

**Notification Timeline:**

**From Lab/Practitioner to Public Health:** Within 48 hours.

**From Public Health to Saskatchewan Ministry of Health:** Within 2 weeks (or immediate if an outbreak is suspected or anticipated).

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

**Public Health Purpose for Notification of Salmonellosis** (adapted from Massachusetts, 2016)

- To identify whether the case may be a source of infection for other persons (e.g., a diapered child, daycare attendee, or food handler), and if so, to prevent further transmission.
- To identify transmission sources of public health concern (e.g., a restaurant or a commercially distributed food product), and to stop transmission from such sources.
- To monitor the effectiveness of prevention and control measures;
- To make timely and evidence informed actions on outbreaks; and
- To inform the public and medical community about salmonellosis.

**Surveillance Case Definition<sup>1</sup>** (Public Health Agency of Canada, May 2008)

|                       |   |
|-----------------------|---|
| <b>Confirmed Case</b> | Laboratory confirmation of infection with or without clinical illness: <ul style="list-style-type: none"> <li>• isolation of <i>Salmonella</i> sp. (excluding <i>Salmonella typhi</i> or paratyphi) from an appropriate clinical specimen (e.g., sterile site, deep tissue wounds, stool, vomit or urine).</li> </ul> |
| <b>Probable Case</b>  | Clinical illness* in a person who is epidemiologically linked to a confirmed case.  |

\*Clinical illness is characterized by headache, diarrhea, abdominal pain, nausea, fever and sometimes vomiting. Asymptomatic infections may occur, and the organism may cause extra-intestinal infections.

<sup>1</sup> Surveillance case definitions ensure uniform reporting to allow comparability of surveillance data. The definition is not intended to be used for clinical or laboratory diagnosis or management of cases.

## Epidemiology and Occurrence

UNDER CONSTRUCTION

### Additional Background Information

#### Causative Agent

- *Salmonella* organisms are gram-negative bacilli that belong to the *Enterobacteriaceae* family.
- The genus *Salmonella* has three recognized species: *S. enterica*, *S. bongori*, and *S. subterranean* with six main subspecies: *enterica* (I), *salamae* (II), *arizonae* (IIIa), *diarizonae* (IIIb), *houtenae* (IV), and *indica* (VI) (US Food and Drug Administration, 2012).
- There are over 2500 serotypes identified. Typhimurium and Enteritidis are the most commonly identified serotypes in Canada. A small number of serotypes account for the majority of confirmed cases in Saskatchewan.
- The infective dose of *S. enterica*, especially for children, is not necessarily high. The probability model suggests that a 10-20% probability for infection with a dose of 100 organisms, and a 60-80% probability for infection at 1,000,000 organisms (Heymann, 2015).

#### Reservoir/Source

The principal reservoirs include poultry (including chicks and other baby poultry), swine, cattle, reptiles (e.g., iguanas, turtles, and snakes), dogs, cats, hamsters, hedgehogs, frogs, and salamanders (Heymann, 2015).

#### Symptoms

- Generally, causes an inflammation of the small intestine.
- Severity of symptoms may vary; depends upon age and health of host, ingested dose and serotype of organism.
- Sudden onset of headache, abdominal pain, diarrhea, fever, nausea and sometimes vomiting.
- Acute symptoms may last for 1-2 days or may be prolonged, depending on host factors, and ingested dose and strain characteristics of organism. Generally, symptoms will resolve within 4-7 days.
- Dehydration and electrolyte imbalances which may lead to death in the very young, the elderly and immunocompromised individuals.

- Bacteremia (presence of viable bacteria in the circulating blood) and septecemia (bacteria in the blood that often occurs with severe infections) may occur.
- Septecemia in people with sickle-cell disease increases the risk of focal systemic infections, e.g., osteomyelitis.

### Complications

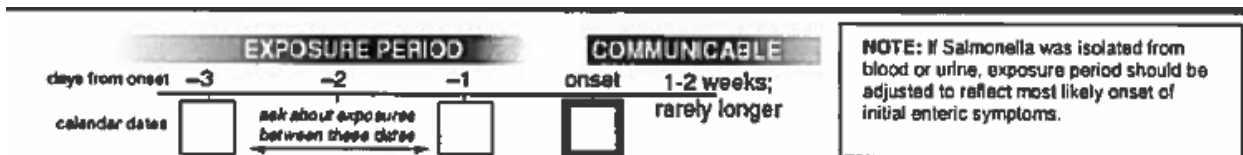
- Occasionally, the organism may localize in any tissue of the body, produce abscesses, and cause septic arthritis, cholecystitis, endocarditis, meningitis, pericarditis, pneumonia, pyoderma, or pyelonephritis (Heymann, 2008).
- Reactive arthritis (an autoimmune response) may follow 3-4 weeks after onset of acute symptoms (U.S. Food and Drug Administration, 2012).

### Incubation Period

Usually 12-36 hours, but ranges from 6-72 hours. Longer incubation periods of up to 16 days have been documented, and may not be uncommon following low dose ingestion (Heymann, 2015).

### Period of Communicability

- Throughout the course of infection; extremely variable, usually several days to several weeks.
- Asymptomatic carrier state may continue for months, especially in infants.
- Depending on the serotypes, approximately 1% of infected adults and 5% of children under 5 may excrete the organism for 1 year (Heymann, 2015).



### Mode of Transmission

- Ingestion of organisms in improperly cooked food (including undercooked eggs/egg products), unpasteurized milk or contaminated drinking water.
- Contact with infected pets and/or their environment as well as contaminated pet treats.
- Person-to-person via fecal-oral transmission is possible, especially when diarrhea is present (Heymann, 2015).

### **Risk Groups/Risk Factors**

Individuals most vulnerable to the disease include (Heymann, 2015):

- achlorhydria (low stomach acid);
- current medication (e.g. antacid treatment, broad-spectrum antibiotics)
- gastrointestinal surgery;
- neoplastic disease;
- malnutrition;
- sickle-cell disease;
- individuals with weakened immune systems due to age (e.g., very young, elderly), medical conditions (e.g., HIV) or medications (e.g., chemotherapy or immunosuppressive treatment) (U.S. Food and Drug Administration, 2012).

### **Specimen Collection and Transport**

- Stool specimen in Cary-Blair transport medium.
- Blood culture if symptoms of septicaemia present.

Refer to the Roy Romanow Provincial Laboratory Compendium of Tests for details at <https://rrpl-testviewer.ehealthsask.ca/>.

### **Public Health Investigation**

#### **I. Case**

Refer to [Attachment – Salmonellosis Data Collection Worksheet](#) to assist in follow-up.

#### **History**

- Onset of illness – to determine incubation period and period of communicability which helps to identify the possible source and contacts to be followed.
- In the three days prior to onset of illness:
  - Identify history of travel (during the incubation period), especially to areas with inadequate sanitation, water and sewage treatment.
  - Exposure to someone else with similar symptoms.
  - Exposure to farm animals and pets including reptiles and amphibians or pet foods and treats, a petting zoo. Consider pets with diarrhea as a possible source of *Salmonella*. Pets may also have fecal matter on their hair, fur, feathers, or skin that is transferred to hands when they are touched.

- 
- 
- Obtain a detailed food history including recent ingestion of potentially contaminated food such as raw or undercooked eggs, unpasteurized milk, grocery produce including tomatoes, melons, apple cider, alfalfa sprouts, peanut butter or unpasteurized milk (complete the [User Defined Form](#)).
  - Assess for safe food handling procedures (e.g. possible cross-contamination such as cutting boards).
  - Determine history of daycare or hospital exposure.
  - Identify potentially contaminated drinking and recreational water sources.
  - Determine history of high-risk sexual practices, particularly activities that result in contact with feces.
  - Identify others who may have been exposed to the same source.
  - Assess for history of similar symptoms in visitors or other members of the household.
  - Occupational considerations exist for food handlers, health care and childcare workers.

### **Public Health Interventions**

#### **Assessment**

- Assess for [contacts](#) paying particular attention individuals that have had exposure to the same source or are a risk for further transmission.

#### **Communication**

- Letters can be used to inform contacts of the exposure, symptom monitoring and when to seek medical attention (see Sample letter)
- Letters can also be used when exclusion from school or work settings are required as a public health intervention.

#### **Education**

- All cases should be provided information on prevention and control measures including safe food handling and handwashing.

#### **Environmental Health**

- In the case of an ill food handler, a restaurant inspection may be warranted to review safe food handling requirements.

#### **Exclusion**

- Food handlers, health care workers, childcare or other staff involved with personal care: Exclude until diarrhea has resolved **and** two consecutive negative stool cultures are obtained at least 24 hours apart and at least 48 hours after discontinuation of antibiotics (if treatment was provided) (Heymann, 2015).

- Children below the age of five years in childcare, and older children and adults unable to maintain adequate standards of personal hygiene (i.e., mentally or physically handicapped): Exclude until diarrhea has resolved. If the individual is living in an institution, follow contact precautions until diarrhea has resolved.
- Diarrhea is considered resolved when stools have been normal for that individual for 48 hours.
- Exclusion may be warranted where transmission from the infected individual to another person is demonstrated or considered very likely in an occupational setting. This may be evaluated on a case-by-case basis by the MHO.

**Public Health Order**

- If a food handler, the case should be excluded from work and order used if necessary.

**Referral**

- When a food that is commercially available is implicated and is from a federally inspected plant a referral to the Canadian Food Inspection Agency is warranted. Likewise, when an agricultural source has been identified, a referral to the Ministry of Agriculture may be warranted.

**Testing**

- Two consecutive negative stool cultures are required before exclusion requirements can be removed for food handlers, health care and childcare workers or other staff involved with personal care. The specimens must be taken at least 48 hours after antibiotics have stopped and at least 24 hours apart.

### **Treatment/Supportive Therapy**

*Treatment for clinical management is at the discretion of the primary care provider. The following serves as a reference for the public health investigator:*

- *Supportive therapy includes oral rehydration solution to replace fluids and electrolytes.*
- *Antibiotics are not usually recommended, as they may not eliminate the carrier state and may lead to prolonged excretion, resistant strains or more severe infections.*
- *Individuals that should receive antibiotics include infants less than 2 months, the elderly, the debilitated, those with sickle-cell disease, persons infected with HIV and/or persons with continued/high fever or manifestations of extra-intestinal infections (Heymann, 2015).*
- *Antibiotic treatment, when indicated should be based on antimicrobial susceptibility testing.*

## **II. Contacts/Contact Investigation**

### **Contact Definition**

Contacts include:

- persons living in the same household;
- children and childcare workers in a daycare/day home;
- persons who have eaten food prepared by the case during the period of communicability;
- persons who have attended events where food was shared with the case (e.g., potluck);
- individuals exposed to the same source (if it is identified).

### **Public Health Interventions**

#### **Assessment**

- Assess for symptoms.

#### **Communication**

- Individual follow-up of contacts in larger daycares, classrooms, schools, teams, workplaces, etc., is generally not recommended. These individuals should be informed by letter from public health, advising them to see their physician if they develop symptoms.

#### **Education**

- All contacts should be provided information on prevention and control measures including safe food handling and handwashing.

#### **Environmental Health**

- If a common exposure is identified through the case and contact investigations, environmental health assessments may be required.

#### **Exclusion**

- Contacts who are symptomatic should be managed as cases.

#### **Referral**

- Depending on the suspected source, investigation/management may involve local Medical Health Officer, Ministry of Health, Public Health Agency of Canada, Ministry of Agriculture, and/or Canadian Food Inspection Agency.

#### **Symptom monitoring**

- Contacts should be asked to monitor symptoms during the incubation period and be advised on testing and exclusion if symptoms develop.

#### **Testing**

- Symptomatic contacts should be assessed by a physician.
- Follow-up testing is required for food handlers, food handlers, health care workers, childcare or other staff involved with personal care (Heymann, 2015):
  - Two consecutive negative stool cultures are required before exclusion requirements can be removed. The specimens must be taken at least 48 hours after antibiotics have stopped and at least 24 hours apart.

### **III. Environment**

#### **Child Care Centres Control Measures**

- For infection control measures refer to the Saskatchewan Ministry of Health Infection Control Manual for Child Care Facilities.<sup>2</sup>
- For one case: No action is recommended for other children or employees in a day care setting.
- For two cases or more: If there are epidemiologically linked cases in attendees or employees, diapered attendees and food handlers should be assessed for illness. Testing is not required. Educate parents and staff about salmonellosis and proper handwashing. Instruct parents and staff to watch for symptoms of diarrhea. Symptomatic individuals should be excluded as cases.

---

<sup>2</sup> <http://publications.gov.sk.ca/documents/11/96181-infection-control-manual-child-care-centres.pdf>

---

---



#### **Institutional Control Measures**

- For infection control measures refer to your Health Authority Infection Control Manual.
- Contact precautions for hospitalized patients and residents of an institution. No action is recommended for other residents. If there are epidemiologically linked cases of salmonellosis in the institution's residents or employees then employees and food handlers should be screened for salmonellosis. Investigate as an outbreak in consultation with the MHO.

#### **IV. Epidemic Measures**

When cases occur among a group of individuals that are known to each other, searching for possible exposures such as travel, or a history of food handling errors, use of unsafe raw ingredients, inadequate cooking, time-temperature abuses and cross-contamination may be the likely source.

When two or more cases are linked through genetic identification (such as PFGE or whole genome sequencing), but have not named each other as contacts, the risk of a common source is heightened. In such cases, further investigation is warranted into what and where their food sources are. Food sampling and inspection of implicated restaurants may be warranted.

When laboratories identify interprovincial or international linkages, the Outbreak Incident Command Center may be activated to coordinate investigation. The Canadian Food Inspection Agency would become involved with the goal to identify the implicated source and implement appropriate interventions such as product recalls to reduce further spread.

#### **Prevention Measures**

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

- Provide prevention information and education to case or caregiver, daycare or institution workers about personal hygiene.
- Educate food handlers about proper food and equipment handling and hygiene, especially in avoiding cross-contamination of food products, and emphasize thorough hand washing.
- Educate eating establishment owners regarding safe food handling and management and cleaning of equipment and to monitor practice within their establishments frequently.
- Avoid using dirty or cracked eggs, thoroughly cook all food derived from animal sources, particularly poultry and eggs.
- Advise individuals to avoid food preparation and care of hospitalized patients, the elderly and children when ill with diarrhea.
- Educate about the risk of sexual practices that permit fecal-oral contact.
- Ensure water supplies are treated properly.
- Wash hands thoroughly after handling animals and pet foods and after cleaning animal enclosures.

## Revisions

| Date           | Change   |
|----------------|--|
| September 2018 | <ul style="list-style-type: none"><li>• Clarified the purpose for notification of cases to public health</li><li>• Incorporated an Epidemiology and Occurrence section to the chapter.</li><li>• Incorporated standardized Salmonellosis Data Collection Worksheet.</li><li>• Added graphic to help calculate incubation and communicability.</li><li>• Rearranged and updated the style into the new format of the Manual.</li><li>• Updated exclusion and follow-up testing for cases and contacts to align with current recommendations outlined in Heymann (2015)</li><li>• References reaffirmed or updated as necessary.</li></ul> |

## References

American Academy of Pediatrics. (2015). *Red book: 2015 Report of the Committee on Infectious Diseases* (30<sup>th</sup> ed.). Elk Grove Village, IL: Author.

Heymann, D. L. (Ed.). (2015). *Control of communicable diseases manual* (20<sup>th</sup> ed.). Washington, DC: American Public Health Association.

Massachusetts Department of Public Health (2016). Bureau of Infectious Disease and Laboratory Sciences Retrieved August, 2018 from <http://www.mass.gov/eohhs/docs/dph/disease-reporting/guide/salmonellosis.pdf>

Public Health Agency of Canada. (2008). Case definitions for communicable diseases under national surveillance. *Canada Communicable Disease Report (CCDR)*, 35S2, November 2009. Retrieved August, 2018 from <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/09vol35/35s2/Salmonel-eng.php>.

U.S. Food and Drug Administration. (2012). *Bad bug book: Foodborne pathogenic microorganisms and natural toxins handbook: Salmonella species*. Retrieved August, 2018 from <http://www.fda.gov/downloads/Food/FoodSafety/FoodborneIllness/FoodborneIllnessFoodbornePathogensNaturalToxins/BadBugBook/UCM297627.pdf>.

### Salmonellosis Data Collection Worksheet

Panorama QA complete:  Yes  No  
Initials: \_\_\_\_\_

Please complete all sections.

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: _____<br>Health Card Number (PHN): _____  | Preferred Communication Method: (specify - i.e. home phone, text):<br>Email Address: <input type="checkbox"/> Work <input type="checkbox"/> Personal |
| Phone #: <input type="checkbox"/> Primary Home:<br><input type="checkbox"/> Mobile contact:<br><input type="checkbox"/> Workplace: |   |  |
| Place of Employment/School:  | Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Other <input type="checkbox"/> Unknown   |  |
| Alternate Contact: _____<br>Relationship: _____<br>Alt. Contact phone: _____   | Address Type:<br><input type="checkbox"/> No fixed <input type="checkbox"/> Postal Address <input type="checkbox"/> Primary Home <input type="checkbox"/> Temporary <input type="checkbox"/> Legal Land Description<br>Mailing (Postal address):<br><br>Street Address or FN Community (Primary Home):<br><br>Address at time of infection if not the same: |  |

**B) INVESTIGATION INFORMATION**

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

| Disease Summary Classification:<br>CASE             | Date           | Classification:<br>CONTACT                          | Date           | LAB TEST INFORMATION:<br>Date specimen collected:  |
|---|----------------|---|----------------|--|
| <input type="checkbox"/> Confirmed                  | YYYY / MM / DD | <input type="checkbox"/> Contact                    | YYYY / MM / DD | YYYY / MM / DD   |
| <input type="checkbox"/> Does Not Meet Case         | YYYY / MM / DD | <input type="checkbox"/> Not a Contact              | YYYY / MM / DD | Specimen type:<br><input type="checkbox"/> Blood<br><input type="checkbox"/> Urine<br><input type="checkbox"/> Stool |
| <input type="checkbox"/> Person Under Investigation | YYYY / MM / DD | <input type="checkbox"/> Person Under Investigation | YYYY / MM / DD |  |
| <input type="checkbox"/> Probable                   | YYYY / MM / DD |   |                |  |

**Disposition:**

*FOLLOW UP:*

- |  |                |   |                |
|--|----------------|---|----------------|
| <input type="checkbox"/> In progress                   | YYYY / MM / DD | <input type="checkbox"/> Complete                   | YYYY / MM / DD |
| <input type="checkbox"/> Incomplete - Declined         | YYYY / MM / DD | <input type="checkbox"/> Not required               | YYYY / MM / DD |
| <input type="checkbox"/> Incomplete - Lost contact     | YYYY / MM / DD | <input type="checkbox"/> Referred - Out of province | YYYY / MM / DD |
| <input type="checkbox"/> 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.

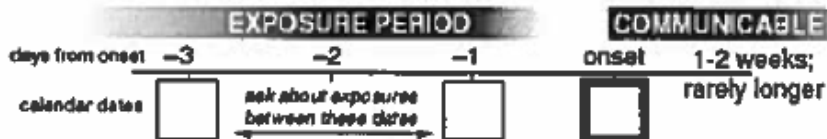
Panorama Client ID: \_\_\_\_\_  
Panorama Investigation ID: \_\_\_\_\_

### C) SIGNS & SYMPTOMS

LHN-> INVESTIGATION-> SIGNS & SYMPTOMS

| Description                          | Yes<br>Date of onset | Date of recovery | Description                                | Yes<br>Date of onset | Date of recovery |
|--------------------------------------|----------------------|------------------|--|----------------------|------------------|
| Abdominal – cramping                 | YYYY / MM / DD       | YYYY / MM / DD   | Headache                                   | YYYY / MM / DD       | YYYY / MM / DD   |
| Asymptomatic                         | YYYY / MM / DD       | YYYY / MM / DD   | Myalgia (muscle pain)                      | YYYY / MM / DD       | YYYY / MM / DD   |
| Dehydration                          | YYYY / MM / DD       | YYYY / MM / DD   | Nausea                                     | YYYY / MM / DD       | YYYY / MM / DD   |
| Diarrhea                             | YYYY / MM / DD       | YYYY / MM / DD   | Pain – abdominal                           | YYYY / MM / DD       | YYYY / MM / DD   |
| Diarrhea – bloody                    | YYYY / MM / DD       | YYYY / MM / DD   | Sepsis (e.g. bacteremia, septicemia, etc.) | YYYY / MM / DD       | YYYY / MM / DD   |
| Fever                                | YYYY / MM / DD       | YYYY / MM / DD   | Vomiting                                   | YYYY / MM / DD       | YYYY / MM / DD   |
| Other Signs & Symptoms if applicable |                      |                  |  |                      |                  |

Exposure period:



**NOTE: If Salmonella was isolated from blood or urine, exposure period should be adjusted to reflect most likely onset of initial enteric symptoms.**

### D) INCUBATION AND COMMUNICABILITY

LHN-> INVESTIGATION->INCUBATION & COMMUNICABILITY

|  |  |
|--|--|
| <b>Incubation for Case (period for acquisition):</b>       |  |
| Earliest Possible Exposure Date: YYYY / MM / DD            | Latest Possible Exposure Date: YYYY / MM / DD        |
| <i>Exposure Calculation details:</i>                       |  |
| <b>Communicability for Case (period for transmission):</b> |  |
| Earliest Possible Communicability Date: YYYY / MM / DD     | Latest Possible Communicability Date: YYYY / MM / DD |
| <i>Communicability Calculation Details:</i>                |  |

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

LHN-> SUBJECT->RISK FACTORS

| DESCRIPTION  | Yes | N,<br>NA, U | Start date   | Add'l Info |
|--|-----|-------------|--------------|------------|
| <b>Animal Exposure</b> - Pet treats and raw food (Add'l Info)            |     |             | YYYY / MM/DD |            |
| <b>Animal Exposure</b> - Pets (including reptiles) (Add'l Info)_         |     |             | YYYY / MM/DD |            |
| <b>Animal Exposure</b> - Rodents/rodent excreta                          |     |             | YYYY / MM/DD |            |
| <b>Animal Exposure</b> - Wild animals (other than rodents) (Add'l Info)_ |     |             | YYYY / MM/DD |            |
| <b>Animal Exposure</b> - Other Animal Exposure (Add'l Info)_             |     |             | YYYY / MM/DD |            |
| <b>Chronic Medical Condition</b> - Other (Add'l Info)_                   |     |             | YYYY / MM/DD |            |
| <b>Contact</b> - Persons with diarrhea/vomiting                          |     |             | YYYY / MM/DD |            |
| <b>Contact to a known case</b> (Add'l Info)                              |     |             | YYYY / MM/DD |            |
| <b>Immunocompromised</b> - Related to underlying disease or treatment    |     |             | YYYY / MM/DD |            |
| <b>Occupation</b> - Child Care Worker                                    | TE  |             | YYYY / MM/DD |            |
| <b>Occupation</b> - Food Handler   | TE  |             | YYYY / MM/DD |            |
| <b>Occupation</b> – Health Care Worker IOM Risk Factor                   |     |             | YYYY / MM/DD |            |
| <b>Occupation</b> - Personal Care Worker                                 | TE  |             | YYYY / MM/DD |            |
| <b>Travel</b> - Outside of Canada (Add'l Info)_                          | AE  |             | YYYY / MM/DD |            |

## Salmonellosis Data Collection Worksheet

Please complete all sections.

Panorama Client ID: \_\_\_\_\_

Panorama Investigation ID: \_\_\_\_\_

| DESCRIPTION  | Yes | N,<br>NA, U | Start date   | Add'l Info |
|--|-----|-------------|--------------|------------|
| <b>Travel</b> - Outside of Saskatchewan, but within Canada (Add'l Info)  | AE  |             | YYYY / MM/DD |            |
| <b>Water</b> - Bottled water (Add'l Info)                                |     |             | YYYY / MM/DD |            |
| <b>Water</b> - Public water system (Add'l Info)                          |     |             | YYYY / MM/DD |            |
| <b>Water</b> - Private well or system (Add'l Info)                       |     |             | YYYY / MM/DD |            |
| <b>Water</b> - Untreated water (Add'l Info)                              |     |             | YYYY / MM/DD |            |
| <b>Water (Recreational)</b> - Pond, stream, lake, river, ocean           |     |             | YYYY / MM/DD |            |
| <b>Water (Recreational)</b> - Private (swimming pool/whirl pool)         |     |             | YYYY / MM/DD |            |
| <b>Water (Recreational)</b> - Public (swimming/paddling pool/whirl pool) |     |             | YYYY / MM/DD |            |

**F) USER DEFINED FORM**  
(SEE ATTACHED)

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

**G) TREATMENT**

LHN-> INVESTIGATION-> MEDICATIONS->MEDICATIONS SUMMARY

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

**H) INTERVENTION**

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

| Intervention Type and Sub Type:   |   |          |                     |          |
|---|---|----------|---------------------|----------|
| <b>Assessment:</b> Investigator name<br><input type="checkbox"/> Assessed for contacts YYYY / MM / DD   | <b>Exclusion:</b> Investigator name<br><input type="checkbox"/> Daycare YYYY / MM / DD <input type="checkbox"/> Preschool YYYY / MM / DD<br><input type="checkbox"/> School YYYY / MM / DD <input type="checkbox"/> Work YYYY / MM / DD |          |                     |          |
| <b>Communication:</b><br><input type="checkbox"/> Other communication (See Investigator Notes) Investigator name YYYY / MM / DD<br><input type="checkbox"/> Letter (See Document Management) Investigator name YYYY / MM / DD | <b>Outbreak Declared</b> YYYY / MM / DD<br>Investigator name  |          |                     |          |
| <b>General:</b> Investigator name<br><input type="checkbox"/> Disease-Info/Prev-Control YYYY/ MM / DD<br><input type="checkbox"/> Disease-Info/Prev-Cont/Assess'd for Contacts YYYY/ MM / DD                                  | <b>Public Health Order:</b><br><input type="checkbox"/> Order (specify) _____ YYYY / MM / DD<br>Investigator name   |          |                     |          |
| <b>Education/counselling:</b><br><input type="checkbox"/> Prevention/Control measures YYYY / MM / DD<br><input type="checkbox"/> Disease information provided YYYY / MM / DD<br>Investigator name                             | <b>Referral:</b><br><input type="checkbox"/> Canadian food inspection agency YYYY / MM / DD<br>Investigator name  |          |                     |          |
| <b>Environmental Health:</b> YYYY / MM / DD<br><input type="checkbox"/> Restaurant inspection Investigator name   | <b>Testing:</b> Investigator name<br><input type="checkbox"/> Stool testing recommended (e.g. for follow-up) YYYY / MM / DD<br><input type="checkbox"/> Laboratory testing recommended YYYY / MM / DD                                   |          |                     |          |
| <b>Immunization:</b> Investigator name<br><input type="checkbox"/> Eligible immunizations recommended YYYY / MM / DD  | <b>Other Investigation Findings:</b><br><input type="checkbox"/> Investigator Notes<br><input type="checkbox"/> 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      |          |

## Salmonellosis Data Collection Worksheet

Please complete all sections.

Panorama Client ID: \_\_\_\_\_  
Panorama Investigation ID: \_\_\_\_\_

### I) OUTCOMES

LHN-> INVESTIGATION-> OUTCOMES

- |   |                |   |                |  |                |
|---|----------------|---|----------------|--|----------------|
| <input type="checkbox"/> Not yet recovered/recovering | YYYY / MM / DD | <input type="checkbox"/> ICU/intensive medical care | YYYY / MM / DD | <input type="checkbox"/> Hospitalization | YYYY / MM / DD |
| <input type="checkbox"/> Recovered                    | YYYY / MM / DD | <input type="checkbox"/> Intubation /ventilation    | YYYY / MM / DD | <input type="checkbox"/> Unknown         | YYYY / MM / DD |
| <input type="checkbox"/> Fatal                        | YYYY / MM / DD | <input type="checkbox"/> Other _____                | YYYY / MM / DD |  |                |

Cause of Death: (if Fatal was selected) \_\_\_\_\_

### J) 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 |
|-----------------------|-------------------------------------|--|--|---------------|
|                       |                                     | <input type="checkbox"/> Food service establishment <input type="checkbox"/> Health Care setting<br><input type="checkbox"/> Public facilities <input type="checkbox"/> Household Exposure |  |               |
|                       |                                     | <input type="checkbox"/> Food service establishment <input type="checkbox"/> Health Care setting<br><input type="checkbox"/> Public facilities <input type="checkbox"/> Household Exposure |  |               |
|                       |                                     | <input type="checkbox"/> Food service establishment <input type="checkbox"/> Health Care setting<br><input type="checkbox"/> Public facilities <input type="checkbox"/> Household Exposure |  |               |
|                       |                                     | <input type="checkbox"/> Food service establishment <input type="checkbox"/> Health Care setting<br><input type="checkbox"/> Public facilities <input type="checkbox"/> Household Exposure |  |               |
|                       | Salmonella Contacts – Inv ID# _____ | <input type="checkbox"/> Multiple Settings   | YYYY / MM / DD<br>to<br>YYYY / MM / DD |               |

### K) 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






---

**Salmonellosis 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.

**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 3 days prior to onset, did you eat...**

Any chicken meat?

Yes  
 Probably  
 No  
 Don't know  
 None of the Above

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

Any whole chicken pieces/parts (e.g. whole chicken, breasts, wings, thighs, in soups or as part of a dish, not including deli-meal)?

Yes  
 Probably  
 No  
 Don't know



None of the Above

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

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

Any breaded chicken (e.g. chicken nuggets, strips or burgers)?

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

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

Any other chicken or poultry meat (e.g. deli meat, ground chicken, turkey, quail, etc.)?

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

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

Any eggs?

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

Were the eggs raw, soft or undercooked?

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

- Yes  
 Probably

Any foods or beverages that contain raw, soft, undercooked



eggs (raw cookie dough, desserts, drinks, dressings, stir fry, hot pot)?

- No  
 Don't know  
 None of the Above

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

- Yes  
 Probably

Any pork, including sausage?

- No  
 Don't know  
 None of the Above

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

- Yes  
 Probably

Any beef, including hamburger patties, other ground beef (meatballs, chili, spaghetti sauce), steak, roast, donair?

- No  
 Don't know  
 None of the Above

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

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

Any seafood, including fish or shellfish (cooked / raw / smoked)?

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

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

Any sprouts (e.g. bean or alfalfa or any other kind), including sprouts on a sandwich or salads?



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

- Yes  
 Probably

Any lettuce or leafy greens (including pre-packaged greens)?

- No  
 Don't know  
 None of the Above

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

- Yes  
 Probably

Any cucumbers?

- No  
 Don't know  
 None of the Above

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

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

Any tomatoes?

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

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

Any cantaloupe?

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



Any papaya?

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

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

Any fresh herbs (e.g. cilantro, parsley, basil)?

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

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

Any nuts, (either on their own, in granola bar, as a garnish or as part of a dish)?

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

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

Any peanut butter or other nut butter or spread?

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

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

Any seeds (e.g. sunflower, sesame, chia, flax, hemp, sprouted seeds)?

- Yes  
 Probably  
 No



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

- Don't know  
 None of the Above

Any tahini, halva, or other products made from sesame seeds?

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

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

Any cheese made with unpasteurized (raw) milk?

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

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

**In the 3 days prior to onset, did you handle or prepare...**

Any eggs or foods containing raw eggs?

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

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

Did you handle or prepare any raw chicken?

- 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](#)

In the 3 days prior to onset, did you attend any social functions (e.g. parties, weddings, showers, potlucks, community events)?

- Yes  
 No  
 Don't know  
 Not asked

Click the Add button to add social event/function details

Add

### Restaurants

[Show/Hide](#)

In the 3 days 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](#)

In the past 3 days 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.



Has the client given consent (written or verbal)?

Yes  
 No  
 Not applicable

Loyalty card details (names and numbers)

**Interviewer Details and Notes**

[Show/Hide](#)

Interviewer Name

Interview date

Any special notes regarding this interview

Orbeon Forms Orbeon Forms 4.9.0.201505052329 CE