

position paper, controlling antimicrobial use is not enough to combat resistance.<sup>6</sup> Hospitals also must focus on appropriateness of use, and respond to data from a monitoring system. Of hospitals we surveyed, only 70% had CPGs that addressed such issues, and less than one half of the hospitals had a system to measure compliance with consultations on initial antimicrobial choice. Furthermore, despite recent evidence that selected restrictions decrease antimicrobial resistance, only 40% of hospitals restricted any antimicrobials.<sup>7,8</sup> Therefore, it is evident that, in most hospitals surveyed, practices to improve antimicrobial use existed. However, these efforts should be considered a first step in approaching more comprehensive programs such as those described in the SHEA-IDS position paper.

One limitation of this study is that we have no information on enforcement of, or changes in, the reported practices. However, this survey provides an overview of some of the more commonly reported methods to improve antimicrobial use. Our data demonstrate the variety of programs currently used and may reflect the current lack of data demonstrating that any one program is more effective than others.

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## Nosocomial Infections in a Neurosurgery ICU

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Dettenkofer and coinvestigators from the Institute of Environmental Medicine and Hospital Epidemiology, University Hospital Freiburg, Germany, conducted a study to identify overall and site-specific nosocomial infection (NI) rates in patients receiving neurosurgical intensive care therapy. A prospective study was started in February 1997 in the eight-bed neurosurgical ICU of the University Hospital of Freiburg, Germany. Case records were reviewed twice per week, all microbiology reports were reviewed, and ward staff were consulted. NIs were defined according to CDC criteria and were categorized into specific infection sites. Within 20 months, 545 patients with a total of

5,117 patient-days were investigated (mean length of stay, 9.4 days). One hundred thirteen NIs were identified in 90 patients (72 patients with 1, 13 with 2, and 5 with 3 infections, respectively). A moderate to high overall incidence (20.7/100 patients) and a moderate incidence density (22.1/1,000 patient-days) of NI in the neurosurgical ICU could be documented; these figures are well within the range of published data.

Site-specific incidence rates and incidence densities were as follows: 1 bloodstream infection (BSI)/100 patients (0.9 central line-associated BSIs/1,000 central line-days), 9 pneumonias/100 patients (15.1 ventilator-associated pneumonias/1,000 ventilator-days), and 7.3 urinary tract infections (UTIs)/100 patients (8.5 urinary catheter-associated

UTIs/1,000 urinary catheter-days). Additionally, 1.1 cases of meningitis, 0.7 brain abscesses/ventriculitis, and 1.7 other infections (surgical-site infection, bronchitis, catheter-related local infection, and diarrhea) were documented per 100 patients, respectively. Of isolated pathogens, 14.6% were *Escherichia coli*; 10.2%, enterococci; 9.6%, *S aureus*; 6.4%, coagulase-negative staphylococci; 6.4%, *Klebsiella* species; 5%, *Enterobacter* species; and 5%, *Pseudomonas* species. In 11 cases of NI, no pathogen could be isolated.

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