

3.5 Rotavirus

Summary

Number of cases: 2,652
Crude incidence rate: 57.8/100,000 population

Rotavirus is the commonest global cause of paediatric gastrointestinal infection and causes sporadic, seasonal and occasionally severe gastroenteritis of infants and young children, characterised by vomiting, fever and watery diarrhoea. Transmission is usually person-to-person, mainly via the faecal-oral route. Children less than two years of age are most susceptible to infection, although cases are often seen in elderly and immunocompromised adults, particularly in institutional settings. By the age of six years old, virtually all children will have had at least one episode of rotavirus infection. Symptoms usually last for only a few days but in severe cases hospitalisation may be required due to dehydration. In developed countries, mortality due to rotavirus is low; however, the morbidity and economic costs associated with infection are significant. Three primary serogroups of rotaviruses infect humans; A, B

and C; A being the commonest infecting serogroup. Given the universal distribution of rotavirus, the numbers of notifications will always represent an underestimate of the true incidence and are likely to be more reflective of habits of presentation to medical practitioners and of styles of investigation, notification and testing.

Since 2004, rotavirus, although not specifically listed, has been a notifiable disease in Ireland under the Acute Infectious Gastroenteritis (AIG) disease category. Prior to 2004, rotavirus caress were notified in the former notification category of "Gastroenteritis in children under two years". In April 2008 the case definition of AIG was amended specifying definitions for both rotavirus and the newly notifiable *Clostridium difficile* associated disease. On 4th May 2008 these amended definitions formally replaced the previous AIG case classification. Rotavirus became notifiable as a disease in its own right under the Infectious Diseases (Amendment) Regulations 2011 (S.I. No. 452 of 2011).

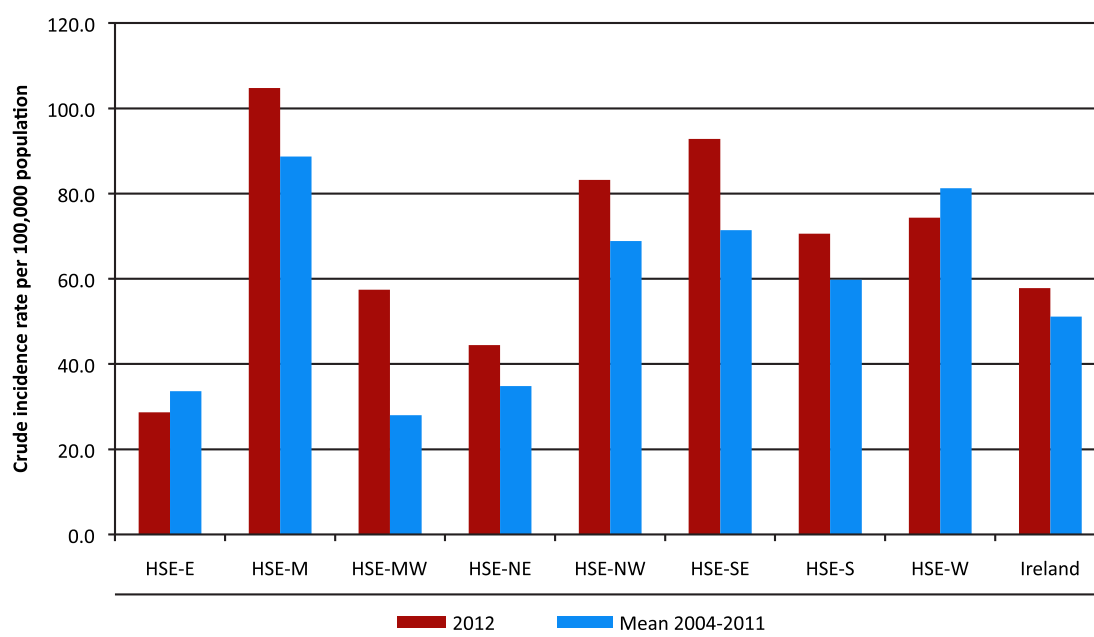


Figure 1: Rotavirus 2012 CIR compared to 2004-2011 mean CIR by HSE area (CIDR).

Rotavirus case definition:

A case of rotavirus infection is defined as a patient with acute onset of vomiting followed by watery diarrhea with fever, which typically lasts between three and eight days, AND one of the following laboratory criteria for diagnosis:

- Detection of rotavirus by antigen assay
- Detection of rotavirus-specific RNA
- Detection of rotavirus by electron microscopy
- Isolation of rotavirus

During 2012, there were 2,652 cases of rotavirus notified in Ireland, corresponding to a national crude incidence rate (CIR) of 57.8 per 100,000 population and representing an increase of 8.2% compared to 2011.

Significant geographical variation was observed in regional rotavirus CIR. The highest regional CIRs were observed in HSE-M (104.8/100,000 population), HSE-SE (92.8/100,000 population) and HSE-NW (83.2/100,000 population). The lowest regional CIR was observed in HSE-E at 28.7 per 100,000 and HSE-NE at 44.5 per 100,000 population. Figure 1 illustrates the rotavirus CIR by HSE area for 2012 compared to the mean CIR during 2004-2011.

Rotavirus infection has a well documented seasonal pattern in Ireland with the number of cases typically peaking during March to May. During 2012, rotavirus notifications peaked during April (n=559) and May (n=788). Figure 2 illustrates the seasonal variation in rotavirus cases by month of notification for 2012

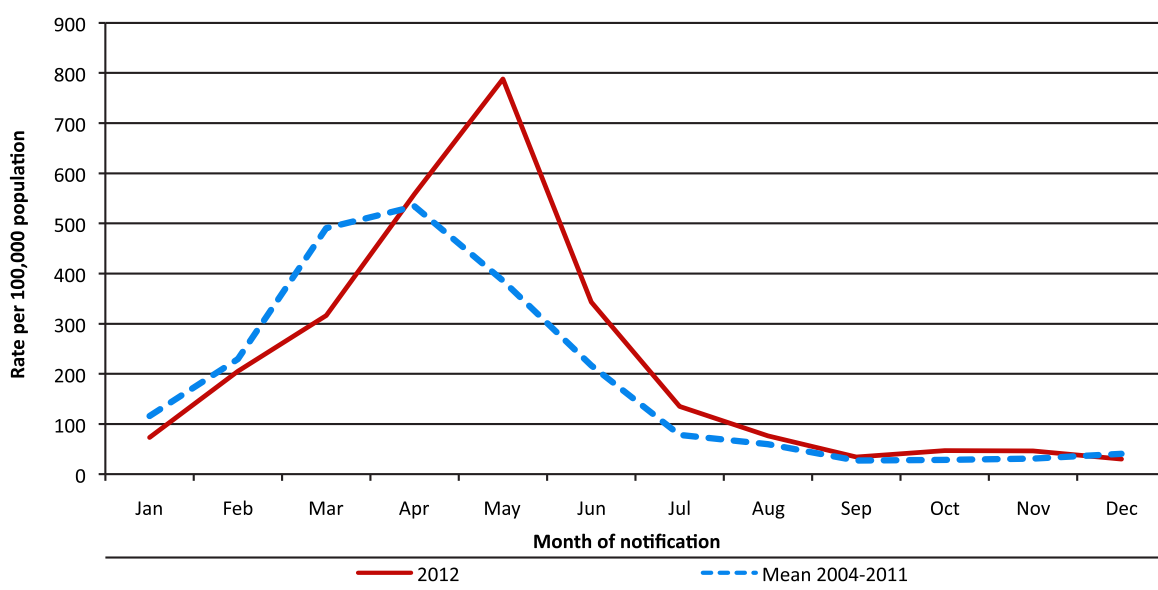


Figure 2: Rotavirus notifications by month during 2012 compared to mean monthly notifications, 2004-2011 (CIDR).

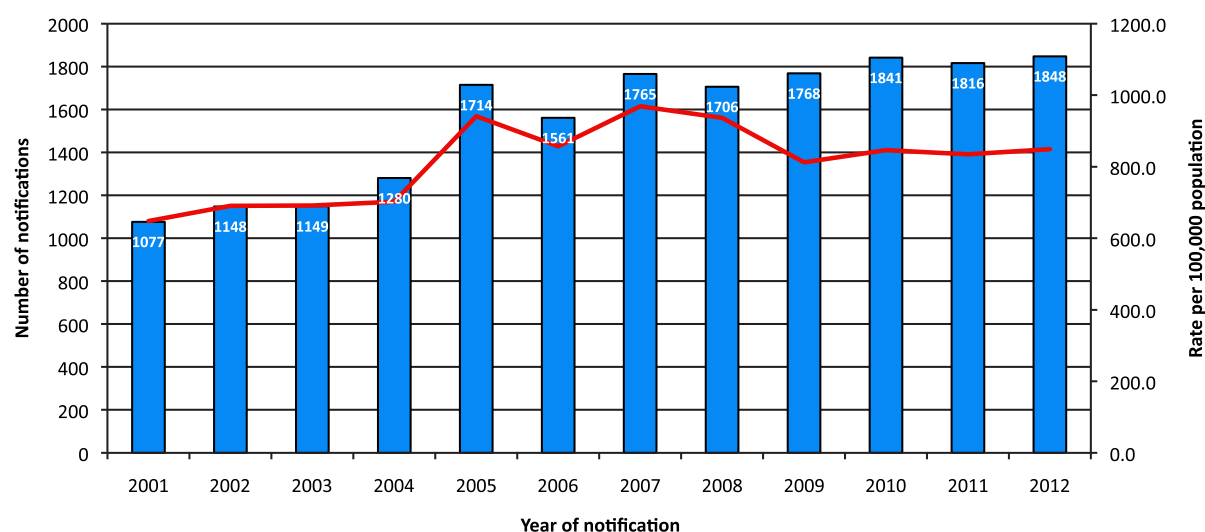


Figure 3: Number of cases of rotavirus in children less than two years of age by year, 2001 to 2012

compared to the mean monthly number of notifications reported during 2004 to 2011. Rotavirus is the most common cause of acute gastroenteritis in children worldwide with children generally affected in the first 2-3 years of life. In 2012, 69.7% (n=1,848) of cases were aged two years or under. Data from 2004 to 2012 show that the peak incidence of clinical disease occurred in the 6-18 month age group, with 49.1% of total notifications in this age group. Figure 3 presents the number of cases of rotavirus in children less than two years of age by year, 2001 to 2012.

During 2012, 1,227 cases (46.3%) were female and 1,419 (53.5%) were male. Sex was not reported for 6 (0.2%) cases. This represented a ratio of females: males of 0.9:1.2, which was similar to the ratio observed in previous years.

There were nine outbreaks of rotavirus notified during 2012 with 18 cases of associated illness, 15 of whom were hospitalised. All nine outbreaks were family outbreaks occurring in private homes. Mode of transmission was reported as person to person spread for eight outbreaks while the remaining outbreak reported transmission as unknown. Table 1 summarises the number of rotavirus outbreaks by location and month during 2012.

Table 1: Summary of rotavirus outbreaks by location and month, 2012

Month	Location	Number of outbreaks	Number ill	Number hospitalised	Number dead
Feb	Private house	1	2	2	0
Mar	Private house	1	2	2	0
Apr	Private house	2	4	4	0
May	Private house	1	2	2	0
Jun	Private house	2	4	3	0
Aug	Unknown	1	2	2	0
Nov	Private house	1	2	0	0
Total		9	18	15	0