

3.1 Campylobacter

Summary

Number of cases: 1,808
Crude incidence rate: 42.6/100,000

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. 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. In the European Union, poultry meat still appears to be the most important food-borne source of *Campylobacter* as the occurrence of the bacteria remained at high levels throughout the food chain: from animals to meat at retail. This was in contrast to the high prevalence observed in live cattle and pigs which was typically followed by a strong decrease during slaughter and at retail.¹ Findings of the first national case control study conducted in Ireland investigating risk factors for sporadic *Campylobacter* infections show that consuming chicken, lettuce and eating in takeaways were important risk factors for contracting the disease in Ireland. Contact with sheep, peptic ulcer, hiatus hernia lower bowel problems were

also independently associated with infection. However mains water supply showed protective effect from contracting the illness².

Campylobacteriosis is the commonest bacterial cause of gastroenteritis in Ireland and Europe. During 2009, 1,808 cases were notified in Ireland, corresponding to a crude incidence rate (CIR) of 42.6 per 100,000 population. This is a slight increase compared to the number of cases reported during 2008 (n=1,747, CIR: 41.2). The European Centre for Communicable Disease Prevention and Control (ECDC) annual epidemiological report on communicable diseases in Europe reported a European crude incidence rate of 46.7 per 100,000 population during 2007.³

Geographical variation in CIR was observed within HSE areas. The highest CIR was observed in HSE-W at 57.0 per 100,000 population, an increase from the 2008 CIR of 44.4 per 100,000 population. The lowest CIR was observed in HSE-NE at 34.3 per 100,000 population, which remains stable in comparison to the 2008 CIR of 33.7 per 100,000 population. Figure 1 illustrates the campylobacteriosis CIR by HSE area during 2009 and 2008, with 95% confidence intervals.

Campylobacteriosis is seen in all age groups with the highest burden of illness experienced by the 0-4 year age group. During 2009, this age group accounted

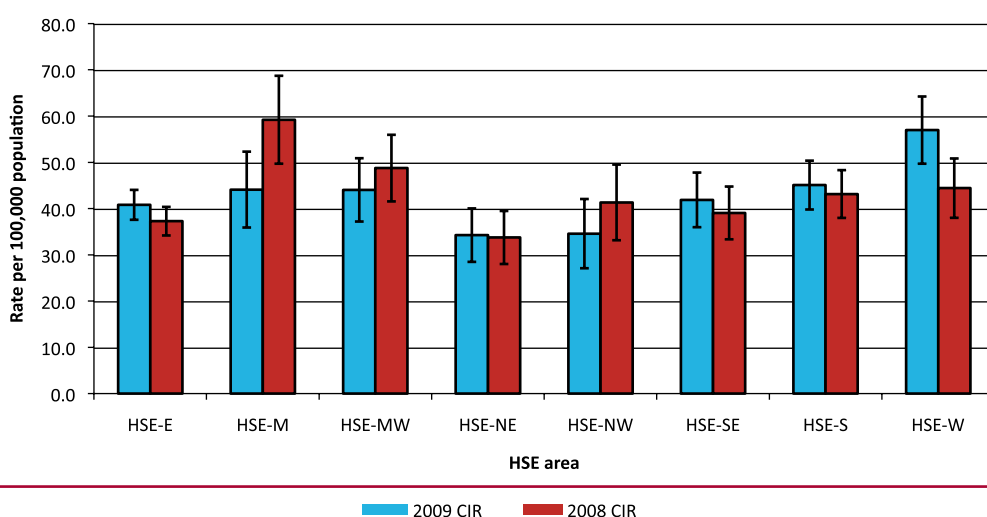


Figure 1: Campylobacteriosis crude incidence rates per 100,000 population (95% CI) by HSE area, 2008 & 2009.

for 27.6% of cases and had the highest age specific incidence rate (ASIR) of 165.1 per 100,000 population. The second highest ASIR observed was in the 5-9 year age group (46.5/100,000 population). The lowest ASIR was observed in the 35-44 year age group (26.1/100,000 population) and the 10-14 year age group (26.3/100,000 population). This preponderance in younger children is a well known characteristic of the disease and is also observed at European level. The highest European notification rate during 2007 was reported in males in the 0-4 year age group (118/100,000 population) and in females of the same age group (99/100,000 population).³

During 2009, 52.7% of all cases were male, 46.8% of cases were female and sex was not reported for 0.5% of cases. Further analysis of the age-sex distribution of campylobacteriosis cases shows a predominance of male cases in every age category, except the 25-34 year age group. Figure 2 illustrates the number of campylobacteriosis cases and age specific incidence rates by age group (years) and sex during 2009.

Campylobacteriosis has a well documented seasonal distribution with a peak in early summer. During 2009, notifications of campylobacteriosis peaked during May (n=206), June (n=208) and July (n=229) with a smaller secondary peak observed in September (n=176). Figure 3 illustrates the seasonal distribution of

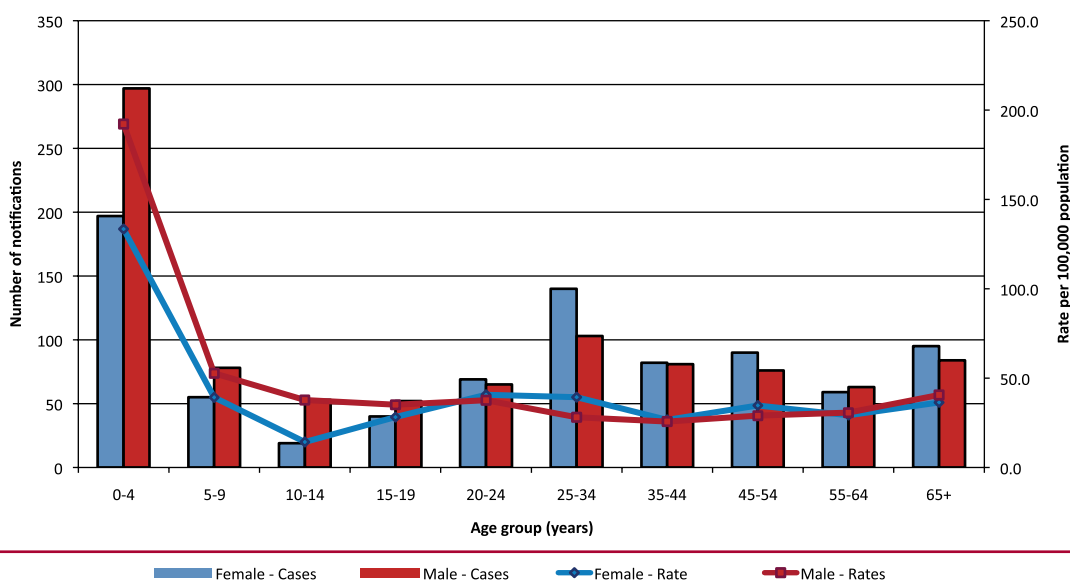


Figure 2: Campylobacteriosis notifications and age specific incidence rate per 100,000 population by age group (years) and sex, 2009 (CIDR)

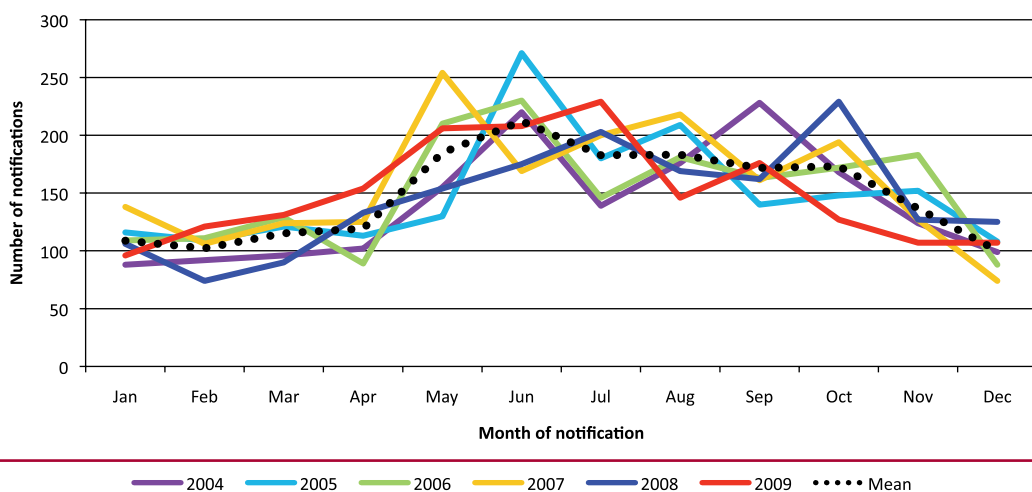


Figure 3: Number of campylobacteriosis notifications by month, 2004-2009

campylobacteriosis notifications in Ireland from 2004 to 2009.

Information on country of infection was recorded in 14.2% of all cases, which is slight decrease on the proportion of cases with this information provided in 2008 (17%). Of the 256 cases where country of origin was specified, indigenous cases accounted for 85.2%. There were also 38 cases (14.8%) with a recent history of foreign travel. These travel associated cases had exposures in 17 different countries. The majority of campylobacteriosis cases (89%) in Europe reported to ECDC during 2007 were also indigenous.³

Of the cases notified in Ireland during 2009, 99.7% were laboratory confirmed. However, as there is currently no national reference facility for routine typing of *Campylobacter* isolates, information on *Campylobacter* species is markedly incomplete. In 2009, 32.0% (n=578) of isolates were speciated. Of the 578 speciated isolates, 88.4% of isolates were *C. jejuni* while 11.6% were *C. coli*. The remaining 67.7% (n=1,224) of *Campylobacter* isolates identified were not further speciated. This compares with 46% of *Campylobacter* isolates in Europe reported to ECDC during 2007 remaining unspciated.³

During 2009, there were nine family outbreaks of campylobacteriosis reported with 33 associated cases of illness. These were all small clusters of illness with no more than six people ill in any outbreak. Mode of transmission was described in seven of the outbreaks with person to person spread being the most common route (n=6). Four of the outbreaks reported as person to person transmission also reported a foodborne transmission element. Foodborne and animal contact was suggested for the remaining outbreak. No information was available on mode of transmission for two outbreaks.

References:

1. European Food Safety Authority (EFSA), European Centre for Disease Prevention and Control (ECDC). *The Community summary report on trends and sources of zoonoses and zoonotic agents in the European Union in 2007*. The EFSA Journal (2009) 223. Available at: <http://www.efsa.europa.eu/en/scdocs/scdoc/223r.htm>
2. Danis K et al., *Risk factors for sporadic Campylobacter infection: an all-Ireland case-control study*. Euro-Surveillance. 2009 Feb 19;14(7). pii: 19123
3. European Centre for Disease Prevention and Control. *Annual epidemiological report on communicable diseases in Europe, 2009*. Stockholm, European Centre for Disease Prevention and Control. Available at: http://ecdc.europa.eu/en/publications/surveillance_reports/Pages/index.aspx

Table 1. Number of campylobacteriosis outbreaks and number ill, 2009 (CIDR)

Mode of transmission	Number outbreaks	Number ill
Person-to-person & foodborne	4	15
Person-to-person	2	8
Foodborne & animal	1	4
Unknown	2	6
Total	9	33