

Enteric Illness

Typhoid Fever

Date Reviewed: June, 2015

Section: 3-200

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Notification Timeline:

From Lab/Practitioner to Public Health: Immediate.

From Public Health to Ministry of Health: Within 2 weeks (or immediately if an outbreak is suspected).

Public Health Follow-up Timeline: Within 24-48 hours.

Information

Case Definition

Confirmed Case (Public Health Agency of Canada, 2009)	Clinical illness ¹ with laboratory confirmation of infection: isolation of <i>Salmonella enterica</i> serovar Typhi from an appropriate clinical specimen.
Probable Case	Clinical illness ¹ in a person who is epidemiologically linked to a confirmed case.
Chronic Carrier (Health Protection Agency, 2012)	Individuals whose stool specimens continue to be positive for 12 months.
¹ Clinical illness is characterized by insidious onset of sustained fever, headache, malaise, anorexia, splenomegaly, constipation or diarrhea, and nonproductive cough. Relative bradycardia and rose spots (less than 25% of individuals) may be seen. Atypical presentations occur, and the severity of the illness varies. Chronic carrier state (< 5% of population) is usually linked to the biliary or urinary tract and should be distinguished from short-term fecal carriage.	

Causative Agent

Salmonella enterica serovar Typhi (commonly known as *S. typhi*) is a rod-shaped, non-sporeforming, gram-negative bacteria. Phage typing can further identify types of *S. typhi*.

Symptoms

- S. typhi* can cause a protracted bacteremic illness.
- Typically, the onset of illness is gradual, with manifestations such as sustained fever, and constitutional symptoms (i.e., marked headache, malaise, anorexia, and lethargy).
- Additional manifestations include abdominal pain and tenderness, hepatomegaly, splenomegaly, non-productive cough in the early stage of the illness, relative bradycardia, rose spots on the trunk, and change in mental status.

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- Enteric fever can manifest as a mild, nondescript febrile illness in young children, in whom sustained or intermittent bacteremia can occur.
 - Constipation is more common than diarrhea in adults (Heymann, 2015).
 - Unapparent or mild illnesses occur, especially in endemic areas; 60%-90% of patients with typhoid fever do not receive medical attention or are treated as outpatients. Mild cases show no systemic involvement; the clinical picture is that of a gastroenteritis. Non-sweating fevers, mental dullness, slight deafness and parotitis may occur (Heymann, 2015).
 - Peyer patches in the ileum can ulcerate, with intestinal hemorrhage or perforation (about 3% of cases), especially late in untreated cases. Severe forms with altered mental status have been associated with high case-fatality rates (Heymann, 2015).
 - Depending on the antimicrobials used, 15%-20% of patients may experience relapses (generally milder than the initial clinical illness) (Heymann, 2015).
 - The case-fatality rate of 10%-20% observed in the pre-antibiotic era can fall below 1% with prompt antimicrobial therapy.

Incubation Period

The incubation period depends on the inoculum size and on host factors; from 3 to 60 days, typically between 8 to 14 days (Heymann, 2015).

Reservoir/Source

S. typhi is found only in humans. Although uncommon in Canada¹, typhoid fever is endemic in many countries. A carrier state may follow acute illness, mild or even sub-clinical infections.

- In most parts of the world, short-term fecal carriers are more common than urinary carriers. Family contacts may be transient or permanent carriers.
- The chronic carrier state is most common (2%-5%) among persons infected during middle age, especially women; carriers frequently have biliary tract abnormalities including gallstones, with *S. typhi* located in the gallbladder. The chronic urinary carrier state may occur with schistosome infections or kidney stones (Heymann, 2015).

Mode of Transmission (Heymann, 2015)

- Ingestion of food and water contaminated by feces and urine of patients and carriers.

¹ Usually in returning international travellers.

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- Important vehicles in some countries include shellfish (particularly oysters) from sewage-contaminated waters, raw fruit and vegetables grown in soil fertilized with fecal material and contaminated milk/milk products (usually contaminated through hands of carriers), and untreated drinking water.
 - Flies may contaminate foods in which the organism then multiplies to infective doses (although less than for paratyphoid bacteria).
 - Epidemiological data suggest that waterborne transmission of *S. typhi* usually involves small inocula, however food-borne transmission is associated with large inocula and high attack rates over short periods.
 - Sexual transmission of typhoid fever from an asymptomatic carrier has been documented.

Individuals and Occupations with High Risk of Transmission

- Food handlers whose work involves:
 - touching unwrapped food to be consumed raw or without further cooking; and/or
 - handling equipment or utensils that touch unwrapped food to be consumed raw or without further cooking.
- Healthcare, daycare or other staff who serve food to highly susceptible patients or persons, in whom an intestinal infection would have particularly serious consequences.
- Individuals involved in patient care or care of young children, elderly, or dependent persons.
- Children attending daycares (or similar facilities) who are diapered or unable to implement good standards of personal hygiene.
- Older children or adults who are unable to implement good standards of personal hygiene (e.g., mentally or physically challenged).

Period of Communicability

Typhoid is communicable as long as the bacilli appear in excreta, usually from the first week throughout convalescence; variable thereafter. About 10% of untreated typhoid fever patients will discharge bacilli for three months after onset of symptoms (Heymann, 2015).²

² Treated and untreated cases can become chronic carriers.

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Specimen Collection and Transport

S. typhi can be isolated from the blood early in the disease, and from urine and feces after the first week. The sensitivity of blood culture may be less than 70%, particularly if antibiotics have been administered prior to collection of specimens (Farooqui et al, 1991; Gilman et al, 1975).

Bone marrow culture provides the best bacteriologic confirmation (90% to 95% recovery) even in persons who have already received antibiotics (Heymann, 2015). Culture of rose spots, if present, also has a higher diagnostic yield than blood culture (Gilman et al., 1975).

For stool samples, 2 gm (or 2 mL) of stool should be collected without contaminating with urine. It should immediately be added to Cary-Blair transport medium and mixed thoroughly.

Bloody and/or liquid stools collected within 48 hours of onset of symptoms have the highest yield of enteric pathogens (collection of stool beyond 6 days results in poor yields). One stool specimen for three consecutive days should be collected and submitted (Saskatchewan Disease Control Laboratory, 2009).

Serology is unreliable (Wain et al, 2015).

Refer to the Saskatchewan Disease Control Laboratory Compendium of Tests for details at <http://sdcl-testviewer.ehealthsask.ca>.

Methods of Control/Role of Investigator

Prevention and Education

Refer to the [Enteric Introduction and General Considerations](#) section of the manual that highlights topics for client education that should be considered as well as provides information on high-risk groups and activities.

Education

- Educate the public about the importance of personal hygiene including handwashing, safe food handling and safe drinking water.

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- Educate food handlers about the importance of hand washing, refrigeration, proper cooking practices, avoiding recontamination, maintaining a sanitary kitchen, and protecting prepared foods from contamination (including controlling contamination by flies).
 - Safer sex practices.
 - Educate about safe recreational water sources and the importance of not swallowing water from ponds, lakes, or untreated pools.
 - Educate individuals about the importance of not going to work or sending children to daycare when they are experiencing diarrheal illness.
 - Counselling of susceptible individuals traveling to intermediate or high endemic areas regarding safeguarding themselves from infection.

Immunization

- Travellers should see travel advice and vaccines from an appropriate travel health consultant.
- Typhoid immunization is recommended for laboratory personnel regularly working with *S. typhi* in clinical or research laboratories. Technicians working in routine microbiology laboratories do not need to be vaccinated.

Management

1. Case

History

Efforts should be made to identify the source by taking into consideration the reservoir, mode of transmission, incubation period, and the onset of illness.

Assessment should include:

- history of travel to endemic countries³ or history of contact with individuals who have travelled to endemic countries or are infected with *S. typhi*;
- recent immigration from an endemic country;
- food history including consumption of shellfish;
- history of high risk sexual practices especially those involving contact with feces;
- history of residing in areas with poor sanitation including improper water treatment and sewage disposal;
- determine immunization history;

³ There is a higher risk of typhoid fever in countries or areas with low standards of hygiene and water supply facilities.

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- identify underlying medical conditions (i.e., decreased gastric acidity, HIV infection, organ transplantation, and lymphoproliferative disease).

Determine risk of transmission and exposure to others:

- determine if attendance at daycare/dayhome or other type of institutional contact;
- determine if case falls into category of [individuals and occupations with high risk of transmission](#).

Identify household and other close contacts (e.g., travel companions). See [Contact Definition](#).

Immunization

- Routine typhoid immunization is not recommended in Canada.
- Refer to the Canadian Immunization Guide for additional information about typhoid vaccines.⁴

Education

Cases should be informed about the modes of disease transmission and information must be shared as follows:

- the importance of hand washing should be stressed;
- the case must not prepare food for others during their period of communicability;
- the case may be excluded from work – see [Exclusion](#);
- safer sex practices.

Treatment/Supportive Therapy

- Treatment choices are governed by the most recent guidelines.
- Antibiotic resistance is increasing. Antibiotic treatment should be based on antimicrobial susceptibility testing.
- Management of chronic carriers should be discussed with an infectious disease specialist as required.
- The public health practitioner should direct any questions regarding the current treatment protocols to the physician/nurse practitioner or Medical Health Officer. See [Appendix H - Sources for Clinical Treatment Guidelines](#).
- Patients with concurrent schistosomiasis must also be treated with praziquantel to eliminate possible carriage of *S. typhi* bacilli by the schistosomes.

⁴ <http://www.phac-aspc.gc.ca/publicat/cig-gci/p04-typh-eng.php>.

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Exclusion⁵

Cases should be excluded until three consecutive negative stool specimens (obtained 24-48 hours apart) have been provided. The stool specimens should not be collected until:

- 24 hours after appropriate antibiotic therapy has been completed
- AND
- stools have returned to normal for the individual.

If one of the stool specimens is positive for *S. typhi*, the individual should be excluded from [high risk occupations](#) and be treated as a convalescent carrier (the same treatment as a case).

Following treatment of the convalescent carrier, monthly samples should be obtained. If any one of the monthly specimens are negative, two more negative specimens are required (obtained 24-48 hours apart) before the exclusion criteria is lifted.

The case will be considered a chronic carrier if samples continue to be positive for 12 months. Exclusion from high risk occupations is warranted. Redeployment from high risk activities/occupations should be considered.

Referrals

Refer to public health inspection if source cannot be identified and transmission continues.

Referral to an infectious disease specialist may be considered.

II. Contacts/Contact Investigation

Contact Definition

Contacts include:

- persons living in the household;
- individuals exposed to the same source (i.e., travel companions to the endemic area);
- sexual contacts;
- children and childcare workers in a daycare/dayhome;

⁵ The exclusion criteria for cases infected with typhoid and their contacts is inconsistent in the literature and in published guidelines. The approach incorporated in this manual takes into consideration practical aspects as well as the public health implications. References include Heymann (2015), British Columbia Center for Disease Control, Alberta Health, and Health Protection Agency.

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- healthcare workers who have provided personal care for a case.

Education

- Advise contacts of the importance of seeking medical care should symptoms develop.
- Advise contacts of prevention and control measures and the requirement to follow exclusion criteria as applicable.

Prophylaxis/Immunization

Selective immunization should be considered for people with ongoing household or intimate exposure to an *S. typhi* carrier (Canadian Immunization Guide, 2012).

Exclusion

- Symptomatic contacts should be managed and excluded as a case.
- Asymptomatic contacts involved in [high-risk occupations](#) and settings should submit a stool specimen and be excluded from these settings until results of stool specimen are available.
 - Those with positive stool specimens should be managed and excluded as a case.
 - Those with negative stool specimens require no further exclusion.

III. Environment

Child Care Centre Control Measures

- Strict enforcement of infection control measures. Refer to Saskatchewan Ministry of Health Infection Control Manual for Day Care Facilities.⁶
- Interview the operator of the daycare and check attendance records to identify suspect cases that may have occurred during the previous month.
- If other confirmed or suspected cases have occurred, collect stool specimens from all staff members and children who are symptomatic or who have had diarrhea during the previous 2 weeks.
- If other possible cases are identified, facility to be inspected by public health inspector.
- Instruct the operator to notify public health immediately if new cases of diarrhea occur.

⁶ <http://www.saskatchewan.ca/live/births-deaths-marriages-and-divorces/starting-a-family/early-learning-and-child-care/child-care>.

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- Call or visit once each week for 2 weeks after onset of the last case to verify that surveillance and appropriate hygienic measures are being carried out.

Institutional Control Measures

- Consult with the infection control practitioner for the facility. Determine if there have been any unusual incidents of typhoid-compatible illness within the past month. If so, investigation for possible common-source outbreaks or any continuing sources of exposure.
- In addition to standard precautions, contact precautions are used with a case of *S. typhi*.

Epidemic Measures

- Promptly report any groups of cases of acute diarrheal disease to the local medical health officer, even in the absence of specific identification of the causal agent. Immediate reporting to the Ministry is required if a cluster or outbreak is suspected.
- Investigate water, food, and milk supplies.
- Use general sanitation measures.
- Prophylactic administration of antibiotics is not recommended.
- Typhoid vaccine is not recommended for the control or containment of outbreaks in Canada.
- Publicize the importance of handwashing after defecation.

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Typhoid/Paratyphoid Data Collection Worksheet

Please complete all sections.

Panorama QA complete: ☐ Yes ☐ No

Initials: _____

Panorama Client ID: _____

Panorama Investigation ID: _____

A) CLIENT INFORMATION

LHN -> SUBJECT -> CLIENT DETAILS -> PERSONAL INFORMATION

Last Name: _____	First Name: and Middle Name: _____	Alternate Name (Goes by): _____
DOB: YYYY / MM / DD Age: _____	Health Card Province: _____ Health Card Number (PHN): _____	Preferred Communication Method: (specify - i.e. home phone, text): Email Address: ☐ Work ☐ Personal
Phone #: ☐ Primary Home: ☐ Mobile contact: ☐ Workplace:		
Place of Employment/School: _____	Gender: ☐ Male ☐ Female ☐ Other ☐ Unknown	
Alternate Contact: _____ Relationship: _____ Alt. Contact phone: _____	Address Type: ☐ No fixed ☐ Postal Address ☐ Primary Home ☐ Temporary ☐ Legal Land Description Mailing (Postal address): Street Address or FN Community (Primary Home): Address at time of infection if not the same:	

B) INVESTIGATION INFORMATION

LHN-> SUBJECT SUMMARY-> ENTERIC-> ENCOUNTER GROUP->CREATE INVESTIGATION

Disease Summary Classification:	Date	Classification:	Date	LAB TEST INFORMATION:								
CASE		CONTACT		Date specimen collected:								
☐ Confirmed	YYYY / MM / DD	☐ Contact	YYYY / MM / DD	YYYY / MM / DD								
☐ Does Not Meet Case	YYYY / MM / DD	☐ Not a Contact	YYYY / MM / DD	Specimen type:								
☐ Person Under Investigation	YYYY / MM / DD	☐ Person Under Investigation	YYYY / MM / DD	☐ Blood								
☐ Probable	YYYY / MM / DD			☐ Urine								
				☐ Stool								
Disposition: FOLLOW UP: <table style="width: 100%; margin-top: 5px;"> <tr> <td style="width: 50%;">☐ In progress YYYY / MM / DD</td> <td style="width: 50%;">☐ Complete YYYY / MM / DD</td> </tr> <tr> <td>☐ Incomplete - Declined YYYY / MM / DD</td> <td>☐ Not required YYYY / MM / DD</td> </tr> <tr> <td>☐ Incomplete - Lost contact YYYY / MM / DD</td> <td>☐ Referred - Out of province YYYY / MM / DD</td> </tr> <tr> <td>☐ Incomplete - Unable to locate YYYY / MM / DD</td> <td>(specify where)</td> </tr> </table>					☐ In progress YYYY / MM / DD	☐ Complete YYYY / MM / DD	☐ Incomplete - Declined YYYY / MM / DD	☐ Not required YYYY / MM / DD	☐ Incomplete - Lost contact YYYY / MM / DD	☐ Referred - Out of province YYYY / MM / DD	☐ Incomplete - Unable to locate YYYY / MM / DD	(specify where)
☐ In progress YYYY / MM / DD	☐ Complete YYYY / MM / DD											
☐ Incomplete - Declined YYYY / MM / DD	☐ Not required YYYY / MM / DD											
☐ Incomplete - Lost contact YYYY / MM / DD	☐ Referred - Out of province YYYY / MM / DD											
☐ Incomplete - Unable to locate YYYY / MM / DD	(specify where)											
REPORTING NOTIFICATION Name of Attending Physician or Nurse: _____			Location: _____									
Physician/Nurse Phone number: _____			Date Received (Public Health): YYYY / MM / DD									
Type of Reporting Source: ☐ Health Care Facility ☐ Lab Report ☐ Nurse Practitioner ☐ Physician ☐ Other _____												

Salmonellosis Data Collection Worksheet

Please complete all sections.

Panorama Client ID: _____

Panorama Investigation ID: _____

C) DISEASE EVENT HISTORY

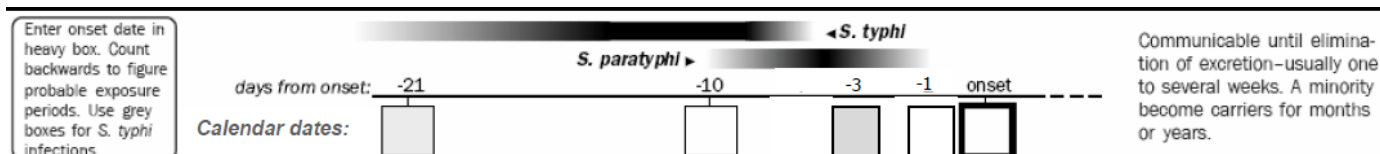
LHN-> INVESTIGATION->DISEASE SUMMARY (UPDATE)->DISEASE EVENT HISTORY

Site / Presentation: ☐ Enteric fever ☐ Gastroenteritis ☐ Other
Staging: ☐ Acute ☐ Carrier

D) SIGNS & SYMPTOMS (Bold text = part of case definition)

LHN-> INVESTIGATION-> SIGNS & SYMPTOMS

Description	No	Yes – Date of onset	Description	No	Yes - Date of onset
Dactylitis (swollen digit)		YYYY / MMM / DD	Loss of appetite (anorexia)		YYYY / MMM / DD
Dehydration		YYYY / MMM / DD	Malaise		YYYY / MMM / DD
Diarrhea		YYYY / MMM / DD	Neurologic - delirium		YYYY / MMM / DD
Fever		YYYY / MMM / DD	Pain - abdominal		YYYY / MMM / DD
Fever - insidious onset		YYYY / MMM / DD	Parotid gland - inflammation (parotitis)		YYYY / MMM / DD
Headache		YYYY / MMM / DD	Rash - rose spots on trunk		YYYY / MMM / DD
Hearing loss			Sepsis (e.g. bactremia, septicemia, etc.)		
Hepatomegaly		YYYY / MMM / DD	Splenomegaly		YYYY / MMM / DD
Lethargy (fatigue, drowsiness, weakness, etc)		YYYY / MMM / DD			YYYY / MMM / DD



E) INCUBATION AND COMMUNICABILITY

LHN-> INVESTIGATION->INCUBATION & COMMUNICABILITY

Incubation for Case (period for acquisition): Earliest Possible Exposure Date: YYYY / MM / DD Latest Possible Exposure Date: YYYY / MM / DD	
Exposure Calculation details:	
Communicability for Case (period for transmission): Earliest Possible Communicability Date: YYYY / MM / DD Latest Possible Communicability Date: YYYY / MM / DD	
Communicability Calculation Details:	

F) RISK FACTORS N—No, NA—Not asked, U—Unknown

LHN-> SUBJECT->RISK FACTORS

DESCRIPTION	Yes	N, NA, U	Start date	Add'l Info
Chronic Medical condition - Biliary tract disease			YYYY / MM/DD	
Chronic medical condition - Liver disease			YYYY / MM/DD	
Chronic Medical Condition - Schistosomiasis			YYYY / MM/DD	
Contact - At risk population (international travellers or immigrants)			YYYY / MM/DD	
Contact - Carrier			YYYY / MM/DD	
Contact - Persons with similar symptoms			YYYY / MM/DD	
Contact to a known case (Add'l Info)			YYYY / MM/DD	
Immunocompromised - Related to underlying disease or treatment (Add'l Info)			YYYY / MM/DD	
Occupation - Child Care Worker			YYYY / MM/DD	

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Please complete all sections.

Panorama Client ID: _____

Panorama Investigation ID: _____

DESCRIPTION	Yes	N, NA, U	Start date	Add'l Info
Occupation - Food Handler			YYYY / MM/DD	
Occupation – Health Care Worker IOM Risk Factor			YYYY / MM/DD	
Travel - Outside of Canada (Add'l Info)			YYYY / MM/DD	
Travel - Outside of Saskatchewan, but within Canada (Add'l Info)			YYYY / MM/DD	
Water - Bottled water (Add'l Info)			YYYY / MM/DD	
Water – Public water system (Add'l Info)			YYYY / MM/DD	
Water - Private well or system (Add'l Info)			YYYY / MM/DD	
Water - Untreated water (Add'l Info)			YYYY / MM/DD	
Water (Recreational) – Pond, stream, lake, river, ocean (Add'l Info)			YYYY / MM/DD	
Water (Recreational) – Private (swimming pool/whirl pool) (Add'l Info)			YYYY / MM/DD	
Water (Recreational) – Public (swimming/paddling pool/whirl pool) (Add'l Info)			YYYY / MM/DD	

G) USER DEFINED FORM (SEE ATTACHED)

LHN-> INVESTIGATION-> INVESTIGATION DETAILS -> LINKS AND ATTACHMENTS -> TYPHOID FORM

H) COMPLICATIONS

LHN-> INVESTIGATION->COMPLICATIONS

Description	Yes Date of onset	Description	Yes Date of onset
Biliary tract abnormalities	YYYY / MMM / DD	Kidney stones	YYYY / MMM / DD
Cardiac - endocarditis	YYYY / MMM / DD	Meningitis	YYYY / MMM / DD
Encephalitis	YYYY / MMM / DD	Pancreatitis	YYYY / MMM / DD
Gallstones	YYYY / MMM / DD	Perforation - intestinal	YYYY / MMM / DD
Hemorrhage - intestinal	YYYY / MMM / DD	Schistosome infections	YYYY / MMM / DD
Other complications			

I) TREATMENT

LHN-> INVESTIGATION-> MEDICATIONS->MEDICATIONS SUMMARY

Medication (<i>Panorama = Other Meds</i>) : _____
Prescribed by: _____ Started on: YYYY / MM / DD

J) INTERVENTION

LHN-> INVESTIGATION->TREATMENT & INTERVENTIONS->INTERVENTION SUMMARY

Intervention Type and Sub Type:			
Assessment: Investigator name ☐ Assessed for contacts YYYY / MM / DD	Exclusion: Investigator name ☐ Daycare YYYY / MM / DD ☐ Preschool YYYY / MM / DD ☐ School YYYY / MM / DD ☐ Work YYYY / MM / DD		
Communication: ☐ Other communication (See Investigator Notes) YYYY / MM / DD Investigator name ☐ Letter (See Document Management) YYYY / MM / DD Investigator name	Outbreak Declared YYYY / MM / DD Investigator name		
General: Investigator name ☐ Disease-Info/Prev-Control YYYY/ MM / DD ☐ Disease-Info/Prev-Cont/Assess'd for Contacts YYYY/ MM / DD	Public Health Order: ☐ Order (specify) _____ YYYY / MM / DD Investigator name		
Education/counselling: ☐ Prevention/Control measures YYYY / MM / DD ☐ Disease information provided YYYY / MM / DD Investigator name	Referral: ☐ Canadian food inspection agency YYYY / MM / DD Investigator name		

Salmonellosis Data Collection Worksheet

Please complete all sections.

Panorama Client ID: _____
Panorama Investigation ID: _____

Environmental Health: YYYY / MM / DD ☐ Restaurant inspection Investigator name _____		Testing: Investigator name _____ ☐ Stool testing recommended (e.g. for follow-up) YYYY / MM / DD ☐ Laboratory testing recommended YYYY / MM / DD	
Immunization: Investigator name _____ ☐ Eligible immunizations recommended YYYY / MM / DD		Other Investigation Findings: ☐ Investigator Notes ☐ Document Management Notes	

Date	Intervention subtype	Comments	Next follow-up Date	Initials
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	

K) OUTCOMES

LHN-> INVESTIGATION-> OUTCOMES

☐ Not yet recovered/recovering YYYY / MM / DD ☐ Recovered YYYY / MM / DD ☐ Fatal YYYY / MM / DD	☐ ICU/intensive medical care YYYY / MM / DD ☐ Intubation /ventilation YYYY / MM / DD ☐ Other _____ YYYY / MM / DD	☐ Hospitalization YYYY / MM / DD ☐ Unknown YYYY / MM / DD
Cause of Death: (if Fatal was selected) _____		

L) EXPOSURES

Acquisition Event

LHN-> INVESTIGATION-> EXPOSURE SUMMARY-> ACQUISITION QUICK ENTRY

Acquisition Event ID: _____	
Exposure Name: _____	
Acquisition Start YYYY / MM / DD to Acquisition End: YYYY / MM / DD	
Location Name: _____	
Setting Type ☐ Travel ☐ Exposure or consumption of potentially contaminated food or water ☐ Most likely source	

TRANSMISSION Events

LHN -> INVESTIGATION-> EXPOSURE SUMMARY -> TRANSMISSION EVENT SUMMARY -> QUICK ENTRY

Transmission Event ID	Exposure Name	Setting type	Date/Time	# of contacts
		☐ Food service establishment ☐ Health Care setting ☐ Public facilities ☐ Household Exposure		
		☐ Food service establishment ☐ Health Care setting ☐ Public facilities ☐ Household Exposure		
		☐ Food service establishment ☐ Health Care setting ☐ Public facilities ☐ Household Exposure		
	Typhoid/paratyphoid Contacts – Inv ID# _____	☐ Multiple Settings	YYYY / MM / DD to YYYY / MM / DD	

M) TOTAL NUMBER OF CONTACTS

LHN -> INVESTIGATION-> EXPOSURE SUMMARY -> TRANSMISSION EVENT SUMMARY -> TE HYPERLINK -> UNKNOWN/ANONYMOUS CONTACTS

Anonymous contacts: _____ (total number of individuals exposed)

Initial Report completed by: _____	Date initial report completed: YYYY / MM / DD
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Typhoid Routine Questionnaire - August 2018



Record type:

Record ID:

Record Name:

In this form the answers (Yes, Probably, No, and Don't know) are from the perspective of the person being interviewed. "Probably" can be used if the client thinks he/she may have eaten this food or usually eats this food, but is unsure if it was eaten during the period in question. For typhoid, if the case traveled outside of Canada during the entire incubation period (3-60 days before the onset of the first symptom) do not fill out this section. If the case traveled outside of Canada for part of the incubation period, fill out the section below for only that part of the incubation period in which he/she was in Canada.

Diet and Allergies[Show/Hide](#)

Are you a vegetarian?

- ☐ Yes
☐ No
☐ Don't know
☐ Not asked

Do you have any food Allergies / avoidances / special diet?

- ☐ Yes
☐ No
☐ Don't know
☐ Not asked

If yes, specify details

Food Exposures[Show/Hide](#)

In the (Typhoid 3-21 days or Paratyphoid 10 days) prior to onset, did you eat...

Any raw/unpasteurized milk or milk products?

- ☐ Yes
☐ Probably
☐ No
☐ Don't know
☐ None of the Above

If yes, specify details (E.g., where consumed, type, brand, location)

☐ Yes



Any raw fruits (e.g. sugar cane juice, mamey (a south/central American fruit) or other exotic product)?

☐ Probably
☐ No
☐ Don't know
☐ None of the Above

If yes, specify details (E.g., where consumed, type, brand, location)

Any raw vegetables?

☐ Yes
☐ Probably
☐ No
☐ Don't know
☐ None of the Above

If yes, specify details (E.g., where consumed, type, brand, location)

Any raw/undercooked shellfish (e.g. oysters)?

☐ Yes
☐ Probably
☐ No
☐ Don't know
☐ None of the Above

If yes, specify details (E.g., where consumed, type, brand, location)

Any imported foods?

☐ Yes
☐ Probably
☐ No
☐ Don't know
☐ None of the Above

If yes, specify details (E.g., where consumed, type, brand, location)

Social Functions

[Show/Hide](#)

Typhoid, in the 3-21 days (10 days for Paratyphoid) prior to onset, did you attend any social functions (e.g. parties,

☐ Yes
☐ No



weddings, showers, potlucks, community events)?

☐ Don't know

☐ Not asked

Click the Add button to add social event/function details

Add

Restaurants

[Show/Hide](#)

Typhoid, in the 3-21 days (10 days for Paratyphoid) prior to onset, did you attend any restaurants (including take-out, cafeteria, bakery, deli, kiosk)?

☐ Yes

☐ No

☐ Don't know

☐ Not asked

Click the Add button to add restaurant details

Add

Grocery Stores

[Show/Hide](#)

Typhoid, in the past 3 - 21 days (10 days for Paratyphoid) prior to onset, did you visit grocery stores for foods consumed during the incubation period?

☐ Yes

☐ No

☐ Don't know

☐ Not asked

Click the Add button to add grocery store details

Add

Loyalty card/store issued card (for outbreak investigation only)

[Show/Hide](#)

This section is only for use in some specific outbreak situations, with client consent. It is not a routine question for sporadic cases.

☐ Yes

Has the client given consent (written or verbal)?

☐ No

☐ Not applicable

Loyalty card details (names and numbers)

**Interviewer Details and Notes**[Show/Hide](#)

Interviewer Name

Interview date

9/26/2018

Any special notes regarding this interview

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