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# Record number of Cryptosporidiosis cases reported in 2007

**New figures show that the number of cryptosporidiosis cases reported in 2007 was the highest recorded since the disease became notifiable in 2004.**



*"Work on upgrading Group Water Schemes under the Rural Water Programme should lead to a reduction in waterborne illness in Ireland"*

Overall, there were 609 cases notified to the Health Protection Surveillance Centre, up 66% when compared with 2006, as illustrated in table 1. The main reason for the 2007 increase was the very high number of notifications in the HSE-W due to a large outbreak linked to public water supplies in the spring which accounted for almost 50% of all cases reported.<sup>1</sup>

Cryptosporidiosis incidence rates in other HSE areas were largely below average, with four HSE areas – Midlands, North East, North West and South - reporting their lowest annual numbers of cases since the disease became notifiable.<sup>2-4</sup>

Cryptosporidiosis causes severe watery, non-bloody, diarrhoea in otherwise healthy people and is a relatively common gastroenteric disease in Ireland. Normally, symptoms last about two weeks. However, in people with weakened immune systems it can cause long lasting severe diarrhoea.

The crude incidence (CIR) and age standardised incidence (ASIR) rates by HSE area for 2007 are reported in table 1. As in previous years, the HSE-E reported the lowest crude incidence rate. When looking at the figures it is important to bear in mind that regional incidence rates may be affected by screening and case finding policies in local laboratories, as well as reflecting a real difference in disease risk.

The number of cases in 2007 peaked slightly earlier than in previous years with 62% occurring between March and May, as shown in figure 1. However, this was largely due to the outbreak in the HSE-W. When the HSE-W cases are excluded, the seasonal pattern is similar to previous years, with a peak in April-June.

*Table 1. Number of notified cases, crude incidence rate and age-standardised incidence rate cryptosporidiosis by HSE area, 2007, and annual number of cryptosporidiosis notifications and crude incidence rate, Ireland 2004-2006*

HSE area	Number of notifications	CIR (95% CI)*	ASIR (95% CI)*
ER	22	1.5 (0.9-2.1)	1.4 (0.8-2.0)
M	34	13.5 (9.0-18.1)	12.8 (8.5-17.1)
MW	57	15.8 (11.7-19.9)	16.0 (11.9-20.2)
NE	24	6.1 (3.7-8.5)	5.6 (3.3-7.8)
NW	25	10.5 (6.4-14.7)	10.6 (6.4-14.7)
SE	79	17.1 (13.4-20.9)	16.9 (13.1-20.6)
S	60	9.7 (7.2-12.1)	9.9 (7.4-12.4)
W	308	74.4 (66.1-82.7)	75.8 (67.3-84.2)
Total 2007	609	14.4 (13.2-15.5)	-
Total 2006	367	8.7 (7.8-9.5)	-
Total 2005	570	13.4 (12.3-14.5)	-
Total 2004	431	10.2 (9.2-11.1)	-

\*Rates calculations based on CSO census 2006, and may differ from rate published previously based on 2002 census

# HPSC sees slight increase in over 65s getting influenza vaccine

Latest figures from the HPSC show that uptake of the influenza vaccine increased slightly during the 2007/2008 influenza season when compared with the previous year.

The HPSC system for monitoring influenza vaccine uptake measures the number of people over 65 with a medical card or GP visit card who availed of the vaccine. During the 2007 / 2008 influenza season 61.7% of people in this category received the vaccine compared with 60.6% for the previous season. However, uptake is still below the World Health Organization (WHO) target of 75% by 2010. Uptake rates varied in the different HSE areas, as illustrated in figure 1.

People aged 75 or over were most likely to get vaccinated while those aged between 65 and 69 were less likely to avail of the vaccine as shown in table 1.

Influenza vaccination is free in Ireland for everyone who has a medical or GP visit card. From mid-2001 to the end of 2008, everyone aged 70 years or older was entitled to a medical card. According to The Primary Care Reimbursement Service and the 2006 CSO population census, 419,767 (89.7%) of the population aged 65 years or older had either a medical card or a GP visit card on August 1<sup>st</sup> 2008.

In Ireland, annual influenza vaccination is recommended for adults and children who are at risk of influenza-related complications, including everyone over 65 years of age. Clearly some of the over 65s are not availing of the vaccine. However, as this system only monitors medical and GP visit cardholders it does not include 50% of the 65-69 age group who are not entitled to these cards. The uptake in this particular group is unknown.

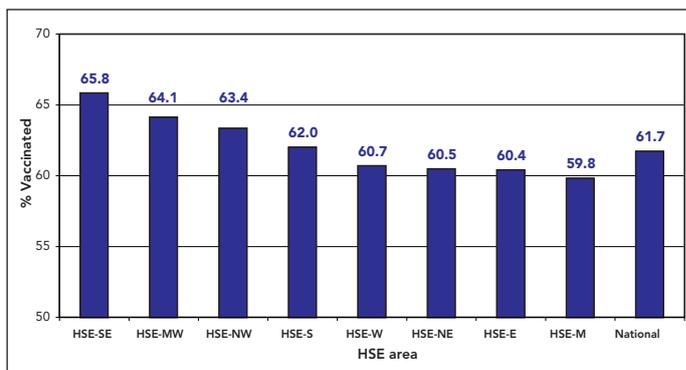


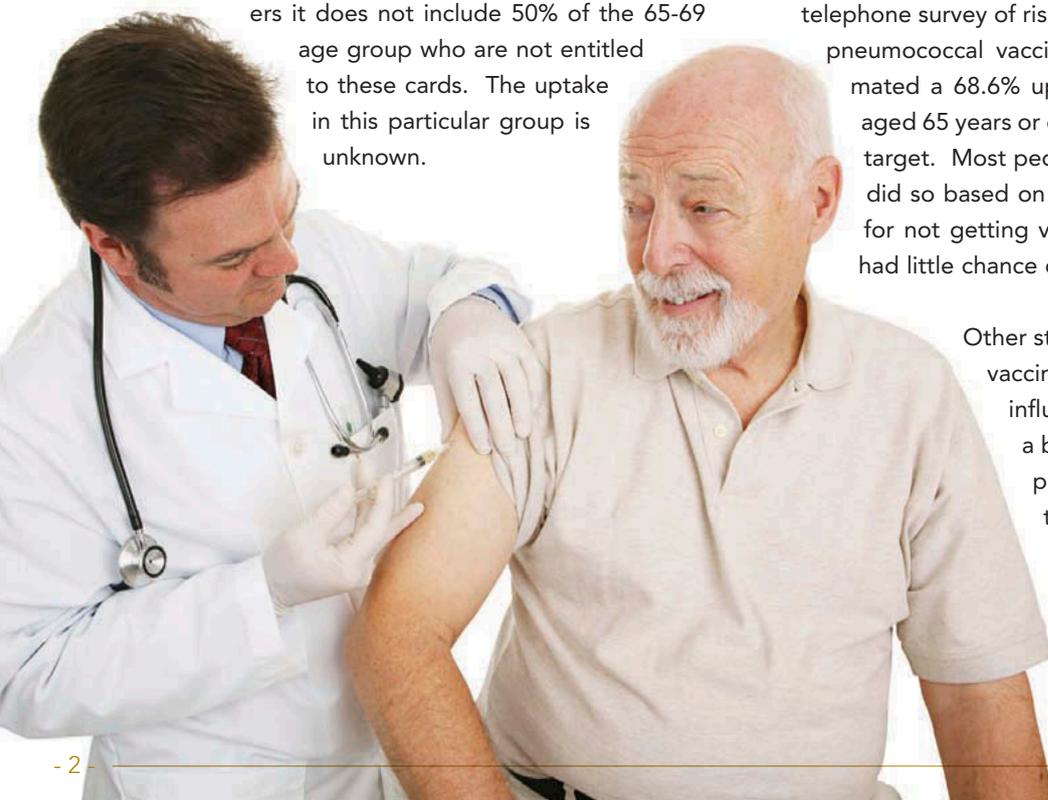
Figure 1. Percentage of people over 65 with a medical or GP visit card who received influenza vaccine during the 2007/2008-influenza season, by HSE area

The measurement of influenza vaccine uptake began in the 2003/2004 flu season, initially amongst over 65s with medical cards. GP visit cardholders were included from 2006/2007 onwards. A study of various European countries during the 2006/2007-influenza season reported uptake rates in older people ranging from 1.8% - 82.1%. The World Health Organization (WHO) has set a target uptake rate of 75% for influenza vaccine in those aged 65 years or older, to be reached by 2010, which is an increase from the 50% WHO target that was set for 2006.

There are no clear reasons for the inadequate vaccination uptake rates, particularly among those aged 65-74 years. A national telephone survey of risk groups and the uptake of influenza and pneumococcal vaccine in Ireland, conducted in 2006, estimated a 68.6% uptake of influenza vaccine among those aged 65 years or older, which reached the then 2006 WHO target. Most people surveyed who availed of the vaccine did so based on the advice of their GP. The main reason for not getting vaccinated was because people felt they had little chance of actually getting influenza.

Other studies have also reported that the cost of vaccination, a lack of awareness of the risks of influenza disease, a distrust of vaccinations, a belief that vaccines don't work and health professionals not recommending vaccination strongly enough are possible reasons for inadequate vaccination uptake.

Influenza and its related illnesses remain a major cause of preventable illness and death in older people worldwide. Vaccination is thought to reduce influenza-



**The main reason for not getting vaccinated was because people felt they had little chance of actually getting the flu.**

Table 1. National average influenza immunisation uptake by age group for the last five influenza seasons for people aged 65 or over and who hold medical or GP visit cards

Age Group (years)	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008
65-69	51.6	49.1	52.9	50.2	51.0
70-74	58.7	57.6	61.5	59.2	60.0
75+	67.3	67.4	66.9	64.7	66.1
65+	62.0	61.4	63.0	60.6	61.7

related illness by 60% and influenza-related deaths by 70-80% in older people.

HPSC believes that health professionals should encourage and facilitate access to vaccination for their at-risk patients, including everyone aged 65 or older. Work is also needed to increase awareness within the wider community of the value of vaccination for those at risk of influenza complications and should be supported as part of the efforts to increase vaccine coverage.

The need for a national immunisation register is more relevant than ever. This would provide more timely and complete influenza vaccination uptake rates in risk groups, individuals aged 65 years and older, and health care workers.

Projects also need to be developed to promote influenza vaccination uptake among health care workers as recommended by the European Centre for Disease Prevention and Control (ECDC).

The methodology for the HPSC influenza uptake survey and references are available from the authors, by contacting [info@hpsc.ie](mailto:info@hpsc.ie)

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## In Brief...

### Get the jab – not the mumps

Teenagers and young adults have been warned by the HPSC to make sure that they have had two doses of MMR vaccine following the provisional reporting of 1389 cases of the disease in 2008. This compares with 142 for 2007. Dr Suzanne Cotter, Specialist in Public Health Medicine at HPSC advised that MMR vaccination is the only way to tackle this increase.

“The huge rise in cases – nearly 60% of whom are between 15 and 24 years old - highlights once again the importance of getting vaccinated with two doses of MMR, which are needed to minimise the risk of infection. This is especially important for all teenagers and young adults, particularly students in schools and colleges following at least seven outbreaks in third level colleges last year,” she said.

# 89%

of children received the first dose of MMR at two years of age in quarter 3, 2008. This is the latest statistic available and is the highest uptake rate ever recorded in Ireland. However, it is still below the 95% uptake rate recommended by the World Health Organization.

### Erratum

Last month's EPI Insight article - *Meningitis in Ireland, 2007/2008* – contained a typographical error. The third sentence of the discussion on page 3 should have read: “Clearly, the MenC vaccine continues to have a positive impact on the number of serogroup C cases (and not serogroup B cases as stated) seven years after its introduction.”

### Write for EPI Insight

EPI Insight is always on the lookout for new and interesting articles. Please contact [maurice.kelly@hpsc.ie](mailto:maurice.kelly@hpsc.ie) for more details.

# Record number of Cryptosporidiosis cases reported in 2007 (continued)

Table 2. Species distribution of *Cryptosporidium* cases by HSE-area, Ireland 2007

Species	E	M	MW	NE	NW	SE	S	W	Total
<i>C. parvum</i>	1	0	1	3	8	47	6	65	131
<i>C. hominis</i>	1	2	0	0	7	14	0	110	134
<i>C. cervine</i>	0	0	0	0	0	1	0	0	1
Non-typeable	0	0	0	0	0	4	0	0	4
Not specified	20	32	56	21	10	13	54	133	339
<b>Total</b>	<b>22</b>	<b>34</b>	<b>57</b>	<b>24</b>	<b>25</b>	<b>79</b>	<b>60</b>	<b>308</b>	<b>609</b>

The highest age-specific incidence rate was in children under 5 years. Typically the highest rates are seen in children who live in rural areas.

Hospitalisation rates were inferred from information available for cases reported in HSE areas whose data is recorded live on the Computerised Infectious Disease Reporting (CIDR) system. Data from two HSE areas – the West and Mid West - is not included as both are still in the process of going live on the CIDR system. Overall, around 33% people infected with cryptosporidiosis needed in-patient hospital treatment.

Hospitalisation rates were higher among children – 36% of whom were hospitalised – than among adult cases, 19% of whom were hospitalised.

Information was available on species for 370 cases, largely from the HSE-SE, HSE-NW and HSE-W areas, as shown in table 2. This was due to the introduction in 2007 of routine referring of positive *Cryptosporidium* specimens by a small number of Irish hospital laboratories to the UK *Cryptosporidium* Reference Unit in Swansea. Prior to this, typing of positive human specimens was rarely undertaken except in the event of outbreaks. Typing of human and/or environmental specimens can provide information on possible sources of infection during human case and outbreak investigations.<sup>5</sup>

Roughly equal numbers of *C. parvum* and *C. hominis* cases were notified, along with a small number of *C. cervine* and non-typeable strains. The large outbreak in Galway strongly skewed the national picture as over 80% of the reported *C. hominis* cases were reported from the HSE-W. When the HSE-W is excluded *C. parvum* was more common, especially in springtime, which suggests that *C. parvum* may be more common among non-outbreak cases. These results provide the first systematic evidence of the relative importance of different *Cryptosporidium* species in human disease in Ireland.

In total, 16 outbreaks of cryptosporidiosis were reported in 2007: six general outbreaks and ten family outbreaks. Three hundred and fifty-eight people were reported ill as a result of these outbreaks. Nine outbreaks were thought to have occurred through person-to-person contact, while water was the suspected mode of transmission in three. Three general outbreaks were community based and two small general outbreaks were reported in crèches.

The waterborne outbreak of cryptosporidiosis in Galway was the largest reported in Ireland since surveillance for outbreaks began. In total, 304 laboratory-confirmed cases were reported and a preliminary report showed that it was primarily due to *C. hominis*.<sup>1</sup> Cases were clustered in areas supplied by water treatment plants

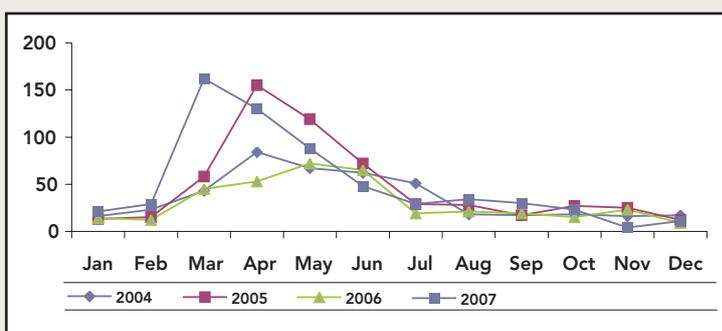


Figure 1. Seasonal distribution of cryptosporidiosis cases, Ireland 2004-2007

which used water from Lough Corrib. Boil water notices were issued for four supplies in March 2007, and were lifted in July and August 2007 following closure of the two older plants and upgrading of the two newer plants.<sup>6</sup> No specific point source of contamination was identified.

Human cryptosporidiosis spread by contaminated water is clearly important, but the most common mode of transmission for outbreaks of the disease in 2007, was person-to-person spread. It accounted for 56% of outbreaks of the disease. However, all except one of these occurred in a private household, and together they accounted for only 11% of outbreak cases. Other important transmission routes for cryptosporidiosis reported internationally are swimming pool uses – as *Cryptosporidium* can survive in chlorinated water - and direct contact with cattle and sheep.<sup>7-8</sup>

In April 2008, the Environmental Protection Agency published its Remedial Action List – which detailed public water supplies in Ireland which ‘required examination from source to consumer to determine whether replacements or upgrades were needed, or whether operational practices should be improved’.<sup>9</sup> Several water supplies have been placed on the list because they may have inadequate treatment for *Cryptosporidium*. The work arising from this prioritisation exercise, and the ongoing work on upgrading Group Water Schemes under the Rural Water Programme should lead to a reduction in waterborne illness in Ireland in the coming years.<sup>10</sup> While there have been a few general outbreaks in recent years in Ireland, the epidemiology of the disease has been largely influenced by apparently sporadic cases. The Galway outbreak is a reminder of the massive outbreak potential of this organism when a public water supply becomes contaminated.

The methodology for this article and references are available from the authors, by contacting [info@hspc.ie](mailto:info@hspc.ie)

Patricia Garvey and Paul McKeown, HPSC

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