

MRSA cases in academic hospitals double in five years: study

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Infections caused by methicillin-resistant *Staphylococcus aureus* (MRSA) doubled at academic medical centers in the U.S. between 2003 and 2008, according to a report published in the August issue of *Infection Control and Hospital Epidemiology*, the journal of the Society for Healthcare Epidemiology of America.

Researchers from the University of Chicago Medicine and the University HealthSystem Consortium (UHC) estimate hospitalizations increased from about 21 out of every 1,000 patients hospitalized in 2003 to about 42 out of every 1,000 in 2008, or almost 1 in 20 inpatients. "The rapid increase means that the number of people hospitalized with recorded [MRSA infections](#) exceeded the number hospitalized with [AIDS](#) and [influenza](#) combined in each of the last three years of the survey: 2006, 2007, and 2008," said Michael David, MD, PhD, an assistant professor of medicine at the University of Chicago and one of the study's authors.

The findings run counter to a recent [CDC](#) study that found MRSA cases in hospitals were declining. The CDC study looked only at cases of invasive MRSA—infections found in the blood, spinal fluid, or deep tissue. It excluded infections of the skin, which the UHC study includes.

MRSA infections, which cannot be treated with antibiotics related to penicillin, have become common since the late 1990s. These infections can affect any part of the body, including the skin, blood stream, joints, bones, and lungs.

The researchers attribute much of the overall increase they detected to community-associated infections—those that were contracted outside the healthcare setting. When MRSA first emerged it was primarily contracted in hospitals or nursing homes. "Community-associated MRSA infections, first described in 1998, have increased in prevalence greatly in the U.S. in the last decade," David said. "Meanwhile, healthcare-associated strains have generally been declining."

The study utilized the UHC database, which includes data from 90 percent of all not-for-profit [academic medical centers](#) in the U.S. However, like many such databases, the UHC data are based on billing codes hospitals submit to insurance companies, which often underestimate MRSA cases. For example, hospitals might not report MRSA cases that do not affect insurance reimbursement for that particular patient. In other cases, hospitals might be limited in the number of billing codes they can submit for each patient, which can result in a MRSA code being left off the billing report if it was not among the primary diagnoses.

David and his team corrected for these errors by using detailed patient observations from the University of Chicago Medical Center and three other hospitals. They looked at patient records to find the actual number of MRSA cases in each [hospital](#) over a three-year period. The team then checked the insurance billing data to see how many of those cases were actually recorded. They found that the billing data missed one-third to one-half of actual MRSA cases at the four hospitals. They used that rate of error as a proxy to correct the billing data from other 420 hospitals in the UHC database and arrive at the final estimates.

"I think this is still an underestimate of actual cases," David said. "But we can say with some assurance that this correction gives us a more accurate lower bound for how many cases [of MRSA] there actually are. What's clear from our data is that cases were on the rise in academic

hospitals in 2003 to 2008."

More information: Michael Z. David, Sofia Medvedev, Samuel F. Hohmann, Bernard Ewigman, Robert S. Daum, "Increasing Burden of Methicillin-Resistant *Staphylococcus aureus* Hospitalizations at US Academic Medical Centers, 2003?." *Infection Control and Hospital Epidemiology* 33:8 (August 2012).

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