DRUG-RESISTANT *SALMONELLA* SEROTYPE TYPHI

THREAT LEVEL **SERIOUS**

4,100 Estimated infections each year

Less than 5 Estimated deaths each year

***Salmonella* Typhi bacteria cause typhoid fever, a potentially life-threatening disease. Symptoms include high fever, abdominal pain, and headache. Infection can lead to bowel rupture, shock, and death.**

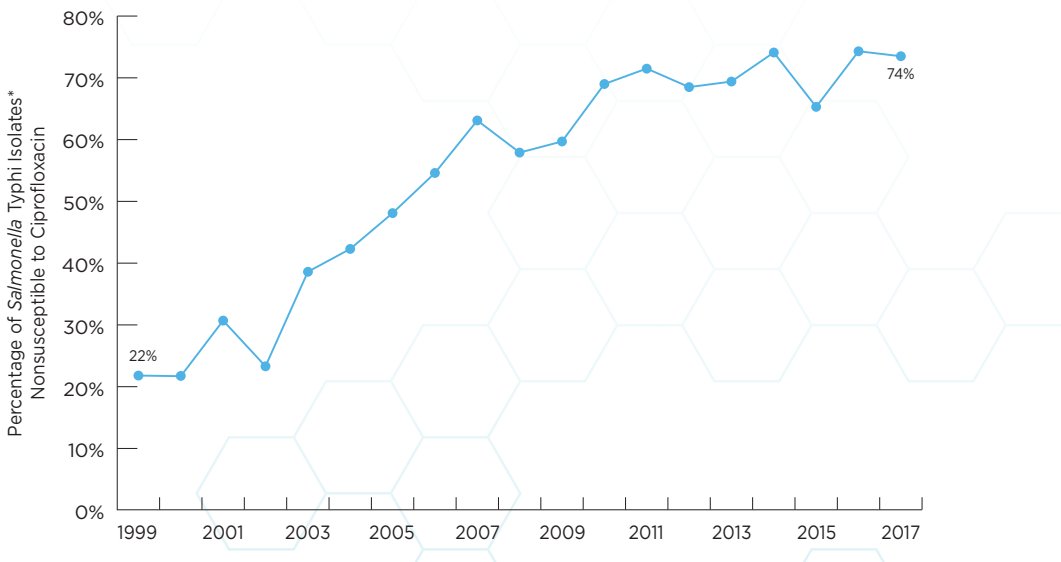
WHAT YOU NEED TO KNOW

- *Salmonella* Typhi causes an estimated 5,700 infections and 620 hospitalizations each year in the United States. Worldwide, an estimated 11 to 21 million infections occur each year.
- Typhoid fever requires treatment with antibiotics, which is complicated by increasing resistance.
- Most people in the United States become infected while traveling to countries where the disease is common (places with poor sanitation and lack of safe drinking water). Vaccination before travel to countries where the disease is common may prevent typhoid fever.

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

RESISTANCE OVER TIME

The percent of *Salmonella* Typhi infections nonsusceptible to ciprofloxacin reached 74% in 2017, severely limiting treatment options.



*Isolates are pure samples of a germ

XDR TYPHOID FEVER IN TRAVELERS

Over the past decade, several strains (types) of *Salmonella* Typhi have become resistant to multiple antibiotics. One recently emerging strain of extensively drug-resistant (XDR) *Salmonella* Typhi is resistant to all but two antibiotic classes recommended for treatment (macrolides and carbapenems). Since 2016, an ongoing outbreak of XDR typhoid fever has sickened more than 5,000 people in Pakistan, and 11 children in the United States who traveled to or from Pakistan.

CDC is working with public health partners across the globe, including Pakistani health authorities, to strengthen prevention efforts, including vaccination. In the United States, healthcare providers, state and local public health officials, and scientists at CDC are closely monitoring emerging resistance among *Salmonella* Typhi strains to identify it quickly and ensure that patients get appropriate antibiotic treatment. Without improved sanitation and access to safe drinking water, this germ and its resistance will continue to pose a risk and spread. U.S. travelers should get vaccinated before going to areas where the disease is common.

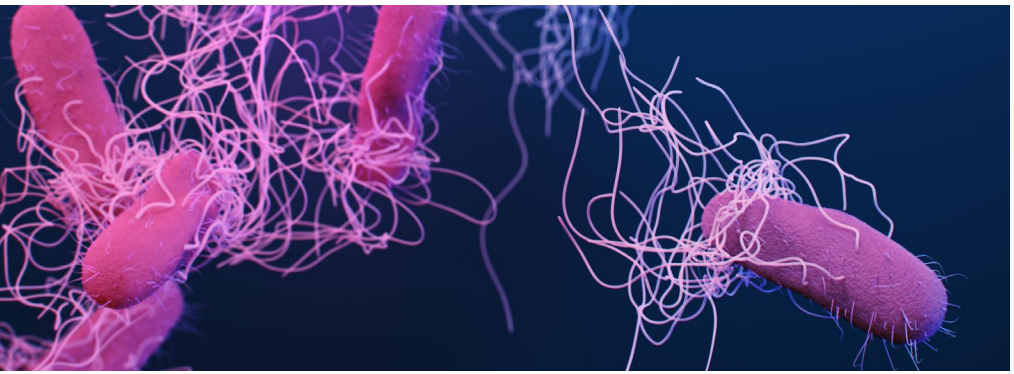
RESISTANCE SNAPSHOT

Salmonella Typhi strains are often nonsusceptible to ciprofloxacin, so antibiotic treatment options are diminishing.

	CIPROFLOXACIN NONSUSCEPTIBLE
PERCENTAGE OF ALL *SALMONELLA* TYPHI*	71%
ESTIMATED NUMBER OF INFECTIONS PER YEAR	4,100
ESTIMATED INFECTIONS PER 100,000 U.S. POPULATION	Less than 5

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)



ONLINE RESOURCES

About Typhoid fever
www.cdc.gov/Typhoid-Fever

CDC's MMWR Publication on Emergence of XDR *Salmonella* Typhi Infections Among Travelers
www.cdc.gov/MMWR/Volumes/68/wr/mm6801a3.htm