



Annual Epidemiological Report

July 2019

Listeriosis in Ireland, 2018

Key Facts

- Twenty-two listeriosis cases were notified in 2018, the highest number since the disease became notifiable in 2004
- All cases had recognised risk factors for listeriosis, with largest increase occurring among the elderly
- No clusters of listeriosis were identified
- No source was confirmed for any individual case
- Referral of isolates for typing at NSSLRL enables detection of clusters and monitoring of trends in the strains that cause listeriosis in Ireland

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Background

Listeriosis is an infection caused by the bacterium *Listeria monocytogenes*. It is usually acquired by eating food contaminated with this bacterium. Anyone can become ill from eating food contaminated with *Listeria monocytogenes*, although the disease affects primarily the following groups of people:

- Pregnant women (and their unborn children)
- Newborns
- Adults with weakened immune systems (e.g. persons with HIV/AIDS, cancer, diabetes)

Infection in a healthy adult is usually without symptoms or causes a mild flu-like illness. In immunocompromised and older adults the infection can occasionally spread via the bloodstream, to the central nervous system causing meningitis and/or septicaemia, with symptoms such as headache, stiff neck, confusion, and loss of balance or convulsions.

Infected pregnant women may have no symptoms or experience only a mild flu-like illness. However, infection during pregnancy can lead to premature labour, meningitis in the newborn or even miscarriage.

Listeria monocytogenes is widespread in the environment and can be found in soil and water. Vegetables can become contaminated from the soil or from manure used as fertilizer. Animals can carry the bacterium asymptotically, and meat or dairy products from these animals can be contaminated. Foods may also be contaminated after processing, eg cheese.

Unlike most bacteria, *Listeria* tends to grow at refrigerated temperatures in foods that have been contaminated. The foods most often associated with infection are ready-to-eat refrigerated and processed foods such as: pre-prepared cooked and chilled meals, soft cheeses, cold cuts of meat, pâtés and smoked fish.

Notable recent outbreaks elsewhere have been attributed to frozen corn (several EU Member States), polony (a processed meat –South Africa), rock melons (Australia), and sandwiches (United Kingdom).¹⁻⁴

Methods

Listeriosis is a notifiable disease in Ireland under the Infectious Disease Regulations and cases are notified to the Medical Officer of Health. Notifications are reported using the Computerised Infectious Disease Reporting system (CIDR) which is described [here](#). Further information on the process of reporting notifiable infectious diseases is available [here](#). The case definition in use in 2018 is available at <http://www.hpsc.ie/a-z/gastroenteric/listeriosis/casedefinitions/> Enhanced surveillance is undertaken by

Departments of Public Health using the following enhanced surveillance form <http://www.hpsc.ie/a-z/gastroenteric/listeriosis/surveillanceforms/> For this report, data on cases notified in 2018 were extracted from CIDR as of 26th June 2019.

The National *Salmonella*, *Shigella* and *Listeria* Reference Laboratory (NSSLRL) undertake whole genome sequencing (WGS), on all *Listeria* isolates referred from primary laboratories.

Results

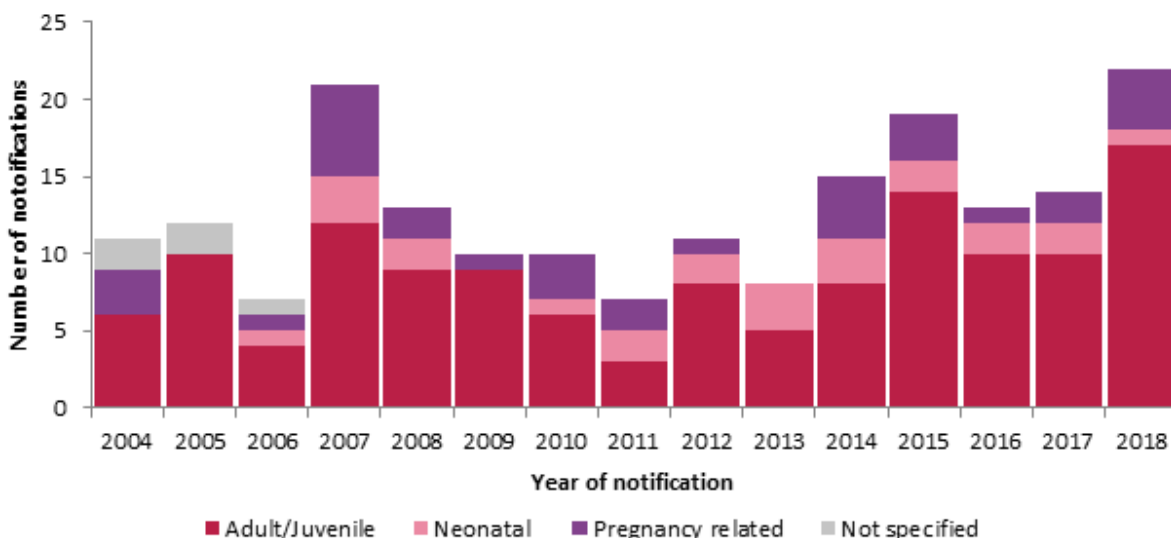
Basic epidemiology

In 2018, 22 cases of listeriosis were notified, an increase of eight cases compared to 2017. This equates to a crude incidence rate of 0.46 per 100,000 population. Ten cases (45%) occurred in the three month period July to September.

One neonatal case and four pregnancy-related cases were reported (Figure 1). These infections resulted in one stillbirth and two miscarriages.

Seventeen cases reported in 2018 were non-pregnancy related, a 70% increase compared with the ten reported in 2017 (Figure 1). Nine of these adult/juvenile cases were male (53%), cases ranged in age from 42-92 years, and three-quarters (n=13) were 65 years of age and older. Fourteen (including all four under 65 years of age) had underlying disease which may have predisposed them to listeriosis. Eight adult/juvenile cases had bloodstream infections, two had meningitis and bloodstream infection, and five had other symptoms. One death was reported due to listeriosis in 2018.

Figure 1. Annual number of notifications of listeriosis by type and year, Ireland 2004-2018



Typing

In 2018, isolates from 18 (82%) of the 22 notified cases were referred by the primary laboratories for typing; serotype 4b was the most common (n=11) followed by serotype 1/2a (n=6) (Table 1).

These 18 isolates were further distinguished into ten different sequence types by whole genome sequencing, and detailed comparison of sequence data at NSSLRL outruled the likelihood of links between them.

Table 1: Listeriosis notifications by case type and serotype, Ireland 2018

Type	Serotype 4b	Serotype 1/2a	Serotype 1/2b	Not referred to NSSLRL	Total
Adult or juvenile	8	5	1	3	17
Pregnancy-related	2	1	0	1	4
Neonatal	1	0	0	0	1
Total	11	6	1	4	22

Typing data provided by the National Salmonella, Shigella and Listeria Reference Laboratory (NSSLRL)

Discussion

In 2018, the number of reported listeriosis cases was the highest since the disease became notifiable in 2004. All reported cases were in the recognised groups at risk for listeriosis, being elderly, having an underlying illness, or being pregnant or neonatal.

As no outbreaks were identified among the reported cases, it appears that there was a rise in the number of sporadic infections, and this was particularly noticeable among the elderly. This increase occurred primarily during the summer months of 2018, a period in which the weather was atypically hot. Given the foodborne nature of this illness, it seems prudent to remind persons at risk of listeriosis of the key food safety messages to ensure they minimise their risk.

HPSC has a fact sheet on listeriosis available at <http://www.hpsc.ie/a-z/gastroenteric/listeriosis/> and Safefood produced an advice leaflet outlining the risks to pregnant women from *Listeria* in a range of languages.

Public health implications

Although there was an increase in the proportion of notified cases for which an isolate was referred for typing, a few were not available, so it remains theoretically possible that a small outbreak could have gone undetected. Referral of human clinical isolates from primary hospital laboratories to the reference facility plays a central role in ruling out links between cases (within Ireland and with cases in other EU Member States), in monitoring trends in the variants which cause disease, and in identifying potentially linked cases, permitting more targeted investigation of cases. We encourage all primary laboratories to avail of the reference service.

Further information available on HPSC website

Further information about listeriosis is available at <http://www.hpsc.ie/a-z/gastroenteric/listeriosis/>

Publications on listeriosis in Ireland available at <http://www.hpsc.ie/a-z/gastroenteric/listeriosis/publications/articles/>

Acknowledgements

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Report prepared by:

Patricia Garvey

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