

Safe Injection, Infusion, and Medication Vial Practices Policy Template

I. INTRODUCTION

Bloodborne pathogen transmission must be prevented by adherence to basic principles of aseptic technique for the preparation and administration of parenteral medications. Pathogens (e.g., Hepatitis C virus, Hepatitis B virus, and HIV) can be present in sufficient quantities to produce infection in the absence of visible blood. Similarly, bacteria and other microbes can be present without any visible evidence of contamination.¹

II. Recommendations

The following recommendations apply to the use of needles, cannulas that replace needles, vials (single and multi-dose), ampules and intravenous delivery systems.

- A. To the greatest extent possible, provide adult IV push medications in a ready-to-administer form (to minimize the need for manipulation outside of the pharmacy sterile compounding area)⁵.
- B. Use aseptic technique when preparing and administering IV push medications, flush/locking solutions, and other parenteral solutions administered by direct IV injection⁵. Aseptic technique includes:
 1. Hand hygiene prior to and after preparation and administration of the medication or solution⁵.
 2. Disinfection of the medication access diaphragm on a vial or the neck of an ampule prior to accessing the medication or solution⁵.
(NOTE: "Pop-off" vial caps from manufacturers are considered "dust covers" and are not intended to maintain sterility of the vial diaphragm or access point⁵)
 3. Disinfection of the IV access port, needleless connector, or other vascular access device prior to administration of the medication or solution⁵.
 4. The use of personal protective equipment if contact and exposure to blood or bodily fluids are possible when administering the medication or slution⁵.
- C. Prepare parenteral medications as close as possible to the time of administration, and administer within one hour after the start of the preparation⁶.
- D. Do not administer medication 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 patient².
NOTE: While repeated dosing from a syringe to a single patient is permissible in certain situations (e.g., sedation, intubation), care must be taken to prevent contamination of the needle/cannula/syringe. Re-use of the syringe/cannula/needle to enter into a common source supply for multiple patients is prohibited.
- E. The Pharmacy uses common source supplies for multiple patients during medication preparation in the IV room, including the use of spike devices for vials and bags. This is permitted under strict regulation and oversight as dictated by USP 797 (i.e., use of aseptic technique in a laminar flow hood).

- F. Use fluid infusion and administration sets (i.e., intravenous bags, tubing, and connectors) for one patient only and dispose appropriately after use. A syringe or needle/cannula is contaminated once it has been used to enter or connect to a patient's intravenous infusion bag or administration set², and should not re-enter a common source vial.
- G. Use single-dose vials for parenteral medications whenever possible².
- H. Do not administer medications from single-dose vials or ampules to multiple patients or combine leftover contents for later use².

Note: A single dose vial should only be used for one patient and any remaining contents should be discarded.⁴

- I. If multidose vials must be used, both the needle or cannula and syringe used to access the vial must be sterile².
 - a. In the rare instance where multi-dose vials are used for multiple patient use (i.e., vaccines, skin test antigens), the medication should be stored and prepared away from the patient care environment (i.e., not at the bedside).
 - b. For common source supplies for multiple patients, do not leave a needle, cannula, or spike device (even if it has a one-way valve) inserted into a medication vial rubber stopper because it renders the vial vulnerable to contamination³. Multidose vial adapters are prohibited for use on common source supplies for multiple patients.
 - c. Vaccine preparation is permitted using multi-dose vials for multiple patients, by trained personnel, in compliance with the guidelines in this policy. The CDC regulations regarding the use, storage, and handling of vaccines shall be strictly adhered to, and are available at:
<http://www.cdc.gov/vaccines/recs/storage/default.htm>.
- J. The use of multi-dose vials (of medication) should be assigned to a single patient and access all vials using a new, sterile syringe and new needle/cannula adhering to aseptic technique³.
- K. NEVER use IV solutions in containers intended for infusion, including mini-bags, as common source containers (multi-dose product) to prepare IV flush syringes or to dilute or reconstitute medications for one or more patients in clinical care areas⁵.
- L. Inspect vials and discard if sterility has been compromised (known or suspected)³.
- M. Cleanse the access diaphragm of vials using friction and recommended solution as recommended by the manufacturer's instructions for use³.
- N. Do not store needles and syringes unwrapped because sterility cannot be ensured³.
- O. Discard all opened vials, IV solutions, and prepared or opened syringes that were involved in an emergency situation³. Waste/discard should be performed in accordance with regulations.
- P. Do not prepare medication in one syringe to transfer to another syringe³. Do NOT withdraw IV push medications from commercially available, cartridge-type syringes into another syringe for administration⁵.

- Q. Never store or transport syringes or vials in clothing or pockets³.
- R. Medications should be drawn up in a designated “clean” medication area, that is not adjacent to areas where potentially contaminated items are placed, and away from obvious contamination sources (e.g., water, sinks)⁵.

NOTE: Examples of contaminated items that should not be placed in or near the medication preparation area include: used equipment such as syringes, needles, IV tubing, blood collection tubes, needle holders, (e.g., Vacutainer[®] holder), Carpujects[®] or other soiled equipment or materials that have been used in a procedure.

- S. Immediately discard unattended, unlabeled syringes containing any type of solution⁵.

REFERENCES:

1. CDC – General – Safe Practices for Medical Infections FAQs – Injections Safety. https://www.cdc.gov/injectionsafety/providers/provider_faqs.html last accessed 1/3/20
2. CDC: Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings 2007. <http://www.cdc.gov/hicpac/2007IP/2007isolationPrecautions.html> last accessed 6/2/17
3. Dolan, S., et al. APIC Position Paper: Safe Injection, Infusion, and Medication Vial Practices in Health Care. *American Journal of Infection Control* 38(3): 167-172.
4. Fast Facts: Unsafe Infection Practices. <https://www.cdc.gov/injectionsafety/PDF/FAQs-Safe-Practices-for-Medical-Injections.pdf> last accessed 6/2/17
5. Institute for Safe Medication Practices (ISMP), Safe Practice Guidelines for Adult IV Push Medications, 2015. <http://www.ismp.org/Tools/guidelines/ivsummitpush/ivpushmedguidelines.pdf> last accessed 6/2/17
6. US Pharmacopeial Convention, Inc. General Chapter <797> Pharmaceutical Compounding-Sterile Preparations. In: *The United States Pharmacopeia, 32nd Revision and The National Formulary, 27th ed.* Rockville, MD: United States Pharmacopeial Convention; 2009:318-54.