

# **Listeriosis**

## **Investigation Guideline**

### **CONTENTS**

#### **Investigation Protocol:**

- **Investigation Guideline**

#### **Investigation Forms / Documentation Worksheets:**

- **General Investigation Form(s)**
- **CDC Listeria Case Form**

#### **Supporting Materials:**

- **Fact Sheet**

# Listeriosis Illness

## Disease Management and Investigative Guidelines

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### CASE DEFINITION (CDC 1999)

#### Clinical Description for Public Health Surveillance:

- In adults, invasive disease caused by *Listeria monocytogenes* manifests most commonly as meningitis or bacteremia; infection during pregnancy may result in fetal loss through miscarriage or stillbirth, or neonatal meningitis or bacteremia. Other manifestations may also be observed.

#### Laboratory Criteria for Case Classification:

- Isolation of *L. monocytogenes* from a normally sterile site (e.g., blood or cerebrospinal fluid or, less commonly, joint, pleural, or pericardial fluid).
- In the setting of miscarriage or stillbirth, isolation of *L. monocytogenes* from placental or fetal tissue.

#### Case Classification:

- **Confirmed:** A clinically compatible illness that is laboratory confirmed.

**Note:** The usefulness of other methods such as fluorescent antibody testing or polymerase chain reaction to diagnose invasive listeriosis is not established.

### LABORATORY ANALYSIS

- Specimens or isolates are not required to be sent to the State Public Health Laboratory (KHEL); but they are equipped to test for *L. monocytogenes*, if requested.
- For additional information concerning collection or sample transport, call (785) 296-1620 or refer to guidance at [http://www.kdheks.gov/labs/lab\\_ref\\_guide.htm](http://www.kdheks.gov/labs/lab_ref_guide.htm)

### EPIDEMIOLOGY

*L. monocytogenes* bacteria are widely distributed in nature, especially in the food chain. Most cases occur sporadically but foodborne and nosocomial outbreaks have been documented. Food associated with infection includes: unpasteurized milk, soft cheeses, processed meats and contaminated vegetables. Newborns, the elderly, immunocompromised persons and pregnant women are at greater risk of infection. About 30% of all cases occur to newborns within the first 3 weeks of life.

### DISEASE OVERVIEW

#### A. Agent:

*L. Monocytogenes* is an aerobic gram-positive rod shaped bacterium.

#### B. Clinical Description:

Listeriosis is typically manifested as meningoenzephalitis or bacteremia in newborns and adults. It may cause fever and abortion in pregnant women. Onset of meningoenzephalitis may be sudden with fever, headache, nausea, vomiting, and signs of meningeal irritation. Endocarditis, granulomatous lesions in the liver and other organs, localized internal or external abscesses, and pustular or papular cutaneous lesions may also occur. Infections in healthy

persons may appear to be a mild flu-like illness. The case-fatality rate in infected newborn infants is about 30%.

**C. Reservoirs:**

Reservoirs for *L. monocytogenes* are soil, water, silage, mammals and fowl.

**D. Mode(s) of Transmission:**

*L. monocytogenes* may be acquired by the fetus in utero or during delivery. Listeria can also be transmitted through ingestion of contaminated foods or through contact with infected animals or birds. Person-to-person transmission has also been reported in nosocomial outbreaks.

**E. Incubation Period:**

Range 3-70 days; average 21 days.

**F. Period of Communicability:**

*L. monocytogenes* may be shed for months in the stool of infected persons, although person-to-person transmission is rare. Following delivery, mothers of infected newborns may shed *L. monocytogenes* for 7-10 days in vaginal secretions or urine.

**G. Susceptibility and Resistance:**

Fetuses and newborns are highly susceptible. Children and young adults are usually resistant; adults less so after age 40, especially the immunocompromised and the elderly. Disease is often superimposed on other illness such as cancer, organ transplant, diabetes and AIDS. There is no evidence of immunity after infection.

**H. Treatment:**

Penicillin or ampicillin alone or together with aminoglycosides. If case is allergic to penicillin, TMP-SMX or erythromycin is preferred. Cephalosporins are not effective. Tetracycline resistance has been observed.

## INVESTIGATOR RESPONSIBILITIES

- 1) Use current [case definition](#), to confirm diagnosis with the medical provider.
- 2) Conduct [case investigation](#) to identify potential source of infection.
- 3) Identify whether the source of infection is major public health concern.
  - Example: commercially available food.
- 4) Conduct [contact investigation](#) only if a specific food has been incriminated.
- 5) Initiate control and prevention measures to prevent spread of disease.
- 6) Complete and report all information requested on the [General Investigation Form](#) and [CDC Listeria Case Form](#).
- 7) As appropriate, use notification letter(s) and the disease fact sheet to notify the case, contacts and other individuals or groups.

## STANDARD CASE INVESTIGATION AND CONTROL METHODS

### Case Investigation

- 1) Contact the medical provider who reported or ordered testing of the case.
  - Obtain information from the provider or medical chart.
    - If patient hospitalized, obtain medical records, including admission notes, progress notes, lab report(s), and discharge summary.
  - For pregnancy associated illness, see specific instructions under [Managing Special Situations](#).
  - Record the type of illness: bacteremia/sepsis, meningitis, febrile gastroenteritis or other type of illness
    - Record onset date of illness
    - Record symptoms: fever; chills; headache; muscle aches; stiff neck; diarrhea; vomiting; preterm labor; other
  - Examine the laboratory testing that was done; noting type of specimen that grew *Listeria*, specimen collection date and submitting lab.
  - Collect case's demographic data and contact information (birth date, county, sex, race/ethnicity, occupation, address, phone number(s))
  - Record hospitalizations: location, admission and discharge dates
  - Record outcomes: survived or date of death
- 2) Interview the case (or mother of neonatal infant) or proxy to determine source and risk factors; focus on incubation period 4 weeks prior to illness onset and use the Listeria Case Form as an interview tool.
  - Examine hospitalizations or residency in nursing homes, note date of admission or discharge.
  - Travel history:
    - Travel outside of KS; list states visited; dates visited
    - Travel outside of U.S.; list country; date of departure and return to U.S.
  - Food purchase history (Note locations and dining dates, as needed)
  - Food consumption history (especially cold cuts, deli or luncheon meat and cheeses, ready-to-eat salads, seafood, fruits, and other dairy)
  - Collect information from case for the [Contact Investigation](#). (See below).
- 3) Investigate epi-links among cases (clusters, household, co-workers, etc).
  - Highly suspected sources should be investigated.
  - A detailed trace-back investigation may need to occur. The agency involved in traceback and inspections will depend on the source. For further information refer to the [Foodborne Illness and Outbreak Manual](#).
  - For suspected [outbreaks](#) to Managing Special Situations section.

### Contact Investigation

- Contacts are considered to be anyone exposed to a specific food identified as a likely source of contamination. Until a specific food has been incriminated, anyone sharing food with case can be considered a potential contact.

## Isolation, Work and Daycare Restrictions

- With the exception of mother-to-fetus/newborn, person-to-person transmission of listeriosis is rare.
- To prevent the possible spread in nurseries, strict hand washing by personnel should be enforced.
- Kansas Food Code should always be enforced for food handlers, as described below.

### **Kansas Food Code 2005:**

- Food handlers with diarrhea, fever or vomiting must be restricted from handling food, or be excluded from work if they serve high risk groups, until symptoms have resolved for 24 hours.
- Workers in schools, residential programs, daycare and healthcare facilities, who feed, give mouth care or dispense medications to clients are subject to the same restrictions as food handlers.

## Case Management

None.

## Contact Management

- Antimicrobial therapy of infection diagnosed during pregnancy may prevent fetal or perinatal infections and its consequences.

## Environmental Measures

- Implicated food items must be removed from the environment.
- A decision about testing implicated food items can be made in consultation with the state epidemiologist.
- If a commercial product is suspected, the state health department will coordinate follow-up with relevant outside agencies.

## Education

Inform people at higher risk, such as pregnant women and persons with weakened immune systems, of methods to avoid listeriosis, including:

- Avoid soft cheeses such as Brie, Camembert, and Mexican style cheeses.
- Avoid deli meats.
- Cook leftover foods or hot dogs until steaming hot.
- Thoroughly cook food from animal sources such as beef, pork, or poultry and consume only pasteurized dairy products.
- Avoid contact with potentially infective materials, such as aborted animal fetuses on farms.
- Thoroughly wash raw fruits and vegetables before eating.
- Wash hands, knives, and cutting boards after handling uncooked foods.
- Avoid the use of untreated manure on food crops.

## MANAGING SPECIAL SITUATIONS

### A. Outbreak Investigation:

- 1) Outbreaks have been reported with the ingestion of contaminated food and as nosocomial infections in neonatal nurseries.
- 2) A foodborne disease outbreak is defined in the following ways:
  - Two or more individuals (from different households) who experience a similar illness after eating a common food or food from a common place.
  - An unexplained, unexpected increase of a similar illness and food is a likely source.
- 3) Notify KDHE immediately, 1-877-427-7317.
- 4) Active case finding will be an important part of any investigation.
- 5) References that will assist with investigations include:
  - USDA Fact sheets:  
[www.fsis.usda.gov/Fact\\_Sheets/Listeria\\_monocytogenes/index.asp](http://www.fsis.usda.gov/Fact_Sheets/Listeria_monocytogenes/index.asp)
  - CDC Foodborne Outbreak Surveillance Kit:  
[www.cdc.gov/outbreaknet/references\\_resources/](http://www.cdc.gov/outbreaknet/references_resources/)

### B. For Pregnancy Associated Cases:

- 1) Examine the laboratory testing; note type of specimen that grew *Listeria*; whether from the mother or neonate; collection date and submitting lab.
- 2) Record outcome of pregnancy:
  - Still pregnant, fetal death, induced abortion, delivery, or other
  - Note week of gestation and date for the event
- 3) Record the type of illness in the mother: bacteremia/sepsis, meningitis, febrile gastroenteritis, amnionitis, non-specific “flu-like” illness, none or other type of illness
- 4) Record the type of illness in neonate: bacteremia/sepsis, meningitis, pneumonia, granulomatosis infantisepticum; none or other
- 5) Note if mother and/or neonate were hospitalized for listeriosis:
  - Include admit and discharge dates
- 6) Record outcomes for mother and/or neonate: survived or date of death
- 7) Collect case's demographic data and contact information (birth date, county, sex, race/ethnicity, occupation, address, phone number(s))
- 8) Complete the Case Patient Interview on Listeria Case Form:
  - Examine hospitalizations or residency in nursing homes, note date of admission or discharge.
  - Travel history:
    - Travel outside of KS; list states visited; dates of visit
    - Travel outside of U.S.; list country; date of departure and return
  - Record any symptoms and onset date: fever; chills; headache; muscle aches; stiff neck; diarrhea; vomiting; preterm labor; other or none
  - Food consumption and purchase history for 4 weeks prior to mother's onset date (or delivery date with no symptom onset).

## DATA MANAGEMENT AND REPORTING TO THE KDHE

- A. Organize, collect and report data with the [General Investigation Form\(s\)](#) and [CDC Listeria Case Form](#) \*.
- B. Report data electronically via KS-EDSS or by fax, include:
- At a minimum, data collected during the investigation that helps to confirm or classify a case.
  - All information collected on the General Investigation Form and supplemental form(s).

\* **Note:** The CDC Listeria Case Form is not available on KS-EDSS for electronic reporting; it must be faxed to the KDHE at 1-877-427-7318.

## ADDITIONAL INFORMATION / REFERENCES

- A. **Treatment / Differential Diagnosis:** American Academy of Pediatrics. 2006 Red Book: Report of the Committee on Infectious Disease, 27th Edition. Illinois, Academy of Pediatrics, 2006.
- B. **Epidemiology, Investigation and Control:** Heymann. D., ed., Control of Communicable Diseases Manual, 18th Edition. Washington, DC, American Public Health Association, 2004.
- C. **Case Definitions:** CDC Division of Public Health Surveillance and Informatics, Available at: [www.cdc.gov/ncphi/diss/nndss/casedef/case\\_definitions.htm](http://www.cdc.gov/ncphi/diss/nndss/casedef/case_definitions.htm)
- D. **Kansas Regulations/Statutes Related to Infectious Disease:** [www.kdheks.gov/epi/regulations.htm](http://www.kdheks.gov/epi/regulations.htm)
- E. **KDHE Foodborne Illness and Outbreak Manual:** [http://www.kdheks.gov/epi/download/kansas\\_foodborne\\_illness\\_manual.pdf](http://www.kdheks.gov/epi/download/kansas_foodborne_illness_manual.pdf)
- F. **KDHE Foodborne Illness Resources:** <http://www.kdheks.gov/epi/foodborne.htm>
- G. **Additional Information (CDC):** [www.cdc.gov/health/default.htm](http://www.cdc.gov/health/default.htm)
- **CDC Listeria Case Form:** <http://www.cdc.gov/foodborneoutbreaks/documents/ListeriaCaseReportFormOMB0920-0004.pdf>

# **General Investigation Form(s)**

# Kansas Disease Investigation Guidelines

## General Investigation Form

Investigation Information		
<b>Case Type:</b> <input type="checkbox"/> Human Case <input type="checkbox"/> Non-human Case	<b>Disease Name:</b> _____	
<b>Classification:</b> <input type="checkbox"/> Suspect <input type="checkbox"/> Probable <input type="checkbox"/> Confirmed	<b>KS-EDSS Investigation ID:</b> _____	
<b>Outbreak:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>Outbreak Name:</b> _____	<b>Outbreak #:</b> _____
<b>Onset Date:</b> _____	<b>Diagnosis Date:</b> _____	<b>Report Date:</b> _____
<b>Assigned to (Investigator):</b> _____	<b>Patient Died:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Patient Information		
<b>Name Type:</b> <input type="checkbox"/> Default/Common <input type="checkbox"/> Legal <input type="checkbox"/> Maiden <input type="checkbox"/> Nickname		
<b>Last:</b> _____	<b>First:</b> _____	<b>Middle:</b> _____
<b>Street:</b> _____	<b>City/State:</b> _____	<b>Zip:</b> _____
<b>Evening Phone #:</b> _____	<b>Daytime Phone #:</b> _____	
<b>Sex:</b> <input type="checkbox"/> Failure to Report <input type="checkbox"/> Female <input type="checkbox"/> Male <input type="checkbox"/> Other <input type="checkbox"/> Transexual <input type="checkbox"/> Unknown		
<b>Race:</b> <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Asian <input type="checkbox"/> Black or African American <input type="checkbox"/> Native Hawaiian or Other Pacific Islander <input type="checkbox"/> White <input type="checkbox"/> Unknown		
<b>Hispanic / Latino Ethnicity:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>Date of Birth:</b> _____	<b>Age:</b> _____	<b>Age Unit:</b> <input type="checkbox"/> Days <input type="checkbox"/> Weeks <input type="checkbox"/> Months <input type="checkbox"/> Years
Parent Information (if under 18)		
<b>Last:</b> _____	<b>First:</b> _____	<b>Middle:</b> _____
<b>Street:</b> _____	<b>City/State:</b> _____	<b>Zip:</b> _____
<b>Evening Phone #:</b> _____	<b>Daytime Phone #:</b> _____	
Work / Occupation or School / Grade		
<b>Worksites / School:</b> _____		
<b>Occupations / Grade:</b> _____		
Travel History		
<b>1<sup>st</sup></b>	<b>Destination:</b> _____	<b>Depart Date:</b> _____ <b>Return Date:</b> _____
<b>2<sup>nd</sup></b>	<b>Destination:</b> _____	<b>Depart Date:</b> _____ <b>Return Date:</b> _____
<b>3<sup>rd</sup></b>	<b>Destination:</b> _____	<b>Depart Date:</b> _____ <b>Return Date:</b> _____
<b>4<sup>th</sup></b>	<b>Destination:</b> _____	<b>Depart Date:</b> _____ <b>Return Date:</b> _____



# Supplemental Laboratory Report Form

**Lab Reports**

Laboratory Name: \_\_\_\_\_

Lab Report Date: \_\_\_\_\_

Ordering Provider Name: \_\_\_\_\_

Phone: \_\_\_\_\_

Facility: \_\_\_\_\_

Specimen Accession Number: \_\_\_\_\_

Specimen Collection Date: \_\_\_\_\_

Organism Name: \_\_\_\_\_

Organism Species: \_\_\_\_\_

Organism Serogroup: \_\_\_\_\_

Organism Serotype: \_\_\_\_\_

**PFGE Results**

Pattern 1      KS: \_\_\_\_\_

Other State: \_\_\_\_\_

CDC: \_\_\_\_\_

Pattern 2      KS: \_\_\_\_\_

Other State: \_\_\_\_\_

CDC: \_\_\_\_\_

Pattern 3      KS: \_\_\_\_\_

Other State: \_\_\_\_\_

CDC: \_\_\_\_\_

**Additional Results Information**

Reported Test Name:

Coded Result:

Text Result:

Numeric Result:

Comments:

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# Supplemental Contact Form

**Contacts**

**Last:** \_\_\_\_\_ **First:** \_\_\_\_\_ **Middle:** \_\_\_\_\_

**Street:** \_\_\_\_\_ **City/State:** \_\_\_\_\_ **Zip:** \_\_\_\_\_

**Evening Phone #:** \_\_\_\_\_ **Daytime Phone #:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

**Sex:**  Failure to Report  Female  Male  Other  Transexual  Unknown

**Race:**  American Indian or Alaska Native  Asian  Black or African American  Native Hawaiian or Other Pacific Islander  White  Unknown

**Hispanic / Latino Ethnicity:**  Yes  No

**Date of Birth:** \_\_\_\_\_ **Age:** \_\_\_\_\_ **Age Unit:**  Days  Weeks  Months  Years

**Worksites / School:** \_\_\_\_\_

**Occupations / Grade:** \_\_\_\_\_

**Exposure Information**

**Contact Type:**  Household  Sexual  Other: \_\_\_\_\_ **Partner / Cluster Code:** \_\_\_\_\_

**Date of First Exposure:** \_\_\_\_\_ **Date of Last Exposure:** \_\_\_\_\_ **Frequency:** \_\_\_\_\_

**Nature of Exposure:** \_\_\_\_\_ **Comments:** \_\_\_\_\_

**Testing and Treatment Information**

**Clinic Code:** \_\_\_\_\_ **Examination Date:** \_\_\_\_\_

**Examination Test:** \_\_\_\_\_ **Examination Result:** \_\_\_\_\_

**Prophylaxis/empiric treatment date:** \_\_\_\_\_ **Drug / Dosage:** \_\_\_\_\_

**Provider (Name / Facility):** \_\_\_\_\_

**Disposition and Diagnosis Information**

**Initiation Date:** \_\_\_\_\_ **Disposition Date:** \_\_\_\_\_ **Disposition:** \_\_\_\_\_

**Diagnosis:** \_\_\_\_\_ **Referral Type:**  Patient  Provider **Post-test Counseled :**  Yes  No

**Currently Assigned To:** \_\_\_\_\_ **Follow-up Date:** \_\_\_\_\_

**Risk Factors**

**Pregnant:**  Yes  No **If Yes, # of Weeks:** \_\_\_\_\_

**Risk factors for complications in contact:**  None  Pregnant Woman  HIV Seropositive  Unimmunized  Index case is a super-spreader

Child younger than 5  Age > 65  Otherwise immunosuppressed (s/p transplant, high dose steroids, etc)

# Supplemental Form



**BOX 4: CASES ASSOCIATED WITH PREGNANCY (Illness in pregnant woman, fetus, or neonate ≤1 month of age)**

Type(s) of specimen(s) that grew <i>Listeria</i> (check all that apply)	Specimen collection date	Submitting Lab (state, city, county)	State Public Health Lab Isolate ID Number (important: must have at least one)
<input type="checkbox"/> Blood from mother	___/___/___		
<input type="checkbox"/> Blood from neonate	___/___/___		
<input type="checkbox"/> CSF from mother	___/___/___		
<input type="checkbox"/> CSF from neonate	___/___/___		
<input type="checkbox"/> Stool from mother	___/___/___		
<input type="checkbox"/> Placenta	___/___/___		
<input type="checkbox"/> Amniotic fluid	___/___/___		
<input type="checkbox"/> Other _____	___/___/___		
<input type="checkbox"/> Other _____	___/___/___		

**BOX 4 (CONTINUED): CASES ASSOCIATED WITH PREGNANCY**

Outcome of pregnancy (single gestation or twin 1) (check one)	Weeks of gestation	Date	Outcome of pregnancy (twin 2) (check one)	Weeks of gestation	Date
<input type="checkbox"/> Still pregnant		___/___/___	<input type="checkbox"/> Still pregnant as of: ___/___/___		___/___/___
<input type="checkbox"/> Fetal death (miscarriage or stillbirth)		___/___/___	<input type="checkbox"/> Fetal death (miscarriage or stillbirth)		___/___/___
<input type="checkbox"/> Induced abortion		___/___/___	<input type="checkbox"/> Induced abortion		___/___/___
<input type="checkbox"/> Delivery (live birth)		___/___/___	<input type="checkbox"/> Delivery (live birth)		___/___/___
<input type="checkbox"/> Other _____		___/___/___	<input type="checkbox"/> Other _____		___/___/___

Type(s) of illness in mother (check all that apply)	Type(s) of illness in neonate (twin 1) (check all that apply)	Type(s) of illness in neonate 2 (twin 2) (check all that apply)
<input type="checkbox"/> Bacteremia/sepsis	<input type="checkbox"/> Bacteremia/sepsis	<input type="checkbox"/> Bacteremia/sepsis
<input type="checkbox"/> Meningitis	<input type="checkbox"/> Meningitis	<input type="checkbox"/> Meningitis
<input type="checkbox"/> Febrile gastroenteritis	<input type="checkbox"/> Pneumonia	<input type="checkbox"/> Pneumonia
<input type="checkbox"/> Amnionitis	<input type="checkbox"/> Granulomatosis infantisepticum	<input type="checkbox"/> Granulomatosis infantisepticum
<input type="checkbox"/> Non-specific "flu-like" illness	<input type="checkbox"/> None	<input type="checkbox"/> None
<input type="checkbox"/> None	<input type="checkbox"/> Other _____	<input type="checkbox"/> Other _____
<input type="checkbox"/> Other _____	<input type="checkbox"/> Unknown	<input type="checkbox"/> Unknown
<input type="checkbox"/> Unknown		

Was mother hospitalized for listeriosis?	Was neonate (twin 1) hospitalized for listeriosis?	Was neonate 2 (twin 2) hospitalized for listeriosis?
<input type="checkbox"/> Yes <i>If yes:</i> Admit date: ___/___/___ Discharge date: ___/___/___ <input type="checkbox"/> Still hospitalized	<input type="checkbox"/> Yes <i>If yes:</i> Admit date: ___/___/___ Discharge date: ___/___/___ <input type="checkbox"/> Still hospitalized	<input type="checkbox"/> Yes <i>If yes:</i> Admit date: ___/___/___ Discharge date: ___/___/___ <input type="checkbox"/> Still hospitalized
<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No
<input type="checkbox"/> Unknown	<input type="checkbox"/> Unknown	<input type="checkbox"/> Unknown

Mother's outcome	Neonate's (twin 1's) outcome	Neonate 2's (twin 2's) outcome
<input type="checkbox"/> Survived	<input type="checkbox"/> Survived	<input type="checkbox"/> Survived
<input type="checkbox"/> Died	<input type="checkbox"/> Died	<input type="checkbox"/> Died
<input type="checkbox"/> Unknown	<input type="checkbox"/> Unknown	<input type="checkbox"/> Unknown

<b>CASE-PATIENT INTERVIEW</b>	
Date of interview(mm/dd/yyyy): ___/___/____	Initials of interviewer: _____
Interviewee: <input type="checkbox"/> Case-patient <input type="checkbox"/> Surrogate <input type="checkbox"/> Unknown	
If surrogate, relationship to patient: <input type="checkbox"/> Parent <input type="checkbox"/> Child <input type="checkbox"/> Sibling <input type="checkbox"/> Spouse <input type="checkbox"/> Other, Specify _____	
When did your illness begin? (Onset of illness) (mm/dd/yyyy): ___/___/____ <input type="checkbox"/> Not applicable (e.g. pregnant woman without clinical illness)	
During the 4 weeks before your illness ( <i>delivery date</i> ), were you admitted to a hospital (≥overnight)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	
During the 4 weeks before your illness ( <i>delivery date</i> ), were you a resident in a nursing home or other long term care facility? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	
If yes, Date of admission (mm/dd/yyyy) ___/___/___	
Date of discharge (mm/dd/yyyy) ___/___/___ or <input type="checkbox"/> Still hospitalized or residing in facility	
During the 4 weeks before your illness ( <i>delivery date</i> ), did you travel to a state outside your state of residence? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	
If yes, please list states visited: _____	
During the 4 weeks before your illness ( <i>delivery date</i> ), did you travel outside the U.S.? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	
If yes, name of country visited _____	
If yes, Date of departure from U.S. (mm/dd/yyyy) ___/___/___	
Date of return to U. S. (mm/dd/yyyy) ___/___/___	
Which of the following symptoms were associated with illness? ( <i>read each</i> )	
Fever <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	Diarrhea (≥3 loose stools/day) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know
Chills <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	Vomiting <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know
Headache <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	Preterm labor <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know
Muscle Aches <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	Other _____ <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know
Stiff Neck <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	Other _____ <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know

<b>FOOD HISTORY</b>
<b>INSTRUCTIONS FOR INTERVIEWER:</b> Ask case-patient about the food he/she consumed during the 4 weeks before his/her Listeria SPECIMEN COLLECTION DATE. Please list venues and food exposures from U.S. locations only. In the event of a fetal death or neonatal infection (<1 month of age), the MOTHER is the case-patient, and she should be asked about her food history during the 4 weeks before DELIVERY. Please refer to patient as “you” if interviewing the case-patient directly; if interviewing a surrogate, please use “he” or “she.”

<b>INSTRUCTIONS TO READ TO CASE-PATIENT (OR SURROGATE):</b>
I am interested in the foods you ate during the 4 weeks before your illness ( <i>delivery</i> ). I see that you had a positive test for listeriosis ( <i>delivered</i> ) on ___/___/____. For most of the interview, I will be asking you questions about the 4 weeks before this date, that is, from ___/___/___ (date 4 weeks before) through ___/___/___ (specimen collection/delivery date). ( <i>Have patient get calendar for reference if possible.</i> ) First I'd like to ask you about where the foods you ate were purchased. I am going to read you a list of places where food can be purchased. For each, please tell me if you ate food purchased from that type of place in the four week time period. I know that it can be difficult to remember that far back, but please do the best you can. If you're not sure, please tell me whether it's likely or unlikely that you ate food purchased from that location.
<b>I. FOOD PURCHASE HISTORY</b>
<b>A. Grocery stores:</b> Did you eat food purchased from any grocery stores during the 4 week time period? ( <i>Please read all options.</i> ) <input type="checkbox"/> Yes <input type="checkbox"/> It's likely <input type="checkbox"/> It's unlikely <input type="checkbox"/> No <b>If yes or likely,</b>

**Listeria Case Form**

**Patient State Laboratory ID No.** \_\_\_\_\_

Store Name	Street Address	City	County	State
1.				
2.				
3.				
4.				
5.				
6.				
7.				

**B. Delis, small markets, farmers' markets:** Did you eat food purchased from any delicatessens, small local markets, other small shops, or farmers' markets during the 4 week period?  Yes  It's likely  It's unlikely  No *If yes or likely,*

Store Name	Street Address	City	County	State
1.				
2.				
3.				
4.				
5.				
6.				
7.				

**C. Restaurants:** Did you eat food from any restaurants, including sit-down, fast-food, and take-out restaurants during the 4 week period?

Yes  It's likely  It's unlikely  No *If yes or likely,*

Restaurant Name	Street Address	City	County	State	Dining dates (mm/dd/yyyy)
1.					___/___/___
2.					___/___/___
3.					___/___/___
4.					___/___/___
5.					___/___/___
6.					___/___/___
7.					___/___/___

**D. Other venues: cafeterias, concession stands, institutions:** Did you eat food purchased or obtained from any other venues, such as school cafeterias, concession stands, street vendors, institutions (e.g. hospital food), local farms, or private vendors during the 4 week period?

Yes  It's likely  It's unlikely  No *If yes or likely,*

Name	Street Address	City	County	State	Dining dates (mm/dd/yyyy)
1.					___/___/___

**Listeria Case Form**

**Patient State Laboratory ID No.** \_\_\_\_\_

2.					__/__/__
3.					__/__/__
4.					__/__/__
5.					__/__/__
6.					__/__/__
7.					__/__/__

**II. FOOD CONSUMPTION HISTORY**  
**INSTRUCTIONS FOR INTERVIEWER:** Please read all options to case-patient in each category. For the names of purchase sites, it is preferable to use codes from Section I above, e.g. A1 for first grocery store, A3 for third grocery store, C5 for fifth restaurant. A DELI COUNTER serves portions or helpings of salads, cheeses, and meats sliced ON-SITE at a specified counter within a grocery store, food market, or delicatessen. Foods sliced and packaged AT the FACTORY and sold as pre-packaged containers in self-serve refrigerated display cases are NOT considered to be from a deli counter

**INSTRUCTIONS TO READ TO CASE-PATIENT (OR SURROGATE):**  
 Now I'd like to ask you about the foods that you ate between \_\_\_\_/\_\_\_\_/\_\_\_\_ (date 4 weeks before) through \_\_\_\_/\_\_\_\_/\_\_\_\_ (specimen collection/delivery date). For each food item, please give me your best guess as to whether you ATE the food, you're not sure but you LIKELY ATE the food, you're not sure but you LIKELY DID NOT EAT the food, or you DID NOT EAT the food.

**MEATS:** In the 4 week period, did you eat any of the following COLD CUT, DELI MEAT, OR LUNCHEON MEAT items?

	Ate (=1)	Likely Ate (=2)	Likely did NOT eat (=3)	Did NOT eat (=4)	If ate or likely ate, How often?	If ate or likely ate, Where was it purchased? (choose all types that apply)	Name(s) of store/restaurant/venue: (all names that apply)	Types or brands: (all that apply)
Ham	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ Was this item purchased from a deli counter at any of the sites? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Bologna	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ Was this item purchased from a deli counter at any of the sites? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Turkey breast	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ Was this item purchased from a deli counter at any of the sites? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Other turkey deli meat (e.g. turkey ham)	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ Was this item purchased from a deli counter at any of the sites? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____

**Listeria Case Form**

**Patient State Laboratory ID No.** \_\_\_\_\_

	<b>Ate (=1)</b>	<b>Likely Ate (=2)</b>	<b>Likely did NOT eat (=3)</b>	<b>Did NOT eat (=4)</b>	<b>If ate or likely ate, How often?</b>	<b>If ate or likely ate, Where was it purchased? (choose all types that apply)</b>	<b>Name(s) of store/restaurant/venue: (all names that apply)</b>	<b>Types or brands: (all that apply)</b>
Chicken deli meat <i>(NOT fresh chicken or rotisserie chicken)</i>	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Pastrami/ Corned beef	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Other deli/ luncheon meat <i>(specify)</i> _____ _____	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Patè or meat spread that was not canned	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Hot dogs	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
<b>If Yes, were the hot dogs:</b> <input type="checkbox"/> Heated before consumption <input type="checkbox"/> Not heated before consumption (eaten directly out of package)								

**Listeria Case Form**

**Patient State Laboratory ID No.** \_\_\_\_\_

**CHEESES:** In the 4 weeks between \_\_\_\_/\_\_\_\_/\_\_\_\_ (date 4 weeks before) through \_\_\_\_/\_\_\_\_/\_\_\_\_ (specimen collection/delivery date), did you eat any of the following CHEESES?

	<b>Ate (=1)</b>	<b>Likely Ate (=2)</b>	<b>Likely did NOT eat (=3)</b>	<b>Did NOT eat (=4)</b>	<b>If ate or likely ate, How often?</b>	<b>If ate or likely ate, Where was it purchased? (choose all types that apply)</b>	<b>Name(s) of store/restaurant/venue: (all names that apply)</b>	<b>Types or brands: (all that apply)</b>
Brie	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Feta	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Camembert	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Goat	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Blue or gorgonzola	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____

**Listeria Case Form**

**Patient State Laboratory ID No.** \_\_\_\_\_

	Ate (=1)	Likely Ate (=2)	Likely did NOT eat (=3)	Did NOT eat (=4)	If ate or likely ate, How often?	If ate or likely ate, Where was it purchased? (choose all types that apply)	Name(s) of store/restaurant/venue: (all names that apply)	Types or brands: (all that apply)
Mexican-style cheese (Queso fresco, queso blanco)	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store <input type="checkbox"/> Deli/small market <input type="checkbox"/> Restaurant <input type="checkbox"/> Other venue <input type="checkbox"/> Don't know <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Farmer's cheese	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store <input type="checkbox"/> Deli/small market <input type="checkbox"/> Restaurant <input type="checkbox"/> Other venue <input type="checkbox"/> Don't know <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Raw (Unpasteurized milk) cheese	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store <input type="checkbox"/> Deli/small market <input type="checkbox"/> Restaurant <input type="checkbox"/> Other venue <input type="checkbox"/> Don't know <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Other soft white cheese (not cream, cottage, or ricotta – specify)_____	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store <input type="checkbox"/> Deli/small market <input type="checkbox"/> Restaurant <input type="checkbox"/> Other venue <input type="checkbox"/> Don't know <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____

<b>READY-TO-EAT SALADS:</b> In the 4 week period, did you eat any of the following ready-to-eat, deli-style salads (that were NOT PREPARED AT HOME)?								
	Ate (=1)	Likely Ate (=2)	Likely did NOT eat (=3)	Did NOT eat (=4)	<i>If ate or likely ate, How often?</i>	<i>If ate or likely ate, Where was it purchased? (choose all types that apply)</i>	<i>Name(s) of store/restaurant/venue: (all names that apply)</i>	<i>Types or brands: (all that apply)</i>
Potato salad	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Pasta salad	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Tuna salad	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Bean salad	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Hummus	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____

**Listeria Case Form**

**Patient State Laboratory ID No.** \_\_\_\_\_

	Ate (=1)	Likely Ate (=2)	Likely did NOT eat (=3)	Did NOT eat (=4)	If ate or likely ate, How often?	If ate or likely ate, Where was it purchased? (choose all types that apply)	Name(s) of store/restaurant/venue: (all names that apply)	Types or brands: (all that apply)
Cole slaw	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store <input type="checkbox"/> Deli/small market <input type="checkbox"/> Restaurant <input type="checkbox"/> Other venue <input type="checkbox"/> Don't know <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Seafood salad	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store <input type="checkbox"/> Deli/small market <input type="checkbox"/> Restaurant <input type="checkbox"/> Other venue <input type="checkbox"/> Don't know <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Fruit salad (including pre-cut cubes of a single fruit)	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store <input type="checkbox"/> Deli/small market <input type="checkbox"/> Restaurant <input type="checkbox"/> Other venue <input type="checkbox"/> Don't know <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Other ready-to-eat meat, vegetable or fruit salad not made at home (Specify)	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store <input type="checkbox"/> Deli/small market <input type="checkbox"/> Restaurant <input type="checkbox"/> Other venue <input type="checkbox"/> Don't know <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____

**Listeria Case Form**

**Patient State Laboratory ID No.** \_\_\_\_\_

**SEAFOOD:** In the 4 weeks between \_\_\_\_/\_\_\_\_/\_\_\_\_ (date 4 weeks before) through \_\_\_\_/\_\_\_\_/\_\_\_\_ (specimen collection/delivery date), did you eat any of the following ready-to-eat fish or seafood items or fruit items?

	<b>Ate (=1)</b>	<b>Likely Ate (=2)</b>	<b>Likely did NOT eat (=3)</b>	<b>Did NOT eat (=4)</b>	<b>If ate or likely ate, How often?</b>	<b>If ate or likely ate, Where was it purchased? (choose all types that apply)</b>	<b>Name(s) of store/restaurant/venue: (all names that apply)</b>	<b>Types or brands: (all that apply)</b>
Precooked shrimp	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store <input type="checkbox"/> Deli/small market <input type="checkbox"/> Restaurant <input type="checkbox"/> Other venue <input type="checkbox"/> Don't know <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Precooked crab (including imitation crab meat)	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store <input type="checkbox"/> Deli/small market <input type="checkbox"/> Restaurant <input type="checkbox"/> Other venue <input type="checkbox"/> Don't know <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Smoked or cured fish that was not from a can (e.g. smoked salmon or lox)	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store <input type="checkbox"/> Deli/small market <input type="checkbox"/> Restaurant <input type="checkbox"/> Other venue <input type="checkbox"/> Don't know <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____

**Listeria Case Form**

**Patient State Laboratory ID No.** \_\_\_\_\_

<b>Fruit:</b> In the 4 weeks between ____/____/____ (date 4 weeks before) through ____/____/____ (specimen collection/delivery date), did you eat any of the following fruit items?						
Honeydew melon	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know
Cantaloupe	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know
Watermelon	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was this item purchased from a deli counter at any of the sites?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know

**Listeria Case Form**

**Patient State Laboratory ID No.** \_\_\_\_\_

<b>MILK:</b> In the 4 weeks between ____/____/____ (date 4 weeks before) through ____/____/____ (specimen collection/delivery date), did you drink any of the following types of milk?								
	Drank (=1)	Likely drank (=2)	Likely did NOT drink (=3)	Did NOT drink (=4)	<i>If ate or likely ate, How often?</i>	<i>If ate or likely ate, Where was it purchased? (choose all types that apply)</i>	<i>Name(s) of store/restaurant/venue: (all names that apply)</i>	<i>Types or brands: (all that apply)</i>
Whole milk	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was any of this milk unpasteurized (raw)?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
2% milk	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was any of this milk unpasteurized (raw)?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
1% milk	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was any of this milk unpasteurized (raw)?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Skim milk	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was any of this milk unpasteurized (raw)?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____
Other milk – chocolate, buttermilk, etc. (Specify) _____ _____	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store _____ <input type="checkbox"/> Deli/small market _____ <input type="checkbox"/> Restaurant _____ <input type="checkbox"/> Other venue _____ <input type="checkbox"/> Don't know _____ <b>Was any of this milk unpasteurized (raw)?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	_____	_____

<b>OTHER DAIRY:</b> In the 4 week period, did you eat any of the following other dairy items?								
	<b>Ate (=1)</b>	<b>Likely Ate (=2)</b>	<b>Likely did NOT eat (=3)</b>	<b>Did NOT eat (=4)</b>	<b>If ate or likely ate, How often?</b>	<b>If ate or likely ate, Where was it purchased? (choose all types that apply)</b>	<b>Name(s) of store/restaurant/venue: (all names that apply)</b>	<b>Types or brands: (all that apply)</b>
Butter ( <i>not margarine or other butter substitute</i> )	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store <input type="checkbox"/> Deli/small market <input type="checkbox"/> Restaurant <input type="checkbox"/> Other venue <input type="checkbox"/> Don't know	_____	_____
Cream	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store <input type="checkbox"/> Deli/small market <input type="checkbox"/> Restaurant <input type="checkbox"/> Other venue <input type="checkbox"/> Don't know	_____	_____
Ice cream	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store <input type="checkbox"/> Deli/small market <input type="checkbox"/> Restaurant <input type="checkbox"/> Other venue <input type="checkbox"/> Don't know	_____	_____
Sour cream	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store <input type="checkbox"/> Deli/small market <input type="checkbox"/> Restaurant <input type="checkbox"/> Other venue <input type="checkbox"/> Don't know	_____	_____
Yogurt	1	2	3	4	<input type="checkbox"/> ~ 1-2 x/month <input type="checkbox"/> ~ 1x/week <input type="checkbox"/> ~ 2-4x/week <input type="checkbox"/> ~ 5-7x/week <input type="checkbox"/> not sure	<input type="checkbox"/> Grocery store <input type="checkbox"/> Deli/small market <input type="checkbox"/> Restaurant <input type="checkbox"/> Other venue <input type="checkbox"/> Don't know	_____	_____

That is all. Thank you very much!

# Public Health Fact Sheet

## Listeriosis

### What is Listeriosis?

Listeriosis is an illness caused by bacteria known as *Listeria monocytogenes*. It is most dangerous in pregnant women, newborns, the elderly, and those with weakened immune systems.

### Who gets Listeriosis?

Anyone can get listeriosis. However, the following have a higher risk of serious illness: pregnant women, unborn and newborn babies, people with cancer, diabetes, kidney and liver disease and HIV infection. People who take steroid medications or are on chemotherapy are also at increased risk. Healthy adults and children can be infected with *Listeria*, but usually are not seriously ill.

### How is Listeriosis spread?

People usually get listeriosis by eating food contaminated with *L. monocytogenes*. Veterinarians, farmers, and others who work directly with animals may also become infected through direct contact with infected animals. Babies can be born with listeriosis when a mother becomes infected while pregnant.

### What are the symptoms of Listeriosis?

Symptoms of listeriosis include: fever, muscle aches, nausea and diarrhea. Many people develop only mild symptoms. If the infection spreads to the nervous system, symptoms such as headache, stiff neck, confusion, loss of balance or convulsions may occur. Infected pregnant women may have mild, flu-like symptoms; however, infection during pregnancy can lead to premature delivery, infection of the newborn or even stillbirth.

### How does it get into food?

The *Listeria* bacteria are found in soil and water. Vegetables can become contaminated from the soil or from manure used as fertilizer. Animals can carry *Listeria* without appearing ill and can contaminate other foods such as meats and dairy products. *Listeria* has been found in many raw foods and processed foods that become contaminated during or after processing, such as soft cheeses, cold cuts, smoked fish products, and ready-to-eat products such as crabmeat and chicken. Unpasteurized (raw) milk or foods made from unpasteurized milk may also contain *Listeria*.

### How is Listeriosis treated?

Listeriosis can be treated with antibiotics. When infection occurs during pregnancy, antibiotics can often prevent infection of the fetus or newborn.

*This fact sheet is for information only and is not intended for self-diagnosis or as a substitute for consultation. If you have any questions about the disease described above or think that you may have an infection, consult with your healthcare provider. This fact sheet is based on the Centers for Disease Control and Prevention's topic fact sheets.*

## **How can Listeriosis be prevented?**

The following measures can be taken to reduce a person's chance of getting sick with listeriosis:

- Thoroughly cook all raw meats.
- Wash raw vegetables thoroughly before eating.
- Keep uncooked meats separate from vegetables and from cooked foods and ready-to-eat foods.
- Wash hands, knives, and cutting boards with soap and water after handling uncooked meats.
- Avoid raw (unpasteurized) milk or foods made from raw milk.
- Always thaw ready-to-eat frozen food in the refrigerator or microwave, not on a counter.
- Before eating, thoroughly reheat leftover food until steaming hot.
- People at higher risk for listeriosis, such as pregnant women and persons with weakened immune systems, should also do the following:
  - Avoid soft cheeses such as feta, Brie, Camembert, blue-veined, and Mexican-style cheese. (Hard cheeses, processed cheeses, cream cheese, cottage cheese, or yogurt need not be avoided.)
  - Cook any leftover foods or ready-to-eat foods, such as hot dogs, until steaming hot before eating.
  - Avoid deli meats or thoroughly cook them before eating.

## **Where can you get more information?**

- Your Local Health Department
- Kansas Department of Health and Environment, Epidemiologic Services Section at (877) 427-7317
- <http://www.cdc.gov/health/default.htm>
- Your doctor, nurse, or local health center

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