

# Researchers reduce antibiotic prescriptions through physician education

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Physicians at Kaiser Permanente in Southern California reduced the odds of prescribing an antibiotic for sinusitis by 22 percent using computer alerts to inform doctors when antibiotics may not be the best course of treatment. The research was published today in the *American Journal of Managed Care*.

The work is a continuation of research to better understand what drives over-prescription of [antibiotics](#) and determine best approaches to improving physician prescribing practices, said study leader Adam Sharp, MD, MS, a researcher with the Kaiser Permanente Department of Research & Evaluation who also works as an emergency department physician at the Kaiser Permanente Los Angeles Medical Center.

Antibiotic over-prescription is an important health issue. If antibiotics are used to treat illnesses for which they are not effective, such as viral infections, they don't benefit the patient and can actually cause harm. Moreover, the overuse of antibiotics gives rise to bacteria that are resistant to them, making the drugs less effective for people with the types of infections they were meant to treat.

Patients who take antibiotics also may experience side effects such as nausea, rashes and diarrhea that can cause significant discomfort.

"We know that a tincture of time, not antibiotics, is generally the best treatment for infections more commonly caused by viruses rather than bacteria. However, health systems are discovering that stopping a

common behavior, like prescribing antibiotics, can be even more difficult than spreading the use of a new test or treatment," said Dr. Sharp. "Our research builds on research conducted at the U.S. Department of Veterans Affairs, the Centers for Disease Control and Prevention, and studies being conducted around the country to better understand how to limit routine use of unwarranted antibiotics."

As part of the American Board of Internal Medicine Foundation's national campaign called "Choosing Wisely," several medical societies have been urging clinicians to reduce [antibiotic overuse](#).

Southern California researchers have conducted multiple studies focused specifically on antibiotic prescriptions for [acute sinusitis](#) (also known as a sinus infection), which affects more than 30 million people each year in the United States. Around 9 in 10 people with acute sinusitis receive a prescription for antibiotics, even though current guidelines do not recommend antibiotics for most [patients](#).

## **How antibiotic prescribing impacts patient satisfaction**

Dr. Sharp led a different study published last month in *The American Journal of Managed Care* that examined the impact of antibiotic prescribing on how patients rate their overall satisfaction with a visit. Researchers found that antibiotics were correlated with slightly higher patient satisfaction scores, but the difference was only about 4 percent. More than 3 in 4 patients were satisfied with a visit even when not prescribed antibiotics for acute sinusitis, according to Dr. Sharp.

His study published today examined the effect of provider education and clinical decision support (alerts on the electronic health record that physicians see during appointments) on antibiotic prescribing for acute

sinusitis, using a pragmatic stepped-wedge cluster randomized design. During an eight-month period (September 2014 through April 2015), the study tracked nearly 22,000 initial acute sinusitis encounters in adults at primary and urgent care offices. Among the key findings:

- Clinical decision support was associated with a decrease of 1 in 5 (22 percent) in antibiotic use post-intervention, but the absolute reduction was small (2 percent).
- Provider education had a large initial effect, but it was not sustained over the study period.
- The intervention was associated with a substantial decrease in acute sinusitis diagnoses, compared to other common upper respiratory diagnoses, although no increase in antibiotic prescribing for those diagnoses was observed.
- The effect of decision support did not appear to vary based on doctors' experience.

Provided by Kaiser Permanente

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