

Study: Doctors overprescribe antibiotics for respiratory infections

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Doctors frequently misuse antibiotics when treating patients hospitalized with respiratory tract infections (RTIs), according to a study to be published in the November issue of *Infection Control and Hospital Epidemiology*.

The study, which tracked patients in two Pennsylvania hospitals, found that doctors often use antibiotics to treat patients whose infections are known to be caused by viruses. The findings are alarming because antibiotics are not effective against viruses, and antibiotic overuse has been linked to the development of resistant [bacterial strains](#).

"[T]hese data demonstrate at least one area where antibiotics are commonly used in hospitalized patients without clear reason," write the study's authors, Kevin T. Shiley, Ebbing Lautenbach and Ingi Lee, all from the University of Pennsylvania School of Medicine. "Recognition of this may be helpful in developing interventions to limit inappropriate antibiotic use in the future."

In recent years, new diagnostic tests have been developed to distinguish infections caused by viruses from those caused by bacteria. In theory, more definitive diagnoses should reduce the inappropriate use of antibiotics in patients with viral infections. But that does not appear to be happening, according to Shiley and his colleagues.

The researchers looked at data on RTI patients admitted to two hospitals over a two-year period. Of 196 patients who were diagnosed with [viral](#)

[infections](#), 125 remained on antibiotics after their diagnoses. It would be understandable to keep a patient on antibiotics if an abnormal chest x-ray suggests a concurrent bacterial infection, the researchers said. However, only 37% of these patients had abnormal chest x-rays. "It is less clear why the remaining 63% of patients with normal chest imaging were prescribed antibiotics," Shiley and his colleagues write.

No clinical benefit

Patients in the study who remained on antibiotics did not benefit from the treatment, the researchers found. In fact, antibiotics may have led to harm in some cases. For example, a significant number of antibiotic patients developed *Clostridium difficile* diarrhea, a condition linked with [antibiotic use](#).

On average, the antibiotic group had longer hospital stays and higher mortality rates than the non-antibiotic group. While those poorer outcomes cannot be attributed directly to antibiotic treatment, they do suggest that there was no clinical benefit, the researchers say.

"This study highlights the crucial role of antimicrobial stewardship in improving patient care," said Neil O. Fishman, M.D. at the University of Pennsylvania and president of the Society for Healthcare Epidemiology of America. "Appropriate use of [antibiotics](#) is not only essential to limiting emergence of resistance, but also may help improve clinical outcomes."

More information: Kevin T. Shiley, Ebbing Lautenbach, and Ingi Lee, "The Use of Antimicrobial Agents after the Diagnosis of Viral Respiratory Tract Infections in Hospitalized Adults: Antibiotics or Anxiolytics?" *Infection Control and Hospital Epidemiology* 31:11 (November 2010). The study will publish online next week.

Provided by University of Chicago

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