

# FROM THE LAB

## *Use of Short-Term Antibiotics*

The American College of Physicians (ACP), in conjunction with physicians from the University of Alabama at Birmingham, recently published an article on the best practice advice on the “[Appropriate Use of Short-Course Antibiotics in Common Infections](#).” An extensive narrative literature review of published clinical guidelines, systematic reviews, and individual studies formed the basis for the recommendations. It addressed common infectious disorders encountered by clinicians in both an outpatient and inpatient setting.

The timing of this publication could not have been more fortuitous as we near the end of the COVID-19 pandemic. Healthcare delivery has undergone a considerable metamorphosis since the onset of the pandemic, and one must wonder how the pandemic has affected the prescribing of antibiotics. The over-prescribing of antibiotics is already considered a national problem. The American Medical Association published a sample survey of U.S. ambulatory care visits to determine the rate of outpatient oral antibiotic prescribing by age and diagnosis during 2010-2011. The survey results showed that 12.6% of prescriptions for outpatient care were written for antibiotics, with an estimated 506 antibiotic prescriptions per 1000 population annually. The data also showed that inappropriate prescriptions comprised nearly 30% of the antibiotics written. There is also precedent on pandemics affecting antibiotic prescribing; in 2009, the H1N1 influenza pandemic resulted in numerous secondary bacterial infections, prompting clinicians to write multiple prescriptions for antibiotics, culminating in a rise in antibiotic-resistant bacterial strains.

These issues were, in part, the impetus that prompted the authors to compile and tabulate data for the publication and ongoing national efforts to prevent and control the development of antibiotic-resistant bacterial strains. In 2019, the U.S. Centers for Disease Control and Prevention (CDC) reported that more than 2.8 million antibiotic-resistant infections occur in the United States annually, leading to the deaths of 35,000 Americans. Despite evidence of inappropriate antibiotic prescriptions, most clinicians put considerable effort into reducing microbial resistance by prescribing antimicrobials appropriately to improve patient outcomes and reduce the spread of infections caused by multidrug-resistant organisms. This concept has become the defining model for antimicrobial stewardship. The term was first coined in 1996 by two internists at the Emory University School of Medicine and then later adopted by the Infectious Diseases Society of America that published guidelines to prevent antimicrobial resistance in 1997. Although antimicrobial stewardship started to take root in the late 90s, it was not until 2017 that hospitals began to create antimicrobial stewardship teams, primarily due to pressure by the joint commission of healthcare organizations that later expanded to the outpatient setting in 2020.

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But why another guideline? There are already countless published guidelines, such as the GOLD guideline, IDSA/ATS guideline, and the NICE guideline, that comprehensively address antibiotic treatment for various infectious diseases. The difference is that this publication takes data from recent randomized controlled trials and incorporates that information into the guidelines to rationalize a shorter treatment course. While the authors admittedly did not conduct a formal systematic review or meta-analysis of the literature to derive the recommendations, selecting the highest level of synthesized evidence ensured content accuracy and validity with minimized bias. In the case of select antibiotics, individual studies enhanced rationality. Still, the authors pointedly illustrated those instances with a cautionary statement that further randomized controlled trials were needed to establish the benefit of short-course therapy with that antibiotic. It is important to note that the value of this publication is based entirely on the premise that a clinician has made the correct diagnosis and that the clinician is knowledgeable of regional differences in antibiotic resistance.

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Clinicians initially rely on knowledge of characteristic disease patterns and common regional infectious disease conditions to build a diagnostic disease paradigm; but, still, the vulnerability of this process is in the selection of antibiotics, and a delay in treatment can result in increased morbidity and mortality risk to the patient. Thus, the authors of this publication have deftly advocated selective administering of empiric antibiotic regimens for a limited duration to minimize the development of antibiotic resistance and adverse antibiotic effects.

As previously mentioned, reducing the spread of multi-drug resistant organism infections is a core component of antibiotic stewardship, and Assurance Scientific Laboratories has long been a proponent of antibiotic stewardship. Our team of physicians and scientists thoroughly understands the critical importance of rapid and precise pathogen and antibiotic-resistance marker identification to aid clinicians in decision-making. Our collection of panels and assays can be applied in synergy with the guidance of the ACP publication to improve patient outcomes while adhering to the principles of antibiotic stewardship. Learn more at [AssuranceScientificLabs.com](http://AssuranceScientificLabs.com).

