

# Universal MRSA Screening Slashes Rates by Half

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Rates of methicillin-resistant *Staphylococcus aureus* infections were reduced by more than half when all new patients were tested for MRSA, according to results from three hospitals.

With methicillin-resistant *S. aureus* (MRSA) has become a fixture in many hospitals, and the resulting MRSA infections are causing poor health outcomes and increasing health care costs, reported Dr. Ari Robicsek of Evanston (Ill.) Northwestern Healthcare and his colleagues.

To cut MRSA infection rates, the researchers implemented a universal MRSA surveillance program at a three-hospital organization in Chicago.

Their observational study compared MRSA rates during a baseline year when patients were not universally screened at admission with rates after conducting polymerase chain reaction–based nasal tests for MRSA. The tests were conducted on all patients admitted to the ICU for 1 year and on all patients admitted to the hospital for another year (*Ann. Intern. Med.* 2008;148:409-18).

During the ICU surveillance year, 3,334 of 4,392 patients (76%) admitted to the ICU were tested for MRSA and 277 (8%) were positive. During the universal screening year, 62,035 of 73,464 patients (84%) admitted to the hospital were tested for MRSA and 3,926 (6%) were positive. Patients who tested positive were isolated. Of the 2,085 patients for whom mupirocin data were available, 1,288 (62%) received at least four doses of mupirocin.

During the year of universal surveillance, the total number of isolation days was 11,454 across the three hospitals. “With no surveillance, clinical cultures alone would have captured 2,036 of those days,” the investigators noted. “Thus, 9,418 MRSA patient-days would have been spent without infection control contact precautions to limit MRSA spread.”

Overall prevalence density of clinical infections caused by MRSA decreased from 8.9/10,000 patient days during the baseline year to 7.4/10,000 patient days during the ICU screening year, but this difference was

not statistically significant. By contrast, prevalence density decreased significantly from baseline to 3.9/10,000 patient days during the universal screening year.

In addition, the prevalence density of four types of MRSA infections—bloodstream, respiratory tract, urinary tract, and surgical site infections—dropped significantly between baseline and the end of the universal screening year.

This improvement following universal screening persisted for up to 30 days after

the patients left the hospital but had no apparent effect on infection rates from 31 days to 180 days, the researchers noted.

To control for a possible unrecognized coinfection, the researchers also compared changes in rates of hospital-associated MRSA bacteremia with rates of hospital-associated methicillin-susceptible *S. aureus* (MSSA) bacteremia. The MRSA bacteremia rates decreased significantly after the surveillance program was implemented, but MSSA bacteremia rates did not.

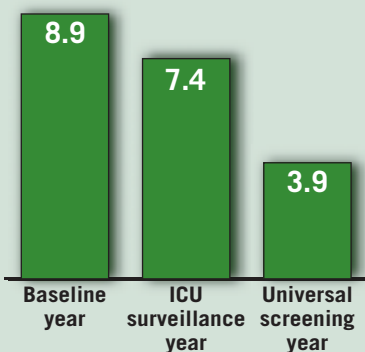
The study was limited by the lack of an unscreened control group and the inclusion of only one hospital organization, but the findings support results from previous studies in which anything less than universal screening detected fewer than 20% of patients with MRSA infections.

“However, given the intermediate size and community-based nature of our three hospitals, our experience is probably representative of most U.S. hospitals,” the investigators wrote. ■

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Note: 3,334 patients tested during ICU surveillance year; 62,035 tested during universal screening year.  
Source: Dr. Robicsek

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