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Most Likely Carriers of Deadly Bacteria Identified

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


Evanston Northwestern Healthcare study reveals who is most at risk for carrying MRSA

10/6/2006 – Findings released today from a new study at the American Society for Microbiology's 46th Annual Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC™) provide doctors with a more complete epidemiologic picture of high-risk groups most likely to carry deadly organisms. Presumed carriers of "superbugs," (multidrug resistant bacteria) responsible for causing a growing number of U.S. hospital acquired infections (HAIs), were identified through a universal surveillance program encompassing more than 90 percent of admitted patients over twelve months.

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Read about ENH's screening program implemented to reduce MRSA infection at Evanston, Glenbrook & Highland Park Hospitals

Conducted by Evanston Northwestern Healthcare, the study "Prevalence of Colonization with **Methicillin-Resistant *Staphylococcus aureus* (MRSA)** Among 24,045 Patients Screened at an Acute Care Hospital," sampled patients at least once from August 01, 2005 until July 31 of 2006. Results show how health care organizations can better target patients colonized with MRSA. Significant predictors of MRSA colonization include:

- being male;
- older age;
- living in a nursing home or assisted living facility, and
- hospital admission within the prior two years.

"Rapid results of new molecular diagnostics enabled the universal surveillance of over 20,000 patients screened for MRSA upon admittance to the hospital," said **Dr. Lance Peterson**, *Director, Microbiology and*

Infectious Disease Research, with Evanston Northwestern Healthcare, one of the authors of the study. "This hard data confirms some suspicions and helps those working in the infection control field to better hone our screening recommendations and definition of those patients at highest-risk of carrying MRSA."

According to the U.S. Centers for Disease Control and Prevention, HAIs cause 90,000 deaths per year in the United States and can cause an estimated eight million excess hospital days and more than \$5 billion in excess healthcare costs, with MRSA being the leading microbe of all HAIs. Lurking on the body of one in every 20 patients entering the hospital is one of the most troublesome bacteria, MRSA. [1] Past research has shown that of those patients who have it on their bodies at admission, up to one in five develops an infection. [2]

For patients who acquire MRSA while in the hospital, up to 25 percent develop a potentially lethal infection [3] and in the United States alone MRSA accounts for nearly 60 percent of the *Staph aureus* infections in intensive care units [4].

In the Evanston Northwestern Healthcare study, 1,309 patients (5.4% percent) were found to carry MRSA. Most importantly, there was a trend of demographic variables identified that might help healthcare institutions to develop a profile of those at highest risk of MRSA colonization.



Lance R. Peterson, MD
Director, Microbiology and
Infectious Disease Research



Ari Robicsek, MD,
Epidemiologist

The data showed that colonization was most prevalent at extremes of age, reaching 19 percent among those aged 90 and older (1,443 patients) and that at least 21 percent of all MRSA-positive patients listed a multi-resident facility as their home address. Also of statistical significance was the fact that colonization was more prevalent in patients with an admission in the prior two years. Evanston Northwestern Healthcare used the BD GeneOhm™ MRSA assay to conduct all of this research and for their ongoing universal screening program.

"Universal surveillance is the most thorough way to identify patients who are carriers of MRSA upon admission," said **Dr. Ari Robicsek**, associate Epidemiologist at Evanston Northwestern Healthcare, who presented this work. "But when it isn't feasible, this study suggests that risk factors can be identified by an organization to direct targeted active surveillance."

Additional data from Evanston Northwestern Healthcare being released at ICAAC indicate that universal surveillance upon admission is the ideal method of identifying and isolating all carriers of MRSA. However targeted surveillance of high-risk admissions, though less robust, can also be a cost-effective alternative to identify carriers.

[1] Hidron, Alice I et al, *CID* 2005; 41: 167-9

[2] Davis, K.A. et al, *CID* 2004; 39: 776-82

[3] Davis, K.A. et al, *CID* 2004; 39: 776-82

[4] *The Lancet Infectious Diseases*, October 2005, page 653; *National Nosocomial Infections Surveillance (NNIS) System Report, data summary from January 1992 through June 2004, issued October 2004. Am J Infect Control* 2004; 32: 470-85 (quoted in *The Lancet Infectious Diseases*, October 2005, page 653)

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