Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

December 2006

Volume 7 Issue 12

hpsc EPI-Insight

Disease Surveillance Report of HPSC, Ireland

ISSN: 1393-9548

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World AIDS Day, December 1st 2006

The first documented cases of AIDS appeared as a report of *Pneumocystis carinii* pneumonia (PCP) in five previously healthy young men in Los Angeles on the 5th June 1981.[1] Since 1981, 65 million people across the globe have been infected with HIV, and more than 25 million people have died from AIDS.

Much has changed in twenty five years, we know the cause and we know what needs to be done to control the spread of HIV/AIDS. Failure to take account of the evidence, implement and manage programmes effectively is now regarded as irresponsible. The World AIDS Campaign has chosen "accountability" as its theme for this year's events and the slogan is "Stop AIDS Keep the promise".

Ireland is not immune to the ravages of HIV/AIDS, 4,082 people have been diagnosed with HIV and 876 people have been diagnosed with AIDS since the epidemic began. HIV is preventable yet, in this country 318 patients were newly diagnosed during 2005. Of these, heterosexual contact was the probable route of transmission in 159 cases, with 91 cases in females and 67 cases in males. During 2005, it is known that 42 women who were previously unaware of their HIV status were diagnosed through voluntary antenatal HIV screening, illustrating the effectiveness of the screening programme.

There were 57 new diagnoses among men who have sex with men (MSM) during 2005, a decrease from the number diagnosed in 2004 (64 cases) and 2003 (75 cases). However, MSM continue to be a population at high risk for HIV infection and worryingly the number of HIV cases reported among MSM in most western European countries has increased in recent years.[2] A significant number of injecting drug users (n=66) were also diagnosed, emphasising the fact that HIV is not exclusively a sexually transmitted infection. Ireland has a "global economy" and HIV/AIDS is a global disease; during 2005, 116 new cases were diagnosed in individuals who were born in sub-Saharan Africa, reflecting the size of the epidemic in this region. These figures highlight the need for equitable and timely access to medical care regardless of an individual's country of origin. Cultural competence in the delivery of prevention and treatment interventions is required. In this respect, particular attention should be paid to challenges presented by contact tracing and partner notification.

It is increasingly recognised that individuals may not be aware of their HIV status. It is estimated that as much as a third of HIV positive individuals may not know that they are infected with the virus.[3] This presents as much a problem for the individual concerned as it does for their contacts. It denies the individual timely access to effective treatment and the opportunity to prevent onward spread of infection.

Surveillance of HIV faces many challenges, the shift from life-threatening disease to chronic illness is not reflected in our existing surveillance infrastructure. The prevalence of drug resistant HIV is increasing, and we have recently seen the emergence of an *Extremely Drug Resistant* (XDR) strain of tuberculosis. This serves to remind us of the need to refocus our efforts to meet emerging and re-emerging threats.

Further information on the World AIDS Campaign and World AIDS Day 2006 can be found at http://www.worldaidscampaign.info/.

Further information on HIV and AIDS in Ireland can be found at http://www.ndsc.ie/hpsc/A-Z/HepatitisHIVAIDSandSTIs/HIVandAIDS/

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Epidemiology of Cryptosporidiosis in Ireland, 2005

Introduction

Cryptosporidium is a protozoal parasite that causes a diarrhoeal illness in humans known as cryptosporidiosis. In immunocompetent patients it causes watery non-bloody diarrhoea, sometimes accompanied by abdominal pain, nausea, anorexia, fever and weight loss. In immunocompromised individuals, especially those with AIDS, diarrhoea can be chronic and persistent, causing clinically significant fluid and electrolyte depletion. Weight loss, wasting and abdominal pain may be severe.

C. parvum (formerly known as *C. parvum* type II) and *C. hominis* (formerly known as *C. parvum* type I) are the main species associated with human infection, although a minority of human infections have been linked with other species such as *C. felis* and *C. meleagridis*. The primary reservoir for *C. hominis* is humans, while both livestock (calves and lambs in particular) and humans serve as reservoirs for *C. parvum*. Thus, speciation can be used to indicate a likely source of infection for individual cases.

With both humans and animals serving as potential reservoirs, multiple routes of transmission are possible. The consumption of contaminated water is regarded as being an important transmission route,[1] but infection has also been associated with swimming pools,[1] farm animal contact,[2] food,[3] and person-to-person spread. A primary public health concern regarding *Cryptosporidium* is its relative resistance to chlorination.

Methods

Cases of cryptosporidiosis are notified by both clinicians and laboratory directors to the medical officer of health in each HSE area. These weekly notifications form the basis of the analyses presented here. The case definition used is that outlined in the HPSC booklet 'Case definitions for notifiable diseases' (http://www.ndsc.ie/hpsc/NotifiableDiseases/CaseDefinitions/). Census data from 2002 were used to calculate incidence rates.

Table 1. Number of notified cases, CIR and ASIR of cryptosporidiosis by HSE area, 2005

HSE area	No. notifications	CIR (95% CI)	ASIR (95% CI)
E	38	2.7 (1.8-3.6)	2.6 (1.8-3.4)
M	36	16.0 (10.8-21.2)	14.7 (9.9-19.4)
MW	56	16.5 (12.2-20.8)	16.6 (12.3-21.0)
NE	62	18.0 (13.5-22.5)	16.8 (12.6-21.0)
NW	43	19.4 (13.6-25.2)	18.4 (12.8-23.9)
SE	99	23.4 (18.8-28.0)	23.1 (18.6-27.7)
S	105	18.1 (14.6-21.6)	18.6 (15.1-22.2)
W	131	34.4 (28.5-40.3)	35.7 (29.6-41.9)
Total	**570**	**14.6 (13.4-15.8)**	-

Table 2. Cryptosporidiosis outbreaks Ireland, 2005

Month	HSE area	Transmission route*	Location	Type	Number ill	Number hospitalised
Mar	SE	P-P and WB	Community	General	31	8
April	W	WB	Other	General	7	2
July	S	Unknown	Private house	Family	2	2
July	MW	Unknown	Private house	Family	2	-
Oct	W	Unknown	Travel related	General	4	-
Dec	S	Unknown	Community	General	3	1

* P-P denotes person-to-person transmission; WB denotes waterborne transmission

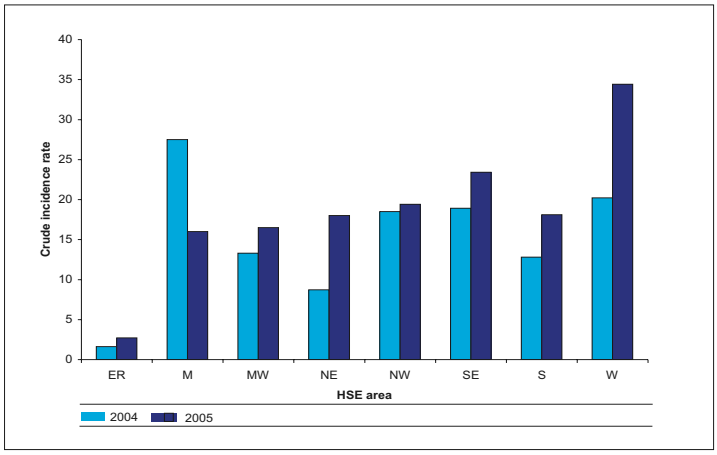

Figure 1. CIR of cryptosporidiosis by HSE area, 2004-2005

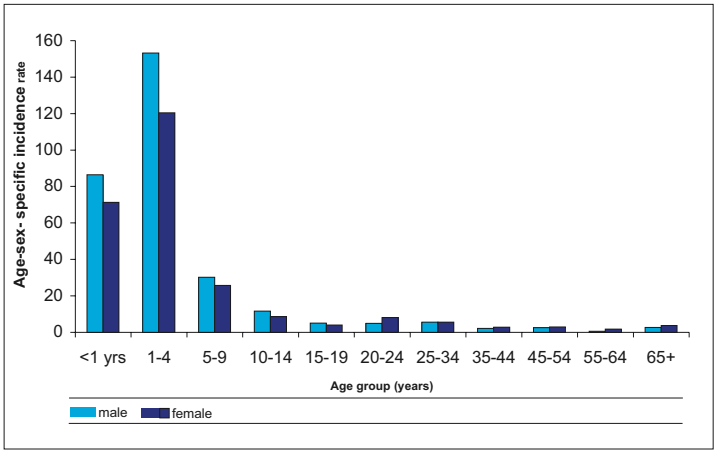

Figure 2. Age-sex-specific incidence rates for cryptosporidiosis in Ireland, 2005

Results

Incidence

In 2005, 570 cases of cryptosporidiosis were notified in Ireland, a crude incidence rate of 14.6 per 100,000 population. This was a 32% increase on the number of cases notified in 2004.

Geographical distribution

The crude incidence (CIR) and age standardised incidence (ASIR) rates by HSE area for 2005 are reported in table 1. As per 2004, HSE E reported the lowest crude incidence rate, while a 42% decrease in notifications occurred in HSE M where a large outbreak in 2004 undoubtedly contributed to the higher incidence in that year. The main increases were reported in HSE NE where the rate rose from 8.7 in 2004 to 18.0 per 100,000 in 2005 (a rate now similar to most other HSE areas), and in HSE W where the rate rose from 20.2 in 2004 to 34.4 per 100,000 in 2005, substantially higher that all other HSE areas (figure 1). In addition to a true difference in incidence, regional variation in incidence may also reflect regional variation in laboratory screening and case-finding policies.

Age distribution

The highest reported incidence was in children between the ages of one and five years and the incidence among males was slightly higher than for females in younger age groups (figure 2).

Seasonality

As in 2004, the disease displayed a pronounced seasonal distribution with 61% of cases notified during the three months April to June (figure 3).

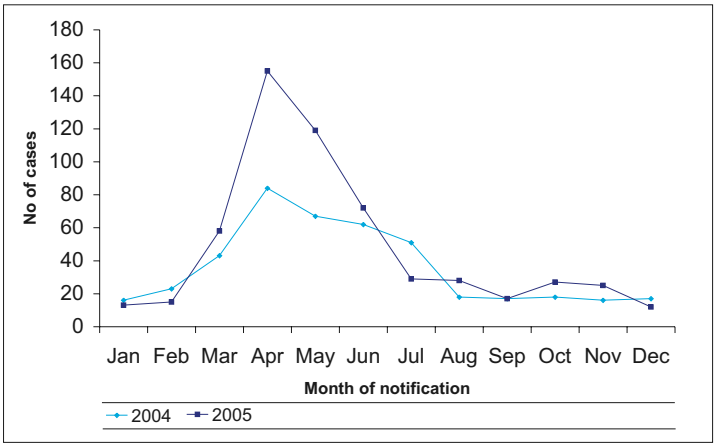

Figure 3. Seasonal distribution of cryptosporidiosis cases, 2004-2005

Outbreaks of cryptosporidiosis

Six outbreaks of cryptosporidiosis were reported in 2005: four general outbreaks and two family outbreaks (table 2). Forty-nine people were reported ill as a result of these outbreaks, and 13 were hospitalised (an admission rate of 26%). The suspected mode of transmission for four outbreaks was unknown. However, for two general outbreaks, water was suspected to have played a role in transmission. The water supplies in both instances were public supplies and boil water notices were issued. Speciation of human isolates was undertaken for the SE outbreak which was reported to be due to *C. hominis*.[4, 5]

Discussion

Overall, there was a 32% increase in the number of cryptosporidiosis cases notified in Ireland in 2005 relative to 2004, with the CIR rising from 11.0 to 14.6 per 100,000 population. Much of the excess in cases was concentrated in the months of April and May, a time when the incidence would be expected to be at its highest. At first, it was unclear if this just reflected improved reporting as notifiers became more familiar with the revised list of notifiable diseases and the new requirements of SI 707. However, provisional data show that the number of cryptosporidiosis cases notified in the second quarter of 2006 mirrors more closely the number of cases reported in 2004 rather than in 2005,[6] indicating that there was probably a real excess of cases in 2005.

In 2005, the HSE W reported the highest crude incidence rate - more than twice the national rate. There were two small general outbreaks reported from the region but the majority of cases appear to have been sporadic. Given the high rate of cryptosporidiosis reported in the HSE W in 2005, a major new research project entitled '*Enhancing Human Health through Improved Water Quality*' funded by the Environmental Protection Agency, at the Environmental Change Institute, National University of Ireland, Galway, is an interesting initiative. Led by Professor Martin Cormican, researchers will examine the relationship between drinking water supply and the occurrence of cryptosporidium infection in the West of Ireland, and the effect of seasonal and environmental factors on ground water quality (http://www.nuigalway.ie/research/ehh/ehhtiwq_home.php). Another interesting study is being undertaken in Northern Ireland, where the CDSC (NI) has commenced a case control study to identify the risk factors for human cryptosporidioisis infection.[7]

Drinking water is considered an important transmission route in outbreaks of cryptosporidiosis. In two outbreaks in Ireland in 2005, drinking water was reported as being suspected to have played a role in transmission, and drinking water was also the suspected mode of transmission for four cryptosporidiosis outbreaks in 2004. The importance of water as a potential transmission route is reflected in a recommendation by the EPA that risk assessment be carried out by each sanitary authority to determine the vulnerability of public water supplies to *Cryptosporidium*.[8] In 2005, the EPA reported that risk assessments had already been carried out on 331 individual public water supplies in Ireland.[9]

Significant outbreaks reported internationally in 2005 include a national outbreak in Scotland with 129 laboratory-confirmed cases. Infection was believed to be transmitted by infected lambs at a wildlife park where there were inadequate handwashing facilities.[2] A foodborne outbreak of *C. hominis* in Denmark was associated with whole carrots served in water at a salad bar in a company canteen.[3] A recent review of waterborne outbreaks in England and Wales has reported that swimming pools were associated with 32 of 62 waterborne cryptosporidiosis outbreaks in England and Wales between 1992 and 2003.[1] These reports serve as reminders of the variety of transmission routes for *Cryptosporidium* infection.

A particularly interesting aspect of the HSE SE outbreak was the fact that it was due to *C. hominis*. In the absence of reference facilities for *Cryptosporidium* in Ireland, isolates from human cases are rarely typed except in the event of outbreaks. In the UK, *C. parvum* was shown to be more common in the spring while *C. hominis* was significantly more common in patients infected during late summer/autumn.[10] The spring peak in human infections concurred with that of infection in farm animals, co-incident with calving and lambing. Given the very strong seasonal peak here in spring, it had seemed reasonable to suspect that *C. parvum* would be the predominant species in Ireland. Data from Northern Ireland[11] have shown *C. parvum* to predominate. However, in Scotland, and England and Wales, *C. hominis* is also important and accounts for over 40% of cases.[12, 13] There is still much to learn about the epidemiology of *Cryptosporidium* in Ireland, and speciation data would add considerably to our understanding. A *Cryptosporidium* reference service would also be invaluable to sanitary authorities in assessing the risk to water supplies from *Cryptosporidium*.

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Acknowledgements

We wish to acknowledge the co-operation of microbiologists, medical scientists, SMOs, SPHMs, surveillance scientists, infection control nurses, PEHOs, and EHOs in providing the information on which this report is based.

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Influenza Vaccine Uptake in Older People

In Ireland, annual influenza vaccination is recommended for a number of at-risk adults and children, 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%.[1]

Influenza vaccination (both vaccine and administration) is free for all medical cardholders in Ireland. Since mid-2001, all individuals aged 70 years or older are eligible for a medical card. Approximately 50% of the population aged 65 to 69 years have medical cards (source: Primary Care Reimbursement Service).

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.[2] This study has been repeated for the 2004/2005 and 2005/2006-influenza seasons.

Methodology

Information was obtained from the Primary Care Reimbursement Service (HSE - National Shared Services) on the number of registered medical cardholders 65 years of age and older, as well as the number of patients vaccinated with influenza vaccine (by age group and HSE area) during the 2005/2006-influenza season. Data refer to GP returns received by the Primary Care Reimbursement Service between September 2005 and August 2006. Influenza uptake rates by age group and HSE area were calculated based on the average number of registered patients with medical cards during the time frame.

Results

All data refer to medical cardholders only. The average uptake for influenza vaccination nationally during the 2005/2006-influenza season in those aged 65 years or older was 63.0%. This compares with an average uptake rate of 61.4% during the 2004/2005-influenza season.[3] Variation in vaccination coverage was observed between HSE areas (range 61.3%-66.3%) (figure 1).

Nationally, the highest uptake (66.9%) of influenza vaccine among older people was in those aged 75 years of age or older (ranging from 64.4% - 71.0% across all HSE areas). The lowest national uptake (52.9%) was in the 65-69 year age group (ranging from 48.1% - 56.1% across all HSE areas) (table 1).

Discussion

In Ireland, the average influenza vaccination uptake rate for the 2005/2006-influenza season among medical cardholders aged 65 years of age or older was 63.0%, a slight increase on the reported uptake rate for the 2004/2005-influenza season of 61.4%.[3]

A study of various European countries during the 2000/2001-influenza season reported uptake rates ranging from 25%-81%.[4] The World Health Organization has set a target of 75% for influenza vaccine uptake in those aged 65 years or older, to be reached by 2010. In Ireland, the target for this age group was increased from 60% for the 2004/2005-influenza season to 65% for the 2005/2006-influenza season.

Although the 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 target uptake rate. However, it should be noted that the data for the 65-69 year age group only represent the medical 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.

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

Age Group (years)	2003/2004	2004/2005	2005/2006
65-69	51.6	49.1	52.9
70-74	58.7	57.6	61.5
75+	67.3	67.4	66.9
Total	**62.0**	**61.4**	**63.0**

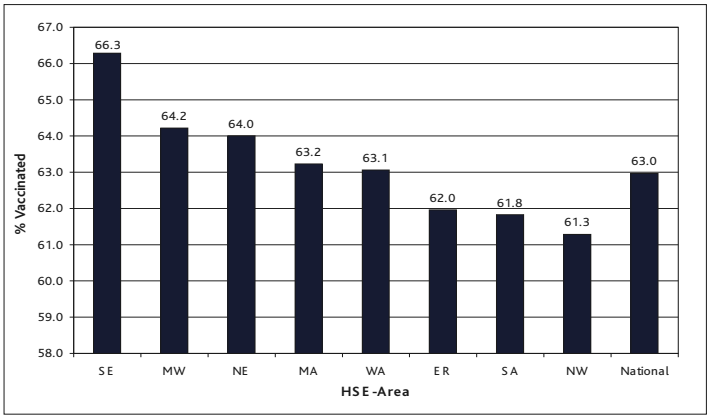

Figure 1. Percentage of medical card holders (65 years of age or older) who received influenza vaccine during the 2005/2006-influenza season, by HSE area.

Reasons for inadequate vaccination uptake rates, particularly among those aged 65-74 years are unclear. Some studies have reported lack of awareness of self-risk associated with influenza disease, distrust of vaccinations, disbelief in vaccine efficacy, and inadequate strength of recommendations from health professionals as possible reasons for inadequate vaccination uptake.[5 6 7 8]

Key points

- In Ireland, influenza vaccination uptake rates among medical card holders aged 65 years of age or older show regional and age group variation.
- Additional studies are needed to identify reasons for non-vaccination uptake among those 65 years of age or older.
- 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 vaccine should be supported as part of efforts to increase vaccine coverage.

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Acknowledgements

The authors would like to thank Pamela Doherty of the Primary Care Reimbursement Service (HSE - National Shared Services) for data provided for this study. The authors would also like to thank Suzanne Cotter (HPSC) and Anne Sheahan (HSE-SA).

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