



St. Vincent Physician Network

Antibiotic Overuse Fuels Drug Resistance

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Antibiotics kill bacteria, not viruses. That simple fact is one of the most important points to remember in halting the growing problem of antibiotic resistance.

Since antibiotics first became widely used in the World War II era, they have saved countless lives and eased the serious complications of many feared diseases and infections. After more than 50 years of widespread use, however, many antibiotics no longer perform as they once did. Instead, extensive use of antibiotics has been promoting the spread of antibiotic resistance.

Antibiotic resistance occurs when bacteria change in some way that reduces or eliminates the effectiveness of the medicines designed to cure or prevent infections. Over time, some bacteria have developed ways to dodge the effects of antibiotics. Widespread use of antibiotics is thought to have spurred evolutionary changes in bacteria that allow them to survive these powerful drugs. The bacteria continue to multiply, causing more harm.

This makes it more difficult to eliminate infections from the body; and it increases the risk of acquiring infections in a hospital.

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Doctors and Patients

Antibiotics are not effective against viral infections like the common cold, most sore throats, and the flu. Still, many people ask for - and some doctors provide - antibiotics for these illnesses "just in case" there are bacteria present.

According to the CDC, tens of millions of the antibiotics are prescribed in doctors' offices for viral infections that are not treatable with antibiotics. Doctors cite diagnostic uncertainty, time pressure, and patient demand as the primary reasons for their tendency to over-prescribe antibiotics.

The Department of Health and Human Services notes that "inappropriate antibiotic use - particularly among children - is contributing to an alarming growth of global antibiotic resistance."

When a patient does not finish taking a prescription for antibiotics, drug-resistant microbes not killed in the first days of treatment can proliferate. Hospitals also provide a fertile environment for drug-resistant germs as close contact among sick patients and extensive use of antibiotics force bacteria to develop

resistance. Another controversial practice that some believe promotes drug resistance is adding antibiotics to agricultural feed.

"Most Pressing Public Health Problem"

Today, virtually all important bacterial infections in the United States and throughout the world are becoming resistant. The Centers for Disease Control and Prevention (CDC) calls antibiotic resistance one of the world's most pressing public health problems.

"Antibiotics show amazing results when used to treat bacterial infections, but they won't help at all against the common cold or flu," Surgeon General Richard Carmona said. "What's worse, if people take antibiotics when they don't need them, it can make these important drugs less effective in the future."

Diseases such as tuberculosis, gonorrhea, malaria, and childhood ear infections are now more difficult to treat than they were decades ago. Drug resistance is an especially difficult problem for hospitals because they take care of critically ill patients who are more vulnerable to infections than the general population and therefore require more antibiotics. Heavy use of antibiotics in these patients speeds up the mutations in bacteria that bring about drug resistance. Unfortunately, this worsens the problem by producing bacteria with greater ability to survive even our strongest antibiotics. These even stronger drug-resistant bacteria continue to prey on already ill hospital patients.

According to CDC statistics:

- Nearly two million patients in the United States get an infection in the hospital each year
- Of those patients, about 90,000 die each year as a result of their infection - up from 13,300 patient deaths in 1992
- More than 70% of the bacteria that cause hospital-acquired infections are resistant to at least one of the drugs most commonly used to treat them
- People infected with drug-resistant organisms are more likely to have longer hospital stays and require treatment with second- or third-choice drugs that might be less effective, more toxic, and more expensive

In short, antimicrobial resistance is driving up health care costs, increasing the severity of disease, and increasing the death rates from certain infections.

Antibiotic resistance can cause significant danger and suffering for children and adults who have common infections that were once easily treatable with antibiotics. Over the last decade, almost every type of bacteria has become stronger and less responsive to antibiotic treatment when it is really needed. These antibiotic-resistant bacteria can quickly spread to family members, school mates, and co-workers -- threatening the community with a new strain of infectious disease that is more difficult to cure and more expensive to treat.

"Our first step toward correcting the problem is to build public knowledge and awareness of when antibiotics work -- and when they don't," said Richard Besser, MD, CDC's medical director of the campaign. "We want Americans to keep their families and communities healthy by getting smart about the proper use of antibiotics."

How can you prevent antibiotic-resistant infections?

- Talk with your health care provider about antibiotic resistance.
Ask whether an antibiotic is likely to be beneficial for your child's illness.
Ask what else you can do to feel better sooner.
- Do not take an antibiotic for a viral infection like a cold or the flu.
- Take an antibiotic exactly as the doctor tells you - do not save some of your antibiotic for the next time you get sick.

- Do not take an antibiotic that is prescribed for the sick child's sibling.

This article is based on information from the [US Centers for Disease Control and Prevention](#), the [US Department of Health and Human Services](#), and the [National Institute of Allergy and Infectious Diseases](#) and appeared on the web site of the Medical College of Wisconsin. Posted 11-1-05 on [kidsgrowth.com](#)