DRUG-RESISTANT NONTYPHOIDAL *SALMONELLA*

THREAT LEVEL **SERIOUS**

212,500 Estimated infections each year

70 Estimated deaths each year

Nontyphoidal *Salmonella* can cause diarrhea (sometimes bloody), fever, and abdominal cramps. Some infections spread to blood and can have life-threatening complications.

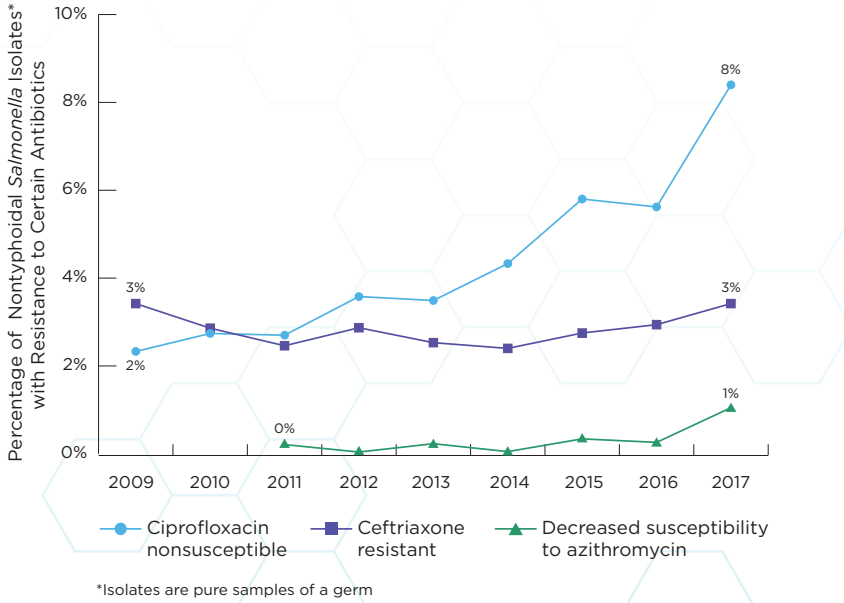
WHAT YOU NEED TO KNOW

- Nontyphoidal *Salmonella* causes an estimated 1.35 million infections, 26,500 hospitalizations, and 420 deaths each year in the United States, resulting in an estimated $400 million in direct medical costs.
- People can get *Salmonella* from eating contaminated food products or from contact with feces from infected people or animals (including touching animals or their surroundings).
- Antibiotics such as ciprofloxacin, azithromycin, and ceftriaxone are sometimes needed to treat patients with severe *Salmonella* infections. Resistant *Salmonella* infections can be more severe and have higher hospitalization rates.

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

RESISTANCE OVER TIME

Antibiotic-resistant nontyphoidal *Salmonella* infections are on the rise and approaching 10% for ciprofloxacin in 2017.



*Isolates are pure samples of a germ

RESISTANT *SALMONELLA* EMERGES IN THE FOOD CHAIN

Resistance continuously emerges. In 2014, the U.S. Food and Drug Administration (FDA) segment of the National Antimicrobial Resistance Monitoring System (NARMS) collected a chicken breast sample during routine monitoring. The sample was tested using whole genome sequencing—a lab technique that provides genetic information—and identified a multidrug-resistant strain (type) of nontyphoidal *Salmonella* serotype Infantis. This strain included an additional gene that was not common among *Salmonella* from chicken in the United States. However, the CDC segment of NARMS initially identified this strain among ill people returning from travel to South America.

This resistant strain spread rapidly. In 2018, it accounted for 25% of *Salmonella* Infantis infections in people. Most of these infected people had no travel history but had recently eaten chicken. At the same time, the U.S. Department of Agriculture (USDA) segment of NARMS increasingly identified this strain in chicken samples. This strain, along with other types of resistant *Salmonella* linked to foodborne illness from pork, turkey, and beef, leaves healthcare providers with few options to treat patients with severe infections.

RESISTANCE SNAPSHOT

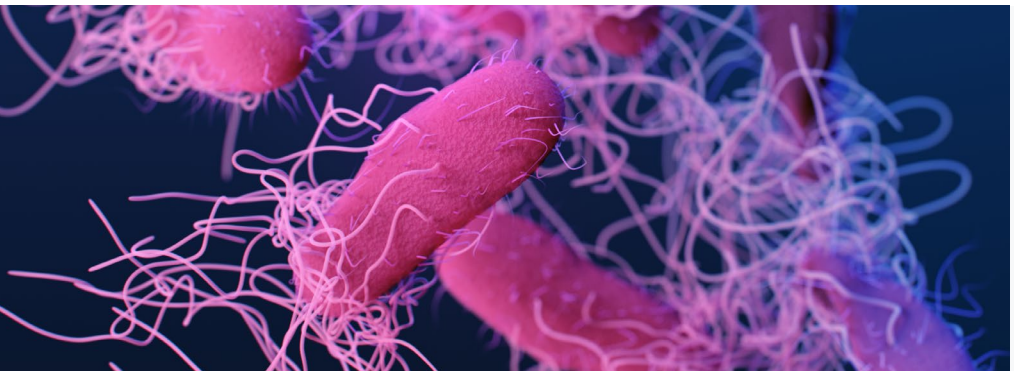
Some nontyphoidal *Salmonella* are becoming less susceptible to essential antibiotics, jeopardizing options to treat severe infections.

	PERCENTAGE OF ALL NONTYPHOIDAL *SALMONELLA**	ESTIMATED NUMBER OF INFECTIONS PER YEAR	ESTIMATED INFECTIONS PER 100,000 U.S. POPULATION
CEFTRIAXONE RESISTANCE	3%	41,000	10
CIPROFLOXACIN NONSUSCEPTIBLE	7%	89,200	30
DECREASED SUSCEPTIBILITY TO AZITHROMYCIN	0.5%	7,400	Less than 5
RESISTANT TO AT LEAST ONE ESSENTIAL ANTIBIOTIC†	16%	212,500	70
RESISTANT TO 3 OR MORE ESSENTIAL ANTIBIOTICS†	2%	20,800	10

Antibiotic susceptibility helps describe how sensitive germs are to particular antibiotics. An antibiotic can stop the growth of or kill a susceptible germ.

*Average (2015–2017)

†Represents the following: ciprofloxacin nonsusceptible, decreased susceptibility to azithromycin, resistance to ceftriaxone, ampicillin, or trimethoprim-sulfamethoxazole.



ONLINE RESOURCES

NARMSNow: Human Data, *Salmonella*
www.cdc.gov/NARMSNow

About *Salmonella*
www.cdc.gov/salmonella