

Health care savings: Reducing inappropriate antibiotic prescriptions

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Inappropriate antibiotic prescriptions are a major public health concern, costing millions of dollars in unnecessary health care costs annually and contributing to the problem of antibiotic-resistant bacteria. Still, despite widely accepted prescription guidelines, physicians continue to prescribe antibiotics for colds even when they won't help. A new study in *JAMA Internal Medicine* to be released January 27 offers an inexpensive and seemingly simple "nudge" that reduced inappropriate antibiotic prescribing by nearly 20 percent.

In the United States, nearly half the [antibiotic prescriptions](#) given for respiratory infections are inappropriate: for illnesses caused by viruses rather than bacteria, antibiotics won't help the patient get better. The study is part of a critical national conversation led by researchers at the USC Schaeffer Center for Health Policy and Economics to find evidence-based interventions that lower [health care costs](#) and unnecessary use of health care.

"Most quality improvement efforts have used audits or pay-for-performance incentives to try to change what providers do, but they ignore social influences that affect all people, including physicians," said senior author Jason Doctor of the USC Schaeffer Center for Health Policy and Economics, and associate professor of clinical pharmacy and pharmaceutical economics and policy at the USC School of Pharmacy.

"Our study is the first to apply the principles of commitment and consistency to prescribing behavior and finds a simple, low-cost intervention that shows great promise in reducing inappropriate

antibiotic prescription."

Lead author Daniella Meeker of RAND Corporation and Merkin Fellow at the USC Schaeffer Center for Health Policy and Economics; Jeffrey A. Linder, an expert in [antibiotic prescribing](#) at Brigham and Women's Hospital and Harvard Medical School; Doctor and the other authors, estimate that their simple intervention—a prominently displayed commitment letter—could eliminate 2.6 million unnecessary antibiotic prescriptions and save \$70.4 million in drug costs alone if extrapolated across the United States.

The study

To test the impact of public commitment on health behavior, the researchers had physicians post a large letter about inappropriate antibiotic prescription in their exam rooms. The letter, displayed in both English and Spanish in Los Angeles clinics, had a picture of the physician and his/her signature, and explained the physician's commitment to reducing inappropriate prescriptions for acute respiratory infections, such as the common cold.

The researchers then looked at clinic records over the next three months, comparing rates of inappropriate antibiotic prescriptions to a control group that did not sign or post a public commitment poster.

The results

A signed commitment poster dramatically decreased unnecessary antibiotic prescriptions: among physicians who posted the letter, inappropriate antibiotic prescriptions fell nearly 10 percentage points, to 33.7 percent of total antibiotic prescriptions from 42.8 percent in the year before the study.

In contrast, inappropriate antibiotic prescriptions actually increased in the control group, who started with a similar 43.5 percent inappropriate prescription rate. Over the study period, the prescription of antibiotics in instances where they would not be effective rose to 52.7 percent among those who did not post a commitment poster.

Importantly, rates of appropriate antibiotic prescription did not change, the researchers found. There also was no evidence of changes to how illnesses or diagnoses were coded by clinicians.

"The findings from the study support the idea that clinicians are influenced by professional and social factors in patient care, and unlike some quality improvement interventions based upon financial incentives, we found no evidence that improvements were driven by changing documentation practices. This low-cost and easily scalable intervention has great potential to reduce inappropriate antibiotic prescribing," Meeker said.

"This intervention is a unique addition to interventions that have decreased inappropriate antibiotic prescribing for respiratory infections. Most other interventions have been focused on reminders or education and this is a novel, low-cost approach," Linder said.

The study did not look at why physicians might be inclined to overprescribe antibiotics, but possible explanations from other research include patient demand and "defensive" prescribing.

"The results move beyond educational posters, showing how public commitments and active engagement can prompt greater personal motivation to perform a behavior, in this case reversing a tendency to prescribe antibiotics when they are not effective," Doctor said.

Provided by University of Southern California

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