

Council of State and Territorial Epidemiologists Position Statement

03-ID-01

Committee: **Infectious Disease**

Title: ***Listeria* case surveillance**

Statement of the Problem:

Listeria monocytogenes is a leading cause of death due to foodborne diseases in the United States. In 1999, CSTE adopted a position statement making listeriosis a nationally notifiable disease and recommending the referral of *L. monocytogenes* isolates from clinical laboratories for subtyping at public health laboratories participating in PulseNet. These changes have greatly enhanced the detection of listeriosis outbreaks. However, investigation of listeriosis outbreaks remains unusually difficult and time consuming. In three major listeriosis outbreaks recognized in the U.S. since 1998, it took several weeks/months to complete the epidemiologic investigation that lead to the identification of the food source of the outbreak. The case-control studies conducted during these outbreaks successfully identified the food vehicle causing the outbreaks by comparing cases with the outbreak pulsed-field gel electrophoresis (PFGE) pattern to other cases of listeriosis with non-outbreak PFGE patterns ("controls"). Prospective interviewing of cases of listeriosis with a standardized questionnaire that includes questions about consumption of high-risk food, together with swift subtyping of *L. monocytogenes* isolates through PulseNet, will shorten the time interval between outbreak detection and the identification and recall of contaminated foods, and reduce the resources required to investigate listeriosis outbreaks.

Statement of the desired action to be taken:

CSTE recommends:

1. Prompt routine interviewing of all patients with culture-confirmed listeriosis using a standardized questionnaire that is developed in conjunction with CDC and the CSTE Food Safety Committee.
2. Prompt referral of *Listeria* isolates from clinical laboratories to state public health laboratories, and prompt subtyping of *Listeria* isolates by state PulseNet laboratories
3. That CDC continues to advocate for funds to assist the states in achieving these outcomes

Public Health Impact:

Listeria monocytogenes is a facultative intracellular pathogen that causes serious illness among newborns, elderly, and immunocompromised persons and can cause fetal loss. It is usually acquired through ingestion of contaminated food. Outbreak investigations have identified several food items as vehicles for foodborne disease; information that has been instrumental in the development of FDA and USDA regulations to reduce contamination of foods with *Listeria* and in motivating industry interventions. However, since *Listeria* is relatively salt-tolerant, grows at refrigeration temperature, and appears to thrive well in food processing environments, the monitoring and control of *Listeria* in food products continues to be a problem for the food industry. Identifying food items that are contaminated with *Listeria* through outbreak identification and investigations continues to play an important role in removing contaminated foods from the market and pinpointing problems in food processing methods.

In 1999, CSTE adopted a position statement making listeriosis a nationally notifiable disease, and recommended the referral of *L. monocytogenes* isolates from clinical laboratories for subtyping at public health laboratories participating in PulseNet. While the detection of listeriosis outbreaks has been enhanced by these actions, the investigation of listeriosis outbreaks continues to be time consuming, and a drain on state public health department resources. This is due in large part to the long incubation period (up to 70 days) of *Listeria* infection; by the time an outbreak is identified, food histories are vague, food samples and packaging are no longer available. In addition, the identification of appropriate control subjects for case-control studies is difficult. In recent outbreaks, cases with the outbreak PFGE pattern (outbreak pattern) were compared to other cases of listeriosis with non-outbreak PFGE patterns; the case-control studies successfully identified the food vehicle causing the outbreaks.

A standardized listeriosis case questionnaire is the next step that CSTE can adopt to improve the response and investigation of listeriosis outbreaks. Prospective interviewing of all patients with listeriosis with a standardized questionnaire that includes questions about consumption of high-risk food, together

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with swift subtyping of *Listeria* isolates through PulseNet, will greatly shorten the interval between outbreak detection and the identification and recall of contaminated foods. A standardized listeriosis case questionnaire will reduce the drain on state public health department resources during listeriosis outbreak investigations and facilitate prompt outbreak investigations.

References:

1999 CSTE Annual Meeting, Position Statement # ID-3, Addition of Listeriosis to the list of Nationally Notifiable Diseases.

Case Definition:

Clinical description

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 can also be observed.

Laboratory criteria for diagnosis

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

Case classification

Confirmed: A clinically compatible case that is laboratory-confirmed

Comment

The usefulness of other laboratory methods such as fluorescent antibody testing or polymerase chain reaction to diagnose invasive listeriosis has not been established.

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