



Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive



Health Protection Surveillance Centre
Lárionad Faire um Chosaint Sláinte



Epidemiology of Human Rotavirus Disease in Ireland

Dr Paul McKeown
Head GZV, HPSC

Partnership – Collaboration – Intersectoral Working

Surveillance

Expert Advice

Research

Training

- Collect
- Collat
- Analy
- Comm
- to the

- Operational Support to the Health System
- Policy advice

- Identifying and developing best practice

- Research

- For professionals in communicable disease control – especially joint training
- Teaching

Infectious Disease Regulations

Global Burden Rotavirus

- 24 million cases of RoV annually
- Almost half a million deaths
- 50% in SSA
- 22% in India

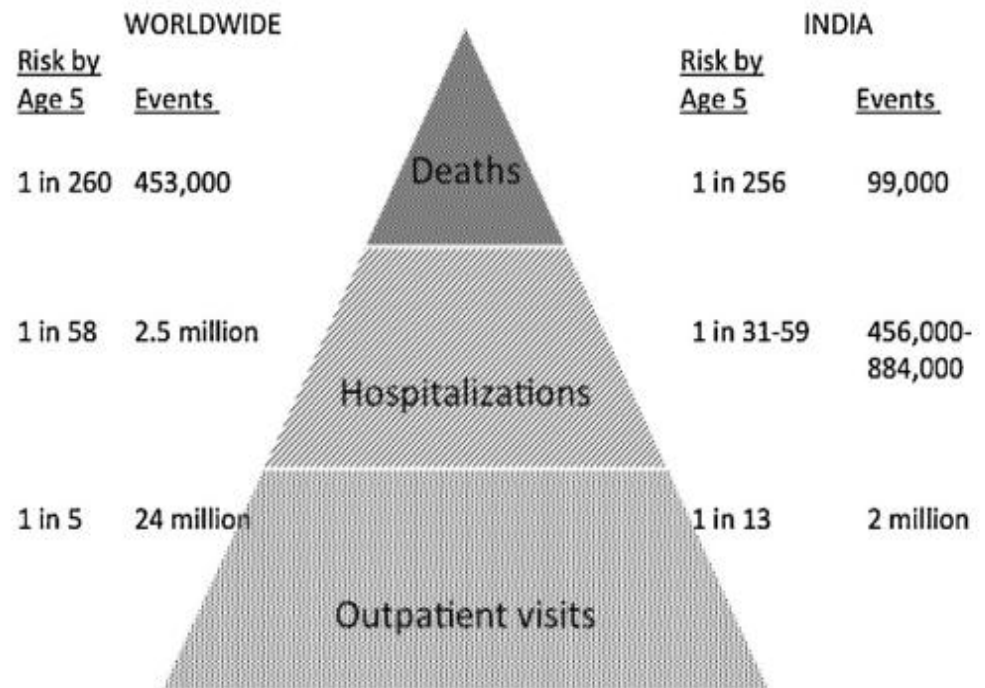
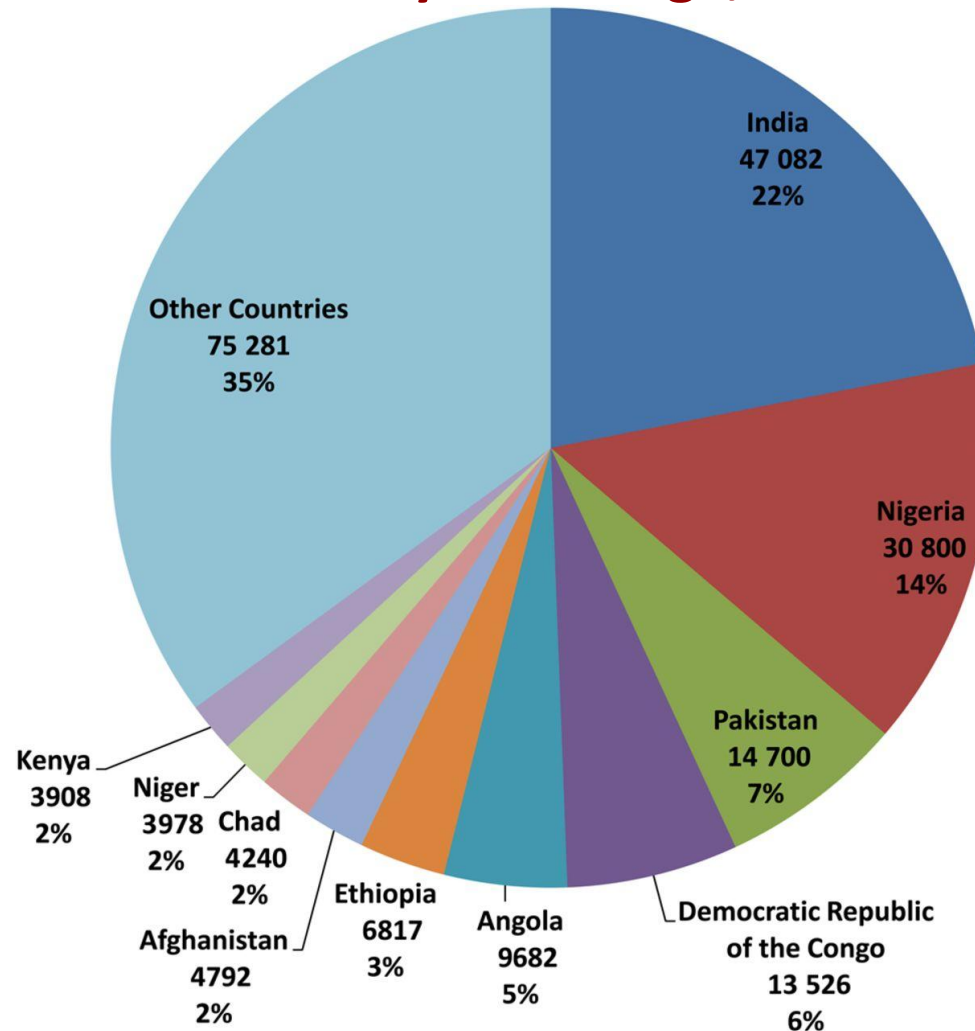


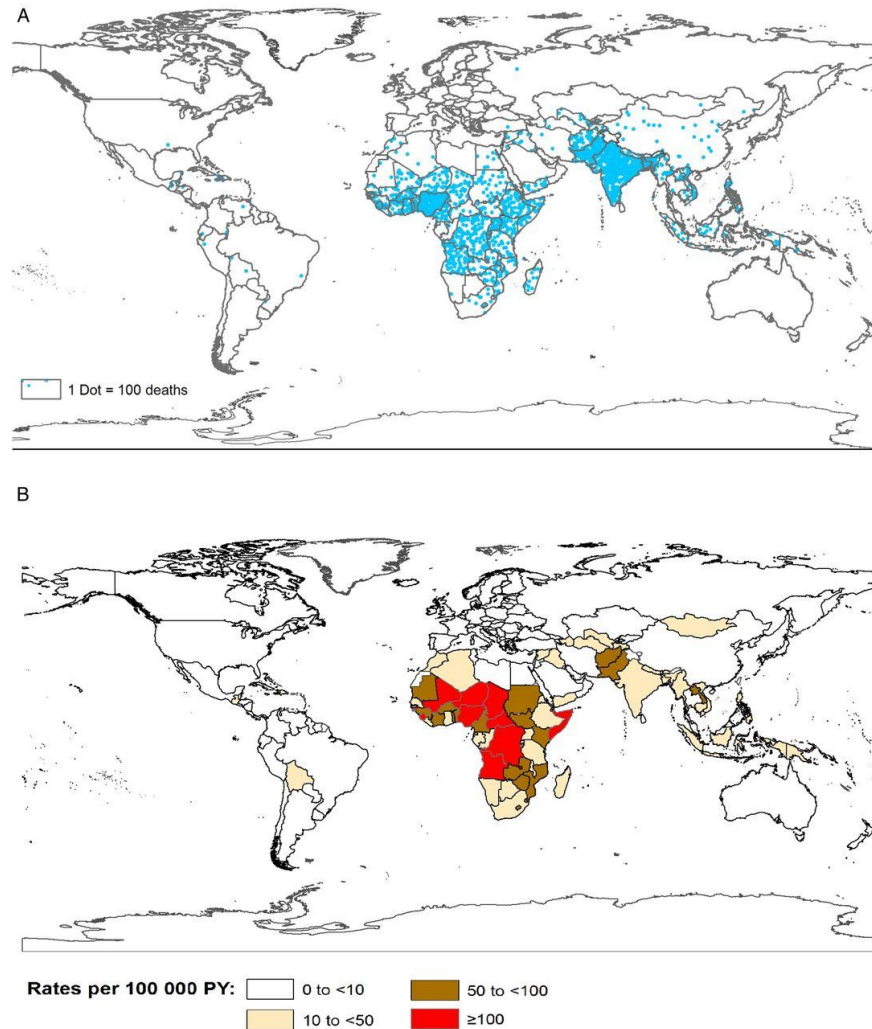
Fig. 1. Rotavirus disease burden globally and in India.

Countries with the greatest number of rotavirus deaths among children <5 years of age, 2013.



Jacqueline E. Tate et al. Clin Infect Dis. 2016;62:S96-S105

Number of rotavirus deaths (A) and rates of rotavirus mortality (B) among children <5 years of age, by country, 2013.

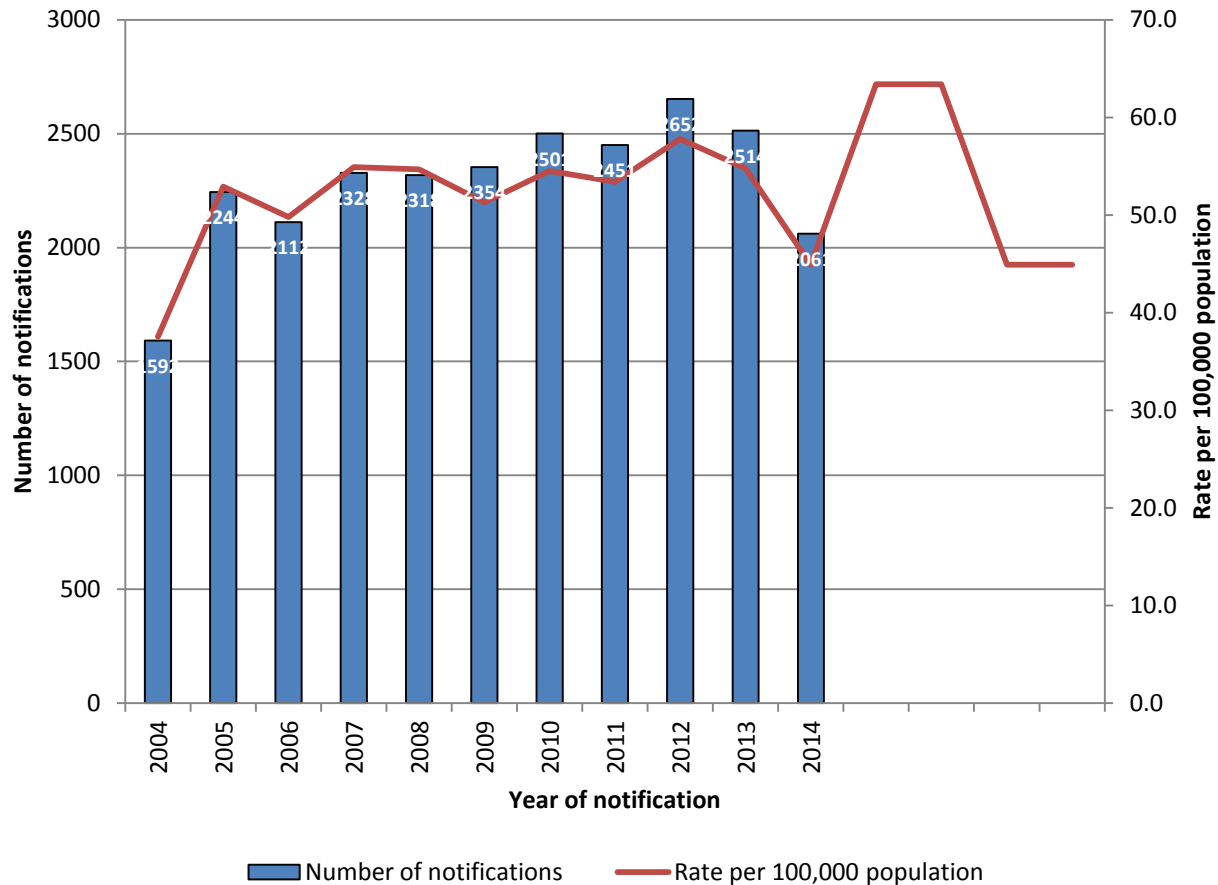


Jacqueline E. Tate et al. Clin Infect Dis. 2016;62:S96-S105

Published by Oxford University Press for the Infectious Diseases Society of America 2016. This work is written by (a) US Government employee(s) and is in the public domain in the US.

Clinical Infectious Diseases

Notification Rate, Rotavirus, Ireland 2004-2014



Global Burden Rotavirus

- Commonest global cause of paediatric gastrointestinal infection
- Causes sporadic, seasonal and occasionally severe gastroenteritis of infants and young children
- Characterised by vomiting, fever and watery diarrhoea.
- Transmission usually person-to-person, mainly via faecal-oral route.
- Children <2 most susceptible to infection - cases are often seen in elderly and immunocompromised adults, particularly in institutional settings
- By 6 years great majority of 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.

Rotavirus in Ireland

- Significant burden on secondary system
- Private GP attendances cover about 2/3 population
- Potential for greater propensity to attend A/E and thus be admitted
- Current best estimates for RoV notification/hospitalisation are:
 - Notification Rate: 44.9 per 100,000 (total) population
 - Notification Rate: 489 per 100,000 (<5) population
 - Admission Rate : 575 per (<5) 100,000

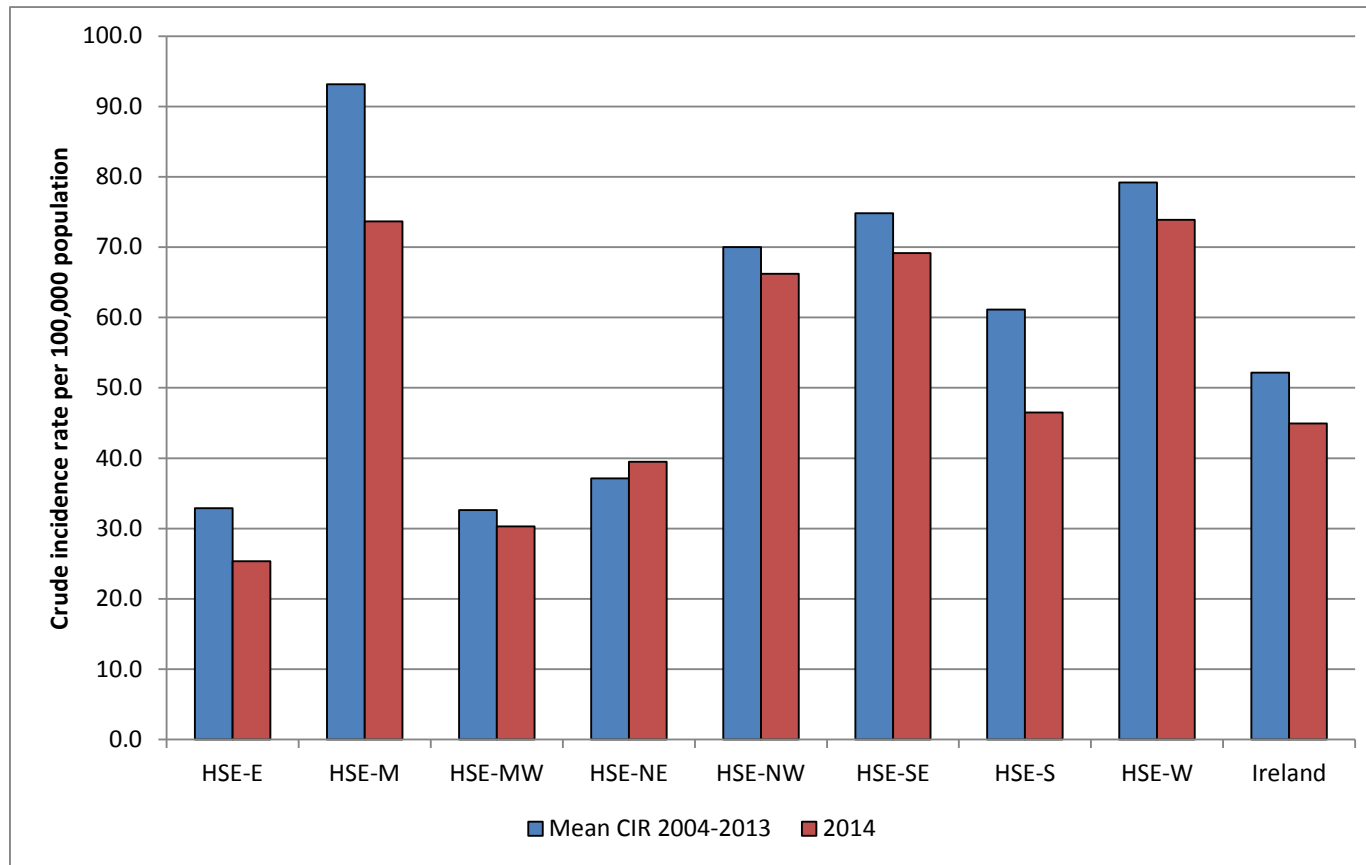
Rotavirus in Ireland

- Prior to 2004, RoV cases notified under the disease category “Gastroenteritis in children under two years”
- From 2004 to 2010, RoV was notifiable in all age groups under the disease category “Acute Infectious Gastroenteritis” (AIG),
- Became notifiable in its own right under the Infectious Diseases (Amendment) Regulations 2011 (S.I. No. 452 of 2011).
- Since March 2013, RoV notifications from HSE-East are based on laboratory testing results rather than patient episodes.
- Added complication is that notifications from HSE-E may also refer to area of laboratory testing rather than area of patient residence.

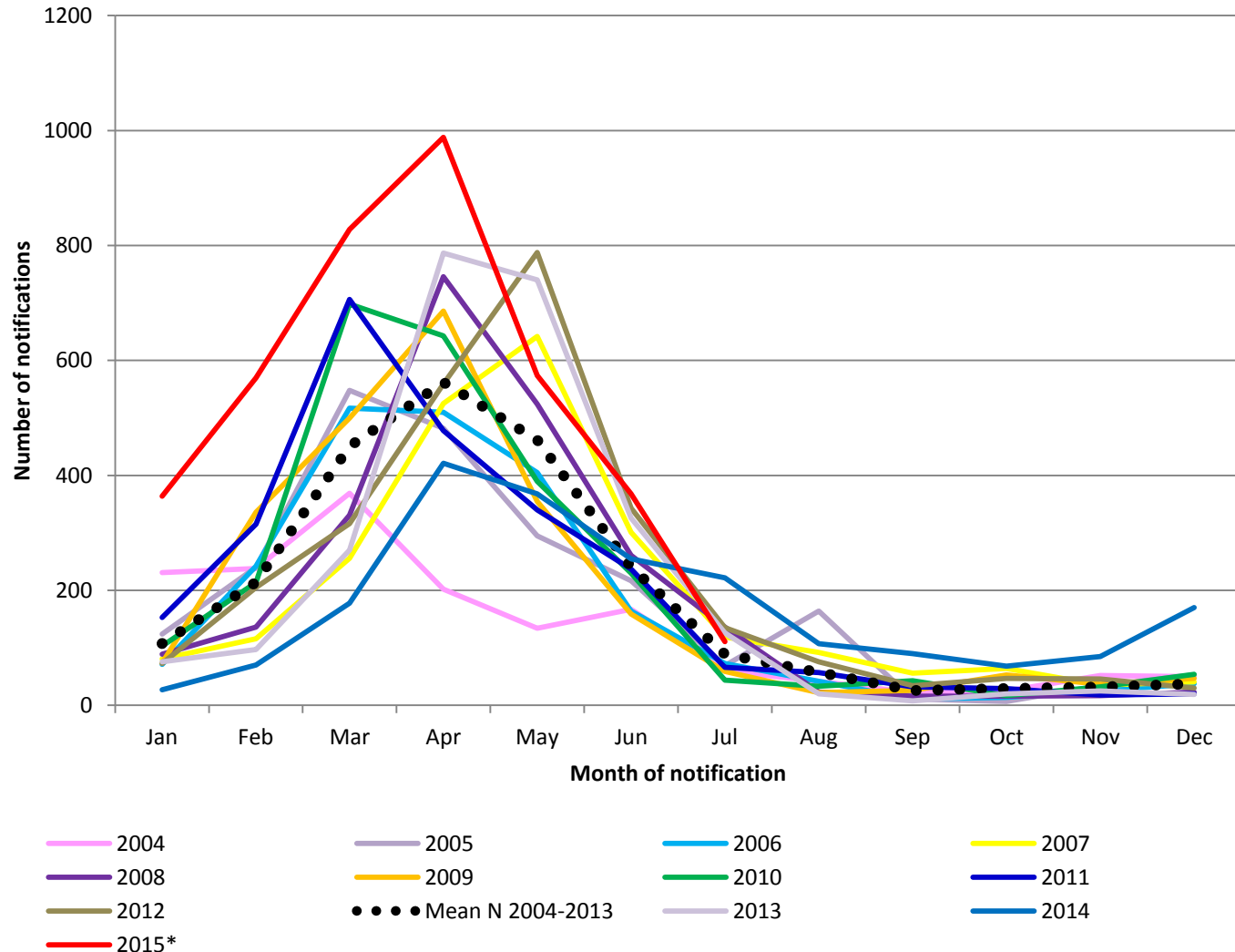
Rotavirus in Ireland

- During 2014, -2,061 cases of rotavirus notified
- Corresponds to CIR of 44.9 per 100,000 population
- Represents decrease of 11.9% compared to the mean CIR during 2004-2013
- Between 70-80% of notifications are in children <2 years
- About 40% of notifications are 6-18 months of age
- See about 4-6 outbreaks a year (frequently nosocomial)

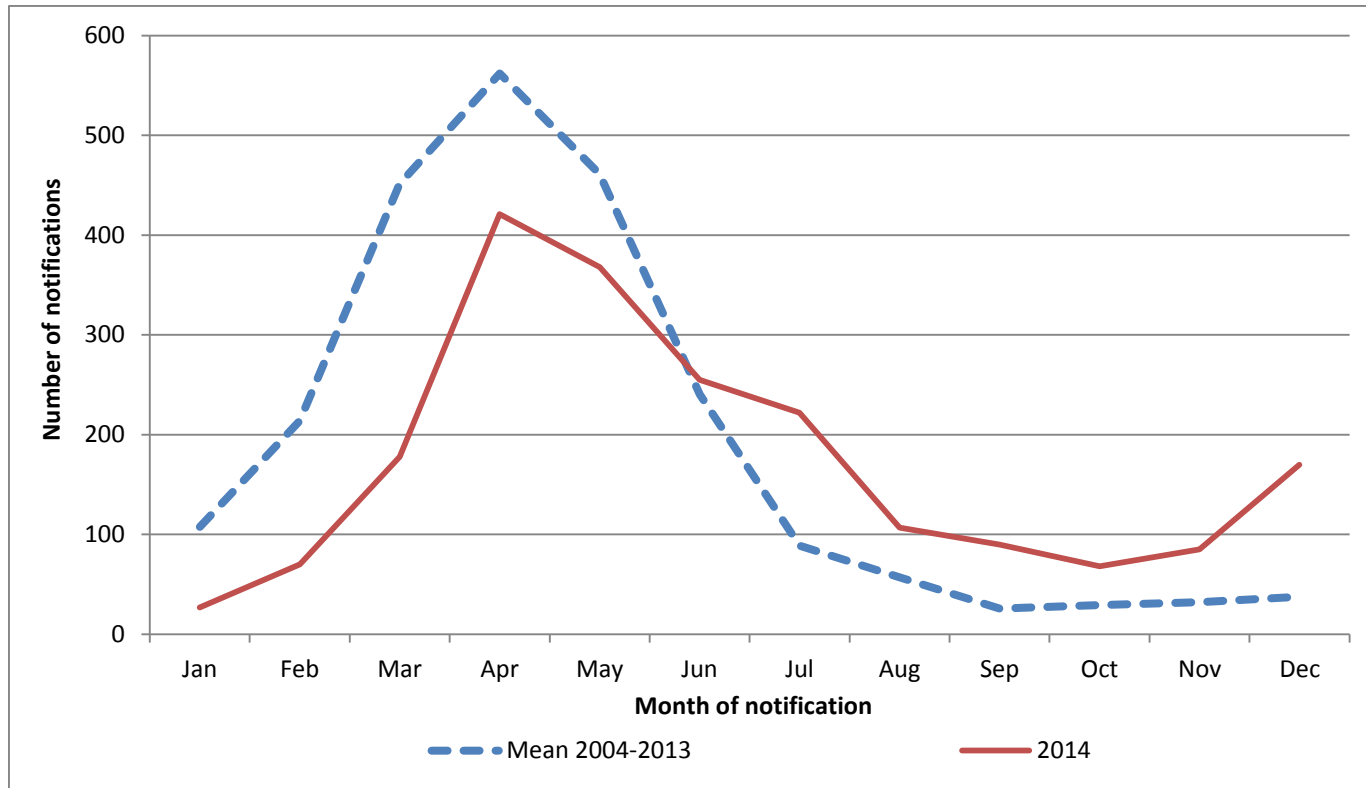
Rotavirus 2014 CIR compared to 2004-2013 mean CIR by HSE area (CIDR)



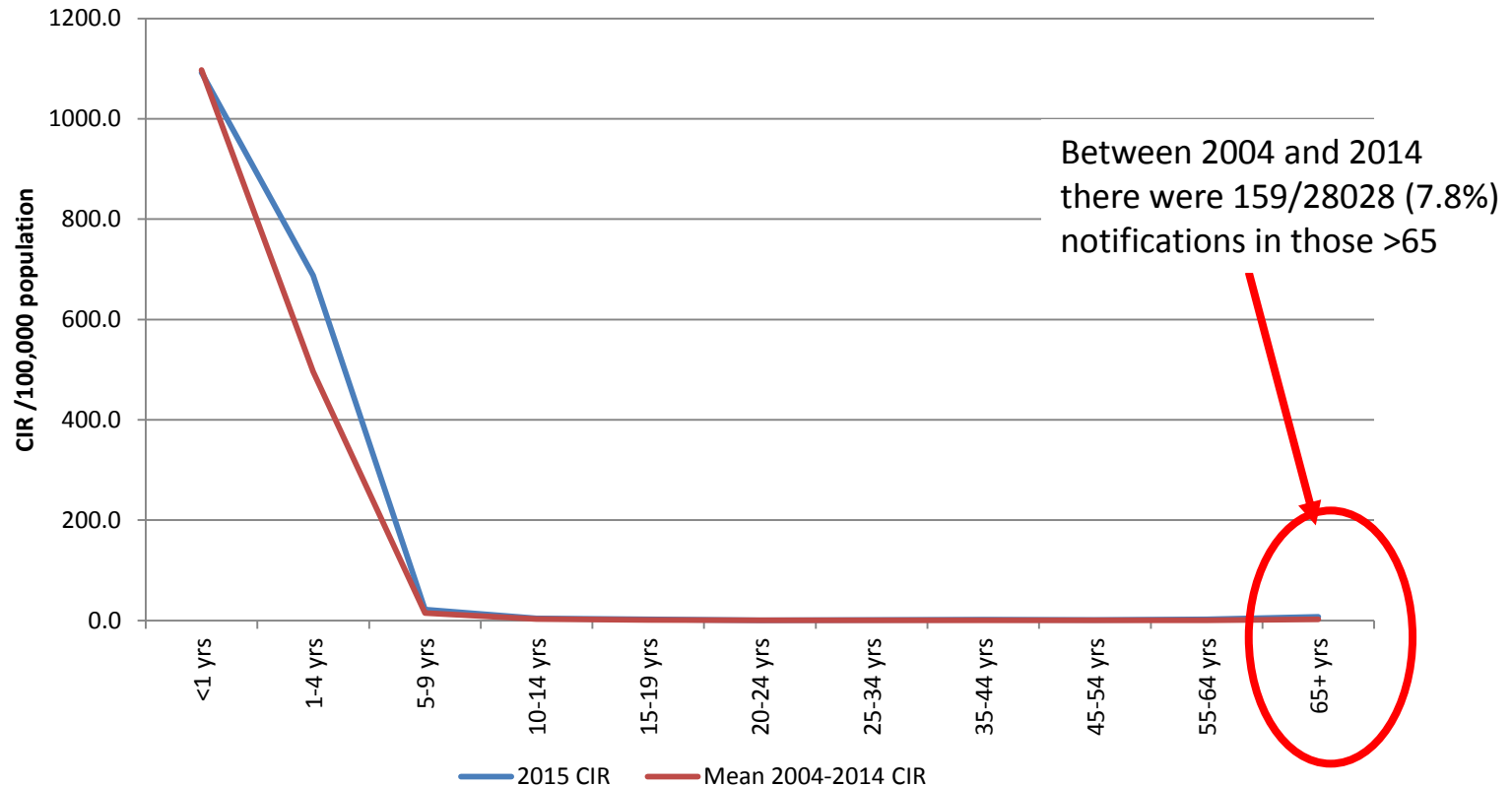
Rotavirus Seasonality: Distribution of Monthly Notifications 2004-2015 (CIDR)



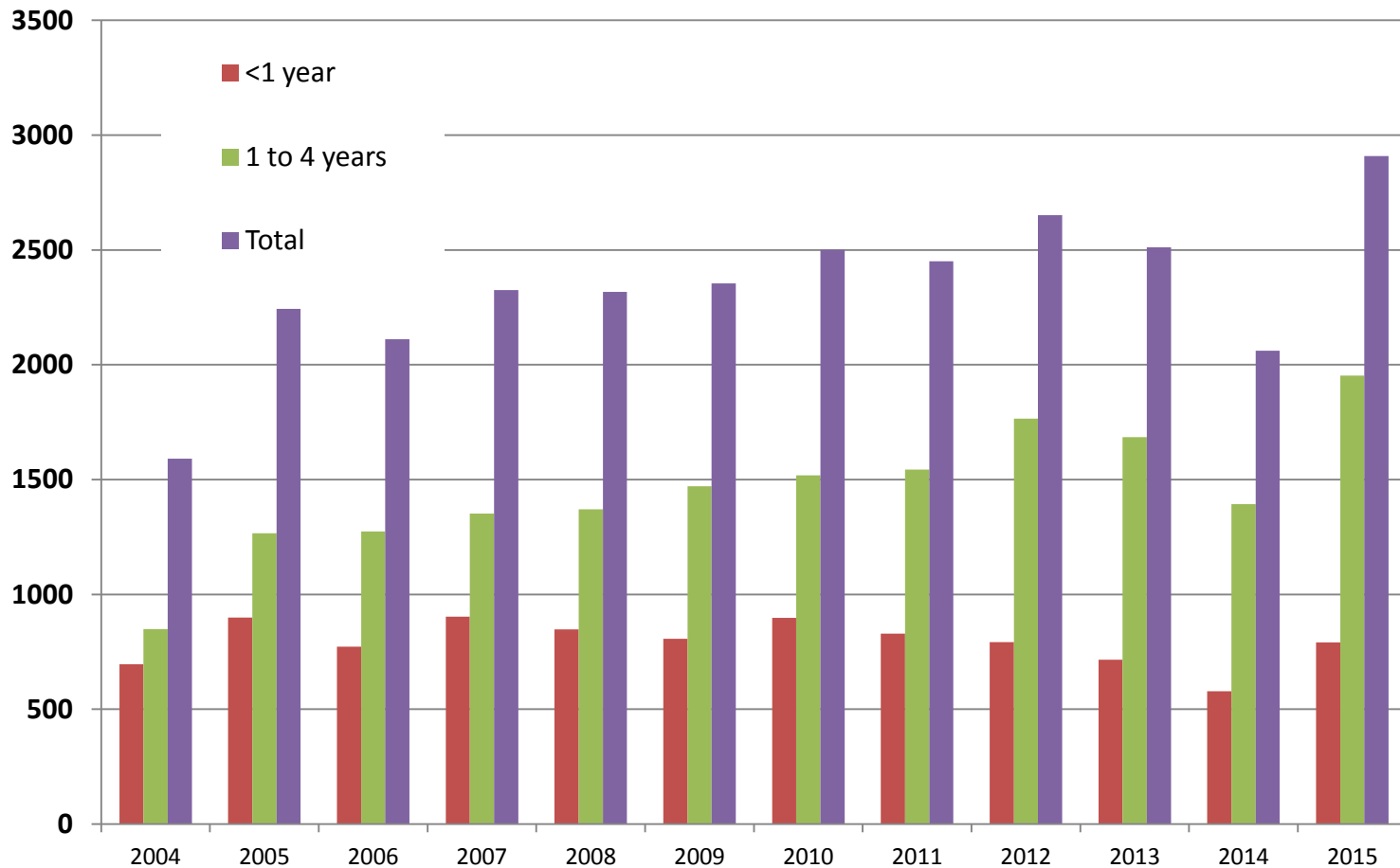
Rotavirus Seasonality: Number of rotavirus notifications by month, 2014 compared to mean monthly number of notifications 2004-2013 (CIDR)



Rotavirus Notifications, Ireland, by Age Category, 2004-2014 (CIDR)



Rotavirus Notifications, Ireland, Notifications in Children, Various Age Categories, 2004-2014 (CIDR)

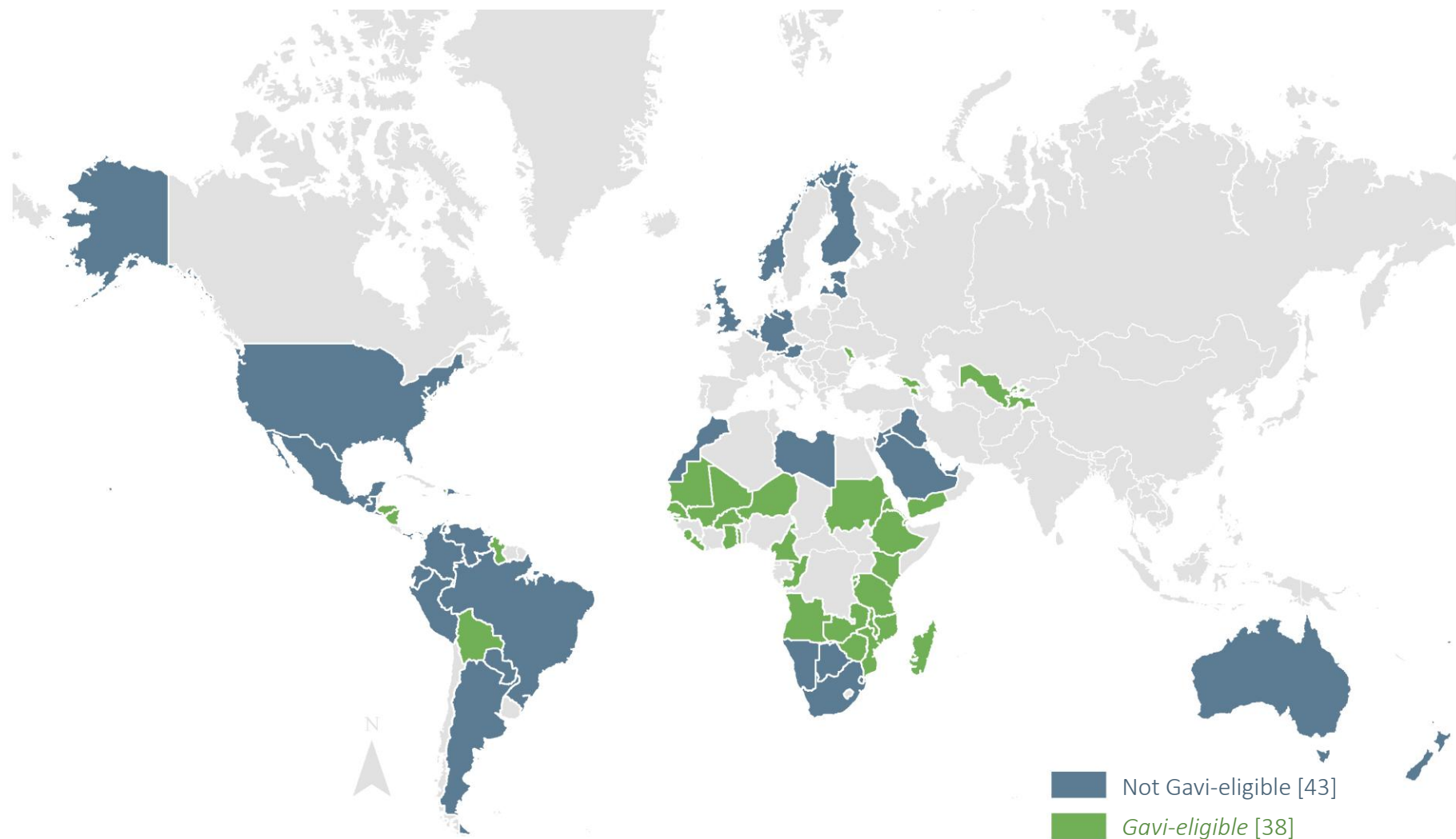


Rotavirus Vaccines

- Two major safe and effective vaccines available on the global market:
 - RotaTeq® - Merck & Co., Inc.
 - Rotarix® - GlaxoSmithKline (GSK)
- Both orally administered
- Both subject of large-scale trials in a range of countries/conditions
- Both have excellent safety profiles



Eighty-One countries* have introduced RV nationally



*As of May 1, 2016
RV = rotavirus vaccine

Rotavirus Vaccination in Ireland

- Extensive research into cost benefits of RoV vaccination in Ireland
- Few deaths would be prevented but potentially significant cost savings in terms of reduction in GP visits, A/E attendances, hospitalisation
- First estimates suggested that that whereas the EU RoV hospitalisation rate was 1 in 17 for those <5
- This has been reassessed as being 575 per 100,000 under five or 1:170

Rotavirus Vaccination in Ireland

- Annual potential healthcare activity savings following implementation of universal RoV vaccination in Ireland (Tilson *et al*, 2011)

Activity	Numbers Prevented
GP Visits	1970
A/E attendance	3280
Hospitalisation	2490

- According to Tilson *et al* in 2011, a vaccination programme was estimated to cost approximately €6.54 million per year but €4.65 million of this would be offset by reducing healthcare resource use
- Ultimately, in 2014, NIAC recommended inclusion of RoV vaccine in primary childhood schedule
- Funding has been secured for the introduction of RoV vaccine in the Primary Childhood Immunisation Programme

Acknowledgements

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