

A Convenient Way to Avoid Venipuncture and Finger Contamination

To the Editor:

Currently, phlebotomists using needles for withdrawing blood, giving intravenous (IV) injections, or inserting over-the-needle catheters customarily wear pairs of unsterile examination gloves to protect themselves from bloodborne pathogens.¹ This is hazardous for patients, especially if the phlebotomist does not hand wash and scrub fingernails before gloving² and uses an unsterile gloved finger of the nondominant hand to guide the needle accurately into a selected vein after sterile preparation of the venipuncture site.^{2,4} A safer way to avoid venipuncture contamination and protect phlebotomists from touching blood during IV access procedures might be outlined as follows:

1. Select an optimal site for venipuncture.

2. If a tourniquet is necessary, use a blood pressure cuff, and leave it loose, so that it can be pumped up to desired pressure (eg, 20-30 mm Hg) with the dominant hand just before venipuncture.

3. Sterilely prepare the skin over and around the selected venipuncture site, so that the antiseptic has had time to work before a hollow-bore

steel needle is inserted.

4. Wash hands and fingernails thoroughly before removing IV access paraphernalia from the sterile packages provided by manufacturers of needles, syringes, over-the-needle catheters, or winged IV infusion sets.

5. After unpacking and assembly, remove the scabbard covering the bevel and shank of the needle, and place the exposed needle attached to a syringe, a Vacutainer holder, or an over-the-needle catheter insertion assembly over a freshly opened sterile 4"×4" bandage. Winged infusion needles that need to be filled with infusion fluid before IV insertion are probably best left dangling from appropriate arms on stands for sterile IV infusion sets.

6. After pumping the blood pressure cuff up to ± 20 mm Hg, the health-care worker should use the dominant hand to don a single sterile glove or finger cot over the nondominant hand and then use the sterile-gloved nondominant hand over the selected vein to guide the thrust of the needle accurately into an optimal position in the selected vein, while the ungloved dominant hand manipulates the needle.

7. During and after deflation of the cuff by means of the dominant hand or a free hand of the patient, the sterile-gloved or cot-covered finger of the nondominant hand should press on the top side of the sterile 4"×4" bandage to hold pressure over the

vein to prevent wall injury, perivascular bleeding, and bleeding through the skin for ± 30 seconds, or as long as seems optimal. In the case of prolonged IV infusions, a new sterile glove or finger cot and sterile pledget should be used on the nondominant hand for similar purposes, while the bare dominant hand withdraws the needle or the IV catheter. A safety needle operable entirely by the dominant hand will simplify the procedure.

The risk for contamination of a patient's bloodstream with skinborne pathogens will be minimized, while at the same time the phlebotomist's chances for skin contact with bloodborne pathogens will be minimized, especially if the sterile glove or finger cot is disposed promptly on completion of the procedure, and both hands are washed again promptly.

REFERENCES

1. Pearson ML. Special report: guidelines for prevention of intravascular-device-related infections. *Infect Control Hosp Epidemiol* 1996;17:438-473.
2. Hannigan P, Shields JW. Handwashing and examination glove use. *Lancet* 1998;351:571.
3. Shields JW. Prevention of nosocomial cross-infections. *Infect Control Hosp Epidemiol* 1998;19:478-479.
4. Shields JW. Prevention of intravascular catheter-related bloodstream infections. *Infect Control Hosp Epidemiol* 1998;19:739.

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Corrections

In the article "Disinfection of Endoscopes: Review of New Chemical Sterilants Used for High-Level Disinfection" (1999;20:69-76), on page 72, Table 2 (Chemical

cal Sterilants Comparison) listed two sterilization claims for "Hydrogen Peroxide, 7.5%" (Sporox): 6 h at 20°C and 20 min at 50°C. This latter claim has not been cleared by the

Food and Drug Administration, and those parameters should not be used for chemical sterilization.

Two articles in the December 1998 issue, "Resolving the Controversy on Environmental Cultures for *Legionella*: A Modest Proposal" (1998;19:893-897), and "Controlling *Legionella* in Hospital Water Systems: Experience With the Superheat-and-

Flush Method and Copper-Silver Ionization" (1998;19:911-914), mention Liquitech as the source of copper and silver equipment. Those seeking that product should now contact T.P. Technology plc, Tarn House, 2-4 Copyground Ln, High Wycombe,

Buckinghamshire, HP12 3HE, UK, telephone 44(0) 1494 535576, fax 44(0) 1494 464175, <http://www.tarn-pure.com>, and inquire about Tarn-Pure ionization systems.