

# **SURVEILLANCE of INFECTIOUS INTESTINAL (IID), ZOO NOTIC AND VECTORBORNE DISEASE, and OUTBREAKS of INFECTIOUS DISEASE**



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

**Quarter 1 –2009**

**June 2009**

This is the first quarterly report for 2009 produced by the Gastroenteric Unit of the Health Protection Surveillance Centre.

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 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. General Outbreaks of Infectious Intestinal Disease (IID) in Quarter 1, 2009**

Month	HSE area	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Jan	NE	Comm. Hosp/Long-stay unit	10	10	-	P-P	Norovirus
Jan	E	Residential institution	32	-	-	Not Specified	Norovirus
Jan	NE	Residential institution	12	10	-	P-P and AB	Norovirus
Jan	NE	Hospital	74	56	03/01/2009	P-P and AB	Norovirus
Jan	E	Hospital	717	-	01/01/2009	P-P	Norovirus
Jan	SE	Residential institution	29	-	02/01/2009	P-P	Norovirus
Jan	NW	Other	7	0	27/12/2008	P-P	AIG
Jan	NW	Residential institution	12	0	30/12/2008	P-P	AIG
Jan	NW	Residential institution	4	0	31/12/2008	P-P	AIG
Jan	E	Residential institution	6	-	06/01/2009	P-P	Clostridium difficile
Jan	E	Hospital	476	-	31/12/2008	Not Specified	Norovirus
Jan	E	Residential institution	29	-	-	P-P	Norovirus
Jan	E	Residential institution	16	-	09/01/2009	P-P	Norovirus
Jan	E	Residential institution	17	-	-	Unknown	Norovirus
Jan	NE	Hospital	5	5	11/01/2009	P-P	Norovirus
Jan	S	Childminder	1	1	06/12/2008	P-P	EHEC
Jan	NW	Residential institution	10	0	-	P-P	Norovirus
Jan	E	Other	7	-	-	Not Specified	Norovirus
Jan	M	Hospital	67	0	30/12/2008	P-P and AB	Norovirus
Jan	M	Comm. Hosp/Long-stay unit	12	0	12/12/2008	P-P and AB	Norovirus
Jan	E	Residential institution	49	-	14/01/2009	P-P	Norovirus
Jan	S	Comm. Hosp/Long-stay unit	-	-	-	P-P	Norovirus
Jan	E	Hospital	47	-	12/01/2009	Not Specified	Norovirus
Jan	W	Hospital	4	4	06/01/2009	P-P	Norovirus
Jan	MW	Hospital	4	4	07/01/2009	P-P	Norovirus
Jan	SE	Hospital	21	-	07/01/2009	P-P	Norovirus
Jan	E	Residential institution	17	-	12/01/2009	Not Specified	Norovirus
Jan	E	Comm. Hosp/Long-stay unit	8	-	20/01/2009	Not Specified	AIG
Jan	S	Comm. Hosp/Long-stay unit	10	-	-	P-P	Norovirus
Jan	SE	Residential institution	11	-	19/01/2009	P-P	Suspected Norovirus
Jan	SE	School	54	0	07/01/2009	P-P	Suspected Norovirus
Jan	SE	School	20	0	07/01/2009	P-P	Suspected Norovirus
Jan	NE	Residential institution	12	0	22/01/2009	P-P	AIG
Jan	NW	Residential institution	20	0	22/01/2009	P-P	Norovirus
Jan	W	Hospital	17	-	02/01/2009	P-P	Suspected Norovirus
Jan	NE	Residential institution	26	-	27/01/2009	P-P and AB	Norovirus
Jan	E	Residential institution	41	-	27/01/2009	P-P	Norovirus
Jan	E	Other	13	-	14/01/2009	P-P	AIG
Jan	S	Other	4	0	-	P-P	Norovirus
Jan	S	Other	2	-	-	P-P	Norovirus
Jan	SE	Hospital	117	-	07/12/2008	P-P	Norovirus
Jan	MW	Hospital	4	4	27/01/2009	P-P	Norovirus

Jan	NE	Residential institution	25	0	-	AB	Norovirus
Feb	NE	Residential institution	10	0	-	P-P	Norovirus
Feb	NW	Comm. Hosp/Long-stay unit	20	-	-	P-P	Norovirus
Feb	NW	Comm. Hosp/Long-stay unit	21	-	-	P-P	Norovirus
Feb	S	Hospital	4	0	-	P-P and AB	Norovirus
Feb	E	Residential institution	8	-	04/02/2009	P-P	Norovirus
Feb	NW	Comm. Hosp/Long-stay unit	31	0	-	P-P	Norovirus
Feb	E	Comm. Hosp/Long-stay unit	18	-	16/01/2009	Not Specified	Norovirus
Feb	E	Hospital	18	-	-	Not Specified	Norovirus
Feb	SE	Hospital	50	-	01/02/2009	P-P and AB	Norovirus
Feb	M	Hotel	6	0	01/02/2009	Unknown	Norovirus
Feb	M	Comm. Hosp/Long-stay unit	3	0	-	P-P and AB	Norovirus
Feb	W	Hospital	4	4	04/02/2009	P-P	AIG
Feb	E	Residential institution	27	1	15/02/2009	P-P	AIG
Feb	E	Residential institution	15	-	14/02/2009	Not Specified	Norovirus
Feb	W	Residential institution	10	-	14/02/2009	P-P	AIG
Feb	NW	Creche	6	2	-	P-P	Rotavirus
Feb	W	Residential institution	15	-	13/02/2009	P-P	Norovirus
Feb	W	Residential institution	5	1	14/02/2009	P-P	AIG
Feb	W	Hospital	11	-	16/02/2009	P-P	Suspected Norovirus
Feb	MW	Residential institution	17	-	10/02/2009	P-P	Norovirus
Feb	NE	Other	16	0	-	P-P	Norovirus
Feb	M	Comm. Hosp/Long-stay unit	8	8	09/02/2009	Not Specified	Norovirus
Feb	NE	Hospital	16	16	-	P-P	Norovirus
Feb	S	Comm. Hosp/Long-stay unit	8	0	-	P-P and AB	Norovirus
Feb	S	Hospital	7	-	-	P-P and AB	Norovirus
Feb	S	Comm. Hosp/Long-stay unit	6	0	-	P-P and AB	Norovirus
Feb	E	Comm. Hosp/Long-stay unit	16	-	20/02/2009	P-P	Norovirus
Feb	MW	Hospital	10	-	18/02/2009	P-P	Norovirus
Feb	MW	Hospital	6	-	07/02/2009	P-P	Norovirus
Feb	S	Residential institution	24	0	-	Not Specified	Norovirus
Feb	E	Residential institution	22		21/02/2009	P-P	Norovirus
Feb	NE	Hospital	18	14	-	P-P	Norovirus
Feb	NW	Residential institution	9	0	21/02/2009	P-P	AIG
Feb	S	Comm. Hosp/Long-stay unit	-	-	25/02/2009	Not Specified	AIG
Feb	E	Residential institution	18		05/02/2009	P-P	AIG
Mar	E	Comm. Hosp/Long-stay unit	54	-	27/02/2009	Not Specified	Norovirus
Mar	S	Not Specified	7	0	-	Not Specified	Norovirus
Mar	NW	Comm. Hosp/Long-stay unit	15	0	-	P-P and AB	Norovirus
Mar	NW	Comm. Hosp/Long-stay unit	26	-	-	P-P and AB	Norovirus
Mar	NW	Hospital	2	1	-	P-P	Norovirus
Mar	S	Hospital	9	-	-	P-P and AB	Norovirus
Mar	S	Residential institution	-	-	06/03/2009	Not Specified	Norovirus
Mar	M	Comm. Hosp/Long-stay unit	-	-	-	P-P	Norovirus
Mar	SE	Comm. Hosp/Long-stay unit	15	4	24/02/2009	P-P	Norovirus
Mar	M	Hospital	-	-	-	P-P	Norovirus

Mar	NW	Comm. Hosp/Long-stay unit	36	0	08/03/2009	P-P	AIG
Mar	SE	Residential institution	6	-	02/03/2009	P-P	Suspected Norovirus
Mar	MW	Hospital	3	3	01/03/2009	Unknown	Clostridium difficile
Mar	SE	Comm. Hosp/Long-stay unit	25	0	24/02/2009	P-P	Suspected Norovirus
Mar	NW	Hospital	11	8	-	P-P	Norovirus
Mar	E	Residential institution	54	1	12/03/2009	P-P and AB	AIG
Mar	M	Residential institution	6	-	16/03/2008	P-P and AB	Norovirus
Mar	NE	Residential institution	11	0	-	P-P and AB	Norovirus
Mar	NW	Creche	5	0	-	P-P	Rotavirus
Mar	E	Residential institution	32	-	13/03/2009	Not Specified	Norovirus
Mar	M	Residential institution	19	-	19/01/2009	P-P and AB	Norovirus
Mar	SE	Residential institution	8	-	10/03/2009	P-P	Suspected Norovirus
Mar	E	Residential institution	8	-	13/03/2009	Not Specified	Norovirus
Mar	E	Residential institution	16	-	23/04/2009	Not Specified	Norovirus
Mar	E	Residential institution	42	0	13/03/2009	Not Specified	AIG

P-P denotes Person-to-Person transmission, FB denotes foodborne, WB denotes waterborne; AB denotes airborne; AIG denotes Acute Infectious Gastroenteritis; EHEC denotes infection with Enterohaemorrhagic *E. coli*

\* Total numbers ill does not include asymptomatic cases

**Table 2. Family Outbreaks of Infectious Intestinal Disease (IID) in Quarter 1, 2009**

Month	HSE region	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Disease
Jan	NW	Private house	2	2	-	P-P	Rotavirus
Feb	M	Private house	2	1	24/01/2009	Unknown	EHEC
Feb	NW	Private house	2	0	-	P-P	Rotavirus
Mar	M	Private house	2	1	22/02/2009	P-P and Animal	EHEC
Mar	E	Private house	2	2	21/02/2009	P-P	Shigella
Mar	E	Private house	4	0	02/03/2009	FB and Animal	Campylobacter
Mar	MW	Private house	2	1	22/02/2009	Unknown	EHEC
Mar	NW	Private house	2	1	-	P-P	Cryptosporidium
Mar	E	Private house	2	0	14/03/2009	Not Specified	Campylobacter

P-P denotes Person-to-Person transmission, FB denotes foodborne, WB denotes waterborne; AB denotes airborne; AIG denotes Acute Infectious Gastroenteritis; EHEC denotes infection with Enterohaemorrhagic *E. coli*

\* Total numbers ill does not include asymptomatic cases

**Table 3. Non-IID Outbreaks in Quarter 1, 2009**

Month	HSE region	Type of outbreak	Location	No. ill *	No. Hosp.	Date Onset	Suspect mode of transmission	Organism
Jan	S	General	Residential institution	18	0	09/12/2009	Not Specified	Influenza like Illness (ILI)
Jan	W	General	Hospital	2	4	-	Unknown	MRSA
Jan	E	General	Residential institution	9	-	13/01/2009	Not Specified	Influenza
Jan	E	General	Private house	2	0	-	P-P	Hepatitis B
Jan	NE	General	Other	4	-	02/01/2009	P-P and AB	Varicella
Jan	W	General	Residential institution	24	-		Unknown	Influenza
Jan	W	General	Hospital	6	-	30/11/2008	P-P	ESBL <i>E. coli</i>
Jan	E	General	Creche	3	0	15/01/2009	P-P and AB	Suspected <i>Streptococcus pyogenes</i>
Jan	S	General	University/College	2	-	-	AB	Mumps
Jan	S	Family	Private house	4	-	19/12/2008	Not Specified	Mumps

Jan	E	General	University/College	3	0	06/01/2009	P-P and AB	Mumps
Feb	NE	Family	Private house	3	0	15/01/2009	AB	Mumps
Feb	E	Family	Private house	5	0	08/01/2009	P-P	Mumps
Feb	E	General	University/College	-	-	-	P-P and AB	Mumps
Feb	NE	General	Public house	4	0	27/12/2008	AB	Mumps
Feb	NE	General	School	7	1	23/01/2009	AB	Mumps
Feb	NE	Family	Private house	5	0	05/01/2009	AB	Mumps
Feb	NW	Family	Private house	2	0	10/02/2009	P-P	Mumps
Feb	W	General	Residential institution	11	-	21/01/2009	Unknown	Influenza
Feb	E	General	University/College	28	0	07/02/2009	P-P	Mumps
Feb	NW	Family	Private house	2	0	09/01/2009	P-P	Mumps
Feb	W	Family	Private house	2	-	24/01/2009	P-P	Mumps
Feb	E	General	School	7	-	10/10/2008	Not Specified	Tinea (Ringworm)
Feb	S	General	Creche	2	0	07/02/2009	P-P	Mumps
Feb	E	General	Creche	6	-	23/02/2009	Unknown	Rubella
Feb	E	General	University/College	3	0	-	P-P and AB	Mumps
Mar	NW	Family	Private house	2	0	09/02/2009	P-P	Mumps
Mar	E	Family	Private house	3	0	08/02/2009	P-P and AB	Mumps
Mar	E	General	University/College	3	-	21/02/2009	P-P	Mumps
Mar	E	General	University/College	2	-	-	P-P	Mumps
Mar	E	General	University/College	16	0	08/03/2009	P-P	Mumps
Mar	M	General	School	8	-	25/03/2009	P-P	Scarlet Fever
Mar	E	General	Other	3	-	13/03/2009	P-P and AB	Mumps
Mar	E	General	School	4	-	22/02/2009	P-P and AB	Mumps
Mar	E	General	School	3	-	14/10/2008	P-P and AB	Mumps
Mar	E	General	Residential institution	3	1	20/08/2008	Environmental / Fomite	ESBL E coli
Mar	NW	Family	Private house	3	0	16/03/2009	P-P	Rubella
Mar	NE	Family	Private house	2	0	17/03/2009	P-P	Mumps
Mar	NE	Family	Private house	3	0	20/02/2009	P-P	Mumps
Mar	E	General	Creche	4	-	05/03/2009	Not Specified	Varicella

P-P denotes Person-to-Person transmission, WB denotes waterborne; AB denotes airborne; IDU denotes Injecting Drug Use

\* Total numbers ill does not include asymptomatic cases

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 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'.

Tables 1 and 2 present a line listing of all general and family outbreaks of IID reported to HPSC in the first quarter of 2009. There were 103 general and 9 family IID outbreaks reported during this period, resulting in at least 2982 people being ill.

Norovirus was responsible for the majority of general outbreaks of IID (72% of all general outbreaks).

The most common cause of family outbreaks of IID was EHEC, with three outbreaks (33% of all family outbreaks) caused by this pathogen. The other pathogens responsible for family outbreaks were campylobacter, cryptosporidiosis, rotavirus and shigellosis. (Table 2).

Most general IID outbreaks were transmitted person-to-person (60%). Ninety general outbreaks (87%) were reported to have occurred in healthcare settings, i.e. hospitals or residential institutions, during this period.

There were forty non-IID outbreaks reported during Quarter 1 - see Table 3.

Table 4 outlines the outbreak rate per HSE-area for outbreaks notified during Q1 2009.

**Table 4. No. of infectious disease outbreaks per HSE region, Q1 2009**

HSE Area	No. of outbreaks	Rate per 100,000 population
<b>E</b>	50	3.3
<b>M</b>	12	5.0
<b>MW</b>	7	0.7
<b>NE</b>	19	5.0
<b>NW</b>	23	10.0
<b>SE</b>	11	2.4
<b>S</b>	18	7.0
<b>W</b>	12	8.3
<b>Total</b>	<b>152</b>	<b>3.6</b>

## NOTIFICATIONS OF INFECTIOUS INTESTINAL, ZONOTIC AND VECTORBORNE DISEASE

The number of notifications of infectious intestinal, zoonotic and vectorborne disease by HSE-Area for the first quarter of 2009 is shown in Table 5.

**Table 5. Intestinal Infectious, Zoonotic and Vectorborne Disease Notifications Quarter 1, 2009 by HSE-Area**

Infected Intestinal Disease	E	M	MW	NE	NW	SE	S	W	Total
Acute infectious gastroenteritis* (incl. rotavirus & <i>C. difficile</i> )	456	42	108	60	91	235	305	256	1553
<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	119	28	30	28	11	28	76	31	351
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	12	5	3	3	9	15	15	63
Enterohaemorrhagic <i>Escherichia coli</i>	1	4	6	0	2	1	1	2	17
Giardiasis	8	0	0	2	1	1	3	1	16
Listeriosis	1	0	0	0	0	1	0	0	2
Noroviral infection	461	73	116	175	52	41	186	93	1197
Paratyphoid	0	0	0	0	0	0	0	0	0
Salmonellosis	18	3	5	9	3	4	10	4	56
Shigellosis	11	1	2	0	0	0	0	1	15
Staphylococcal food poisoning	0	0	0	0	0	0	0	0	0
Typhoid	1	0	0	0	0	0	0	0	1
Yersiniosis	0	0	0	0	0	0	0	0	0
<b>Zoonotic Disease</b>									
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	1	0	2	1	0	0	0	1	5
Plague	0	0	0	0	0	0	0	0	0
Q Fever	0	0	0	1	0	0	2	0	3
Rabies	0	0	0	0	0	0	0	0	0
Toxoplasmosis	5	0	0	0	1	0	9	4	19
Trichinosis	0	0	0	0	0	0	0	0	0
Typhus	0	0	0	0	0	0	0	0	0
<b>Vectorborne Disease</b>									
Malaria	7	0	2	3	0	0	0	1	13

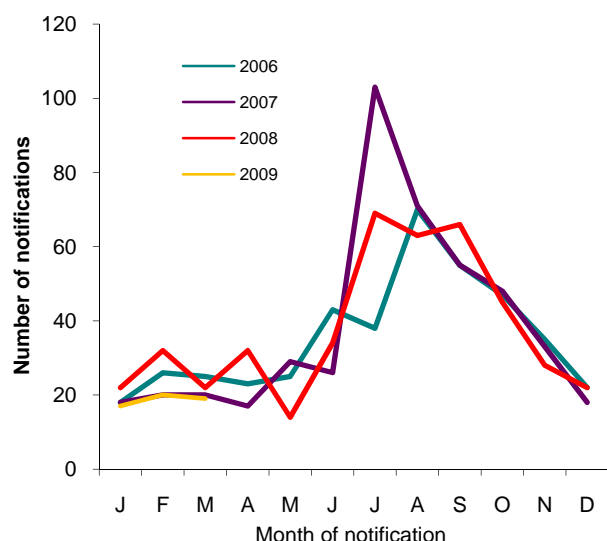
\*Since May 4th 2008, the category Acute Infectious Gastroenteritis has included *C. difficile*. Note that data for AIG since this time is not directly comparable with data collected previous to this



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 6 shows the number of salmonellosis notifications by HSE-Area and month for the first quarter of 2009. Comparison of trends with previous years is shown in Figure 1 below.

**Table 6. Salmonellosis Notifications by HSE-Area and Month, Q1 2009**

Month	E	M	MW	NE	NW	SE	S	W	Total
Jan	4	2	1	2	2	3	2	1	17
Feb	6	0	2	5	1	0	4	2	20
Mar	8	1	2	2	0	1	4	1	19
Total	18	3	5	9	3	4	10	4	56



**Figure 1. Seasonal Distribution of Human Salmonellosis Notifications, 2006 to end quarter 1 2009**

Table 7 shows the *S. enterica* isolates typed by the NSRL in the first quarter of 2009 (n=68). The commonest human serotypes isolated were *S. Typhimurium* (n=17 [28%]) and *S. Enteritidis* (n= 9 [13%]).

Ten (15%) *S. enterica* isolates were reported to be associated with travel outside of Ireland during this quarter.

**Table 7. Serotypes of *S. enterica* referred to NSRL in Quarter 1, 2009** (Data are provided courtesy of Prof. Martin Cormican and Dr Geraldine Corbett-Feeney, NSRL).

Serotype	E	M	MW	NE	NW	SE	S	W	Total
4,5,12:i:-	2	0	0	0	0	0	4	0	6
Agona	0	0	0	0	1	0	0	0	1
Braenderup	1	0	0	0	0	0	0	0	1
Derby	0	1	0	0	0	1	0	0	2
Dublin	1	0	0	0	0	0	2	0	3
Enteritidis	4	1	1	0	1	0	1	1	9
Essen	0	1	0	0	0	0	0	0	1
Hadar	0	0	0	0	0	1	1	0	2
Indiania	0	1	0	0	0	0	0	0	1
Infantis	0	0	0	1	0	0	0	0	1
Java	1	0	0	0	0	0	0	0	1
Johannesburg	1	0	0	0	0	0	0	0	1
Litchfield	0	0	0	0	0	1	0	0	1
Mbandaka	0	0	1	0	0	0	0	0	1
Mississippi	1	0	0	0	0	0	0	0	1
Napoli	1	0	0	0	0	0	0	0	1
Oranienburg	0	0	0	1	0	0	0	0	1
Paratyphi A	1	0	0	0	0	0	0	0	1
Saintpaul	0	1	0	0	0	0	0	0	1
Schwarzengrund	0	0	0	0	1	0	0	0	1
Stanley	0	0	0	1	0	0	1	0	2
Stanleyville	0	0	0	1	0	0	0	0	1
Thompson	1	0	0	0	0	0	0	0	1
Typhi	1	0	0	0	0	0	0	0	1
Typhimurium	7	0	2	3	0	1	1	3	17
Unnamed	2	1	0	0	2	0	0	0	5
Virchow	2	0	0	0	0	1	0	0	3
Worthington	0	0	0	0	0	0	0	1	1
Total	26	6	4	7	5	5	10	5	68

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

There was one case of *S. Typhi* and one case of *S. Paratyphi* A notified during Q1 2009.

### **Outbreaks of salmonellosis**

There no outbreaks of salmonellosis reported in Q1 2009.



## VEROTOXIGENIC *E. COLI* (VTEC)

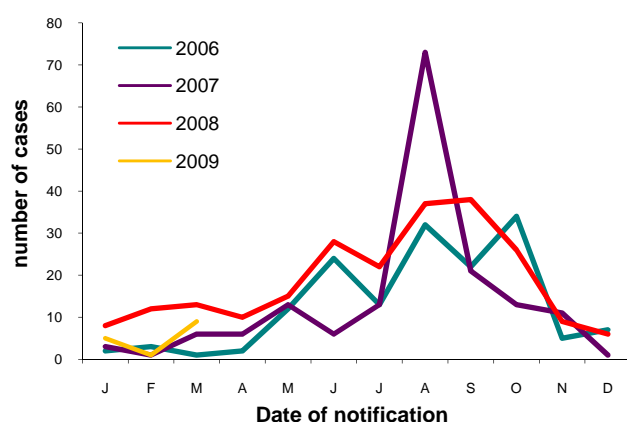
Illness caused by enterohaemorrhagic *E. coli* (EHEC) became a notifiable disease on January 1st 2004. Under EHEC, all verotoxin positive *E. coli*, and *E. coli* of serogroups O157, O26, O111, O103, O145 regardless of whether verotoxin producers, are reported. Previously, VTEC were notified under the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

The number of EHEC notified in Q1 2009 is shown in Table 5. 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.

Seventeen EHEC were notified in this quarter, 15 of which were confirmed VTEC (Table 8). This compares with 33 VTEC cases notified in Q1 2008 and 10 in Q1 2007 (Figure 2). Table 8 shows the number of VTEC cases reported by serogroup and month, Q1 2009.

**Table 8. Confirmed and Probable VTEC Notified by Serogroup and Month, Q1 2009**

Month	O157	O26	Other	Total
Jan	2	3	0	5
Feb	1	0	0	1
Mar	5	3	1	9
Total	8	6	1	15



**Figure 2. Seasonal distribution of confirmed and probable VTEC cases notified 2006 to end quarter 1 2009**

No cases notified during this quarter were reported as having developed HUS.

The HSE DML 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 9 and 10 show the phage types and VT types of VTEC isolates referred to the laboratory in Q1 2009.

**Table 9. Phage Types of VTEC O157 isolates referred to the HSE DML Public Health Laboratory, Cherry Orchard Hospital in Q1 2009.** (Data are provided courtesy of Dr. Eleanor McNamara and Dr. Anne Carroll).

Phage type	Number of isolates
32	4
14	1
2	1
31	2
Total	8

Includes isolates from confirmed cases only. All phage typing was undertaken at the HPA Laboratory of Enteric Pathogens (LEP), Colindale, UK

**Table 10. Verotoxin typing results of VTEC isolates referred to the HSE DML Public Health Laboratory, Cherry Orchard Hospital in Q1 2009.** (Data are provided courtesy of Dr. Eleanor McNamara and Dr. Anne Carroll).

Serogroup	vt1	vt2	vt1+vt2	Total
O157	0	7	1	8
O26	4	0	2	6
Other	1	0	0	1
Total	5	7	3	15

### Outbreaks of VTEC infection

During this quarter, three family outbreaks and one general outbreak of VTEC infection were reported (see Tables 1 and 2).

## CAMPYLOBACTER

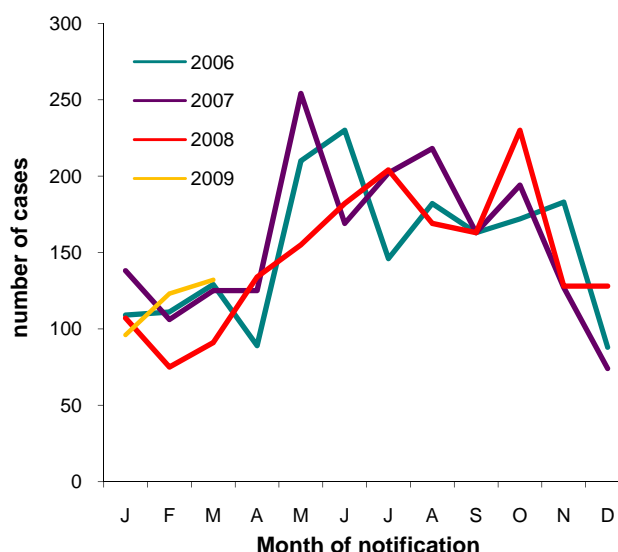
Human campylobacteriosis became a notifiable disease on January 1st 2004. Prior to this, human campylobacter infection was notified under the category of 'Food Poisoning (bacterial other than Salmonella)'. The notifications for the first quarter of 2009 are shown in Table 11. The number of cases notified this quarter is similar to quarter 1 in previous years (Figure 3).

**Table 11. Campylobacter Notifications by HSE-Area and Month, Q1 2009**

Month	E	M	MW	NE	NW	SE	S	W	Total
Jan	32	7	11	3	3	9	21	10	96
Feb	37	12	6	20	4	7	26	11	123
Mar	50	9	13	5	4	12	29	10	132
Total	119	28	30	28	11	28	76	31	351

### Outbreaks of Campylobacter infection

There were two family outbreaks of campylobacteriosis reported in Q1 2009.



**Figure 3. Seasonal distribution of Campylobacter notifications 2006 to end quarter 1 2009**

## CRYPTOSPORIDIUM

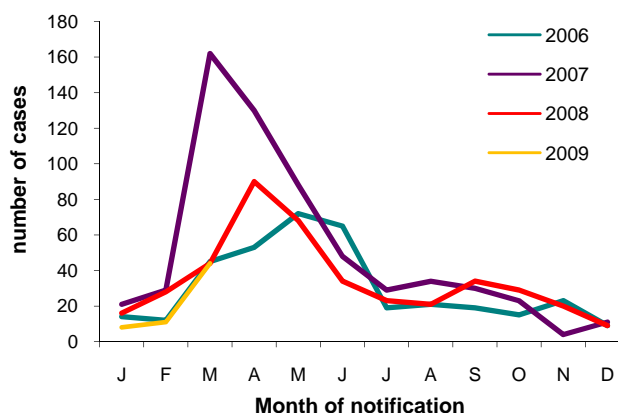
Human cryptosporidiosis became a notifiable disease on January 1st 2004. Prior to this, cryptosporidiosis was notifiable in Ireland only in young children under the category 'Gastroenteritis in Children Under 2'. In Q1 2009, 63 cases of cryptosporidiosis were notified (Table 12), compared to 88 in the same period last year and 212 in Q1 2007 (Figure 4).

**Table 12. Cryptosporidiosis Notifications by HSE-Area and Month, Q1 2009**

Month	E	M	MW	NE	NW	SE	S	W	Total
Jan	0	2	0	0	0	3	1	2	8
Feb	0	3	0	1	0	2	2	3	11
Mar	1	7	5	2	3	4	12	10	44
Total	1	12	5	3	3	9	15	15	63

### Outbreaks of cryptosporidiosis

There was one family outbreak of cryptosporidiosis reported in Quarter 1.



**Figure 4. Seasonal distribution of cryptosporidiosis notifications 2006 to end quarter 1 2009**

## NOROVIRUS

Human noroviral infection became a notifiable disease on January 1st 2004. There were 1197 cases reported in the first quarter of 2009, as shown in Table 13. These data are certainly an under-ascertainment of the true burden of disease due to this pathogen.

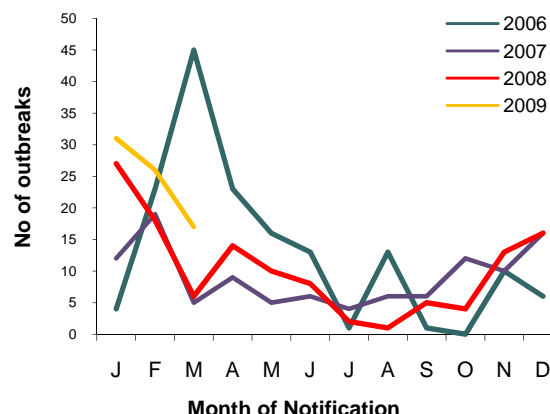
**Table 13. Norovirus Notifications by HSE-Area and Month, Q1 2009**

Month	E	M	MW	NE	NW	SE	S	W	Total
Jan	257	16	45	104	16	15	49	27	529
Feb	127	40	41	45	21	18	99	59	450
Mar	77	17	30	26	15	8	38	7	218
Total	461	73	116	175	52	41	186	93	1197

### Norovirus outbreaks

Norovirus or suspect viral aetiology is the commonest cause of outbreaks of acute gastroenteritis in Ireland. In the first quarter of 2009 there were 74 outbreaks confirmed as being caused by this virus, involving at

least 2528 people becoming ill, as outlined in Table 1. The seasonal trend is outlined in Figure 5.



**Figure 5. Seasonal distribution of confirmed norovirus outbreaks, 2006 to end quarter 1 2009.**

## 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.

There were two cases of listeriosis notified in Q1 2009, compared to three in quarter 1 2008 and two in quarter 1 2007. Both were non-pregnancy related

adult cases. One isolate was referred to the NSRL this quarter. Table 14 lists the serotypes for this isolate.

**Table 14: Serotypes of Q1 2009 human *Listeria* isolates referred to the NSRL** (Data are provided courtesy of Prof. Martin Cormican and staff at the NSRL).

Serotype	Number of isolates
1/2	1

## SHIGELLA

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

During Q1 2009, fifteen cases of shigellosis were notified (Table 5). This compares with 13 cases notified as shigellosis in Q1 in 2008 and eight in Q1 2007. Six cases were reported as *S. sonnei*, seven as *S. flexneri*, one as *S. boydii* and one as *S. dysenteriae*.

During this quarter, eight cases (53%) were reported to have acquired their illness abroad, three in Nigeria, two each in Egypt and Dominican Republic, and one in Pakistan. Country of infection was reported as Ireland for one further case, and as 'not specified' or 'unknown' for the remaining six cases.

### Outbreaks of shigellosis

There was one family outbreak of shigellosis reported in Q1 2009 (Table 2).

## 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 years'.

During Quarter 1 2009, 16 cases of giardiasis were notified (Table 5); this compares with 20 cases notified in Q1 2008 and 22 in Q1 2007.

## 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)'.

There were no cases of foodborne intoxications in Q1 2009.

## ACUTE INFECTIOUS GASTROENTERITIS incl. ROTAVIRUS

Since 1<sup>st</sup> January 2004, there is a notifiable disease category termed 'Acute Infectious Gastroenteritis'. Until May 3<sup>rd</sup> 2008, this included all unspecified causes of gastroenteritis and also specifically, gastroenteritis due to rotavirus. Since May 4<sup>th</sup> 2008, it has also specifically included *Clostridium difficile* associated disease (CDAD). AIG cases due to unspecified causes or to rotavirus are notifiable in all age groups, unlike the former notifiable disease category of 'Gastroenteritis in children under 2 years'. CDAD cases are only notifiable in patients two years or older that meet the case definition.

During Quarter 1 2009, there were 1553 notifications of acute infectious gastroenteritis. 913 of these (59%) were reported as rotavirus (as shown in Table 15).

**Table 15. Rotaviral Infections Notified under the Category of 'Acute Infectious Gastroenteritis' by HSE-Area and Month, Q1 2009**

Month	E	M	MW	NE	NW	SE	S	W	Total
Jan	17	4	1	3	8	7	22	12	74
Feb	90	1	15	22	16	54	91	50	339
Mar	98	25	30	23	25	100	101	98	500
Total	205	30	46	48	49	161	214	160	913

## NON-IID ZONOTIC DISEASES

Non-IID zoonoses now notifiable include: anthrax, brucellosis, echinococcosis, leptospirosis, plague, Q Fever, toxoplasmosis, trichinosis, typhus and rabies. The Q1 2009 notifications of these zoonotic diseases are reported by HSE-Area in Table 5.

Nineteen cases of toxoplasmosis were notified in this quarter. This compares with 22 cases notified in the same period in 2008 and eight cases in Q1 2007.

There were no cases of brucellosis reported during this quarter compared with two in Q1 2008 and four in Q1 2007.

Five cases of leptospirosis were notified in Q1 2009; this compares with six in Q1 2008 and four in Q1 2007. One was reported as associated with leisure activities, two as occupational, while one acquired their illness through another known exposures; no information was provided for one case.

There were three cases of Q fever notified this quarter, compared to four in Q1 in 2008 and three in Q1 2007.

## MALARIA

Malaria is a notifiable disease for many years. The Q1 2009 notifications are reported in Table 5 by HSE-Area.

Thirteen cases of malaria were notified in Q1 2009. This compares with 15 cases reported in Q1 2008 and eight in Q1 2007.

Eight cases were reported as *P. falciparum*, one as *P. vivax*, one as *P. ovale*, one as *P. malariae* and species was specified for two cases.

Six cases were exposed in Sub-Saharan Africa and one in Asia. One case was described as a case of airport/luggage malaria, while no data were provided on country of infection for the remaining five cases.

The reason for travel for two cases was reported as visiting family in country of origin. Two cases were exposed during holiday travel, while the reason for travel was specified as 'other' for two cases, Irish citizen living abroad for one case, and not specified for six cases.

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