

# Antimicrobial resistance for common urinary tract infections drug increases five fold since 2000

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WASHINGTON, District of Columbia (April 30, 2012) – In a surveillance study of over 12 million bacteria, investigators at The George Washington University and Providence Hospital found *E. coli* antimicrobial resistance to ciprofloxacin, the most commonly prescribed antimicrobial for urinary tract infections in the U.S., increased over five-fold from 2000 to 2010. In addition, nearly one in four isolates in 2010 were resistant to trimethoprim-sulfamethoxazole (Bactrim®), the second most commonly prescribed drug for this infection. This research was published in the April edition of the journal, *Antimicrobial Agents and Chemotherapy*.

"Our study is important because it shows that *E. coli* resistance to two common drugs to treat UTIs rose substantially over the last decade. For patients, this will ultimately translate into more expensive and sometimes more complex antimicrobial treatments. What is more concerning however, is the lack of new antimicrobial [drug](#) development which has been declining for decades," said Guillermo Sanchez, a graduate student in the Physician Assistant program at the George Washington University and primary author of the study.

*E. coli* accounts for 75% to 95% of [urinary tract](#) infections (UTIs) and UTIs are among the most common infections in humans, with half of all women experiencing at least one in their lifetime. *E. coli* [antimicrobial resistance](#) is a major factor in determining health outcomes in patients

with UTIs. *E. coli* antimicrobial resistance has been associated with lower likelihood of clinical cure and increased risk of infection recurrence. Additionally, antimicrobial resistance significantly increases patient morbidity, costs of treatment, and rates of hospitalization.

As antimicrobial resistance continues to increase, remaining antimicrobial drug options have a higher likelihood of causing unwanted side effects such as gastrointestinal distress, nausea, and vomiting. Due to a lack of drug development, the paucity of new antimicrobial drugs for common infections like UTIs will continue to worsen in the near future.

"Our study reveals that ciprofloxacin and TMP-SMX are not longer safe for outpatient urinary tract infection (UTI). Our study indicates that safer antimicrobials for outpatient UTI are nitrofurantoin in patients without kidney insufficiency and amoxicillin/clavulanate and third generation cephalosporins for all others", said Jose Bordon, MD Ph.D., AAHIVS, Infectious Disease Specialist at Providence Hospital in Washington, DC.

Provided by George Washington University

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