

Notification Timeline:

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

From Public Health to Ministry of Health: Within 2 weeks.

Public Health Follow-up Timeline: Initiate within 72 hours.

Public Health Purpose for Notification of Listeriosis (adapted from British Columbia Centre for Disease Control, 2017)

- To provide an early detection system of outbreaks;
- To identify potential sources of high-risk exposures in order to prevent or control the risk of disease transmission;
- To make timely and evidence informed actions on outbreaks;
- To monitor the effectiveness of prevention and control measures;
- To track epidemiology trends of listeriosis in Saskatchewan including risk populations and distribution;
- To inform the public and medical community about listeriosis.

Surveillance Case Definition¹ (Saskatchewan-specific case definition, adapted from Public Health Agency of Canada, 2008)

Confirmed Case	Laboratory confirmation of infection with symptoms:^a • isolation of <i>Listeria monocytogenes</i> from a normally sterile site (e.g., blood, cerebrospinal fluid, joint, pleural or pericardial fluid) OR • in the setting of miscarriage or stillbirth, isolation of <i>L. monocytogenes</i> from placental or fetal tissue (including amniotic fluid and meconium). OR The biological mother^b (symptomatic or asymptomatic), of a laboratory-confirmed neonatal case is considered an epidemiologically linked case^c.
^aInvasive clinical illness is characterized by meningitis or bacteremia. ^bInfection during pregnancy may result in fetal loss through miscarriage, stillbirth, neonatal meningitis or bacteremia. ^cIn this case, create IOM record for mother and baby separately.	

¹ 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 DEVELOPMENT

Additional Background Information

Causative Agent (Heymann, 2015)

Listeria monocytogenes is a Gram-positive rod-shaped bacterium; human infections are usually caused by serotypes 1/2a, 1/2b, 1/2c, and 4b.

Reservoir/Source (Heymann, 2015)

- The organism mainly occurs in soil, forage, water, mud, livestock food, and silage.
- Other reservoirs include infected domestic and wild mammals, fowl, and people.
- *Listeria* can multiply in refrigerated foods that are contaminated.

Symptoms

Usually a mild febrile illness, but can cause meningoencephalitis and/or septicemia in newborns and adults.

- **Pregnant women:** may be asymptomatic or may be mild and nonspecific: fever, headache, myalgia or gastrointestinal symptoms, and back pain. Infection may cause preterm delivery and fetal infection (American Academy of Pediatrics, 2015; Heymann, 2015).
- **Neonates:** may be stillborn or born with septicemia, or may develop meningitis in the neonatal period even though the mother may be asymptomatic at delivery. Neonatal illnesses have early-onset and late-onset syndromes similar to those of group B streptococcal infections (American Academy of Pediatrics, 2015).
 - Early-onset disease – prematurity, pneumonia and septicemia are common. The case fatality rate ranges between 14% to 56% and is closer to 50% when onset occurs in the first 4 days (American Academy of Pediatrics, 2015; Heymann, 2015)
 - Late-onset infections occur between 8-30 days following delivery and usually result in meningitis with fatality rates of approximately 25% (American Academy of Pediatrics, 2015).
- **Elderly, immunocompromised persons:** frequently present with sepsis, meningitis, or meningoencephalitis. The onset of meningoencephalitis can be sudden – with fever, intense headache, nausea, vomiting and signs of meningeal irritation. Delirium and coma may appear early; occasionally there is collapse and shock.

Endocarditic, glaucomatous lesions in the liver and other organs, localized internal or external abscesses, and pustule or papular cutaneous lesions may occur (Heymann, 2015).

- **Other healthy individuals:** may exhibit only an acute, mild, febrile illness. May present as febrile gastroenteritis.

Incubation Period

Variable, ranges from 3 to 70 days, with the median (middle) incubation period estimated to be 3 weeks; data from outbreaks suggests the median may be longer in pregnant women (Heymann, 2015)

Period of Communicability

- Mothers of infected newborns can shed the infectious agent in vaginal discharges and urine for 7 to 10 days.
- Infected individuals can shed the organisms in their stools for several months.

Mode of Transmission

- A substantial proportion of sporadic infections results from foodborne transmission such as ingestion of raw or contaminated milk, soft cheeses, vegetables, and ready-to-eat meats such as hot dogs, pate, and deli meats.
- In-utero or perinatal transmission can occur. There are rare reports of nursery outbreaks attributed to contaminated equipment or materials.
- Papular lesions on hands and arms may result from direct contact with infectious material such as aborted animal fetuses.
- Person-to-person transmission rarely occurs.

Risk Groups/Risk Factors

Those at highest risk include (Heymann, 2015):

- neonates;
- the elderly: case-fatality rate higher among patients ≥ 50 years old;
- immunocompromised individuals such as those with HIV, organ transplants, on corticosteroids, or having a malignancy;
- alcoholics;
- pregnant women;
- cirrhotic adults;
- diabetic adults;
- those with conditions such as renal disease and heart disease.

Specimen Collection and Transport

Selection of specimens is dependent on clinical signs and symptoms and may include the following: Cerebrospinal fluid, blood for culture.

Amniotic fluid, placenta, meconium, lochia, gastric washings, and other sites of infection may be collected if listeria stillbirth is suspected.

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

Strain characteristics must be documented in the provincial surveillance system in a timely manner as this allows for provincial monitoring of clusters.

Public Health Investigation

I. Case

The Public Health Agency of Canada (PHAC) established the Enhanced National Listeriosis Surveillance Program in 2010 as part of the National Enteric Surveillance Program (NESP). Because of the relative infrequent number of cases and long incubation periods, identifying outbreaks can be difficult. It is therefore important that prompt and thorough investigation of all cases be completed. Saskatchewan has adjusted the national surveillance form into the standard data collection worksheet and user defined form.

History

- Key elements to inquire about include:
 - Onset of illness – to determine incubation period and presentation.
 - Complete the [Attachment – Listeriosis Data Collection Worksheet](#) and [User Defined Form](#).

Public Health Interventions

Assessment

- Assess for other individuals that may have been exposed to the same source.

Communication

- Letters or public communication may be required in the case of food handlers that serve in a public setting.

Education

- All cases should be provided disease information and safe food handling.

Environmental Health

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

Exclusion

Not applicable.

Immunization

Not applicable.

Public Health Order

Not applicable for isolated 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.

Treatment/Supportive Therapy

*Treatment for clinical management is under the direction of the primary care provider.
Appropriate antibiotic treatment of cases is recommended.*

II. Contacts/Contact Investigation

Contact Definition

Contacts would include others who may have been exposed to the same source.

Public Health Interventions

Testing

Testing may be considered for symptomatic contacts in the risk groups.

Prophylaxis

Not applicable.

Exclusion

Not applicable.

III. Environment

Child Care Centre/Schools Control Measures

For infection control measures refer to Saskatchewan Ministry of Health Infection Control Manual for Child Care Facilities.²

Health Facilities Control Measures

- For infection control measures refer to your Health Authority Infection Control Manual.
- Contact precautions for hospitalized patients.

IV. Epidemic Measures

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 reduce further spread.

Communication

- Communication with other stakeholders is important during outbreaks.
- Public communication may be required in partnership with other stakeholders such as Canadian Food Inspection Agency and Public Health Agency of Canada.

Environmental Health

- Depending on the suspected source coordination among inspectors from Health, Canadian Food Inspection Agency and the Ministry of Agriculture may be necessary.

Public Health Order

- In the case of a provincially regulated food production or food processing facility a public health order may be considered, if necessary, to control a health hazard.

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. Heymann (2015) and the American Academy of Pediatrics (2015) identify the following as general guidelines in preventing listeriosis:

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

- Thoroughly wash raw vegetables and fruit before eating.
- Wash, rinse, and sanitize knives and cutting boards after handling and preparing uncooked foods.
- Thoroughly cook raw food from animal sources (e.g., ground beef, pork, and poultry).
- Avoid consumption of unpasteurized milk or foods made from raw milk.
- Wash hands thoroughly using soap and water after handling uncooked or high-risk food items.
- Educate veterinarians and farmers to take proper precautions in handling aborted fetuses, and sick or dead animals.
- Avoid the use of untreated manure on vegetable crops.
- Pregnant women and immunocompromised individuals should (American Academy of Pediatrics, 2015):
 - avoid soft cheeses;
 - avoid raw or unpasteurized milk, including goat's milk, or milk products or foods that contain unpasteurized milk or milk products;
 - cook leftover foods to an internal temperature of 74°C or ready-to-eat foods (e.g., hot dogs) to an internal temperature of 71°C before eating.

Refer to the following website for additional information on Listeria and Food Safety:
<https://www.canada.ca/en/public-health/services/diseases/listeriosis.html>.

Environmental Health Measures

Inspection of food facilities to assess safe food handling practices.

Revisions

Date	Change
September 2018	• Incorporated public health purpose for notification. • Aligned with Panorama and incorporated standard data collection worksheet and user defined form; removed link to Enhanced National Listeriosis Questionnaire. • Specified public health measures for epidemic measures.
May 2017	• Updated Case definition to include biological mothers of neonates a confirmed case. • Incorporated reference to the Enhanced National Listeriosis Surveillance Program and the Enhanced National Listeriosis Questionnaire. • Updated references and applied new formatting template.

References

- American Academy of Pediatrics. (2015). *Red book: 2012 Report of the Committee on Infectious Diseases* (30th ed.). Elk Grove Village, IL: Author.
- British Columbia Centre for Disease Control (2017). Objectives of surveillance. BCCDC. Retrieved August, 2018 from <http://www.bccdc.ca/Communicable-Disease-Control-Manual/Documents/Objectives%20of%20Surveillance.pdf>
- Heymann, D. L. (Ed.). (2015). *Control of communicable diseases manual* (20th ed.). Washington, DC: American Public Health Association.
- 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/Listeri-eng.php>.

Listeriosis, invasive 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: _____ 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 same:	

B) INVESTIGATION INFORMATION

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

Disease Summary Classification: CASE:		Date		Date		LAB TEST INFORMATION: Date specimen collected: YYYY / MMM / DD Specimen Type	
☐ Confirmed		YYYY / MMM / DD		☐ Does Not Meet Case			YYYY / MMM / DD
☐ Person Under Investigation		YYYY / MMM / DD					
Disposition: FOLLOW UP:							
☐ In progress		YYYY / MMM / DD		☐ Complete		YYYY / MMM / DD	
☐ Incomplete - Declined		YYYY / MMM / DD		☐ Not required		YYYY / MMM / DD	
☐ Incomplete – Lost contact		YYYY / MMM / DD		☐ Referred – Out of province		YYYY / MMM / DD	
☐ Incomplete – Unable to locate		YYYY / MMM / DD		(Specify where)			
REPORTING NOTIFICATION Name of Attending Physician or Nurse:				Location:			
Provider's Phone number:				Date Received (Public Health): YYYY / MMM / DD			
Type of Reporting Source: ☐ Health Care Facility ☐ Lab Report ☐ Nurse Practitioner ☐ Physician ☐ Other _____							

C) DISEASE EVENT HISTORY

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

Site Description:	☐ Congenital Listeriosis	☐ Meningitis	☐ Sepsis	☐ Other	☐ Unknown
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Listeriosis, invasive Data Collection Worksheet

Please complete all sections

Panorama Client ID: _____
Panorama Investigation ID: _____

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
Abortion - spontaneous (miscarriage)		YYYY / MMM / DD	Meningoencephalitis		YYYY / MMM / DD
Birth of infected infant		YYYY / MMM / DD	Myalgia (muscle pain)		YYYY / MMM / DD
Chills		YYYY / MMM / DD	Neurologic - delirium		YYYY / MMM / DD
Fetal death - stillbirth		YYYY / MMM / DD	Pain - back		YYYY / MMM / DD
Fever		YYYY / MMM / DD	Pneumonia		YYYY / MMM / DD
Gastrointestinal symptoms		YYYY / MMM / DD	Premature delivery (mother)		YYYY / MMM / DD
Headache		YYYY / MMM / DD	Premature labour (may not mean premature delivery)		YYYY / MMM / DD
Meningeal irritation <i>(severe unrelating headaches, irritability, nausea and vomiting, fever and chills and generalized muscle aches and pains)</i>		YYYY / MMM / DD	Prematurity (infant)		YYYY / MMM / DD
Meningitis		YYYY / MMM / DD	Sepsis (e.g. bactremia, septicemia, etc.)		YYYY / MMM / DD

E) INCUBATION

LHN-> INVESTIGATION->INCUBATION & COMMUNICABILITY

Incubation for Case (period for acquisition):	
Earliest Possible Exposure Date: YYYY / MMM / DD	Latest Possible Exposure Date: YYYY / MMM / DD
<i>Exposure Calculation details:</i>	

F) RISK FACTORS (provide a response for ALL Risk Factors)

LHN-> SUBJECT->RISK FACTORS

DESCRIPTION	Yes	N, NA, U	Add'l Info
Chronic Medical Condition Cardiac Disease			
Chronic Medical Condition Liver disease			
Chronic Medical Condition Lung disease			
Chronic Medical Condition Malignancies/Cancer			
Chronic Medical Condition Other (Add'l Info)			
Chronic Medical Condition Renal disease			
Immunocompromised due to underlying disease or treatment (Add'l Info)			
Special Population Infant born to an infected mother			
Special Population Pregnancy			
Travel – Outside of Canada (Add'l Info)	YYYY / MM/DD		
Travel –Outside of Saskatchewan, but within Canada (Add'l Info)	YYYY / MM/DD		

G) USER DEFINED FORM (SEE ATTACHED)

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

Listeriosis, invasive Data Collection Worksheet

Please complete **all** sections

Panorama Client ID: _____
Panorama Investigation ID: _____

H) COMPLICATIONS

LHN-> INVESTIGATION->COMPLICATIONS

Description	Yes Date of onset	Description	Yes Date of onset
Abscesses	YYYY / MMM / DD	Coma	YYYY / MMM / DD
Cardiac - endocarditis	YYYY / MMM / DD	Granulomatosis infantisepticum	YYYY / MMM / DD
Other complications			

I) TREATMENT

LHN-> INVESTIGATION-> MEDICATIONS->MEDICATIONS SUMMARY

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

J) INTERVENTIONS

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

Intervention Type and Sub Type:				
Assessment: Investigator name ☐ Assessed for contacts YYYY / MM / DD		Environmental Health: YYYY / MM / DD ☐ Environmental sampling ☐ Restaurant inspection ☐ Food/Water sampling Investigator name		
Communication: ☐ Other communication (See Investigator Notes) YYYY / MM / DD Investigator name ☐ Letter (See Document Management) YYYY / MM / DD Investigator name		Other Investigation Findings: ☐ Investigator Notes YYYY / MM / DD ☐ Document Management Notes YYYY / MM / DD		
General: Investigator name ☐ Disease-Info/Prev-Control YYYY / MM / DD ☐ Disease-Info/Prev-Cont/Assess'd for Contacts YYYY / MM / DD		Referral: ☐ Canadian food inspection agency YYYY / MM / DD ☐ Consultation with MHO YYYY / MM / DD ☐ Physician YYYY / MM / DD		
Education/counselling: ☐ Prevention/Control measures YYYY / MM / DD ☐ Disease information provided YYYY / MM / DD Investigator name				
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	☐ ICU/intensive medical care YYYY / MM / DD	☐ Hospitalization YYYY / MM / DD
☐ Recovered YYYY / MM / DD	☐ Intubation /ventilation YYYY / MM / DD	☐ Unknown YYYY / MM / DD
☐ Fatal YYYY / MM / DD	☐ Other _____ YYYY / MM / DD	
Cause of Death: (if Fatal was selected) _____		

Initial Report completed by:	Date initial report completed: YYYY / MMM / DD
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Listeriosis 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 4 weeks prior to onset, did you eat...

Any turkey deli meat?

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

Was it prepackaged or sliced at the deli counter?

- ☐ Prepackaged
☐ Sliced at the deli counter

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



Any chicken deli meat?

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

Was it prepackaged or sliced at the deli counter?

- ☐ Prepackaged
☐ Sliced at the deli counter

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

Any beef deli meat?

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

Was it prepackaged or sliced at the deli counter?

- ☐ Prepackaged
☐ Sliced at the deli counter

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

Any ham deli meat?

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

Was it prepackaged or sliced at the deli counter?

- ☐ Prepackaged
☐ Sliced at the deli counter

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



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

- ☐ Prepackaged
- ☐ Sliced at the deli counter

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

- ☐ Prepackaged
- ☐ Sliced at the deli counter

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

- ☐ Prepackaged
- ☐ Sliced at the deli counter



Any Pepperoni?

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

Was it prepackaged or sliced at the deli counter?

- ☐ Prepackaged
- ☐ Sliced at the deli counter

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

Other deli meat (e.g. corned beef, kielbasa, prosciutto, mortadella)?

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

Was it prepackaged or sliced at the deli counter?

- ☐ Prepackaged
- ☐ Sliced at the deli counter

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

Any prepackaged sandwiches/wraps (purchased from vending machine, cafeteria, gas station, grocery store etc.)?

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

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

Any pate/meat spread?

- ☐ yes
- ☐ Probably
- ☐ No
- ☐ Don't know
- ☐ None of the above



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

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

Any hot dogs?

- ☐ Yes
- ☐ No
- ☐ Don't know

If yes, heated before eating?

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

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

Any cured or dried meats (e.g. Jerky or Pepperettes)?

If yes, was it prepackaged or unpackaged at the deli counter?

- ☐ Prepackaged
- ☐ Unpackaged at the deli counter

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

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

Any chicken eaten cold (e.g. ready to eat chicken pieces or strips, left over cooked chicken, cold chicken in salads)?

if yes, was it purchased cooked, ready to eat or cooked at home and later ate cold?

- ☐ Purchased cooked, ready to eat
- ☐ Cooked at home and later ate cold

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

Any ham eaten cold?

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

if yes, was it purchased cooked, ready to eat or cooked at home and later ate cold?

- ☐ Purchased cooked, ready to eat
- ☐ Cooked at home and later ate cold

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

Any turkey eaten cold?

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

if yes, was it purchased cooked, ready to eat or cooked at home and later ate cold?

- ☐ Purchased cooked, ready to eat
- ☐ Cooked at home and later ate cold

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

Any sausage eaten cold (e.g. ham sausage, breakfast sausage, frankfurters, cured sausages, left overs)?

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

if yes, was it purchased cooked, ready to eat or cooked at home and later ate cold?

- ☐ Purchased cooked, ready to eat
- ☐ Cooked at home and later ate cold

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

Any ground beef?

- ☐ yes
- ☐ Probably
- ☐ No
- ☐ Don't know
- ☐ None of the above

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

Any Brie?

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

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

Any Camembert?

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

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

Any Blue cheese (e.g. Roquefort, Gorgonzola, Stilton etc.)?

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

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

Any Feta?

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

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

Any Goat cheese?

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

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

Any Mexican - or Latin-style cheese (e.g. queso fresco, queso blanco)?

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

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

Any other soft/semi soft cheese (e.g. havarti, bocconcini, goat cheese)?

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

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

Any other cheese, all types (e.g. cottage cheese, ricotta gouda, cheese sold as a block)?

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

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

Any unpasteurized cheese?

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

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

Any unpasteurized(raw) milk?

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

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

Any pasteurized milk (e.g. whole, skim, 1%,2%, flavoured)?

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

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

Any ice cream/frozen yogurt/gelato (including milkshakes, frozen dairy bars and sandwiches and other novelties)?

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

If yes, was it soft serve from a machine?

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

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

Any other dairy (e.g. butter, yogurt, sour cream, whipped cream)?

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

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

Any raw fish (e.g. sushi, sashimi)?

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

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

Any smoked or cured fish (not from a can e.g. smoked salmon or lox)?

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

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

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

Any pre-cooked shrimp or prawns eaten cold (e.g. shrimp ring, shrimp cocktail, in a salad, leftovers eaten cold)?

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

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

Any pre-cooked crab eaten cold (including imitation crab meat)?

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

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

Any other ready to eat shellfish eaten cold (e.g. mussels, oysters, clams)?

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

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

Any prepared green salad (e.g. garden, Greek, Caesar purchased in a store, restaurant or cafeteria)?

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



Any potato salad?

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

if yes, was it homemade or purchased?

- ☐ Home made
☐ Purchased

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

Any pasta salad?

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

if yes, was it homemade or purchased?

- ☐ Home made
☐ Purchased

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

Any bean salad?

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

if yes, was it homemade or purchased?

- ☐ Home made
☐ Purchased

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

Any cole slaw?

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

if yes, was it homemade or purchased?

- ☐ Home made
☐ Purchased

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

Any hummus?

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

if yes, was it homemade or purchased?

- ☐ Home made
☐ Purchased

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

Any other salads/dips (e.g. chicken salad, egg salad, tuna salad, seafood salad, tabouli)? ?

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

if yes, was it homemade or purchased?

- ☐ Home made
☐ Purchased

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

Vegetables (Not Cooked)



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

Any alfalfa sprouts?

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

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

Any bean sprouts?

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

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

Any lettuce and/or salad purchased pre-packaged in a bag or plastic container?

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

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

Any whole lettuce?

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

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

Any spinach, purchased loose or in bag or plastic container?

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

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

Any mushrooms?

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

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

Any fresh herbs?

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

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

Any packaged pre-cut vegetables (e.g. in a platter or tray, diced onions, celery etc.)?

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

Any honeydew melons?

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

If yes, was it whole, cut at home or pre-cut?

- ☐ Whole, cut at home
☐ Pre-cut

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

Any cantaloupe?

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

If yes, was it whole, cut at home or pre-cut?

- ☐ Whole, cut at home
☐ Pre-cut

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

Any watermelon?

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

If yes, was it whole, cut at home or pre-cut?

- ☐ Whole, cut at home
☐ Pre-cut

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



Any packaged pre-cut fruit (e.g. in a platter or tray, apple slices, fruit salad etc.)?

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

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

Any unpasteurized fruit/vegetable juice?

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

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

Social Functions

[Show/Hide](#)

In the 4 weeks 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 4 weeks 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](#)

☐ Yes

In the past 4 weeks prior to onset, did you visit grocery stores
for foods consumed during the incubation period?

☐ No

☐ Don't know

☐ Not asked

Click the Add button to add grocery store details

Grocery store name

Location

Foods purchased

Brands/other details

Delete

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

8/23/2018

Any special notes regarding this interview

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