solution available in clinical settings, especially when current Centers for Disease Control and Prevention guidelines state that only solutions of PPD containing 5 TU/0.1 mL should be used.[1] We have discontinued the 250 TU formulation in our institution. We urge caution in the interpretation of tuberculin tests and suggest careful examination of the strength of the solution before administration.


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## Prevention of Intravascular Catheter-Related Bloodstream Infections

**To the Editor:**

In his *Lancet* seminar, Raad[1] estimated that 400,000 intravascular catheter-related bloodstream infections (IVCR BSIs) with skinborne microorganisms now occur annually in US healthcare facilities. On the basis of 1995 data, Jarvis[2] summarized that such infections occurred then at a rate >100,000 annually, killed 16.3% to 35% of persons infected, and cost $40,000 per survivor.[2] Pearson[3] estimated that there were over 200,000 IVCR BSIs annually in 1996. Using 400,000 for current annual morbidity and 25% for mortality, IVCR BSIs will kill 100,000 Americans in 1998. For prevention, Raad recommended: (1) maximum sterile barriers (hand washing, sterile gloves, large drape, sterile gown, mask, and cap) during insertion and maintenance of intravenous (IV) catheters by specialized infusion-therapy teams; and (2) supplementary cutaneous microbicides, tunneling catheters under skin, ionic silver cuffs, intraluminal antibiotic locks, antibiotic coating of catheters, and antiseptic hubs.

One must add that, during use in patients, each intravascular catheter requires a sterile IV infusion set with a port for reversible attachment to the catheter hub; some 6 feet of trailing tubing; one to three Y-ports for adding small-volume infusates; a trailing spike for repetitively attaching large-volume infusion bags; and added paraphernalia for controlling rates of flow and filtering and for preventing back flow. Depending on the duration of the infusion, soluble medications prescribed, and changes dictated by a patient's condition, the numbers of IV infusion sets, infusion bags, and Y-ports used with each IV catheter vary from several to many, all requiring sterile handling.

Precautions versus spread of bloodborne pathogens in healthcare facilities officially broadcast in 1987, 1988, and 1992[3] had the following side effects: (1) burgeoning use of unsterile examination gloves, to an annual volume of some 10 billion in 1996[4]; (2) a decrease in hand washing before donning examination gloves, to about 25%,[4] (3) use of unsterile exam gloves for handling IV sets and patients[3]; and (4) use of needleless infusion systems employing blunt cannulae instead of sharp needles to service Y-ports.[3] Since 1995, we've seen a 3- to 10-fold increase of IVCR BSIs in patients infused via needleless systems that have Y-port recesses that are suitable for microbial colonization and that require more manipulation than standard systems.[5] Thus, to Raad's recommendations one might add that needleless IV infusion systems should be eliminated, and healthcare workers should use sterile gloves when handling needles and related paraphernalia in standard IV infusion systems.

Supply of IV infusion systems safer for patients and healthcare workers currently is limited by manufacturers, purchasing consortia, and managed-care organizations whose bottom line is profit (*Business Week*, March 16;1998:75; *San Francisco Chronicle,* April 13-15, 1998;A-1). A simple remedy can be found in the Healthcare Worker Protection Act (HR 2754) now under consideration in Congress. The gist is that Medicare (and we, the taxpayers) will not reimburse providers for needles and paraphernalia proven unsafe by qualified experts.


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## Pseudo-epidemic in an Acute-Care Teaching Hospital

**To the Editor:**

Cronin et al's Concise Communication[1] is of importance, not only in showing the unnecessary treatment of false-positive patients but also in demonstrating that pseudo-epidemics are expensive and time-consuming.

We would like to report a pseudo-outbreak of *Pseudomonas putida* in our facility. *Pseudomonas putida* is a common inhabitant of soil, plants, and water. It is infrequently isolated from the hospital environment. It is of low virulence and usually not of clinical significance. Occasionally, it is part of the normal oropharyngeal flora. *P putida* usually is regarded as an environmental contaminant.

*P putida* was isolated between February 7 and March 25, 1991, from urine of 23 patients in an acute-care, 400-bed community teaching hospital located in Virginia (Table). These cases were from medical and surgical units, an outpatient clinic, emergency room, and nursery. Patients were admitted with various diagnoses. The cases were distributed in all age groups from <1 to >90 years of age, in both genders and from both catheterized and noncatheterized patients. In each case, the implicated organism had an identical antibiotic susceptibil-

**TABLE**
CASES BY UNIT, GENDER, AGE, AND PRESENCE OF URINARY CATHETER

| | Gender | | Age (y) | | | | Catheter | | |
|---|---|---|---|---|---|---|---|---|---|
| Unit | Male | Female | <2 | 18-40 | 41-60 | >61 | Yes | No | Total |
| 1S | 1 | 1 | 2 | | | | 2 | | 2 |
| 2E | 2 | 3 | | 1 | 2 | 2 | 2 | 3 | 5 |
| 2S | | 1 | | | | 1 | 1 | | 1 |
| 3E | | 1 | | | | 1 | 1 | | 1 |
| 3W | | 4 | | 4 | | | 2 | 2 | 4 |
| 4E | | 1 | | | | 1 | | 1 | 1 |
| 4W | 1 | 1 | | | 1 | 1 | 1 | 1 | 2 |
| ER | | 2 | | 1 | | 1 | 1 | 1 | 2 |
| L and D | | 2 | | 2 | | | 1 | 1 | 2 |
| OP | 1 | 1 | | 1 | | 1 | | 2 | 2 |
| ICU | 1 | | | | 1 | | 1 | | 1 |
| Total | 6 | 17 | 2 | 9 | 4 | 8 | 12 | 11 | 23 |

Abbreviations: ER, emergency room; L and D, labor and delivery; OP, outpatient clinic; ICU, intensive-care unit.

ity pattern and biotype. Most of the patients had clinical evidence of infection. Several patients were treated for this organism.

Epidemiological investigation of the cases showed no pattern. Identical antibiotic susceptibility pattern, similar biotype, hospitalwide distribution of cases in both genders and in all age groups and a relatively uncommon organism, suggested that the "outbreak" might be artifactual. Further investigations identified the source of this cluster as contamination of the urine collection kit. A new lot of urine collection kits was placed in the laboratory; since then, the hospital has remained free of *P putida.*

Most pseudo-outbreaks involve microbial contamination.[1-3] Whenever an apparent increase in similar laboratory isolates is found or laboratory findings are discordant with expected epidemiological patterns, confirmatory testing by alternative methods should be performed.[2] This pseudo-outbreak emphasizes the need for meticulous quality control in the laboratory.[4]

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## Does Steris Sterilize?

**To the Editor:**

The Steris company recommends in Germany the Steris System 1 "for a rapid, safe, and standardized sterilization of minimally invasive devices for operations and diagnostic procedures," but the Steris system probably is used mostly for disinfection of endoscopes. Steris guarantees to the German users that the system sterilizes, provided that certain precautions such as careful cleaning prior to disinfection are being taken. A guarantee for sterilization is misleading for several reasons. First of all, disinfection and sterilization strongly depend on the amount of biological material and the number of microorganisms present on the object prior to the disinfection or sterilization process. Second, manual cleaning prior to disinfection or sterilization is a nonstandardized procedure, which in addition could expose staff to pathogens. It is well known that in clinical practice routine cleaning rather often is not done very carefully. Finally, many pathogens still have not been tested or are not even recognized to produce disease. William Rutala and his group recently have shown that Steris with 0.2% peracetic acid at a temperature of 23° to 25°C does not kill *Cryptosporidium parvum* at 12 minutes, and Steris with 0.2% peracetic acid at a temperature of 48° to 50°C reduces the colony count of *Cryptosporidium parvum* by only 1.8 log, which is below the effect of high-level disinfection.[1]

There are several other problems associated with the use of Steris. Peracetic acid is more damaging to instruments and processors than many other disinfectants, eg, gluteraldehyde. It also is less stable and far more expensive than aldehydes are.

The National Reference Center for Hospital Epidemiology in Germany strongly recommends the use of washer disinfectors, especially for reprocessing of endoscopes. Automatic washer disinfectors clean, disinfect, and dry the devices without exposing the staff to pathogens and irritant or toxic substances.

Neither Steris nor other companies should give a guarantee for disinfection or sterilization for their products. Steris may not even provide high-level disinfection of devices contaminated with certain microorganisms.

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*Editor's note: Please see page 798 for Dr. Rutala's discussion of low-temperature sterilization technology (LTST), where he points out that no LTST fulfills the FDA guidance document for sterilization, but that, with proper cleaning, LTST can provide clinically effective sterilization.*