EPI-INSIGHT

IONAD NAISIUNTA FAIRE GALAIR

DISEASE SURVEILLANCE REPORT OF NDSC, IRELAND

Volume 1, Issue 3, August 2000 ISSN: 1393-9548

IN THE NEWS!

Antimicrobial Resistance: A Growing Threat

A report entitled "Overcoming Antimicrobial Resistance" has been released by the World Health Organization (WHO). According to a press release[1] in June 2000, "increasing levels of drug resistance are threatening to erode medical advances of recent decades". It details how once effective medicines are becoming increasingly ineffective. Many reasons for this trend are discussed, "poorly planned or haphazard use of medicines…overuse of drugs (unnecessary demands by patients in health services prone to over-prescription)…human misuse and neglect of antimicrobial drugs". The economic consequences of antimicrobial resistance can be staggering. The cost of treating one person with multidrug-resistant TB is a hundred times greater than the cost of treating non-resistant cases. According to this report, 60% of hospital-acquired infections are caused by drug-resistant microbes.

In July, the "North/South Study of MRSA in Ireland 1999" was published. The report found that, in a study of blood cultures positive for *Staphylococcus aureus (S.aureus)* in 1998, 31% of patients in the South had MRSA compared to 22% in the North. The European Antimicrobial Resistance Surveillance System (EARSS) monitors the level of resistance in *S.aureus* from blood cultures and *Streptococcus pneumoniae* (*S.pneumoniae*) from blood and CSF. In 1999, isolates from 39.1% of patients with *S.aureus* bacteraemia were resistant to methicillin and isolates from 18% of patients with *S.pneumoniae* bacteraemia/meningitis were resistant to penicillin. Across Europe, the levels of methicillin resistance and penicillin resistance vary greatly. More information on this system and the results from around Europe are available at the website: www.earss.rivm.nl

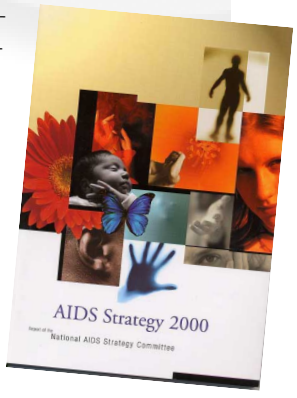
1. WHO Press Release (12 June 2000) www.who.int §

Prevent Food Poisoning!

Summer time is peak season for certain types of gastrointestinal illness. Proper cooking in the home or at seasonal barbecues can prevent serious illness caused by bacteria such as Salmonella, Campylobacter, verocytotoxin producing *E.coli*. This month, the Food Safety Authority of Ireland (FSAI) called on Irish people nationwide to use their consumer power to raise standards of food safety and hygiene in all food establishments by rejecting poor hygiene practices. The Authority launched a national campaign with the message *Poor Hygiene – Don't Accept It* to prompt consumers not to purchase or eat food from a premises where they believe standards are not excellent in every respect. The campaign was devised in response to concerns that food poisoning incidence statistics are increasing, and because in the summer season the number of cases of food poisoning increase with the warmer weather. The Food Safety Authority website is www.fsai.ie §

HIV/AIDS in Ireland

The Department of Health & Children launched the AIDS Strategy 2000 in June. Although major advances have been made in treatment of HIV-infected people, there is still no cure for HIV infection. The incidence of HIV infection increased substantially in 1999 with sexual transmission accounting for the majority of new cases (22.7% homosexual, 18.77% heterosexual). Male homosexual activity remains the most common mode of transmission outside the ERHA region, accounting for 48% of all cases. This trend parallels the increase in other sexually transmitted infections (STIs) seen in Ireland. There has been a large increase in the incidence of gonorrhoea reported in the past two years with most new infections occurring in homosexual men. This raises concerns about complacency regarding safer sexual practices in a population in whom STIs had previously declined in response to the HIV epidemic. Bacterial STIs and genital ulcer diseases facilitate the transmission of HIV infection. Early detection and treatment of STIs can prevent transmission of HIV infection. However, prevention of HIV infection and STIs should remain the priority. Promotion of safer sexual practices should be ongoing and should target those most at risk including homosexual men and adolescents. HIV infection and STIs are preventable illnesses. Copies of the report are at booksellers and the Stationery Office, Dublin.



Dr Mary Horgan M.D. §

National Disease Surveillance Centre, Sir Patrick Dun's Hospital, Lr. Grand Canal St, Dublin 2, Ireland
Tel: +353 (0)1 6617346
Fax: +353 (0)1 6617347
info@ndsc.ie
www.ndsc.ie

Campylobacter enteritis in Ireland in 1999

Introduction:

There has been increasing concern internationally at the level of illness caused by *Campylobacter spp.* Commonly, *Campylobacter jejuni* (*C.jejuni*) or *Campylobacter coli* (*C.coli*) infection is a zoonosis and manifests as a severe enteritis. Data from regional surveillance systems[1] have suggested a rise in the incidence of disease caused by *C.jejuni/coli*. This prompted a national review to ascertain information on the epidemiology of laboratory-confirmed campylobacter enteritis in Ireland. This review provides important information to supplement further investigations in this field by the National Disease Surveillance Centre (NDSC), the Food Safety Authority of Ireland (FSAI) and other partners in infectious disease surveillance and control.

Methods:

In March 2000, NDSC asked laboratories and/or public health doctors for disaggregate information on all laboratory-confirmed cases of campylobacter enteritis diagnosed in 1999. A minimum dataset was requested; data on an identifier, date of birth, gender, address and date of onset/isolation/reporting. In regions where laboratory surveillance systems were in place, this information was requested from their database. Duplicates were removed where detected. Data was assigned a health board where necessary and a county where address was supplied. This data was analysed in an Access database programme. Further analysis was done with STATA to confirm results. Direct methods of standardisation were applied using the Irish population as the standard population. Population data were taken from the 1996 census.

Information on laboratory methodology and testing protocols was not requested. Differentiation of *C.jejuni* and *C.coli* (or other) was not requested.

Results:

Information on campylobacter was obtained from all Health Boards. Information on age was missing in 12% of cases and information on gender was incomplete in 0.7% of cases. Data on age was not available on many cases in two health board areas (North Eastern [58%] and Mid-Western [32%]). This had implications for presenting crude rates, and age standardised rates here. Those without age are not seen in age standardised charts. The crude rates are the best indicators of disease burden in these two areas.

In total, 2085 cases of laboratory-confirmed campylobacter enteritis were reported in 1999 in Ireland. This represents a crude incidence rate of 57.5 cases per 100,000 persons.

Males accounted for 56% of cases, females 44%, where gender was given. The male:female ratio was 1.28:1.

Campylobacter infection has a well characterised seasonal distribution and this is evident when the trend over time is examined. Table 1 shows the cases as they occurred in each health board by month. The number of cases seen by week in 1999 is shown in Figure 1.

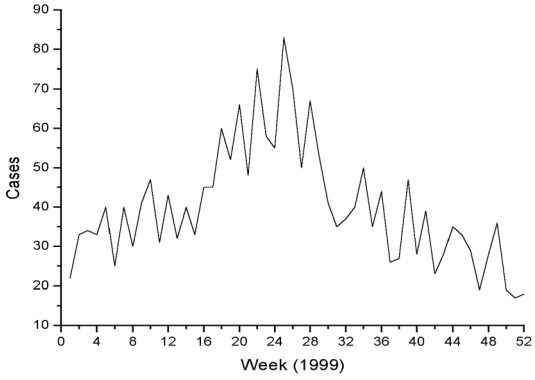


Figure 1: Cases of campylobacter infection by week (1999) in Ireland

Table 1: Cases by month (1999) and crude incidence rates for each health board in Ireland.

Health Board	Eastern	Midland	Mid-West	North Eastern	North Western	South Eastern	Southern	Western	Total
January	38	8	3	5	6	9	34	19	122
February	35	3	13	8	6	8	42	20	135
March	48	8	5	10	9	21	44	43	188
April	41	6	8	8	8	24	29	38	162
May	80	8	28	8	13	33	68	42	280
June	69	17	15	9	17	37	58	52	274
July	68	5	8	4	13	29	50	50	227
August	39	7	15	8	16	17	53	35	190
September	47	8	7	7	8	6	41	29	153
October	33	6	0	5	8	17	34	17	120
November	66	4	0	2	6	7	32	19	136
December	27	3	1	0	8	11	22	26	98
Total	591	83	103	74	118	219	507	390	2085
Crude Incidence Rate	45.6	40.4	32.5	24.2	56	55.9	92.7	110.7	57.5

Very often the burden of illness from a pathogen can be distorted by age structure when comparing different areas and countries. To overcome this, age standardised rates were calculated to allow comparisons between areas to be made without the confounding effects of age. When age standardised rates for each health board are examined (Figure 2), the trend was similar to that seen with the crude rates.

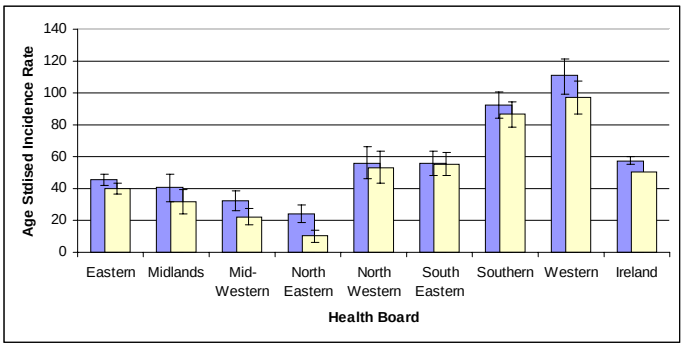


Figure 2: Age standardised rates for campylobacter enteritis by health board (yellow) in Ireland in 1999, compared to crude incidence rates (blue) (95% confidence intervals included).

Figure 3 shows the age specific incidence rate in each age group for Ireland. This demonstrates that there was a large burden of illness in children less than 5 years of age. There was a second peak in the 25-35 year old age group. This is a well-recognised feature of the illness in many countries also.

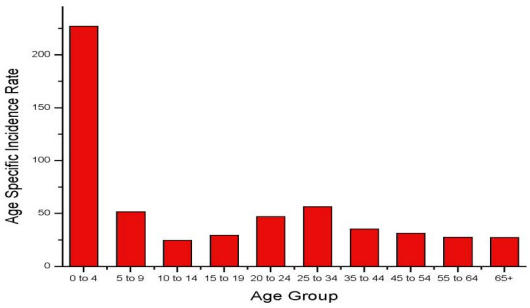


Figure 3: Age specific incidence rates (per 100,000) for campylobacter enteritis in Ireland in 1999.

Another interesting aspect of campylobacter enteritis was the variation in the gender distribution. There was a clear predominance in males in several age groups, it was equal in middle age groups and greater in females in the older groups. This is illustrated in Figure 4 where this data has been adjusted for each age group.

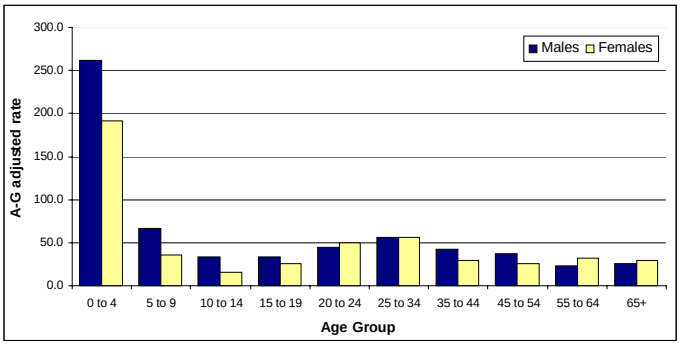


Figure 4: Age-Gender adjusted incidence according to age group for campylobacter enteritis.

Discussion:

The data reveals a crude incidence rate of 57.5 cases per 100,000 persons, making it the single biggest cause of bacterial food-poisoning in Ireland. This compares with a rate of 51/100,000 in Northern Ireland, 104.9 in England and Wales and 116 in Scotland. The similarity in rates between the North and South of Ireland contrasts with the higher rates abroad. It must be reiterated that these are laboratory confirmed cases and the real burden of illness is higher.

Risk factors for campylobacter include ingestion of poultry and meats, poultry and meat handling (cross contamination), contact with some pets and occupational exposure. Outbreaks have been documented in some countries associated with water and raw milk. Pasteurisation does kill the organism. Campylobacter infection is a serious illness but the symptoms are not so distinct as to allow differentiation from other causes. The stool does often contain blood, pus or mucus. Symptoms include severe, crampy abdominal pain (mimicking appendicitis) and diarrhoea but vomiting is rare. It can cause bacteraemia and has been associated with subsequent development of Guillain Barré Syndrome.

To reduce the burden of illness we must focus on prevention rather than cure. Further work is needed in Ireland to identify risk factors for those most at risk (those under five years of age) and to examine the reasons for the observed regional variation in incidence. The unusual gender distribution of the illness remains unexplained. NDSC/FSAI will continue working with our partners in surveillance to elicit more answers to these questions. A multidisciplinary working group was established by the FSAI in July to assess the extent of the risk to humans and the food industry from campylobacter and to develop effective prevention strategies. A report is due in early 2001.

There can be significant morbidity associated with campylobacter infection. In the draft "Overview of Communicable Diseases 1999", from the Public Health Laboratory Service in the UK[2], campylobacter was ranked very highly in terms of priority. It is a preventable zoonosis and good quality surveillance is key to enabling an appropriate and timely response to this and other microorganisms causing food poisoning.

References:

1. Whyte, D. INFOSCAN 1998; 8: 1.

2. Public Health Laboratory Service. Overview of Communicable Disease 1999; http://www.phls.co.uk/publications/index.htm

Acknowledgements:

NDSC thanks and acknowledges all those who provided information for the report on campylobacter enteritis in Ireland in 1999 and also the FSAI for their assistance. Many medical microbiologists, public health doctors and medical laboratory scientists made special efforts to obtain their data for this period to allow NDSC compile an accurate and relatively complete database of laboratory-confirmed cases of campylobacter enteritis. The availability of quality information from INFOSCAN (Southern, South Eastern and Mid-Western Health Boards) and LSS (Eastern Health Board) made data collection very efficient, for which we are grateful.

Mr Dominic Whyte & Dr Derval Igoe, NDSC §

Revised Guidelines for Childhood Vaccinations

The National Immunisation Advisory Committee Guidelines published in 1999 contain some changes in the timing of vaccine administration of children. The revised timetable is shown below. The changes made are

1. DT_aP booster is recommended at 4 to 5 years of age
2. The second MMR dose is recommended at 4 to 5 years of age.
3. Td is given at school leaving (11-12 years).

There are a number of reasons why we have recommended these changes.

Without a booster it has been shown that vaccine derived immunity after DTP declines after 6 - 10 years. This reduced immunity affects all three components. It is probable that there will be a similar decline when theacellular vaccine is given. For this reason a fourth dose of DT_aP should be given within six years of the three dose primary course.

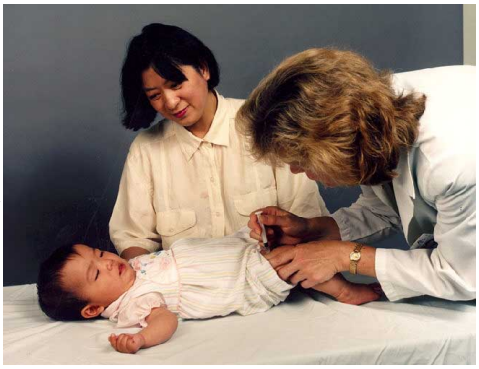
When children enter school they are more likely to be exposed to infectious diseases, and therefore we recommend that the DT_aP vaccine be given soon after school entry, to an accessible population.

It has been shown that after the first MMR vaccine, approximately 90% of children will develop immunity to measles and mumps, and over 97% will be immune to rubella. A second dose, which is not a booster, is given in order to produce immunity in the small number would not have responded to the first dose. 90% of those who did not develop immunity after the first dose will do so after the second dose.

This means that 98-99% of children who are given two doses of the MMR vaccine will be immune to all three diseases.

We recommend that the MMR vaccine from now on will be given at school entry, because of increased risk of exposure.

The third change is the recommendation that Td be given at school leaving. This vaccine contains a full dose of tetanus toxoid, and about 1/3rd the dose of diphtheria, hence it is called "big T, little d" or Td. There are hardly any indications now for giving tetanus toxoid on its own.



Photograph courtesy of CDC/PHIL

This recommendation is made because of waning immunity to diphtheria, which could result in a population susceptible to diphtheria infection. This happened in the aftermath of the break up of the former Soviet Union, with a significant number of deaths from diphtheria.

Since the guidelines were published, discussions have taken place to clarify what is meant by school leaving. We now recommend that Td be given at 11-12 years, when children are in their last year at primary school. If necessary the second MMR dose is given at the same time.

It is important to remember that immunising older children will help protect their unimmunised younger siblings.

References:

1. Clin. Diag. Lab. Immune., 1996, 3, 93-7
2. Lancet 1994, 344, 1225-6
3. Report of the Committee of Infectious Diseases, Ed. 25, American Academy of Pediatrics, 2000

Dr Kevin Connolly, Chairperson, Sub Committee, Childhood Vaccinations, National Immunisation Advisory Committee, Royal College of Physicians of Ireland (RCPI).

§

Recommended Childhood Immunisation Schedule*	
Age	**Immunisation**
Birth - 1 month	BCG (not implemented nation-wide)
2 months	DT_aP/Oral Polio/Hib
4 months	DT_aP/Oral Polio/Hib
6 months	DT_aP/Oral Polio/Hib
15 months[1]	MMR
4-5 years	DT_aP, Oral Polio, MMR
11-12 years	MMR[2]
10-14 years	BCG (interval of 3 weeks post MMR)[3]
School Leaving (11-12 years)	Td

[1] A single dose of Hib vaccine is also recommended if the child presents after the age of 13 months and has had no previous Hib vaccine.

[2] Omit if two previous doses of MMR have been given.

[3] Only for those who are known to be tuberculin negative and have had no previous BCG.

Adrenalin should be available at all times before giving vaccines.

*Reproduced from "Immunisation Guidelines for Ireland" 1999, RCPI. §

VHF in Ireland

Guidance has been made available in the UK and the United States in relation to the minimisation of the risk of transmission of infection to health care workers and others coming into contact with a suspected or known case of viral haemorrhagic fever (VHF). Following a request from the European Union the Department of Health and Children wrote to NDSC welcoming advice in relation to guidance for these diseases in this country. NDSC's Scientific Advisory Committee established a VHF sub-committee in November 1999. A consultation document "The Management of Viral Haemorrhagic Fevers in Ireland" is now available for comment on the NDSC web page

www.ndsc.ie

Erratum: ID Legislation

In the July issue of EPI-INSIGHT we reported on the changes in Infectious Disease legislation. The Statutory Instrument was incorrectly stated to be SI 250 of 2000. It should have read SI 151 of 2000.§