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Annual Epidemiological Report

April 2019

Rotavirus in Ireland, 2018

Key Facts

2018:

- 635 cases of rotavirus were notified
- Crude incidence rate (CIR) of 13.3 per 100,000 population.
- Sharp decline of 76% compared to the CIR 48.4 notified in 2017

Suggested citation: HSE Health Protection Surveillance Centre. Rotavirus 2018 Annual Epidemiological Report. Dublin: HSE HPSC; 2019.

Background

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, 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.

Rotarix™ vaccine was introduced in Ireland in December 2016 for all babies born from 1st October 2016 onwards. Rotarix™ is a live attenuated monovalent vaccine. Vaccine is administered orally in two doses at 2 months and 4 months. Both doses must be administered by 8 months old. Further information on rotavirus vaccine is available on the HSE website.

Methods

Rotavirus is a notifiable disease in Ireland under the Infectious Disease Regulations and cases should be notified to the Medical Officer of Health. The case definition is outlined on the HPSC website.

Prior to 2004, rotavirus cases were notified under the “Gastroenteritis in children under two years” disease category. From 2004 to 2010, rotavirus was notifiable in all age groups under the “Acute Infectious Gastroenteritis” (AIG) disease category, until it became notifiable as a disease in its own right under the Infectious Diseases (Amendment) Regulations 2011 (S.I. No. 452 of 2011).

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.

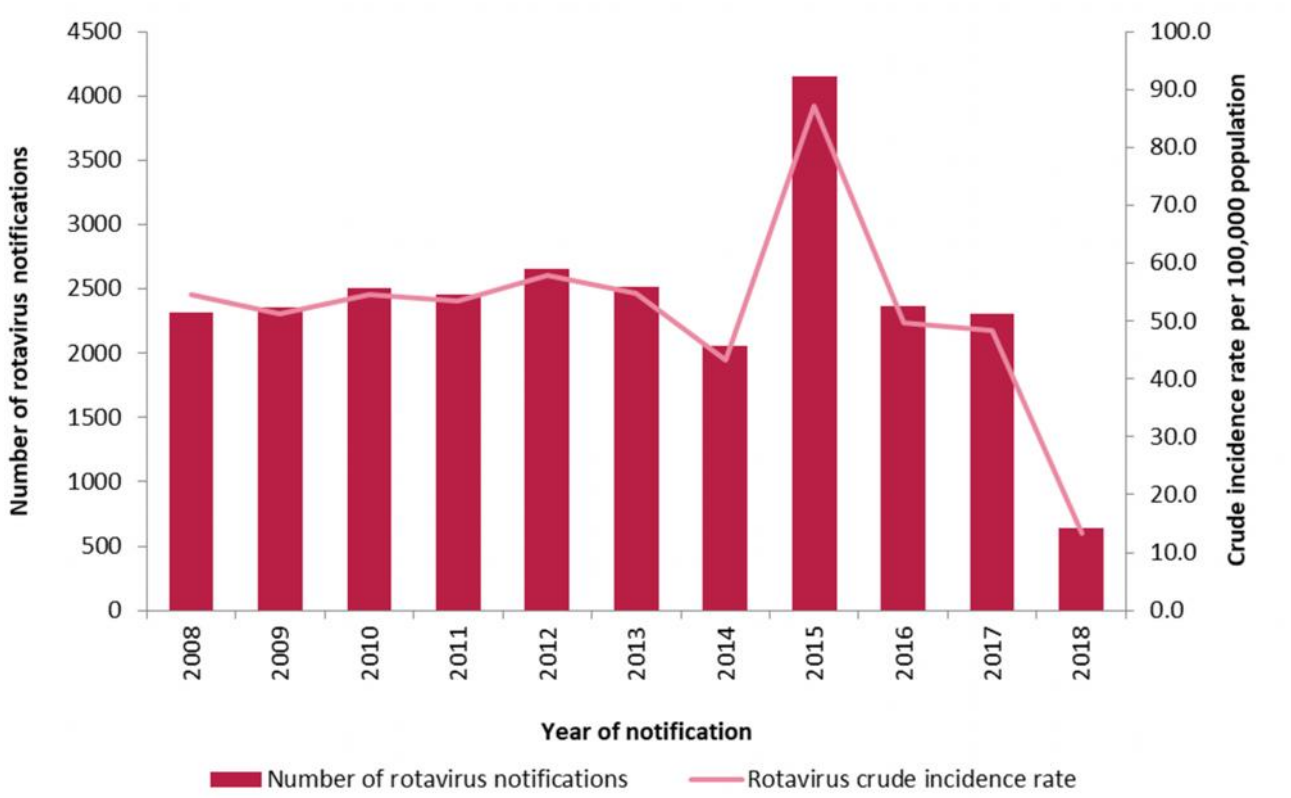
Between March 2013 and July 2017, rotavirus notifications from HSE-East were based on laboratory testing results rather than patient episodes. During this period, notifications from HSE-E may also refer to area of laboratory testing rather than area of patient residence.

All crude incidence rates (CIRs) are per 100,000 population and were were calculated using the 2016 Census for 2014 to 2018, the 2011 Census for 2009 to 2013 and the 2006 Census for 2004 to 2008.

Epidemiology

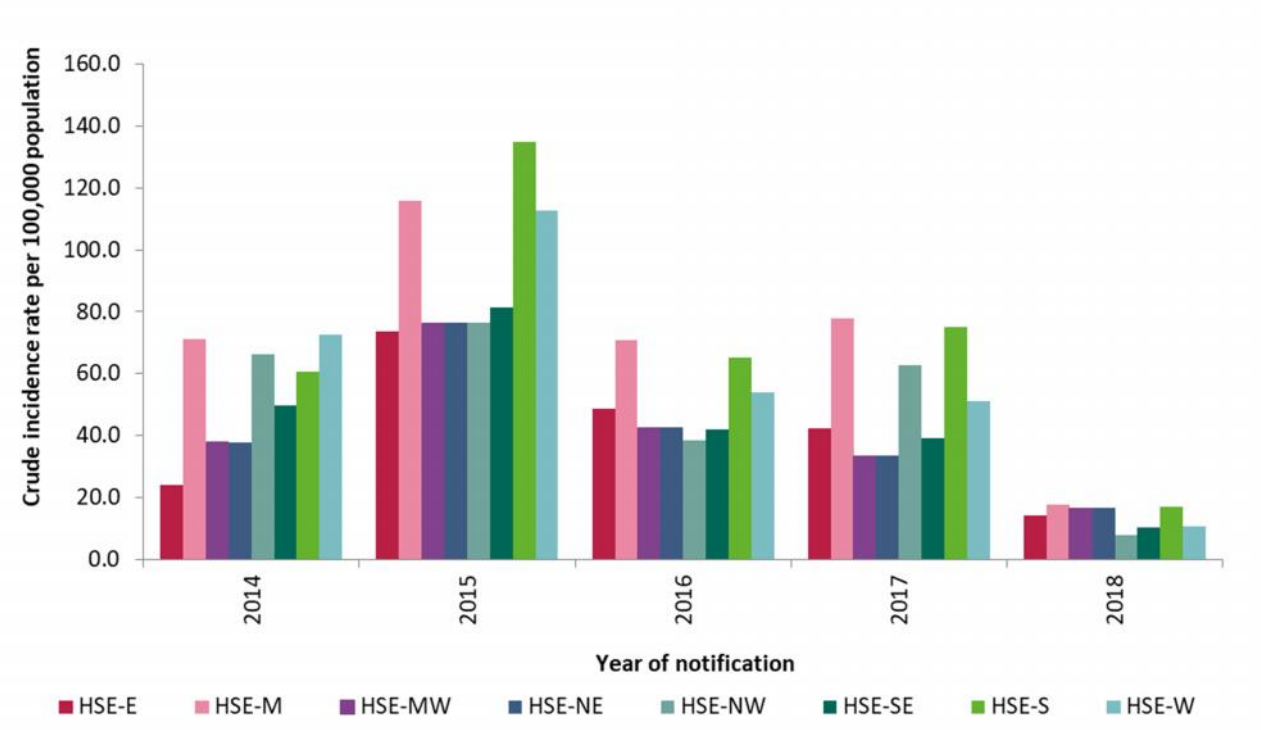
During 2018, there were 635 cases of rotavirus notified in Ireland, corresponding to a national crude incidence rate (CIR) of 13.3 per 100,000 population (figure 1). This represents a sharp decline compared to a CIR of 48.4 in 2017 and is a decrease of 76% compared to the mean CIR during 2008-2017 (55.5).

Figure 1: Number of rotavirus notifications and rotavirus crude incidence rate in Ireland by year



Significant geographical variation has previously been observed in regional rotavirus CIR but this was much reduced during 2018. The highest regional CIR was observed in HSE-M (17.8), while the lowest regional CIR was observed in HSE-NW (7.8). All HSE areas experienced a decrease in regional CIRs in excess of 60%. Compared to the mean CIR between 2008 and 2017, the largest decreases in regional CIRs were observed in HSE-NW (88.8%), -W (86.1%) and –SE (85.6%). Figure 2 illustrates the crude incidence rate per 100,000 population by HSE area and year.

Figure 2: Rotavirus crude incidence rate in Ireland by HSE area and year



During 2017, 299 cases (47.1%) were female and 336 (52.9%) were male.

The highest age-specific incidence rates (ASIRs) in 2018 were in the <1 year old age group and the 1-4 years age group. The ASIR in both age groups dropped dramatically from 912.3 in 2017 to 274.7 in 2018 in <1 year olds and from 570.5 in 2017 to 137.4 in 2018 in 1-4 year olds. This corresponds to a decrease of 75% in the ASIR in the <1 year old age group and a decrease of 76% in the 1-4 years age group. Figure 3 illustrates the annual ASIRs in the 0-9 year old age group.

While rotavirus vaccination uptake has been in excess of 80% nationally, there were 172 rotavirus notifications in the vaccine eligible cohort (defined as having been born after 01/10/2016 and being aged two months or older at the time of notification). Vaccination status is not currently reported on CIDR for rotavirus cases.

Rotavirus infection has a well-documented seasonal pattern in Ireland with the number of cases typically peaking during March to May. During 2018, the highest number of rotavirus notifications was observed during May (n=116) but the characteristic peak was absent. Figure 4 illustrates the seasonal variation in rotavirus cases by month of notification for 2017 and 2018 compared to the mean monthly number of notifications reported during 2008 to 2017.

Figure 3: **Rotavirus annual ASIR in children under 10 years old in Ireland**

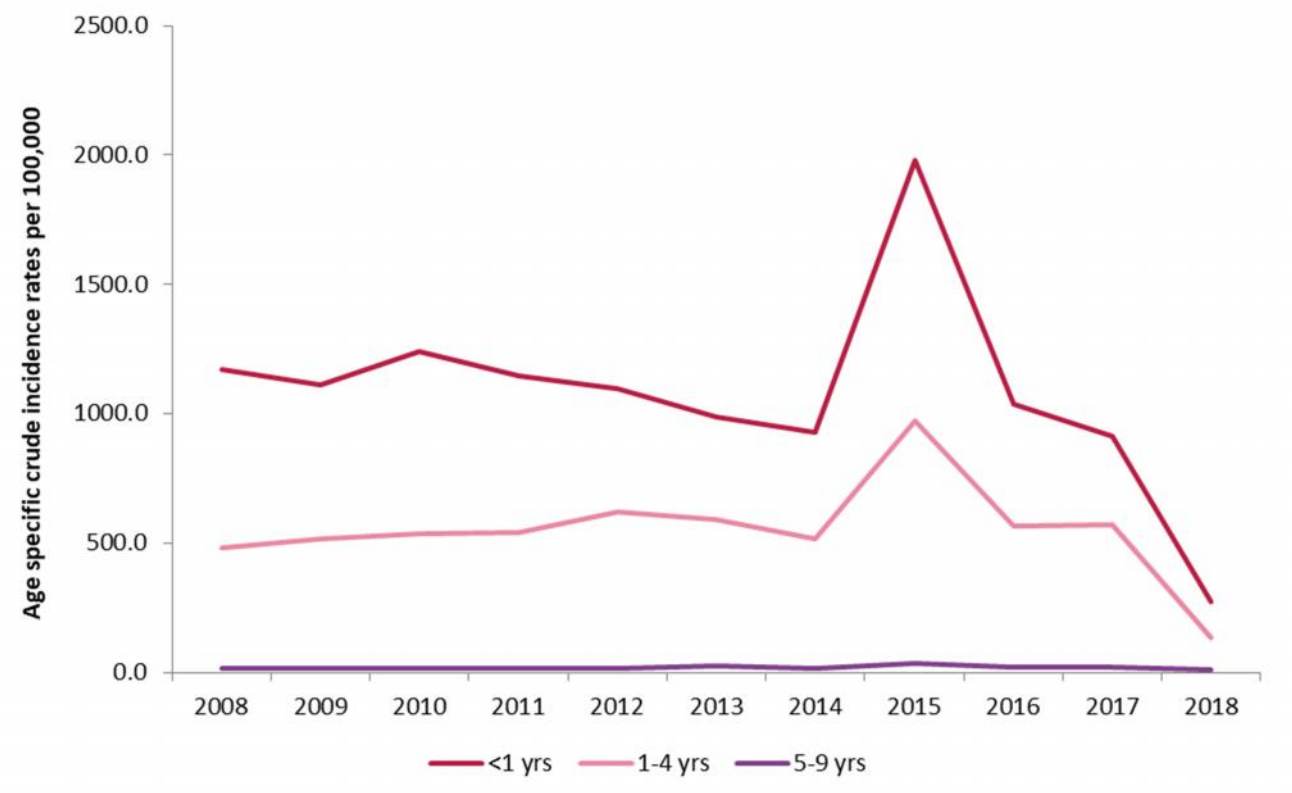
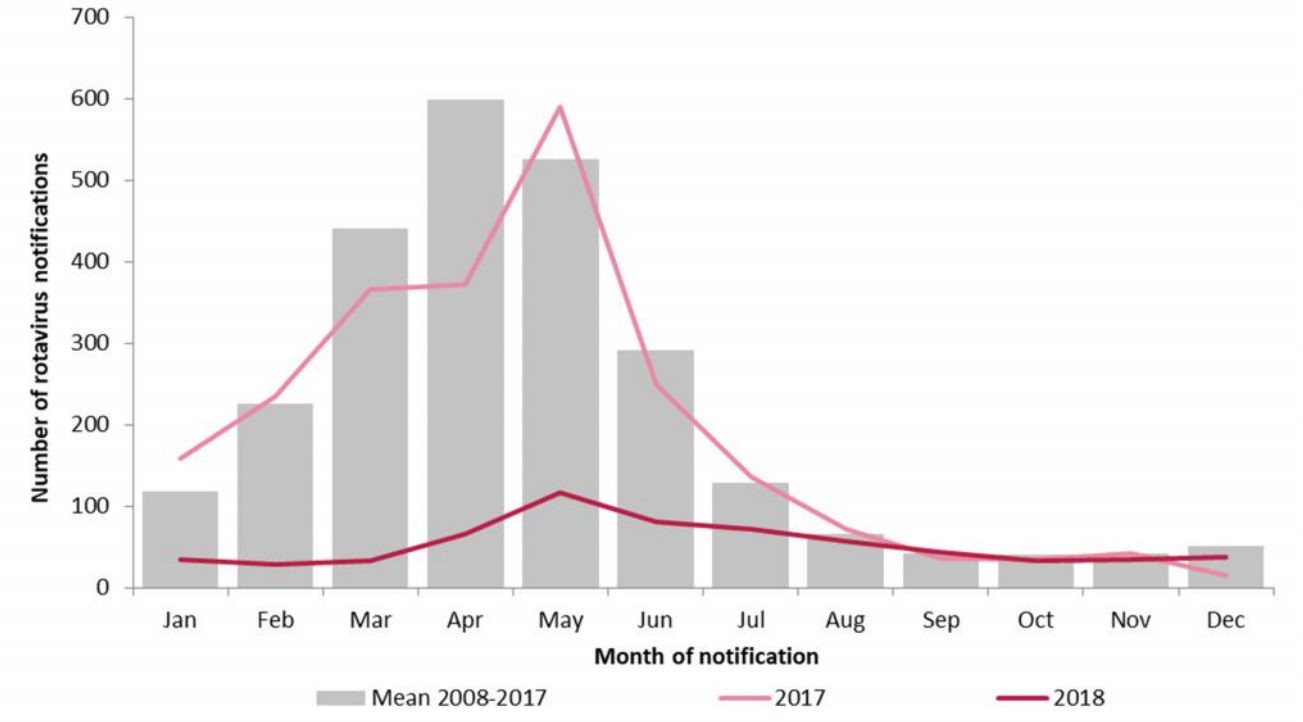


Figure 4: **Number of rotavirus notifications in Ireland by month of notification and year**



Three outbreaks of rotavirus were notified during 2018 with 74 cases of associated illness, three of whom were hospitalised. Two general outbreaks occurred, one in a child-care facility, and one in a nursing home. The remaining outbreak was a family outbreak that occurred in a private home. All outbreaks reported mode of transmission as person to person or airborne spread.

Further information available on HPSC website

http://www.hpsc.ie/a-z/gastroenteric/rotavirus/

Acknowledgements

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