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Outbreak of Cryptosporidiosis in Galway

An extensive cryptosporidiosis outbreak has been identified in the HSE Western area, with 125 laboratory-confirmed cases reported in March (up to 29/3/2007) compared with a March 2006 total of just 6 cases. A small number of human isolates have tested positive for *Cryptosporidium hominis*. Staff in public health, environmental health and clinical microbiology are undertaking an investigation in conjunction with colleagues in the relevant local authorities to determine the cause of the outbreak.

Although prior to 19 March, there had been little firm evidence to link the human illness with water, Galway City and County Council put in place an extensive, precautionary boil water notice on Thursday 15th March 2007 (see here <http://www.galway.ie/en/Services/PublicNotices/TheFile,6109,en.pdf>) on the advice of HSE West. This notice affected about 90,000 people.

On 19 March 2007, test results from the suspected water supplies demonstrated significantly elevated levels of cryptosporidium oocysts in two of the water supplies. Preliminary typing results indicate the presence of both *C. hominis* and *C. parvum* in the water supply. Neither of the two supplies is treated by filtration. As a result, the boil water notice has been extended. The Environmental Protection Agency has requested an action plan (short, medium and long term) from the local authorities and this is expected soon.

It is quite possible that the area could have hosted international guests (particularly from the UK and other European countries, US and Canada) in the weeks prior to St Patrick's Day. In order to identify visitors to Ireland who may have been exposed to contaminated water, an alert is being circulated through Enter-net (international surveillance network for gastrointestinal infections) and the EU's Early Warning and Alert System (EWRS).

Further updates are available at www.galwaycity.ie.

Information on cryptosporidiosis is available at www.ndsc.ie/hpsc/A-Z/Gastroenteric/Cryptosporidiosis/

European Immunisation Week 16-22 April 2007

Immunisation saves lives and protects children from disease and disability.



The national immunisation programme in Ireland has successfully decreased the number of vaccine preventable diseases occurring each year. Many parents have forgotten the impact that these diseases (tuberculosis, meningitis, whooping cough, tetanus, polio, diphtheria, measles, mumps, rubella) had on the Irish population in the past and have become complacent about vaccines. Delayed immunisation leaves children vulnerable to infection.

At least 90%-95% of children should have completed their primary immunisation schedule by the age of 12 months, thereby providing both individual and population protection ("herd immunity"). The importance of immunisation was demonstrated during the measles outbreak of 2000 (>1600 cases and 3 deaths). At that time, national MMR uptake rates were <85% in children 24 months of age. MMR is the vaccine that protects against measles, mumps and rubella. Those areas with lowest MMR uptake rates were most affected (Dublin region). Although recent MMR uptake data show an improvement in uptake levels, these are still sub-optimal at a national level of 86% at 24 months of age (Quarter 3, 2006). To protect children against measles at least a 95% uptake of the MMR vaccine is required among all children.

For the third year in a row Ireland will participate in European Immunisation Week from 16-22 April 2007. The 4th National Immunisation Conference will take place on 16 April 2007 at Croke Park. Ireland will join countries across the European Region to put immunisation in the focus. From Tajikistan in the East to Ireland in the West, debates, workshops, trainings, exhibitions, education and media events will highlight the importance of immunisation, providing clear and evidence-based information about the benefits of vaccines and celebrating the lives that have been saved through this intervention.

More information can be found at the Health Protection Surveillance Centre website at www.hpsc.ie, the HSE National Immunisation Office at www.immunisation.ie and the WHO European Region website at www.euro.who.int/vaccine/20050608_1.

Campylobacteriosis in Ireland, 2005

Background

Campylobacteriosis is the commonest reported bacterial cause of infectious intestinal disease in Ireland. Two species account for the majority of infections: *Campylobacter jejuni* and *Campylobacter coli*.

Illness is characterised by severe diarrhoea and abdominal pain. Symptoms may subside after a number of days or may persist for weeks. Rarely, more severe sequelae may develop such as reactive arthritis, or Reiter's syndrome. Approximately 1 in every 1000 cases leads to a severe neurological disorder called Guillain-Barré Syndrome (GBS). Rehydration and electrolyte replacement are the cornerstone of treatment. Antibiotics are indicated in cases of severe or prolonged illness.

Undercooked meat especially poultry is often associated with illness as is unpasteurised milk and untreated water. However, the risk factors for the majority of cases remain unknown. Recently, flies have been postulated as a possible transmission route.¹

Methods

Human campylobacter infection became a statutorily notifiable disease for the first time on 1 January 2004 under the Infectious Diseases (Amendment) (No. 3) Regulations 2003.² Data for this report were extracted and analysed from the CIDR system (Computerised Infectious Disease Reporting system). Data from 1999 to 2003 inclusive were collected under the Zoonoses Directive as part of the national survey on campylobacteriosis infection in Ireland.

Results

Incidence

In 2005, 1,803 notifications of human campylobacteriosis were notified in Ireland. This gives a crude incidence rate (CIR) of 46 cases

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

| HSE area | No. of cases | CIR (incl. 95% C.I.) |
|--------------|--------------|---------------------------|
| E | 612 | 43.7 [40.2 - 47.2] |
| M | 156 | 69.2 [58.3 - 80.1] |
| MW | 140 | 41.2 [34.4 - 48.0] |
| NE | 113 | 32.8 [26.8 - 38.8] |
| NW | 87 | 39.3 [31.3 - 47.5] |
| SE | 230 | 54.3 [47.3 - 61.3] |
| S | 271 | 46.7 [41.1 - 52.3] |
| W | 194 | 51.0 [43.8 - 58.2] |
| Total | 1,803 | 46.0 [43.9 - 48.1] |

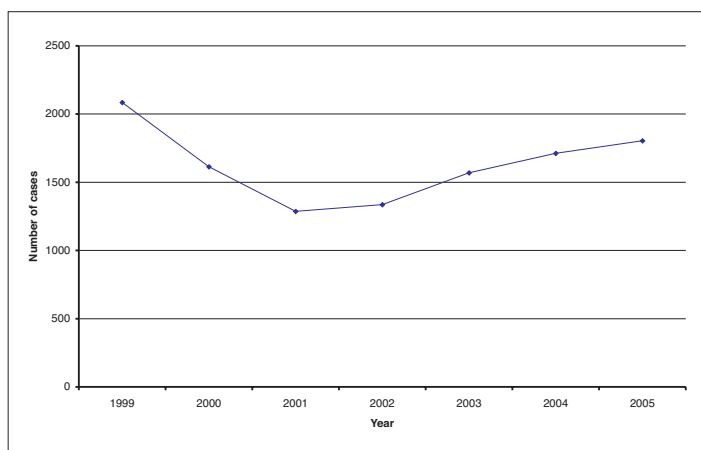


Figure 1. Annual number of cases of campylobacteriosis in Ireland, 1999-2005

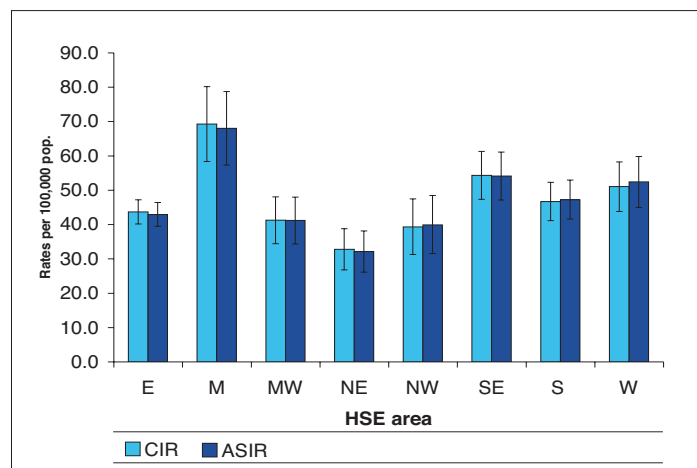


Figure 2. Age standardised incidence rates (ASIR) of human campylobacteriosis in Ireland, compared to CIR in each HSE area, 2005

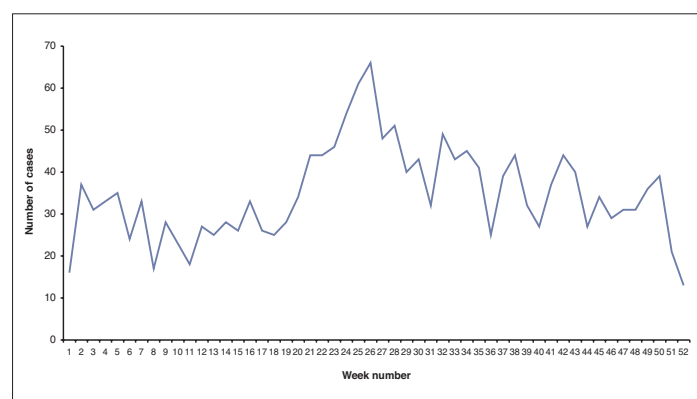


Figure 3. Number of campylobacteriosis cases by week, 2005 (data from CIDR)

per 100,000 population (table 1). This compared with a CIR of 43.7 cases per 100,000 in 2004. The annual number of cases by year since 1999 is shown in figure 1.

Age standardised rates were calculated to allow comparisons to be made between HSE areas without the confounding effects of age (figure 2). In 2005, the highest incidence was reported from the Midland area followed by the South Eastern area. The lowest rate was reported from the North Eastern area.

Seasonal distribution

Analysis of the data by week of notification is shown in figure 3. A peak in cases is evident in week 26.

Age

When the distribution of cases for each age group is examined, it is evident that by far the highest burden of illness is seen in children less than five years (figure 4). This was also noted in previous years and is a well-reported feature of campylobacteriosis.

Gender distribution

Females accounted for 53.7% of all cases notified (males 45.8%; unknown 0.6%) (table 2). However, the variance in gender distribution that has been noted since 1999 was again evident when the data were adjusted for age and sex. In almost all age-groups there is a predominance of male cases (figure 5).

Outbreak data

There were eight small family outbreaks of campylobacteriosis notified in 2005, affecting a total of 17 people. The suspected mode of transmission recorded was foodborne (5), person-to-person (2) and unknown (1).

Table 2. Gender distribution of campylobacter cases by HSE area, 2005

| HSE area | Female | Male | Unknown | Total |
|--------------|------------|------------|-----------|--------------|
| E | 332 | 276 | 4 | 612 |
| M | 87 | 68 | 1 | 156 |
| MW | 78 | 62 | 0 | 140 |
| NE | 68 | 45 | 0 | 113 |
| NW | 48 | 38 | 1 | 87 |
| SE | 118 | 111 | 1 | 230 |
| S | 132 | 138 | 1 | 271 |
| W | 105 | 87 | 2 | 194 |
| Total | 968 | 825 | 10 | 1,803 |

in fact the highest rate reported in Ireland since 1999. In most areas, an increase was seen in 2005, especially in the Midland and Mid-West areas. However, the CIR for the Western area decreased from 63.1/100,000 in 2004 to 51/100,000 in 2005.

For the same period, higher rates were noted for Northern Ireland^{3,4} (51.6/100,000), England and Wales^{3,4} (91.8/100,000) and Scotland⁵ (90.2/100,000).

As has been noted consistently since 1999, some interesting epidemiologic features of this pathogen have emerged in recent years. In particular, the higher incidence rate in young children and in male cases in almost all age groups.

Already significant strides have been made to expand our understanding of the complex epidemiology of this infection. An all-Ireland case-control study carried out by the HSE East in the Republic of Ireland and in all four Health and Social Services Boards (HSSB) in Northern Ireland was completed in 2005. Findings from the study reveal that eating chicken, and lettuce, and eating out in restaurants/takeaways are major risk factors for campylobacteriosis in Ireland, North and South.⁶

A three-year study, "Sentinel surveillance of *Campylobacter* in Ireland", funded by **safe food – Food Safety Promotion Board**, commenced in 2005.⁷ This project will involve the collection of detailed clinical and microbiological information on cases of campylobacter infection in order to generate hypotheses as to potential risk factors for infection. Food, animal and human sources of *Campylobacter* will be targeted. This project will bring together the public health medical practitioners, clinical/food laboratory personnel, veterinary health specialists and food safety research expertise to address the growing issue of campylobacteriosis in Ireland.⁷

As the most common cause of bacterial gastroenteritis in Ireland, *Campylobacter* continues to be significant public health issue, both in terms of personal suffering and economic costs. Through continued surveillance and targeted research our understanding of this disease will improve and more effective prevention and control strategies may be developed.

Barbara Foley, Paul McKeown; HPSC

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References

- Nichols GL. Fly transmission of campylobacter. *Emerg Infect Dis* 2005; **11**(3): 361-364.
- Government of Ireland. Infectious Diseases (Amendment) (No. 3) Regulations 2003 (S.I. No. 707 of 2003). Dublin: Stationery Office; 2003. Available at www.irishstatutebook.ie/front.html.
- Health Protection Agency – Centre for Infections. Epidemiological data – campylobacter. Available at http://www.hpa.org.uk/infections/topics_az/campy/data.htm.
- National Statistics. Population Estimates. Available at <http://www.statistics.gov.uk/statbase/explorer.asp?CTG=3&SL=&E=4819>.
- Health Protection Scotland. Gastro-intestinal and foodborne infections (Escherichia coli O157, salmonellas, animal salmonellas, campylobacter, 2005 figures). Available at <http://www.hps.scot.nhs.uk/giz/wrdetail.aspx?id=29495&wrtype=6>.
- Di Renzi M, Danis K, O'Neill F, Smyth B, McKeown P, Devine M, and Tohani V. Good food hygiene practices are needed to prevent sporadic campylobacteriosis. 10th EPIET Scientific Seminar, Máo, Menorca, Spain, October 13-15, 2005.
- safe food – Food Safety Promotion Board. Sentinel surveillance of campylobacter in Ireland. Available at http://www.relayresearch.ie/subapplications/safefood/sf_projects_by_funding_agency.asp?funding_agency_id=2.

Discussion

In 2004, human campylobacter infections became statutorily notifiable for the first time under the Amendment to the Infectious Diseases Regulations.² Therefore, since 2004, the data on campylobacteriosis have been collated directly from the notifiable disease data on CIDR and not as part of the Zoonoses Directive data collection (as had been the case since 1999).

Analysis of the 2005 data reveals that campylobacteriosis still remains the most common cause of bacterial gastroenteric infection in Ireland - over five times the number of salmonellosis cases reported in 2005.

The CIR of campylobacteriosis increased in Ireland in 2005 (46.0 cases/100,000 persons) compared to 2004 (43.7/100,000). This was

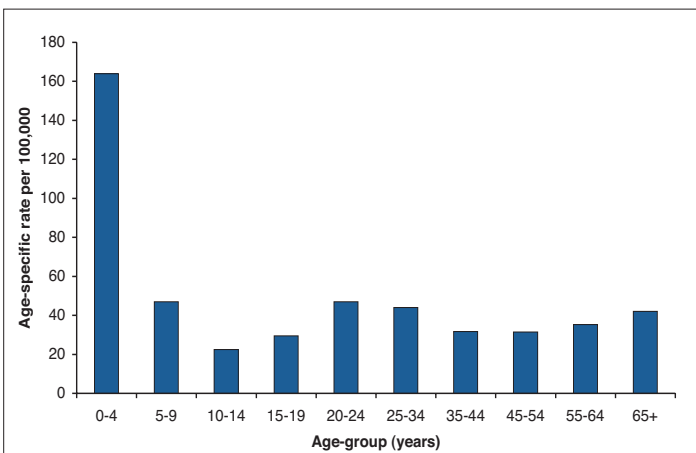


Figure 4. Age-specific incidence rates for campylobacteriosis in Ireland, 2005 (data from CIDR)

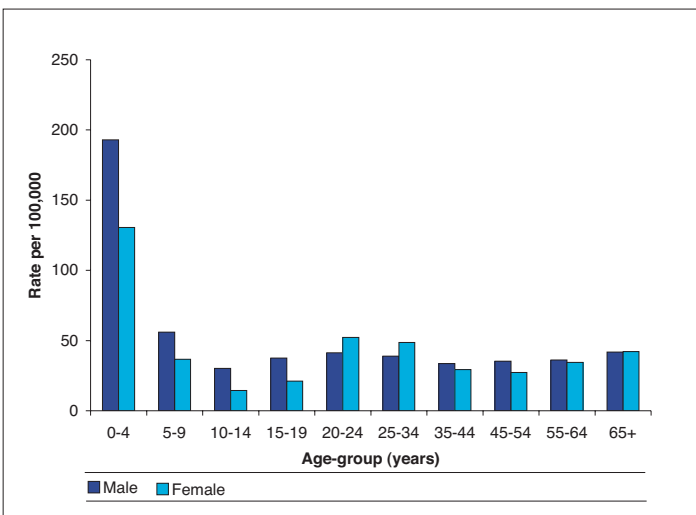


Figure 5. Age-gender adjusted incidence of campylobacteriosis according to age group in 2005

Healthcare-Associated Infection Survey, 2006

The third Hospital Infection Society prevalence survey of healthcare-associated infection (HCAI) in acute hospitals took place between February and May 2006 in UK and Irish hospitals. In Ireland, the 44 acute adult hospitals that participated in the survey represented the vast majority of eligible acute adult hospitals. Not all hospitals were eligible to participate as participating hospitals had to have an infection control team and because there were difficulties in applying definitions to children, children's hospitals and certain other clinical areas were excluded. In Ireland, the survey was coordinated by the Health Protection Surveillance Centre.

The number of patients surveyed in Ireland was 7,541. Information was collected on HCAI risk factors for each patient surveyed irrespective of the presence of HCAI. The risk factors recorded were: presence of intravenous lines and parenteral nutrition, urinary catheters, mechanical ventilation, recent surgery and antibiotic therapy. Information was collected on all active HCAI present on the date of the survey. Special emphasis was placed on four HCAI: primary bloodstream infections, pneumonia, urinary tract infections and surgical site infections. In addition, information on *C. difficile* and norovirus infection was recorded. Provisional results for the Republic of Ireland were published in October 2006 and information on participating hospitals (risk factors and HCAI rates) in March 2007 (both available at www.hpsc.ie).

The overall rate of HCAI in Ireland was 4.9% compared with 7.6% for the UK. The rate varied depending on the type of hospital surveyed from 6% in regional/tertiary hospitals, to 4% in general hospitals and 2% in specialist hospitals. Although the prevalence rate is lower than that found in the 2nd Prevalence Survey carried out in the 1990s, the results are not comparable as the definitions of infections used were different. HCAI rates varied between participating hospitals. This was due to several reasons including: the survey took place over several months and not one day (differences in hospital occupancy and case mix that would normally be expected during this period); differences in patients and isolation facilities (hospitals that treat patients with risk factors for HCAI such as patients that have had recent surgery, those on ventilators, those with medical devices such as intravenous lines or urinary catheters are more likely to have

higher HCAI rates).

The most common HCAIs in Ireland according to anatomical site were urinary tract infection (1.1% of patients), surgical site infection (1.1% of patients), pneumonia (0.86% of patients), primary bloodstream infection (0.49% of patients) and skin and soft tissue infection (0.48% of patients). Thirty six (0.5%) patients had infection with *Clostridium difficile* and seven (0.4%) patients had norovirus infection.

This survey has provided important baseline information on the prevalence of HCAI in Irish acute hospitals. Although Irish hospitals have participated in previous surveys of HCAI, and many hospitals carry out regular surveillance of HCAI, this was the first opportunity to collect detailed information nationally and compare it directly with that from other Irish hospitals, as well as with data from the UK. It will provide a benchmark for future interventions to determine whether they are effective or not in Ireland and help target future HCAI surveillance efforts at both national and local level. It is only by monitoring, measuring and documenting rates of infections that we can make plans to reduce it. This study is a useful beginning from which we can learn and improve on our methods of monitoring and reducing HCAI.

Further information on the methodology and results of the Irish survey is available at www.hpsc.ie.

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Clean your Hands - Say No to Infection Campaign

On March 16 2007, the Health Service Executive (HSE) launched a campaign **Clean your Hands – Say No to Infection** to reduce infection levels in healthcare facilities in Ireland. A National Infection Control Steering Group has also been established and their objectives over the next three to five years are

- To reduce healthcare associated infections by 20%
- To reduce MRSA infections by 30%
- To reduce antibiotic consumption by 20%.

The steering group will be supported by eight local implementation teams which will ensure that all local facilities are focused on achieving national targets, standards and protocols and report results back to the steering group.

Further information is available at www.hse.ie/en/NewsEvents/News/HCAI.

Influenza Vaccines Composition for the 2007-2008 Season

The World Health Organization has recommended that vaccines to be used in the 2007–2008 season (northern hemisphere winter) contain the following:

- an A/Solomon Islands/3/2006 (H1N1)-like virus;
- an A/Wisconsin/67/2005 (H3N2)-like virus;^a
- a B/Malaysia/2506/2004-like virus

Vaccine viruses include:

^a A/Wisconsin/67/2005 (H3N2) and A/Hiroshima/52/2005

Further information can be obtained at www.who.int/wer/2007/wer8209/en/index.html.

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