe reuse, consider using alternative injection methods, such as

- *auto-destruct syringes* that can be used only once
- *fixed-needle syringes* with a metal clip that locks the plunger after a single use
- *syringes with a safety plunger* that breaks off after a single use and with removable plastic tabs that indicate if the syringe has been used before

For more information on injection devices, visit the Web site of the International Association of Safe Injection Technology at www.iasit.org.

Reuse of injection apparatus. Needles and syringes are prepackaged sterile and intended only for single use. Reported cases of viral transmission through contaminated needles underscore the importance of adhering to the principles of aseptic technique when administering injectables. To ensure hygienic practice, encourage your materials management department to "bundle" the purchase of injectable medications with related equipment and supplies.

The following infection control principles are consistent with CDC recommendations and should be observed by all healthcare professionals who administer parenteral substances through injection:

- All hypodermic needles, as well as lumens of syringes used to administer parenteral substances, should be sterile.
- All infusion fluids, administration sets and pressure transducer setups should be used on only one patient or resident and according to the guidelines of the medical device manufacturer.
- Staff members should be made aware that visual inspection alone cannot guarantee absence of blood contamination in a needle or syringe.
- Needles and syringes manufactured for single use should not be reprocessed, because the reprocessing method may fail to sterilize the internal surfaces and/or impair the device's integrity.
- Reprocessing of needles and syringes using liquid chemical germicides cannot guarantee sterility and is not recommended.
- Used needles should never be recapped by hand or by any other technique that involves pointing the needle toward any part of the body. If recapping is necessary, use a mechanical device designed to hold the needle sheath.
- Old needles and syringes should be disposed of in puncture-resistant containers located in the area where the needles and syringes are used.

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Contamination of multi-dose vials. When possible, use single-dose rather than multi-use vials. Even with bacteria-fighting preservatives, multi-dose vials are prone to contamination. If multi-dose vials must be used, ensure that staff members adhere to these infection control guidelines:

- *Draw up medications as close to administration time as possible*, since medications in multi-dose vials can become contaminated from non-sterile glass fragments, airborne contaminants or failure to use aseptic technique.
- *Do not aspirate vaccine from a multi-dose vial with a previously used needle* if any of the contents of the vial will be administered to another patient or resident.
- *Refrigerate multi-dose vials* after they are opened and when recommended by the manufacturer.
- *Cleanse the access diaphragm* of multi-dose vials with 70 percent alcohol before inserting any device into the vial.
- *Use sterile needles* and avoid touching needles before penetrating the vial's access diaphragm.
- *Dispose of needle, syringe and vial after use.* Never leave a needle in the septum of the vial, as this may encourage reuse of the syringe.
- *Discard any multi-dose vial* if there is any chance that its sterility is compromised.

General Preventive Strategies

You may further enhance patient/resident and staff safety by integrating the following risk management principles into your organization's injection policies:

- *Promote safe practices on the part of staff* through the use of "safety" sharps as mandated by the 2000 Needlestick Safety and Prevention Act, Public Law 106-430 and the 2001 Bloodborne Pathogens Standard, 29 CFR 1910.1030.
- *Reduce unnecessary injections* by promoting the use of appropriate oral alternatives.

- *Examine your facility's waste management system* to ensure that it has adequate safeguards to prevent contamination from disposable syringes.
- *Create an organization-wide system of accountability* for the use of safe and effective injection technologies. Incorporate OSHA guidelines regarding prevention and treatment of needlestick and other sharps injuries, as well as protection against exposure to viral pathogens.
- *Ensure that infection control guidelines and universal precautions are followed* at all levels of healthcare delivery under the guidance of an infection control specialist.

For More Information

Several organizations offer online resources for educating staff, patients/residents and families about standards for needle and syringe reuse as well as other injection safety and infection control issues.

The Joint Commission on Accreditation of Healthcare Organizations monitors reuse and reprocessing of single-use devices through Standard IC 4-10, available for purchase at www.jcaho.org. The American Association of Nurse Anesthetists (www.aana.com) convened a task force to develop strategies to promote proper needle and syringe use. Other organizations active in this area include the World Health Organization's Safe Injection Global Network (www.injectionsafety.org), the Anesthesia Patient Safety Foundation (www.apsf.org) and the Association for Professionals in Infection Control and Epidemiology (www.apic.org). For more about needlestick injuries and prevention, visit the Occupational Safety and Health Administration at www.osha.gov/SLTC/bloodbornepathogens/index.html and the Exposure Prevention Information Network (EPINet) at www.healthsystem.virginia.edu/internet/epinet.

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