

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 3–2005

December 2005

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

News

International Outbreak of *Salmonella* Goldcoast Infection in Tourists Returning from Majorca

An international outbreak control team is currently investigating an extensive outbreak of *Salmonella* Goldcoast infection. The outbreak was first identified by Health Protection Scotland and an alert through Enter-Net and the European Commission's Early Warning and Response system (EWRS) led to an international response with active case finding. A total of 148 cases of *S. Goldcoast* meeting the outbreak case definition were reported from around Europe between 1 October and 1 December 2005: England and Wales (66), Scotland (28), Germany (17), Sweden (12), Norway (8), Ireland (6), Denmark (4), Finland (4) and Majorca (3).

Despite extensive trawling, no testable hypothesis about foods, outlets, or other potential sources of infection could be generated. The outbreak was declared over on December 1st.

North–South General Practice Food Safety Promotion Board Research Project

Two studies into Acute Gastroenteritis in Ireland, North and South, by the Food Safety Promotion Board (*A Telephone survey* and *A Study of General Practitioners*) into the incidence of gastroenteritis and its management by General Practitioners North and South indicated that the burden of illness is great (3.2 million cases annually, accounting for almost 1 in every 20 consultations) and that there are variations in its management. The FSPB has funded a research project to implement findings arising from these two important studies.

Two Research Fellows, one North and South, are developing the project in conjunction with the Department of General Practice, Queens University Belfast, Irish College of General Practitioners, CDSC-NI and HPSC. Its principal aims are:

- To improve the clinical and public health management of food-borne disease and infectious gastroenteritis by Irish General Practitioners
- To enhance the communication and exchange between the public health system and general practice, and the laboratory services and general practice, in relation to gastrointestinal and other infections

It is intended that practice-based and training resources for use by GPs, GP registrars, medical students and other primary care practitioners in the management of IID will be developed, with feedback on their usefulness being gathered through focus groups comprising GPs, public health physicians and laboratory staff. Intended outputs include decision-support systems to allow a move towards more rationalised stool testing, reduced adverse effects from unnecessary/inappropriate medication, reduced community acquired antibiotic resistance, improved GP and patient knowledge about IID, an enhanced public health response to IID outbreaks, better liaison between disciplines.

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 the HPSC's surveillance

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 3, 2005

Month	HSE region	Type of outbreak	Location	No. ill	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
July	S	General	Hospital	5		03/07/2005	Unknown	AIG
July	E	General	Hospital	13		18/06/2005	Person-to-person	Suspected Norovirus
July	E	General	Hotel	18		26/06/2005	Person-to-person	Norovirus
July	E	Family	Private house	2	1	16/06/2005	P-P and Animal	Campylobacter
July	E	Family	Private house	2	1	02/07/2005	P-P and FB	<i>E. coli</i> O157
July	S	Family	Private house	2	2	10/07/2005	Unknown	Cryptosporidiosis
Aug	M	General	Residential institution	26		02/08/2005	Foodborne	AIG
Aug	E	Family	Private house	7	1	03/07/2005	Unknown	Salmonella
Aug	E	General	Travel related	95		01/08/2005	Person-to-person	Norovirus
Aug	M	Family	Private house	2		12/08/2005	Not Specified	<i>E. coli</i> O157
Aug	S	Family	Travel related	3	1	29/07/2005	Unknown	<i>E. coli</i> O157
Aug	SE	Family	Private house	2		15/07/2005	FB and WB	Salmonella
Aug	SE	Family	Private house	3	1	27/07/2005	Person-to-person	<i>E. coli</i> O26
Aug	E	Family	Private house	2		05/08/2005	Person-to-person	<i>E. coli</i> O157
Aug	S	General	Hospital	13	1	16/08/2005	Unknown	AIG
Aug	E	Family	Private house	2		20/07/2005	Waterborne	<i>E. coli</i> O157
Aug	E	General	Residential institution	6		15/08/2005	Person-to-person	Suspected Norovirus
Aug	M	Family	Private house	2		23/08/2005	Not Specified	Salmonella
Aug	E	Family	Private house	2			Foodborne	<i>C. jejuni</i>
Sep	M	Family	Private house	4		18/09/2005	Unknown	<i>E. coli</i> O157
Sep	E	Family	Private house	2			Unknown	Salmonella
Sep	SE	Family	Private house	2	1	25/08/2005	Person-to-person	<i>E. coli</i> O157
Sep	M	Family	Private house	1	1	05/09/2005	FB and Animal	<i>E. coli</i> O157
Sep	E	Family	Private house	4	1	02/09/2005	Unknown	<i>E. coli</i> O26
Sep	SE	Family	Private house	6	1	03/07/2005	Person-to-person	Salmonella
Sep	E	General	Residential institution	5		24/09/2005	Not Specified	Unknown
Sep	E	General	Residential institution	10		22/09/2005	Person-to-person	Suspected Norovirus
Sep	MW	Family	Other	3	1	19/09/2005	Foodborne	<i>Shigella sonnei</i>
Sep	S	Family	Private house	3	3	16/09/2005	Person-to-person	Salmonella

P-P denotes Person-to-Person transmission, FB denotes foodborne, WB denotes waterborne

Table 2. Non-IID Outbreaks in Quarter 3, 2005

Month	HSE region	Type of outbreak	Location	No. ill	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
Aug	S	General	Hotel			28/07/2005	Airborne	Mumps
Aug	NW	General	Other	12	2	05/08/2005	Person-to-person	Mumps
Aug	E	General	Residential institution			02/06/2005	Waterborne	<i>Legionella pneumophila</i>
Aug	S	General	Community outbreak	8	6	16/05/2005	Airborne	<i>Mycobacterium tuberculosis</i>

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 third quarter of 2005. There were 29 IID outbreaks reported during this period, resulting in at least 247 people being ill. The most common cause of IID outbreaks was *E. coli* with 10 outbreaks (34% of all outbreaks). There were 6 suspect foodborne outbreaks: 1 *Campylobacter spp.*, 1 *Shigella*, 1 AIG, 1 *Salmonella*, and 2 *E. coli* O157. There was 1 waterborne outbreak reported, a family outbreak of *E. coli* O157. 7 outbreaks (24%) were reported to have occurred in healthcare settings, i.e. hospitals or residential institutions, during this period.

There were 4 non-IID outbreaks (2 Mumps, 1 legionella and 1 TB) reported during Quarter 3 - see Table 2.

Table 3. No of IID outbreaks per HSE region

HSE area	No of IID outbreaks	Rate per 100,000 population
E	14	1.0
M	5	2.2
MW	1	0.3
NE	0	-
NW	0	-
SE	4	0.9
S	5	0.9
W	0	-

NOTIFICATIONS OF INFECTIOUS INTESTINAL AND ZOOBOTIC DISEASE

The number of notifications of infectious intestinal and zoonotic disease by HSE-Area and month for the third quarter of 2005 is shown in Table 4.

Table 4. Intestinal Infectious and Zoonotic Disease Notifications Quarter 3 2005 by HSE-Area

Infectious Intestinal Disease	E	M	MW	NE	NW	SE	S	W	Total
Acute infectious gastroenteritis (incl. rotavirus)	40	36	5	12	18	9	25	1	146
<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	190	62	39	41	32	60	60	51	535
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	2	10	13	10	6	9	16	8	74
Enterohaemorrhagic <i>Escherichia coli</i>	15	7	4	2	3	10	7	5	53
Giardiasis	7	1	0	1	4	2	0	1	16
Listeriosis	0	2	1	1	0	0	1	0	5
Noroviral infection	13	0	18	4	3	1	2	0	41
Paratyphoid	0	0	0	0	0	0	0	0	0
Salmonellosis	48	6	8	13	8	24	17	12	136
Shigellosis	5	1	4	0	0	1	4	1	16
Staphylococcal food poisoning	0	0	0	0	0	0	0	0	0
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	1	11	0	0	0	0	0	12
Echinococcosis	0	0	0	0	0	0	0	0	0
Leptospirosis	0	0	0	0	4	1	2	0	7
Plague	0	0	0	0	0	0	0	0	0
Q Fever	0	0	1	1	0	0	1	0	3
Toxoplasmosis	5	2	0	0	0	3	0	0	10
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 HSE-Area and month for the third quarter of 2005. Comparison of trends with previous years is shown in Figure 1 below.

Table 5. Salmonellosis Notifications by HSE-Area and Month, Q3 2005

Salmonellosis	E	M	MW	NE	NW	SE	S	W	Total
Jul	11	1	3	3	0	4	1	5	28
Aug	18	1	1	6	5	17	8	4	60
Sep	19	4	4	4	3	3	8	3	48
Total	48	6	8	13	8	24	17	12	136

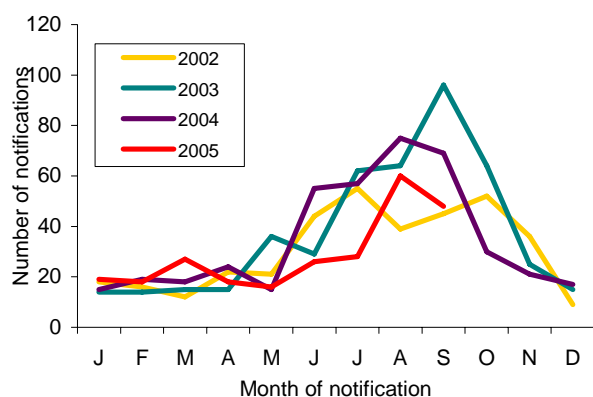


Figure 1. Seasonal Distribution of Human Salmonellosis Notifications, 2002-2004 and to end Q3 2005

Table 6 shows the *S. enterica* isolates typed by the NSRL in the third quarter of 2005 (n=140). The commonest human serotypes isolated were *S.*

Enteritidis (n=73 [52%]) and *S. Typhimurium* (n=25 [18%]).

23 (16%) 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 3, 2005.

Outbreaks of salmonellosis

There were six small outbreaks (all family outbreaks) of salmonellosis reported in Q3, 2005 (see Table 1).

Table 6. Serotypes of *S. enterica* referred to NSRL in Quarter 3, 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
Agona	1	0	0	1	1	5	0	0	8
Anatum	1	0	1	0	0	0	0	0	2
Blockley	0	0	1	0	0	0	0	0	1
Bredeney	0	0	1	0	0	1	0	0	2
Bukavu	1	0	0	0	0	0	0	0	1
Corvallis	1	0	0	0	0	0	0	0	1
Dublin	0	0	0	0	0	0	1	0	1
Enteritidis	30	5	5	5	1	11	11	5	73
Hadar	3	0	1	0	0	1	2	0	7
Infantis	0	0	0	0	0	1	0	0	1
Java	0	1	0	0	0	0	0	1	2
Kentucky	0	1	0	0	0	0	0	0	1
Newport	2	0	0	0	0	0	0	0	2
Oranienburg	0	0	0	0	1	0	0	0	1
Rissen	1	0	0	0	0	0	0	0	1
Sandiego	0	0	0	0	0	0	0	1	1
Stanley	1	0	0	0	0	1	1	1	4
Tennessee	1	0	0	0	0	0	0	0	1
Typhimurium	11	2	2	3	1	4	0	2	25
Unnamed	0	0	0	0	0	0	1	0	1
Virchow	1	1	0	0	0	0	1	0	3
Worthington	0	0	0	0	0	1	0	0	1
Total	54	10	11	9	4	25	17	10	140

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 Q3 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.

53 EHEC were notified in this quarter, 49 of which were confirmed or probable VTEC (Table 7). This compares with 29 VTEC cases notified in Q3 2004 (Figure 2). Table 7 shows the number of VTEC cases reported by serogroup and month, Q3 2005.

Table 7. Confirmed VTEC Notified by Serogroup and Month, Q3 2005

VTEC	O157	O26	O6	Total
Jul	5 ^a	1	0	6
Aug	21	1	1	23
Sep	16 ^b	4	0	20
Total	42	6	1	49

^a one case confirmed by serology as O157 but co-infected with *E. coli* O21

^b one case confirmed only by serology

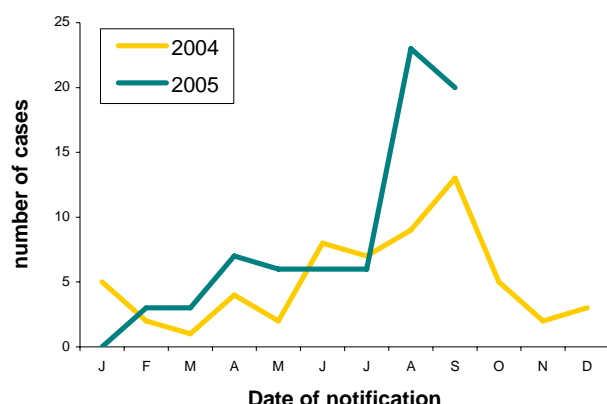


Figure 2. Seasonal Distribution of Confirmed VTEC cases notified 2004, and to Q3 2005

Enhanced information is provided by HSE-Area personnel on all VTEC cases. Seven VTEC cases notified in this quarter developed 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. Tables 8 and 9 show the phage types and VT types of VTEC isolates referred to this laboratory in Q3 2005.

Table 8. Phage Types of VTEC O157 isolates referred to the HSE SWA Public Health Laboratory, Cherry Orchard Hospital in Q3 2005. (Data are provided courtesy of Dr. Eleanor McNamara and Dr. Anne Carroll).

Phage type	Number of isolates
32	23
8	6
31	5
21/28	1
49	1
14	1
Not yet available	3
Total	40

Table 9. Verotoxin typing results of VTEC isolates referred to the HSE SWA Public Health Laboratory, Cherry Orchard Hospital in Q3 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	35	5	40
<i>E. coli</i> O26	1	0	5	6
<i>E. coli</i> O6	1	0	0	1
<i>E. coli</i> O21	0	1	0	1
Total	2	35	10	48

Outbreaks of VTEC infection

10 family outbreaks of VTEC infections were reported during Q3 2005, 8 due to *E. coli* O157 and 2 due to *E. coli* O26. The modes of transmission and numbers ill in each outbreak are reported in Table 1.

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 third quarter of 2005 are shown in Table 10. The seasonal trend is broadly similar to 2004 with a peak in cases noted in June, as depicted in Figure 3.

Table 10. Campylobacter Notifications by HSE-Area and Month, Q3 2005

Campylobacter Infection	E	M	MW	NE	NW	SE	S	W	Total
Jul	54	27	9	18	6	22	21	22	179
Aug	78	16	20	11	16	24	30	16	211
Sep	58	19	10	12	10	14	9	13	145
Total	190	62	39	41	32	60	60	51	535

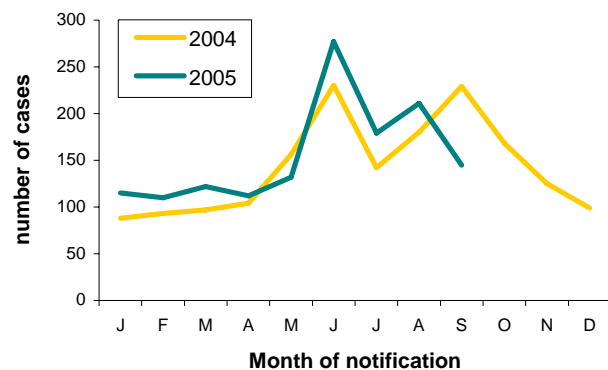


Figure 3. Seasonal distribution of Campylobacter cases 2004 and to end Q3 2005

Outbreaks of campylobacter infection

Two family outbreaks of Campylobacter infection were reported in Q3 2005 (Table 1).

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 Q3 2005, 74 cases of cryptosporidiosis were notified (Table 11), compared to 86 in same period last year (Figure 4).

Table 11. Cryptosporidiosis Notifications by HSE-Area and Month, Q3 2005

Cryptosporidiosis	E	M	MW	NE	NW	SE	S	W	Total
Jul	0	7	2	6	1	3	6	5	30
Aug	2	0	6	4	2	3	7	2	26
Sep	0	3	5	0	3	3	3	1	18
Total	2	10	13	10	6	9	16	8	74

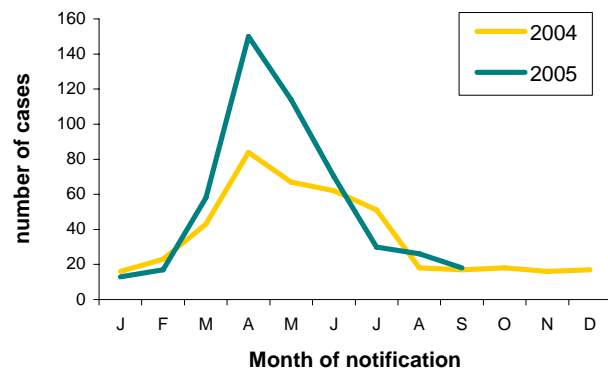


Figure 4. Seasonal distribution of cryptosporidiosis notifications 2004 and to end Q3 2005

Outbreak of cryptosporidiosis

A family outbreak of cryptosporidiosis was reported by HSE-S; 2 people were hospitalised.

NOROVIRUS

Human noroviral infection became a notifiable disease on January 1st 2004. There were 41 cases reported in the third 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 third quarter of 2005 there were five outbreaks confirmed or suspected to be caused by this virus,

involving at least 142 people becoming ill, as outlined in Table 1.

Table 12. Norovirus Notifications by HSE-Area and Month, Q3 2005

Noroviral Infection	E	M	MW	NE	NW	SE	S	W	Total
Jul	10	0	6	2	1	0	1	0	20
Aug	2	0	7	1	2	1	1	0	14
Sep	1	0	5	1	0	0	0	0	7
Total	13	0	18	4	3	1	2	0	41

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.

Five cases of listeriosis were notified in Q3 2005 (Table 4) compared to 4 in the same period last year, all 5 were 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 Q3 2005, 16 cases of shigellosis were notified (Table 4). This compares with 21 cases notified as shigellosis in quarter 3 in 2004 and 9 as bacillary dysentery in 2003.

Eleven cases were reported as *S. sonnei*, 4 as *S. flexneri*, and the species was not specified for the remaining case.

Outbreak of shigellosis

A family outbreak of shigellosis was reported by the Mid-West Area. Three people were reported ill and the suspected mode of transmission was foodborne.

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 3 2005, 16 cases of giardiasis were notified (Table 4), the same as were notified in Q3 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)'.

No cases of foodborne intoxication were notified in Q3 2005 (Table 4).

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 3 2005, there were 146 notifications of acute infectious gastroenteritis. 110 were reported as rotavirus (Table 13) and 75% of these were in children under 2 years of age.

Table 13. Rotaviral Infections Notified under the Category of 'Acute Infectious Gastroenteritis' by HSE-Area and Month, Q3 2005

Rotaviral Infection	E	M	MW	NE	NW	SE	S	W	Total
Jul	22	12	2	9	6	7	11	1	70
Aug	8	0	3	1	8	1	10	0	31
Sep	2	1	0	1	3	1	1	0	9
Total	32	13	5	11	17	9	22	1	110

NON-IID ZOONOTIC 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 HSE-Area in Table 4.

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

There were 12 cases of brucellosis reported during this quarter compared with 16 in Q3 2004 or 2003.

Seven cases of leptospirosis were notified in Q3 2005; this compares with one in Q3 2004 and one in Q3 2003.

Three cases of Q fever were also notified, compared to one in Q3 2004.

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