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Simple lab-based change may help reduce unnecessary antibiotic therapy, improve care

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A simple change in how the hospital laboratory reports test results may help improve antibiotic prescribing practices and patient safety, according to a pilot, proof-of-concept study published in *Clinical Infectious Diseases* and now available online. No longer routinely reporting positive urine culture results for inpatients at low risk for urinary tract infections (UTIs) greatly reduced unnecessary antibiotic prescriptions and did not affect the treatment of patients who did need antibiotics, the study authors found.

Urine cultures for hospitalized patients are often ordered unnecessarily. Positive culture results from patients without any UTI symptoms can lead to antibiotic prescriptions that are of no benefit and may cause harm to patients, including *C. difficile* infection and subsequent infection with more antibiotic-resistant bacteria.

In the study, conducted in 2013 at Mount Sinai Hospital in Toronto, urine culture results from non-catheterized inpatients—those at lower risk for developing a UTI—were no longer reported automatically to the ordering physician. Instead, a message was posted to the patient's electronic medical record asking caregivers to call the lab for the results only if a UTI was strongly suspected.

The message reminded providers that "the majority of positive urine cultures from inpatients without an indwelling urinary catheter represent asymptomatic bacteriuria," a condition for which current practice guidelines do not usually recommend antibiotics, unless the patient is

pregnant or will be undergoing certain urological procedures.

After the change in how the culture results were reported, the rate of antibiotic treatment for asymptomatic bacteriuria among non-catheterized patients decreased from 48 percent to 12 percent. Treatment rates among patients in the catheterized control group—whose culture results were routinely reported as before—remained steady, at 41 percent. Patients with positive culture results were assessed by a study investigator for UTI symptoms within 24 hours. Four UTIs developed among the non-catheterized patients; in all of these cases, clinicians had already started appropriate antibiotic treatment when the urine cultures were ordered, based on the patients' symptoms.

"In clinical medicine, there are many examples of tests that are not routinely processed or reported when they have been shown to be of very low yield or associated with potential harms, and special requests are required in these cases," said lead study author Jerome A. Leis, MD, MSc, of Sunnybrook Health Sciences Centre in Toronto. "We believe this to be true of some urine cultures from medical and surgical floors where we know that the majority of positive results occur in patients without symptoms of urinary tract infection and lead to unnecessary and potentially harmful therapy with antibiotics."

The study authors stressed the need for larger studies to confirm the overall generalizability, safety, and sustainability of such a change in urine culture reporting before it is implemented more broadly and in other practice settings.

Provided by Infectious Diseases Society of America

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