

# Study shows sharp national rise in skin infections, MRSA suspected

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A national analysis of physician office and emergency department records shows that the types of skin infections caused by community-acquired MRSA doubled in the eight-year study period, with the highest rates seen among children and in urban emergency rooms.

The study, conducted at the University of California, San Francisco, examined annual data from the National Center for Health Statistics of patient visits for skin and soft-tissue infections from 1997 to 2005. The results appear in the July 28, 2008 issue of the *Archives of Internal Medicine*.

During that time period, office and emergency room visits for all skin infections rose from 8.6 million nationwide to 14.2 million, according to Adam Hersh, MD, PhD, lead author on the paper and a fellow in the divisions of general pediatrics and of pediatric infectious diseases at UCSF.

The vast majority of that increase was attributable to visits for abscesses or cellulitis, which Hersh called the hallmark signs of infections from the variety of staph bacteria known as MRSA, or methicillin-resistant *Staphylococcus aureus*.

Those infections rose from 4.6 million to 9.6 million during the study period.

"This shows that community-acquired MRSA infections are occurring

nationwide and affect all subsets of the population," Hersh said. "But there clearly are some subsets that are disproportionately affected, such as children."

The increase was predominantly seen among children and among patients who visit emergency rooms in urban areas at so-called safety net hospitals. Those are hospitals in which at least half of the patients receive Medicaid or are uninsured.

From 1997 to 2005, the number of visits for abscesses or cellulitis nearly quadrupled in safety-net emergency departments, from 1.3 people per 1,000 total population to 4.9. Among children, the incidence nearly tripled from 10.1 patients per 1,000 children to 27.6. By contrast, incident rates among patients older than 45 rose less than 50 percent, from 27.9 to 41.3 patients per 1,000 adults in that age group.

By comparison, the number of patients who sought medical care for any skin infection rose from a rate of 32.1 to 48.1 visits per 1,000 people during the same period.

Previous studies at UCSF and other urban medical centers have indicated that MRSA had begun to spread outside hospital settings in the late 1990s, but until now, no one had been able to verify those suspicions with hard data or to indicate the extent of MRSA nationwide, Hersh said. There also was no way of assessing whether the rise was due to population shifts or to people visiting emergency rooms instead of family physicians.

"This validates what San Francisco physicians have been suspecting for several years," says Henry Chambers, MD, a co-author of the study and UCSF professor of medicine at San Francisco General Hospital. "This is the first national report to look at the impact of MRSA on public health nationwide."

Chambers is lead scientist of a large multi-centered clinical trial recently funded by the National Institutes of Health to study treatment of community-acquired MRSA infections.

While the rate of this rise is dramatic, public health researchers say these infections can be limited with simple behavioral changes in hygiene.

"This is certainly a cause for increased awareness among clinicians and the public nationwide, but it is not cause for alarm," said Erica Pan, MD, MPH, a UCSF assistant professor of pediatric infectious diseases and a medical epidemiologist at the San Francisco Department of Public Health. Pan was not involved in this study, but works frequently with the UCSF team on MRSA research.

"A simple way to avoid these and many other infections is to practice good hygiene habits, such as routine hand-washing with soap and water, as well as by covering open cuts and wounds when participating in sports or other activities involving skin-to-skin contact with other people," she said. "If you notice that you or your child has a skin infection that does not seem to get better on its own after a few days, consult a medical provider."

The study also found a shift in prescribing practices among physicians seeing these patients. The number of prescriptions written for medications effective against MRSA infections more than tripled over the study period. At the start of the study, less than 8 percent of antibiotics prescribed nationwide for skin infections were those effective for MRSA infections. By 2005, 28 percent were in that category.

"We had anticipated seeing a rise in office visits for abscesses due to the emergence of community-acquired MRSA, but we were somewhat surprised by the rapid changes in antibiotic prescribing," Hersh said. "It is evidence of growing awareness of community-acquired MRSA

nationwide among physicians."

Hersh acknowledged that the data, which is the most recent available, is too old to show what is happening right now, or even last month, but does confirm that the emergence of community-acquired MRSA in the 1990s led to a rapid increase in the number of patients with skin and soft tissue infections nationwide.

It also raises opportunities for further research, including determining the risk factors for developing an abscess and how best to care for patients with recurrent infections, he said.

Source: University of California - San Francisco

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