Community-acquired MRSA becoming more common in pediatric ICU patients

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Once considered a hospital anomaly, community-acquired infections with drug-resistant strains of the bacterium Staphylococcus aureus now turn up regularly among children hospitalized in the intensive-care unit, according to research from the Johns Hopkins Children's Center.

The Johns Hopkins Children's team's findings, to be published in the April issue of the journal *Emerging* Infectious Diseases, underscore the benefit of screening all patients upon hospital admission and weekly screening thereafter regardless of symptoms because MRSA can be spread easily to other patients on the unit.

Community-acquired methicillin-resistant Staphylococcus aureus (CA-MRSA) is a virulent subset of the bacterium and impervious to the most commonly used antibiotics. Most CA-MRSA causes skin and soft-tissue infections, but in ill people or in those with weakened immune systems, it can lead to invasive, sometimes fatal, infections.

In 2007, The Johns Hopkins Hospital began screening all patients upon admission and weekly thereafter until discharge. Some states have made patient screening mandatory but the protocols vary widely from hospital to hospital and from state to state.

"MRSA has become so widespread in the community, that it's become nearly impossible to predict which patients harbor MRSA on their body," says lead investigator Aaron Milstone, M.D., M.H.S., a pediatric infectious disease specialist at Hopkins Children's.

"Point-of-admission screening in combination with other preventive steps, like isolating the patient and using contact precaution, can help curb the spread of dangerous bacterial infections to other vulnerable patients."

The new Johns Hopkins study found that 6 percent of the 1,674 children admitted to the pediatric intensive-care unit (PICU) at Hopkins Children's between 2007 and 2008 were colonized with MRSA, meaning they carried MRSA but did not have an active infection. Of the 72 children who tested positive for MRSA, 60 percent harbored the community-acquired strain and 75 percent of all MRSA carriers had no previous history or MRSA. MRSA was more common in younger children, 3 years old on average, and among African-American children. The reasons behind the age and racial disparities in MRSA colonization remain unclear, the investigators say. Patients with MRSA had longer hospital stays (eight days) than MRSA-free patients (five days) and longer PICU stays (three days) than non-colonized patients (two days).

Eight patients who were MRSA-free upon admission became colonized with MRSA while in the PICU. Of the eight, four developed clinical signs of infection, meaning that the other four would have never been identified as MRSA carriers if the hospital was not performing weekly screenings of all patients.

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