

DATE:	25 July 2024
TO:	Physicians, Nurse Practitioners, Midwives and Pharmacists
FROM:	Dr. A. Mark Joffe, Chief Medical Officer of Health, Province of Alberta, Dr. Laura MacDougall, Senior Medical Officer of Health, Alberta Health Services, and Dr. Graham Tipples, Medical-Scientific Director, Alberta Precision Laboratories
RE:	Clinical and Laboratory Guidance – Plant-Based Beverages and Outbreak of <i>Listeria</i> Infections

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Key Message

- An outbreak of *Listeria* (with 12 infections to date in Canada) has been identified and linked to various Silk and Great Value plant-based refrigerated beverages. Outbreak updates can be found here: <https://www.canada.ca/en/public-health/services/public-health-notice/2024/outbreak-listeria-infections-recalled-refrigerated-plant-based-beverages.html>

Background

What is *Listeria*?

- Listeria* are common bacteria found in soil and decaying vegetation as well as in numerous animal species, water, and sewage. It can also be a low-level contaminant in processed and unprocessed foods of plant and animal origin that can survive, and multiply, at refrigerator temperatures. Infections with *Listeria* (usually *Listeria monocytogenes*), or listeriosis, are uncommon, with 1-15 infections reported per year in Alberta since 2000.

Risk Factors for Serious Infections from *Listeria*

- Serious infection from *Listeria* is uncommon. Individuals at most risk for serious infection are neonates, anyone over age 60y and/or those who are immunosuppressed, whether due to disease or medications (especially steroids). Pregnant people are at risk of infection that may result in miscarriage, stillbirth, premature delivery, or serious infection in the newborn.

What are the Symptoms of Infection with *Listeria*?

- Acute Self-Limited Febrile Gastroenteritis** – Ingestion of a large amount of *Listeria* in contaminated food can cause fever, watery diarrhea, nausea, vomiting, headache and joint/muscle pain. Onset is usually within a few hours to 10 days of consuming contaminated product, lasts 1-2 days, and resolves without treatment. There is no role for routine stool cultures, as *Listeria* can be found in stool of healthy people.
- Invasive Listeriosis** – *Listeria* has potential to cause serious, invasive disease including bloodstream infection and meningoenephalitis, and infections in pregnant people. Onset is usually within 7-10 days of consuming contaminated product with the vast majority occurring within 4 weeks (and rarely up to 12 weeks).
 - Bloodstream Infection (Septicemia)** – Fever and chills (with or without prior gastrointestinal symptoms)
 - Central Nervous System Infections (Meningoenephalitis)** – Fever and change in mental status, with or without meningitis (headache, neck stiffness)

- c. **Infections in Pregnancy** – Febrile gastroenteritis and bloodstream infections are most commonly diagnosed in the 3rd trimester. Consider listeriosis in pregnant people who have consumed contaminated product and develop fever, myalgia, abdominal or back pain, nausea, vomiting or diarrhea.

How this will impact you

- There are no confirmed cases of *Listeria* infections linked to this outbreak in Alberta to date, but this is an evolving outbreak in Canada with unpredictable impact. There are likely to be many individuals who have consumed products from the affected companies. Most are likely to be asymptomatic but may have concerns. There may be others presenting with symptoms of Listeriosis and investigation may be warranted. Common anticipated scenarios are outlined in the table below.

Action Required

Approach to Those Exposed to Contaminated or Recalled Product¹:

- **Testing for *Listeria* in asymptomatic individuals is not recommended.**
- **Laboratory testing may be warranted for symptomatic individuals at risk for severe disease (see Table). Routine cultures of blood, CSF and sterile sites will detect *Listeria*. Food product testing requires direction from a Medical Officer of Health/Environmental Public Health.**
- **Systemic infections with *Listeria* are serious and may be complex. Clinical consultation for expert input is recommended in management of these infections.**

Presentation	<i>Listeria</i> Testing Recommendations
Asymptomatic or resolved symptoms (with or without Risk Factors – see above)	<ul style="list-style-type: none"> • No testing recommended; counsel regarding symptoms of listeriosis and to consult a health care provider should these develop within 3 months of the last exposure event
Acute afebrile gastroenteritis and <u>no</u> risk factor for severe illness (see Risk Factors above)	<ul style="list-style-type: none"> • No testing for <i>Listeria</i> recommended; counselling as above. • Stool testing for bacterial, <i>C. difficile</i> (where appropriate), viral and/or protozoal pathogens for alternate diagnoses of severe or persistent symptoms, as clinically indicated.
Acute afebrile gastroenteritis <u>with Risk Factors</u> for severe illness (see above)	<ul style="list-style-type: none"> • Counselling; Stool testing for alternate diagnoses, as above • Consider collecting two sets of routine bacterial blood cultures if symptoms are not improving within 24 - 48h
Acute febrile ($\geq 38.1^{\circ}\text{C}$) gastroenteritis	<ul style="list-style-type: none"> • Collect two sets of routine bacterial blood cultures • Stool testing for alternate diagnoses, as above • Assess need for empiric treatment pending culture results (especially if risk factors for severe illness)

¹ Modified from Public Health Ontario: <https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index/Listeria-monocytogenes-Confirmation-Serotyping/Listeriosis-Clinical-Testing-Information>

<p>Signs and symptoms of invasive listeriosis. (bloodstream infection and/or CNS Infection)</p>	<ul style="list-style-type: none"> • Collect two sets of routine bacterial blood cultures • With neurological involvement, consider collecting CSF for cell count, protein, glucose and bacterial culture • Additional bacterial cultures as indicated (e.g. joint, pleural, pericardial, respiratory) • Assess need for empiric treatment pending culture results
<p>Pregnant with gastroenteritis or symptoms of invasive infection</p>	<ul style="list-style-type: none"> • Consider listeriosis if exposed to contaminated or recalled product and having relevant symptoms (see above) • Collect two sets of blood cultures (and stool studies, as clinically indicated – see above) • Consider presumptive antibiotic therapy

Effective

- July 24, 2024

Questions/Concerns

- Laboratory Issues – Consult Medical Microbiologist On Call as appropriate for your zone;
- Clinical Issues – Consult appropriate specialist (Infectious Diseases, Pediatrics, Obstetrics and Gynecology, etc.);
- Public Health Concerns – Consult On Call Zone Medical Officer of Health

Approved by

- Dr. Mark Joffe: Chief Medical Officer of Health, Province of Alberta
- Dr. Laura MacDougall: Chief Medical Officer of Health, Alberta Health Services
- Dr. Graham Tipples: Medical Director, APL – Public Health Laboratory