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## CDC Health Alert Network (HAN) Health Advisory: Extensively Drug-Resistant *Salmonella* Typhi Infections Among U.S. Residents Without International Travel

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# Extensively Drug-Resistant *Salmonella* Typhi Infections Among U.S. Residents Without International Travel

## Summary

The Centers for Disease Control and Prevention (CDC) is providing—

1. Information on extensively drug-resistant (XDR) *Salmonella* Typhi (Typhi) infections among U.S. residents without international travel, and
2. Treatment recommendations for XDR Typhi infection.

## Background

Typhoid fever is a systemic illness caused by the bacterium *Salmonella enterica* serotype Typhi (Typhi). Most people in the United States diagnosed with typhoid fever acquired it during international travel, but some acquired it in the United States. The disease is treated with antibiotics; without appropriate antibiotic treatment, 12–30% of people with typhoid fever will die.

Typhi is transmitted through contaminated food and water and person-to-person contact. CDC recommends [vaccination](#) for people traveling to places where typhoid fever is common. Because typhoid fever vaccines are not 100% effective, travelers should always practice [safe eating and drinking habits](#) to help prevent infection.

In 2016, a large outbreak of extensively drug-resistant (XDR) Typhi infections began in Sindh province, Pakistan [1]. XDR Typhi strains are resistant to antibiotics generally recommended to treat typhoid fever, including ampicillin, ceftriaxone, chloramphenicol, ciprofloxacin, and trimethoprim-sulfamethoxazole. Isolates from patients linked to the outbreak in Pakistan are susceptible to carbapenems and azithromycin. Infections among travelers to or from Pakistan have been reported globally, including in the United States.

As of January 14, 2021, CDC has received 71 reports of XDR Typhi infection in the United States with specimens obtained from February 9, 2018, through November 16, 2020. Among 67 patients with known travel history, 58 (87%) had traveled to Pakistan in the 30 days before illness began ([Figure](#)).