

# CDC Actions to Prevent the Spread of Antibiotic Resistance in Enteric Bacteria

Antibiotic resistance (AR) can spread through people, animals, and the environment. People can get sick from antibiotic-resistant enteric bacteria (bacteria that cause intestinal illness) through food, the environment, person-to-person contact, and contact with animals. CDC works to fight AR using a One Health approach, which recognizes that the health of people is closely tied to the health of animals and our shared environment.

## CDC ACTS IN FIVE STRATEGIC AREAS



### Emerging Resistance

Three common enteric bacteria—*Salmonella*, *Campylobacter*, and *Shigella*—cause around **740,000** antibiotic-resistant infections each year in the United States.

These bacteria are becoming more resistant to some clinically important antibiotics, limiting treatment options.

### Prevention

Build capacity to prevent, detect, and contain antibiotic-resistant enteric infections. Encourage appropriate use of antibiotics through national and state outreach to consumers, healthcare providers, veterinarians, and industry, and by supporting health department strategies.

### One Health Surveillance

Work with federal agencies to expand AR testing capabilities and tracking systems. Identify ways in which water, animal feed, soil, crops, and other potential sources contribute to the spread of AR.

### Advanced Diagnostics and Laboratory Capacity Building

Develop and validate new laboratory tests and clinical diagnostics to detect antibiotic-resistant enteric infections and improve surveillance, infection control, and treatment decisions.

### Research

Improve understanding of the many factors that contribute to the emergence, spread, and ongoing presence of AR and discover new strategies to prevent and treat enteric infections.

### International Collaboration

Collaborate with international partners and foreign ministries of health to enhance national strategies, international surveillance, and global research to prevent, detect, and control the spread of antibiotic-resistant enteric bacteria.

Learn more about CDC's AR Solutions Initiative:  
[www.cdc.gov/DrugResistance/solutions-initiative](http://www.cdc.gov/DrugResistance/solutions-initiative)



U.S. Department of  
Health and Human Services  
Centers for Disease  
Control and Prevention

# Moving Forward to Combat AR in Enteric Bacteria

As part of the 2020 U.S. National Action Plan, CDC and partner agencies are taking action to address AR in enteric bacteria. The activities below are a snapshot of the AR activities, including prevention, One Health surveillance, diagnostics and lab capacity building, research, and international collaboration.



## Prevention

- Work with partners to optimize use of antibiotics for treatment of enteric infections in people and use of medically important antibiotics in animals.
- Develop and disseminate health education tools to federal, state, veterinary, academic, and agriculture partners.



## One Health Surveillance

- Collaborate with FDA, EPA, and USDA to establish AR monitoring in water, an expansion of the National Antimicrobial Resistance Monitoring System, which tracks resistance in enteric bacteria among people, food animals, and food.
- Help establish an accelerator program to advance molecular testing for antibiotic-resistant bacteria in humans, animals, plants, and the environment with federal partners.



## Advanced Diagnostics and Capacity Building

- Support the enhancement of culture-independent diagnostic tests (tests that do not require growth of bacteria in a laboratory) to determine presence and severity of antibiotic-resistant enteric infections in people.



## Research

- Characterize the epidemiology, burden, outcomes, and risk factors for antibiotic-resistant enteric infections, and compare to susceptible (treatable) infections in people and animals.
- Connect findings about enteric-related antibiotic-resistant genes with the microbiome, health status, and response to treatments in people and animals.



## International Collaboration

- Strengthen international surveillance and containment of antibiotic-resistant enteric diseases, including those spreading in other countries, like extensively drug-resistant typhoid fever.

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