

Drug-resistant infection once found only in hospitals now present in community

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Drug-resistant *Staphylococcus aureus*, a predominantly hospital-acquired infection, has been identified in children outside of the hospital setting with no identified risk factors, according to a study by researchers at the University of Chicago Children's Hospital, published in the February 25, 1998, issue of the *Journal of the American Medical Association*.

"This is the first published study to indicate that methicillin-resistant *Staphylococcus aureus* (MRSA) infections that are already resistant to many types of antibiotics are now found in non-chronically ill children outside of the hospital environment," said Robert S. Daum, MD, professor of pediatrics at the University of Chicago and a co-author of the study. "This suggests a significant change in the way the organism is spread among the population. We need additional research focused on the mechanisms of community-acquired infections."

The retrospective study looked at the medical records of children hospitalized for MRSA at the University of Chicago Children's Hospital. It compared the cases of children with MRSA from August 1988 to July 1990 with those seen from August 1993 to July 1995. After examining the records of children with community-acquired MRSA during the two time periods, the researchers focused on children with no known risk factors for infection. Among eight children with "community-acquired" MRSA, only one case in the first two-year period lacked an identified risk factor, whereas 25 out of 35 cases in the second two-year period lacked an identified risk factor.

Risk factors for infection were described as previous hospitalization or frequent antibiotic use, history of intubation, an underlying chronic disorder, presence of a catheter, history of any surgical procedure, or household Contact with a person who has identified risk factors.

The researchers also found interesting differences between hospital-acquired and community-acquired MRSA infections. Although hospital-acquired MRSA infections appeared to be drug resistant to many antibiotics, community-acquired MRSA infections were susceptible to drugs other than methicillin. However, the researchers predict this may change over time.

"This study should make physicians aware that community-acquired MRSA infections exist, but it should not change their current practice for treating the infection," said Betsy C. Herold, MD, assistant professor of pediatrics at the University of Chicago and lead author of the study. "First-line antibiotics are still the best therapy for these infections." The University of Chicago researchers conclude that the results of this study underscore the need for further investigation. They have already begun a study to evaluate the

transmission of these organisms by identifying children colonized with *Staphylococcus aureus* that do not have symptoms of illness.

Dr. Herold's co-authors include Lilly C. Immergluck, MD, Melinda C. Maranan, MD, Diane S. Lauderdale, PhD, Ryan E. Gaskin, Susan Boyle-Vavra, PhD, Cindy D. Leitch, and senior author Robert S. Daum, MD

The University of Chicago Children's Hospital (UCCH) is a 156-bed acute care hospital at the University of Chicago Hospitals. As a major tertiary referral center, UCCH sees children with the most complex medical problems and annually admits more than 4,000 patients from the Chicago area, the Midwest, and around the world.

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