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Russell Eggert: Common sense about Staphylococcus aureus infections

As the Florida Department of Health's Director of Disease Control, I have been very concerned about recent articles and media reports about infections due to methicillin-resistant Staphylococcus aureus (MRSA). In order to clarify some misconceptions and ease some fears, I would like to provide some important facts and some recommendations to lower the risk of infection. In particular, I would like to help direct attention away from schoolchildren as a high-risk group – because they are not – and towards practical prevention measures for everyone.

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Staphylococcal infections have been around forever. They cause boils and other skin and soft tissue infections. They can also cause serious infections -- and in severe cases even death -- if the infection spreads widely beyond its original location. People who are not in good health or whose immune systems are compromised are particularly at risk for severe infections.

When antibiotics were first introduced in the 1930s and 1940s, staphylococcal infections were the most important targets of these new 'miracle' drugs. Staphylococcus aureus has repeatedly developed resistance to the most commonly used antibiotics as they were introduced – first to penicillin, then to methicillin, now even to more recently introduced antibiotics. This is one of the strongest reasons for physicians, patients and parents to use antibiotics only when they are necessary and not for common viral infections. The Florida Department of Health, in collaboration with the U.S. Centers for Disease Control and Prevention, started the Florida Schools Get Smart program in the fall of 2007, working with school nurses in over 400 schools all across Florida, to educate parents and children about appropriate antibiotic use.

Most infections with Staphylococcus aureus have no symptoms. As many as a quarter of all healthy children and adults may be carriers of this organism in their noses at any time. According to a recent article in the Journal of the American Medical Association (JAMA), most infections (85%) with this organism occur in people who have had recent contact with a health care facility.

According to the Centers for Disease Control and Prevention (CDC), staphylococcal infections, including MRSA, that are acquired outside the health care setting occur most frequently among persons where the 5 C's are present:

1) Crowding
2) Contact (Frequent skin-to-skin)
3) Compromised skin (cuts or abrasions)
4) Contaminated items and surfaces,
5) Lack of Cleanliness.

Settings where these 5 C's may be present include workplaces where cuts and abrasions are common, crowded living and working spaces like fishing boats, jails and prisons, and sports settings where athletes have frequent physical contact and share equipment. Because so many infections are in people without symptoms, and the infections may be from the organisms they were already carrying, we cannot identify a source patient for most cases.

We can determine that schools are an uncommon setting for transmission of Staphylococcus aureus, including MRSA, for several reasons. First, we do not see a decline in MRSA infections among children during the summer when school is out of session. Second, the JAMA article shows that the incidence rate for severe infections due to MRSA is lowest among schoolage children, compared to adults and seniors. The overall incidence rate of severe MRSA infections for persons of all ages is 31.8 cases per 100,000 per year, but it ranges from 1.4 in persons aged 5 to 17, to 127.7 in those aged 65 and over. Third, outbreaks in schools are rare, and when they do occur are among members of certain sports teams.

In Florida, the rate of hospital discharges (representing serious and invasive disease) where Staphylococcus aureus infection was the primary reason for the hospital stay has remained steady over the last seven years, rising only slightly from 34.24 discharges per 100,000 population in 1999 to 35.68 in 2006. Similarly, death rates due to Staphylococcus aureus infection have remained stable over the same interval. However, the percentage of a statewide sample of outpatient illnesses (representing milder, non-invasive disease) due to Staphylococcus aureus that are methicillin-resistant (MRSA) has risen from 35.1% in 2003 to 50.0% in 2006.

Prevention of staph infections is so simple that many people do not imagine it could be effective – but it is:

Wash hands frequently, both children and adults, whenever they are soiled or have been exposed to materials that may be contaminated.

Schools should provide soap and towels in rest rooms so children can wash their hands effectively.

Be careful when doing activities that may result in cuts and scratches.

Wash cuts and scratches with soap and water and then keep them clean and dry

Keep skin infections such as boils or infected wounds covered and treat them promptly with both local care (such as drainage of boils) and appropriate antibiotics for the entire duration, as prescribed by your healthcare provider

Do not participate in contact sports if you have a skin infection unless the lesions can be securely covered

Avoid sharing personal items such as towels or razors, or sports equipment that touches skin

Clean locker rooms and sports equipment routinely with a disinfectant

Precautions like these can help Floridians avoid infection with Staphylococcus aureus, avoid increasing the rate of antibiotic resistance in our staph infections, and reduce illness and hospitalizations due to this sometimes serious disease.

For more information on Staphylococcus aureus and MRSA, please contact your County Health Department, the Florida Department of Health's Epidemiology Bureau at 850-245-4412, or go to www.doh.state.fl.us/Disease_ctrl/epi/index.html