

Number of patients admitted with antibiotic-resistant infections rising

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The emergence of community-acquired infections, such as urinary tract infections (UTI), due to strains resistant to common antibiotics are on the rise, according to Rhode Island Hospital researchers. The study is published online in the journal *Antimicrobial Resistance and Infection Control*.

"Over the last several years, we've seen an increase in the number of [bacteria](#)—many of which are forms of *E. coli*—that are resistant to commonly administered antibiotics," said Leonard Mermel, D.O., medical director of the department of epidemiology and [infection control](#) at Rhode Island Hospital. "However, we also found that many of these bacteria causing [urinary tract](#) infections were susceptible to an older, inexpensive antibiotic, nitrofurantoin."

Urinary tract infections are the second most common type of infection in the body, accounting for about 8.1 million visits to healthcare providers each year, according to the U.S. Department of Health and Human Services.

The study involved patients with infections documented from 2006 to 2011 that were due to extended-spectrum beta-lactamase (ESBL)-producing bacteria. These bacteria are resistant to most antibiotics in the penicillin and cephalosporin families of antibiotics. The incidence of infections due to these microorganisms is increasing, which creates a challenge regarding appropriate antimicrobial therapy, especially in a community or outpatient setting where [oral antibiotics](#) are used.

The study noted the emergence of community-acquired infections due to ESBL-producing bacteria, a significant increase in healthcare-associated infections, as well as *E. coli* becoming the predominant pathogen in all three acquisition groups (community-acquired, healthcare-associated, and hospital-acquired). The researchers found high levels of resistance to the

antibiotics Ciprofloxacin and Trimethoprim-Sulfamethoxazole (TMP-SMZ), which could lead to poor outcomes in the community as these are the commonly used antibiotics in outpatient settings for [urinary tract infections](#).

"Recognizing the strains that are resistant to common antibiotics is critical to providing proper treatment and better outcomes," Mermel said. "The incidence of overall antibiotic resistance is also on the rise, likely due to overuse in both humans and farm animals, so what may have been effective in the past, may no longer work to fight infection today. Therefore, greater efforts in controlling unnecessary antibiotic use in the community, healthcare settings, and in agriculture is critical."

"The overuse of antibiotics is a big concern, with real implications for patients," said co-author Steve Kassakian, MD. "It's imperative that we determine why these bacteria are resistant to some [antibiotics](#) so that we can develop new ones to combat dangerous, and possibly fatal infections."

Provided by Lifespan

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