

How to optimize pediatric antibiotic use during COVID-19 pandemic

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Editor's note: U.S. Antibiotic Awareness Week is Nov. 18-24.

Antibiotic resistance is one of the biggest threats to public health globally. Thus, efforts to prolong the effectiveness of antibiotics are important and have demonstrated impact.

An 18% reduction in the number of U.S. deaths from antibiotic-resistant infections was observed from 2012-'17. In addition, the number of deaths from resistant infections in U.S. hospitals fell by nearly 30%, [according to the Centers for Disease Control and Prevention \(CDC\)](#).

Despite this progress, more than 2.8 million antibiotic-resistant infections and more than 35,000 deaths occurred in 2019 in the U.S., according to the CDC. Furthermore, worrisome trends are emerging, including the discovery of new resistant pathogens such as *Candida auris* and increases in resistant *Enterobacteriaceae* and *streptococci*, among others.

The U.S. government recently released a plan to change the trajectory of antibiotic resistance and improve the health of all Americans, as well as the health of animals, plants and the environment. The [National Action Plan for Combating Antibiotic-Resistant Bacteria, 2020-2025](#) is a set of coordinated, strategic actions, many of which build on evidence-based activities initiated under the 2015-2020 National Action Plan. Among the objectives is to develop and implement policies and practices to promote the responsible use of antibiotics (i.e., antibiotic stewardship).

An estimated 85% to 95% of human antibiotic use by volume occurs in the outpatient setting, including doctors' offices, emergency departments and urgent care clinics. In 2016, 270 million courses of antibiotics were dispensed to outpatients in community pharmacies. This equates to more than five prescriptions

written each year for every six people, on average, according to the [CDC's Antibiotic Resistance and Patient Safety Portal](#). Furthermore, at least 30% of antibiotics prescribed in the outpatient setting are unnecessary. Antibiotics frequently are prescribed for known viral infections, including for 75% of adults with acute bronchitis and 45% of children with viral upper respiratory infection (URI).

The CDC has outlined [key principles](#) to enhance antibiotic stewardship programs in outpatient settings. The COVID-19 pandemic, however, has hampered antimicrobial stewardship activities. Resources for stewardship programs have been reallocated, and higher use of empiric antibiotics was observed in the acute phase of the pandemic.

Some ways to maintain antibiotic stewardship in the COVID-19 era include:

- Regularly review and update indications for antimicrobials and treatment guidelines. National guidance stating that antibiotics are not warranted for uncomplicated COVID-19 infections is useful.
- Use electronic health records and telehealth technologies for education, audits and monitoring, committee meetings, virtual rounds and clinical visits.
- Use rapid viral detection assays in outpatient and urgent care settings to detect multiple respiratory pathogens, including SARS-CoV-2.

Pediatric antibiotic stewardship interventions are more important than ever to preserve the quality of antibiotic prescribing and minimize unnecessary use. Antibiotic stewardship activities need to be integrated with pandemic planning.

Pediatricians can continue providing the best care for their patients despite the challenges posed by the pandemic by following clinical practice guidelines regarding antibiotic prescribing, using rapid viral diagnostic assays to facilitate diagnosis and minimizing unnecessary antibiotic use for URIs.

Dr. Kourtis is a member of the AAP Committee on Infectious Diseases.

Resources

- [AAP information on pediatric antibiotic safety](#)
- [Information from the AAP Red Book on antimicrobial resistance and stewardship](#)
- [Pediatric Antibiotic Stewardship Program Toolkit](#)
- [MITIGATE Antimicrobial Stewardship Toolkit, a guide for adult and pediatric emergency departments and urgent care settings](#)
- [CDC's Be Antibiotics Aware Partner Toolkit](#)

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