to vancomycin (MIC=8 μ/mL); all previous MRSA strains had been vancomycin-susceptible. This VISA isolate was sent to the CDC, where the intermediate resistance was confirmed; the isolate was susceptible to gentamicin, trimethoprim-sulfamethoxazole, tetracycline, and imipenem. The patient continues to receive antimicrobial therapy at home.—ED.]

FROM: 1. Centers for Disease Control and Prevention. Reduced susceptibility of *Staphylococcus aureus* to vancomycin—Japan, 1996. *MMWR* 1997;46:624-626.

2. Centers for Disease Control and Prevention. *Staphylococcus aureus* with reduced susceptibility to vancomycin—United States, 1997. *MMWR* 1997;46:765-776.

3. Centers for Disease Control and Prevention. Interim guidelines for prevention and control of staphylococcal infection associated with reduced susceptibility to vancomycin. *MMWR* 1997;46:626-628,635.

## Vancomycin Resistance Outside the Healthcare Setting

Although no data so far support substantial acquisition and transmission of vancomycin-resistant enterococci (VRE) outside the healthcare setting in the United States, a growing number of reports from Europe suggest that colonization with VRE occurs frequently in the community. Reports from Europe also have suggested that VRE exist elsewhere in the environment, including animal feces and human foods of animal origin. Additional evidence supports the transmission of VRE to persons in contact with these sources, resulting in an increased human reservoir of VRE colonization.

An important factor associated with VRE in the community in Europe has been avoparcin, a glycopeptide antimicrobial drug used for years in many European nations at subtherapeutic doses as a growth promoter in food-producing animals. Although avoparcin never has been approved for use in the United States, undetected community VRE transmission may be occurring at low levels. Further studies of community transmission of VRE in the United States are needed urgently. If transmission with VRE from unrecognized community sources can be identified and controlled, increased incidence of colonization and infection among hospitalized patients may be prevented.

FROM: McDonald LC, Kuehnert MJ, Tenover FC, Jarvis WR. Vancomycin-resistant enterococci outside the health-care setting: prevalence, sources, and public health implications. *Emerg Infect Dis* 1997;3:311-315.

## Electroconvulsive Therapy-Related Bacteremia

Infectious complications associated with electroconvulsive therapy (ECT) are extremely unusual. When five of nine patients undergoing ECT at one facility on June 20, 1996, developed *Staphylococcus aureus* bloodstream infection (BSI), an investigation by the CDC's Hospital Infections Program was initiated.

A case was defined as any patient who had ECT at facility A from June 1, 1995, through June 20, 1996, and developed *S aureus* BSI less than 30 days after ECT. The post-ECT *S aureus* BSI rate was significantly greater on the epidemic day than the pre-epidemic period, (ie, June 1, 1995–June 19, 1996; 5/9 vs 0/54 patients, $P<.001$). All patients during the study period received propofol before ECT. Case patients were more likely than non-case patients to have higher maximum temperature after ECT (median, 103.9°F vs 100.0°F; $P<.03$) and a greater time from preparation of intravenous medications to infusion (median, 2.1 vs 1.1 hours; $P=.01$). All isolates of *S aureus* from case patients were indistinguishable by pulsed-field gel electrophoresis. These data suggest the ECT-associated *S aureus* BSIs were associated with the administration of propofol that was contaminated during preparation due to multiple breaks in aseptic technique.

FROM: Kuehnert MJ, Webb RM, Jochimsen EM, et al. *Staphylococcus aureus* bloodstream infections among patients undergoing electroconvulsive therapy traced to breaks in infection control and possible extrinsic contamination by propofol. *Anesth Analg* 1997;85:420-425.

## Compliance With OSHA's Ethylene Oxide Standard

Researchers in Massachusetts conducted a study to determine the extent to which hospitals in the state implemented the Occupational Safety and Health Administration (OSHA)'s 1984 ethylene oxide (EtO) standard. EtO is used in hospitals to sterilize heat- and moisture-sensitive medical devices and instruments. Healthcare workers comprise the largest group among the estimated 270,000 US workers who are potentially exposed to EtO. OSHA considers EtO a potent neurotoxin, a known human carcinogen, a potential reproductive hazard, and an allergic sensitizer.

In 1984, OSHA published a health standard setting at 1 ppm permissible exposure limit (PEL) and 0.5 ppm action level. The standard was revised in 1988 to add a 5 ppm short-term excursion limit. The EtO standard requires exposure monitoring consisting of workers' breathing zone air samples that are representative of the 8-hour time-weighted average (for PEL and action level) and 15-minute short-term exposures for each employee (for excursion limit). If exposures exceed that action level or excursion limits, repeat testing is required.

An in-depth mail and telephone survey was conducted followed by on-site interviews at all EtO-using hospitals in Massachusetts (n=92; 96% participation rate). The study results showed that, by 1993, most hospitals had performed personal exposure monitoring for OSHA's 8-hour action level (95%) and the excursion limit (87%), although most did not meet the 1985 implementation deadline. In 1993, 66% of hospitals reported the installation of EtO alarms to fulfill the standard's "alert" requirement. Alarm

installation also lagged behind the 1985 deadline and peaked following a series of EtO citations by OSHA. From 1990 through 1992, 23% of hospitals reported having exceeded the action level once or more, 24% reported having exceeded the excursion limit, and 33% reported that workers were exposed accidentally to EtO in the absence of personal monitoring.

The authors conclude that, almost a decade after the publication of the EtO standards, exposure-monitoring requirements were widely but incompletely implemented. Work-shift exposures had decreased markedly since the mid-1980s, but overexposure continued to occur widely. OSHA enforcement appears to have stimulated implementation, but additional exposure monitoring is needed. In addition to EtO being a known human carcinogen, it also is a potent allergic sensitizer, and the increased reports of EtO-associated asthma in healthcare workers further emphasizes the need to control worker exposures.

FROM: LaMontagne A, Kelsey K. Evaluating OSHA's ethylene oxide standard: employer exposure-monitoring activities in Massachusetts hospitals from 1985 through 1993. *Am J Public Health* 1997;87:1119-1125.

## Reliability of TB Skin-Test Measurement Using Ballpoint Pen

The tuberculin skin test has many potential sources of error and variability. Standardization of the tuberculin reagent and interpretation of results have been considered in detail; however, little attention has been given to the reading itself. Measurement of the induration is one of the most important potential sources of error. Induration often is difficult to define with the use of the customary technique of palpation.

An alternative technique that has been advocated as early as 1975 never has been discussed in official statements on tuberculosis. Researchers from France and British Columbia recently investigated the reliability of the ballpoint pen technique and compared this technique with the palpation method. With the ballpoint pen technique, a medium ballpoint pen is used to draw a line starting 1 to 2 cm away from the skin reaction and moving toward its center. When the pen reaches the margin of the induration, an increased resistance to further movement is felt, and the pen is lifted. The procedure is repeated on the opposite side of the skin reaction. The distance between the ends of the opposing lines at the margins of the induration is measured.

Three measurements were taken on 69 persons with reactions to the TB skin test: two with the ballpoint pen technique and one with palpation. The results indicated that intra- and interobserver reliability coefficients of the ballpoint pen technique were high. Five percent of the time, however, a second measurement by the same observer could be at least 2.7 mm less to 3.0 mm more than the first measurement, and the measurement from the second observer could be at least 3.4 mm less to 3.7 mm more than the measurement from the first observer. This could lead to the reclassification of a positive test as negative or vice versa. The area of imprecision was 38% less broad for the ballpoint pen technique than for the palpation technique.

The researchers concluded that the ballpoint pen technique is a reliable technique for measurements of TB skin test results. They suggest that current methods for TB skin testing reading should be reconsidered.

FROM: Pouchet J, Grasland A, Collet C, Coste J, Esdaile JM, Vinceneux P. Reliability of tuberculin skin test measurement. *Ann Intern Med* 1997;126:210-214.

## Prevention of Opportunistic Infections in HIV-Infected Persons—Revised Guidelines

The US Public Health Service and the Infectious Disease Society of America issued revised "1997 Guidelines for the Prevention of Opportunistic Infections in Persons with HIV." These guidelines update the guideline published in 1994. Among the most important changes are the recommendation that clarithromycin or azithromycin be considered first-choice drugs for *Mycobacterium avium* complex prophylaxis, with rifabutin as an alternative, and a revision in the immunization schedule for HIV-infected children, with a comparison of the differences between this schedule and that for immunocompetent children.

Although not included in the disease-specific recommendations, an important issue in opportunistic-infection prophylaxis is whether to offer or continue prophylaxis on the basis of the lowest CD4+ T-lymphocyte count or of a more recent count that has been elevated as a result of antiretroviral therapy. This issue is particularly pertinent because of the administration of potent drug combinations that include protease inhibitors, which may increase CD4+ counts by 100 to 250 cells per milliliter. It currently is unknown whether such increases in CD4+ counts provide anti-infective protection comparable with that afforded to patients whose counts never declined below the current level. Until data assessing these risks are available, most experts recommend that prophylaxis be initiated or continued on the basis of the lowest CD4+ count.

FROM: Centers for Disease Control and Prevention. 1997 USPHS/IDSA guideline for the prevention of opportunistic infections in persons with human immunodeficiency virus. *MMWR* 1997;46(No. RR-12):1-46.

*Additional news items in this issue: Lack of Isolation Despite Respirator Use Leads to MDR-TB Outbreak, page 709.*