Public Health Service
DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Disease Control and Prevention (CDC)

MEMORANDUM

Date: September 19, 2011

From: Enteric Diseases Epidemiology Branch
Division of Foodborne, Waterborne, and Environmental Diseases
National Center for Emerging and Zoonotic Infectious Diseases
Centers for Disease Control and Prevention

Subject: Suggested framework for medical management of persons at elevated risk for invasive listeriosis who are exposed to *Listeria monocytogenes*

To: The Record

Purpose

Outbreak investigations or routine monitoring of food production and processing facilities may lead to identification and recall of a food contaminated with *Listeria monocytogenes.* In these situations, persons at elevated risk for invasive listeriosis may seek medical care because of concern that they have been exposed to to *L. monocytogenes.* This document provides a suggested framework for medical management of these persons. It is not intended either as a practice guideline or as a modification of existing guidelines or practices in managing patients with confirmed or suspected listeriosis.

Introductory notes

- Invasive listeriosis—illness with isolation of *Listeria monocytogenes* from a normally sterile site, typically blood or cerebrospinal fluid—is very rare, with an incidence rate of ~0.3/100,000 in the general population and ~3/100,000 in population subgroups at elevated risk.
- Groups at elevated risk for invasive disease include pregnant women, persons with immunocompromising conditions, and older adults. Risk increases with increasing age over 50 years.
- Pregnancy-associated listeriosis can lead to fetal loss, preterm delivery, and neonatal sepsis and meningitis. In most, but not all, cases of fetal or neonatal infection, the mother has a history of symptoms consistent with listeriosis.
- The risk of invasive listeriosis after exposure to *L. monocytogenes* is very low; exposure is common, but disease is rare.
- When a specific food is recalled (for example, melon grown at a specific farm) because of *L. monocytogenes* contamination, persons seeking medical care may know that they ate that general class of food (ie, melon) but may not know if it was the specific type or brand that was recalled. In this situation the likelihood of exposure to *L. monocytogenes* will depend on the commercial distribution of the specific implicated or recalled food product.
- Little scientific evidence is available to inform decisions regarding management of persons at elevated risk of invasive listeriosis who have been exposed to *L. monocytogenes* and who are either asymptomatic or mildly symptomatic. Therefore, this suggested framework is based to a large extent on expert professional opinion.

- Patient management decisions for asymptomatic or mildly symptomatic persons are appropriately made on a case-by-case basis, informed by clinical judgment and the likelihood of exposure of the patient. Consultation with a specialist in infectious disease may be considered
- The suggested framework discusses stool culture for *L. monocytogenes,* but stool culture has not been evaluated as a screening tool. It may have low sensitivity unless enrichment procedures are performed and, in many areas, may not be available routinely.

Suggested framework for medical management

Pregnant women

1. Exposed, asymptomatic:

Most experts believe that no testing or treatment is indicated for an asymptomatic pregnant woman who ate a product recalled because of *L. monocytogenes* contamination. Such a patient should be instructed to return if she develops symptoms of listeriosis within 2 months of eating the recalled product. Symptoms may include fever and myalgias, often preceded by diarrhea or other gastrointestinal symptoms.

2. Exposed, afebrile, mild symptoms:

A pregnant woman who ate a product recalled because of *L. monocytogenes* contamination who is afebrile and has signs and symptoms consistent with a minor gastro-intestinal or flu-like illness, such as mild myalgias or mild nausea, vomiting, or diarrhea, could be managed expectantly (as for an exposed, asymptomatic woman); this is a reasonable approach to limit low-yield testing and supports judicious use of antimicrobial agents. Alternatively, such a patient could be tested with blood culture and/or stool culture for *Listeria,* where such testing is available. If diagnostic testing is performed, some experts would withhold antibiotic therapy unless at least a culture yielded *Listeria monocytogenes*. Others would initiate antibiotic therapy while culture results were pending, and then stop treatment if culture(s) were negative. The antibiotic regimen could consist of oral ampicillin or amoxicillin, although it is important that both the clinician and the patient know that no effectiveness data exist for this scenario. If stool culture is positive, therapy could continue for 10-14 days.

3. Exposed, fever and symptoms consistent with invasive listeriosis:

An exposed pregnant woman with fever (>100.6^{o} F, >38.1^{o} C) and signs and symptoms consistent with invasive listeriosis, for whom no other cause of illness is known should be tested and treated for presumptive listeriosis. The febrile illness may be accompanied by myalgias and headache, and may have been preceded by diarrhea or other gastrointestinal symptoms.

a) Diagnostic testing should include blood culture and other tests, such as culture of cerebrospinal fluid, as indicated by the clinical presentation.
b) The antimicrobial regimen should be the standard therapy for listeriosis, typically including IV ampicillin and gentamicin for 14 to 21 days for nonallergic patients.
c) If blood culture is negative and symptoms resolve, antibiotic therapy may be discontinued.

4. Exposed, history of symptoms in past 4 weeks, currently asymptomatic:

Most experts believe that no testing or treatment is indicated for an asymptomatic pregnant woman who ate a product recalled because of *L. monocytogenes* contamination and who experienced symptoms that have resolved. Any such patient should be instructed to return for medical care if she develops symptoms of listeriosis within 2 months of eating the recalled product. Diagnostic testing, such as culture of blood or amniotic fluid, has been considered in such patients, depending on the clinical scenario.

Other Persons with Elevated Risk of Invasive Listeriosis
(older adults, immunocompromised persons)

1. **Exposed, asymptomatic:**

   Most experts believe that no testing or treatment is indicated for an asymptomatic person with elevated risk of invasive listeriosis who ate a product recalled because of *L. monocytogenes* contamination. Such a patient should be instructed to return if he or she develops symptoms of listeriosis within 2 months of eating the recalled product. Symptoms may include fever and myalgias, often preceded by diarrhea or other gastrointestinal symptoms. In older adults and immunocompromised persons, symptoms of listeriosis not infrequently include headache, stiff neck, confusion, loss of balance, and/or convulsions.

2. **Exposed, afebrile, mild symptoms:**

   A person with elevated risk of invasive listeriosis who ate a product recalled because of *L. monocytogenes* contamination who is afebrile and has signs and symptoms consistent with a minor gastro-intestinal or flu-like illness, such as mild myalgias or mild nausea, vomiting, or diarrhea, could be managed expectantly (as for an exposed, asymptomatic person); this is areasonable approach to limit low-yield testing and support judicious use of antimicrobial agents. Alternatively, such a patient could be tested with stool culture and/or with blood culture for *Listeria,* where such testing is available. If diagnostic tests are performed, some experts would withhold antibiotic therapy unless cultures yielded *Listeria monocytogenes*. Others would initiate antibiotic therapy while culture results were pending and then stop treatment if the cultures were negative. The antibiotic regimen could consist of oral ampicillin or amoxicillin, although it is important that both the clinician and the patient know that no effectiveness data exist for this scenario. If stool culture is positive, therapy could continue for 10-14 days.

3. **Exposed, fever and symptoms consistent with invasive listeriosis:**

   An exposed person with elevated risk of invasive listeriosis with fever (>100.6^{o} F, >38.1^{o} C) and signs and symptoms consistent with listeriosis, for whom no other cause of illness is known should be tested and treated for presumptive listeriosis. The febrile illness may be accompanied by myalgias, often preceded by diarrhea or other gastrointestinal symptoms, and, in older adults and immunocompromised persons, not infrequently include headache, stiff neck, confusion, loss of balance, and/or convulsions, as stated above.

   a. Diagnostic testing should include blood culture and other tests, such as culture of cerebrospinal fluid, as indicated by the clinical presentation.
   b. The antimicrobial regimen should be the standard therapy for listeriosis, typically including IV ampicillin and gentamicin for 14 to 21 days for nonallergic patients.
   c. If blood culture is negative and symptoms resolved, antibiotic therapy may be discontinued.

4. Exposed, history of symptoms in past 4 weeks, currently asymptomatic:

Most experts believe that no testing or treatment is indicated for an asymptomatic person with elevated risk of invasive listeriosis who ate a product recalled because of *L. monocytogenes* contamination and experienced symptoms that have resolved. Any such patient should be instructed to return for medical care if he or she develops symptoms of listeriosis within 2 months of eating the recalled product.