

High prevalence of inappropriate antibiotic prescribing in a VA healthcare system

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Inappropriate antibiotic prescribing is rampant at primary care clinics within the Veterans Administration (VA) healthcare system in Pittsburgh, despite the rise of antibiotic resistance. About half of all prescriptions reviewed were prescribed unnecessarily. In another quarter of cases, the incorrect antibiotic was prescribed, or the duration of the prescription wasn't consistent with guideline recommendations. The research was published in *Antimicrobial Agents and Chemotherapy*, a journal of the American Society for Microbiology.

"We found the vast majority of [prescriptions](#) for some commonly prescribed antibiotics, like azithromycin and ciprofloxacin, were inappropriate," said first author Nathan R. Shively, MD, now the Medical Director of the Antimicrobial Stewardship Program at Allegheny Valley Hospital, and Faculty in the Division of Infectious Disease at Allegheny Health Network. "Another interesting finding was that a third of all prescriptions we reviewed were prompted by a non-face-to-face encounter, such as a telephone call," said Dr. Shively. "The bottom line is that we have a lot of room for improvement in outpatient antibiotic prescribing."

For acute respiratory infections, antibiotics were not indicated in 74 percent of prescriptions. For urinary tract infections, antibiotics were not indicated in 30 percent of prescriptions, and 28 percent of patients for whom an antibiotic was indicated received one that did not fit the guidelines. That could mean, for example, that they received a broad-spectrum antibiotic rather than one that was more precisely targeted to their infection. Precise targeting reduces the likelihood of spreading [antibiotic resistance](#).

Based on their findings, the investigators instituted an antibiotic education and feedback program in the Veterans Affairs Healthcare System primary care clinics in Pittsburgh, that participated in this

study. "The program has achieved marked and sustained reductions in antibiotic use," said Dr. Shively. "These data will be presented at the [Infectious Disease Week] (IDWeek) meeting this October, and they will provide one model for how [healthcare](#) systems might improve their use of antibiotics."

In the study, "we collected all [antibiotic prescriptions](#) prescribed within our VA healthcare system from September 2015 through August 2016," said Dr. Shively. "We then reviewed a random subset of prescriptions to determine why they were prescribed, and based on [guideline recommendations](#), whether the antibiotic was necessary, whether it was the right antibiotic, and whether it was prescribed for the right amount of time."

Many antibiotics prescribed in the United States are unnecessary or unnecessarily broad spectrum, said Dr. Shively. "This is a major cause for concern, as it leads to increasing bacterial resistance, making the antibiotics we have less effective when we really need them." One example: Azithromycin is no longer reliable to treat the most common cause of bacterial pneumonia—*Streptococcus pneumoniae*—due to increasing resistance.

Excessive use of [antibiotics](#) also leads to more adverse effects for patients, including complications such as the difficult to eradicate *Clostridium difficile* infections, which boost costs for health care systems, said Dr. Shively.

While other regions and healthcare systems were not included in the study, Dr. Shively said he doubts that the Pittsburgh VA Healthcare System is an outlier for inappropriate antibiotic prescribing. "I think our findings are more likely to be a hint that prior studies might have underestimated the extent of the problem."

Provided by American Society for Microbiology

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