

Community-Associated MRSA in Uruguay

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[Karen Hunter] I'm Karen Hunter, with Dr. Stephen Benoit, medical epidemiologist at the Centers for Disease Control and Prevention. Today, we're talking about a study he co-authored in the August 2008 issue of CDC's journal, Emerging Infectious Diseases. The study is about a drug-resistant germ called methicillin-resistant staphylococcus aureus (or MRSA for short) that's found worldwide, and particularly a study that they did in Uruguay to try to learn what was happening there. So, Stephen can you start by telling us a little bit about MRSA?

[Steve Benoit] Thanks, Karen. MRSA is a type of bacteria called *Staphylococcus aureus*, or staph for short, which is resistant to some antibiotics. Historically, we've seen MRSA infections in hospitals and healthcare facilities, but since the 1990s, a new type of MRSA has emerged outside of healthcare settings (or what we usually call the community setting). Community-associated MRSA typically causes skin infections in younger people who haven't recently been hospitalized. But, in recent years we've started to see strains that were more common in the community making their way into hospitals and healthcare facilities and infecting people there.

[Karen Hunter] Now, Steve, we've heard a lot in the media about MRSA in the United States but is it a big problem in South America too?

[Steve Benoit] Well, MRSA has been reported worldwide but few studies have reported community-associated MRSA in South America. In 2004, the country of Uruguay had a substantial increase in the number of cases of community-associated MRSA and the ministry of health asked CDC to help investigate the problem.

[Karen Hunter] So I gather that you found some interesting trends in Uruguay. Can you tell us a little bit about what you found?

[Steve Benoit] We studied laboratory records from one large healthcare institution in Montevideo, the capital and largest city of Uruguay. What we found was pretty interesting. At that facility, the proportion of all staph infections caused by MRSA stayed stable over a two-year period. However, the proportion of staph infections caused by strains which have typically been community-associated increased more than six fold – from four percent to nearly 25 percent. At the same time, those caused by healthcare-associated MRSA strains went down from 25 percent to just 5 percent. This suggests that, at least at this facility, the community strains of MRSA seemed to be replacing those that have traditionally infected patients in healthcare settings.

[Karen Hunter] Now, did you study these community-associated MRSA cases in more detail?

[Steve Benoit] We did. We reviewed records of patients who were hospitalized with community-associated MRSA in four different facilities in Uruguay and identified 182 patients who were infected with the community MRSA strains. Of those, more than 60 percent had skin infections, but we also saw respiratory infections, bloodstream infections and surgical site

infections. In about a fifth of the patients, the symptoms started after they were in the hospital. So, in other words, they likely got their infections while they were in the hospital.

[Karen Hunter] Now, were there any differences among those who came down with infection prior to hospitalization and those whose symptoms began in the hospital?

[Steve Benoit] One of the major differences between these groups was age. Those who had symptoms after they arrived in the hospital were typically older, with more than half older than 59 years old. Those who got the infection in the community setting were usually younger. In fact, 20 percent of this group was younger than two years old. Another difference we saw was the site of infection. The group that had what we call healthcare-onset infections were more likely to have non-skin infections such as surgical site infections or blood infections and they tended to be sicker and more often required admission to the intensive care unit. The group whose symptoms started in the community typically had more mild skin infections. So in other words, the MRSA infections that started in the hospital but were caused by strains that have typically been associated with a community setting were looking more like infections we typically associate with healthcare-associated MRSA strains.

[Karen Hunter] So what does this mean for the overall health impact of community-associated MRSA?

[Steve Benoit] Well, it's hard to say at this point. Other studies have found a similar phenomenon of community-associated MRSA strains infiltrating hospitals but we don't know whether community-associated MRSA is more easily passed between patients in healthcare settings than healthcare MRSA strains. Community MRSA strains typically contain toxins that can cause serious infections, so community strains are a concern in the healthcare setting. Community strains can typically be treated with more antibiotics than hospital strains but we don't know if this will change as these strains become more common in healthcare settings, particularly as they're exposed to settings where there is high use of antibiotics. We're also concerned that community strains that are present in hospitals might have the opportunity to swap genes with the hospital strains, which could theoretically lead to new strains capable of causing more severe infections.

[Karen Hunter] It sounds like there are a lot of unknowns at this point. So, what can healthcare workers do to help ensure that patients stay safe?

[Steve Benoit] Karen, that's a great question. We especially want healthcare providers to realize that these community strains have entered the healthcare setting. When possible, it's important for clinicians to collect specimens for testing so they can make the right diagnosis and choose proper treatment for their patients. It's also important to reinforce to healthcare workers the importance of infection control precautions, especially washing their hands with soap and water or using an alcohol-based gel. This will prevent the spread of community-associated MRSA between patients and staff in healthcare facilities. Increased vigilance now may help keep community-associated MRSA from gaining a greater foothold in healthcare settings, which would ultimately help protect patients from MRSA infections.

[Karen Hunter] Thanks, Stephen, for talking with us about your article in the August 2008 issue of CDC's journal Emerging Infectious Diseases. You can see the whole article online at www.cdc.gov/eid. Again, that's www.cdc.gov/eid.

If you'd like to comment on our podcast, send us a line via email at [eideditor](mailto:eideditor@cdc.gov), that's one word, at cdc.gov; again that's [eideditor](mailto:eideditor@cdc.gov), one word, at cdc.gov. Thanks for listening. I'm Karen Hunter.

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