

Universal Surveillance for Methicillin-Resistant *Staphylococcus aureus* in 3 Affiliated Hospitals

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The summary below is from the full report titled “Universal Surveillance for Methicillin-Resistant *Staphylococcus aureus* in 3 Affiliated Hospitals.” It is in the 18 March 2008 issue of *Annals of Internal Medicine* (volume 148, pages 409-418). The authors are A. Robicsek, J.L. Beaumont, S.M. Paule, D.M. Hacek, R.B. Thomson Jr., K.L. Kaul, P. King, and L.R. Peterson.

What is the problem and what is known about it so far?

Patients in the hospital sometimes get infections from other hospitalized patients. These hospital-acquired infections can be very serious because hospitalized patients often have reduced resistance to infection. Bacterial infections due to *Staphylococcus aureus* are particularly serious because standard antibiotics are sometimes not effective against them. The most important antibiotic-resistant type of bacteria is called “methicillin-resistant *Staphylococcus aureus*” (MRSA) because it is not killed by methicillin, a very useful drug closely related to penicillin. Many healthy people carry MRSA in their nasal passages and are not even aware of it. This type of limited infection is called “colonization.” Hospitalized patients who are colonized with MRSA can spread the infection to other people if a hospital worker gets MRSA on their hands while taking care of them and then touches another patient. The only proven way to slow the rate of MRSA infections in the hospital is to put the MRSA-colonized patient in a private room and require everyone who enters the room to wear gloves. This method is called “contact precautions.” For this method to work, the hospital must first find out which patients are colonized and place them on contact precautions.

Why did the researchers do this particular study?

To find out how screening newly admitted patients for MRSA affects the rate of serious MRSA infections.

Who was studied?

Patients admitted to 3 hospitals in Chicago, Illinois.

How was the study done?

The researchers compared the frequency of serious MRSA infections in patients admitted to the 3 hospitals in the 3 years of the study. For 3 years, the researchers tried to identify each patient who became sick with a serious MRSA infection while in any of the 3 hospitals. During the first year, they did nothing to detect newly admitted patients who were colonized with MRSA. In the second year, they tested all patients admitted to only the intensive care units in the 3 hospitals to see whether they were colonized with MRSA. If a patient tested positive for MRSA, their doctors put them on contact precautions. In the third year, they tested everyone who was admitted to the 3 hospitals and placed anyone who tested positive on contact precautions.

What did the researchers find?

When screening for MRSA was limited to patients admitted to intensive care units, the rate of serious MRSA infections was the same as when no MRSA testing was done. However, when everyone admitted to the 3 hospitals was tested for MRSA colonization, the frequency of serious MRSA infections decreased by more than half compared with no MRSA testing.

What are the limitations of the study?

It is difficult to be sure that the decrease in MRSA infections was due to the testing program rather than to other things that were happening during the 3 years. Some doctors treated the patients who were colonized with antibiotic ointment, whereas others did not. Some parts of the hospital tested fewer patients than expected.

What are the implications of the study?

Screening everyone admitted to the hospital for MRSA was associated with a decrease in serious MRSA infections in patients admitted to the 3 hospitals. It is too early to say that all hospitals should test newly admitted patients for MRSA, but this research should prompt hospitals to start thinking about it.

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