

Rate of community-onset MRSA infections appears to be on the decline

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In analysis that included more than 9 million Department of Defense nonactive and active duty personnel, the rates of both community-onset and hospital-onset methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia decreased from 2005 to 2010, while the proportion of community-onset skin and soft tissue infections due to MRSA has more recently declined, according to a study in the July 4 issue of *JAMA*.

"The magnitude of invasive [MRSA infections](#) as well as the emergence of community-onset [MRSA](#) infections in the United States has been well documented," according to background information in the article. "In parallel with the emergence of community-onset MRSA infections in the U.S. [civilian population](#), skin and [soft tissue infections](#) (SSTIs) have become a significant public health issue for the U.S. military. ... Rates of hospital-onset MRSA infections are reported as decreasing, but recent rates of community-onset *S aureus* infections are less known."

Michael L. Landrum, M.D., of the San Antonio Military Medical Center, Fort Sam Houston, Texas, and colleagues conducted a study to examine the incidence rates of community-onset and hospital-onset *S aureus* bacteremia and SSTIs and the proportion due to MRSA in a large population composed of individuals of all ages from all regions of the United States. The analysis consisted of an observational study of all Department of Defense TRICARE beneficiaries from January 2005 through December 2010. Medical record databases were used to identify and classify all annual first-positive *S aureus* blood and wound or abscess cultures as methicillin-susceptible *S aureus* (MSSA) or MRSA, and as

community-onset or hospital-onset infections (isolates collected >3 days after hospital admission).

From 2005 through 2010, there were more than 9.2 million people eligible to receive care within the Department of Defense health care system each year. In the first year of observation (2005), 52 percent of individuals in the study population were men and 84 percent were nonactive duty. There were 2,643 blood and 80,281 wound or abscess annual first-positive *S aureus* cultures included in the study for further analyses. Community-onset infections accounted for 2,094 (79 percent) cases of *S aureus* bacteremia and 79,801 (99 percent) cases of *S aureus* SSTIs. The rate of community-onset MRSA bacteremia was highest for those aged 65 years or older. The rates of community-onset bacteremia were higher in men than in women. Fifty-eight percent of community-onset *S aureus* SSTIs were due to MRSA, significantly higher than for either community-onset bacteremia (39 percent) or hospital-onset SSTIs (53 percent). Fifty-four percent of cases of hospital-onset bacteremia were due to MRSA.

The researchers found that the annual incidence rates for community-onset and hospital-onset MRSA bacteremia decreased from 2005 to 2010. "Concurrently, the proportion of community-onset SSTI due to MRSA peaked at 62 percent in 2006 before decreasing annually to 52 percent in 2010."

The authors highlight several findings from this study, including that the rates of hospital-onset MRSA bacteremia significantly decreased and that rates of both community-onset and hospital-onset MRSA bacteremia decreased in parallel. The annual rates of community-onset MSSA bacteremia also decreased significantly. "However, the proportions of both community-onset and hospital-onset *S aureus* bacteremia due to MRSA did not change significantly, suggesting balanced decreases in the rates of both MRSA and MSSA bacteremia.

For community-onset MRSA SSTIs, no significant overall trend in annual rates was observed, but the proportion of community-onset SSTIs due to MRSA declined significantly." They add that within the U.S. Military Health System, the burden of *S aureus* bacteremia and SSTIs remains substantial, highlighting the importance of having successful prevention and treatment strategies.

"These observations, taken together with results from others showing decreases in the rates of health care-associated infections from MRSA, suggest that broad shifts in the epidemiology of *S aureus* infections may be occurring. Additional studies are needed to assess whether these trends will continue, which prevention methods are most effective, and to what degree other factors may be contributing."

More information: JAMA. 2012;308[1]:50-59.

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