

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 1–2005

July 2005

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

In the News

Pregestimil, an infant formula preparation, used for premature infants who are allergic to cow's milk protein, was linked in France to illness and the deaths of two infants in France due to *Enterobacter sakazakii* between October and December 2004. The parent company, Mead Johnson Nutritionals initiated a voluntary recall on the infant formula Pregestimil in December 2004. Although the implicated batches were not received in Ireland, the company as precautionary measure recalled all batch codes of Pregestimil globally. In January 2005, the FSAI became aware that some of the product may still have been on the market, and further action was taken to ensure that all product was removed from the food chain. No cases of illness due to *Enterobacter sakazakii* were seen in Ireland.

France also reported 61 cases of illness due to *Salmonella* Agona arising between January and April 2005. The illness in all infants was associated with consumption of a brand of infant formula (Picot) produced in France and sold in Europe, Russia and Africa (although not in Ireland). A recall of all product was undertaken and an alert was posted on the European Early Warning and Response System.

An outbreak of cryptosporidiosis occurred in Perthshire, in Scotland associated with a wildlife centre. Sixty-two cases had been confirmed by 25 April. None of the patients were seriously ill, although six children required admission to hospital. Lambs, poultry, chicks, rabbits, cattle, ducks and other species were at the wildlife centre. A temporary 'petting area' had been set up, where adults and children could touch young animals. There were no handwashing facilities next to the petting area, although disinfectant hand cream dispensers were available. The centre remained open but animal petting was stopped. About 4000 people may have visited the centre between 25 March and 18 April when the outbreak was detected.

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 1, 2005

Month	HSE region	Type of outbreak	Location	No. ill	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
Jan	S	General	Residential institution	8	0	23/11/2004	Person to person	Suspect Norovirus
Jan	E	General	Residential institution	12	0	09/01/2005	Person to person	Norovirus
Jan	E	General	Hospital	84	0	10/01/2005	Person to person	Norovirus
Jan	E	General	Residential institution	18	1	07/01/2005	Person to person	Suspect Norovirus
Jan	E	General	Hospital	36	0	08/01/2005	Person to person	Norovirus
Jan	E	General	Hospital	187	0		Person to person	Norovirus
Jan	E	General	Hospital	8	0	13/01/2005	Person to person	Norovirus
Jan	E	General	Hospital	17		12/01/2005	Person to person	Norovirus
Jan	SE	General	Residential institution	32	0	31/12/2004	Not Specified	Norovirus
Jan	NE	General	Hospital	4	4	20/01/2005	Person to person	Suspect Norovirus
Jan	E	General	Residential institution	12	0	21/01/2005	Person to person	Suspect Norovirus
Jan	E	General	Residential institution	13	0	22/01/2005	Person to person	Norovirus
Jan	S	General	Hospital	5	0	23/01/2005	Person to person	Suspect Norovirus
Jan	W	General	Hospital	17	0	24/01/2005	Person to person	Suspect Norovirus
Jan	W	General	Residential institution	13	0	26/01/2005	Person to person	Suspect Norovirus
Jan	E	General	Residential institution	9	0	24/01/2005	Person to person	Suspect Norovirus
Jan	E	General	Hospital	36	0		Person to person	Norovirus
Jan	E	General	Hospital	13	1	25/01/2005	Person to person	Norovirus
Jan	S	Family	Residential institution	7	0	20/01/2005	Person to person	Suspect Norovirus
Jan	E	General	Hospital	19	0	27/01/2005	Person to person	Suspect Norovirus
Feb	NE	General	Residential institution	20	0	20/01/2005	Person to person	Suspect Norovirus
Feb	NE	General	Hospital	19	15		Person to person	Suspect Norovirus
Feb	NE	General	Hospital	13	8	03/02/2005	Person to person	Suspect Norovirus
Feb	S	General	Residential institution	9	1	01/02/2005	Person to person	Suspect Norovirus
Feb	NE	General	Residential institution	17	0	04/02/2005	Person to person	Norovirus
Feb	E	General	Hospital	12	0	01/02/2005	Person to person	Norovirus
Feb	S	General	Residential institution	18	0	04/02/2005	Person to person	Suspect Norovirus
Feb	S	General	Residential institution	15	0	05/02/2005	Person to person	Suspect Norovirus
Feb	E	General	Residential institution	86	0	12/01/2005	Person to person	Norovirus
Feb	E	General	Hospital	14	0	20/02/2005	Person to person	Suspect Norovirus
Feb	M	General	Hospital	40	0	13/01/2005	Person to person	Norovirus
Feb	SE	General	Hospital	36	0	01/02/2005	Person to person	Norovirus
Feb	NE	General	Hospital	4	4		Person to person	Suspect Norovirus
Feb	SE	General	Hospital	23	0	21/01/2005	Person to person	Norovirus
Feb	S	General	Residential institution	8	0	08/02/2005	Person to person	Suspect Norovirus
Feb	S	General	Hotel	5	0	15/02/2005	Unknown	Unknown
Mar	E	General	Residential institution	70	0	25/02/2005	Person to person	Suspect Norovirus
Mar	SE	General	Other	5	0	20/02/2005	Person to person	Norovirus
Mar	E	General	Other	6	1	20/02/2005	Person to person	Suspect Norovirus

Mar	SE	General	Hospital	14	0	01/03/2005	Person to person	Suspect viral
Mar	SE	General	Other	28	6	26/01/2005	Waterborne	Cryptosporidium
Mar	SE	General	Hospital	18	0	28/02/2005	Person to person	Norovirus
Mar	S	General	Hotel	5	0	10/03/2005	Person to person	Suspect Norovirus
Mar	S	General	Residential institution	4	0	06/03/2005	Person to person	Suspect Norovirus
Mar	S	Family	Residential institution	22	0	16/02/2005	Person to person	Norovirus
Mar	SE	Family	Hospital	7	0	21/03/2005	Person to person	Suspect Norovirus
Mar	SE	Family	Private house	1	0	15/01/2005	Unknown	<i>E. coli</i> O157
Mar	E	General	Hospital	15	0	27/02/2005	Person to person	Norovirus
Mar	E	Family	Private house	2	0		Unknown	Salmonella
Mar	E	General	Hospital	90	0	03/03/2005	Person to person	Norovirus
Mar	E	General	Hospital	8	0	08/03/2005	Person to person	Suspect Norovirus
Mar	NE	General	Hospital	10	10	18/03/2005	Person to person	Suspect Norovirus
Mar	SE	General	Hospital	4	0	16/03/2005	Person to person	Suspect Norovirus
Mar	SE	Family	Private house	2	1	09/02/2005	Foodborne	Salmonella

P-P denotes Person-to-Person transmission; NK denotes Not Known

Table 2. Non-IID Outbreaks in Quarter 1, 2005

Month	HSE region	Type of outbreak	Location	No. ill	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
Jan	E	General	Residential institution	42	0	01/01/2005	Person to person	Influenza A
Mar	NE	General	School		0	27/01/2005	Airborne	Mumps

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 first quarter

of 2005. There were 54 IID outbreaks reported during this period, resulting in at least 1200 people being ill. The most common cause of IID outbreaks was norovirus with 49 outbreaks being either confirmed or suspect norovirus (91% of all outbreaks). There was one suspect foodborne outbreak, a family outbreak of salmonellosis. There was one suspect waterborne outbreak reported, a general outbreak of cryptosporidiosis. 46 outbreaks (85%) were reported to have occurred in healthcare settings, i.e. hospitals or residential institutions, during this period. Table 2 presents the non-IID outbreaks reported to HPSC in Quarter 1, 2005. There was one outbreak of Influenza A and one outbreak of mumps reported.

Table 3. Rate of IID outbreaks per HSE region

HSE area	No of IID outbreaks	Rate per 100,000 population
E	22	1.6
M	1	0.4
MW	0	-
NE	7	2.0
NW	0	-
SE	11	2.6
S	11	1.9
W	2	0.5

NOTIFICATIONS OF INFECTIOUS INTESTINAL AND ZOOONOTIC DISEASE

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

Table 4. Intestinal Infectious and Zoonotic Disease Notifications Quarter 1 2005 by Health Board

Infectious Intestinal Disease	E	M	MW	NE	NW	SE	S	W	Total
Acute infectious gastroenteritis (incl. rotavirus)	329	91	5	76	42	161	120	33	857
<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	134	24	8	17	18	43	52	37	333
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	1	5	4	4	6	29	13	20	82
Enterohaemorrhagic <i>Escherichia coli</i>	2	1	0	0	0	1	1	1	6
Giardiasis	3	0	0	0	1	0	1	1	6
Listeriosis	1	0	0	0	0	0	0	0	1
Noroviral infection	331	39	0	87	12	20	46	2	537
Paratyphoid	0	0	0	0	0	0	0	0	0
Salmonellosis	24	6	1	7	1	8	9	7	63
Shigellosis	1	0	0	0	0	1	2	0	4
Staphylococcal food poisoning	2	0	0	0	0	1	0	0	3
Typhoid	0	0	0	0	0	0	0	0	0
Yersiniosis	0	0	0	0	0	0	0	0	0
Zoonotic Disease									
Anthrax	0	0	0	0	0	0	0	0	0
Brucellosis	0	0	0	0	0	0	0	0	0
Echinococcosis	0	0	0	0	0	0	0	0	0
Leptospirosis	0	0	0	0	1	0	0	0	1
Plague	0	0	0	0	0	0	0	0	0
Q Fever	0	0	0	0	0	0	0	0	0
Toxoplasmosis	3	1	0	0	2	1	0	0	7
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 first 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, Q1 2005

Salmonellosis	E	M	MW	NE	NW	SE	S	W	Total
Jan	10	2	0	2	0	0	2	3	19
Feb	7	1	0	2	0	3	2	3	18
Mar	7	3	1	3	1	5	5	1	26
Total	24	6	1	7	1	8	9	7	63

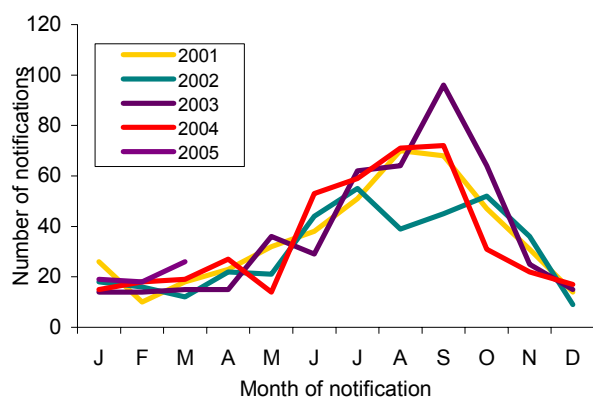


Figure 1. Seasonal Distribution of Human Salmonellosis Notifications, 2001-2004 and to end Q1 2005

Table 6 shows the *S. enterica* isolates typed by the NSRL in the first quarter of 2005 (n=68). The

commonest human serotypes isolated were *S. Enteritidis* (n=21 [30%]) and *S. Typhimurium* (n=21 [30%]).

12 (18%) of *S. enterica* isolates were reported to be associated with travel outside of Ireland during this quarter.

S. Typhi and S. Paratyphi

There were no cases of typhoid or paratyphoid reported during Quarter 1, 2005.

Outbreaks of Salmonellosis

2 small family outbreaks of salmonellosis were reported during this period (see Table 1).

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	NK	Total
Arechavaleta	2	0	0	0	0	0	0	0	0	2
Blockley	0	0	0	0	0	0	1	1	1	3
Bredeney	1	0	0	0	0	0	0	0	0	1
Concord	0	0	0	1	0	0	0	0	0	1
Dublin	0	0	0	0	0	0	0	0	1	1
Enteritidis	10	1	1	2	1		3	1	2	21
Give	0	0	0	0	0	0	1	0	0	1
Goldcoast	0	0	0	0	0	0	0	1	0	1
Indiana	1	0	0	1	0	0	0	0	0	2
Infantis	1	0	0	0	0	0	0	0	0	1
Kedougou	0	0	0	0	0	1	0	0	0	1
Minnesota	0	0	0	0	0	1	0	0	0	1
Sandiego	1	0	0	0	0	0	0	0	0	1
Senftenberg	1	0	0	0	0	0	0	0	0	1
Stanleyville	2	0	0	0	0	0	0	0	0	2
Teitelkebir	1	0	0	0	0	0	0	0	1	2
Typhimurium	7	1	0	0	0	5	5	1	2	21
Unnamed	0	0	1	0	0	0	0	1	1	3
Virchow	2	0	0	0	0	0	0	0	0	2
Total	29	2	2	4	1	7	10	5	8	68

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 Q1 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.

Six EHEC were notified in this quarter; all were verotoxin positive and all were serogroup O157. Table 7 shows the number of VTEC cases reported by health board and month Q1 2005. All reported cases were male. This compares with 9 VTEC cases reported in Q1 2004 (Figure 2).

Table 7. Confirmed VTEC Notified by Health Board and Month, Q1 2005

VTEC	E	M	MW	NE	NW	SE	S	W	Total
Jan	0	0	0	0	0	0	0	0	0
Feb	0	1	0	0	0	1	1	0	3
Mar	2	0	0	0	0	0	0	1	3
Total	2	1	0	0	0	1	1	1	6

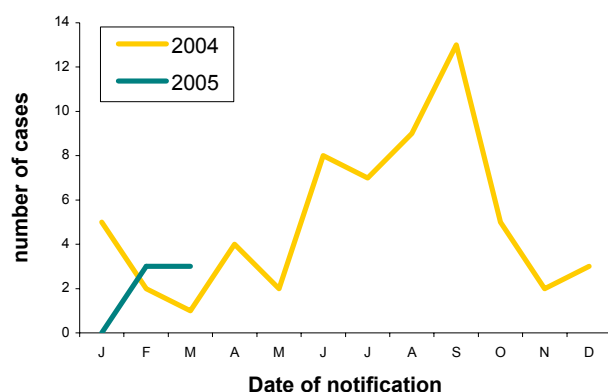


Figure 2. Seasonal Distribution of Confirmed VTEC cases notified 2004, and year to date 2005

Enhanced information is collected by health board personnel on all VTEC cases. One case reported in this quarter developed Haemolytic Uraemic Syndrome (HUS).

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. It is also NAB accredited for detection of *E. coli* O157 in food and water samples.

Tables 8 and 9 show the phage types and VT types of VTEC isolates referred to Cherry Orchard in Q1 2005. The data reported here is based on date of receipt in the laboratory and may differ from the notification data reported opposite.

Table 8. Phage Types of VTEC O157 isolates referred to the HSE SWA Public Health Laboratory, Cherry Orchard Hospital in Q1 2005.

(Data are provided courtesy of Dr. Eleanor McNamara and Dr. Anne Carroll).

Phage type	Number of isolates
PT32	3
PT88	2
PT51	1
Total	6

Table 9. Verotoxin typing results of VTEC isolates referred to the HSE SWA Public Health Laboratory, Cherry Orchard Hospital in Q1 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	6	0	6
<i>E. coli</i> O26	1	0	0	1
Total	1	6	0	7

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 first 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, Q1 2005

Campylobacter Infection	E	M	MW	NE	NW	SE	S	W	Total
Jan	48	7	1	5	3	15	18	14	111
Feb	41	6	3	6	5	15	15	11	102
Mar	45	11	4	6	10	13	19	12	120
Total	134	24	8	17	18	43	52	37	333

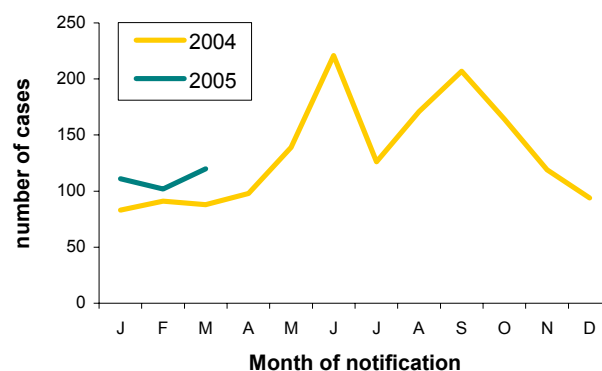


Figure 3. Seasonal distribution of Campylobacter cases 2004 and year to date 2005

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 Q1 2005, 82 cases of cryptosporidiosis were notified (Table 11). This compares with 78 cases notified in Q1 2004 (Figure 4).

Table 11. Cryptosporidiosis Notifications by Health Board and Month, Q1 2005

Cryptosporidiosis	E	M	MW	NE	NW	SE	S	W	Total
Jan	0	0	1	2	0	2	2	4	11
Feb	0	1	0	0	1	3	4	7	16
Mar	1	4	3	2	5	24	7	9	55
Total	1	5	4	4	6	29	13	20	82

Outbreak of cryptosporidiosis

A general outbreak of cryptosporidiosis (28 cases) was reported during this quarter in the HSE-South East Region. The suspect mode of transmission was waterborne (Table 1).

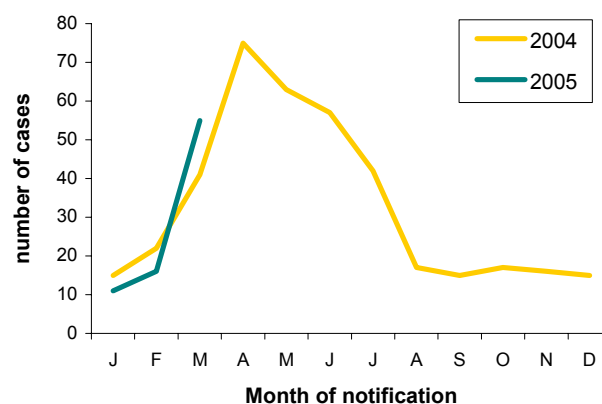


Figure 4. Seasonal distribution of cryptosporidiosis cases 2004 and year to date 2005

NOROVIRUS

Human noroviral infection became a notifiable disease on January 1st 2004. There were 537 cases reported in the first 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 first quarter of 2005 there were 49 outbreaks confirmed or suspected to be caused by this virus, representing 91% of IID outbreaks reported to HPSC

during this period, and involving at least 1162 people becoming ill, as outlined in Table 1.

Table 12. Norovirus Notifications by Health Board and Month, Q1 2005

Noroviral Infection	E	M	MW	NE	NW	SE	S	W	Total
Jan	91	23	0	35	3	6	11	0	169
Feb	130	7	0	19	8	5	8	2	179
Mar	110	9	0	33	1	9	27	0	189
Total	331	39	0	87	12	20	46	2	537

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.

One case of listeriosis was notified in Q1 2005 (Table 4), a non pregnancy-associated adult case.

SHIGELLA

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

During quarter 1 2005, 4 cases of shigellosis were notified (Table 4). This compares with 6 cases

notified as shigellosis in quarter 1 in 2004 and 7 as bacillary dysentery in 2003.

One case was reported as *S. sonnei*, 2 as *S. flexneri*, and the species was not specified for the remaining case.

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 1 2005, there were 857 notifications of acute infectious gastroenteritis. 811 were reported as rotavirus (Table 13) and 81% of these were under 2 years of age.

Table 13. Rotaviral infections Notified under the Category of 'Acute Infectious Gastroenteritis' by Health Board and Month, Q1 2005

Rotaviral Infection	E	M	MW	NE	NW	SE	S	W	Total
Jan	37	14	0	1	2	7	4	14	79
Feb	85	18	1	24	9	50	26	12	255
Mar	188	57	3	47	30	97	78	7	507
Total	310	89	4	72	41	154	108	33	811

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 1 2005, 6 cases of giardiasis were notified (Table 4). This compares with 4 notifications in Q1 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)'.

Three cases of staphylococcal food poisoning were reported in Q1 2005 (Table 4).

NON-IID ZONOTIC 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.

Seven cases of toxoplasmosis were notified in this quarter. This compares with 2 cases notified in the same period in 2004.

One case of leptospirosis was reported during this quarter; this compares with 5 cases in Q1 2004 and 4 in Q1 2003.

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