

# Study succeeds in cutting inappropriate antibiotic prescribing by pediatricians

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A study involving one of the nation's largest networks of pediatric practices was able to nearly halve the inappropriate use of antibiotics through quarterly monitoring and feedback of the physicians' prescribing patterns. The research, which is being presented at IDWeek, is one of the first to look at an antimicrobial stewardship intervention in the outpatient setting.

Although efforts to cut the [overuse of antibiotics](#) have made headway in hospitals, the majority of prescriptions are written by community-based clinicians—often for [pediatric patients](#) with common ailments. "If you really want to impact antibiotic use, you have to do it with outpatient [prescribing](#)," said lead researcher Jeffrey Gerber, MD, an assistant professor of pediatrics at Children's Hospital of Philadelphia. "Our message is that targeting common conditions and intervening in the outpatient setting is doable."

Indeed, the study looked at three common [respiratory tract infections](#) in children and greatly affected prescribing in a group of practices after only a year. The biggest impact was with inappropriate [use of antibiotics](#) for pneumonia, which dropped from 16 percent to just 4 percent.

The findings are among the significant research being discussed at the inaugural IDWeek meeting, taking place through Sunday in San Diego. With the theme Advancing Science, Improving Care, IDWeek features the latest science and bench-to-bedside approaches in prevention, diagnosis, treatment, and epidemiology of [infectious diseases](#), including

HIV, across the lifespan. More than 1,500 abstracts from scientists in this country and internationally will be highlighted over the conference's five days.

"Improving antibiotic use is a crucial public health goal and necessary given increasing [antibiotic resistance](#)," noted Daniel J. Diekema, MD, an IDWeek chair for the Society for Healthcare Epidemiology of America. "This study shows that the same approaches we use in hospitals can also improve antibiotic use in clinics. The intervention isn't complicated or high-tech, so it should be 'scalable' to large populations, where it could make a big difference in slowing resistance and preventing the complications of inappropriate antibiotic use."

Gerber and his colleagues at Children's Hospital focused on its affiliated primary care network of more than two dozen practices. Eighteen of those [pediatric practices](#) agreed to participate, offering a look at 174 clinicians' prescribing habits in urban, suburban and rural communities from the Main Line of Philadelphia to the New Jersey shore. Over nearly three years, that included more than 1.4 million office visits by 185,212 patients.

The practices were randomly divided into two groups and their prescriptions tracked through the network's electronic health record. The researchers reviewed prescribing for sinusitis, Group A strep throat and pneumonia after omitting cases that involved children with chronic medical conditions, antibiotic allergies or [antibiotic use](#) during the three months preceding the study period.

The control group was merely told the study was under way. In the [intervention group](#), however, each practice was given a short lunch-hour refresher on the latest prescribing guidelines recommended by the American Academy of Pediatrics and the Infectious Diseases Society of America. Additionally, each clinician in the intervention group received

quarterly one-page updates on his or her prescribing habits. This feedback showed how individuals compared to the guidelines and to others within their own practice, as well as how practices compared to each other. It involved no clinical decision-making support tools.

The initial data showed that about 28 percent of all children inappropriately received a broad-spectrum antibiotic for a targeted condition—with the variance across practices ranging from 15 percent to 60 percent.

But after the antibiotic primer session and a year of regular prescribing evaluations, clinicians in the intervention group cut their off-guideline use to 14 percent. The control group rate also declined, but only to 23 percent.

There was little change in the already low prescribing of broad-spectrum antibiotics for strep throat. Inappropriate prescribing for sinusitis had already been trending down in both groups, but it dropped by half, to 20 percent, in the practices that had gotten the refresher and regular feedback.

"The impact in the intervention group was much better than we thought it would be," Gerber said. "It shows that getting people up to speed and providing simple reminders are helpful. It also shows that you can leverage electronic health records to put together a relatively low-maintenance system to improve prescribing."

The researchers say they now need to look at the staying power of their effort. Have clinicians continued to be vigilant or returned to old habits? Gerber acknowledges that pediatricians often are pressured by a clock that requires them to see patients quickly and by families that often demand antibiotics when a child is sick. Writing that prescription sometimes seems like the most expeditious solution.

"We need to know what the important piece of our intervention was, whether the education or the feedback reports," Gerber said. "What we're ultimately hoping is that by improving adherence to prescribing guidelines, we changed the level of treatment success while reducing unnecessary exposure to broad-spectrum [antibiotics](#)."

Provided by Society for Healthcare Epidemiology of America

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