



TYPHOID FEVER, ACUTE

(See also TYPHOID CARRIER, PARATYPHOID, and SALMONELLOSIS)

1. **Agent:** *Salmonella typhi*, a gram-negative bacillus.
2. **Identification:**
 - a. **Symptoms:** Systemic infectious disease with fever, headache, malaise, anorexia, diminished frequency of stool more common than diarrhea, bradycardia, enlargement of spleen and rose spots on trunk. Ulceration of Peyer's patches of ileum in late untreated disease may cause bloody diarrhea.
 - b. **Differential Diagnosis:** Appendicitis, cholecystitis, other diseases with fever or rash, typhoid carrier.
 - c. **Diagnosis:**

Culture: Positive blood, feces or urine confirms diagnosis. Blood may be positive as early as first week; feces and urine after first week.

Serum agglutination: Serologic test for "O" and "H" titers. No single titer or combination is diagnostic and should **not** be substituted for blood culture. Consult ACDC.
3. **Incubation period:** 2 weeks average; range 1 to 3 weeks.
4. **Reservoir:** Human.
5. **Source:** Feces and urine of infected person. Possibly infected draining wounds.
6. **Transmission:** Fecal-oral route by direct or indirect contact with feces or urine of case or carrier; ingestion of contaminated food or milk; raw shellfish from contaminated water; flies may be vectors.
7. **Communicability:** As long as bacilli are shed in excreta, usually after first week of illness into convalescence; 2-5% of acute cases become chronic carriers.

8. **Specific Treatment:** Ciprofloxacin, ceftriaxone or ofloxacin. Antibiotic sensitivity tests should be obtained on all typhoid isolates. Consult with ACDC as needed.
9. **Immunity:** Generally lifelong.

REPORTING PROCEDURES

1. Reportable. (*California Code of Regulations*, Sections 2500 and 2628). Report within 1 working day of identification.
2. **Report Form:**

[TYPHOID AND PARATYPHOID FEVER SURVEILLANCE REPORT \(CDC 52.5 E, 6/97 Rev. 3/07, fillable\)](#)

[RELEASE OF ACUTE OR CONVALESCENT TYPHOID FEVER CASE \(acd-typhoid case release, rev 7/02\), formerly H-1961.](#)

The original CDC 52.5 E form should be submitted as soon as the investigation is complete. Do not hold in the district pending completion of mandated clearance. District follow-up for mandated clearance or sensitive occupations or situations (SOS) can be continued without the original form.

3. **Epidemiologic Data:**
 - a. Date and source of first positive culture.
 - b. Onset, symptoms, birthplace, travel history, and treatment of case.
 - c. Household contact roster. Include visitors within incubation period. Name, address, relationship, occupation, dates of contact. History of typhoid or exposure or similar illness; if so, where and when. Identify those persons in SOS.
 - d. Travel itinerary during incubation period. Include places and dates. If homes visited, obtain information as in "b" above. If travel out of country, include mode of travel. If possible, identify suspect food or beverage



ingested, where it was obtained and how contaminated.

- e. If case occurred in commercial travel group, investigate all members of group.

CONTROL OF CASE, CONTACTS & CARRIERS

Contact on day of report to determine if sensitive occupation or situation (SOS) involved; otherwise, investigate within 3 days. For definition of SOS, see B-73, **Part I**, Section 12. Individuals living in a group setting, including a skilled nursing or intermediate care facility, are considered to be in a sensitive situation.

Protection of the public health is a priority in management of SOS. Reasonable efforts to contact the case must be made by the PHN. If unable to locate or if case is uncooperative, refer to PHI in a timely manner to assist in locating case and determining SOS.

Public Health Nursing Protocol:

Home visit is required – a face to face interview is required

Refer to “Public Health Nursing Home Visit REQUIRED Algorithm” (B-73 Part IV Public Health Nursing Home Visit Protocol).

Case cannot be released from supervision until cleared according to public health law.

Prior written approval from the Area District Medical Director, after consultation with ACDC is required before any admission to a skilled nursing or intermediate care facility (B-73, **Part II**, Section 2A).

CASE:

1. **Precautions:** Blood/body fluids and enteric until clinical recovery.
2. **Sensitive Occupation or Situation:** Remove from work until 3 consecutive feces and urine cultures taken at least 24 hours apart, **beginning at least 1 week after discontinuation of specific therapy and not earlier than 1 month from onset**, are negative for *S. typhi* at Public Health Laboratories.
3. **Non-sensitive Occupation or Situation: As above** except do not remove from work.

CONTACTS:

Household members or persons who share a common source.

1. Sensitive Occupation or Situations:

- a. **Symptomatic:** Confirm diagnosis. Remove from work. If positive, follow as a case. If negative, remain removed from work until 2 consecutive feces and urine cultures, taken at least 24 hours apart, are negative. Then, weekly negative specimens of both feces and urine until case released or contact with case broken. If contact to carrier, consult ACDC.
- b. **Asymptomatic:** Remove from work until 2 consecutive feces and urine cultures, taken at least 24 hours apart, are negative. Then, may return to work with weekly negative specimens of both feces and urine until case released or contact with case broken. If contact to carrier, consult ACDC.

2. **Non-sensitive Occupations:** May continue to work. Obtain 2 consecutive feces and urine cultures at least 24 hours apart for additional case finding or identification of carriers.

PREVENTION-EDUCATION

1. Stress hand washing, personal hygiene and the need to keep fingernails short and clean.
2. Dispose of urine, feces, and fomites in a safe manner.
3. Prepare, store, and refrigerate foods properly.
4. Identify, supervise, and educate typhoid carriers (See TYPHOID CARRIER).
5. Typhoid Vaccination: Vaccination is not 100% effective and is not a substitute for careful selection of food /drink especially in areas not on the usual tourist itineraries. Tourists may wish to consider vaccination. There are currently three typhoid vaccines available in the United States: an oral live-attenuated, a parenteral heat-phenol-inactivated vaccine, and a capsular polysaccharide vaccine. All vaccines have approximately 50-80% protection depending on the degree of exposure.



DIAGNOSTIC PROCEDURES

Container: Enterics.

Laboratory Form: Test Requisition Form H-3021 (Rev. 9/07)

Examination Requested: *Salmonella typhi*
(indicate if acute case or suspected carrier).

Material: Feces and urine; follow instructions provided with the container.

Storage: Protect from excessive heat. Maintain at room temperature.

Remarks: Check with the Public Health Laboratory regarding sensitivity testing.