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## Influenza Vaccine Uptake in Older People

In Ireland, annual influenza vaccination is recommended for adults and children who are at risk of influenza related complications, including all persons 65 years of age or older. Influenza and its related illnesses remain a major cause of preventable morbidity and mortality in older people worldwide. Among older people, vaccination is thought to reduce influenza-related morbidity by 60% and influenza-related mortality by 70-80%.<sup>1</sup>

Influenza vaccination (both vaccine and administration) is free for all medical cardholders and GP visit cardholders in Ireland. Since mid-2001, all individuals aged 70 years or older are eligible for a medical card. Approximately 50.2% of the population aged 65 to 69 years have a medical card or a GP visit card. GP visit cards have been available since mid-2006. As of August 1<sup>st</sup> 2007, 412,241 (88.1%) of the population aged 65 years or older had either a medical card or a GP visit card (source: Primary Care Reimbursement Service and 2006 CSO population census).

In 2004, a study was undertaken in Ireland to measure influenza vaccine uptake among medical cardholders (aged 65 years or older) for the 2003/2004-influenza season.<sup>2</sup> This study has been repeated to determine influenza vaccine uptake among medical cardholders (aged 65 years or older) for the 2004/2005, 2005/2006 and 2006/2007-influenza seasons. The study was expanded for the 2006/2007 season to include GP visit cardholders.

### Methodology

Information was obtained from the Primary Care Reimbursement Service (HSE Finance Shared Services) on the number of registered medical cardholders and GP visit cardholders 65 years of age or older, as well as the number of patients vaccinated with influenza vaccine (by age group and HSE area) during the 2006/2007-influenza season. Data refer to GP returns received by the Primary Care Reimbursement Service between September 2006 and August 2007. Influenza uptake rates by age group and HSE area were calculated based on the average number of registered patients with medical cards and GP visit cards during the time period.

### Results

All data refer to medical cardholders and GP visit cardholders only. The average uptake for influenza vaccination nationally during the 2006/2007-influenza season in those aged 65 years or older was 60.6%. This compares with an average uptake rate of 63.0% during the 2005/2006-influenza season.<sup>3</sup> Variation in vaccination coverage was observed between HSE areas (range 57.7%-63.5%) (figure 1).

Nationally, the highest uptake (64.7%) of influenza vaccine among older people was in those aged 75 years of age or older (ranging from 61.8% - 68.2% across all HSE areas). The lowest national uptake (50.2%) was in the 65-69 year age group (ranging from 47.9% - 53.7% across all HSE areas) (table 1).

### Discussion

In Ireland, the average influenza vaccination uptake rate for the 2006/2007-influenza season among medical cardholders and GP visit cardholders aged 65 years of age or older was 60.6%, a decrease on the reported uptake rate of 63.0% for the 2005/2006-influenza season.<sup>3</sup> A study of various European countries during the 2000/2001-influenza season reported uptake rates in older people ranging from 15%-81%.<sup>4</sup> The World Health Organization (WHO) has set a target of 75% for influenza vaccine uptake in those aged 65 years or older, to be reached by 2010 (an increase from the 50% WHO target that was set for 2006),<sup>5</sup> this target has been supported by the European Parliament.<sup>6</sup> In Ireland, the national target for this age group was increased from 60% for the 2004/2005-influenza season to 65% for the 2005/2006 and 2006/2007 influenza seasons.

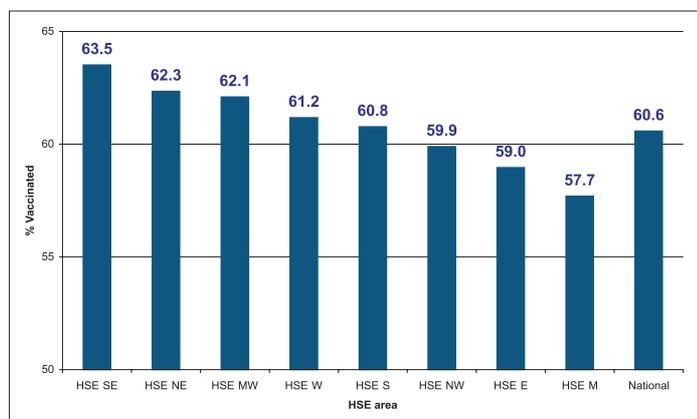


Figure 1. Percentage of medical cardholders and GP visit cardholders (65 years of age or older) who received influenza vaccine during the 2006/2007-influenza season, by HSE area

Table 1. National average influenza immunisation uptake for 2003/2004, 2004/2005, 2005/2006 and 2006/2007-influenza seasons by age group

Age group (years)	2003/2004	2004/2005	2005/2006	2006/2007
65-69	51.6	49.1	52.9	50.2
70-74	58.7	57.6	61.5	59.2
75+	67.3	67.4	66.9	64.7
65+	62.0	61.4	63.0	60.6

# Rotavirus in Ireland, 2006

## 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.

Illness is characterised by the sudden onset of 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, 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 (AIG) became a statutorily notifiable disease for the first time in January 2004 under the Amendment to the Infectious Diseases Regulations. 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, rotavirus was only notifiable as a generic disease category of 'gastroenteritis in children less than two years of age'.

Data for this report were extracted and analysed from the CIDR system.

## Results

### Incidence

There were 2,306 notifications of AIG in 2006. Rotavirus was the causative organism identified in 2,112 (92%) of these, a crude incidence rate (CIR) of 50.0 per 100,000 population (table 1). This represents a decrease compared to 2005, when 2,251 cases of rotavirus were notified (CIR 53.1 per 100,000).

Regional variation was observed in the number of cases reported (table 1), with the highest incidence rate reported from HSE North West, and the lowest rate reported from HSE East. Most areas noted a decrease in the rate of rotavirus infection compared to 2005, but an increase was seen in HSE NW and HSE South. Figure 1 depicts the crude versus age standardised incidence rates for each HSE area in 2006.

Table 1. Number of cases, CIR and ASIR of rotavirus infections in Ireland by HSE area, 2006

HSE area	No. of cases	CIR incl. 95% C.I.	ASIR incl. 95% C.I.
E	588	39.2 [36.0 - 42.4]	40.3 [37.0 - 43.5]
M	187	74.3 [63.7 - 85.0]	67.1 [57.4 - 76.7]
MW	96	26.6 [21.3 - 32.0]	26.8 [21.4 - 32.2]
NE	116	29.4 [24.1 - 34.8]	26.2 [21.4 - 30.9]
NW	203	85.6 [74.0 - 97.3]	84.3 [72.7 - 95.8]
SE	221	48.0 [41.6 - 54.2]	46.6 [40.5 - 52.7]
S	394	63.4 [57.1 - 70.0]	65.9 [59.4 - 72.4]
W	307	74.1 [66.0 - 82.3]	76.9 [68.3 - 85.4]
<b>Total 2006*</b>	<b>2,112</b>	<b>50.0 [48.0 - 52.0]</b>	-
<b>Total 2005*</b>	<b>2,251</b>	<b>53.1 [50.9 - 55.3]</b>	-
<b>Total 2004*</b>	<b>1,600</b>	<b>37.8 [35.9 - 39.6]</b>	-

\*Rates calculated using 2006 census data and may differ from previously published rates

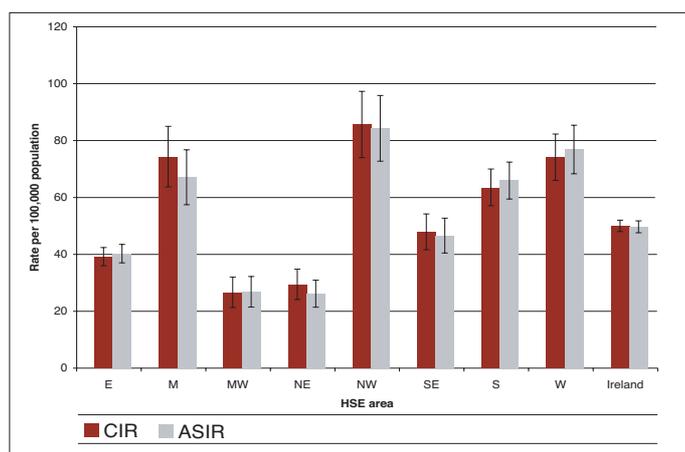


Figure 1. CIR versus ASIR for human rotavirus infections in Ireland, 2006

### Seasonal distribution

Rotaviral infection has a well documented seasonal pattern with peaks in cases occurring each year in late winter/early spring. Analysis of the data by week of notification from 2004 to 2006 is shown in figure 2. In 2006, a peak in cases was observed during week 17, which was the same week the 2005 peak occurred (a 'false' second peak seen in 2005 during week 33, 2005 which is attributable to bulk uploading of notifications for HSE West).

### Age

Rotavirus is primarily a paediatric illness and when the distribution of cases by 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 reveals that the majority (n=2,026) of infections occurred in children less than two years of

Table 2: Age-specific incidence rates for rotavirus in Ireland, 2006

Age group (years)	Number of cases	Rate per 100,000 population
0-4	2,045	676.6
5-9	32	11.1
10-14	6	2.2
15-19	0	0
20-24	0	0
25-34	0	0
35-44	3	0.5
45-54	1	0.2
55-64	2	0.5
65+	17	3.6
Unknown	6	0
<b>Total</b>	<b>2,112</b>	<b>50.0</b>

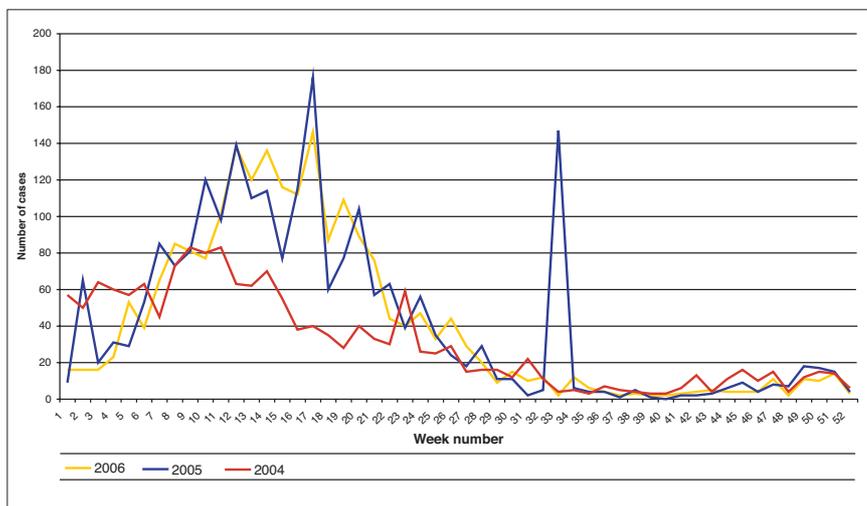


Figure 2: Seasonal distribution of rotavirus events by week, 2004-2006 (CIDR)

age. There has been a continuous increase in the number of cases affecting this age group over recent years (figure 3). However, as rotavirus only became notifiable in 2004 and laboratories also became notifiers that year, it is possible that figures for previous years underestimate the true burden of infection and this should be borne in mind when analysing these data.

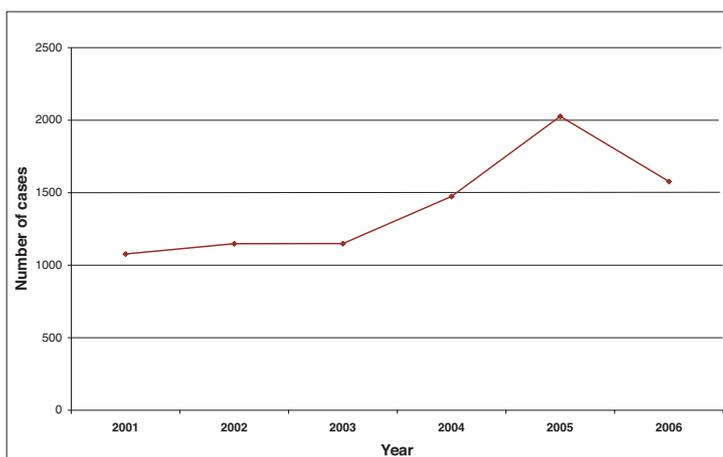


Figure 3. Number of cases of rotavirus in children aged less than two years, 2001 to 2006

### Gender distribution

Males accounted for 1,068 cases (50.6%) and females for 1,026 (48.6%), with 0.9% of cases unknown.

### Outbreak data

There were three rotavirus outbreaks notified in 2006, two general and one family. The general outbreaks occurred in a hospital and a residential institution, with six people reported ill in each.

## Discussion

In 2004, rotavirus infections became statutorily notifiable for the first time under the disease category Acute Infectious Gastroenteritis (Amendment to the Infectious Diseases Regulations 2003). Prior to 2004, only gastroenteritis cases in children under two years of age were notifiable.

The CIR of rotavirus decreased in Ireland in 2006 (50 cases per 100,000 population) compared to 2005 (53/100,000). Most areas

noted a decrease in the rate of rotavirus infection compared to 2005, but an increase was seen in HSE NW and HSE S. The overall national rate of infection in Ireland is still considerably higher than that in England and Wales<sup>1</sup> (25.6/100,000), Northern Ireland<sup>2</sup> (25.3/100,000) and Scotland<sup>3</sup> (33.4/100,000). However, it should be borne in mind that as rotavirus is not statutorily notifiable in the UK, meaningful comparisons cannot be made.

Rotavirus has a well documented seasonal trend with peaks each year in late winter/early spring in countries with temperate climates. The 2006 data demonstrate a consistent trend with a peak reported in the same week as in 2005 (week 17).

Rotavirus is the commonest reported cause of acute gastroenteritis in children under five years of age in Ireland, as well as worldwide. It is a widely accepted theory that every child will have a rotavirus infection within the first five years of life.<sup>4</sup> 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.<sup>5,6</sup> Major developments have taken place in this field of research in recent years, with the licensing of two vaccines against rotavirus in Europe in the past year (*Rotarix* and *Rotateq*). The United States have already introduced one of these vaccines (*Rotateq*) as part of their national childhood vaccination schedule,<sup>7</sup> while the majority of European countries, including Ireland, are still considering this decision.

These new safe and effective vaccines offer the best hope of reducing the toll of acute gastroenteritis due to rotavirus in both developed and developing countries.

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### References

1. Health Protection Agency – Centre for Infections. Epidemiological information – rotavirus. Available at [http://www.hpa.org.uk/infections/topics\\_az/rotavirus/data.htm](http://www.hpa.org.uk/infections/topics_az/rotavirus/data.htm).
2. Communicable Disease Surveillance Centre Northern Ireland. Laboratory reports of rotavirus (all specimen types, 1995-2006, Northern Ireland). Available at <http://www.cdscni.org.uk/surveillance/Gastro/Rotavirus.htm>.
3. SCIEH. Gastro-intestinal and foodborne infections: Incidence of viral and protozoal infections reported to HPS in 2006. Available at <http://www.documents.hps.scot.nhs.uk/ewr/pdf2007/0705.pdf>.
4. The Pediatric ROTavirus European Committee ('PROTECT'). The paediatric burden of rotavirus disease in Europe. *Epidemiol Infect* 2006; 134(5): 908-16.
5. Dennehy PH. Rotavirus vaccines - an update. *Vaccine* 2007; 25: 3137-41.
6. Glass RI, Parashar UD, Bresee JS, Turcios R, Fischer TK, Widdowson MA, Jiang B, Gentsch JR. Rotavirus vaccines: current prospects and future challenges. *Lancet* 2006; 368: 323-32.
7. Parashar UD, Alexander JP, Glass RI. Prevention of rotavirus gastroenteritis among infants and children. *MMWR Recomm Rep* 2006; 55(RR12): 1-13. Available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5512a1.htm>.

# Influenza Vaccine Uptake in Older People (continued)

Although influenza vaccine is recommended for all individuals 65 years of age or older in Ireland, it is evident that there is inconsistent uptake amongst this group with only those aged 75 years or older reaching the national target uptake rate. However, it should be noted that data for the 65-69 year age group only represent medical and GP visit cardholders in this age group and as such do not include 50% of the population in this age group. The uptake in this group is unknown.

During the 2006/2007 season, a pilot project in HSE North West involving several GP practices, nursing homes and community hospitals was initiated to increase influenza vaccine uptake in those aged over 65 years. Patients were invited to attend for vaccination and a local media campaign was launched. Results demonstrated that uptake increased by an average of 10% in these practices, with one practice increasing by 20%. As a result of these findings, the initiative has been extended to all GP practices in the North West for the 2007/2008 season (personnel communication, Louise Cullen, HSE NW, 14/12/2007).

Reasons for inadequate vaccination uptake rates, particularly among those aged 65-74 years are unclear. In Ireland, a national telephone survey of influenza and pneumococcal vaccine uptake in the recommended risk groups was conducted in 2006. This survey estimated influenza vaccine uptake among persons aged 65 years or older at 68.6%, reaching the WHO target and surpassing the recommended national target for Ireland. Low self-perceived risk of getting influenza was the main reason stated for non-vaccination by those aged 65 years or older. Family doctor recommendation was the most commonly cited reason for receiving the influenza vaccine.<sup>7</sup> Other studies have also reported lack of awareness of self-risk associated with influenza disease, as well as distrust of vaccinations, disbelief in vaccine efficacy and inadequate strength of recommendations from health professionals as possible reasons for inadequate vaccination uptake.<sup>8,9,10,11</sup>

## Key points

- Influenza vaccine uptake for those aged 65 years or older during the 2006/2007 season was at lower levels than previously recorded.

- In Ireland, influenza vaccination uptake rates among medical cardholders and GP visit cardholders aged 65 years of age or older show regional and age group variation.
- Health professionals should encourage and facilitate access to vaccination for their at-risk patients, including all patients 65 years of age or older.
- Work on increasing awareness within the wider community about the value of influenza vaccination for those at risk of influenza complications should be supported as part of efforts to increase vaccine coverage.

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## References

1. WHO. Influenza vaccines. *WER* 2000; **75**: 281-288.
2. Sheahan A, Cotter S. Influenza vaccination uptake. *Epi-Insight* 2004; **5**(11): 1.
3. Jackson S, O'Donnell J, O'Flanagan D. Influenza vaccine uptake in older people. *Epi-Insight* 2006; **7**(12): 4.
4. Kroneman *et al.* Influenza vaccination in Europe: an inventory of strategies to reach target populations and optimise vaccination uptake. *Eurosurveillance* 2003; **8**(6): 130-138.
5. Resolution of the World Health Assembly WHA 56.19, Prevention and control of influenza pandemics and annual epidemics, 56th WHA, 10th plenary meeting, 28 May 2003.
6. European Parliament resolution [P6\_TA(2005)0406] on the strategy against an influenza pandemic, 26 October 2005.
7. Mereckiene J *et al.* Risk groups and uptake of influenza and pneumococcal vaccine in Ireland. *Euro Surveill* 2007; **12**(12) [Epub ahead of print]. Available at [www.eurosurveillance.org/em/v12n12/1212-227.asp](http://www.eurosurveillance.org/em/v12n12/1212-227.asp).
8. Kaufman Z, Green MS. Compliance with influenza and pneumococcal vaccinations in Israel, 1999-2002. *Public Health Rev* 2003; **31**(1): 71-9.
9. Lewis-Parmar H, McCann R. Achieving national influenza vaccine targets - an investigation of the factors affecting influenza vaccine uptake in older people and people with diabetes. *Commun Dis Public Health* 2002; **5**(2): 119-26.
10. Cornford CS, Morgan M. Elderly people's beliefs about influenza vaccination. *Br J Gen Pract* 1999; **49**(441): 281-4.
11. Canova L *et al.* Prevalence rate and reasons for refusals of influenza vaccine in elderly. *Swiss Med Wkly* 2003; **133**(43-44): 598-602.

# Hepatitis A Vaccine for Post-exposure Prophylaxis

A recently published study has found that hepatitis A vaccine is effective when used for post-exposure prophylaxis against hepatitis A.<sup>1</sup> The study was a randomised, double-blind clinical trial comparing the efficacy of hepatitis A vaccine with immune globulin in preventing laboratory-confirmed symptomatic hepatitis A when given to contacts within 14 days of exposure to a laboratory-confirmed index case of hepatitis A.

The study took place in Kazakhstan. The study population were aged 2 to 40 years old with no previous history of hepatitis A or liver disease, had not previously received hepatitis A vaccine, and had no contraindications for study interventions. Of 4,524 contacts who underwent randomisation, 1,090 were eligible for analysis as per the protocol. Most of the contacts were children, with an average age of 12 years. Five hundred and sixty eight received the hepatitis A vaccine and 522 received immune globulin. Symptomatic hepatitis A was confirmed in 25 contacts who received the vaccine (4.4%), and 17 contacts who received immune globulin (3.3%) (relative risk: 1.35 with 95% confidence interval, 0.70-2.67).<sup>1</sup>

The study shows that both hepatitis A vaccine and immune globulin are effective when used for post-exposure prophylaxis against hepatitis A infection. The advantages of the vaccine are that it provides long-term protection, it is more readily available, administration is easy, and the costs are similar. However, the authors caution that the modest difference in efficacy may be relevant when choosing between the vaccine and immune globulin when dealing with persons who are likely to develop severe illness

if infected with hepatitis A, such as older people and those with chronic liver disease.

The Advisory Committee on Immunization Practices in the United States now recommends that hepatitis A vaccine be used for post-exposure prophylaxis in preference to immune globulin for healthy persons aged 12 months to 40 years. Immune globulin should be used for children aged <12 months, adults >40 years, those who are immunocompromised or have chronic liver disease, and those for whom the vaccine is contraindicated.<sup>2</sup>

The UK guidelines recommend that close contacts are given hepatitis A vaccine for post-exposure prophylaxis up to seven days following exposure. Immune globulin should be used in preference to or in addition to the vaccine for persons who are at risk of adverse outcomes if infected with hepatitis A, or those who are more than 8 days post-exposure.<sup>3</sup>

## References

1. Victor JC, *et al.* Hepatitis A vaccine versus immune globulin for postexposure prophylaxis. *N Engl J Med* 2007; **357**(17): 1685-94.
2. CDC. Update: prevention of hepatitis A after exposure to hepatitis A virus and in international travellers: updated recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Wkly* 2007; **56**(41): 1080-84.
3. Crowcroft NS *et al.* Guidelines for the control of hepatitis A virus infection. *Commun Dis Public Health* 2001; **4**: 213-27.