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Curb overuse of antibiotics in animal agriculture: AAP report

by Kristy Kennedy, Correspondent

For years, the pediatric health care community has worked to reduce the overuse of antibiotics in children. Now, an AAP technical report is spotlighting another big issue leading to antimicrobial-resistant infections: the overuse of antibiotics in animal agriculture.

Nontherapeutic Use of Antimicrobial Agents in Animal Agriculture: Implications for Pediatrics is available at www.pediatrics.org/cgi/doi/10.1542/peds.2015-3630 and will be published in the December issue of *Pediatrics*.

The overuse and misuse of antimicrobials in veterinary and human medicine is, in large part, responsible for the emergence of antibiotic resistance, according to the report. Antimicrobial resistance now is considered one of the most serious threats to public health globally.

Widespread practice, big business

" Probably



Dr. Zaoutis the most important action we could take is to change the way we use antibiotics," said Theoklis E. Zaoutis, M.D., M.S.C.E., FAAP, report co-author and member of the AAP Committee on Infectious Diseases.

Antibiotic use in animals must be addressed because more antibiotics by tonnage are used in animals than in people. And in animals used for food, their main purpose isn't to fight disease but to promote growth.

"The fact remains that a number of studies show that low doses of antibiotics for poultry, pork, beef and other animal species do end up in getting (the animals) to market weight sooner than they otherwise would, which means farmers need to use less feed," said Jerome A. Paulson, M.D., FAAP, report co-author and former chair of the AAP Council on Environmental Health Executive Committee.

Antibiotics for animals often don't require a prescription and are put into the animals' feed and water.

Scientists aren't sure why antibiotics promote growth, but the practice is big business. According to the report, 80% of the overall tonnage of antimicrobial agents sold in the U.S. in 2012 was for ani



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mal use. What's worrisome is that 60% of those antibiotics like macrolides, streptogramins and tetracyclines are considered important for human medicine.

"There's a lot of overlap because a lot of antibiotics that work in humans work in animals," Dr. Zaoutis said.

Health impacts

Antimicrobial-resistant infections are costly. Each year, they cause more than 2 million Americans to become ill and 23,000 deaths, according to the Centers for Disease Control and Prevention. National health care system costs range from \$21 billion to \$34 billion annually, with 8 million hospital days.

"Children are susceptible to a lot of those infections," Dr. Zaoutis said.

Antibiotic use in food animals has been linked to antimicrobial-resistant infections like *Campylobacter*, *Salmonella*, methicillin-resistant *Staphylococcal aureus* and extraintestinal pathogenic *Escherichia coli* infections.



Dr. Paulson

Dr. Paulson urges pediatricians to consider that patients could be sick with a resistant organism and to counsel families, particularly those who are immunocompromised, of health risks from consuming meat of animals treated with antibiotics.

Problematic pathways



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Disease can spread to people through the food supply, by direct contact with animals on farms or in processing facilities, and through environmental contamination by water tainted with antibiotic-resistant bacteria used to irrigate crops or manure used for fertilizer.

"We have a situation that makes it more difficult to treat human infections," Dr. Paulson said, adding he hopes the U.S. bans the use of antibiotics for growth stimulation like many European countries have done.

"Because of the link between antibiotic use in food-producing animals and the occurrence of antibiotic-resistant infections in humans, antibiotic agents should be used in food-producing animals only to treat and control infectious diseases and not to promote growth or to prevent disease routinely," the report concludes.

Governmental efforts

The issue has gotten national attention. The Food and Drug Administration (FDA) and Congress have sought to curb animal antibiotic use through policies and bills. President Barack Obama also ordered key federal departments and agencies to combat antibiotic resistance, including directing the FDA to continue steps to eliminate agricultural use of medically important antibiotics for promoting growth in animals.

Resources

- [AAP News article, "U.S. releases broad plan to combat antibiotic resistance"](#)
- [AAP News article, "How to combat growing threat of antimicrobial resistance"](#)
- [Antibiotic Use in Food-Producing Animals](#)