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Increased Influenza Activity in Ireland

Data on influenza-like illness (ILI) around the country are provided by a network of 47 sentinel general practices, covering approximately 4.3% of the population. ILI is defined as the sudden onset of symptoms with a temperature of 38°C or more, and two or more of the following: headache, sore throat, dry cough and myalgia.

One hundred and three ILI cases were reported from sentinel GPs during week 8 2007, corresponding to an ILI consultation rate of 64.5 per 100,000 population, a decrease on the rate of 69.3 per 100,000 in week 7 (figure 1).¹ One influenza-associated death was registered with the General Registrar's Office during week 8 2007. Influenza was the secondary cause of death and not the primary cause.

Laboratory data

The National Virus Reference Laboratory (NVRL) receives specimens for influenza testing from sentinel GPs and from hospitals (non-sentinel). Specimens from hospitals are also tested for respiratory syncytial virus (RSV). The NVRL tested 28 specimens taken by sentinel GPs during week 8 2007, 10 of which were positive for influenza A untyped and three were positive for influenza A(H3). They also tested 46 non-sentinel specimens taken during week 8 2007, mainly from hospitalised paediatric cases. Six non-sentinel specimens were positive for respiratory syncytial virus (RSV) and five were positive for influenza A untyped.

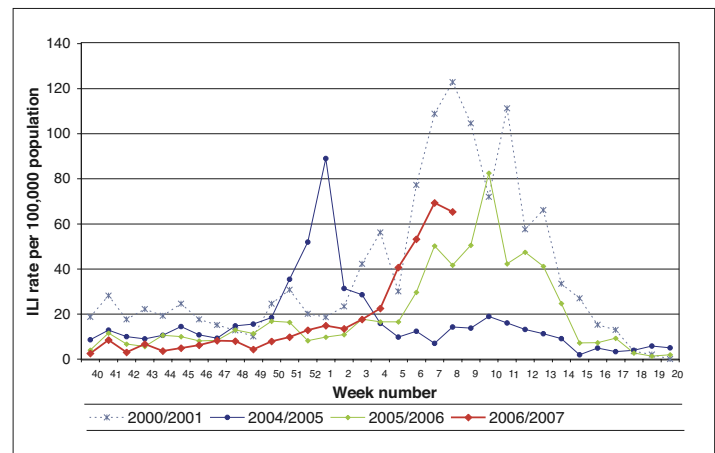


Figure 1. GP consultation rate for ILI per 100,000 population by week, during the 2000/2001*, 2004/2005, 2005/2006 and 2006/2007 influenza seasons

* highest recorded levels of ILI activity since initiation of sentinel surveillance

2006/2007 influenza season to date

The first influenza detection of the 2006/2007 season was in week 48, 2006 (4-10 December). To date, 119 influenza A viruses and two influenza B have been detected. Of the 119 influenza A viruses, two have been subtyped as A(H1) and 62 have been subtyped as A(H3). Influenza positive specimens have been detected in all of the eight HSE areas.¹ The majority (69.4%) of influenza positive cases were aged 15-64 years, with 19.0% aged 0-4 years, 9.9% aged 5-14 years and 0.8% aged ≥65 years (one unknown age group). No influenza/ILI outbreaks have been reported to date this season. One influenza-associated death has been reported.

Influenza activity in Europe

In week 7 2007, increased influenza activity was reported by 20 of 27 European countries. In some countries in the south of Europe (i.e. Portugal, Spain, Serbia) the levels of ILI were lower than those of the previous week for the first time. Influenza A (H3N2) is the dominant virus circulating in Europe but in Romania a relatively high proportion (35%) of the circulating viruses is influenza B.²

Use of antivirals

During week 5 2007 (week ending 4 February), the general practitioner consultation rate for ILI in Ireland increased to 41.2 per 100,000 population. This rate exceeded the threshold at which the UK National Institute of Clinical Excellence (NICE) guidelines (2003) for the use of antiviral drugs is triggered. In line with the NICE guidelines, the use of antiviral drugs for the prevention or treatment of influenza is now recommended. The algorithm for the use of antiviral drugs for the prevention (prophylaxis) of influenza and the recommendations on the use of antiviral neuraminidase inhibitors for the treatment of influenza may be found at <http://www.ndsc.ie/hpsc/A-Z/Respiratory/Influenza/Guidance/NICEguidanceontheuseofantiviraldrugs/#d.en.2211>.

Note: The NICE algorithm on prescribing oseltamivir (Tamiflu) for prophylaxis refers to using oseltamivir in persons aged 13 years and older. In January 2006, oseltamivir was licensed for prophylactic use in children aged one year and over. In the meantime, until NICE completes its review, it would be appropriate to use oseltamivir for prophylaxis in persons aged one year and over according to the other conditions laid out in the NICE algorithm for prophylaxis of influenza. Prescribers should also note a concomitant change to the licensed duration of post-exposure prophylaxis in children and adults which is now ten days as opposed to the previous seven days.

Rotavirus in Ireland, 2005

Introduction

Rotavirus is the most common cause of acute gastroenteritis in children worldwide and a frequent cause of diarrhoea associated deaths in developing countries. In developed countries, mortality due to rotavirus is low. However, the morbidity and economic costs associated with infection are significant.¹

Illness is characterised by sudden onset diarrhoea and vomiting, often with mild fever. Occasionally there is blood in stools. Symptoms usually last for only a few days but in severe cases hospitalisation may be required due to dehydration.

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. Transmission can be rapid, through person-to-person contact, airborne droplets, or contact with contaminated objects such as toys.

Methods

Acute infectious gastroenteritis became a statutorily notifiable disease for the first time in January 2004 under the Amendment to the Infectious Diseases Regulations.²

Only cases of rotavirus and gastroenteritis unspecified are notifiable under this disease category. Diseases such as norovirus infection, cryptosporidiosis, and campylobacter infection are specified individually. Prior to 2004, gastroenteritis was only notifiable when contracted by children less than two years of age.

Cases are notified by both clinicians and laboratory directors to the medical officer of health in each HSE area. Data for this report were extracted and analysed from the Computerised Infectious Disease Reporting system (CIDR).

Results

Incidence

There were 2,404 notifications of acute infectious gastroenteritis (AIG) in 2005. Rotavirus was the causative organism identified in 2,251 (93%) of these, a crude incidence rate (CIR) of 57.5 cases per 100,000 population (table 1). This represents an increase compared to 2004 when 1,600 cases of rotavirus were notified (CIR 40.8 cases per 100,000). The incidence rates increased across all HSE areas relative to 2004 values, except in HSE South where a decrease was observed (figure 1). The highest incidence rate was in HSE West with a CIR of 99.4 per 100,000 population.

Table 1. Number of cases and CIR per 100,000 population of rotavirus in Ireland by HSE area, 2005

HSE area	No. of cases	CIR per 100,000
E	658	47.0
M	176	78.1
MW	92	27.1
NE	162	47.0
NW	167	75.4
SE	283	66.8
S	335	57.7
W	378	99.4
Total	2,251	57.5

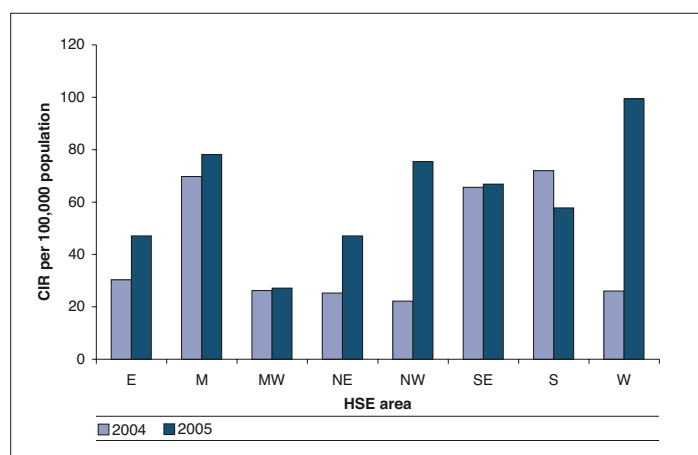


Figure 1. Crude incidence rate per 100,000 population for rotavirus in Ireland by HSE area, 2004 to 2005

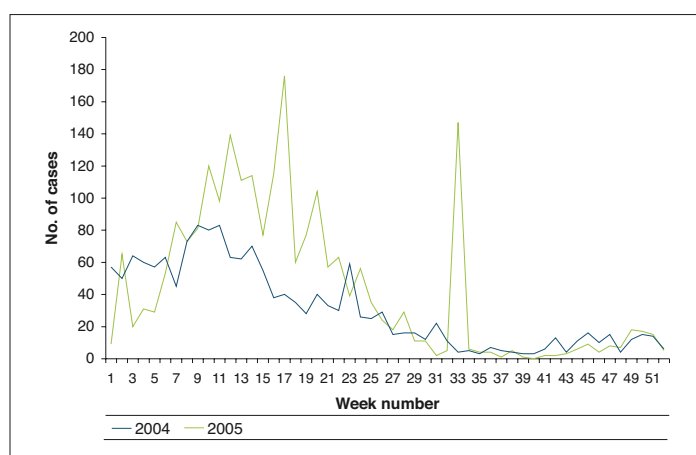


Figure 2. Total number of rotavirus notifications by week, 2005 (data from CIDR)

Seasonal distribution

Analysis of the data by week of notification is shown in figure 2. Most cases were notified in the first half of the year with a peak incidence during week 17. A later peak was also observed during week 33. However, this was attributable to the bulk uploading of notifications for April, May, June and August for HSE West.

Age

When the distribution of cases for each age group is examined, it is evident that the highest burden of illness is seen in children less than five years (table 2). A further breakdown of these figures revealed that the majority (n = 2,026) of infections occurred in children less than two years of age. There has been a continuous increase in the number of cases affecting this age group over recent years (figure 3). As rotavirus became notifiable in 2004 it is possible that figures for previous years underestimate the true burden of infection (prior to 2004, gastroenteritis was only notifiable when contracted by children less than two years of age) and this should be borne in mind when analysing these data.

Gender distribution

No significant gender bias was noted in 2005 with a male: female ratio of 1.11: 1. This is similar to the ratio observed in 2004 (1.18: 1).

Outbreak data

There was only one outbreak of rotavirus notified in 2005. This outbreak occurred in HSE East in a residential institution. A total

Table 2. Age-specific incidence rates for rotavirus in Ireland, 2005

Age group (years)	Number of cases	Age-specific incidence rate (ASIR)
0-4	2,172	782.3
5-9	25	9.5
10-14	5	1.8
15-19	2	0.6
20-24	1	0.3
25-34	2	0.3
35-44	0	0.0
45-54	1	0.2
55-64	2	0.6
65+	22	5.0
Unknown	19	-
Total	2,251	57.5

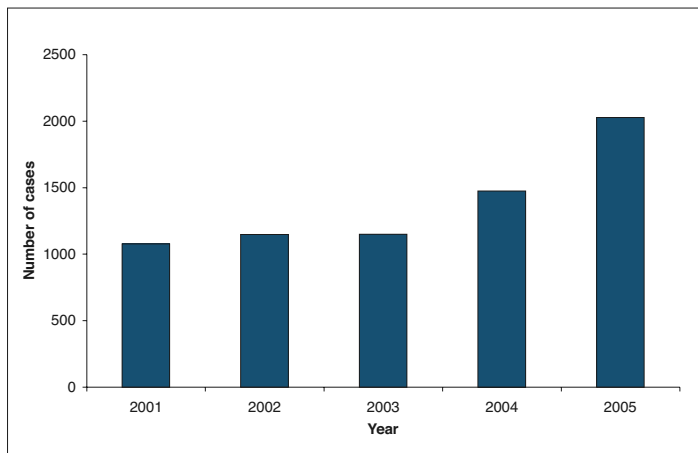


Figure 3. Number of cases of rotavirus in children aged less than two years, 2001 to 2005

of 14 people became ill and the suspected mode of transmission was person-to-person spread.

Discussion

In 2004, rotavirus infections became statutorily notifiable for the first time under the disease category acute infectious gastroenteritis. Prior to 2004, only gastroenteritis cases in children under two years of age were notifiable.

The crude incidence rate (CIR) of rotavirus increased in Ireland in 2005 (57.5 cases/100,000 persons) compared to 2004 (40.8/100,000). In most areas, an increase was seen in 2005, especially in HSE West. For the same period, lower rates were noted for England and Wales^{3 4} (26.0/100,000) and Scotland⁵ (31.5/100,000). However, rotavirus is not statutorily notifiable in the UK and so meaningful comparisons cannot be made.

Analysis of the data presented here shows that children less than two years of age are most at risk. This was also noted in 2004 and is a well-reported feature of the illness worldwide. Seasonal peaks in winter/spring, as observed here, are also a common feature of rotavirus infections in temperate climates.

The morbidity and associated medical costs associated with rotavirus infections is considerable, the extent of which was highlighted in an Irish study published in 2003.⁶ The study monitored hospital admissions, treatments and costs of rotavirus

infections in two paediatric hospitals over a 2-year period. Results revealed that one percent of all hospital admissions were for community-acquired rotavirus. Of these cases, 87% required intravenous rehydration and 13% were rehydrated orally. The minimum cost per case was €728.40. This represents a significant burden on healthcare resources in Ireland.

It is a widely accepted theory that every child will have a rotavirus infection within the first five years of life. These early infections induce long-lasting immunity and are the reason infections are uncommon in adulthood. This acquired immunity has prompted much research into the development of an effective vaccine in recent decades and is a high priority for international agencies such as WHO and the Global Alliance for Vaccine and Immunisations.

Recent research published in the *New England Journal of Medicine* indicates the two new rotavirus vaccines, in a study setting, had an impressive efficacy profile and had a low incidence of side effects (particularly in relation to intussusception – a recognised complication with an older rotavirus vaccine).^{7 8} The National Immunisation Advisory Committee is currently reviewing the efficacy and safety of the new vaccines.

Valerie Jackson, Paul McKeown, HPSC

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Presentation on CIDR at the Fourth Annual US Public Health Information Network Conference

The Public Health Information Network (PHIN) is the vision of the Center for Disease Control and Prevention (CDC) for advancing fully capable and interoperable information systems in the many organisations in the US that participate in public health. PHIN is a national initiative to implement a multi-organisational business and technical architecture for public health information systems. With the acceptance of information technology as a core element of public health, public health professionals are actively seeking essential tools capable of addressing and meeting the needs of the community.

The CDC and its partners, the Association of State and Territorial Health Officials (ASTHO), the Association of Public Health Laboratories (APHL), the Council of State and Territorial Epidemiologists (CSTE), the National Association of Health Data Organizations (NAHDO), the National Association for Public Health Statistics and Information Systems (NAPHSIS), and the National Association of Public Health Information Technology (NAPHIT) hosted their annual PHIN conference in Atlanta, Georgia in 2006. The PHIN conference is one opportunity to advance the PHIN vision with partners and share experiences in implementing PHIN. The PHIN vision encompasses the development and use of information systems addressing a number of public health areas including: early event detection, surveillance and monitoring, epidemiologic case investigation and outbreak management, partner communications and alerting, countermeasure/response administration, distance learning and knowledge management, and laboratory and clinical data management from both the public and private sectors.

Following a visit to Ireland last year by Dr John Loonsk, then Associate Director of Informatics at CDC, and now Director, Office of Interoperability and Standards with the Office of the National Coordinator for Health Information Technology at the US Department of Health and Human Services, it was suggested that a presentation on the development of CIDR in Ireland should be made at the next PHIN annual conference. John was a key driver in the development of the Public Health Information Network in the US and of the National Electronic Disease Surveillance System (NEDSS) that is a key component of PHIN.

The 4th Annual Public Health Information Network (PHIN) Conference was held at the Hyatt Regency Atlanta in Atlanta, Georgia from September 25-27, 2006. This was a large meeting (more than 800 registered participants). There were over 300 presentations, including both plenary and concurrent sessions,

focussed on public health information systems experiences across the US states and the development of these in the context of the more recent wider US national health information network initiative (NHIN).

Although the meeting was primarily focused on experiences within the US, there was a small international session that included a presentation on CIDR from Ireland, a presentation from the Public Health Surveillance Programme/Health Canada Infoway on a national strategy for health surveillance systems in Canada, and a presentation from Northrup Grumman, a commercial supplier, on a global disease surveillance platform. There was a lot of interest in this session with up to 200 people in the audience. There was an extensive question and answer session involving all of the speakers after the presentations. There was also interest expressed in strengthening international links between PHIN in the US and other countries and international agencies (e.g. WHO and ECDC).

As well as providing an opportunity for updates on US federal initiatives, the conference allowed individual states to describe their experiences in relation to a wide variety of topics including early event detection, tools for analysis, visualisation and reporting of surveillance data, partner communication and alerting systems, collaborative development, and analysis and evaluation of electronic laboratory reporting. Many of these presentations described experiences similar to those experienced by CIDR in Ireland. It was clear that CIDR has much more sophisticated role-based access control, is more widely used by public health professionals, and provides more widely available and flexible real-time reporting capability than that reported by many of the state systems. It was particularly reassuring to learn that some of the same problems encountered in Ireland in relation to electronic laboratory reporting are also shared in the US despite the more extensive use of standards such as HL7, SNOMED and LOINC in laboratories in the US. CIDR attendance at future PHIN conferences will allow us to continue to learn from and share experiences with our colleagues working in this area in the US.

The presentations from this conference are on the web at <http://www.cdc.gov/phin/06conference/09-25-06/index.html> and the CIDR presentation may be found at http://www.cdc.gov/phin/06conference/09-26-06/Session4C_Brazil.pdf.

John Brazil, HPSC

Increased Influenza Activity in Ireland continued.

Vaccination

As ILI rates are increasing and influenza A is circulating, it is also important that persons in at-risk groups for influenza are vaccinated as they are at higher risk of developing complications from influenza. Annual influenza vaccination is recommended for a number of at-risk children and adults, including all persons aged 65 years or older.³ Vaccination is free for all those entitled to free primary care which includes all persons aged 70 years or older and approximately 50% of the 65 to 69 year age-group. The average vaccine uptake in patients aged 65 years and over during the 2005/2006 season was 63%.⁴

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