

# 3.1 Campylobacter

## Summary

Number of cases: 2,275  
Crude incidence rate: 49.6/100,000

Campylobacteriosis became a notifiable disease in Ireland in 2004 under the Infectious Diseases regulations. Prior to this, data on laboratory-confirmed cases of *Campylobacter* infection in humans were collected nationally as part of the EU Zoonoses Regulations (while some cases were included in the former category of "Food Poisoning

(bacterial other than *Salmonella*"). It is an acute zoonotic bacterial disease characterised by diarrhoea, abdominal pain, malaise, fever, nausea and vomiting. Symptoms generally last for only a few days. Campylobacteriosis is the commonest bacterial cause of gastroenteritis in Ireland and Europe. In the EU it is estimated that 9.2 million cases occur annually, resulting in a public health impact of 0.35 million disability adjusted life years (DALYs) per year and an annual cost of approximately €2.4 billion.<sup>1</sup>

During 2008, a European Union-wide baseline survey of *Campylobacter* in broiler batches and broiler carcasses was carried out by The European Food Safety Authority (EFSA). This survey found that 75.8% of broiler carcasses sampled were contaminated with *Campylobacter* while 98% of Irish broiler carcasses sampled were positive for *Campylobacter*.<sup>2</sup> EFSA currently estimates that handling, preparation and consumption of broiler meat may account for 20-30% of human campylobacteriosis while 50-80% of cases may be attributed to the broiler reservoir as a whole.<sup>3</sup> The importance of poultry meat as a source of human *Campylobacter* infection was supported by the food-borne outbreak data reported to EFSA during 2012, where 44.0% of food-borne outbreaks of campylobacteriosis (with strong evidence and a specified food item) were poultry related.<sup>4</sup> In response to such evidence, the food Safety Authority of Ireland (FSAI) published "Recommendations for a Practical Control Programme for *Campylobacter* in the Poultry Production and Slaughter Chain" during 2011.<sup>5</sup>

Findings of an all-Ireland case control study that investigated risk factors for sporadic *Campylobacter* infections showed that consuming chicken and lettuce, and eating in takeaways were important risk factors for contracting the disease in Ireland. Contact with sheep,

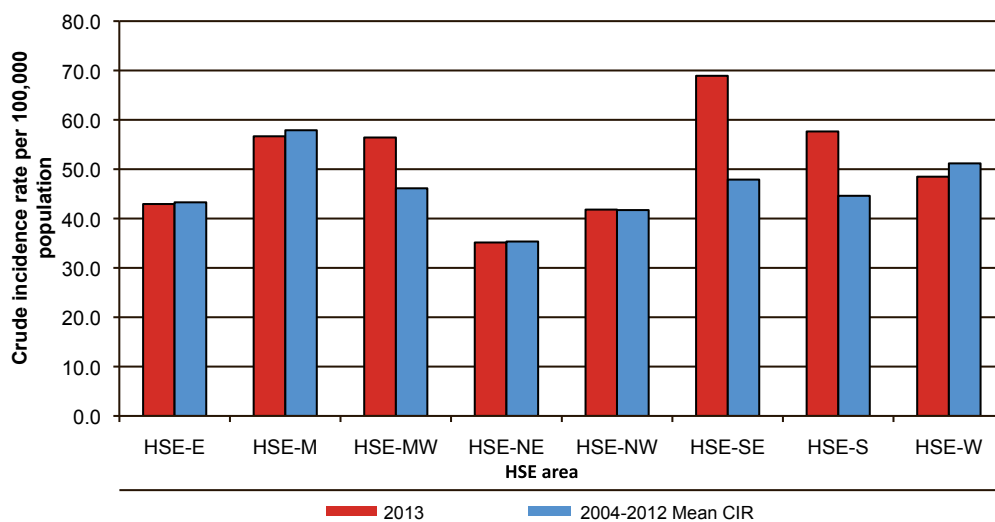


Figure 1: Campylobacteriosis 2013 CIR compared to 2004-2012 mean CIR by HSE area (CIR)

peptic ulcer, hiatus hernia and lower bowel problems were also independently associated with infection. However, mains water supply showed protective effect from contracting the illness.<sup>6</sup>

During 2013, levels of campylobacteriosis remained elevated with 2,275 notifications reported to HPSC. This corresponded to a crude incidence rate of 49.6/100,000 population, which is comparable with the 2012 European crude incidence rate of 55.5 per 100,000 population.<sup>7</sup>

Historically, variation in campylobacteriosis crude incidence rates (CIRs) has been reported between HSE areas. During 2013, the highest CIRs occurred in HSE-SE (68.9/100,000 population) and HSE-S (57.6/100,000 population). The lowest CIR was reported by HSE-NE (35.2/100,000 population). Figure 1 compares the campylobacteriosis CIRs in 2013 with the mean campylobacteriosis incidence rates for 2004 to 2012 by HSE area.

Campylobacteriosis occurs in all age groups with the highest rate of notification reported in the 0-4 year age group. This preponderance in younger children is a well described characteristic of the disease and is also observed at European level. The highest European notification rate during 2012 was reported in males in the 0-4 year age group (157.5/100,000 population).<sup>7</sup>

In Ireland between 2004 and 2012, the highest mean ASIR occurred in the 0-4 year age group (159.0/100,000 population) followed by the 25-34 year age group (41.4/100,000 population) and the 15-24 year age group (40.1/100,000 population). A comparison of the mean age-specific incidence rate between 2004-2012 and the age-specific rate in 2013 showed an increase of >40% in the 55-64 year age group (43.1%) and those aged 65 years and older (50.8%). Figure 2 compares the campylobacteriosis age specific rates (ASIR) for 2013

with the mean campylobacteriosis ASIR for 2004 to 2012.

During 2013, 47.1% of all cases were female, 52.5% of cases were male and sex was not reported for 0.4% of cases. Further analysis of the age-sex distribution of campylobacteriosis cases shows that the highest ASIRs for both males and females were observed in the 0-4 year and 65 years and older age groups.

Campylobacteriosis has a well-documented seasonal distribution with a peak in summer. In Ireland, campylobacteriosis notifications typically peak during May to August. While there was the usual warm-season peak in campylobacteriosis notifications in 2013, a smaller secondary peak also occurred during October. This represented an increase of 27.7% compared to the mean number of notifications during the same period in 2004-2013. Figure 3 compares the monthly number of campylobacteriosis notifications for 2013 to the mean monthly number of campylobacteriosis notifications between 2004 and 2013.

All of the cases notified in Ireland during 2013 were laboratory confirmed. However, as there is currently no national reference facility for routine typing of *Campylobacter* isolates, information on *Campylobacter* species is strikingly incomplete. In 2013, 31.7% (n=721) of isolates were speciated. Of the 721 speciated isolates, 90.7% of isolates were *C. jejuni*, 8.7% were *C. coli*, 0.3% were *C. upsaliensis* while *C. lari* and *C. lariidis* each accounted for 0.1%. The remaining 68.3% (n=1,554) of *Campylobacter* isolates identified were not further speciated.

During 2013, there were seven outbreaks of campylobacteriosis reported to HPSC with 16 associated cases of illness. Six outbreaks were family outbreaks occurring in private houses, as is typical of

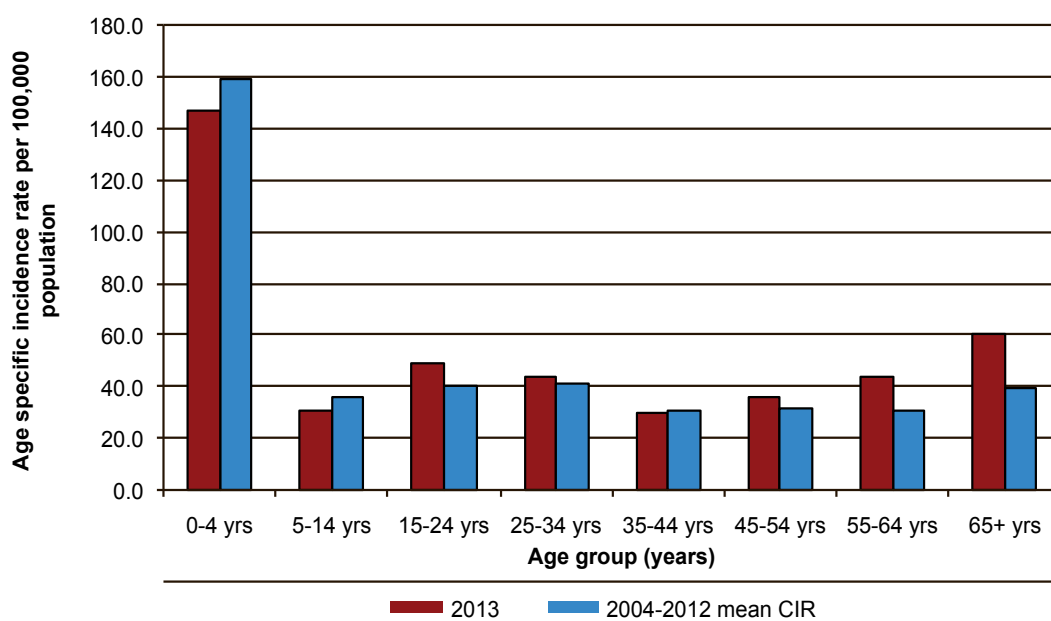


Figure 2: Campylobacteriosis ASIR 2013 compared to 2004-2012 mean ASIR (CIDR)

previous years. Three reported mode of transmission as person to person, one reported mode of transmission as other, while mode of transmission was unknown for the remaining two outbreaks. One general outbreak was also reported in a community hospital/long stay facility and mode of transmission was unknown. During 2012, 19 European countries reported 501 food-borne outbreaks of campylobacteriosis which accounted for 9.3% of the total food-borne outbreaks reported to EFSA. These outbreaks comprised 1,801 associated cases of illness and 197 hospitalisations.<sup>4</sup>

**References:**

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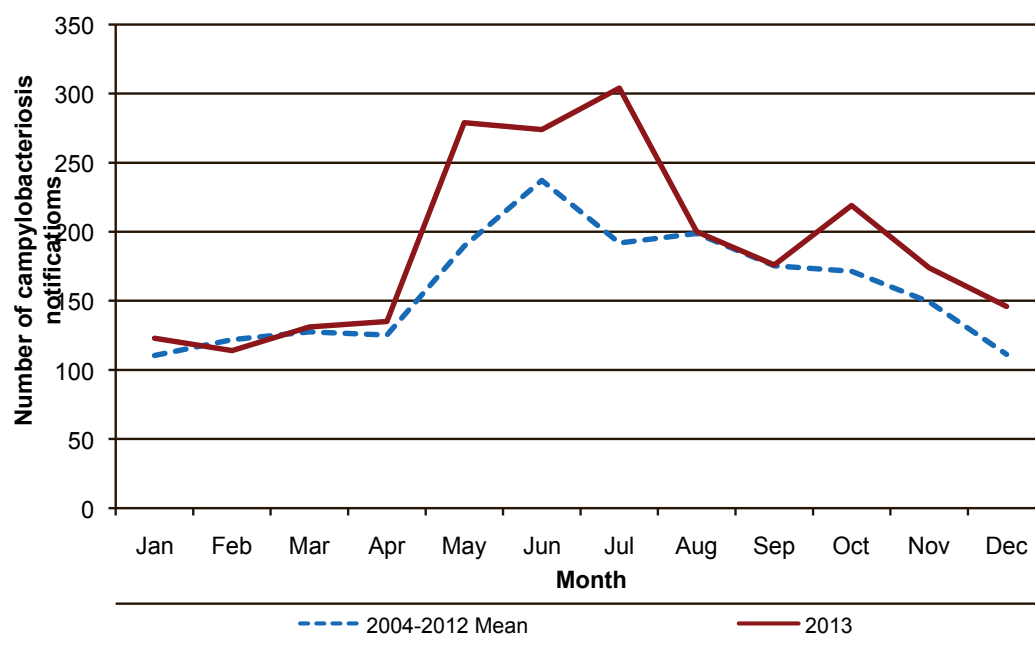


Figure 3: Campylobacteriosis notifications by month during 2013 compared to mean monthly notifications 2004-2012 (CIDR)

Table 1: Campylobacteriosis outbreaks summary, 2013 (CIDR)

Outbreak location	Mode of transmission	Number outbreaks	Number ill	Number hospitalised	Number dead
Comm. hosp. /long-stay unit	Unknown	1	2	0	0
Private house	Person to person	3	7	0	0
Private house	Other	1	2	0	0
Private house	Unknown	2	5	0	0
<b>Total</b>		<b>7</b>	<b>16</b>	<b>0</b>	<b>0</b>