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## Society for Healthcare Epidemiology of America Guideline Approach Works to Control a Methicillin-Resistant *Staphylococcus aureus* Outbreak

### To the Editor:

I want to thank the Society for Healthcare Epidemiology of America (SHEA) and *Infection Control and Hospital Epidemiology* for setting a standard for excellence in infection control. SHEA has recommended the use of evidence-based measures for controlling nosocomial methicillin-resistant *Staphylococcus aureus* (MRSA) infections<sup>1</sup> and *Infection Control and Hospital Epidemiology* has kept a steady focus on this growing problem.<sup>2,5</sup>

I am the sole infection control practitioner employed by a Health Region in Alberta, Canada. Thus, I am required to make decisions regarding whether and when to use screening and isolation precautions for controlling MRSA (and vancomycin-resistant *Enterococcus*) infections. I have found

the guidance of *Infection Control and Hospital Epidemiology* most helpful in managing these situations and would like to relate a recent experience controlling MRSA infections.

In September 2003, a MRSA outbreak was suspected in a small town of 5,400 in my region. Two deaths followed probable inappropriate antibiotic treatment of unrecognized MRSA infection. Initially, it was known from routine clinical cultures that 2 acute care and 2 home care patients, 6 nursing home residents, and 6 community members who had previously received healthcare services had MRSA. These numbers were larger than expected for rural Canada, leading me to wonder whether the practices recommended by some (no screening and no use of contact precautions in long-term care) might be creating an "ostrich with its head in the sand" situation. When my supervisor, the Medical Officer of Health, and I sought counsel, we were advised to just "give up" because most U.S. healthcare facilities, where according to National Nosocomial Infections Surveillance System data MRSA infections are currently approximately 25-fold more common than they were in 1980, were not even bothering to control nosocomial MRSA infections.

On the basis of the SHEA guideline, however, surveillance cultures were conducted and identified 2 additional colonized acute care patients in the 34-bed hospital and 21 additional colonized nursing home residents; this meant that 27 (30%) of the nursing home's 90 residents were found to be colonized before or during the prevalence survey. Of 166 healthcare workers (64%) volunteering to be screened, 4 were colonized (2.4%). All MRSA isolates showed the same antibiogram with resistance to oxacillin, erythromycin, and clindamycin. Twenty-five isolates were submitted for pulsed-field gel electrophoresis testing, which showed that 20 (80%) were identical to and 5 were closely related to the outbreak strain (ie, > 90% similarity). Contact precautions with gowns and gloves were used for the care of colonized patients. Colonized residents and healthcare workers underwent 1 week of decolonization therapy with intranasal mupirocin three times daily, mupirocin ointment applied to small skin lesions twice daily, 2% chlorhexidine baths once daily and 2%

chlorhexidine shampoos on days 1 and 4, 600 mg of rifampin orally once daily, and trimethoprim-sulfamethoxazole (1 double strength tablet twice daily), except one resident who was allergic to sulfonamide and who received 100 mg of doxycycline orally twice daily instead of trimethoprim-sulfamethoxazole. Screening cultures were used for patients being transferred between the hospital and the nursing home. Alcohol hand gel was made available to healthcare workers in every room, and the entire nursing home was disinfected using accelerated hydrogen peroxide (1:16 strength).

On follow-up after 6 months, 14 (70%) of 20 nursing home residents who had undergone eradication therapy still remained free of colonization. Three others had died during the ensuing 6 months and 6 had failed eradication or had become recolonized and were thus back in contact isolation. In addition, 4 of the previously culture-negative residents had acquired MRSA colonization, bringing the total prevalence after 6 months of control efforts to 10 (11%) of the nursing home's 90 patients, a two-thirds relative reduction. At 12 months, 12 (71%) of the remaining 17 residents who had been MRSA positive were culture negative and 5 (5.6%) of all 90 nursing home residents remained culture positive for the outbreak strain (an 81% relative reduction).

The SHEA approach greatly benefited the residents of the nursing home. MRSA is an important and sometimes deadly pathogen that was being nosocomially transmitted in this small healthcare facility. The proactive efforts taken to control it were worth it.

Complicating the approach to the MRSA outbreak was a concomitant influenza A outbreak that occurred in this facility before the arrival of vaccine for residents and staff. For this reason, staff wore gowns for contact precautions and added masks if they could not tolerate amantadine prophylaxis. When healthcare workers' faces were covered by masks and their name tags were covered by gowns, residents sometimes could not tell who was caring for them. For this reason, a label with the words "Behind the Mask is: \_\_\_\_\_" was developed that could be placed on the healthcare worker's

gown to prominently display his or her name and position (eg, Denise, RN). Families and residents in the rooms were then able to know who was behind the gown or mask. Healthcare workers have since been encouraged to use such labels when protective gowns cover their name tags. Others implementing isolation precautions might find this practice useful.

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