

Antibiotic side effects in kids lead to nearly 70,000 ER visits in the US each year

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The use of antibiotics drives the development of antibiotic resistance, a major threat to public health worldwide. But these drugs also carry the risk of harm to individual patients, including children. According to a

new analysis published in the *Journal of the Pediatric Infectious Diseases Society*, antibiotics led to nearly 70,000 estimated emergency room visits in the U.S. each year from 2011-2015 for allergic reactions and other side effects in children. The study helps quantify the risk posed by specific antibiotics in children across different age ranges.

"For parents and other caregivers of children, these findings are a reminder that while antibiotics save lives when used appropriately, antibiotics also can harm children and should only be used when needed," said lead author Maribeth C. Lovegrove, MPH, Division of Healthcare Quality Promotion, Centers for Disease Control and Prevention. "For health care providers, these findings are a reminder that adverse effects from antibiotics are common and can be clinically significant and consequential for pediatric patients."

For their analysis, researchers used nationwide estimates for outpatient antibiotic prescriptions and data from a nationally representative sample of hospitals for [emergency room visits](#) attributed to the use of antibiotics by children aged 19 and younger. Most of the visits (86 percent) were for [allergic reactions](#), such as a rash, pruritus (itching), or angioedema (severe swelling beneath the skin). The risk of a visit varied by child age and type of antibiotic, but for most antibiotics, children aged 2 or younger had the highest risk of an adverse drug event. Forty-one percent of visits involved children in this age group. Amoxicillin was the most commonly implicated antibiotic in [adverse drug events](#) among children aged 9 or younger, while sulfamethoxazole/trimethoprim was most commonly implicated among children 10-19 years old.

Antibiotics are among the most commonly prescribed medications for children, but prior research has suggested that nearly a third, if not more, of outpatient pediatric prescriptions for antibiotics are unnecessary. Efforts to reduce antibiotic overprescribing have largely focused on reducing [antibiotic resistance](#). However, studies have shown that these

longer-term societal risks are not always prioritized when clinicians are making decisions about treatment.

"By considering available data on the immediate risks to individual patients, clinicians, and parents and caregivers, can better weigh the risks and benefits of [antibiotic treatment](#)," Lovegrove said.

The researchers were not able to determine which antibiotic prescriptions were unnecessary or inappropriate in the study, because data for antibiotic indications, doses, and durations of therapy were not available. The study also likely underestimates how often [children](#) experience adverse side effects from [antibiotics](#) because the analysis includes only adverse drug events that resulted in a visit to an emergency room. Adverse drug events treated in other settings, such as an urgent care facility or a doctor's office, or cases for which no health care was sought, were not included. Also, adverse events that are less likely to be diagnosed in the [emergency room](#) setting (e.g., Clostridium difficile infections that can cause severe diarrhea after antibiotic use) were not included.

More information: Maribeth C Lovegrove et al, US Emergency Department Visits for Adverse Drug Events From Antibiotics in Children, 2011–2015, *Journal of the Pediatric Infectious Diseases Society* (2018). [DOI: 10.1093/jpids/piy066](https://doi.org/10.1093/jpids/piy066)

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