

Interdisciplinary approach decreases broad spectrum antibiotic usage

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An interdisciplinary approach to antimicrobial stewardship involving comprehensive blood culture identification (BCID) testing decreased broad spectrum antibiotic use, according to new research presented last

week in Philadelphia at the 46th Annual Conference of the Association for Professionals in Infection Control and Epidemiology (APIC).

The microbiology lab at Einstein Medical Center Montgomery in Pennsylvania, in collaboration with the antimicrobial stewardship team, implemented a new protocol to treat sepsis patients. Rapid BCID polymerase chain reaction (PCR) tests were administered to identify the bacteria making the patient sick, and pharmacists made recommendations on how to manage or readjust the previously prescribed antibiotic regimen.

Data collected for four months before and after implementation showed that the new BCID PCR test protocol resulted in providers adjusting patients' [antibiotic treatment](#) a full 25 hours sooner on average, decreasing patients' time on [broad spectrum](#) antibiotics.

"Reducing the use of broad spectrum antibiotics is essential in slowing the growth of resistant bacteria," said lead study author David Ezdon, PharmD. "Through rapid blood culture identification tests, we are able to tailor patients' antibiotic regimen and ultimately improve their care."

Pharmacists' recommendations were developed using an algorithm that determines the best course of treatment for the type of bacteria indicated by the BCID PCR test results.

By optimizing [antibiotic use](#), Montgomery Hospital observed a length of stay reduction of 1.45 days per patient, which resulted in a cost avoidance of \$322,508 over four months.

"This scenario illustrates the success that [antimicrobial stewardship programs](#) can achieve when healthcare providers, pharmacists, and infection preventionists work together," said 2019 APIC President Karen Hoffmann, RN, MS, CIC, FSHEA, FAPIC. "Antimicrobial

stewardship programs require coordination across multiple disciplines to achieve the larger goal of preserving antibiotic therapy for [future generations](#)."

Antimicrobial stewardship programs encourage the appropriate use of antimicrobials (including antibiotics) to minimize overuse, improve patient outcomes, reduce microbial resistance, decrease the spread of infections, and preserve the efficacy of antibiotics. Multidrug-resistant organisms cause a significant proportion of serious healthcare-associated infections (HAIs) and are more difficult to treat because there are fewer and, in some cases, no antibiotics that will cure the infection. The Centers for Disease Control and Prevention (CDC) states that each year in the United States at least 2 million people become infected with bacteria that are resistant to antibiotics and at least 23,000 people die as a result.

More information: David Ezdon et al, Integrating Rapid Diagnostics and Antimicrobial Stewardship for Blood Cultures Improves Antibiotic Use in a Community Hospital, *American Journal of Infection Control* (2019). [DOI: 10.1016/j.ajic.2019.04.131](https://doi.org/10.1016/j.ajic.2019.04.131)

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