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Guidance for the Public Health and Clinical Management of Listeria Cases

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1.0 Introduction & Epidemiological Context

Listeriosis is a **notifiable infectious disease in Ireland**, caused by the bacterium *Listeria monocytogenes*. It is primarily transmitted through **contaminated food**, especially ready-to-eat (RTE) products such as soft cheeses, cold-smoked fish, deli meats, and pâtés.

Ready-to-heat (RTH) foods that are not cooked thoroughly present a potential risk for the transmission of *Listeria monocytogenes*. To minimise this risk, it is essential that RTH foods are prepared according to the manufacturer's instructions, with particular attention to:

- **Achieving a core temperature of at least 75°C**, as recommended by **Safefood**, to ensure harmful bacteria such as *Listeria* are effectively destroyed.
- **Stirring or turning food during cooking**, where instructed, to promote even heat distribution and eliminate cold spots.
- **Using a food thermometer**, where available, to verify that the correct internal temperature has been reached.

Following these steps is especially important for vulnerable groups, including pregnant individuals, older adults, and those with weakened immune systems, who are at higher risk of severe illness from *Listeria*.

Full information on the foods that present a risk of listeria can be found **here**.

1.1 Forms of Listeriosis

Listeriosis presents in **two distinct clinical forms**:

- **Non-invasive listeriosis**:
  - Typically presents as a mild, febrile self-limiting constitutional and gastrointestinal illness.
  - Symptoms include fever, influenza like illness, diarrhoea and muscle aches.
  - Most common in healthy individuals after consuming contaminated food.
  - Often underreported due to mild symptoms and the infrequency with which patients present for medical attention.

- **Invasive listeriosis**:
  - A severe systemic infection in which *L. monocytogenes* invades normally sterile sites (e.g., blood, cerebrospinal fluid).
  - Can lead to sepsis, meningitis, encephalitis, in adults and infants, and foetal loss.
  - Primarily affects **vulnerable groups**: pregnant women, neonates, the elderly, and immunocompromised individuals.
  - Requires hospitalisation and urgent antimicrobial therapy based upon antimicrobial susceptibility profile, or in the absence of an isolate upon empirical therapy, supported by advice from local hospital prescribing guidelines and local ID/clinical microbiological experts.

1.2 Transmission

- Primarily **foodborne** (>95% of cases).
- Found in soil, water, sewage, and food processing environments.

- Occasionally via contact with products of conception of ruminants (i.e. cattle, sheep, goats).
- Rare person-to-person transmission (e.g., vertical transmission).
- Asymptomatic carriage in more than 1% of the population.

1.3 Incubation Period

- Variable: **3 to 70 days**, typically around **3 weeks**.
- **Longer incubation may be observed in pregnancy-associated cases**.

2.0 Epidemiology in Ireland

- **Annual incidence**: 14–22 confirmed cases. More details can be found **here**.
- There is **no seasonal pattern** to distribution.

3.0 Case Definitions

For official case definitions, including clinical, laboratory, and epidemiological criteria, refer **here**.

4.0 General Clinical Approach

- Listeriosis symptoms are often mild and non-specific.
- In immunocompetent individuals and pregnant persons, diarrhoea is reported in over two-thirds of cases; however, fever—often accompanied by an influenza-like illness—is the most common symptom, occurring in more than 90% of cases.
- **Asymptomatic individuals,** even those exposed to high-risk food products**, do not require stool testing**.
- **Public health guidance** advises that **asymptomatic individuals**, even those in **vulnerable groups, do not require referral for assessment**, if consumed high-risk foods[1] and remain well.

[1] **High-risk foods for listeria infection** typically include **chilled, ready-to-eat items** that may support the growth of *Listeria monocytogenes*. These include:

- **Cold, cooked sliced meats** and **cured meats**
- **Smoked and cured fish**, including sushi
- **Cooked shellfish**
- **Soft mould-ripened cheeses** (e.g., camembert, brie) and **blue-veined cheeses**
- **Pâté**
- **Pre-prepared sandwiches and salads**
- **Pre-cut fruit**, such as pre-packed melon slices
- **Unpasteurised milk** and **dairy products made from unpasteurised milk**

These foods are not always contaminated, but they pose a higher risk, especially for vulnerable groups such as pregnant women, older adults, and individuals with weakened immune systems.

- **Symptomatic individuals** who may have consumed high-risk foods[1] particularly those in **vulnerable groups** (e.g. **pregnant women, neonates, older adults, and immunocompromised individuals**), **should be referred for further clinical assessment.**

5.0 Testing Pathways

- *Listeria monocytogenes* is **not routinely included** in standard infectious intestinal bacterial panels due to several limitations:
  - **Stool culture has low sensitivity** and is an unreliable indicator of active infection.
  - Shedding is intermittent, particularly in mild or asymptomatic cases, which reduces the likelihood of detection.
- In cases of **invasive disease, blood culture remains the gold standard**, as faecal shedding may occur later in the disease course.
- **Stool testing is not recommended** for screening of potential case(s) including **food handlers.**
- If a patient is **symptomatic** and at risk of or suspected to have listeriosis, **clinical management and referral should be guided by their risk profile**—especially if they are **pregnant, very young, elderly, or immunocompromised**.

5.1 Diagnostic Testing

5.1.1 Indications for Testing

- Febrile illness in pregnancy
- Neonatal sepsis or meningitis
- Sepsis or meningitis in elderly or immunocompromised individuals

5.1.2 Testing Protocols

- Blood cultures (multiple sets)
- CSF analysis and culture
- Placental/foetal tissue culture in pregnancy loss
- PCR for rapid detection

5.2 Testing in Specific Settings

5.2.1 Paediatric

- Neonates with sepsis or meningitis should be tested for *Listeria*.

5.2.2 Maternity

- In pregnant women with unexplained fever, listeriosis should always be considered as part of the differential diagnosis.
- **Placental cultures and testing of foetal tissues are essential in cases of stillbirth**, to support diagnosis and inform public health investigation.

5.2.3 Institutional & Residential Settings

Testing and surveillance considerations should be adapted to the nature of the setting:

- **Hospitals and healthcare facilities**:
  - In **patients presenting with febrile illness, sepsis, or meningitis**— particularly those who are **immunocompromised, pregnant or elderly**— a **diagnosis of invasive listeriosis should always be considered**.
  - Enhanced clinical vigilance is warranted during **outbreaks** or when **foodborne exposure is suspected**, in line with national or regional public health advice**.**
- **Community residential settings (e.g., nursing homes, long-term care facilities)**:
  - Residents may be at increased risk due to age, underlying health conditions, and shared food services.
  - Prompt testing and public health notification are advised if multiple residents develop compatible symptoms.
- **Non-healthcare congregate settings**[2]:
  - Risk assessments should consider food sourcing, preparation practices, and the vulnerability of the population.
  - In the event of suspected foodborne transmission, coordinated clinical testing and environmental investigation should be initiated.

6.0 Public Health & Clinical Measures for Case Risks Reduction

6.1 Confirmed Case(s)

- **Admission**: Individuals with suspected or confirmed **invasive listeriosis** should be admitted to an acute hospital for urgent clinical management and microbiological investigation.
- **Notification**: All confirmed cases must be reported to the Regional Department of Public Health, and contact details are available **here**.
- **Source investigation:** Initiate a food history and exposure assessment to identify potential sources of infection.
- **Environmental and institutional response**:
  - In **institutional and residential settings** (e.g., hospitals, nursing homes, prisons), coordinate with environmental health officers and food safety authorities to assess food handling, preparation, and storage practices.
  - Implement control measures to prevent further exposure, including temporary suspension of implicated food items and enhanced hygiene protocols.

[2] **Congregate setting:** refers to a range of facilities where people (most or all of whom are not related) live or stay overnight and use shared spaces (e.g., common sleeping areas, bathrooms, kitchens) such as: homeless shelters, refugees, group homes and State-provided accommodation for refugees and applicants seeking protection. Those living or staying in the facility are referred to as residents.) The **risk of transmission is significantly higher**. In these environments, even general GZV cases may warrant **enhanced infection prevention and control precautions**, including temporary isolation, and improved ventilation.

- **Risk communication**: Provide tailored food safety advice to individuals and staff within the affected setting, focusing on:
    - Avoidance of high-risk foods (e.g., unpasteurised dairy, cold-smoked fish, deli meats)
    - Proper food storage and reheating practices
    - Enhanced hand hygiene and surface sanitation

6.2 Probable Case(s)

- **Clinical monitoring**: Probable cases should be closely monitored for progression of symptoms and undergo diagnostic testing as indicated.
- **Public health assessment**: Conduct preliminary food exposure history and assess for epidemiological links to confirmed cases or known outbreaks.
- **Precautionary measures**:
    - In institutional settings, consider temporary dietary adjustments and reinforce hygiene practices.
    - Provide interim food safety guidance pending confirmation.

6.3 Key Risk Considerations in Institutional & Residential Settings

- **Hospitals and healthcare facilities**:
    - Prioritise early identification and isolation of symptomatic individuals.
    - Ensure food service areas meet hygiene and temperature control standards.
    - Reinforce clinical awareness among staff for early recognition of invasive listeriosis.
- **Community residential care settings (e.g., nursing homes)**:
    - Monitor residents for febrile illness and gastrointestinal symptoms.
    - Review food procurement and preparation protocols.
    - Engage with public health teams for outbreak containment and communication.
- **Non-healthcare congregate settings**:
    - Assess food sourcing and preparation practices.
    - Implement enhanced cleaning and food safety education for staff and residents.
    - Coordinate with public health and custodial management for containment and support.

- **Schools and Childcare Facilities:**
    - Rarely affected, but hygiene and food safety education are important.

6.4 Public Health Measures for Exposed Individual(s)

Considerations:

- No routine antibiotic prophylaxis or vaccination is recommended.

- Monitor high-risk individual(s) for the development of symptoms suggestive of early invasive disease.[3]
- Reinforce food safety education.

Management:

- No routine contact tracing required.
- Active case finding will be undertaken by Public Health during outbreaks.
- Assess maternal/neonatal contacts in perinatal cases.
- Institutional assessments for shared food exposure.

Exclusion Guidance:

- Exclude symptomatic individuals from:
  - Food handling
  - Direct care roles
  - Communal activities
- Return to duties after clinical recovery (i.e. 48 hours without gastrointestinal symptoms).
- Microbiological clearance not routinely required.

7.0 General Infection Prevention & Control (IPC) Measures Across Settings

- **Standard Precautions**: Apply routine infection control practices, including hand hygiene and appropriate use of personal protective equipment (PPE) when handling bodily fluids or contaminated materials.
- **Hand Hygiene**: Emphasise regular handwashing with soap and water, particularly before and after food handling, patient contact, and contact with potentially contaminated surfaces.
- **Environmental Cleaning**:
  - Ensure thorough and frequent cleaning of food preparation areas, kitchen equipment, and communal dining spaces.
  - Use disinfectants effective against *L. monocytogenes* in institutional kitchens and food service areas.
- **Food Safety Protocols**:
  - Maintain **cold chain integrity** for refrigerated foods.
  - Avoid **cross-contamination** between raw and ready-to-eat foods through proper storage and handling.
  - Ensure reheating of pre-cooked meals until piping hot, reaching a core temperature of 75˚C for at least 30 seconds.
- **Staff Training**:
  - Provide targeted training for food service and care staff in hospitals, residential care homes, and custodial institutions on listeria-specific risks and controls.
- **Occupational Exposure**:

[3] **Risk Categories for Listeriosis: Low Risk**: Healthy adults with mild symptoms; **Moderate Risk**: Elderly with medical comorbidities; **High Risk**: Pregnant women, neonates, immunocompromised individuals; and **Risk related to sepsis:** Evaluate and treat these individuals empirically as high risk

- Monitor staff in high-risk settings (e.g., food preparation, neonatal care) for symptoms if exposed during an outbreak.
- Reinforce exclusion policies for symptomatic staff until medically cleared.

8.0 Outbreak Management

Effective outbreak management requires early detection, coordinated response, and clear communication across clinical, public health, and food safety domains.

8.1 Outbreak Definition

An outbreak of listeriosis is defined as:

- Two or more confirmed cases with a common epidemiological link, typically through a shared food source or preparation environment.

8.2 Outbreak Detection

- **Surveillance**: Monitor for clusters of invasive listeriosis, particularly in high-risk populations or settings.
- **Laboratory Reporting**: Prompt notification of confirmed cases to public health authorities is essential.
- **Epidemiological Investigation**: Conduct detailed food histories and identify common exposures.

8.3 Outbreak Response

- **Case Identification**: Rapid identification and clinical management of additional cases.
- **Food Traceback and Recall**:
  - Collaborate with the Food Safety Authority of Ireland (FSAI) and National Environmental Health Services (NEHS) to trace implicated food products.
  - Initiate product recalls and public advisories as needed.
- **Environmental Assessment**:
  - Inspect food preparation and storage areas in affected institutions.
  - Collect environmental swabs for microbiological testing.
- **Communication**:
  - Provide timely updates to affected institutions, healthcare providers, and the public.
  - Issue targeted food safety advice to vulnerable populations.

8.4 Outbreak Control Team (OCT)

- Convene an OCT for complex or multi-setting outbreaks.
- Membership should include representatives from:
  - Public health
  - Clinical microbiology
  - Environmental health
  - Food safety authorities
  - Affected institutions (e.g., hospital IPC teams, residential care managers)

- The OCT should oversee:
    - Coordination of case management and testing
    - Implementation of control measures
    - Communication strategy
    - Evaluation and closure of the outbreak

9.0 Preventative Strategies

This advice is specifically targeted at vulnerable populations, including pregnant women, neonates, older adults, and individuals with compromised immune systems.

9.1 Hygiene & Food Safety Practices

- Emphasise **hand hygiene** before and after food preparation, especially in institutional kitchens and care settings.
- Ensure **cleaning and disinfection** of food preparation surfaces and equipment using agents effective against *L. monocytogenes*.
- Maintain **cold chain integrity** for refrigerated foods and avoid cross-contamination between raw and ready-to-eat items.
- **Cook food thoroughly**: All ready-to-eat and pre-cooked meals should be reheated until piping hot throughout, reaching a core temperature of 75˚C for at least 30 seconds. Additional advice can be obtained **here**.
- Provide **staff training** on listeria-specific food safety risks and controls.
- For up-to-date public food safety advice, consult **Safefood** – the all-island body promoting food safety and healthy eating.

In agricultural settings, pregnant women are advised to avoid assisting with the birthing of livestock—including lambing ewes, calving cows, or kidding goats—to minimise the risk of exposure to *Listeria monocytogenes*. They should also avoid contact with newly birthed animals, birthing products (such as placental tissue and fluids), and any potentially contaminated materials, clothing, or equipment.

10.0 Reactive Strategies

10.1 Antimicrobial Therapies

- The choice of antimicrobial therapy for invasive listeriosis should be guided by **clinical judgement**, **local clinical microbiology or infectious disease advice**, and **local hospital protocols**.

10.2 Supportive Therapies

- Provide **supportive care** as clinically indicated, including **ICU admission** for patients with severe sepsis, meningitis, or encephalitis.

11.0 Resources

In the development of this guidance, the following evidence sources were referred to:

Australian Government, Department of Health, Disability and Ageing. (2025, April 11). *Listeriosis*. Australian Government Department of Health and Aged Care. https://www.health.gov.au/diseases/listeriosis

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