

SURVEILLANCE of INFECTIOUS INTESTINAL DISEASE (IID), ZONOSSES and OUTBREAKS of INFECTIOUS DISEASE



A quarterly report by the Health Protection Surveillance Centre in collaboration with the Departments of Public Health

Quarter 2–2005

August 2005

This is the second quarterly report for 2005 produced by the Gastroenteric Unit of the Health Protection Surveillance Centre.

News

There were a number of episodes earlier in the year of infant formula contamination, one of the most significant being that due *Salmonella* Agona January and April 2005 involving *Picot* infant Formula, a French proprietary brand. In April 2005, a number of cases of illness due to *Salmonella* Agona were identified, also in France. Investigation of the production plant revealed that several batches of the infant milk formula produced by the company *Bledina* had undergone part of the manufacturing process in the PICOT production plant and were therefore likely to have been contaminated. On 7th April, Bledina recalled these batches and a RASSFF (Rapid Food and Feed) alert was sent to DG SANCO. Ireland was not listed among the export destinations of this product.

The earlier part of the year saw an upsurge in cases of cryptosporidiosis in Ireland with several HSE Areas reporting an increase in cases. Among the increase was an outbreak in the HSE-W (see Table 1).

In June the Rotunda and Temple Street Hospital established a national toxoplasmosis screening programme on a pilot basis for two years. It is intended that all neonates born in Ireland will be screened (with parental permission) for congenital *Toxoplasma* infection from residual blood of Guthrie card sampling. It is intended that a database of cases will be maintained and identified patients will be fully investigated and treated.

An outbreak of shigellosis affecting over half the passengers on a flight from Luxor, in Egypt that arrived on the evening of June 1st 2005, in Dublin Airport. More than half the passengers questioned on the flight were ill. The Egyptian authorities and the tour operators were alerted and a review of the hygiene standards in locations implicated with illness was undertaken.

The production of this quarterly report would not be possible without the valuable input and commitment from the Directors of Public Health, Specialists in Public Health Medicine, Surveillance Scientists, Clinical Microbiologists, General Practitioners, Hospital Clinicians, Infection Control, Environmental Health and laboratory personnel, and other professionals who provide the data for HPSC's surveillance systems.

Note: Data are collected and analysed using the Computerised Infectious Disease Reporting (CIDR) system. The data in this report are provisional and will not be regarded as final until all returns are received and data have been validated.

OUTBREAK SURVEILLANCE

Table 1. Outbreaks of Infectious Intestinal Disease (IID) in Quarter 2, 2005

Month	HSE region	Type of outbreak	Location	No. ill	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
Apr	E	General	Public house	8		03/04/2005	Foodborne	Norovirus
Apr	E	General	Residential institution	13		08/04/2005	Person to person	Suspected Norovirus
Apr	E	General	Residential institution	14		30/03/2005	Person to person	Rotavirus
Apr	E	General	Hospital	15		23/03/2005	Person to person	Norovirus
Apr	E	General	Hospital	21		16/03/2005	Person to person	Norovirus
Apr	E	General	Hospital	161		29/03/2005	Person to person	Norovirus
Apr	S	General	Hospital	16		23/03/2005	Person to person	Suspected Norovirus
Apr	S	General	Hospital	6		25/03/2005	Person to person	Suspected Norovirus
Apr	NE	General	Residential institution	14	0	12/03/2005	Person to person	Norovirus
Apr	NE	General	Hospital	3	3	10/03/2005	Person to person	Norovirus
Apr	E	General	Hospital	6			Person to person	Suspected Norovirus
Apr	E	Family	Private house	2		04/04/2005	Foodborne	<i>Campylobacter spp</i>
Apr	E	General	Hospital	4		19/04/2005	Person to person	Norovirus
Apr	S	General	Residential institution	12	1	21/04/2005	Person to person	Suspected Norovirus
Apr	SE	General	Hospital	14		23/04/2005	Person to person	Norovirus
Apr	NW	Family	Hospital	18	14	26/04/2005	Person to person	Norovirus & <i>Clostridium difficile</i>
Apr	NW	General	Hospital	7	7	30/04/2005	Not Specified	Suspected Norovirus
Apr	W	General	Other	7	2	11/04/2005	Waterborne	<i>Cryptosporidium</i>
Apr	NW	General	Hospital	8	6	22/04/2005	Person to person	Norovirus & <i>Clostridium difficile</i>
Apr	NW	General	Hospital	21	15	15/04/2005	Person to person	Norovirus
Apr	NW	General	Residential institution	6	6	20/04/2005	Person to person	Norovirus & <i>Clostridium difficile</i>
May	SE	General	Hospital	49		10/04/2005	Person to person	Norovirus
May	SE	Family	Private house	2		14/03/2005	Person to person	<i>Salmonella</i> Typhimurium DT104
May	E	General	Social services centre	21		26/04/2005	Person to person	Norovirus
May	SE	Family	Private house	2	1	01/04/2005	Person to person & Animal Contact	<i>E. coli</i> O157
May	E	General	Residential institution	29		05/05/2005	Person to person	Norovirus
May	NE	General	Hospital	5	5	10/05/2005	Person to person	Norovirus
May	E	General	Travel related	2	1	17/02/2005	Foodborne	<i>E. coli</i> O157
May	S	General	Hospital	3		06/05/2005	Person to person	Suspected Norovirus
May	S	General	Residential institution	7		10/04/2005	Person to person	Suspected Norovirus
May	E	General	Hospital	4		12/05/2005	Person to person	Suspected Norovirus

May	NW	General	Hospital	12	8	11/05/2005	Person to person	Norovirus
May	NW	General	Hospital	22	19	14/05/2005	Person to person	Norovirus
May	E	General	Travel related	41	1	19/05/2005	Unknown	<i>Shigella sonnei</i>
Jun	SE	Family	Residential institution	29		27/04/2005	Person to person	Norovirus
Jun	SE	General	Residential institution	24		03/06/2005	Person to person	Norovirus
Jun	SE	General	Residential institution	29		11/06/2005	Person to person	Norovirus
Jun	E	Family	Private house	2			Foodborne	<i>Campylobacter spp</i>
Jun	SE	General	Hospital	67		31/05/2005	Person to person	Norovirus
Jun	E	Family	Private house	4		22/04/2005	Unknown	<i>Campylobacter spp</i>
Jun	SE	Family	Private house	1	1	21/04/2005	Waterborne	<i>E. coli</i> O157
Jun	SE	General	Residential institution	21		22/05/2005	Person to person	Norovirus
Jun	W	General	Other	2	1	03/06/2005	Unknown	<i>E. coli</i> O157

P-P denotes Person-to-Person transmission

NK denotes Not Known

Table 2. Non-IID Outbreaks in Quarter 2, 2005

Month	HSE region	Type of outbreak	Location	No. ill	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
May	M	General	School	33		28/04/2005	Airborne	Influenza B
May	E	General	Pre School	9		09/05/2005	Person to person & Airborne	Probable Varicella

P-P denotes Person-to-Person transmission

Since July 2001, outbreaks have been reported to HPSC. Initial information is provided by a public health professional using a preliminary notification form (by fax or email). A full report is then forwarded by the lead investigator once more complete data are available. The data requested includes information on the source of reporting of the outbreak, the extent of the outbreak, mode of transmission, location, pathogen involved, laboratory investigation, morbidity and mortality data, suspect vehicle and factors contributing to the outbreak. The data provided on final reports is crucial in providing information on the reasons why the outbreak occurred, the factors that lead to the spread of disease and the lessons that can be learnt to prevent further such outbreaks.

Since the 1st January 2004, with the amendment to the Infectious Diseases Regulations (2003), there is a statutory requirement for medical practitioners and clinical directors of a diagnostic laboratory to notify to the medical officer of health 'any unusual clusters or changing patterns of any illness, and individual cases thereof, that may be of public health concern'.

Table 1 shows a line listing of all general and family IID outbreaks reported to the HPSC in the second quarter of 2005. There were 43 IID outbreaks reported during this period, resulting in at least 754

people being ill. The most common cause of IID outbreaks was norovirus with 32 (including the 3 mixed norovirus & *C. difficile*) outbreaks being either confirmed or suspect norovirus (72% of all outbreaks). There were 4 suspect foodborne outbreaks; two *Campylobacter spp*, one norovirus, and one *E. coli* O157. There were two waterborne outbreaks reported, a general outbreak of cryptosporidiosis and a family outbreak of *E. coli* O157. 32 outbreaks (71%) were reported to have occurred in healthcare settings, i.e. hospitals or residential institutions, during this period.

There were 2 non-IID outbreaks (Influenza B and probable varicella) reported during Quarter 2 - see Table 2.

Table 3. No of IID outbreaks per HSE region

HSE area	No of IID outbreaks	Rate per 100,000 population
E	17	25.4
M	1	14.6
MW	-	-
NE	3	6.4
NW	7	42.4
SE	10	56.2
S	5	7.6
W	2	2.4

NOTIFICATIONS OF INFECTIOUS INTESTINAL AND ZOOBOTIC DISEASE

The number of notifications of infectious intestinal and zoonotic disease by health board and month for the second quarter of 2005 is shown in Table 4.

Table 4. Intestinal Infectious and Zoonotic Disease Notifications Quarter 2 2005 by Health Board

Infectious Intestinal Disease	E	M	MW	NE	NW	SE	S	W	Total
Acute infectious gastroenteritis (incl. rotavirus)	306	82	3	63	83	113	202	40	892
<i>Bacillus cereus</i> foodborne infection/intoxication	0	0	0	0	0	0	0	0	0
Botulism	0	0	0	0	0	0	0	0	0
Campylobacter infection	163	46	18	25	25	67	93	65	502
Cholera	0	0	0	0	0	0	0	0	0
<i>Clostridium perfringens</i> (type A) food-borne disease	0	0	0	0	0	0	0	0	0
Cryptosporidiosis	33	15	19	39	24	50	61	88	329
Enterohaemorrhagic <i>Escherichia coli</i>	5	2	1	1	4	3	2	3	21
Giardiasis	9	0	0	0	2	1	1	0	13
Listeriosis	1	0	0	1	0	0	0	0	2
Noroviral infection	117	8	1	55	23	29	26	3	263
Paratyphoid	0	0	0	0	0	0	0	0	0
Salmonellosis	23	2	2	7	1	11	11	3	60
Shigellosis	5	1	0	0	0	2	1	0	9
Staphylococcal food poisoning	1	0	0	0	0	0	0	0	1
Typhoid	2	1	0	0	0	0	0	1	4
Yersiniosis	1	0	0	0	0	0	0	0	1
Zoonotic Disease									
Anthrax	0	0	0	0	0	0	0	0	0
Brucellosis	1	1	0	1	0	1	0	0	4
Echinococcosis	0	0	0	0	0	0	0	0	0
Leptospirosis	0	0	0	0	0	0	0	0	0
Plague	0	0	0	0	0	0	0	0	0
Q Fever	0	0	0	0	0	0	0	1	1
Toxoplasmosis	3	1	0	0	0	4	0	0	8
Trichinosis	0	0	0	0	0	0	0	0	0
Typhus	0	0	0	0	0	0	0	0	0
Rabies	0	0	0	0	0	0	0	0	0

SALMONELLA ENTERICA

Human salmonellosis (*S. enterica*) is a notifiable disease. The National Reference Laboratory for Salmonella (NSRL) in Ireland was established in 2000 in the Dept. of Medical Microbiology, University College Hospital, Galway. This laboratory accepts *S. enterica* isolates from all clinical and food laboratories in Ireland for serotyping, phage typing and antimicrobial sensitivity testing. Table 5 shows the number of salmonellosis notifications by health board and month for the second quarter of 2005. The seasonal trend is broadly similar to the same period for the past three years as depicted in Figure 1 below.

Table 5. Salmonellosis Notifications by Health Board and Month, Q2 2005

Salmonellosis	E	M	MW	NE	NW	SE	S	W	Total
Apr	8	1	1	2	0	3	1	2	18
May	8	1	0	3	0	1	2	1	16
Jun	7	0	1	2	1	7	8	0	26
Total	23	2	2	7	1	11	11	3	60

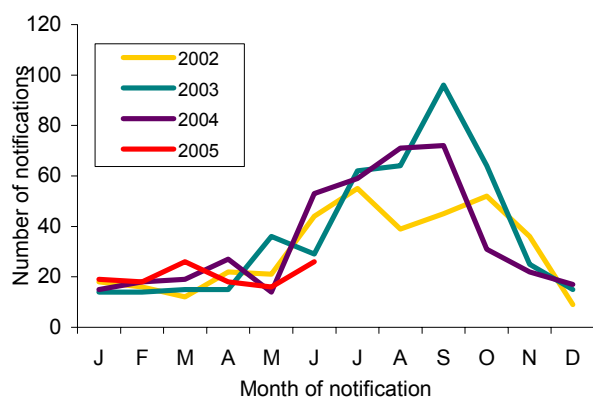


Figure 1. Seasonal Distribution of Human Salmonellosis Notifications, 2002-2004 and to end Q2 2005

Table 6 shows the *S. enterica* isolates typed by the NSRL in the second quarter of 2005 (n=64). The

commonest human serotypes isolated were *S. Enteritidis* (n=21 [32%]) and *S. Typhimurium* (n=18 [28%]).

18 (28%) of *S. enterica* isolates were reported to be associated with travel outside of Ireland during this quarter.

S. Typhi and S. Paratyphi

There were 4 cases of typhoid reported during Quarter 2, 2005. Two were associated with travel to Pakistan; information was not available on the other two cases.

Outbreaks of Salmonellosis

There was one family outbreak of *S. Typhimurium* reported in Q2, 2005.

Table 6. Serotypes of *S. enterica* referred to NSRL in Quarter 1, 2005 (Data are provided courtesy of Prof. Martin Cormican and Dr Geraldine Corbett-Feeney, NSRL).

Serotype	E	M	MW	NE	NW	SE	S	W	Total
Anatum	1	0	0	0	0	0	0	0	1
Braenderup	1	0	0	0	0	0	0	0	1
Corvallis	0	0	0	0	0	1	0	0	1
Dublin	0	0	1	0	0	0	1	1	3
Enteritidis	4	0	0	3	2	3	8	1	21
Infantis	1	0	0	0	0	0	0	0	1
Isangi	0	0	0	0	0	1	0	0	1
Kentucky	1	0	0	1	0	0	0	0	2
Livingstone	1	0	0	0	0	0	0	0	1
Newport	1	0	0	0	0	0	0	0	1
Oranienburg	1	0	0	0	0	0	0	0	1
Saintpaul	1	0	0	0	0	0	0	0	1
Typhi	2	1	0	0	0	0	0	1	4
Typhimurium	5	2	0	2	0	5	2	2	18
Uganda	1	0	0	1	0	0	0	0	2
Unnamed	1	0	0	1	0	0	0	0	2
Virchow	2	0	0	0	0	0	1	0	3
Total	23	3	1	8	2	10	12	5	64

VEROTOXIGENIC *E. COLI* (VTEC)

Illness caused by enterohaemorrhagic *E. coli* (EHEC) became a notifiable disease on January 1st 2004. Under EHEC, all verotoxin positive *E. coli*, and *E. coli* of serogroups O157, O26, O111, O103, O145 regardless of whether verotoxin producers, are reported. Previously, VTEC were notified under the category of 'Food Poisoning (bacterial other than Salmonella)'.

The number of EHEC notified in Q2 2005 is shown in Table 4. Under the legislation, it is required that information on EHEC be gathered and reported. However, because of their clinical and public health significance, it is important to distinguish between those isolates that are verotoxin-producers and those that are not.

Twenty-one EHEC were notified in this quarter: 18 were culture confirmed and verotoxin positive, and an additional (HUS) case was confirmed by serology alone. A further HUS patient was reported as a suspected case of VTEC. This compares with 13 VTEC cases notified in Q2 2004 (Figure 2). Table 7 shows the number of cases reported by serogroup and month Q2 2005.

Table 7. Confirmed VTEC Notified by Serogroup and Month, Q2 2005

VTEC	O157	O26	Ungroupable	Total
Apr	5	2	0	7
May	5*	0	1	6
Jun	4	2	0	6
Total	14	4	1	19

*one confirmed only by serology

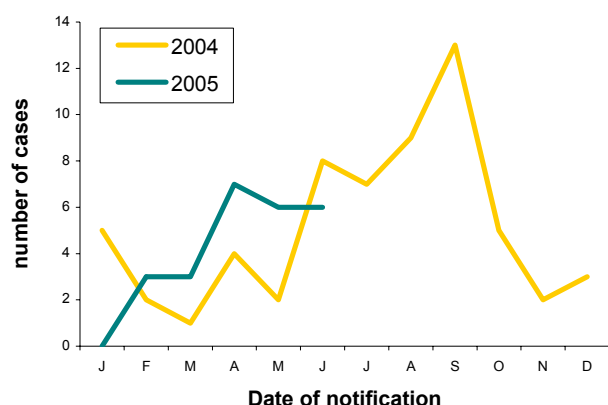


Figure 2. Seasonal Distribution of Confirmed VTEC cases notified 2004, and year to date 2005

Enhanced information was collected by health board personnel on all VTEC cases. Three confirmed cases reported in this quarter developed Haemolytic Uraemic Syndrome (HUS), one of whom died. An additional HUS case was reported as a suspected case.

The HSE SWA Public Health Laboratory at Cherry Orchard Hospital, Dublin provides a national *E. coli* O157 and non-O157 diagnostic service for clinical samples, including *E. coli* serotyping, verotoxin detection and VTEC molecular typing. Tables 8 and 9 show the phage types and VT types of VTEC isolates referred to this laboratory in Q2 2005.

Table 8. Phage Types of VTEC O157 isolates referred to the HSE SWA Public Health Laboratory, Cherry Orchard Hospital in Q2 2005. (Data are provided courtesy of Dr. Eleanor McNamara and Dr. Anne Carroll).

Phage type	Number of isolates
21/28	6
32	2
1	1
4	1
8	1
RDNC	1
Not yet available	1
Total	13

Table 9. Verotoxin typing results of VTEC isolates referred to the HSE SWA Public Health Laboratory, Cherry Orchard Hospital in Q2 2005. (Data are provided courtesy of Dr. Eleanor McNamara and Dr. Anne Carroll).

Serogroup	Vt1	Vt2	Vt1+Vt2	Total
<i>E. coli</i> O157	0	12	1	13
<i>E. coli</i> O26	3	0	1	4
<i>E. coli</i> Ungroupable	1	0	0	1
Total	4	12	2	18

Outbreaks of VTEC O157

There were 2 general and 2 family outbreaks of VTEC O157 infection reported in Q2 (Table 1). One was travel related and suspected to be foodborne, one was suspected to be waterborne, one was reported as being due to person-to-person spread/animal contact, and for the remaining outbreak the mode of transmission was unknown.

CAMPYLOBACTER

Human campylobacteriosis became a notifiable disease on January 1st 2004. Prior to this, human campylobacter infection was notified under the category of 'Food Poisoning (bacterial other than Salmonella)'. The notifications for the second quarter of 2005 are shown in Table 10. The seasonal trend is broadly similar to the same period for the last year as depicted in Figure 3.

Table 10. Campylobacter Notifications by Health Board and Month, Q2 2005

Campylobacter Infection	E	M	MW	NE	NW	SE	S	W	Total
Apr	43	10	2	8	2	12	18	6	101
May	38	8	6	8	1	24	20	21	126
Jun	82	28	10	9	22	31	55	38	275
Total	163	46	18	25	25	67	93	65	502

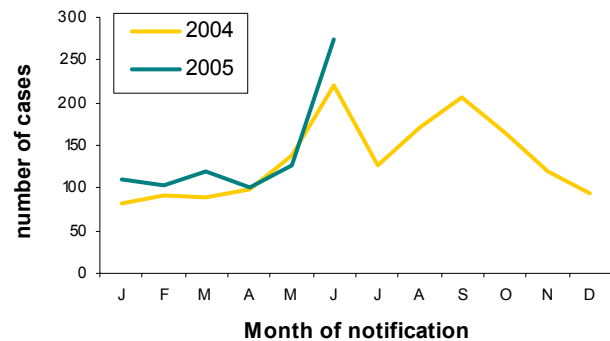


Figure 3. Seasonal distribution of Campylobacter cases 2004 and year to date 2005

Outbreaks of Campylobacteriosis

There were three family outbreaks of *Campylobacter* spp reported during Q2, 2005. Two were reported as foodborne.

CRYPTOSPORIDIUM

Human cryptosporidiosis became a notifiable disease on January 1st 2004. Prior to this, cryptosporidiosis was notifiable in Ireland only in young children under the category 'Gastroenteritis in Children Under 2'. In Q2 2005, 329 cases of cryptosporidiosis were notified (Table 11), a 70% increase on the number notified in same period last year (193 cases. Figure 4).

Table 11. Cryptosporidiosis Notifications by Health Board and Month, Q2 2005

Cryptosporidiosis	E	M	MW	NE	NW	SE	S	W	Total
Apr	13	8	3	15	7	30	26	46	148
May	8	2	10	15	12	14	21	30	112
Jun	12	5	6	9	5	6	14	12	69
Total	33	15	19	39	24	50	61	88	329

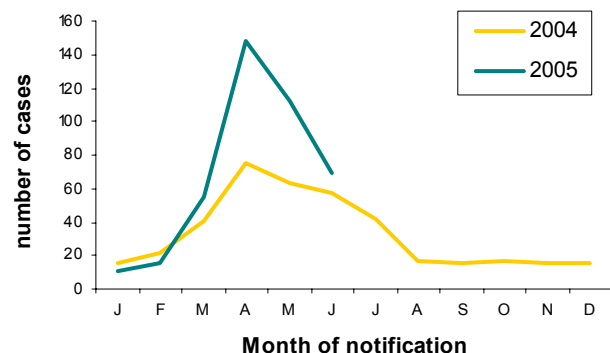


Figure 4. Seasonal distribution of cryptosporidiosis notifications 2004 and year to date 2005

Outbreak of cryptosporidiosis

A waterborne outbreak of cryptosporidiosis was reported by the Western Region in Q2 2005. Seven people were ill, of whom 2 were admitted to hospital.

NOROVIRUS

Human noroviral infection became a notifiable disease on January 1st 2004. There were 262 cases reported in the second quarter of 2005, as shown in Table 12. These data are certainly an under-ascertainment of the true burden of disease due to this pathogen.

Norovirus outbreaks

Norovirus or suspect viral aetiology is the commonest cause of outbreaks of acute gastroenteritis in Ireland. In the second quarter of 2005 there were 32 outbreaks confirmed or suspected to be caused by this virus, representing 72 % of IID outbreaks reported to HPSC

during this period, and involving at least 675 people becoming ill, as outlined in Table 1.

Table 12. Norovirus Notifications by Health Board and Month, Q2 2005

Noroviral Infection	E	M	MW	NE	NW	SE	S	W	Total
Apr	69	3	0	27	3	9	19	0	130
May	32	1	0	21	10	9	5	0	78
Jun	16	4	1	7	10	11	2	3	54
Total	117	8	1	55	23	29	26	3	262

LISTERIA

Human listeriosis became a notifiable disease on January 1st 2004. Prior to this, listeriosis was notified under the category of 'Food Poisoning (bacterial other than Salmonella)' or 'Bacterial Meningitis' as appropriate.

Two cases of listeriosis were notified in Q2 2005 (Table 4), both non pregnancy-associated adult cases.

SHIGELLA

On January 1st 2004, infection with *Shigella* spp. became notifiable as 'Shigellosis'. Prior to this, it was notifiable as 'Bacillary Dysentery'.

During quarter 2 2005, 9 cases of shigellosis were notified (Table 4). This compares with 10 cases notified as shigellosis in quarter 2 in 2004 and 8 as bacillary dysentery in 2003.

Four cases were reported as *S. sonnei*, 2 as *S. flexneri*, and the species was not specified for the remaining 3 cases.

Outbreak of shigellosis

An outbreak of *S. sonnei* was reported associated with travel to Egypt (Table 1).

GIARDIA

Human giardiasis became a notifiable disease on January 1st 2004. Prior to this, giardiasis was notifiable in Ireland only in young children under the category 'Gastroenteritis in Children Under 2'.

During quarter 2 2005, 13 cases of giardiasis were notified (Table 4). This compares with 7 notifications in Q2 2004.

FOODBORNE INTOXICATIONS

Bacillus cereus foodborne infection/intoxication, botulism, *Clostridium perfringens* (type A) foodborne disease and staphylococcal food poisoning became notifiable diseases on January 1st 2004. Prior to this, these diseases were notified under the category of 'Food Poisoning (bacterial other than Salmonella)'.

One case of staphylococcal food poisoning was reported in Q2 2005 (Table 4), the same as the Q2 2004.

ACUTE INFECTIOUS GASTROENTERITIS incl. ROTAVIRUS

Since 1st January 2004, there is a notifiable disease category termed 'Acute Infectious Gastroenteritis'. This includes all unspecified causes of gastroenteritis and also specifically, gastroenteritis due to rotavirus. It should be noted that acute infectious gastroenteritis is now notifiable in all age groups, unlike the former notifiable disease category of 'Gastroenteritis in children under 2 years'.

During quarter 2 2005, there were 892 notifications of acute infectious gastroenteritis. 840 were reported as rotavirus (Table 13) and 77 % of these were under 2 years of age.

Outbreak of Rotavirus

One outbreak of rotavirus affecting 14 people in a residential institution was reported during Q2, 2005.

Table 13. Rotaviral Infections Notified under the Category of 'Acute Infectious Gastroenteritis' by Health Board and Month, Q2 2005

Rotaviral Infection	E	M	MW	NE	NW	SE	S	W	Total
Apr	135	37	0	30	29	49	61	9	350
May	77	18	2	16	31	36	83	18	281
Jun	71	12	0	15	27	27	44	13	209
Total	283	67	2	61	87	112	188	40	840

NON-IID ZOO NOTIC DISEASES

Non-IID zoonoses now notifiable include: anthrax, brucellosis, echinococcosis, leptospirosis, plague, Q Fever, toxoplasmosis, trichinosis, typhus and rabies. The Q1 2005 notifications of these zoonotic diseases are reported by health board in Table 4.

Eight cases of toxoplasmosis were notified in this quarter. This compares with 9 cases notified in the same period in 2004.

There were 4 cases of brucellosis reported during this quarter compared with none in Q2 2004 or 2003.

One case of Q fever was also notified.

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