The authors concluded that higher rates of vancomycin or third-generation cephalosporin use were associated with increased prevalence of VRE, independent of other ICU characteristics and the endemic VRE prevalence elsewhere in the hospital. Decreasing the use rates of these antimicrobial agents could reduce rates of VRE in ICUs.

FROM: Fridkin SK, Edwards JR, Courval JM, Hill H, Tenover FC, Lawton R, et al. The effect of vancomycin and third-generation cephalosporins on prevalence of vancomycin-resistant enterococci in 126 U.S. adult intensive care units. *Ann Intern Med* 2001;135:175-183.

Risk Factors for Ventilator-Associated Pneumonia in a Community Hospital

Ibrahim and coinvestigators from Washington University School of Medicine, Barnes-Jewish Hospital, St Louis, Missouri, conducted a study to identify prospectively the occurrence of ventilator-associated pneumonia (VAP) in a community hospital and to determine the risk factors for VAP and the influence of VAP on patient outcomes in a nonteaching institution. The study was a prospective cohort study conducted in a medical ICU and a surgical ICU in a 500-bed private community nonteaching hospital. All patients receiving mechanical ventilation who were admitted to the ICU setting between March 1998 and December 1999 were prospectively evaluated.

During a 22-month period, 3,171 patients were admitted to the medical and surgical ICUs. Eight hundred eighty patients (27.8%) received mechanical ventilation. VAP developed in 132 patients (15.0%) receiving mechanical ventilation. Three hundred one patients (34.2%) who received mechanical ventilation died during hospitalization. Logistic-regression analysis demonstrated that tracheostomy (adjusted odds ratio [AOR], 6.71; 95% confidence interval [CI_{95}], 3.91-11.50; $P<.001$), multiple central venous-line insertions (AOR, 4.20; CI_{95}, 2.72-6.48; $P<.001$), reintubation (AOR, 2.88; CI_{95}, 1.78-4.66; $P<.001$), and the use of antacids (AOR, 2.81; CI_{95}, 1.19-6.64; $P=.019$) were independently associated with the development of VAP. The hospital mortality of patients with VAP was significantly greater than the mortality of patients without VAP (45.5% vs 32.2%, respectively; $P=.004$). The occurrence of bacteremia, compromised immune system, higher APACHE II scores, and older age were identified as independent predictors of hospital mortality.

The authors concluded that VAP is a common nosocomial infection in the community hospital setting. The risk factors for the development of VAP and risk factors for hospital mortality in a community hospital are similar to those identified from university-affiliated hospitals. These risk factors can potentially be employed to develop local strategies for the prevention of VAP. ICU clinicians should be aware of the risk factors associated with the development of VAP and the impact of VAP on clinical outcomes. More importantly, they should cooperate in the development of local multidisciplinary strategies aimed at the prevention of VAP and other nosocomial infections.

FROM: Ibrahim EH, Tracy L, Hill C, Fraser VJ, Kollef MH. The occurrence of ventilator-associated pneumonia in a community hospital: risk factors and clinical outcomes. *Chest* 2001;120:555-561.

Touch Contamination Levels During Anesthetic Procedures: Relation to Hand-Hygiene Procedures

Merry and colleagues from the University of Auckland, New Zealand, have reported on a study of microbial contamination levels during anesthetic procedures. After different methods of hand preparation, volunteers rolled segments of a sterile central venous catheter between their fingertips, and bacterial transfer was evaluated by standardized quantitative culture. The number of bacteria transferred differed between methods ($P<.001$). Comparisons were made with the control group (no preparation at all; median, third quartile and maximum count=6.5, 24, 55). Bacterial transfer was greatly increased with wet hands (1,227, 1,932, 3,254; $P<.001$). It was reduced with a new rapid method, based on thorough drying with a combination of 10 seconds using a cloth towel followed by either 10 or 20 seconds with a hot-air towel (0, 3, 7 and 0, 4, 30, respectively; $P=.007$ and .004, respectively).

When asked to follow their personal routines, 10 consultant anesthetists used a range of methods. Collectively, these were not significantly better than control (7.5, 15, 55; $P=.73$) and neither was an air towel alone (2.5, 15, 80; $P=.176$) nor the hospital's standard procedure (0, 1, 500; $P=.035$).

The authors concluded that, if hand preparation is needed, an adequate and validated method should be used, together with thorough hand drying.

FROM: Merry AF, Miller TE, Findon G, Webster CS, Neff SP. Touch contamination levels during anaesthetic procedures and their relationship to hand hygiene procedures: a clinical audit. *Br J Anaesth* 2001;87:291-294.

Evolution of MRSA

Crisostomo and colleagues have theorized that the key genetic component of methicillin resistance, the *mec*A determinant, is not native to *Staphylococcus aureus*. Thus, the evolution of methicillin-resistant *S aureus* (MRSA) must have begun with the acquisition of the *mec*A determinant from an unknown heterologous source some time before the first reported appearance of MRSA isolates in clinical specimens in the United Kingdom and Denmark (in the early 1960s). They compared the genetic backgrounds and phenotypes of a group of methicillin-susceptible *S aureus* (MSSA) isolates to the properties of MRSA strains isolated in Denmark and the United Kingdom during the same time period and to the genetic profiles of contemporary epidemic clones of MRSA.

All early MRSA isolates resembled a large group of the early MSSA blood isolates in phenotypic and genetic properties, including phage group, antibiotype (resistance to penicillin, streptomycin, and tetracycline), pulsed-field gel electrophoresis pattern, and *spa*A type and multilocus