STM JOURNALS

Recent Trends in
Infectious Diseases

ISSN: 3048-9857
Volume 3, Issue 1, 2026
January–June
DOI (Journals): 10.37591/RTID

https://journals.stmjournals.com/rtid

Review | RTID

# Typhoid Fever: Etiology, Clinical Manifestations, Diagnosis, and Management

Ruby Bhadoriya*

***Abstract***

*Typhoid fever is a systemic and potentially life-threatening infectious disease caused by Salmonella enterica serotype Typhi, which primarily spreads through the fecal–oral route via ingestion of contaminated food and water. It continues to be a major global public health concern, particularly in developing and low-resource countries where poor sanitation, inadequate personal hygiene, and unsafe water supplies prevail. The disease is characterized by prolonged high-grade fever, abdominal discomfort, headache, loss of appetite, hepatosplenomegaly, and systemic toxicity, which can significantly impact an individual's health and quality of life. Without timely diagnosis and proper treatment, typhoid fever may lead to severe and life-threatening complications, including intestinal perforation, gastrointestinal hemorrhage, septicemia, encephalopathy, and multi-organ dysfunction. Early detection through clinical evaluation and laboratory investigations, coupled with prompt initiation of appropriate antibiotic therapy and supportive care, is crucial to reducing morbidity and mortality. Furthermore, preventive strategies play a vital role in controlling the disease burden. These include ensuring access to safe drinking water, improving environmental sanitation, promoting proper hand hygiene, strengthening public health education, and implementing effective vaccination programs. A comprehensive approach that combines early diagnosis, effective treatment, and robust prevention measures is essential to curb the transmission and mitigate the overall impact of typhoid fever, especially in endemic regions.*

**Keywords:** Typhoid fever, Salmonella Typhi, diagnosis, management, prevention, nursing care

## INTRODUCTION

Typhoid fever, also known as enteric fever, is a systemic infectious disease caused primarily by *Salmonella enterica* serotype Typhi and, less commonly, by *Salmonella enterica* serotype Paratyphi. It is one of the most significant water- and food-borne illnesses affecting humans, particularly in developing countries where inadequate sanitation, limited access to safe drinking water, and poor personal hygiene practices are prevalent [1, 2]. The disease is transmitted mainly through the fecal–oral route, which involves the ingestion of food or water contaminated with the feces or urine of an infected person.

Typhoid fever remains a major public health challenge worldwide, with an estimated 11–20 million new cases and over 120,000 deaths reported annually, according to the World Health Organization (WHO). Its incidence is particularly high in South Asia, Sub-Saharan Africa, and parts of Southeast Asia, where factors such as rapid urbanization, population density, improper waste disposal, and lack of adequate healthcare facilities contribute to the persistent spread of infection.

The disease typically presents with insidious onset of symptoms, including prolonged high-grade fever, headache, malaise, abdominal discomfort,

***Author for Correspondence**
Ruby Bhadoriya
E-mail: Rubi.Bhadoriya@galgotiasuniversity.edu.in

Tutor, School of Nursing, Galgotias University, Greater Noida, Uttar Pradesh, India

Received Date: August 30, 2025
Accepted Date: December 17, 2025
Published Date: January 20, 2026

**Citation:** Ruby Bhadoriya. Typhoid Fever: Etiology, Clinical Manifestations, Diagnosis, and Management. Recent Trends in Infectious Diseases. 2026; 3(1): 1–4p.

© STM Journals 2026. All Rights Reserved 

constipation or diarrhea, and hepatosplenomegaly. If not diagnosed and treated promptly, it may progress to serious and potentially life-threatening complications, such as intestinal perforation, severe gastrointestinal bleeding, septicemia, encephalopathy, and multi-organ failure. These complications are among the leading causes of typhoid-related mortality, particularly in resource-limited settings where access to healthcare is inadequate [2].

In recent years, the growing antimicrobial resistance of *Salmonella Typhi* has emerged as a significant concern, posing challenges to effective treatment and control of the disease. While antibiotic therapy remains the cornerstone of management, public health measures such as safe water supply, improved sanitation, personal hygiene, food safety, and vaccination programs are essential for reducing the overall disease burden.

Understanding the epidemiology, clinical features, risk factors, diagnostic tools, treatment options, and preventive strategies of typhoid fever is crucial for healthcare professionals, policymakers, and the general public alike. A multidisciplinary approach involving early diagnosis, effective management, and robust preventive interventions is vital to controlling the spread of this disease and reducing its global impact [3–5].

## CAUSES

- *Causative Agent:* Salmonella enterica serotype Typhi.
- *Mode of Transmission:* Fecal–oral route via:
  - Contaminated water.
  - Improperly cooked food.
  - Poor hand hygiene.
  - Direct contact with carriers.

## RISK FACTOR

- Consumption of unsafe drinking water.
- Poor sanitation facilities.
- Living in densely populated areas.
- Lack of access to healthcare.
- Weakened immune system.
- Traveling to endemic regions.

## SIGN AND SYMPTOMS

- High, sustained fever (>39°C).
- Severe headache.
- Abdominal pain and tenderness.
- Loss of appetite.
- Diarrhea or constipation.
- Rose-colored spots on the chest or abdomen.
- Hepatosplenomegaly.
- Weakness and fatigue.

## DIAGNOSIS

- *Clinical Examination:* Based on history and symptoms.
- *Laboratory Tests:*
  - Blood culture – gold standard (early stages).
  - Widal test – detection of antibodies.
  - Stool and urine cultures.
  - CBC – shows leukopenia.
- *Imaging:* Abdominal ultrasound in suspected complications.

© STM Journals 2026. All Rights Reserved 

## MEDICAL MANAGEMENT

- *Antibiotic Therapy:*
  - *First-Line:* Ceftriaxone, Azithromycin.
  - *Alternative:* Ciprofloxacin (resistance dependent).
- *Supportive Therapy:*
  - Oral or IV fluids to prevent dehydration.
  - Antipyretics for fever control.
  - Nutritional support with soft, easily digestible food.

## SURGICAL MANAGEMENT

Indicated only in severe complications:

- Intestinal perforation.
- Intestinal hemorrhage.

Procedures include surgical repair or resection of affected bowel segments.

## PREVENTION

- Use safe drinking water.
- Practice proper hand hygiene.
- Eat freshly cooked food.
- Avoid street food in endemic regions.
- Proper disposal of sewage.
- *Vaccination:*
  - Injectable Vi polysaccharide vaccine.
  - Oral live attenuated vaccine (Ty21a).

## COMPLICATION

- Intestinal perforation.
- Severe gastrointestinal bleeding.
- Encephalopathy.
- Septicemia.
- Shock and multi-organ failure.

## DISCUSSION

Typhoid fever remains a significant public health challenge, especially in developing countries where poor sanitation, contaminated water, and overcrowded living conditions facilitate its spread [6, 7]. Early detection and prompt treatment are essential to reduce morbidity and mortality, as timely administration of appropriate antibiotics and supportive care can prevent serious complications such as intestinal perforation, septicemia, and multi-organ failure. However, the rise of antimicrobial resistance (AMR), including multidrug-resistant (MDR) and extensively drug-resistant (XDR) strains of *Salmonella* Typhi, has made treatment increasingly complex, emphasizing the need for judicious antibiotic use and effective antimicrobial stewardship programs. In addition to treatment, comprehensive public health measures are crucial to control outbreaks, including vaccination drives, improved sanitation, safe drinking water access, and health education to promote hygiene and food safety practices [8, 9]. A holistic approach combining early diagnosis, effective treatment, antimicrobial control, vaccination, sanitation, and public awareness is vital to reduce the global burden of typhoid fever and prevent future epidemics [10].

## CONCLUSION

Typhoid fever remains a preventable yet persistent public health challenge, especially in developing countries where inadequate sanitation, unsafe drinking water, and limited access to healthcare contribute to its continued prevalence. By implementing comprehensive preventive strategies, including

© STM Journals 2026. All Rights Reserved 

improved sanitation facilities, safe drinking water supply, proper waste management, effective vaccination programs, and community health education, the incidence of typhoid fever can be significantly reduced. Among healthcare professionals, nurses play a pivotal role in combating this disease. Their responsibilities extend beyond clinical care to include health education, early detection of symptoms, prompt referral for treatment, supportive care, and active participation in community awareness programs. Through their involvement in vaccination drives, hygiene promotion, patient counseling, and preventive health campaigns, nurses serve as essential links between healthcare systems and communities. By empowering individuals with knowledge and promoting healthier practices, nurses contribute substantially to reducing transmission, preventing complications, and lowering overall disease burden. Therefore, a multidisciplinary approach that combines nursing interventions, public health measures, and active community participation is critical for controlling typhoid fever, improving population health, and moving toward its eventual eradication.

## REFERENCES

1. World Health Organization. Typhoid fever: Fact sheet. Geneva: World Health Organization; 2025.
2. Park K. Park's textbook of preventive and social medicine. 27th edition. Jabalpur: Bhanot Publishers; 2023.
3. Bennett JE, Dolin R, Blaser MJ, editors. Mandell, Douglas, and Bennett's principles and practice of infectious diseases. 10th edition. Philadelphia: Elsevier; 2024.
4. Centers for Disease Control and Prevention. Typhoid fever. Atlanta (GA): CDC; Available from: https://www.cdc.gov/typhoid.
5. Mayo Clinic. Typhoid fever: symptoms and causes. Rochester (MN): Mayo Clinic; Available from: https://www.mayoclinic.org.
6. Crump JA. Typhoid fever and paratyphoid fever (enteric fever). In: StatPearls. Treasure Island (FL): StatPearls Publishing; updated 2024. Available from: https://www.ncbi.nlm.nih.gov/books.
7. Centers for Disease Control and Prevention. Typhoid fever surveillance, incidence estimates, and introduction of typhoid conjugate vaccine, 2018–2022. Morbidity and Mortality Weekly Report (MMWR). 2023;72:1–10.
8. Stanaway JD, Reiner RC, Blacker BF, et al. The global burden of enteric fever, 2017–2021: A systematic analysis. The Lancet eClinicalMedicine. 2024;68:102145.
9. Alemu A, Getahun A, Worku T, et al. Risk factors for typhoid fever: A systematic review of studies from 1928 to 2024. JMIR Public Health and Surveillance. 2025;11(2):e58743.
10. Centers for Disease Control and Prevention. Typhoid and paratyphoid fever: Travel-associated infections. In: CDC Yellow Book 2025: Health information for international travel. Atlanta (GA): CDC; updated April 2025.

© STM Journals 2026. All Rights Reserved 