

# SURVEILLANCE OF INFECTIOUS INTESTINAL (IID) AND ZONOTIC DISEASE



**A quarterly report by the National Disease Surveillance Centre in collaboration with the Departments of Public Health**

**Quarter 1 –2004**

**May 2004**

This is the first quarterly report produced by the Gastroenteric Unit of the National Disease Surveillance Centre. These quarterly reports will provide surveillance data and information on a range of gastroenteric and zoonotic pathogens for the preceding quarter. It is hoped to publish the Report within six weeks of the end of each quarter in order to ensure that the information is as up to date as possible.

This Report covers an extremely important period in the surveillance of infectious disease in Ireland. On 1st January 2004, an amendment to the Infectious Diseases Regulations 1981 (Infectious Diseases (Amendment) (No. 3) Regulations 2003, S.I. No. 707 of 2003) established a revised list of notifiable diseases. The former list of notifiable infectious diseases was replaced by a new expanded list of 65 pathogens and conditions. For the first time, there is a requirement for Laboratory Directors to report infectious diseases. In addition, noroviral illness, Acute Infectious Gastroenteritis, campylobacteriosis, illness caused by enterohaemorrhagic *E. coli*, cryptosporidiosis, giardiasis, listeriosis and clusters of illness including outbreaks became reportable. The categories 'Gastroenteritis in children under 2 years' and 'Food Poisoning (bacterial other than salmonella)' are no longer included on the list of notifiable diseases. (For a full list of diseases please see <http://www.ndsc.ie/IDStatistics/ChangestoNotificationofInfectiousDiseases/SI707.pdf>).

There have been two important publications in the field of intestinal infectious disease recently. *Guidelines on the Management of Outbreaks of Norovirus Infection in Healthcare Settings* was launched in December by the Minister of Health and Children, Mr Micheál Martin. This document provides a template for the management of this important cause of IID, and can be accessed at <http://www.ndsc.ie/Publications/>

The Food Safety Authority of Ireland (FSAI) published the first national zoonosis report, *Report on Zoonoses in Ireland 2000 & 2001*. The report was a joint collaboration between the FSAI, the National Disease Surveillance Centre and the Department of Agriculture and Food. It brings together for the first time human, food and foodstuffs, and veterinary data on the important zoonotic diseases in Ireland. It can be accessed at [http://www.fsai.ie/publications/reports/Zoonoses\\_report.pdf](http://www.fsai.ie/publications/reports/Zoonoses_report.pdf)

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 information to the NDSC's surveillance systems.

***Note: The data in this report are provisional and will not be regarded as final until all returns are received and data have been validated. In addition, certain 2003 data remain provisional.***

## SURVEILLANCE OF OUTBREAKS OF IID

**Table 1. Outbreaks of IID reported to NDSC in Quarter 1, 2004**

Month	HB	Type of Outbreak	Location	No. ill	No. Hosp	Date Onset	Suspected Mode of Transmission	Organism
Jan	ERHA	General	Residential Institution	26	0	03/01/2004	P-P	Suspect viral
Jan	ERHA	General	Residential Institution	83	0	02/01/2004	P-P	Norovirus
Jan	MHB	General	Residential Institution	25	0	NK	P-P	Suspect viral
Jan	ERHA	General	Hospital	5	0	25/01/2004	Unknown	Suspect viral
Jan	ERHA	General	Residential Institution	27	0	NK	P-P	Suspect viral
Jan	SHB	General	Hotel	6	0	03/01/2004	Unknown	Suspect viral
Jan	MWHB	General	Hospital	24	0	05/01/2004	P-P	Norovirus
Feb	ERHA	General	Hospital	16	0	20/02/2004	P-P	Suspect viral
Feb	ERHA	General	Hospital	18	0	15/02/2004	P-P	Norovirus
Feb	SEHB	General	Hospital	3	0	24/02/2004	Waterborne	<i>Cryptosporidium</i> spp
Feb	SHB	General	Hospital	38	0	26/02/2004	P-P	Suspect viral
Feb	SHB	General	Hospital	40	0	09/02/2004	P-P	Norovirus
Feb	SEHB	General	Residential Institution	27	0	27/02/2004	P-P	Suspect viral
Feb	NEHB	Family	Private Home	1	1	05/02/2004	Waterborne	<i>E. coli</i> O157
Feb	SHB	General	Hospital	41	0	NK	P-P	Norovirus
Feb	MWHB	General	Hospital	76	0	03/02/2004	P-P	Norovirus
Feb	NWHB	General	Hospital	43	0	17/02/2004	P-P	Norovirus
Mar	ERHA	General	Residential Institution	9	0	22/03/2004	P-P	Norovirus
Mar	NEHB	General	Hospital	18	0	26/03/2004	P-P	Norovirus
Mar	SEHB	Family	Private Home	2	1	10/03/2004	P-P	<i>Salmonella</i> Virchow
Mar	SHB	General	Hospital	12	0	12/03/2004	P-P	Suspect viral
Mar	SHB	General	Hospital	11	0	NK	P-P	Suspect viral
Mar	SHB	General	Residential Institution	2	0	14/03/2004	P-P	Suspect viral
Mar	SHB	General	Hospital	5	0	06/03/2004	P-P	Suspect viral
Mar	SHB	General	School	7	0	29/03/2004	P-P	Suspect viral
Mar	SHB	General	Hospital	NK	0	NK	P-P	Suspect viral
Mar	SEHB	General	Residential Institution	10	0	09/03/2004	P-P	Suspect viral
Mar	ERHA	General	Hospital	6	0	22/03/2004	P-P	Suspect viral
Mar	ERHA	General	Hospital	30	0	03/03/2004	P-P	Norovirus
Mar	SHB	General	Residential Institution	13	0	18/03/2004	P-P	Suspect viral
Mar	ERHA	General	Residential Institution	11	0	12/03/2004	P-P	Suspect viral
Mar	SHB	General	Hospital	9	0	11/03/2004	P-P	Suspect viral

P-P denotes person to person transmission; NK – not known

Since July 2001, outbreaks have been reported to the NDSC. 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 1<sup>st</sup> 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 NDSC in the first quarter of 2004. There were thirty-two outbreaks

reported during this period, resulting in 644 people being ill. Ten outbreaks were confirmed to be due to norovirus, with nineteen outbreaks reported as suspect viral aetiology. This resulted in 91% of all outbreaks reported being confirmed or suspected norovirus. There were two waterborne outbreaks reported, one *E. coli* O157:H7 and one *Cryptosporidium* sp. Twenty-eight outbreaks (87.5%) occurred in healthcare settings, hospitals or residential institutions. The majority of reported outbreaks occurred in the SHB region (12), followed by the ERHA (10).

## NOTIFICATIONS OF INTESTINAL INFECTIOUS AND ZOO NOTIC DISEASE

The number of notifications of intestinal infectious and zoonotic disease by health board and month for the first quarter of 2004 is shown in Table 2.

**Table 2. Intestinal Infectious and Zoonotic Disease Notifications Quarter 1 2004 by Health Board**

Infectious Intestinal Disease	E	M	MW	NE	NW	SE	S	W	Total
Acute infectious gastroenteritis (incl. rotavirus)	174	99	8	37	21	197	228	29	793
<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	99	22	7	24	15	35	32	30	264
Cholera	0	0	0	0	0	0	0	0	0
Clostridium perfringens (type A) food-borne disease	1	0	0	0	0	0	0	0	1
Cryptosporidiosis	1	14	2	4	6	24	18	11	80
Enterohaemorrhagic <i>Escherichia coli</i> <sup>a</sup>	3	0	0	2	4	0	1	1	11
Giardiasis	2	1	0	0	0	1	0	0	4
Listeriosis	1	1	0	0	0	0	0	0	2
Noroviral infection	13	0	1	0	0	5	1	3	23
Paratyphoid	0	0	0	0	0	0	0	0	0
Salmonellosis	22	5	4	7	2	4	8	0	52
Shigellosis	5	0	0	0	0	1	0	0	6
Staphylococcal food poisoning	1	1	0	0	0	0	0	0	2
Typhoid	1	0	0	0	0	0	0	0	1
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	1	0	0	0	1	0	2
Echinococcosis	0	0	0	0	0	0	0	0	0
Leptospirosis	0	0	1	1	1	0	1	0	4
Plague	0	0	0	0	0	0	0	0	0
Q Fever	0	0	0	0	0	0	0	0	0
Toxoplasmosis	0	0	1	0	0	0	0	0	1
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

<sup>a</sup>includes some cases whose date of onset was in 2003

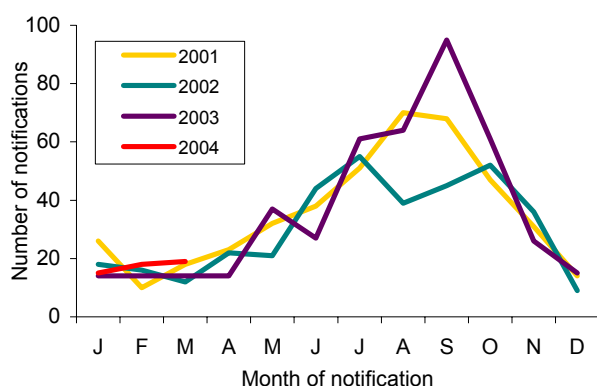
## SALMONELLA ENTERICA

Human salmonellosis (*S. enterica*) is a notifiable disease. There is a National Reference Laboratory for Salmonella (NSRL) in Ireland that was established in the year 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 3 shows the number of salmonellosis notifications by health board and month for the first quarter of 2004. The seasonal trend is broadly similar to the same period for the past three years as depicted in Figure 1 below.

**Table 3. Salmonellosis notifications by Health Board and month, Q1 2004**

Salmonellosis	E	M	MW	NE	NW	SE	S	W	Total
Jan	5	1	3	2	1	0	3	0	15
Feb	9	2	1	4	1	1	0	0	18
Mar	8	2	0	1	0	3	5	0	19
Total	22	5	4	7	2	4	8	0	52



**Figure 1. Seasonal Distribution of Human Salmonellosis Notifications, 2001-2003 and Q1 2004**

Table 4 shows the *Salmonella enterica* isolates typed by the National Reference Laboratory in the first quarter of 2004 (n=57). The commonest human serotype isolated was *S. Enteritidis* (n=19 [33.3%])

followed by *S. Typhimurium* (n=17 [29.8%]). There were four isolates each of *S. Kottbus* and *S. Havana* during this period.

7/57 (12%) of *S. enterica* isolates were reported to be associated with travel outside of Ireland during this quarter.

### Salmonellosis outbreak

There was one small family outbreak due to *S. Virchow* during this period. One of the cases was hospitalised. It is understood that the infection was acquired abroad.

### *S. Typhi* and *S. Paratyphi*

There were no cases of paratyphoid and just one case of typhoid fever notified during quarter 1. The typhoid case was associated with travel to Pakistan.

**Table 4. Serotypes of *S. enterica* referred to NSRL in quarter 1, 2004** (Data are provided courtesy of Prof. Martin Cormican and Dr Geraldine Corbett-Feeney, NSRL)

Serotype	E	M	MW	NE	NW	SE	S	W	Total
Albany	1	0	0	0	0	0	0	0	1
Bredeney	1	0	0	0	0	0	0	0	1
Chester	0	0	0	0	0	1	0	0	1
Derby	0	0	0	0	1	0	0	0	1
Dublin	1	0	0	0	0	1	0	0	2
Enteritidis	8	2	2	3	0	1	3	0	19
Havana	4	0	0	0	0	0	0	0	4
Heidelberg	1	0	0	0	0	0	0	0	1
Kottbus	0	4	0	0	0	0	0	0	4
Newport	1	0	0	0	0	0	0	0	1
Typhi	1	0	0	0	0	0	0	0	1
Typhimurium	3	5	1	3	1	1	3	0	17
Unknown	1	0	0	0	0	0	0	0	1
Virchow	0	0	0	0	0	1	0	0	1
Weltevreden	0	0	0	1	0	0	0	0	1
Wien	0	0	0	0	0	0	0	1	1
Total	22	11	3	7	2	5	6	1	57

## 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 2004 is shown in Table 2. Under the legislation, it is required that information on EHEC be gathered and reported. Because of their clinical and public health importance, it is important to distinguish between those isolates that are verotoxin-producers and those that are not. All EHEC notified in this quarter were *E. coli* serogroup O157 and all were verotoxin positive.

### Enhanced surveillance of VTEC O157

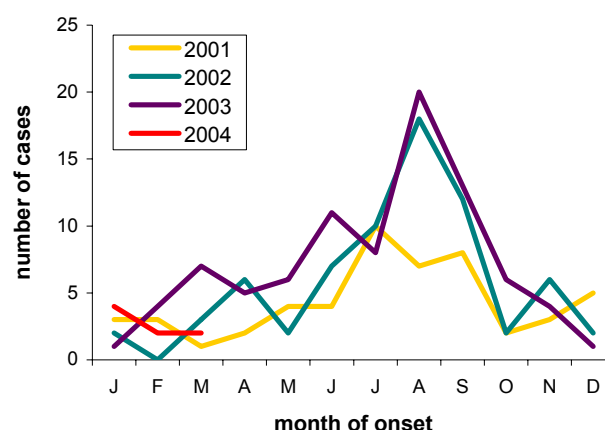
Since 1999, enhanced information has been provided on all cases of verotoxigenic *E. coli* O157. The number of cases reported here is based on date of onset and these figures may differ from the number of cases notified by individual health boards during the quarter.

**Table 5. Confirmed VTEC O157 reported to the enhanced surveillance system by Health Board and month, Q1 2004**

VTEC O157	E	M	MW	NE	NW	SE	S	W	Total
Jan	2	0	0	0	0	0	1	1	4
Feb	0	0	0	2	0	0	0	0	2
Mar	1	0	0	0	0	0	1	0	1
Total	3	0	0	2	0	0	2	1	8

Eight confirmed cases of VTEC O157 were reported which had a date of onset between January 1<sup>st</sup> and March 31st 2004 (Table 5), 6 males and 2 females. This compares with 11 cases in Q1 2003, and 5 cases in Q1 2002 (Figure 2).

One additional suspected case of VTEC was reported by the SHB.



**Figure 2. Seasonal distribution of confirmed VTEC O157 cases, 2001-2003 and Q1 2004**

### Outbreak of VTEC O157

One family outbreak was reported comprising an HUS case and an asymptomatic carrier. The family home was served by a private water supply, which was subsequently found to be contaminated with verotoxin positive *E. coli* O157<sup>1</sup>.

<sup>1</sup> Finnegan, P. 2004. Outbreak of VTEC O157 in the North Eastern Health Board. Epi-Insight 5(4):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 first quarter of 2004 are shown in Table 6, with the highest number recorded in February.

**Table 6. Campylobacter notifications by Health Board and month, Q1 2004**

Campylobacter Infection	E	M	MW	NE	NW	SE	S	W	Total
Jan	30	4	3	12	6	9	13	6	83
Feb	43	10	3	3	0	14	10	11	94
Mar	26	8	1	9	9	12	9	13	87
Total	99	22	7	24	15	35	32	30	264

## CRYPTOSPORIDIUM

**Table 7. Cryptosporidiosis notifications by Health Board and month, Q1 2004**

Cryptosporidiosis	E	M	MW	NE	NW	SE	S	W	Total
Jan	0	4	1	3	2	1	3	1	15
Feb	0	2	1	0	0	10	6	3	22
Mar	1	8	0	1	4	13	9	7	43
Total	1	14	2	4	6	24	18	11	80

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'. The number of cryptosporidiosis cases notified in Q1 2004 is shown in Table 7.

### Cryptosporidiosis outbreak

One waterborne outbreak of cryptosporidiosis was reported in Q1 2004 in the SEHB in which 3 persons were reported ill (Table 1)

## NOROVIRUS

Human noroviral infection became a notifiable disease on January 1st 2004. There were 23 cases reported in the first quarter of 2004, as shown in Table 6. 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 2004 there were 29 outbreaks confirmed or suspected to be caused by this virus, representing 91% of outbreaks reported to NDSC

during this period, and involving at least 638 people becoming ill, as outlined in Table 1.

**Table 8. Norovirus notifications by Health Board and month, Q1 2004**

Noroviral Infection	E	M	MW	NE	NW	SE	S	W	Total
Jan	0	0	0	0	0	0	1	3	4
Feb	4	0	1	0	0	1	0	0	6
Mar	9	0	0	0	0	4	0	0	13
Total	13	0	1	0	0	5	1	3	23

## LISTERIA

Human listeriosis became a notifiable disease on January 1<sup>st</sup> 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 Q1 2004 (Table 2). One was reported as being pregnancy-associated, resulting in an intrauterine death.

## 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'.

Four cases of giardiasis were notified in Q1 2004 (Table 2).

## 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 2004, 6 cases of shigellosis were notified (Table 2). This compares with 7 cases notified as bacillary dysentery in quarter 1 in 2003 and 5 in 2002.

## ACUTE INFECTIOUS GASTROENTERITIS incl. ROTAVIRUS

Since 1<sup>st</sup> 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 2004, there were 793 notifications of acute infectious gastroenteritis. 659 were reported as rotavirus (Table 9) and 86% of these were under 2 years of age.

**Table 9. Rotaviral infections notified under the category of 'Acute Infectious Gastroenteritis' by Health Board and month, Q1 2004**

Rotaviral Infection	E	M	MW	NE	NW	SE	S	W	Total
Jan	23	41	1	6	3	60	56	2	192
Feb	26	24	3	3	3	60	51	15	185
Mar	38	32	3	17	9	62	111	10	282
Total	87	97	7	26	15	182	218	27	659

## FOODBORNE INTOXICATIONS

*Bacillus cereus* foodborne infection/intoxication, botulism, *Clostridium perfringens* (type A) food-borne 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 *Clostridium perfringens* food poisoning and 2 cases of staphylococcal food poisoning were reported in Q1 2004 (Table 2).

## NON-IID ZOONOTIC DISEASES

Non-IID zoonoses now notifiable include: anthrax, brucellosis, echinococcosis, leptospirosis, plague, Q Fever, toxoplasmosis, trichinosis, typhus and rabies. The Q1 2004 notifications of these zoonotic diseases are reported by health board in Table 2.

Four cases of leptospirosis were notified, the same as for Q1 2003; two cases were reported as being associated with animal contact. Two cases of brucellosis were notified this quarter as compared with 3 in Q1 2003 and none in Q1 2003. One case of toxoplasmosis was notified in this quarter.

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