

New way of determining treatment for staph infections cuts antibiotic use

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Using a clinical checklist to identify eligible patients, doctors were able to shorten the antibiotic duration for patients with uncomplicated staphylococcal bloodstream infections by nearly two days, Duke Health researchers report.

That's good news for individual [patients](#) and could also help reduce [antibiotic resistance](#) on a broader scale.

"Staphylococci are among the most common causes of blood infection in the country," said Thomas L. Holland, M.D., assistant professor of medicine at Duke and lead author of a study appearing Sept. 25 in the *Journal of the American Medical Association*.

Holland and colleagues in the Staphylococcal Bacteremia Investigators initiative tested an algorithm that defines how long patients with staph bloodstream infections should receive IV antibiotics.

The algorithm is based on specific clinical characteristics, such as how long the patient has had a fever, blood culture results, findings of heart infection, and other criteria. These criteria help doctors determine whether the infection is simple, uncomplicated or complicated—the most severe—in which infection has spread to the heart, spine or some other site in the body.

The study included 509 patients with staph bloodstream infections at 16 medical centers in the U.S. and Spain. Roughly half of the patients were randomly assigned to receive the algorithm-guided duration of antibiotic. For the other half, doctors determined the duration of their antibiotic treatment based on standard practice.

Patients in both groups recovered at the same rate: 82 percent of the algorithm patients and 81.5 percent of the standard care patients had positive outcomes, according to the study.

Complications were also statistically similar between the two groups, with 32.5 percent of algorithm patients and 28.3 percent of standard practice patients developing an adverse event, such as the infection spreading or getting worse.

However, the data showed a significant difference in antibiotic duration among patients with simple and uncomplicated infections—those in which [infection](#) had not spread to other parts of the body.

For these patients, an algorithm-guided treatment plan allowed doctors to stop IV antibiotics almost two days sooner than similar patients receiving standard care (4.4 days versus 6.2 days).

"Any reductions in the use of antibiotics to treat these infections would be a significant benefit in our effort to fight antibiotic resistance, particularly when these measures can be undertaken without harm to patients," Holland said.

"The big point of this study is doing the same with less," said senior author Vance G. Fowler, M.D., professor of medicine at Duke and member of the Duke Clinical Research Institute. "If we are able to have the same outcomes but use less [antibiotics](#), that has tremendous benefit at all levels of care."

Provided by Duke University Medical Center

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