

Troubling trend in antibiotic prescriptions in the outpatient setting

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Antibiotics continue to be prescribed at alarming rates in outpatient settings, despite increased national attention to curtail inappropriate use of these drugs, according to a study published in *Infection Control &*

Hospital Epidemiology, the journal of the Society for Healthcare Epidemiology of America. The findings suggest that current initiatives to improve the use of antibiotics in outpatient settings may not be enough to change clinicians' prescribing practices.

"We need to better equip prescribers with the tools and knowledge to know when antibiotics are needed. It is one of the most important steps towards reducing antibiotic resistant bacteria, as well as adverse events associated with these powerful drugs," said Michael Durkin, MD, MPH, assistant professor of medicine at Washington University School of Medicine and lead author of the study. "There has been progress in reducing [antibiotic prescriptions](#) in hospitals, but there needs to be more research and attention on how to address this issue in the outpatient setting."

Researchers conducted retrospective analysis of outpatient antibiotic prescriptions from administrative claims data between January 1, 2013 to December 31, 2015, using a sample from Express Scripts Holding Company's database of insured members. Data was used to track monthly prescription rates for all antibiotics, as well as the five most commonly prescribed antibiotics - azithromycin, amoxicillin, amoxicillin/clavulanate, ciprofloxacin, and cephalexin.

While the study found no change in the overall annual antibiotic prescribing rate, or the prescribing rate of any one drug, researchers did observe variation in rates of antibiotics prescribed by season. Overall, seasonal prescribing peaked in February and was 42 percent higher than the lowest rate in September.

Previous studies have suggested that spikes in antibiotic prescriptions in winter months could be due to inappropriate treatment for viral conditions, which tend to occur more frequently in the winter. However, the researchers caution that some of this seasonal peak may be

appropriate. For example, the three most common drugs reviewed (azithromycin, amoxicillin, amoxicillin/clavulanate) were most often prescribed in February, when pneumonia is more common. And ciprofloxacin and cephalexin were most often prescribed in summer months, timed to increases in infections including [urinary tract infections](#), and skin and soft-tissue infections.

"If quality improvement guidelines were sufficient to improve antibiotic prescribing practices, then we would have expected to see an overall decrease in antibiotic prescribing rates over time. However, standalone educational materials are rarely successful for changing clinician behavior," said Durkin. "A more rigorous framework and greater investment of resources is needed to substantially improve outpatient antibiotic prescribing rates, helping to combat [antibiotic resistance](#) and improve patient safety."

Dr. Durkin advocates that healthcare systems incorporate the Centers for Disease Control and Prevention's (CDC) Core Elements of Outpatient Antibiotic Stewardship. In addition to education, the Core Elements recommend creating accountability for optimizing antibiotic prescribing, implementing at least one policy or practice to improve antibiotic prescribing, and tracking and reporting antibiotic unitization to providers. Simple, low cost interventions - such as a poster in waiting rooms - can improve antibiotic prescribing.

The researchers note several limitations of the study. First, the data include only insured patients, so the results may not be generalizable to the entire U.S. population. Additionally, since prescriptions were only included if insurance was used, patients' prescriptions paid for out-of-pocket are not included. And finally, since the data does not include clinical information (e.g., microbiology or medical claims), researchers were unable to adequately assess the appropriateness of each antibiotic prescribed or potential comorbidities of patients who received

[antibiotics](#).

More information: Michael J. Durkin et al, Outpatient Antibiotic Prescription Trends in the United States: A National Cohort Study, *Infection Control & Hospital Epidemiology* (2018). [DOI: 10.1017/ice.2018.26](#)

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