3.1 Campylobacteriosis

Summary

Number of cases, 2016: 2513
Crude incidence rate: 52.8/100,000

Campylobacteriosis is an acute zoonotic bacterial disease characterised by diarrhoea, abdominal pain, malaise, fever, nausea and vomiting. Symptoms generally last for only a few days. It is the commonest bacterial cause of gastroenteritis in Ireland and Europe. Campylobacteriosis became a notifiable disease in Ireland in 2004 under the Infectious Diseases (Amendment) Regulations.

During 2016, 2513 cases were notified, an increase of 2.6% observed, compared with 2015. Among the 95% of notifications for which patient type was available, 27% of cases were hospital in-patients.

This corresponds to a crude incidence rate of 52.8/100,000 population, which is lower than the European crude incidence rate of 65.5 per 100,000 population. This is sixth consecutive year for which campylobacteriosis levels were elevated compared with rates reported between 2004 and 2010 (Figure 1). Increasing use of PCR since 2013 as a primary diagnostic method may have impacted on ascertainment rates, however, this would seem not to explain the increase from 2011. During the period 2008-2015, 12 other EU MS (Austria, Estonia, France, Hungary, Italy, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia and Spain) also reported significantly increasing trends.

During 2016, the highest CIRs occurred in HSE-M (70/100,000), HSE-SE (67/100,000) and HSE-W (66/100,000); similar to last year, the lowest CIRs were reported by HSE-NW (36/100,000) and -NE (37/100,000) (Figure 2).

There was variation in the size of the increase in reported incidence in the last six years between HSE-areas, with the largest increase reported by HSE-SE (74% increase in annual mean number of cases between 2011-2016 compared with the period 2004-2010) compared with a more modest 12% increase in annual mean number of cases in the HSE-NW between 2011-2016 compared with the period 2004-2010.

Campylobacteriosis occurs in all age groups with the highest rate of notification reported in the 0-4 year age group. This elevated rate in younger children is a well described characteristic of the disease and is also observed at European level. A comparison of the age-specific rate in 2016 and the mean age-specific incidence rate between 2004-

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Figure 1. CIR per 100,000 population, Ireland 2004-2016

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2010 (before the commencement of elevated rates in 2011) shows a marked increase in the CIRs among older people since 2010 (Figure 3); most notably, there has been a 2.5-fold increase in CIR in those aged 65 years and older in 2016 compared to the period 2004-2010.

Campylobacteriosis has a well-documented seasonal distribution with a peak in early summer. In Ireland, notifications typically peak during May to July. During 2016, notifications peaked between May and July (although more modest than observed in 2014 and 2015); there were elevated case numbers also in January 2016 (small January peaks have been observed since 2011 in the EU). A sharp peak in September 2016 coincided with a general outbreak in a CCF described below (Figure 4).

All Campylobacter cases notified in Ireland during 2016 were reported as laboratory confirmed. Formally, only culture confirmed Campylobacter cases are notifiable, however, there has been increasing implementation of culture independent methods for Campylobacter diagnosis since 2013 (i.e. PCR), and, although not all PCR-diagnosed cases have subsequently been culture confirmed, informally all laboratory diagnosed cases of Campylobacter have been accepted as notifications. Moreover, as there is currently no national reference facility for routine typing of Campylobacter isolates and only a small number of laboratories speciating isolates, information on Campylobacter species in the notification dataset is limited. In 2016, 17.9% (n=451) of isolates were speciated. Of the 451 speciated isolates, 93.1% (n=420) were C. jejuni and 6.0% (n=27) were C. coli.

Public health investigation of Campylobacter cases is not routine which limits data on the role of travel to the information which accompanied the specimen upon submission to the diagnosis laboratory. Travel is believed to be a relatively minor risk factor for campylobacteriosis in Ireland; in a case control study across the island of Ireland, 20% of cases reported travel outside of the island of Ireland during their potential incubation period. Moreover, travel was not found to be significantly associated with infection after adjustment for other risk factors in the study. In the 2016 dataset, country of infection was completed for only 88 cases, of which eight were foreign-travel related (9%). Unascertainment of travel as a risk factor was reported previously in the United Kingdom for campylobacter laboratory surveillance data.

During 2016, there were five notified outbreaks which included cases of campylobacteriosis (Table 1). Four were family outbreaks in private houses with a total of 9 persons ill (eight laboratory confirmed). There was one VTEC/Campylobacter outbreak which included 32 confirmed campylobacter cases; the reported mode of transmission was foodborne and person-to-person spread. No food vehicles were implicated in any of three foodborne outbreaks, although chicken cooked at home was suspected for one family outbreak. Notification of outbreaks of Campylobacter

<table>
<thead>
<tr>
<th>Outbreak location</th>
<th>Mode of transmission</th>
<th>Number outbreaks</th>
<th>Number of confirmed campylobacter cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private house</td>
<td>P-P - Person-to-person</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Foodborne+P-P</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Unknown</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Childcare facility*</td>
<td>Foodborne and P-P</td>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>5</td>
<td>40</td>
</tr>
</tbody>
</table>

*VTEC and Campylobacter outbreak

Figure 2. CIR by HSE-area, campylobacteriosis 2016
are less common than for other bacterial gastrointestinal pathogens; increasingly this is being regarded as a reflection of our present ability to detect them as traditionally typing of *Campylobacter* strains has been of limited value. A recent Danish study using whole genome sequencing suggests that *Campylobacter* case clustering and even outbreaks appear to occur more often than previously assumed.⁴

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**References:**


