

Targeted *C. difficile* screening at hospital admission could potentially ID most colonized patients

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Testing patients with just three risk factors upon hospital admission has potential to identify nearly three out of four asymptomatic carriers of *C. difficile*, according to a new study published in the May issue of the *American Journal of Infection Control*, the official publication of the Association for Professionals in Infection Control and Epidemiology (APIC).

Researchers from Mayo Clinic in Rochester, MN, analyzed [stool samples](#) from 320 [patients](#) showing no symptoms of *C. difficile* at [hospital admission](#) using a real-time [polymerase chain reaction](#) (PCR) assay. Samples from 31 of 320 patients tested positive for *C. difficile*, resulting in a colonization rate of 9.7 percent. The authors wanted to estimate the reservoir of colonized patients as a source of potential transmission because despite rigorous infection control measures, *C. difficile* infection was increasing at their institution.

In this study, independent predictors of *C. difficile* colonization were found to be recent hospitalization, [chronic dialysis](#) and corticosteroid use. According to the authors, one or more of the three independent risk factors were present in 155 (48 percent) of study participants, and screening only those with one or more of these factors would have identified 23 *C. difficile* carriers (74 percent).

"In our population, by targeting those with identified risk factors, we

would need to screen approximately half of those patients with anticipated stays longer than 24 hours, to identify three-fourths of those colonized with *C. difficile*," said the authors. "This is in the range of previously published screening efficiency rates for [MRSA](#)."

However, the authors also state that these results should be interpreted keeping in mind that only 22 percent of all eligible patients provided stool for *C. difficile* PCR, and the study population was not representative of all patients admitted to the hospital.

"Our objective was to estimate the burden of asymptomatic *C. difficile* carriers at admission because that constitutes an important checkpoint where [risk factors](#) can be assessed and infection prevention measures instituted," said the authors. "This is the first study to demonstrate the feasibility of performing *C. difficile* surveillance on hospitalized patients at admission. The role of asymptomatic carriers in transmitting *C. difficile* should be studied further, and the utility of PCR-based targeted surveillance to detect asymptomatic carriers should be explored in areas of high endemicity or outbreak settings when other control measures have been exhausted."

"While more research needs to be conducted on the transmission of *C. difficile* infection from colonized patients, this study may help institutions with persistently high rates of transmission develop an expanded strategy for targeted *C. difficile* surveillance," said APIC 2013 President Patti Grant, RN, BSN, MS, CIC. "The study does not indicate necessity for all healthcare facility implementation, yet provides a step-wise progressive approach to help impede *C. difficile* activity when considering the overall epidemiologic impact of transmission."

C. difficile causes infectious diarrhea and is linked to 14,000 American deaths each year, according to the Centers for Disease Control and Prevention. While many types of healthcare-associated infections have

declined in recent years, infections from *C. difficile* have increased. APIC recently issued a new open-access Guide to Preventing *C. difficile* infections.

More information: "Asymptomatic Clostridium difficile colonization in a tertiary care hospital: Admission prevalence and risk factors," by Surbhi Leekha, Kimberly C. Aronhalt, Lynne M. Sloan, Robin Patel and Robert Orenstein appears in the *American Journal of Infection Control*, Volume 41, Issue 5 (May 2013).

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