

to dedicate its efforts to respond to the best of its ability to the needs and demands of the healthcare community it serves. However, it is only the healthcare community that should be determining the level of performance they expect that technology to provide.

In the interim, it appears that it would be proper for industry to adopt one of the simple and inexpensive test methodologies described in the clinical literature^{4,6,14} for the screening of materials. These data could then be submitted for the ICP's use in assessing the protective attributes of the state-of-the-art materials as well as the gowns design, construction, and cost.

Nathan L. Belkin, PhD
Clearwater, Florida

REFERENCES

1. Department of Labor, Occupational Safety and Health Administration. Occupational exposure to bloodborne pathogens, final rule. *Federal Register* 1991;56:64177,(d)(3)(i).
2. Crow S. Emperor's clothing for the contemporary healthcare worker. *Infect Control Hosp Epidemiol* 1991;12:308-310.
3. Shadduck PF, Tyler DS, Lyster HK, et al. Commercially available surgical gowns do not prevent penetration by HIV-1. *Surgical Forum* 1990;41:77-80.
4. Smith JS, Nichols RJ. Barrier efficacy of surgical gowns. *Arch Surg* 1991;126:756-763.
5. Quebbeman EJ, Telford GL, Hubbard S, et al. In-use evaluation of surgical gowns. *Surg Gynecol Obstet* 1992;174:369-375.
6. Laufman H, Eudy WW, Vandermoot BA, Liu D, Harris CA. Strike-through of moist contamination by woven and non-woven surgical materials. *Ann Surg* 1975;181:857-862.
7. American Society for Testing Materials. *ES 21 and ES 22 Test Methods*. Philadelphia, PA: American Society for Testing Materials, Nov. 1992.
8. Altman KW, McElhaney JH, Moylan JA, Fitzpatrick KT. Transmural surgical gown pressure measurements in the operating theater. *Am J Infect Control* 1991;19:147-155.
9. Bernard HR, Beck WC. Operating room barriers-idealism, practicality and the future. *Bulletin of the American College of Surgeons* 1975;60:16.
10. Smith JW, Nichols RL. Barriers: resistance of protective clothing materials to synthetic blood. *OR Reports* 1993;2-5.
11. Decker MD. The OSHA bloodborne hazard standard. *Infect Control Hosp Epidemiol* 1992;13:407-417.
12. Hedrick E. Buyer beware! *Am J Infect Control* 1992;20:170-171.
13. Telford GL, Quebbeman EJ. Invited commentary. *Arch Surg* 1991;126:763.
14. Schwartz JT, Saunders DE. Microbial penetration of surgical gown materials. *Surg Gynecol Obstet* 1980;150:507-512.

Guaiac Testing of IV Lines

To the Editor:

The article by Manian et al (1993;14:325-330) regarding the risk of transmission of bloodborne illness through needles removed from IV ports was timely and important to the management of this common occurrence.

One point that the authors did not raise involves the possibility that guaiac testing may not always detect the presence of blood. Although I do not know enough about the physics of the fluids involved to predict this with any accuracy, it would seem likely that a certain amount of sedimentation might occur naturally at the end of an IV line. If this is so, the lighter elements of the serum may be found considerably higher in the line than red cells, and the risk of infection might be significantly higher than predicted in this article.

Pamela Patrick

Augusta Hospital Corporation
Staunton, Virginia

The authors reply:

We appreciate Ms. Patrick's interest in our article. We do not believe sedimentation of blood in IV tubings confounds the results of our study, for several reasons.

First, it should be remembered that all needles in our study were removed from IV lines immediately after the administration of IV medications. Thus, any preexisting serum in the upper half of

the IV line would not have remained undisturbed and instead would have been mixed with the red blood cells during the process of insertion and removal of the needle, and perhaps more importantly during the administration of medication.

Second, except for the heparin-locks, the tip of the needles removed from IV ports often were near the junction of the port and the main running line, and area that would not be conducive to undisturbed sedimentation of red blood cells.

Third, since some degree of hemolysis is inevitable in IV lines, even if there were significant sedimentation of blood, guaiac testing still would have detected extracorporeal hemoglobin in the serum at the threshold level reported in the study.

Farrin A. Manian, MD, MPH

Lynn Meyer, RN, MPH, CIC

Joan Jenne, RN, CIC

St. John's Mercy Medical Center
St. Louis, Missouri

Port-a-Cath Needlestick Injuries

To the Editor:

Needlestick injuries are the major hazard for healthcare workers for acquiring human immunodeficiency virus (HIV) infection during their work.¹ Surveillance for needlestick accidents and study of the circumstances of such accidents are of critical importance when proposing preventive measures.

Recently, in our acquired immunodeficiency syndrome care center, two needlestick injuries occurred while removing needles from Port-a-Cath systems. These Port-a-Cath systems were used to administer intravenous foscarnet/gancyclovir treatment